the need of extrinsic evidence. However, trial judges are under the admonition of Judge Learned Hand[106] not to assume too much expertise in interpreting, construing, or comparing patents or devices. Patent validity is now a question of law,[107] and questions of definiteness,[108] abandonment[109] and novelty[110] either are, or necessarily involve, strong questions of fact. Invalidity by reason of obviousness under 35 U.S.C. § 103 requires definite factual inquiries,[111] which if not couched in terms of ultimate factual conclusions, can be a subject for determination by the jury. In view of the foregoing, it seems clear that under proper circumstances, where extrinsic evidence is submitted which is not inconsistent with any absolute to which the court could adhere, the jury's findings on both the issues of infringement and the factual aspects of validity, would necessarily control the trial court's conclusions as to these issues, and the jury's findings in these areas would similarly acquire the clearly erroneous immunity of Rule 52(a). At least the factual inquiries pertaining to obviousness, as enunciated in *Graham*, do come within the strictures of this rule.[112]

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106 Kohn v. Eimer, 265 F. 900, 902 (2d Cir. 1920); Safety Car Heating & Lighting Co. v. General Electric Co., 155 F.2d 937 (2d Cir. 1946).
107 Graham v. John Deere Co., 383 U.S. 1, 17 (1966).
108 Battin v. Taggert, 58 U.S. (17 How.) 74, 85 (1854).
109 *Id.*
110 *Id.*
111 Graham v. John Deere Co., 383 U.S. 1, 17 (1966).
112 Stamicarbon N.V. v. Escambia Chem. Corp., 430 F.2d 920, 926 (5th Cir. 1970).

THE LAW OF WATER DISTRIBUTION IN IOWA AND SOUTH DAKOTA: A COMPARISON OF THE RIPARIAN AND APPROPRIATIVE SYSTEMS

Max A. Gors†

Water is necessary to sustain human and other animal and plant life, as we know it, on this planet.[1] Water is also necessary to manufacturing, mining, recreation, transportation and a variety of other activities in which human beings are notorious for engaging.[2]

The supply of water is static.[3] The supply of men is not.[4] Moreover, a great deal of the supply of water is unusable for many of mankind's purposes because of its saline condition. Another significant portion of the world's water supply has been, is, or soon will be, polluted to the point of impairing its usefulness, exhausted by extravagant use,[5] or wasted by mismanagement.[6] Therefore, as the demand created by increasing population[7] and myriad new forms of consumption is rising[8] the supply is diminishing. An alarming water shortage is developing,[9] necessitating rules for sharing water.[10] In an ordered society the rules will be written and referred to as laws.[11]

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1 "Water is absolutely necessary for human existence. This is a widely recognized but little appreciated fact." Timmons, *Problems in Water Use and Control*, 41 IOWA L. REV. 160 (1956) [hereinafter cited as Timmons].

2 *Id.* Water is important economically, physically, and esthetically "to a great range of human activities." N. HINES, A DECADE OF EXPERIENCE UNDER THE IOWA PERMIT SYSTEM 1 (Agricultural Law Center, College of Law, The University of Iowa, Monograph No. 9, 1966) [hereinafter cited as HINES].

3 *See* Timmons, *supra* note 1, at 178.

4 *See generally* P. EHRLICH, THE POPULATION BOMB (1968).

5 "[E]xtravagent uses of this precious resource [water] are straining the available supplies, even in areas once considered water rich." HINES, *supra* note 2, at 1.

6 "[T]he majority of today's water problems . . . stem from . . . a continuing lack of accomodation between nature's distribution patterns and man's need patterns . . . . [M]ost would agree the fault lies chiefly with man and not with nature." *Id.*

7 "Concern over handling the nation's resources in order to meet the demands of its exploding population is deep and widespread." Hutchins, *Background and Modern Developments in State Water-Rights Law* in 1 WATERS AND WATER RIGHTS 150 (R. Clark ed. 1967) [hereinafter cited as Hutchins].

8 "An increasing population coupled with greater per capita consumption is much the story, but industrial, agricultural and recreational demands for water are also expanding rapidly." HINES, *supra* note 2, at 1. "The fundamental character of water problems lies in the increasing demands . . . ." Timmons, *supra* note 1, at 161.

9 *See* Timmons, *supra* note 1, at 178. "That the pressure of increasing population upon the nation's water supplies is posing and will continue to pose, serious problems in engineering and other natural sciences, economics, finance, and law is widely recognized and studied . . . ." Hutchins, *supra* note 7, at 150-51. Iowa, however, is one of the few remaining states with a water surplus. *See* HINES, *supra* note 2, at 1, where the author concludes that in Iowa "scarcity is as yet chiefly a potential threat."

10 *See* Timmons, *supra* note 1, at 171, 178.

11 Not that all rules will always be written—custom and traditions sometimes as-

South Dakota is located in a semiarid region of North America.[12] It is a water-poor state and has been increasingly confronted with water shortages over the first century of its modern history.[13] Iowa, on the other hand, is a water-rich state located contiguous to South Dakota but in a more humid region of North America.[14] Since these states represent two opposite aspects of the water situation,[15] this Article will attempt to compare the systems of water allocation in South Dakota and Iowa in an effort to note and discuss both the similarities and differences in the problems and solutions to the law of water distribution and use. As more states consider and reconsider the problems of water distribution, a comparison of the experiences and approaches of these two states may prove helpful. This Article will be limited to discussing and comparing the manner and methods of distribution of surface and ground water in South Dakota and Iowa, and will not deal with the problems of drainage, pollution,[16] bank rights, access rights, streambed ownership, recreational uses, or the problems of accretion and avulsion.[17]

The systems of water law in the United States are: riparian, prior appropriate, and possibly a combination of both.[18] Water law has developed along various lines depending on climate,[19] geographic location,[20] topography,[21] and the nature of the use.[22] The nature of the water itself—whether surface or ground water—[23] and the abundance or shortage of the supply have also influ-

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sume the force and effect of written rules of law—but at least a majority of the most important rules will be written either as statutes or cases.

12 Knight v. Grimes, 80 S.D. 517, 127 N.W.2d 708 (1964).

13 *Id.*

14 Hutchins, *supra* note 7, at 65.

15 This does not mean that the laws of distribution will be different, only that the basic problems are different.

16 While pollution problems are obviously related to distribution problems, because both involve water and rights to water, the two areas are separate. For example, the state of Iowa has separated the problems by putting distribution under the control of the Natural Resources Council while pollution is handled by the Iowa Water Pollution Control Commission. HINES, *supra* note 2, at 17.

17 In dealing with water rights, bank rights, access, streambed ownership, and other related problems, most authors treat them separately. *See* Clark & Martz, *Classes Of Water and Character of Water Rights and Uses* in 1 WATERS AND WATER RIGHTS 293 (R. Clark ed. 1967) [hereinafter cited as Clark & Martz], wherein the authors state:

> The term "riparian rights" in the previous discussion refers to the right to divert or use water. It does not encompass bank rights, or the right of access to bodies of water, or rights of ownership in the bed of a stream or in fastlands created by accretion. Nor does it refer to fishing and other recreational uses, or the right to protect a stream bank from erosion.

Professor Timmons notes that while there are several interrelated elements in water use and control, one article cannot possibly cover the entire range. Timmons, *supra* note 1, at 161.

18 H. FARNHAM, THE LAW OF WATERS AND WATER RIGHTS (1904); Clark & Martz, *supra* note 17.

19 Clark, *Plan and Scope of the Work* in 1 WATERS AND WATER RIGHTS 29 (R. Clark ed. 1967) [hereinafter cited as Clark].

20 *Id.* "In essence, the difference between . . . doctrines stems from the geographical differences in the regions in which they arise." HINES, *supra* note 2, at 3 n.4.

21 Clark, *supra* note 19, at 29.

22 *See id.* and *see* HINES, *supra* note 2, at 4, as to the distinction between natural and artificial uses. *See also* notes 125-34 *infra* and accompanying text.

23 Early American water law developed out of disputes concerning surface, not ground, water. Clark, *supra* note 19, at 32. *See* HINES, *supra*.

enced water law development.[24]

The semiarid and arid western states can be hydrologically differentiated from the humid eastern states roughly along the ninety-seventh meridian or from 200 to 400 miles west of the Mississippi River.[25] The western states are generally considered to be those seventeen states lying west of the line of states that includes from north to south: North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas.[26] Hawaii and Alaska are sometimes added to this group of western states.[27] There are thirty-one humid or subhumid states in the eastern group.[28]

The difference between the two regions is principally a difference in the rate of evapotranspiration.[29] Evapotranspiration is the process by which the sun pulls water into the air from water surfaces and plant leaves.[30] In the western states, the rate of evapotranspiration is greater than the average precipitation causing the climate to be arid or semiarid, while in the eastern states, the rate of evapotranspiration is less than normal precipitation resulting in a humid climate.[31]

In the arid and semiarid western states, water has been in short supply for most, if not all, of the existence of these states.[32] Consequently, these arid and semiarid states have been forced to develop systems of water distribution to deal with shortages.[33]

In the eastern or humid states, the problems have been more ones of surplus water, drainage, pollution, and navigation.[34] Therefore, the East has lagged behind in developing its law of water distribution to meet the changing circumstances.[35]

> From the middle of the nineteenth century on, problems of water use and rights of use occurred predominantly in the West under semiarid conditions. This rapidly growing West was making increasing demands upon available water supplies—problems of supply and demand which, in volume and extent and frequency of occurrence, were wholly foreign to eastern experience. By contrast with the West, legal problems pertaining to watercourses and ground waters were

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24 "In the humid east, apportioning water rights on the basis of land ownership bordering the water source was practical; in the arid and semi-arid west, such a luxurious system was not." HINES, *supra* note 2, at 3 n.4.

25 Piper, *Interpretation and Current Status of Ground-water Rights* in PAPERS DELIVERED AT THE WATER RIGHTS CONFERENCE 68 (1960) [hereinafter cited as Piper].

26 Hutchins, *supra* note 7, at 65.

27 *Id.* at 65-66.

28 Piper, *supra* note 25, at 68.

29 *Id.*

30 *Id.*

31 *Id.*

32 *See* Hutchins, *supra* note 7, at 66.

33 *Id.*

34 Clark, *supra* note 19, at 29. "The areas with abundant rainfall, or at least an adequate supply, have long emphasized the maintenance of streamflows, lake levels and the like and the protection or rights which are essentially relational rather than usufructuary." *Id.*

35 *See* Hutchins, *supra* note 7, at 66.

> not then significant in the over-all economy of the great eastern region.[36]

However, with recent increases in demand on water resources and recent drought, eastern states have been faced with grave distribution problems.[37] Several of the eastern states have changed or contemplated revising their existing techniques for water allocation.[38]

The law of water distribution developed along two major lines. The dominant theory in the eastern, humid states was the riparian doctrine based on ownership of land bordering the water source.[39] In the western, arid and semi-arid states the doctrine of prior appropriation, based largely on a first-come, first-served theory, emerged as the dominant rule of water allocation.[40] In their earlier stages, both the riparian and appropriative doctrines grew out of court decisions.[41] As time went on, the riparian doctrine continued to develop largely as court-made law,[42] while the law of prior appropriation became more and more the subject of legislation.[43]

Water is a migratory element both as to where it occurs and where it goes.[44] Use[45] or disposal at any one point will affect use or disposal at other points. For example, reduced rainfall causes subsurface water sources to fail to recharge and causes surface water sources to get shallow or go dry.[46] The whole migration process of water is called the hydrologic cycle.[47] Water precipitates onto the earth in the form of rain. From there it may soak into the ground, run off as surface water or as a water course, or collect in a puddle, slough, pond, or lake. Water that remains close to the surface of the ground and water remaining on the surface evaporates directly into the atmosphere from whence it came. Water that finds its way into the leaves of plants also returns to the air through the process of transpiration.[48] Then the whole process starts over again.

