

Two of the major issues in groundwater basin management are: (1) How are rights to use groundwater acquired? (2) What legal constraints limit the exercise of groundwater rights? These issues are the primary concern of this study.\*

## I. Acquisition of Groundwater Rights

### A. Groundwater Act

Idaho has had a comprehensive Ground Water Act since 1951. That Act as currently amended is the major source of modern groundwater law in the state.<sup>1</sup> The act declares that rights to groundwater "may be acquired only by appropriation,"<sup>2</sup> and this applies to "all water under the ground whatever may be the geological structure in which it is standing or moving."<sup>3</sup> Thus, the Act makes no distinction between categories of groundwater. All groundwater is subject to the appropriation doctrine, under which a water right is acquired by diverting water and applying it to beneficial use.<sup>4</sup>

The Idaho Department of Water Resources<sup>5</sup> supervises the acquisition of groundwater rights by administering a permit system under which a person intending to appropriate water applies for a permit prior to commencing work on his diversion and distribution facilities.<sup>6</sup> This permit system actually applies both to groundwater and surface water appropriations. It predates the Ground Water Act and traces back to 1903.<sup>7</sup> Not surprisingly, the

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\*Lay readers should be cautioned not to attempt to solve individual problems on the basis of the principles discussed herein. Since slight changes in fact situations may require a material variance in the legal result, the advice of an attorney should be sought regarding particular fact situations.

permit system has changed in detail over the years. The current statute authorizes the Department to deny a permit application, or grant it for a lesser quantity of water than requested, under the following conditions:

"where [the] proposed use is such that it will reduce the quantity of water under existing water rights, or that the water supply itself is insufficient for the purpose for which it is sought to be appropriated, or where it appears to the satisfaction of the department that such application is not made in good faith, is made for delay or speculative purposes, or that the applicant has not sufficient financial resources with which to complete the work involved therein. . . "8

If the holder of a permit shows the Department that he has diverted water and applied it to beneficial use in accordance with his permit, the Department issues him a license which is prima facie evidence of a water right.<sup>9</sup>

In addition to the general permit statutes applicable both to surface streams and groundwater, there are special provisions in the Ground Water Act governing water permits. The Act introduces the concept of critical groundwater areas. A critical groundwater area is:

"any ground water basin, or designated part thereof, not having sufficient ground water to provide a reasonably safe supply for irrigation of cultivated lands, or other uses in the basin at the then current rates of withdrawal, or rates of withdrawal projected by consideration of valid and outstanding applications and permits, as may be determined and designated, from time to time, by the state reclamation engineer [Director of the Department of Water Resources]."<sup>10</sup>

If an application is filed for a permit to appropriate water within a groundwater area which has been designated as critical and if the Director of the Department of Water Resources has reason to believe

that there is insufficient water available subject to appropriation at the location of the proposed well, he may forthwith deny the application.<sup>11</sup>

Prior to 1963, the permit procedure was not mandatory for groundwater. An appropriation of groundwater could be established simply by diverting water from the ground and applying it to beneficial use, without first obtaining a permit.<sup>12</sup> An appropriation established in this manner is as valid as one established pursuant to a permit, although the permit procedure traditionally has offered two advantages. First, a right acquired without a permit dates from the time water was first applied to beneficial use, while one acquired pursuant to a permit relates back to and dates from the time of application for the permit.<sup>13</sup> Second, a permit holder who proceeds to obtain a license from the Department has prima facie evidence of priority date and quantity of water appropriated.<sup>14</sup> Recently, the legislature may have added a third advantage for groundwater areas incorporated into water districts. A statute was enacted providing that a nonpermit right which has never been recognized by a decree or water adjudication shall be treated, for the purpose of distributing water during time of scarcity, as inferior to any decreed, adjudicated, permit, or licensed right within the water district.<sup>15</sup> The statute possibly could be construed to apply to groundwater, since it refers to the waters of "the public streams, streams or water supply, comprising . . . [a] water district." Thus, it is not limited in scope to water flowing in streams. Doubt about application of the statute to groundwater arises from reference in the statute to shutting "the headgates of the ditches

heading from such stream, streams or water supply" in times of water scarcity. Later in the same sentence, however, there is reference to closing "headgates of ditches or other diversions." It is possible, if not probable, that the legislature intended to include diversions through wells within the statutory language "other diversions."

In 1963 the Ground Water Act was amended to make the permit procedure mandatory for groundwater appropriations,<sup>16</sup> and five years later the mandatory system was sustained against constitutional challenge by the Idaho Supreme Court.<sup>17</sup> Since 1963, one diverting water and applying it to beneficial use without a permit acquires no right under the mandatory permit system.<sup>18</sup> Several classes of wells are exempted from the requirement of a permit, however. These are (1) wells for domestic purposes,<sup>19</sup> (2) wells for drainage purposes,<sup>20</sup> and (3) wells of owners of irrigation works which wells are "for the sole purpose of recovering ground water resulting from irrigation under such irrigation works for further use on or drainage of lands to which the established water rights of the parties constructing the wells are appurtenant . . . ."21

The Ground Water Act, since its enactment in 1951, has provided: "All rights to the use of ground water in this state however acquired before the effective date of this act are hereby in all respects validated and confirmed."<sup>22</sup> Thus, analysis of the acquisition of groundwater rights in Idaho must include inquiry into the earlier law.

## B. Pre-Ground Water Act Law

During the early years after Idaho attained statehood in 1890, American groundwater law was in its infancy.<sup>23</sup> One of the few points which had been settled in other states was that there should be a basic distinction between underground water which formed a subterranean stream and that which did not. The latter was often called percolating water.<sup>24</sup> Subterranean streams, it was generally agreed, should be governed by the same law which a state applied to surface streams, i.e., either the riparian doctrine or the appropriation doctrine.<sup>25</sup> The law of percolating water, or at least those percolating waters not sufficiently connected with a stream to be treated as a part thereof, was in doubt. Three doctrines were beginning to emerge and vie for acceptance, namely, the rule of absolute ownership, the rule of reasonable use, and the doctrine of correlative rights.<sup>26</sup> These doctrines have been analyzed at length elsewhere,<sup>27</sup> and that learning need not be repeated here beyond a brief summary which will facilitate analysis of the early Idaho law.

All three doctrines view the owner of land as having a proprietary interest in percolating water under his land.<sup>28</sup> One acquires a right to percolating water, not by diverting and applying it to beneficial use as under the appropriation doctrine, but simply by acquiring land with percolating water under it. The three doctrines differ most importantly in how they resolve disputes between competing well owners.

The rule of absolute ownership, also called the English rule for its country of origin,<sup>29</sup> treats a landowner as the owner of

percolating water under the surface of his land much in the same sense as he owns the soil under his surface. He has virtually an unlimited right to extract percolating water even though he thereby causes a neighbor's well to run dry.<sup>30</sup> Conversely, he gets no protection against a neighbor doing the same thing to his well. The rule of absolute ownership was widely accepted in the United States during the second half of the nineteenth century.<sup>31</sup> The lone exception was New Hampshire which rejected it in 1862 in favor of limiting a landowner's right to extract percolating water by a reasonable use criterion.<sup>32</sup>

The idea of a reasonable use limitation did not attract much attention until it was adopted by New York in 1900.<sup>33</sup> A number of courts in rapid succession thereafter rejected the rule of absolute ownership in favor of a rule of reasonable use, so that a leading commentator writing in 1911 was able to conclude that the rule of reasonable use "may be said to represent the general American rule."<sup>34</sup> That rule allows one well owner to interfere with another's supply of percolating water only if the former's use is reasonable under the circumstances.<sup>35</sup> It prohibits interference resulting from an unreasonable use. While the line of demarcation between a reasonable and an unreasonable use still has not been established with complete clarity, it soon became apparent that any use upon non-overlying land (i.e., use away from the land where the water was extracted) which injured an overlying user was likely to be held unreasonable.<sup>36</sup>

In 1902 the California court announced a variation of the reasonable use rule which later came to be known as the correlative

rights doctrine.<sup>37</sup> The correlative rights doctrine was not clearly distinguished from the rule of reasonable use during its early years;<sup>38</sup> but later it became settled that the correlative rights doctrine requires a prorationing of water among overlying users when the supply is insufficient for the reasonable needs of all, while the same is not necessarily true under the rule of reasonable use.<sup>39</sup>

With this background about the status of American groundwater law during the late nineteenth and early twentieth centuries, we may turn to developments in Idaho during the same period. In 1899 the state legislature enacted the following statute: "The right to the use of the waters of rivers, streams, lakes, springs, and of subterranean waters, may be acquired by appropriation."<sup>40</sup> The statute clearly adopted the appropriation doctrine for "subterranean waters," but the meaning of "subterranean waters" was not free from doubt for some years. It was argued by some that the phrase should be construed to apply only to subterranean streams and that percolating waters should be subject to one of the proprietary doctrines, i.e., the rule of absolute ownership, the rule of reasonable use, or the correlative rights doctrine. According to this argument, percolating waters were somehow (perhaps because of their unusually slow rate of movement) the private property of an overlying landowner and could not be subjected by the legislature to the right of appropriation.<sup>41</sup> Some support for the argument could be found in the fact that during the first several decades after Idaho became a state, other jurisdictions--including those with the appropriation doctrine for surface and subterranean streams--generally applied a proprietary doctrine to percolating waters.<sup>42</sup>

The early Idaho cases did not clearly settle the dispute about the scope of the appropriation doctrine with respect to groundwater. LeQuieme v. Chambers,<sup>43</sup> decided in 1909, is generally regarded as Idaho's first groundwater case.<sup>44</sup> There the court validated an alleged appropriation from a spring on public domain land which was fed by percolating groundwater. The case was not a definitive adoption of the appropriation doctrine for percolating groundwater because the court's opinion, when read carefully, left two open questions: (1) Would the appropriation doctrine have governed if the groundwater did not form a spring?<sup>45</sup> (2) Would the appropriation doctrine have governed if the spring had been located upon patented land rather than the public domain?<sup>46</sup>

In Bower v. Moorman,<sup>47</sup> which was decided in 1915, the court called the rule of absolute ownership "an impossible rule to adopt . . . where percolating water underlies a tract of land which has been divided into parcels owned by different persons, since the rule would allow the owner of a large well to drain water from under the land of others with impunity."<sup>48</sup> Justice Budge, writing for the court, seemed to apply the appropriation doctrine (although, ironically, Justice Budge in a later case stated he really intended to adopt the correlative rights doctrine in his Bower opinion).<sup>49</sup>

A year later, in Jones v. Vanausdeln,<sup>50</sup> the court uttered dicta inconsistent with the rule of absolute ownership. It indicated that a senior artesian well owner could enjoin the operation of a junior well which interfered with the flow from a senior well if he produced "very convincing proof of the interference."<sup>51</sup> This result could not be reached under the rule of absolute ownership,



since that doctrine imposes virtually no limits on the opening and operation of new (junior) wells.<sup>52</sup>

In 1922 the court decided Public Utilities Commission v. Natatorium Company.<sup>53</sup> Unlike the prior cases, it was not a suit between claimants of water. The Natatorium Company owned land upon which there were two hot water wells, and it distributed water from these wells to 276 customers for heating and domestic purposes.<sup>54</sup> The Idaho Public Utilities Commission ruled that the company was subject to regulation as a public utility in the distribution of hot water. The company appealed the ruling and the court held, in a 3-2 decision which produced four separate opinions, that the company was not subject to regulation as a public utility.