The cycle repeats itself endlessly unless it is upset in some way. Since

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36 *Id.*

37 *Id.*; Timmons, *supra* note 1, at 160.

38 Timmons, *supra* note 1, at 160.

39 *See* Ellis, *Development and Elements of the Riparian Doctrine with Reference to the Eastern States* in PAPERS DELIVERED AT THE WATER RIGHTS CONFERENCE 19 (1960) [hereinafter cited as Ellis] and Clark, *supra* note 19, at 34.

40 *See generally* Clark, *supra* note 19, at 33-34 and Hutchins, *supra* note 7, at 79-82.

41 HINES, *supra* note 2, at 3.

42 Legislation relating to riparian water law has been enacted in many eastern states, but court-made rules of riparian law usually predominate. Ellis, *supra* note 39, at 19.

43 Hutchins, *supra* note 7, at 81. The federal government recognized the doctrine of prior appropriation by legislation in the 1860's and 1870's. *Id.* at 78 nn. 70 & 71. *See, e.g.*, S.D. COMPILED LAWS ANN. tit. 46-1, 46-5 & 46-6 (1967) and IOWA CODE ch. 455A (1966), which, according to one author, contains implications of the prior appropriation doctrine. Piper, *supra* note 25, at 70.

44 Timmons, *supra* note 1, at 165.

45 *Id.* at 167.

46 *Id.* at 166.

47 *Id.* at 165.

48 Transpiration is the process by which water evaporates into the atmosphere from the leaves of plants.

water is migratory in the air, on the surface, and underground, it crosses property lines.[49] Use at one point in the hydrologic cycle affects use at other points.[50] The following is a discussion of the varying rights in and to water before and after it crosses property lines.

I. Surface Water Law

There are really four types of water—diffused surface water, surface watercourses, underground watercourses, and percolating ground water.[51] For a variety of reasons, many of which are obscure or without scientific basis, the law of water distribution depends upon the type of water (i.e., diffused surface water *vis a vis* surface watercourses) involved.[52] A quick look at the nature of the hydrologic cycle should show that the type of water involved makes no difference because the cycle operates as a whole and each type of water depends for its source and existence upon all of the other types of water in the cycle, but water law was developing at a time when the interrelationships between surface and ground water were not so apparent as modern science has made them appear. Therefore, these distinctions in the type of water under discussion must be taken into account in analyzing not only the history and development of water law but also modern water law.[53]

A. *Riparian Water Law*

1. *History*

Riparian law originally was based on the idea that land owners next to a stream or body of water had natural rights to the water.[54] "Every person owning land on the bank of a stream possessed, by reason of such landownership, a right to the use of the water in its natural streamflow, without diminution or alteration."[55] Along with the right went the duty to share equally the privileges and benefits with other riparian land owners.[56]

Perhaps riparian water law originally developed because only riparians had access to streams.[57] At least, "the riparian doctrine originated in abundantly

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49 Timmons, *supra* note 1, at 167.

50 *Id.*

51 Hines, *supra* note 2, at 4.

52 *See* Piper, *supra* note 25, at 71, where he indicates that the common law rule respecting ground water distribution was based on the idea that ground water's behavior was incomprehensible, that it was not capable of orderly management by the law, and it was inseparable from the soil.

53 Just like real property law, water law is apparently slow to change. In the same way that vestiges of feudal tenure still remain in the modern concepts of estates in land, earlier riparian and appropriative rights and concepts are clearly discernible in modern water control law.

54 Clark & Martz, *supra* note 17, at 288.

55 Hutchins, *supra* note 7, at 67.

56 Clark & Martz, *supra* note 17, at 288.

57 If a land owner did not have access to a stream, there was no way he could get at it to use it. While it was not absolutely true even at common law that only owners of land contiguous to a stream had access to the stream, non-adjacent owners certainly had only limited access. *See* Ellis, *supra* note 39, at 30.

watered regions . . . ."[58] Also, at the time riparian law was developing, not only were there many watercourses and other water supplies, but also most people lived along a watercourse of some sort.[59]

There is authority both ways as to whether the riparian doctrine came from the old English common law or from the French *Code Napoleon* via Louisiana with the help of Story and Kent.[60]

> Court decisions respecting rights in flowing waters in the eastern states . . . were based upon principles of the common law of England as the early jurists understood them. . . . [C]limatological conditions along the Atlantic seaboard were comparable to those of England; and the common law respecting waters was integrated with American law in this region without serious difficulties.[61]

Another author asserts that riparian law came from French civil law to Louisiana in 1804 in the form of the *Code Napoleon.*[62] He further asserts that Justice Story took up the theory and terminology in the 1827 case of *Tyler v. Wilkinson.*[63] The same theory and terminology appeared in 1828 in *Kent's Commentaries.*[64] Irrespective of where the doctrine originated, it eventually became the basic law of water distribution in the eastern and a few of the western states.[65]

Early eastern uses that generated litigation were usually for mills, for domestic or household consumption, and for stock watering.[66] Consequently, demands on the water supply were not very great. The eastern states could afford a luxurious system of distribution. In fact, drainage, not distribution, was more often the problem.[67] For example, in Iowa, early riparian controversies usually involved non-consumptive uses such as damming a stream to provide power for mills.[68] These uses were only temporary and did not permanently diminish the flow of water.[69] On the other hand, in western states like South Dakota much of the demand for water was for irrigation and mining.[70] Along with the increased demand went a water shortage.[71] Because of the different needs and conditions, different principles of distribution were developed. Some states adopted the doctrine of prior appropriation as the sole method of distribution. Other states applied both the riparian and prior appropriation doctrines,[72] "The application of both doctrines in these states is explained by their

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58 Clark, *supra* note 19, at 34.
59 Ellis, *supra* note 39, at 30.
60 Hutchins, *supra* note 7, at 62.
61 *Id.* at 66.
62 Ellis, *supra* note 39, at 19-20.
63 *Id.* at 20. Tyler v. Wilkinson, 24 F. Cas. 472 (No. 14,312) (C.C.R.I. 1827).
64 Ellis, *supra* note 39, at 20. Kent cited the *Code Napolean*, French legal treatises, and *Tyler v. Wilkinson. Id.*
65 *Id.* at 21.
66 Hutchins, *supra* note 7, at 70.
67 *See* note 258 *infra* and accompanying text.
68 Hines, *supra* note 2, at 7.
69 *Id.*
70 Hutchins, *supra* note 7, at 70.
71 Piper, *supra* note 25, at 68-69.
72 Hutchins, *supra* note 7, at 80-82.

geographical location partly in humid and partly in semiarid areas."[73]

2. *Development and Principles of Riparian Water Law*

a. *Riparian Land.* Riparian theory is based upon the principle that "[N]o water right [exists] without land ownership."[74] The riparian doctrine allows certain rights to use water to owners of lands adjacent to a watercourse.[75] Riparian "land generally must adjoin the watercourse, constitute one contiguous ownership tract, and lie within the watershed."[76] In South Dakota "Legally defined, a riparian owner is an owner of land bounded by a water course or lake through which a stream flows."[77] In Iowa, the riparian right to water is incident to ownership of land containing or bordering on a natural watercourse.[78] Generally, non-riparian land subsequently acquired and added to the original riparian tract does not become riparian by the common ownership.[79] Iowa follows this view,[80] except that riparian rights do attach to new land added to the original tract by accretion.[81] Normally, selling of a non-contiguous portion of a riparian tract severs the water rights from the severed tract.[82]

b. *Natural Watercourses.* Riparian rights attach to water in natural watercourses.[83] "A natural watercourse has often been defined as a natural stream of water that flows along a defined channel, with beds and banks, for a sufficient time to give it a substantial existence."[84] A natural watercourse may go dry periodically, or may be a spring that flows between two individuals' land, or a lake or pond.[85] Artificial watercourses may be treated as natural ones,[86] but a natural watercourse artificially improved may receive different treatment.[87] Flood water that returns to a natural watercourse is usually treated as being subject to riparian rights.[88]

In South Dakota, a natural watercourse is usually a well-defined stream with beds and banks, but it may be a ravine that forms a natural watercourse

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73 Clark & Martz, *supra* note 17, at 287.
74 Clark, *supra* note 19, at 34.
75 Ellis, *supra* note 39, at 19.
76 *Id.* at 26-27 (footnotes omitted).
77 Sayles v. City of Mitchell, 60 S.D. 592, 594, 245 N.W. 390, 391 (1932).
78 HINES, *supra* note 2, at 6.
79 Ellis, *supra* note 39, at 27.
80 HINES, *supra* note 2, at 6-7; Davis, *Water Rights in Iowa*, 41 IOWA L. REV. 216, 220 (1956) [hereinafter cited as Davis].
81 HINES, *supra* note 2, at 6.
82 Ellis, *supra* note 39, at 27.
83 Davis, *supra* note 80, at 219.
84 Ellis, *supra* note 39, at 22 (footnote omitted).
85 *Id.* Usually rights to the use of water in ponds and lakes are referred to as littoral rights. Clark & Martz, *supra* note 17, at 288 n.15.
86 Ellis, *supra* note 39, at 22. *See* Logsdon v. Anderson, 239 Iowa 585, 30 N.W.2d 787 (1948) and Falcon v. Boyer, 157 Iowa 745, 142 N.W. 427 (1913).
87 Ellis, *supra* note 39, at 22. *But see* Logsdon v. Anderson, 239 Iowa 585, 30 N.W.2d 787 (1948); Falcon v. Boyer, 157 Iowa 745, 142 N.W. 427 (1913) *and* HINES, *supra* note 2, at 5-6, where that author says that a natural watercourse remains natural even though deepened or straightened.
88 Ellis, *supra* note 39, at 22.

even though there are no well-defined beds or banks.[89] A natural watercourse implies water running from a permanent source in a definite channel, but a stream may go dry during part of the year and still be a natural watercourse.[90] A swale or depression may be a natural watercourse.[91]

> [I]t does not seem to be important that the force of the water flowing from one tract to the other has not been sufficient to wear out a channel or canal having definite and well-marked sides or banks. That depends on the nature of the soil and the force and rapidity of the flow. If the surface water in fact uniformly or habitually flows off over a given course, having reasonable limits as to its width, the line of flow is, within the meaning of the law applicable to the discharge of surface water, a water course.[92]