Justice Budge, who wrote the principal opinion, analyzed the problem as follows:

"If these waters are public waters, the sale, rental or distribution of the same would be a public use and subject to [public utility] regulation . . . . If these waters are private waters, in the absence of unequivocal intention to and dedication thereof to a public use by the appellant, the appellant would not be a public service corporation, and therefore subject to regulation as a public utility."<sup>55</sup>

Since Justice Budge found no unequivocal dedication of the waters to a public use, the case was reducible to the question of whether the waters were public or private. Upon that point, he observed:

"This being percolating or seepage water, merely, rising out of the earth, without an outlet through any definite channel, and no part of any natural spring or stream, or any subterranean stream, or flow, was not subject to appropriation, except by the owner in fee. It was the property of the owner of the land upon which it stood, and under the well-recognized doctrine that percolating water existing in the earth belongs to the soil as a part of the realty, it may be used and

controlled to the same extent by the owner of the land itself."<sup>56</sup>

Because of the proprietary interest of the Natatorium Company in the percolating water under its land, concluded Justice Budge, the water was private rather than public.

The rule of absolute ownership is premised upon the notion that a landowner owns percolating water under the surface much in the same fashion as he owns the soil and rocks under the surface.<sup>57</sup> The passage from Justice Budge's opinion which is quoted immediately above, particularly the last sentence, sounds very much like a rejection of the appropriation doctrine and acceptance of the absolute ownership rule for percolating water that is not tributary to any spring or stream. What, then, did Justice Budge do with LeQuieme v. Chambers, Bower v. Moorman and Jones v. Vanausdeln, all of which had seemed to opt for the appropriation doctrine? He dismissed them with this statement:

"The right to appropriate subterranean waters is not involved in this case, as disclosed by the record, and the cases cited in support of the right to appropriate subterranean waters have no application."<sup>58</sup>

The statement is puzzling because the balance of his opinion seems to assume the rejection of the appropriation doctrine was necessary in order to avoid holding the water in question to be public.

Justice McCarthy, in a concurring opinion, analyzed the problem in much the same way as Justice Budge, except that he dealt more straightforwardly with the earlier Idaho cases. He concluded that percolating water "situated entirely on privately owned land" is not subject to appropriation but "is part of the soil and belongs

to the owner of the land."<sup>59</sup> He added that "if anything to the contrary is to be found in LeQuieme v. Chambers . . . and Bower v. Moorman . . . those decisions should be modified to the extent therein indicated."<sup>60</sup>

In 1930, eight years after the Natatorium decision, the court applied the appropriation doctrine to percolating groundwater which was tributary to a surface stream.<sup>61</sup> The Natatorium case was argued in opposition to the appropriation doctrine, but the court swept it aside as dealing only with non-tributary percolating water which "underlay only the land owned by the Company, that is, a single owner."<sup>62</sup>

One year later came Hinton v. Little,<sup>63</sup> in which the court applied the appropriation doctrine to percolating water that formed an artesian basin underlying land owned by various persons. There was "some movement" of the water laterally under the ground and between different wells. There is no indication in the court's opinion whether or not the water was significantly tributary to a stream. The court seemed not to be concerned about that. In applying the appropriation doctrine, the court could have distinguished Natatorium by saying that the case was limited to a relatively stationary body of percolating water which underlaid the land of a single owner. Indeed, the court did, at one point, say in Hinton v. Little that "the facts in the case at bar show there is movement of the underground waters involved in this litigation, and we need pass herein on no other situation." However, the court went further and noted Justice Budge's enigmatic statement in Natatorium that "the right to

appropriate subterranean waters is not involved in this case . . . and the cases cited in support of the right to appropriate subterranean waters have no application."<sup>64</sup> The court then dismissed the Natatorium case by stating: "It is therefore unnecessary to consider further Public Utilities Com. v. Natatorium Co., supra, since the court itself stated therein that it did not involve the question before us here."<sup>65</sup>

To support its application of the appropriation doctrine to the dispute, in which senior artesian well owners sought to enjoin junior artesian well owners from interfering with the flow from their wells, the court relied heavily upon Bower v. Moorman. It viewed Bower v. Moorman as making "a clear statement . . . to the effect that subterranean waters are the subject of appropriation."<sup>66</sup> There was one dissenter who argued that although Bower v. Moorman might contain "some language" subscribing to the appropriation doctrine, the writer of that opinion really intended to adopt the correlative rights doctrine. Ironically, the dissenter was Justice Budge, who had written the opinion in Bower v. Moorman. It seems significant that in dissenting Justice Budge said nothing in favor of the rule of absolute ownership, with which he had flirted in writing the principal opinion in the Natatorium case.

In the four decades since Hinton v. Little, there has been no challenge in the appellate cases to the view that rights to all ground waters, whether percolating or not, are acquired under the appropriation doctrine. In the subsequent cases coming before the court, application of the appropriation doctrine has been assumed

without question.<sup>67</sup> At the most, the Natatorium case is left standing as authority for application of the rule of absolute ownership to a narrowly limited category of groundwater, namely, nontributary percolating water which underlies the land of a single owner.<sup>68</sup> In view of the short shrift given the Natatorium case in Hinton v. Little, however, it is likely that Natatorium can simply be dismissed altogether. This conclusion is buttressed by dictum in Baker v. Ore-Idaho Foods, Inc.,<sup>69</sup> Idaho's most recent groundwater decision. In that case the court characterized the development of Idaho's pre-Ground Water Act law as "uneven," with initial commitment to the appropriation doctrine followed by apparent abandonment of the doctrine in the Natatorium case but return to it in subsequent cases. The court seemed to regard Hinton v. Little as overruling Natatorium insofar as the latter may be read as a commitment to absolute ownership for any category of groundwater.