In Iowa, a watercourse is a natural stream usually flowing in a definite channel having beds, sides, or banks and emptying into some other body of water,[93] but the banks or beds do not necessarily have to be well-defined[94] as long as the water has the characteristics of a stream with a visible current.[95] If water uniformly or habitually flows over a given course having reasonable limitations as to width, it is a natural watercourse.[96] The watercourse may be a swale[97] or a depression[98] through which surface water runs according to the laws of nature.[99] A partially artificial excavation may become a watercourse if it becomes a living, flowing stream of water.[100] A natural watercourse may be aided by the hand of man.[101] An artificial watercourse may become natural by prescription as between individual land owners,[102] but not as against the state[103] or against land owners upon whose land the artificial watercourse does not run.[104] From the Iowa court's broad definition of a natural watercourse, it is apparent that all that is necessary is that the "water uniformly flows in a

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89 Quinn v. Chicago, M. & St. P. Ry., 23 S.D. 126, 132, 120 N.W. 884, 886 (1909).
90 Benson v. Cook, 47 S.D. 611, 201 N.W. 526 (1924).
91 Mishler v. Peterson, 40 S.D. 183, 166 N.W. 640 (1918).
92 Thompson v. Andrews, 39 S.D. 477, 484, 165 N.W. 9, 11 (1917).
93 Hunt v. Smith, 238 Iowa 543, 28 N.W.2d 213 (1947); Falcon v. Boyer, 157 Iowa 745, 142 N.W. 427 (1913).
94 Stouder v. Dashner, 242 Iowa 1340, 49 N.W.2d 859 (1951); Hunt v. Smith, 238 Iowa 543, 28 N.W.2d 213 (1947); Heinse v. Thorborg, 210 Iowa 435, 230 N.W. 881 (1930); Parizek v. Hinek, 144 Iowa 563, 123 N.W. 180 (1909); Hull v. Parker, 130 Iowa 190, 106 N.W. 629 (1906).
95 Hinkle v. Avery, 88 Iowa 47, 55 N.W. 77 (1893).
96 Belville v. Porter, 256 Iowa 1119, 130 N.W.2d 426 (1964); Hull v. Parker, 130 Iowa 190, 106 N.W. 629 (1906).
97 Hunt v. Smith, 238 Iowa 543, 28 N.W.2d 213 (1947).
98 Parizek v. Hinek, 144 Iowa 563, 123 N.W. 180 (1909).
99 Heinse v. Thorborg, 210 Iowa 435, 230 N.W. 881 (1930).
100 Falcon v. Boyer, 157 Iowa 745, 142 N.W. 427 (1913).
101 Logsdon v. Anderson, 239 Iowa 585, 30 N.W.2d 787 (1948).
102 Droegmiller v. Olson, 241 Iowa 426, 40 N.W.2d 292 (1950); Wheatley v. Cass County, 239 Iowa 932, 31 N.W.2d 871 (1948); Logsdon v. Anderson, 239 Iowa 585, 30 N.W.2d 787 (1948); Brightman v. Hetzel, 183 Iowa 385, 167 N.W. 89 (1918).
103 Droegmiller v. Olson, 241 Iowa 426, 40 N.W.2d 292 (1950); Wheatley v. Cass County, 239 Iowa 932, 31 N.W.2d 871 (1948); Brightman v. Hetzel, 183 Iowa 385, 167 N.W. 89 (1918).
104 Logsdon v. Anderson, 239 Iowa 585, 30 N.W.2d 787 (1948).

certain line within reasonable limits."[105]

c. *The Riparian Right.* All landowners with property next to a stream or body of water have rights to the flow of water.[106] Both the privileges and benefits of riparian ownership must be shared on an equal basis.[107] Actually there are three separate rights involved: (1) all riparian owners have equal rights to the flow of water, (2) no individual riparian owner can use so much water that he causes material injury to a downstream owner, and (3) no individual riparian owner can so obstruct the stream as to flood upstream owners.[108] However, strict application of these three principles would favor the lower riparian owner because he would receive an undiminished flow while the upper owner would be unduly restricted because he could not diminish the flow.[109] So, at least to a limited degree, pure riparian theory is usually qualified to allow each riparian owner to use as much water as is reasonable under the circumstances and consistent with other riparian owners' rights even to the extent of diminishing the flow somewhat.[110] The three riparian principles "contemplate the right to a reasonable use of the water, for to deny this would lead to the intolerable result of denying any valuable use of the water at all. The test of reasonableness is whether it does or does not cause injury to the other riparians, and thus diminish the value of the common right."[111] In reality, the upper riparian owner may in fact have some preference over lower riparian owners because he has the first opportunity to withdraw or use the streamflow.[112]

d. *Natural Flow v. Reasonable Use—Natural and Artificial Uses*

i. *Natural Flow.* "Pure" riparian theory as referred to above demands that each riparian owner have an equal share in the water flowing in the stream and that no riparian owner may withdraw or use so much water that he thereby diminishes the flow to the injury of lower riparians. This is sometimes referred to as the "natural flow" doctrine.[113] The natural flow doctrine worked fine 150 years ago when uses of water were primarily domestic or nonconsumptive. As the number and variety of uses for water increased, however, the natural flow doctrine proved inadequate.[114]

South Dakota probably followed the natural flow doctrine for a while:

> Every proprietor of lands on the banks of a river has an equal right to the use of the water which flows in the stream, as it was wont to run, without diminution or alteration. No proprietor has the right to use the water, to the prejudice of other proprietors above or below

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105 HINES, *supra* note 2, at 5. *See* Durst v. Puffett, 181 Iowa 14, 15, 163 N.W. 201, 202 (1917).
106 Clark & Martz, *supra* note 17, at 288.
107 *Id.*
108 Hutchins, *supra* note 7, at 68.
109 *Id.*
110 *Id.* at 68-69.
111 *Id.* at 68.
112 Ellis, *supra* note 39, at 26.
113 *See id.* at 23.
114 *Cf. id.* at 26.

> him. He has no property in the water itself, but a simple usufruct while it passes along. He may use the water as it runs in its natural channel, but he cannot unreasonably detain it, or give it another direction. He cannot divert or diminish the quantity of water which would otherwise descend to the proprietors below, nor throw the water back upon the proprietors above. Streams of water are intended for the use and comfort of man, and every proprietor is entitled to a reasonable use of the water, and may apply it to domestic, agricultural, and manufacturing purposes, but not so as to destroy or materially diminish or affect the application of the water by the proprietors below on the stream. Although each proprietor through whose land a stream flows has a right to the use of the water in its natural channel, he may not use it to the prejudice of another.[115]

However, that doctrine was discarded before too long. In *Henderson v. Goforth*,[116] the South Dakota supreme court held that riparian rights are not necessarily equal. "The fact of equal acreage does not raise a presumption that the riparian rights are equal."[117] Riparian rights depend on "what would be a reasonable riparian use of the waters for irrigating the lands of such defendants, commensurate with, and which would not infringe upon, the rights of other claimants."[118]

The Iowa supreme court has struggled with the natural flow doctrine for years:

> The right to have a stream flow on its accustomed course is recognized to be universally incident to the property in the adjoining lands. It is a right which the riparian proprietors on one side of a stream can, under no pretext, be justified in drawing from those on the opposite side . . . . By virtue of their ownership, they are entitled to the use of the water flowing by, or over their land in its natural current, without diversion, material diminution, or obstruction; but no such proprietor has a right to divert or use the water to the prejudice of another.[119]

In the 1894 case of *Willis v. City of Perry*,[120] the Iowa court was still talking about equal rights as among riparian proprietors. However, in 1897, while saying that riparian owners were supposed to have equal rights in the stream-flow,[121] the Iowa court began to allow some encroachment on the natural flow doctrine when it stated: "[W]hile one riparian proprietor may not divert the water of a stream so as to deprive a lower proprietor on the same stream of the benefit thereof, such upper proprietor may reasonably detain the water for

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115 Redwater Land & Canal Co. v. Reed, 26 S.D. 456, 474-75, 128 N.W. 702, 707 (1910) (quoting from *Kent's Commentaries* and Arnold v. Foote, 12 Wend. (N.Y.) 330).

116 34 S.D. 441, 148 N.W. 1045 (1914).

117 *Id.*, at 452, 148 N.W. at 1049.

118 *Id.* at 452-53, 184 N.W. at 1049. But see S.D. COMPILED LAWS ANN. § 46-5-1 (1967).

119 Moffett v. Brewer, 1 Greene 348, 351 (Iowa 1848). *Cf.* Falcon v. Boyer, 157 Iowa 745, 751, 142 N.W. 427, 429-30 (1913).

120 Willis v. City of Perry, 92 Iowa 297, 301, 60 N.W. 727, 729 (1894).

121 Gehlen Bros. v. Knorr, 101 Iowa 700, 704, 70 N.W. 757, 758 (1897). *See* HINES, *supra* note 2, at 7.

proper purposes."[122] In fact, the permissible detention could diminish the flow.[123] The concept of reasonable use was beginning to creep into the Iowa law. "Broadly stated, the general rule is that the owner of land through which a stream of water runs has a right to have it flow over his land in the natural channel, undiminished in quantity, and unimpaired in quality, *except in so far as diminution or contamination is inseparable from a reasonable use of such water.*"[124]

ii. *Natural and Artificial Uses.* As the years rolled by, water was being applied to new uses. A distinction between "natural" or ordinary uses and "artificial" uses arose. Natural uses were household, drinking, and watering of domestic animals.[125] Artificial uses did not minister directly to the necessities of life on the land and included uses for business, trade, irrigation, mining, power, and watering large herds of animals.[126]

"At first 'ordinary uses' were allowed to deplete the 'natural flow.' These were for livestock and domestic uses. Later extraordinary uses were recognized where the result would not in fact injure lower riparians."[127] The law recognized that a riparian owner could use all of the water he needed for natural uses,[128] but in the case of artificial uses, the natural flow doctrine restricted use to only those situations in which (1) there was more than enough left over after the artificial use to satisfy the domestic requirements of all lower riparians and (2) the use did not noticeably diminish the flow, level, or quality of the stream.[129] Such restrictions unduly burdened agricultural, mining, and industrial development, and they have been largely abandoned.[130]

South Dakota recognized the natural and artificial use dichotomy:[131]

> The so-called ordinary or natural use includes the use of the water for domestic purposes and for watering stock. The extraordinary or artificial use including manufacturing, mining, and irrigation. A wide difference in the nature of these two classes of use for water will be readily recognized. The one use being directly necessary to the preservation of animal life; the other, at the best, but indirectly needful.[132]

As to natural users:

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122 Gehlen Bros. v. Knorr, 101 Iowa 700, 705, 70 N.W. 757, 759 (1897).

123 *Id.* at 705-06, 70 N.W. at 759.

124 *Id.* at 704, 70 N.W. at 758 (emphasis added). A riparian owner may impede the natural flow long enough to build up a sufficient head of water to propel his mill machinery even though there is some damage to other riparian owners. *Id.* at 706-07, 708, 70 N.W. at 759. The same is true for a dam constructed to form a pond for the purpose of harvesting ice. A two or three day detention of the natural flow is not unreasonable. *Id.* at 710, 70 N.W. at 760. *See* Harp v. Iowa Falls Elec. Co., 196 Iowa 317, 321-22, 191 N.W. 520, 522 (1923).

125 Hutchins, *supra* note 7, at 84.

126 *Id.*

127 Clark, *supra* note 19, at 34.

128 Ellis, *supra* note 39, at 23.

129 *Id.*

130 *Cf. id.*

131 Lone Tree Ditch Co. v. Cyclone Ditch Co., 26 S.D. 307, 128 N.W. 596 (1910) S.D. COMPILED LAWS ANN. § 46-1-6(4) (1967).

132 Lone Tree Ditch Co. v. Cyclone Ditch Co., 26 S.D. 307, 312, 128 N.W. 596, 598 (1910).

> It is the established law of riparian rights that the riparian owner whose land lies the nearer the source of the stream has, as against those riparian claimants whose land lies lower down, the right to use, for domestic purposes and watering of his stock, if he needs it, all of the water of the stream to the exclusion of the others, this apparantly upon the theory that it is better for a few to have water sufficient for their health and well-being, even at the expense of driving others to make their homes elsewhere, than that many should suffer from only a partial supply of water.[133]

Iowa makes the same distinction between natural and artificial uses.[134] Similarly, Iowa allows an upper natural user to take all of the water for his natural uses to the exclusion of lower riparians.[135]

iii. *Reasonable Use.* Because the natural flow doctrine tended to retard agricultural and industrial progress, a new standard was needed for apportioning water among artificial users. Therefore, the doctrine of "reasonable use" developed as the test for distributing water among multiple artificial users. The reasonable use doctrine allows a riparian owner to use or withdraw water from a natural water course as long as the use is considered reasonable under the circumstances of the particular case even though the flow or level is diminished.[136] These rights of each riparian are qualified by the rights of other riparians on the same watercourse.[137] In some cases, application of the reasonable use doctrine results in essentially equal sharing among competing artificial users; in other cases, some artificial uses are declared unreasonable and excluded while other artificial users are allowed to share equally or on some proportional basis.[138] Some general factors considered in determining whether the use is reasonable are size and location of the stream, the location and type of use, the amount used and returned, and the rights and requirements of other riparian owners.[139]

In South Dakota, natural riparian users get their water before artificial riparian users; "the right of even the owner of the lowest riparian land to water for the so-called ordinary or natural uses, is superior to any riparian claimant's right to use water for extraordinary or artificial purposes."[140] Likewise in Iowa, all artificial uses are subordinate to natural uses.[141]

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133 *Id.*

134 Willis v. City of Perry, 92 Iowa 297, 303, 60 N.W. 727, 729 (1894). The *Willis* case includes domestic uses such as general household use, cleansing, and washing and the supplying of an ordinary number of horses or livestock with water. *Id.* HINES, *supra* note 2, at 8, includes drinking, washing, and supplying an ordinary number of livestock with water in the natural uses category. He says all other uses, such as irrigation, consumptive industrial use, and municipal water supplies, are artificial uses. Propulsion of mills by water power and harvesting of ice for commercial sale are both artificial uses. Gehlen Bros. v. Knorr, 101 Iowa 700, 704, 70 N.W. 757, 758 (1897).

135 Willis v. City of Perry, 92 Iowa 297, 302-03, 60 N.W. 727, 729 (1894). Domestic or natural uses are still favored in Iowa. IOWA CODE §§ 455A.1, .20 (1966).

136 Ellis, *supra* note 39, at 24.

137 *Id.*

138 *Id.* at 24-25.

139 *Id.* at 24.

140 Lone Tree Ditch Co. v. Cyclone Ditch Co., 26 S.D. 307, 312, 128 N.W. 596, 598 (1910).

141 HINES, *supra* note 2, at 8.

In South Dakota, the reasonable use cases have arisen in connection with irrigation controversies. South Dakota permits "riparian owners to use a reasonable quantity of the water flowing over or along their lands for irrigating the same."[142] "[N]o one riparian owner would have the right to divert all the water of a creek for irrigating his land, to the exclusion of all other riparian owners . . . ."[143] A riparian owner cannot claim more water than he uses for either natural or artificial uses.[144] It is interesting and important to note that in South Dakota the rights of a riparian, either for natural uses or for irrigation, are superior to those of subsequent appropriators.[145] What is reasonable varies and may depend on the amount of water flowing in the stream, the time of year, the amount of land to be irrigated, the amount of land the owner owns, and the amount of water other riparians need for natural and artificial purposes.[146]

Iowa also adopts the view that among artificial users, reasonable use is the test of and basis for the right.[147] The rights of all artificial users are equal.[148] Reasonable use depends on the size of the stream, the number and needs of other riparians, the fall of the water, the type of soil, and all other circumstances.[149] "In no case, however, is reasonable use to be determined in view of the necessities or business of any one proprietor, but the rights of each in the stream for artificial uses are to be determined in view of all of the circumstances as affecting all of the proprietors."[150] Reasonable use may also depend on the extent of any injury to other proprietors and the extent of any benefits to the user in question."[151] Reasonableness will probably be a question of fact for the jury.[152]

e. *Non-Riparian Uses.* Generally, a riparian owner cannot use or divert water from a stream onto non-riparian land.[153] One possible exception exists where a city owns some riparian land. The city may be able to use stream water for the whole city even though the whole city is not riparian to the stream.[154] However, in South Dakota, a city cannot take any water "away from the natural watershed and onto nonriparian lands and for nonriparian consumers,"[155] and the general rule that a riparian owner cannot use tream water be-

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142 Lone Tree Ditch Co. v. Cyclone Ditch Co., 15 S.D. 519, 527, 91 N.W. 352, 355 (1902).

143 *Id.* at 529, 91 N.W. at 355.

144 Redwater Land & Canal Co. v. Reed, 26 S.D. 466, 128 N.W. 702 (1910).

145 *Id. See* S.D. COMPILED LAWS ANN. § 46-1-10 (1967) that continues all water rights vested prior to July 1, 1955. Vested water rights presumably include riparian rights that are vested.

146 Lone Tree Ditch Co. v. Cyclone Ditch Co., 26 S.D. 377, 128 N.W. 596 (1910).

147 Gehlen Bros. v. Knorr, 101 Iowa 700, 704, 70 N.W. 757, 758 (1897); Willis v. City of Perry, 92 Iowa 297, 303, 60 N.W. 727, 729 (1894); HINES, *supra* note 2, at 8. *See* Healey v. Citizens Gas & Elec. Co., 199 Iowa 82, 88, 201 N.W. 118, 121 (1924).

148 Gehlen Bros. v. Knorr, 101 Iowa 700, 704, 70 N.W. 757, 758 (1897); Willis v. City of Perry, 92 Iowa 297, 303, 60 N.W. 727, 729 (1894).

149 Willis v. City of Perry, 92 Iowa 297, 303, 60 N.W. 727, 729 (1894).

150 *Id.* at 303-04, 60 N.W. at 729-30.

151 Gehlen Bros. v. Knorr, 101 Iowa 700, 705, 70 N.W. 757, 758-59 (1897).

152 HINES, *supra* note 2, at 9.

153 Ellis, *supra* note 39, at 27.

154 *Id.*

155 Sayles v. City of Mitchell, 60 S.D. 592, 595, 245 N.W. 390, 391 (1932).

yond his riparian land also exists.[156] It is interesting to note, however, that in South Dakota, as long as an owner has a riparian right and takes the same amount, it does not matter whether he withdraws the water on his own land or at some other point along the watercourse.[157] It may be necessary to have the consent of any other owner whose land the riparian owner diverts the water across if he diverts it at some place other than his own land.[158]

3. *The Nature of the Riparian Interest*

Riparian rights are normally considered to be property rights.[159] "A water right is generally considered to be real property or 'land.' "[160] "[E]ach valid right to the use of water is a real-property right, under the protective aegis of federal and state constitutional guarantees which prohibit the deprivation of private property without due process of law."[161] Therefore, a constitutional problem may arise when vested rights are impaired.[162] Water rights are considered to be real property for determining title in quiet title actions, mortgages, Statute of Frauds problems, descent and inheritance, and taxation.[163] The water itself may become personalty; "[t]he corpus of water, like a wild animal, may be severed from its natural surroundings and be reduced to possession, as for example in a reservoir, and it then becomes personalty . . . ."[164] South Dakota agrees that riparian rights are property rights,[165] but in a recent case it was held that water rights may not be entitled to constitutional protection.[166] In Iowa, a water right "is in the nature of a freehold right, and it cannot be taken from him constitutionally for public use without just compensation."[167]

While water rights may be treated as real property rights, the interest is not a right to the water itself. A riparian owner does not own the water itself; he owns a right to use the water.[168] "[F]lowing water 'admits only of a transient, usufructuary property; and if it escape for a moment, the right to it is gone forever . . . .' "[169] The right is usufructuary, rather than possessive.[170] So, too, in Iowa, "[S]trictly speaking, [the riparian proprietor] has no property in the water itself, but a simple use of it as it passes along."[171]

"Use does not create the right, and disuse cannot destroy or suspend it."[172]

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156 *Id.* at 594, 245 N.W. at 391.
157 Redwater Land & Canal Co. v. Reed, 26 S.D. 466, 128 N.W. 702 (1910).
158 *Id.*
159 Ellis, *supra* note 39, at 22; Hutchins, *supra* note 7, at 93.
160 Clark & Martz, *supra* note 17, at 345.
161 Hutchins, *supra* note 7, at 83.
162 Ellis, *supra* note 39, at 32.
163 Clark & Martz, *supra* note 17, at 345.
164 *Id.*
165 *See* Parsons v. City of Sioux Falls, 65 S.D. 145, 272 N.W. 288 (1937).
166 Knight v. Grimes, 80 S.D. 517, 127 N.W.2d 708 (1964).
167 McCord v. High, 24 Iowa 336, 342 (1868). *But see* Iowa Natural Resources Council v. Van Zee, 158 N.W.2d 111 (Iowa 1968).
168 Ellis, *supra* note 39, at 22.
169 Hutchins, *supra* note 7, at 67 and n.24.
170 See Clark & Martz, *supra* note 17, at 289.
171 Willis v. City of Perry, 92 Iowa 297, 301-02, 60 N.W. 727, 729 (1894).
172 Clark, *supra* note 19, at 34, quoting from Lux v. Haggin, 69 Cal. 255, 10 P. 674 (1866). *See* Ellis, *supra* note 39, at 26.

ried no water rights.[199] Therefore, it was up to the states to develop their own water laws.[200] The distinctive feature of the prior appropriation doctrine is its first-come, first-served priority.[201] The water right is not dependent upon being located adjacent to the source and the water can be used on non-riparian land.[202]

The first person to appropriate water has priority over subsequent appropriators.[203] In South Dakota, the first, or earlier, appropriator has priority.[204] This priority of right is normally fixed as of the time the permit is applied for, or if no permit is necessary, when the water is first diverted.[205] However, the better view[206] and the South Dakota view,[207] seems to be that the priority dates from the time of actual use, not the time of the technical act of appropriation. In South Dakota, an appropriation made prior to the opening of public land to settlement was no good unless the appropriation was continued past the date of the opening of the public domain.[208] Normally, in South Dakota, an appropriative right is subject to the rights of all riparians.[209] However, an appropriative right has priority over all subsequently acquired riparian rights.[210] Thus, water rights appropriated prior to the settlement of a riparian owner are senior to the rights of the riparian owner to irrigate his land.[211] This is true because most riparian owners in South Dakota took by original patent which made their title subject to vested, existing water rights.[212]