If the foregoing analysis is correct, the provision in the current Ground Water Act that the appropriation doctrine shall apply to "all water under the surface of the ground whatever may be the geological structure in which it is standing or moving"<sup>70</sup> makes no basic change in the earlier law on the acquisition of groundwater rights. The appropriation doctrine governs all groundwater and always has. Still to be considered, however, is how and to what extent the appropriation doctrine controls the adverse effects which the operation of a well may have upon others.

## II. Physical Effects of Operating Wells

### A. Introduction<sup>71</sup>

Some familiarity with groundwater hydrology is essential to understanding the function of various legal rules which regulate the exercise of groundwater rights.

The terms "aquifer" and "groundwater basin" refer to underground formations from which groundwater can be extracted in significant quantities. Water flowing into an aquifer is called recharge and that flowing out is called discharge. Recharge consists of precipitation infiltrating directly into the aquifer, inflow from streams and lakes, return flow from surface irrigation, and deliberate artificial recharge from injection wells or the spreading of water on surface areas of high infiltration capacity. Discharge occurs through springs, flow into lakes and streams, evaporation from the soil, transpiration from vegetation, and artificial extraction by wells. Most aquifers cover a large area and contain a total volume of water which is many times greater than the annual recharge or discharge. Such aquifers serve as underground storage reservoirs.

Aquifers are either confined or unconfined. Water in an unconfined aquifer is under atmospheric pressure, while water in a confined (or artesian) aquifer is under greater pressure because the movement of water is restrained by an overlying impermeable formation. When a well is drilled into an unconfined aquifer, water will stand in the well at a level which is designated as the water table and corresponds approximately with the upper surface of the portion of the aquifer which is saturated with water.<sup>72</sup> When a well is drilled into a confined aquifer, water will rise in the well

above the level of the impermeable formation which defines the top of the aquifer and will stand at the level of an imaginary surface (piezometric surface) that is a function of the amount of artesian pressure under which the water is confined. If the pressure is great enough, a flowing well results. A confined aquifer has no water table since that term refers to the level at which water stands in an aquifer when it is under atmospheric pressure only. The term water level is hereafter used in an inclusive sense to refer either to the water table of an unconfined aquifer or the pressure surface of a confined aquifer.

Withdrawing water from a well will cause a water level decline. When water is pumped from an unconfined aquifer, the water table around the well is drawn down in the shape of an inverted cone, called a cone of depression. Within the area of the cone, the aquifer is dewatered. If the capacity of the pump is too great considering the depth at which its intake is set and the permeability of the surrounding rock, the tip of the cone is drawn down to the point that the well sucks air. When water is extracted from a well in a confined aquifer, the imaginary pressure surface around it is drawn down in the shape of an inverted cone, called a cone of pressure relief. Water is released from storage and supplied to the well not by dewatering the area within the cone, as in the case of an unconfined aquifer, but by the relief of hydrostatic pressure, which allows the aquifer skeleton and the water to expand. As the confining pressure dissipates to the point that the pressure surface falls below the bottom of the overlying impermeable formation, a confined aquifer becomes an unconfined aquifer.

The size of a cone of depression will depend upon such factors as the permeability of the aquifer, the depth that the well penetrates the water bearing stratum, and the rate of pumping. In many instances, water table declines in unconfined aquifers are slight at distances exceeding 1,000 feet from an isolated well. Cones of pressure relief spread over a much larger area than cones of depression, but the significant effects of a cone of pressure relief are still relatively localized rather than basin-wide. Cones of depression and pressure relief are not necessarily permanent phenomena. If a well is shut off, the water table or the pressure surface may return nearly to its original level around the well.

The water level of an aquifer (i.e., the water table in an unconfined aquifer or the pressure surface in a confined aquifer) will decline if total discharge from the basin, including artificial discharge through wells, exceeds total recharge. Withdrawing water through wells may produce seasonal water level fluctuations, with decline during the irrigation season and recovery later. There may also be cyclical fluctuation, with decline in dry years and recovery in wet years. Perennial withdrawal in excess of recharge will, of course, result in permanent water level decline. Such permanent depletion of stored groundwater is often called mining, by analogy to what occurs in the minerals extraction industry.<sup>73</sup>

With this background it is possible to consider specifically how the withdrawal of water from a well may adversely affect others.

#### B. Interference With Other Wells

Water is brought to the surface of a well which taps an unconfined aquifer by pumping. Water is brought to the surface of



a well which taps a confined aquifer either by artesian pressure alone or, if the pressure is not sufficient to raise the water in the well pipe all the way to the surface, by a combination of artesian pressure and pumping. Regardless of the means of diversion, the flow from a well will diminish or even cease if the water level around the well declines too much. Often the flow could be restored by improving the means of diversion, i.e., by deepening the well, lowering the pump bowl, or installing a more powerful pump. If the bottom of a well is located near bedrock, however, restoration of the flow may be impossible.

If two or more cones of depression or pressure relief overlap, water level decline in the area accelerates. Water level decline which renders the means of diversion of an established well ineffective may be a localized phenomenon, involving overlap of the cones of only two or three wells, or it may be widespread, involving enough wells to produce an overall decline through the entire basin or a large subarea of it.<sup>74</sup>

### C. Interference With Surface Water Rights<sup>75</sup>

Where an unconfined aquifer is hydrologically connected with a surface stream, the aquifer may either receive recharge from the stream or discharge water into it. If a decline in the water table of an aquifer increases recharge from the stream or decreases discharge into it, the volume of water flowing in the stream will decrease. In an acute situation, this may mean that there is no longer enough water in the stream to satisfy holders of existing surface rights. The interference may vary in seriousness from requiring

a small improvement in the surface appropriator's means of diversion from the stream to total loss of water regardless of the efficiency of his means of diversion from the stream.