Another important fact of the appropriative system is the certainty of the amount of water.[213] So in South Dakota, the first appropriator gets as much water, up to the limit of his appropriation, as he needs even if he has to take the entire flow.[214] The amount is measured at the point of the appropriation, not at the destination.[215] Enlarging a ditch does not enlarge the amount of the appropriation.[216] Therefore, the appropriative right is limited by the capacity of the appropriator's ditch.[217]

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199 Knight v. Grimes, 80 S.D. 517, 127 N.W.2d 708 (1964).
200 *Id.*
201 *See* Clark & Martz, *supra* note 17, at 295-96.
202 *See id.* at 296.
203 *Id.* at 295.
204 Redwater Land & Canal Co. v. Reed, 26 S.D. 466, 128 N.W. 702 (1910).
205 Clark & Martz, *supra* note 17, at 295-96.
206 *Id.* at 293-94. Prior appropriation is "priority of right based upon *actual use.*" *Id.* (emphasis added).
207 Cook v. Evans, 45 S.D. 31, 185 N.W. 262 (1921). *But see* S.D. COMPILED LAWS ANN. § 46-5-7 (1967).
208 Cook v. Evans, 45 S.D. 31, 185 N.W. 262 (1921).
209 Stenger v. Tharp, 17 S.D. 13, 94 N.W. 402 (1903).
210 Lone Tree Ditch Co. v. Cyclone Ditch Co., 15 S.D. 519, 91 N.W. 352 (1902).
211 Driskill v. Rebbe, 22 S.D. 242, 117 N.W. 135 (1908).
212 Redwater Land & Canal Co. v. Jones, 27 S.D. 194, 130 N.W. 89 (1911); Scott v. Toomey, 8 S.D. 639, 67 N.W. 838 (1896).
213 Clark & Martz, *supra* note 17, at 296-97.
214 Cundy v. Weber, 68 S.D. 214, 226-27, 300 N.W. 17, 23 (1941).
215 Cook v. Evans, 45 S.D. 31, 185 N.W. 262 (1921). If the ditch leaks, it is too bad. *Id.*
216 Stenger v. Tharp, 17 S.D. 31, 94 N.W. 402 (1903). *But see* Cook v. Evans, 45 S.D. 31, 185 N.W. 262 (1921), where it is indicated that an appropriator may be able to acquire rights to additional water by actually appropriating more water than he has a right to take. The additional appropriation would have to be for the prescriptive period before the additional rights would vest.
217 Cook v. Evans, 45 S.D. 31, 185 N.W. 262 (1921).

In addition, there is another limitation on the appropriative right. That limitation is referred to as the doctrine of "beneficial use."[218] In fact, beneficial use is the key to appropriative rights.[219] "The appropriative right as recognized in the western states is, and always has been, a right of beneficial use of water."[220] In South Dakota, the rights of an appropriating party are limited by the amount that party actually uses for a beneficial purpose.[221] Even a water right established by a court decree is subject to the limitation of beneficial use.[222] The reason for the beneficial use limitation is:

> [P]ublic waters, subject as such to appropriation, are to be appropriated and used, not only for the benefit of appropriators, but also for the benefit of the public. The very foundation of the right of appropriation is the fact that it is to the public interest that waters shall not be allowed to run waste and thus not benefit mankind—and what benefits man benefits society, of which he is a unit. It follows, therefore, that, in all disputes between claimants of public waters, the public itself is a vitally interested party; and that every adjudication by a court as to rights to the use of water should take into consideration and should fully protect the rights of the public, and should restrict the rights of the claimants in such manner as to properly conserve the waters so that they may, in the end, bring the greatest benefit to the public.[223]

Beneficial use is "the use of such a quantity of water, when reasonable intelligence and reasonable diligence are exercised in its application for a lawful purpose, as is economically necessary for the use."[224] In South Dakota, beneficial use is defined as "any use of water that is reasonable and useful and beneficial to the appropriator, and at the same time is consistent with the interests of the public in the best utilization of water supplies . . . ."[225] Beneficial use refers to the amount of water used, not its availability; therefore a user may take all the waters of a stream not already appropriated as long as he applies them to a beneficial use.[226]

Some uses generally considered to be beneficial are household uses, drinking, power, irrigation, mining, recreation, and scenic.[227] Other beneficial uses are domestic uses, municipal water supplies, manufacturing, general railroad uses, refrigeration, fire protection, navigation, recovery of minerals, raising fish, and recharging ground reservoirs.[228] Actually, what is a beneficial use

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218 "[B]eneficial use [is] the basis, the measure, and the limit of the right to the use of water." Hutchins, *supra* note 7, at 86. *See* S.D. COMPILED LAWS ANN. § 46-1-8 (1967).

219 Hutchins, *supra* note 7, at 85.

220 *Id.*

221 Stenger v. Tharp, 17 S.D. 13, 94 N.W. 402 (1903).

222 Cundy v. Weber, 68 S.D. 214, 223-24, 300 N.W. 17, 21 (1941).

223 Cook v. Evans, 45 S.D. 31, 39-40, 185 N.W. 262, 264 (1921). *See* Hutchins, *supra* note 7, at 86.

224 Hutchins, *supra* note 7, at 86.

225 S.D. COMPILED LAWS ANN. § 46-1-6(6) (1967).

226 Hutchins, *supra* note 7, at 86.

227 *Id.* at 88.

228 *Id.* at 89.

depends on the particular case.[229] A use may be beneficial if there is plenty of water, but if water is scarce, the same use may not be considered beneficial.[230] Generally speaking, most wasteful practices will not be considered beneficial.[231]

In South Dakota, an appropriator has a reasonable time after his appropriation to start applying the water to a beneficial use.[232] The amount which can be applied to a beneficial use depends to a certain extent on the particular soil involved.[233] If the soil is sandy, irrigating it may be considered a waste and therefore the use may be considered not to be beneficial.[234] The amount that can be beneficially used for irrigation in South Dakota is determined for a normal year, not necessarily for the year during which a controversy may arise, nor is the amount to be determined by the size of the appropriator's ditch, the amount originally appropriated, or the amount actually used.[235]

If the amount applied to a beneficial use decreases, the excess water no longer used is available to be appropriated.[236] Similarly, in South Dakota, any surplus over the amount an appropriator applies to a beneficial use may be used by lower riparians.[237]

3. *The Nature of the Appropriative Interest*

The appropriative right is a property right[238] sometimes said to be in the nature of a freehold interest.[239] An appropriative right can be lost by nonuse or abandonment and possibly by adverse use or prescription.[240] In South Dakota, to abandon a water right it must be shown that the appropriator intended to abandon the right and that he actually did so.[241] "While abandonment of a valuable water right should not be lightly implied, public interests require that this natural resource be applied to a beneficial use by the holder of such a right, or that it be rendered available for appropriation and use by others."[242] An appropriator can also lose an appropriative right in South Dakota by prescription or adverse use, however, the use does not become adverse until the adverse user begins to cut into the appropriator's amount; therefore, as long as there is enough for everybody, the use is not adverse.[243]

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229 *Id.* at 87.
230 *Id.*
231 *Id.* at 90-91. *See* Stenger v. Tharp, 17 S.D. 13, 94 N.W. 402 (1903).
232 Cook v. Evans, 45 S.D. 31, 185 N.W. 262 (1921).
233 *Id.* Remember that most of South Dakota's water distribution cases deal with irrigation.
234 *Id.*
235 *Id.* The amount that can be beneficially used is definitely not the amount needed during a dry year. *Id.*
236 Hutchins, *supra* note 7, at 87.
237 Henderson v. Goforth, 34 S.D. 441, 148 N.W. 1045 (1914); Stenger v. Tharp, 17 S.D. 13, 94 N.W. 402 (1903).
238 Hutchins, *supra* note 7, at 93.
239 Clark & Martz, *supra* note 17, at 345-46.
240 *Id.* at 298-99.
241 Cundy v. Weber, 68 S.D. 214, 300 N.W. 17 (1941).
242 *Id.* at 225, 300 N.W. at 22.
243 Henderson v. Goforth, 34 S.D. 441, 148 N.W. 1045 (1914). *See* Redwater Land & Canal Co. v. Jones, 27 S.D. 194, 130 N.W. 85 (1911).

There is no comparison between the appropriative right in South Dakota and the appropriative right in Iowa because at least until the adoption of the new Iowa water permit statute[244] no appropriative right of any consequence existed in Iowa. The most significant similiarities between Iowa and South Dakota are in their water distribution laws both of which were established in their current forms in the 1950's. However, these statutes apply to both surface and ground water alike. Discussion of the water permit statutes in both states will be reserved to Part III on administrative water distribution and the permit statutes.

C. *Distribution of Diffused Surface Water*

As previously discussed, surface water can be divided into at least two distinct classes—surface watercourses and diffused surface water.[245] "Diffused surface water is the term used to describe water on the ground, usually as a result of precipitation, which is spread at random and not yet being lost by percolation into the soil, by evaporation, or by runoff into a surface watercourse."[246] In Iowa, diffused surface water is more particularly defined as "water on the surface of the ground of a casual or vagrant character following no definite course, of a more or less temporary existence, which [spreads] at random over the ground and [is] lost by percolation into the soil and by evaporation."[247] Also in Iowa, flood water probably is not considered to be diffused surface water.[248] In South Dakota, water flowing for only short periods of time after a rainfall or the melting of snow is diffused surface water even though it flows down a natural channel or drainway with beds and banks.[249] Also in South Dakota, spring water does not become surface water by being brought to the surface.[250]

As a general rule, riparian rights do not attach to diffused surface water.[251] Usually the owner of the land upon which the diffused surface water is found can use the water in any way he sees fit.[252] In South Dakota, neither riparian or appropriative rights attach to diffused surface waters.[253] Nor is there any right on the part of a lower proprietor to have surface water flow onto his land from the land of an upper proprietor.[254] "A landowner is entitled to use surface water as he pleases so long (and so long only) as it continues in fact to come

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244 IOWA CODE ch. 455A (1966).

245 Surface water is to be "distinguished from the water of creeks, streams, rivers, ponds, and lakes, having a substantial existence and a substantially definite location." Hunt v. Smith, 238 Iowa 543, 555, 28 N.W.2d 213, 219 (1947).

246 HINES, *supra* note 2, at 4-5.

247 Hunt v. Smith, 238 Iowa 443, 555, 28 N.W.2d 213, 219 (1947); *accord*, Woods v. Town of State Centre, 249 Iowa 38, 44, 85 N.W.2d 519, 523 (1957).

248 Moore v. Chicago, B.&Q. Ry., 75 Iowa 263, 39 N.W. 390 (1888); Sullens v. Chicago, R.I. & P. Ry., 74 Iowa 659, 38 N.W. 545 (1888). *But see* Ellis, *supra* note 39, at 22.