#### D. Compaction and Land Subsidence<sup>76</sup>

When water is pumped from a confined aquifer composed of alluvial sediments, the water bearing sediments may become compacted. There are two sources of potential damage in this phenomenon. First, the compaction may irreversibly reduce the storage capacity of the aquifer. Second, it may produce subsidence of the overlying land surface. In some areas of the San Joaquin Valley in California, for example, land has subsided one foot for every 10 to 25 feet that the artesian pressure surface has lowered. Such land subsidence can produce various undesirable effects. Land survey elevations and topographical maps may be rendered inaccurate. The rate of flow of surface streams and irrigation canals may be altered. Well casings may collapse. Buildings supported by pilings which extend into or below the zone of subsidence may not sink as much as the land surface, causing severance of connections with the ground such as stairs.

#### E. Water Quality Impairment<sup>77</sup>

The quality of groundwater may become impaired in a variety of ways, but the only concern here is impairment caused by operation of wells and subsequent use of the water. The quality of groundwater depends to a large extent upon the quality of its source water. Thus, if groundwater withdrawals cause water level decline and this

in turn increases recharge from a polluted source, such as a surface stream, the quality of the groundwater may suffer. Similarly, irrigation return flow which percolates down to an aquifer may add substantial quantities of salt.

#### F. Injury to Future Generations

If all or part of the stock of groundwater stored in an aquifer is permanently depleted by current use, it is obvious that the water will not be available to meet future needs. Thus, even if such depletion does not cause any undesirable interference with other wells or with surface water rights and would neither cause undesired compaction nor water quality impairment, there is a sense in which future generations may suffer as a result of unrestrained depletion of the storage component of groundwater basins. This can be quite an important matter if an aquifer does not receive significant recharge.

In summary, the operation of a well may have any one or more of five kinds of adverse effects upon others --(1) interference with other wells, (2) interference with surface water rights, (3) compaction and land subsidence, (4) water quality impairment, and (5) injury to future generations. It remains to be considered how, and to what extent, Idaho law seeks to control the occurrence of such effects.

### III. Legal Constraints on Exercise of Groundwater Rights

#### A. Introduction

Section 237a(g) of the Idaho Ground Water Act empowers the Director of the Department of Water Resources to supervise and

control the exercise of groundwater rights. It goes on to provide:

"[I]n the exercise of his power he may by summary order, prohibit or limit the withdrawal of water from any well during any period that he determines that water to fill any water right in said well is not there available . . . Water in a well shall not be deemed available to fill a water right therein if withdrawal therefrom of the amount called for by such right would affect, contrary to the declared policy of this act, the present or future use of any prior surface or ground water right or result in the withdrawing the ground water supply at a rate beyond the reasonably anticipated average rate of future natural recharge."

This statute is the most basic source of authority in the Act for controlling the adverse effects which the operation of a well can have. It lists two grounds for shutting down an existing well, partly or completely, within the framework of the appropriation doctrine. The first is when a junior well affects a senior right contrary to the declared policy of the Act. The second is when withdrawals from an aquifer exceed the reasonably anticipated average natural recharge.

The initial part of the above quotation from section 237a(g) states that the Director "may" shut down a well if there is not water available to fill any water right in the well, i.e., when either of the two grounds mentioned above exists. A later provision of section 237a(g), not included in the above quotation says that the Director "shall, upon determining that there is not sufficient water in a well to fill a particular ground water right therein by order, limit, or prohibit further withdrawals of water under such right as hereinabove provided . . ." (Emphasis added.) The Idaho court recently held, in Baker v. Ore-Idaho Food, Inc.,<sup>78</sup> that well closure is mandatory when the second of the two grounds

stated in the statute is present, i.e., when withdrawals from an aquifer exceed the reasonably anticipated average natural recharge. There seems to be no basis for taking a different approach under the statute regarding the first of the two grounds. Thus, the word "may" near the beginning of the above quotation from section 42-237a(g) should be read as "shall".<sup>79</sup>

The two grounds in section 237a(g) for prohibiting or limiting withdrawals from wells merit separate and careful analysis. It will be convenient to begin with the second ground.

#### B. The Average Natural Recharge Clause

As noted above, one clause of section 237a(g) empowers the Director of the Department of Water Resources to close a well when its operation would "result in the withdrawing the ground water supply at a rate beyond the reasonably anticipated average rate of future natural recharge." In the Ore-Idaho Foods case, the Idaho court held that this clause forbids the mining of an aquifer. The court defined "mining" as "perennially withdrawing ground water at rates beyond the recharge rate."<sup>80</sup> The court's definition of "mining" was taken from a widely cited article on groundwater mining<sup>81</sup> and is in accord with standard usage of the term to refer to permanent depletion of stored groundwater by withdrawals in excess of long-time mean annual supply to the basin.<sup>82</sup>

The component parts of the average natural recharge clause of section 42-237a(g) bear close scrutiny. The clause prohibits "the withdrawing the ground water supply at a rate beyond the reasonably anticipated average rate of future natural recharge." The statute

does not define the work "withdrawing". If total discharge from an aquifer--including (1) natural discharge by evaporation, transpiration, and seepage into streams, lakes or adjacent groundwater systems, and (2) artificial discharge through wells--exceeds total recharge, then water in storage is depleted and groundwater levels will drop. Since perennial overdraft of this nature would seem to violate the no-mining holding of the Ore-Idaho Foods case, the word "withdrawing" in the statute should be construed to include both natural and artificial discharge. This is so even though in ordinary language we might not speak of natural discharge from an aquifer as constituting the withdrawal of water. If the word "withdrawing" in the statute were interpreted to refer only to artificial discharge through wells and if such withdrawals were allowed in a volume equal to total recharge, it is almost inevitable that total discharge from the aquifer, i.e., the sum of artificial discharge and natural discharge, would exceed total recharge and there would be a perennial overdraft. In other words, there would be mining. It is puzzling, therefore, that the decision in the Ore-Ida Foods case affirmed a trial court order which seems to allow artificial withdrawals alone to equal total recharge. This does not square with the court's statement in the same case that "[w]e now hold that Idaho's Ground Water Act forbids 'mining' of an aquifer."

Does it necessarily follow that every permanent depletion of stored groundwater should run afoul of the no-mining policy of the Ore-Ida Foods case? When the extraction of groundwater by wells is commenced, total discharge may for a time exceed total recharge.

Then later the resulting decline in water level may either increase recharge or, more likely, decrease natural discharge to the point that total discharge and total recharge come back into balance and produce a new, stable but lower water level. (The process will be described more fully by the quotation in the next paragraph.) It is possible, then, for a period of storage depletion to be followed by an equilibrium condition between total discharge and total recharge even though artificial discharge does not decrease.<sup>83</sup> If an overdraft situation is anticipated to be only temporary for this reason, arguably it would not constitute mining in the sense denounced in the Ore-Ida Foods case, *i.e.*, perennial overdraft, even though the temporary condition is expected to continue for several years or longer. In the Ore-Ida Foods case there was no evidence that the overdraft would correct itself through an increase in recharge or a decrease in natural discharge; closure of some wells was the only way to stop annual overdrafts. Thus, the court did not necessarily have in mind during its discussion the kind of disequilibrium just hypothesized.

Even if such a temporary overdraft, with permanent but limited depletion of storage, is not necessarily prohibited by the Ore-Ida Foods case, there still is need to consider whether it is prohibited by the underlying statutory language, *i.e.*, the average natural recharge clause of section 237a(g). The clause itself does not explicitly define the concept of withdrawal in excess of recharge, but an earlier part of the same statute declares a policy "to conserve . . . ground water resources." Arguably, it would be permissible to allow the limited but permanent depletion of storage now being discussed

when the stated policy of conserving groundwater resources is juxtaposed with these facts:

"When pumping from wells is started, it must be accompanied by a drop in water level . . . . The drop increases the opportunity for recharge from influent streams. It reduces the area of seep lands and uneconomic losses through consumptive use and evaporation. It provides opportunity for penetration of rain falling on the valley floors, which under normal conditions did not happen because the groundwater levels were too high. It also increases the opportunity for under flow into the reservoir by increasing the gradient.

Extractions by pumping from wells at this state of ground-water development functions as a conservation measure by converting uneconomical losses to beneficial uses."84 (Emphasis added.)

Further indication that the legislature contemplated the possibility of reaching a new equilibrium after a period of storage depletion can be found by reference in the average recharge clause to "the reasonably anticipated average rate of future natural recharge." Past recharge rates are not necessarily determinative under this language. Arguably, at least, it would be permissible to look to expected future recharge at a new, lower water level where the net annual natural recharge (total natural recharge minus total natural discharge) would be greater than at the present level.

If the foregoing analysis is accepted, then neither the average natural recharge clause of section 42-237a(g) nor the Idaho court's interpretation of it in the Ore-Ida Foods case would preclude all permanent depletion of water stored in an aquifer. Permanent depletion of storage could occur in the special kind of situation described above.

The next topic is the significance of the word "average" in the natural recharge clause. Precipitation is a major factor in



determining recharge. All other things being equal, recharge into a basin which is not already filled to capacity is likely to be greater in a wet year than in a dry year. The average natural recharge clause seems to contemplate computing the rate of recharge over a sufficiently long period that series of wet and dry years tend to average out. This would allow temporary depletion of storage during a dry year or series of dry years. The advantage of such a policy has been described as follows:

"[Such] lowering of the water table . . . creates a capacity for storing and carrying over the water that originates in wet periods for use during dry periods.

In that respect a ground-water reservoir is not unlike a surface reservoir. A reservoir that is maintained full or nearly full at all times is not being used to greatest advantage. Falling water tables during dry periods should not necessarily be viewed with alarm, because water placed in storage during wet periods is being drawn upon and storage capacity is being created for the wet periods that follow."<sup>85</sup>

The author of the above excerpt goes on to add that falling or even static water tables during wet periods are a "serious problem." It is this problem to which the average natural recharge clause of section 42-237a(g) seems to be directed, rather than the cyclical fluctuations from dry to wet years.

There is another aspect of the average natural recharge clause which requires close examination. The clause prohibits withdrawals in excess of average "natural" recharge. In some states the sustained yield capacity of certain groundwater basins has been increased through artificial recharge, i.e., by techniques such as injection wells, water spreading, and recharge pits.<sup>86</sup> The option of artificial recharge seems to be foreclosed by the language of

the Idaho statute. The exact scope of the statutory limitation to natural recharge is not clear, however. Most groundwater diversions, when used on the surface, are not fully consumed. Some of the unconsumed water may return to the aquifer. As much as half of the water pumped for irrigation may return to the aquifer.<sup>87</sup> Assume that recharge to an aquifer from precipitation and stream inflow averages 100,000 a.f. (acre-feet) per year and that irrigation withdrawals average 100,000 a.f. per year, with fifty per cent return flow to the aquifer. Is the "natural" recharge 100,000 a.f. per year or 150,000 a.f. per year? To state the same question differently, is the 50,000 a.f. of return flow "natural" recharge? The Idaho court did not have to face this question in the Ore-Ida Foods case because the water source there was a confined aquifer which did not receive return flow recharge from the area of water use. While the no-mining policy of section 42-237a(g) would not be violated by treating return flow to an aquifer as natural recharge when computing the amount of water that may be withdrawn from it under the statute, this does not necessarily prove that return flow should be treated as natural recharge. The statute prohibits not only mining but the avoidance of mining through the utilization of artificial recharge.