249 Terry v. Heppner, 59 S.D. 317, 239 N.W. 759 (1931); Benson v. Cook, 47 S.D. 611, 201 N.W. 526 (1924).

250 Anderson v. Drake, 24 S.D. 216, 123 N.W. 673 (1909).

251 Ellis, *supra* note 39, at 22.

252 *Id.*

253 Terry v. Heppner, 59 S.D. 317, 239 N.W. 759 (1931).

254 *Id.*

upon his premises. He may drain or divert the same or he may capture, impound, and use it in such fashion as he will . . . ."[255] In Iowa, the owner of the land upon which the diffused surface water is found may use the water in any manner he sees fit, except to waste it.[256] "This right of the higher owner thus to retain, and if he sees fit, to appropriate *all* of his surface waters to his own use, is based upon his dominion over the soil which extends indefinitely upwards and downward . . . ."[257] In Iowa, at least, and probably in South Dakota, too, the problem is more how to get rid of the diffused surface water rather than who gets to use it.[258] Apparently, then, there are no major differences in the distribution laws of Iowa and South Dakota as to diffused surface water.

II. Subsurface Water Law

In much the same way that there are two kinds of surface water, there are two kinds of subsurface water—underground streams and percolating ground water. Each has been governed by different distribution rules.

A. *Underground Streams*

Not all subsurface water is ground water. While below the surface, water may still be part of a subterranean stream or the underflow of a surface stream.[259] The riparian right does not apply to percolating ground water, but it may apply to an underground stream.[260]

In South Dakota, an underground stream is "a running stream, with well-defined banks, formed by nature under the surface . . . ."[261] However, there is a presumption that subsurface waters are percolating waters, not an underground stream.[262] The same rules govern underground watercourses as govern surface watercourses in South Dakota.[263] At least springs formed by a definite underground watercourse breaking out on the surface as springs are governed by the same rules as surface watercourses.[264]

There is a presumption that subsurface waters are percolating ground waters in Iowa, too.[265] The burden of proving the existence of the underground channel is on the party asserting the right to the underground stream to show that the waters flow in a well-defined channel.[266] Mere existence of the channel of the underground stream is not enough; its location must be readily ascertain-

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255 *Id.*
256 Livingston v. McDonald, 21 Iowa 160, 167 (1866). *See* Pohlman v. Chicago, M. & St. P. Ry., 131 Iowa 89, 93, 107 N.W. 1025, 1026 (1907).
257 Livingston v. McDonald, 21 Iowa 160, 167 (1866).
258 Hines, *supra* note 2, at 5.
259 Clark & Martz, *supra* note 17, at 284-85.
260 Ellis, *supra* note 39, at 22.
261 Deadwood Cent. Ry. v. Barker, 14 S.D. 558, 564, 86 N.W. 619, 620 (1901).
262 Metcalf v. Nelson, 8 S.D. 87, 65 N.W. 911 (1895).
263 *Cf.* Deadwood Cent. Ry. v. Barker, 14 S.D. 558, 86 N.W. 619 (1901).
264 Metcalf v. Nelson, 8 S.D. 87, 65 N.W. 911 (1895).
265 DeBok v. Doak, 188 Iowa 597, 603, 176 N.W. 631, 633 (1920); Barclay v. Abraham, 121 Iowa 619, 620, 96 N.W. 1080, 1081 (1903).
266 Barclay v. Abraham, 121 Iowa 619, 622, 96 N.W. 1080, 1081 (1903).

able.[267] If, by reasonable inference, it is shown that an underground watercourse flows in a well-defined channel, it is governed by the laws of surface watercourses.[268] However, a riparian owner using water from a surface stream can return the unused portion; whereas a riparian using water from a subsurface watercourse generally cannot.[269] Therefore, according to the Iowa court, a riparian using water from an underground stream for natural purposes[270] can use all he wants, but if the riparian is using the water from the underground watercourse for artificial uses,[271] he may get cut off; otherwise he would be infringing on the rights of riparians using the water of the underground stream for natural uses.[272] Further, an upper landowner may not waste underground water running in a well-defined stream.[273]

B. *Percolating Ground Water*

Ground water is sometimes referred to as percolating water.[274] "The term 'ground water' lacks a single precise legal definition."[275] Ground water can probably be defined as water diffused below the surface in permeable soil and fissures in the non-permeable earth.[276] Ground water moves much as stream water does, only slower.[277] Therefore, "[t]he division of surface and ground water into separate categories in law contradicts hydrologic principles."[278]

1. *History*

The English rule as to percolating ground water was that the owner of the land overlying the source of the ground water owned the water also.[279] Percolating ground water was considered to be a mere ingredient of the soil.[280] The English cases indicated that because percolating ground water defied understanding, it could not be regulated in the same manner as surface water.[281]

2. *Development and Principles of the Law Governing Ground Water*

a. *The Common Law Rule.* The common law rule gives the overlying owner an absolute property in perpetuity in percolating ground water.[282] The common law doctrine grew up in humid regions where water was plentiful:

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267 *Id.*
268 Willis v. City of Perry, 92 Iowa 297, 301, 60 N.W. 727, 729 (1894).
269 *Id.* at 304, 60 N.W. at 730.
270 *See* notes 125, 128 and 133-34 *supra* and accompanying text.
271 *See* notes 126, 129, 134, 136-39 and 147-52 *supra* and accompanying text.
272 Willis v. City of Perry, 92 Iowa 297, 301, 60 N.W. 727, 729 (1894).
273 DeBok v. Doak, 188 Iowa 597, 602, 176 N.W. 631, 633 (1920).
274 Clark & Martz, *supra* note 17, at 285.
275 *Id.* (footnote omitted).
276 *See generally* Clark, *supra* note 19, at 10 and Piper, *supra* note 25, at 68.
277 Piper, *supra* note 25, at 71.
278 Clark & Martz, *supra* note 17, at 285.
279 Hutchins, *supra* note 7, at 63.
280 *Id.* at 63-64.
281 Piper, *supra* note 25 at 69.
282 *Id.* at 68.

therefore, at the time the common law doctrine arose, it was adequate because of the small amounts of ground water consumed and the large supply.[283] However, because of increased population, new industry, and water shortages, the common law doctrine is now inadequate. "[E]xclusive and unlimited right to use ground water, attached to specific parcels of land, can be real only if the water does not move laterally, from the jurisdiction of one overlying landowner to that of another."[284]

South Dakota once followed the common law rule. While the overlying owner did not technically have an absolute right to percolating ground waters, he had the exclusive right to use and dispose of them.[285] Percolating waters were considered part of the realty.[286] The South Dakota supreme court said:

> It must be remembered that we are not dealing with a running stream, or with riparian rights, but simply with percolating waters which have combined and struggled to the surface on plaintiff's land. We think the plaintiff had more than the ordinary usufruct in the water of this spring, so long, at least, as it was held in the spring. He might consume or dispose of it all if he chose. He might convey it away in pipes, or carry it off in tanks. If medicinal, he might bottle it, and sell it for the healing of the nations.[287]

The law of prior appropriation was held to have no application to percolating ground water.[288] However, South Dakota adopted prior appropriation as the law for distributing percolating ground waters in 1955.[289]

The common law rule has sometimes been modified by a reasonable use limitation. Under this limitation, an overlying owner may withdraw as much percolating ground water as he can put to a reasonable or beneficial use.[290] Iowa may have followed this variation of the common law rule. Hines says the land owner can "draw out all of the percolating water that he can put to a beneficial use."[291] One case indicates that an overlying owner may divert percolating water as long as he does so in the reasonable use of his own land.[292]

Another variation of the common law doctrine is the principle of correlative rights which holds that the rights of all overlying land owners are equal and no owner can take more than his share.[293] The Iowa court once said it would apply the principle of correlative rights to the distribution of percolating ground waters.[294] However, in its statement of the principle of correlative rights, the Iowa court sounded more like it was applying the reasonable or bene-

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283 *Id.* at 71.
284 *Id.*
285 Metcalf v. Nelson, 8 S.D. 87, 65 N.W. 911 (1895).
286 *Id.*
287 *Id.* at 90, 65 N.W. at 912.
288 Deadwood Cent. Ry. v. Barker, 14 S.D. 588, 86 N.W. 619 (1901).
289 Ch. 431, [1955] S.D. Laws (now S.D. COMPILED LAWS ANN. § 46-6-1 (1967)). *See* Hutchins, *supra* note 7, at 164.
290 Piper, *supra* note 25, at 69.
291 HINES, *supra* note 2, at 9 (footnote omitted).
292 Hougan v. Milwaukee & St. P. Ry., 35 Iowa 558, 559-60 (1872).
293 Piper, *supra* note 25, at 69.
294 Barclay v. Abraham, 121 Iowa 619, 631, 96 N.W. 1080, 1084 (1903).

ficial use limitation referred to above.[295] All that is really certain about the distribution of percolating ground water in Iowa, is that it cannot be wasted.[296]

b. *Prior Appropriation.* Prior appropriation is applied to percolating ground water on the theory that all water is public property.[297] The same rules apply to appropriation of ground water as to appropriation of surface water;[298] it must be appropriated for a beneficial use, and the first appropriator has priority.[299] As mentioned previously, South Dakota has adopted the prior appropriation doctrine as the rule governing distribution of percolating ground water.[300] Iowa may have done so also.[301]

Any basic differences between Iowa and South Dakota law regarding underground streams or percolating ground waters have probably been resolved by the new permit laws in both states.

III. Administrative Water Distribution—The Water Permit Statutes

A. *History*

In early western water law, local customs dictated the manner of appropriating water.[302] "A person acquired a right to the use of water by digging a ditch, tapping a stream, and turning the water into it, and applying the water so diverted to a beneficial use. This constituted a valid appropriation of water."[303] In the 1880's, posting and filing rules arose.[304] These rules, however, proved inadequate because generally a water right was still valid even if the rules were not complied with, and records usually were not kept in a central location.[305] Because of the inadequacies of posting and filing, complete new administrative systems began to spring up in the western states.[306] The new administrative systems were good because applications were made to an informed and experienced state agency for a definite amount of water. These agencies could control water distribution during shortages, and because the new systems usually included central recordation of claims.[307]

Public water administration began in South Dakota in 1905.[308] The original administrative procedure was elaborate and soon proved unnecessary.[309]

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295 "Except for the benefit and improvement of his own property or for his own beneficial use . . . ." *Id.* at 627, 96 N.W. 1083.

296 DeBok v. Doak, 188 Iowa 597, 602-05, 176 N.W. 631, 633-34 (1920); Barclay v. Abraham, 121 Iowa 619, 96 N.W. 1080 *passim* (1903).

297 Piper, *supra* note 25, at 68.

298 *Id.* at 68, 71.

299 *Id.*

300 *See* note 289 *supra.*

301 Iowa Code ch. 455A (1966).

302 Hutchins, *supra* note 7, at 99.

303 *Id.* at 98-99 and n.57.

304 *Id.* at 100.

305 *Id.*

306 *Id.* at 101.

307 *Id.* at 113.