The answer to the question of how to treat return flow under the statute must, of course, lie in legislative intent. The extent to which a natural/artificial recharge dichotomy has a settled meaning in the field of hydrology is likely to be highly significant, however. A leading groundwater hydrology text defines

artificial recharge as "augmenting the natural infiltration of precipitation or surface water into underground formations by some method of construction, spreading of water, or by artificially changing natural conditions."<sup>88</sup> Another defines it as "the practice of increasing, by artificial means, the amount of water that enters a ground water aquifer."<sup>89</sup> Insofar as the word "artificial" appears in the definitions, they are circular and not particularly helpful. Since the irrigation water was artificially withdrawn from the aquifer in the first place, it might be argued that return flow must be treated as artificial recharge. On the other hand, the return flow is an unintended by-product of irrigation due to the natural force of gravity. One text classifies the practice of increasing infiltration into the ground in irrigated areas by deliberately irrigating with excess water during dormant, winter, or nonirrigation seasons as artificial recharge.<sup>90</sup> Could the difference between natural and artificial recharge implicit in the Idaho statute turn upon a distinction between return flow which is an unintended by-product and that which is deliberate and motivates the entire process? Although such a distinction may fall short of being a self-evident truth and may generate classification difficulties in practice, support for the distinction can be found in a recent groundwater study prepared for the National Water Commission.<sup>91</sup> The study lists four sources of groundwater recharge, namely, (1) precipitation, (2) stream flow, (3) return flow to groundwater, and (4) artificial recharge. The significant point is that return flow is listed separately from artificial recharge. The study distinguishes between the "intentional and purposeful

use of aquifers to store water" and "recharge which is essentially unintentional and which is incidental to some other process." It states that "'artificial ground water storage' normally is, and always should be used to describe only" the former situation.

There is some basis, then, in the language of hydrology for a distinction between intended and unintended return flow even though such a distinction has its arbitrary aspects. (Perhaps the true source of arbitrariness is the legislative decision to exclude artificial recharge in computing permissible withdrawals from an aquifer.) The advantage of making such a distinction is that it would enable greater utilization of groundwater under the Idaho statutory framework than would the classification of all return flow as artificial recharge. Furthermore, it would be in harmony with a legislatively announced policy, in the first section of the Idaho Ground Water Act, to promote the "full economic development of underground water resources."<sup>92</sup>

### C. The Adverse Effect Clause

The possible adverse consequences to others from the operation of a well previously were divided into five classes: (1) interference with other wells, (2) interference with surface water rights, (3) compaction and land subsidence, (4) water quality impairment, and (5) depletion of storage to the detriment of future generations. The average natural recharge clause of section 42-237a(g) prohibits the occurrence of any of these consequences to the extent that they are produced by groundwater mining--and mining may produce any or all of them. The first four types of consequences

can occur, however, even without mining in the usual sense of the term, i.e., without permanent depletion of storage due to perennial overdrafts. The question for discussion here is the extent to which the adverse effect clause of section 42-237a(g) regulates such consequences.

It will be well to begin by repeating the precise language of the adverse effect clause:

"Water in a well shall not be deemed available to fill a water right therein if withdrawal therefrom of the amount called for by such right would affect contrary to the declared policy of this act, the present or future use of any prior surface or ground water right . . . ."

Since this clause forbids only those adverse effects which are "contrary to the declared policy of this act," identification of the declared policy of the Ground Water Act is essential. Section 42-237a refers in an offhand fashion to "the policy of this state to conserve its ground water resources." Section 42-226 includes the following statement of policy:

"It is hereby declared that the traditional policy of the state of Idaho, requiring the water resources of the state to be devoted to beneficial use in reasonable amounts through appropriation is affirmed with respect to the ground water resources of this state as said term is hereinafter defined\*: *and while the doctrine of 'first in time is first in right' is recognized, a reasonable exercise of this right shall not block full economic development of ground water resources, but early appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the . . . [Director of the Department of Water Resources] as herein provided.*" (The asterisk and italics are part of the statute.)

In addition to the formal declaration of policy at the beginning of the section, the subsequent italicized language implicitly declares a policy of promoting "full economic development of ground

water resources." The touchstone for interpreting this language is legislative intent, but the task is made difficult by the absence of any record of legislative history of the Ground Water Act. The Colorado legislature has enacted a similarly worded statute,<sup>93</sup> but there is nothing illuminating in the Colorado legislative history or judicial decisions.

One possible approach in seeking insight into the meaning of the "full economic development" language of section 42-226 of the Idaho Ground Water Act is to examine what was being said about the earlier law which the Act replaced. Apparently it was generally believed that Idaho's pre-Ground Water Act cases protected a senior well owner's historic means of diversion, i.e., pumping level or artesian pressure, without regard to its reasonableness. (Whether the cases necessarily stood for such a rule is discussed later.) Thus, the following criticism of Idaho groundwater law appeared in the Journal of the American Water Works Association in 1938:

"One feature of the doctrine of appropriation in certain cases deserves notice. Thus, in two Idaho cases (Bower v. Moorman, 27 Idaho 162, 147 Pac. 496, 1915; Noh v. Stoner et al., 26 Pac. 2d 1112, 1933) where prior appropriators claimed harmful effects from wells of later nearby appropriators, the court awarded damages. There is no indication in the decisions that the defendants set up as their justification, that by the laws of nature it would generally be impossible for any subsequent user of ground water to pump from the same water bearing formation without affecting to some degree the water level and yield of every well previously installed in the area. Carried to an ultimate conclusion, these decisions might mean that in many areas the first appropriator could require damages from every subsequent appropriator and each subsequent appropriator, in turn of priority, could require damages from all later appropriators, until the last one would have to pay tribute to all. If the doctrine of appropriation is to accomplish the desired end of making full use of the

ground-water resources of the state, it must be recognized that some lowering of the water table or of the artesian pressure is a reasonable result of a reasonable method of diversion (pumping) of the water and should not constitute a basis for damages."<sup>94</sup>