308 Ch. 132, [1905] S.D. Laws.

309 Hutchins, *supra* note 7, at 108, 137.

The South Dakota courts have consistently upheld the statutory adjudication procedures.[310]

In Iowa, up to 1957, vague riparian principles governed water distribution.[311] Dry years between 1949 and 1955 created water shortages.[312] Between 1952 and 1958, the Iowa Natural Resources Council inventoried the available water and the water being used, resulting in a prediction of potential shortages in many parts of the state.[313] In 1950 and 1954, the Natural Resources Council recommended that the Iowa law as to water allocation be changed.[314] Effective May 16, 1957, Iowa adopted a new water permit statute.[315] "The Iowa permit system is a unique experiment in regulating a natural resource where scarcity is as yet chiefly a potential threat."[316]

B. *The Statutes*

1. *Policy*

In South Dakota, the policy of the water rights statute is (1) "that the people of the state have a paramount interest in the use of all water of the state . . ."[317] and (2) "that all water within the state is the property of the people of the state . . . ."[318] The statute furthermore provides "that the protection of the public interest in the development of the water resources of the state is of vital concern to the people of the state . . . ," and that the state shall decide how water resources should be used, keeping in mind the greatest public benefit.[319]

Iowa's policy declaration states that "the orderly development, wise use, protection and conservation of the water resource of the state . . . is of paramount importance to the welfare and prosperity of the people of the state . . . ."[320] "Water occurring in any basin or in any watercourse, or other natural body of water of the state, is hereby declared to be public waters and public wealth of the state of Iowa."[321] A reading of the policy statement further indicates that the protection and development of Iowa's water resources is important and that the state will "take such measures as shall effectuate full utilization and protection of the water resources of the state of Iowa."[322] If not identical in word, the policy statements of both South Dakota and Iowa are identical in import. Another similarity that is very important is that both statutes call for water to be beneficially used. In South Dakota, "the general welfare requires

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310 *Id.* at 109. *See, e.g.*, Knight v. Grimes, 80 S.D. 517, N.W.2d 708 (1964).
311 HINES, *supra* note 2, at 4.
312 *Id.* at 11.
313 O'Connell, *Iowa's New Water Law* in PAPERS DELIVERED AT THE WATER RIGHTS CONFERENCE 55 (1960) [hereinafter cited as O'Connell]; HINES, *supra* note 2, at 11.
314 HINES, *supra* note 2, at 11.
315 IOWA CODE ch. 455A (1966).
316 HINES, *supra* note 2, at 1-2.
317 S.D. COMPILED LAWS ANN. § 46-1-1 (1967).
318 *Id.* § 46-1-3.
319 *Id.* § 46-1-2.
320 IOWA CODE § 455A.2 (1966).
321 *Id.*
322 *Id.*

that the water resources of the state be put to beneficial use to the fullest extent of which they are capable . . . ."[323] In Iowa, "the general welfare . . . requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable . . . ."[324] The wording is exactly the same. It is beginning to look like Iowa is adopting an appropriative water system because, as noted earlier, beneficial use is the key[325] to the appropriative system.

2. *Non-Regulated Uses*

Both states exempt certain uses from their regulations. South Dakota declares that "use of water for domestic purposes is the highest use of water, and takes precedence over all appropriative rights . . . ."[326] Permits are not necessary for persons making reasonable use[327] of any water for domestic purposes.[328] Similarly, Iowa exempts from regulation "the use of water for ordinary household purposes, use of water for poultry, livestock and domestic animals . . . ."[329] In this regard both statutes are somewhat like the riparian rule allowing riparians to use all the water they need for natural or domestic purposes. However, these new statutes are broader because they allow anyone, not just riparians, to put water to domestic uses.

Iowa has more non-regulated uses. The first is any beneficial use of water that is less than 5,000 gallons per day.[330] This reflects Iowa's surplus or abundance of water. It also keeps the administrative process and records free from volumes of small use requests. Five thousand gallons per day is a low figure; a garden hose at moderate pressure would take about twenty-four hours to discharge 5,000 gallons.[331] Such use is not completely free from regulation because the requirement that it be a beneficial use still exists.[332]

The second non-regulated use is "any beneficial use of surface flow from rivers bordering the state of Iowa, or use of ground water on islands or former islands situated in such rivers . . . ."[333] Perhaps this exception is included because many neighboring states do not have similar regulations.[334] Anyway,

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323 S.D. COMPILED LAWS ANN. § 46-1-4 (1967).
324 IOWA CODE § 455A.2 (1966).
325 *See* note 219 *supra* and accompanying text.
326 S.D. COMPILED LAWS ANN. § 46-1-5(1) (1967). Domestic use is defined as "the use of water by an individual, or by a family unit or household, for drinking, washing, sanitary, culinary purposes, and other ordinary household purposes; and irrigation of a family garden, trees, shrubbery or orchard not greater in area than one-half acre. Stock watering shall be considered a domestic use . . . ." *Id.* § 46-1-6(4).
327 The inclusion of the term "reasonable use" may imply some limitation on the right to use water for domestic purposes. Under riparian principles, a natural or domestic user was not limited by the reasonable use doctrine.
328 S.D. COMPILED LAWS ANN. §§ 46-5-8, 46-6-3 (1967).
329 IOWA CODE § 455A.1 (1966).
330 *Id.*
331 HINES, *supra* note 2, at 16.
332 IOWA CODE § 455A.1 (1966). A beneficial use is "the application of water to a useful purpose that inures to the benefit of the water user and subject to his dominion and control but does not include the waste or pollution of water . . . ." *Id.*
333 *Id.*
334 HINES, *supra* note 2, at 15.

there is usually plenty of water in the border rivers like the Mississippi and Missouri.

The third such non-regulated use applies to any user within a city which user was already putting water to a beneficial use before May 16, 1957.[335] Should an industrial user within a city increase the amount it uses by more than three percent over the amount it was using on or before May 16, 1957, then it will be subject to regulation.[336] This protects "vested water rights" acquired before the statute was passed. South Dakota also recognizes "vested water rights" acquired prior to the passage of its water law.[337]

No permit is required for use of water in lakes and ponds which are located exclusively on the land owner's property, if there are no outlets.[338] There is a further non-regulated use. The person probably has the right to use diffused surface water without regulation.[339] South Dakota's "dry draw" law achieves the same result by allowing the owner of land to trap and use surface waters running in a dry draw[340] without getting a permit.[341]

3. *Regulation*

In South Dakota, all uses except domestic uses and dry draw water rights are subject to regulation.[342] In Iowa, all depleting uses except specifically designated non-regulated uses are subject to regulation.[343]

a. *Beneficial Use.* "Beneficial use is the basis, the measure and the limit of the right to the use of waters . . ." in South Dakota.[344] Further, the general welfare of the state requires that water be put to the greatest beneficial use possible.[345] Beneficial use is any "use of water that is reasonable and useful and beneficial to the appropriator, and at the same time is consistent with the interests of the public in the best utilization of water supplies . . . ."[346] Iowa also requires use to be beneficial to the fullest extent possible for the general welfare of the people of Iowa.[347] Beneficial use in Iowa "means the application of water to a useful purpose that inures to the benefit of the water user . . . ."[348] Both

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335 IOWA CODE § 455A.1 (1966).

336 *Id.*

337 S.D. COMPILED LAWS ANN. § 46-1-10 (1967). *See id.* § 46-1-9 for a definition of vested rights.

338 IOWA CODE § 455A.1, .26; McConnell, *supra* note 313, at 57.

339 IOWA CODE § 455A.27 (1966).

340 Dry draw is defined in S.D. COMPILED LAWS ANN. § 46-1-6(3) (1967). *See* Benson v. Cook, 47 S.D. 611, 201 N.W. 526 (1924).

341 S.D. COMPILED LAWS ANN. tit. 46-4 (1967).

342 This is strictly a deduction of the writer. I deduce from reading the water statutes of South Dakota that uses are regulated except those expressly exempted.

343 IOWA CODE § 455A.1 (1966).

344 S.D. COMPILED LAWS ANN. § 46-1-8 (1967).

345 *Id.* § 46-1-4.

346 *Id.* § 46-1-6(6).

347 IOWA CODE § 455A.2 (1966). Iowa has another unique limitation called "established average minimum flow." *Id.* § 455A.1. The established average minimum flow must be preserved before a permit can be issued. *Id.* § 455A.22. So if an applicant wants water, but his use would lower the level below the established average minimum flow, he cannot be issued a permit. *Id.*

348 *Id.* § 455A.1.

states prohibit waste.[349]

b. *State Agencies.* The South Dakota Water Resources Commission consists of eight members appointed by the governor.[350] Each member represents a specific water related interest group.[351] The commission has full control of all waters in South Dakota for purposes of measurement, appropriation, and distribution.[352]

The Iowa Natural Resources Council consists of nine members appointed by the governor.[353] The council is to promote the policies of the water permit law,[354] and has jurisdiction over the public and private waters of the state.[355] The council also has a director,[356] a water commissioner, who is a quasi-judicial trier of fact in application controversies,[357] and deputy commissioners to assist the water commissioner.[358] None of these officers can be members of the Natural Resources Council.[359]

c. *Water Permits.*

i. *Administrative Procedures.* All persons[360] seeking to appropriate surface[361] or ground[362] waters in South Dakota must make an application to the Water Resources Commission before commencing construction for the appropriation. The application must state the amount and periods of use and all other necessary data.[363] The application must refer to the system to be used in diverting and using the water.[364]

After the application is filed and accepted by the Water Resources Commission, the applicant must file notice in a newspaper in the locality of the water source for four consecutive weeks giving all the facts essential to the proposed appropriation.[365] Proof of publication must be furnished within sixty days.[366] At this time the commission holds a public hearing to determine whether there is an unappropriated water source available.[367] If the com-

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349 *Id.*; S.D. COMPILED LAWS ANN. § 46-1-4 (1967).
350 S.D. COMPILED LAWS ANN. § 46-2-1 (1967).
351 *Id.*
352 *Id.* §§ 46-2-9 to -11.
353 IOWA CODE § 455A.4 (1966).
354 *Id.* § 455A.3.
355 *Id.* § 455A.18.
356 *Id.* § 455A.9(1).
357 *Id.* § 455A.9(2).
358 *Id.* § 455A.9(3).
359 *Id.* § 455A.9.
360 Persons includes public or private associations or corporations. S.D. COMPILED LAWS ANN. § 46-5-10 (1967).
361 *Id.*
362 *Id.* § 46-6-3. Appropriators of ground water shall give notice of the beneficial use to which the water will be applied, the location of the proposed well, the land owner's name, the amount of water to be taken, and if the use is for irrigation, the name of the owner of the land to be irrigated and its description. No application is necessary for a domestic use. Otherwise, the procedure is the same as for surface water. *Id.*
363 *Id.* § 46-5-11.
364 *Id.* § 46-5-12.
365 *Id.* § 46-5-17.
366 *Id.* § 46-5-19.
367 *Id.* § 46-5-20.

mission finds that there is unappropriated water available, it shall approve the application which then becomes a permit.[368] The commission may reject the application if it finds that there is no unappropriated water available.[369] Any applicant may appeal within sixty days to the circuit court of the county where the proposed appropriation is located.[370]

In Iowa, the procedure for securing a permit to divert, store, or withdraw waters begins with a written application to the Natural Resources Council.[371] The application should state the beneficial use the water will be put to and the limits as to quantity, time, place, and rate of diversion.[372] A fifteen dollar filing fee is required.[373] When the application is received, the water commissioner sets a time and place for a hearing, usually in the county where the permit is sought.[374]

Notice must be published by the commissioner for two consecutive weeks in a general newspaper in the county where the permit is sought. Copies of the notice go to any interested state agencies and anyone who has filed a request to be notified of water permit hearings affecting certain areas.[375] Any interested person may appear at the hearing and present evidence and cross examine other witnesses.[376] The commissioner shall make a determination of fact in writing.[377] Any person aggrieved by the determination may appeal within thirty days to the council.[378]

If the commissioner or the council on appeal determines that a proposed use will not be detrimental to the public interest, the commissioner or council on appeal shall grant a permit.[379] Any person aggrieved by the determination, acts, or orders of the council may appeal to the district court for the county in which the permit is sought or to the Polk County district court.[380] If he is still aggrieved following the district court judgment, he may appeal to the Supreme Court of Iowa.[381]

ii. *Duration of the Permit.* Water permits in Iowa are good for ten years or less are renewable for another ten years without hearing if there are no objections.[382] Iowa is the first state in the United States to impose a statewide system of term permits.[383] Permits may be cancelled by the commissioner for any breach of the terms or conditions of the permit by the permittee,[384] for

368 *Id.* § 46-5-21.
369 *Id.* § 46-5-22.
370 *Id.* § 46-5-23.
371 IOWA CODE § 455A.19(1) (1966).
372 *Id.*
373 *Id.* § 455A.19(5).
374 *Id.* § 455A.19(2).
375 *Id.* § 455A.19(3).
376 *Id.* § 455A.19(4).
377 *Id.* § 455A.19(7).
378 *Id.* § 455A.19(8).
379 *Id.* § 455A.20.
380 *Id.* § 455A.37.
381 *Id.*
382 *Id.* § 455A.20.
383 Piper, *supra* note 25, at 71.
384 IOWA CODE § 455A.28(2) (1966).

nonuse for three consecutive years,[385] or if the commissioner finds that it is necessary to the public health or safety.[386]

Apparently, there is no limitation on the duration of the permit in South Dakota except beneficial use,[387] failure to complete construction of diversion works,[388] improper assignment of irrigation permits,[389] abandonment,[390] nonuse,[391] and waste of ground water.[392]

iii. *Priorities and Vested Rights.* In both South Dakota and Iowa, domestic uses receive high priorities.[393] In South Dakota, "the first in time is the first in right,"[394] as between appropriators. First in time is determined by the date of filing of an application for a permit.[395] No priority as between a riparian and an appropriator is set, except that a riparian cannot prevent the natural flow of a stream or spring, nor pursue the water.[396] It would therefore seem logical that the old rules governing priorities between riparians and appropriators under the natural flow doctrine would apply. Since the natural flow doctrine is very restrictive as to withdrawal of water,[397] it appears that most riparians are out of luck unless they have "vested" riparian rights entitled to protection. South Dakota's water law protects rights that were vested prior to July 1, 1955.[398] Vested rights include riparian rights.[399] Therefore, if a riparian had a vested right to irrigate his land prior to July 1, 1955, that right would have priority over a subsequent appropriator's right,[400] and should have priority under the current law.

Iowa also provides for priorities in the order in which applications are received, but this is only for the consideration of permits.[401] Otherwise, there is no general system of priorities among users.[402] Vested rights shall not be impaired.[403]

iv. *Nature of the Interest Under the Permit.* The permit in South Dakota is assignable,[404] and a water right for irrigation is deemed to be appurtenant to the land irrigated.[405] In Iowa, a permit is an appurtenance to the land de-

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385 *Id.* § 455A.29.
386 *Id.* § 455A.28(2).
387 S.D. COMPILED LAWS ANN. §§ 46-1-4, 46-1-8, 46-5-5 and 46-6-2 (1967).
388 *Id.* § 46-5-25. *See id.* § 46-5-21.
389 *Id.* § 46-5-33.
390 *Id.* § 46-5-36.
391 *Id.* § 46-5-37.
392 *Id.* § 46-6-14.
393 *Id.* § 46-1-5; IOWA CODE § 455A.1 (1966).
394 S.D. COMPILED LAWS ANN. § 46-5-7 (1967).
395 *Id.*
396 *Id.* § 46-5-1.
397 *See* notes 113-24 *supra* and accompanying text.
398 S.D. COMPILED LAWS ANN. § 46-1-10 (1967).
399 *Id.* § 46-1-9(1), (3).
400 *See* note 145 *supra* and accompanying text.
401 IOWA CODE § 455A.21 (1966).
402 O'Connell, *supra* note 313, at 59, which O'Connell says is probably all right for a state like Iowa.
403 IOWA CODE § 455A.21 (1966).
404 S.D. COMPILED LAWS ANN. § 46-5-32 (1967).
405 *Id.* § 46-5-33 & -34.

scribed in the permit, and it passes with the land when it is sold.[406] The right is not absolute, nor is it ownership of the water.[407] The permit may be sold, transferred, assigned, conveyed, or leased.[408]

4. *Constitutional Questions*

As noted earlier, vested water rights are the type of property entitled to protection of both state and federal constitutions.[409] In South Dakota, "Vested property rights in waters in this state, whether held as riparian or by prior appropriation, could not thus be taken or confiscated or interfered with by any such act of the Legislature."[410] However, the Supreme Court of South Dakota held that "[t]he legislature was fully justified in finding that the public welfare requires the maximum protection and utilization of its water supply."[411]

Iowa expressly bases its water permit statute on the police power of the state.[412] The police power is the exercise of the state's right to regulate the use of property and prevent uses harmful to the public.[413] Uncontrolled watercourses would be harmful to the public interests according to the Iowa court.[414] The statute is related to public welfare and prosperity and therefore is a valid exercise of the police power.[415] "A vital resource such as water must be subject to regulation by the state under the police power."[416]

In comparing the Iowa administrative water distribution with that of South Dakota, it is at once obvious that Iowa has had less experience with water permit and appropriative statutes. The policy statements, however, are nearly identical. Both states exempt domestic uses, but Iowa has a larger number of non-regulated uses than South Dakota. Both states adopt beneficial use as the key to use under the statutes. The procedures for securing permits are not exactly the same, but close.

The real differences come in the water permits. Iowa uses a ten-year term permit, while South Dakota does not. The idea of term permits may be to keep close account of the water uses in the state, but it has its drawbacks in that any industrial or agricultural investor is not as likely to purchase long term improvements when the period of his water right is so precarious.[417]

The second major difference lies in the priorities. While South Dakota establishes a first-come, first-served rule as to who has priority among appro-

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406 IOWA CODE § 455A.20 (1966); O'Connell, *supra* note 313, at 59.
407 O'Connell, *supra* note 313, at 59; HINES, *supra* note 2, at 21. *See* IOWA CODE § 455A.30 (1966).
408 IOWA CODE § 455A.30 (1966).
409 *See* notes 161-62 and 238-39 *supra* and accompanying text.
410 St. Germain Irrigating Co. v. Hawthorn Ditch Co., 32 S.D. 260, 267, 143 N.W. 124, 127 (1913).
411 Knight v. Grimes, 80 S.D. 517, 523, 127 N.W.2d 708, 711 (1964).
412 IOWA CODE § 455A.2 (1966).
413 Iowa Natural Resources Council v. Van Zee, 158 N.W.2d 111, 116 (Iowa 1968).
414 *Id.* at 118.
415 *Id.* at 117.
416 *Id.*
417 Timmons, *supra* note 1, at 177-78.

priators, Iowa has no priorities. This adds to the confusion among permit holders. If a shortage of water should come about, there is no way of knowing how the Natural Resources Council would allocate the remaining water among permit holders. This is just another uncertainty that tends to discourage investment.

CONCLUSION

"As the demand for water increases in this country, it is likely that many of the nearly thirty eastern states currently allocating their water resources on the basis of riparian rules will have occasion to reconsider their allocation systems. An awareness of the Iowa experience in water use regulation should provide valuable insight to any state contemplating abandonment of the riparian system . . . ."[418] Hopefully, these states can gain something from the South Dakota experience too.

At least one thing stands out from this Article. The hodge-podge of water law that has developed throughout the past 100 to 150 years makes certainty in water rights almost impossible. The new water statutes, like the marketable title statutes in land law, are designed to free water rights from stale principles of property law that are wasteful of resources. The purpose of the new statutes should be to give certainty to the law. The new statutes are certain about one thing—that the policy of the state is to apply water resources to the greatest possible beneficial use.

But too often, as in the case of Iowa's water permit statute, the new statutes are merely another hodge-podge of common law, riparian law, appropriative law, and the best of other state's statutes. This is merely replacing one evil with another. The new laws are only certain until a major dispute over water shows the weaknesses. For example, one day in the future there will be a water shortage in Iowa, and the Natural Resources Council will have to divide up what water there is among permit holders and non-regulated users. Yet the statute makes no provision for the division of a short supply.

At the very least two things can be concluded. First, states, even those with surplus water like Iowa, are recognizing potential shortages and attempting to head off the problem before it arrives. Second, these two states, South Dakota and Iowa, are building good bases from which to begin structuring better statutes while they are gaining valuable experience in water resource regulation.

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[418] HINES, *supra* note 2, at 2.

SURVEY OF IOWA LAW
IOWA TORT LAW*

Roland D. Peddicord†

I. INTENTIONAL TORTS

During the past year the Iowa supreme court decided three cases in the field of intentional torts which should be commented upon. In the only nuisance case decided by the court, the primary issue was whether a municipal sewage lagoon constituted a permanent nuisance as defined under statute,[1] thereby entitling abutting landowners to damages for the decrease in value of their property.[2] The court defined a nuisance per se as "a structure or activity which is a nuisance at all times and under any circumstances, regardless of location or surroundings."[3] In its opinion, the court admitted that a sewage disposal facility may become a nuisance because of particular circumstances, yet the court refused to classify the municipal sewage lagoon in the instant case as a nuisance. Uncontradicted evidence established that properly maintained and operated sewage lagoons are practically odorless, except for a few days in the spring. The evidence did show, however, that plaintiff's land had significantly diminished in value. Nevertheless, the court held that "[i]f the lawful use of one's property does not create a public or private nuisance . . . damages [cannot be] recovered for the diminution in value of neighboring properties . . . ."[4]

In *Allen v. Lindeman*,[5] the question presented was whether a judgment for alienation of affections falls within the purview of the "Bankruptcy Act",[6] which declares that discharge under the act does not release liability for willful and malicious injuries. The court indicated in its opinion that the elements of willfulness and malice are not required in a cause of action for alienation of affections. " 'The three essential elements of such a cause of action [for alienation of affections] are 1) wrongful conduct of the defendant, 2) loss of affection or consortium of plaintiff's spouse, and 3) a causal connection between such

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* The survey covers developments in Iowa Tort Law from January 1969 to September 1970. The survey does not cover automobile law. Also, assumption of the risk and contributory negligence are treated in the cases in which they arose.

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1 IOWA CODE § 657.2(1) (1966).

2 Bader v. Iowa Metropolitan Sewer Co., 178 N.W.2d 305 (Iowa 1970).

3 *Id.* at 306-7.

4 *Id.* at 307.

5 164 N.W.2d 346 (Iowa 1969).

6 THE BANKRUPTCY ACT § 17, 11 U.S.C. § 35 (1964).