Immediately prior to adoption of the Ground Water Act, there was some uncertainty in the legal profession about the extent to which a senior well appropriator's means of diversion should be protected under the priority principle of the appropriation doctrine.<sup>95</sup> When the Ground Water Act was adopted in 1951, section 42-226 merely affirmed that the appropriation doctrine governed groundwater development. Two years later the legislature added the following phrase to it:

*"and while the doctrine of 'first in time is first in right' is recognized, a reasonable exercise of this right shall not block full economic development of underground water resources, but early appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the . . . [Director of the Department of Water Resources] as herein provided."*

This amendment is consistent with, and likely was motivated by, the kind of sentiment expressed in the above-quoted excerpt from the Journal of the American Water Works Association.

The full economic development concept of section 42-226 has not been the subject of judicial comment except for dictum in Baker v. Ore-Ida Foods, Inc. That case contains the following statement:

"Idaho's Ground Water Act seeks to promote 'full economic development' of our ground water resources . . . [T]he Ground Water Act is consistent with the constitutionally enunciated policy of promoting optimum development of water resources in the public interest. Idaho Const. art. 15, §7. Full economic development of Idaho's ground water resources can and will benefit all of our citizens. Trelease, F.J., Policies for Water Law: Property Rights, Economic Forces and Public Regulations, 5 Nat. Res. J. 1(1965); Hutchins, W.A., Ground Water Legislation, 30 Rocky Mtn. L. Rev. 416 (1958)."<sup>96</sup>

The court's citation of the Trelease and Hutchins articles calls for examination of them to see what they say about the concept of full economic development of groundwater resources. Although neither of the articles discusses the exact phrasing of the Idaho statute, the Trelease article refers to the "maximization principle" in economics, under which the goal is to obtain the largest possible net social returns from the use of a resource. Trelease concludes that the maximization principle does not require compulsive development of water: "What is to be maximized is welfare from water use, not water use itself."<sup>97</sup> He reports that economists have not yet devised any magic test for determining when maximization has been achieved:

"Some have attempted to take a given resources, a river with known potentialities of use, and discover that use or combination of uses producing the greatest economic product from a given expenditure of goods and services. In a more complicated fashion others have tried to determine by linear programming the point at which the optimum ratio between expenditures and benefits is reached, out of all possible combinations of 'inputs and outputs'. Some economists try to eliminate the dollar as a measuring device, since market values fluctuate, and since the value of society of the product of a water resource project may not be accurately reflected by money. By using the technique of 'indifference curves,' they measure the relative welfare position of each combination of uses against other combinations and reach a ranking of desirability of alternatives rather than a comparison based on the common denominator of the dollar."<sup>98</sup>

The phrase "full economic development" in section 42-226 could mean any of these things. A recent groundwater study prepared for the National Water Commission says that the goal of economic efficiency in resource allocation is achieved by:



"that combination of resources which produces the maximum net benefits (i.e., total benefits less costs) to the owners, users, and beneficiaries of the resource over time. Applied to groundwater and related resources this means that the total resource -- water, storage capacity, transmission and treatment capability of the underground structures -- should be used to achieve maximum net benefits."<sup>99</sup>

This would seem to be a justifiable interpretation of the phrase "full economic development."

The policy of full economic development stated in section 42-226 is not to be pursued at all costs, however. That policy is qualified by the following language of the same section:

*"but early appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the . . . [Director of the Department of Water Resources] as herein provided."*

Thus, it is necessary to explore the concept of reasonable pumping levels.

The only other reference to the concept in the Ground Water Act appears in section 42-237a(g) sandwiched between a delegation of power to the Director to close any well for which he determines water "is not available" and the statement that water shall not be deemed available if operation of the well would "affect, contrary to the declared policy of this act, the present or future use of any prior surface or ground water right or result in the withdrawing the ground water supply at a rate beyond the reasonably anticipated average rate of future natural recharge." The specific language is this:

*"To assist the . . . [Director of the Department of Water Resources] in the administration and enforcement of this act, and in making determinations upon which said orders shall be based, he may establish a ground water pumping level or levels in an area or areas having a common ground water supply as determined by him as hereinafter provided."*

Since section 42-237a(g) empowers the Director to issue well closure orders either to prevent injury to a senior appropriator contrary to the declared policy of the act or to prevent mining, it might be argued that, under the statutory language quoted immediately above, the Director may set a reasonable pumping level in a particular area and then, if existing pumping levels are above that, allow mining down to the reasonable level before issuing closure orders. Baker v. Ore-Ida Foods, Inc. expressly rejects this argument, however. Thus, it is only in closing a well for creating an adverse effect contrary to the policy of the Act that the concept of reasonable pumping levels comes into play.

In dicta the Idaho court made these additional observations in the Ore-Ida Foods case about reasonable pumping levels:

1. "Priority rights in ground water are and will be protected insofar as they comply with reasonable pumping levels. Put otherwise, although a senior may have a prior right to ground water, if his means of appropriation demands an unreasonable pumping level his historic means of appropriation will not be protected."<sup>100</sup>
2. "Because of the need for highly technical expertise to accurately measure complex ground water data the legislature has delegated to the IDWA [now the Idaho Department of Water Resources] the function of ascertaining reasonable pumping levels . . . Implicit in the delegation is the recognition that reasonable pumping levels can be modified to conform to changing circumstances."<sup>101</sup>

The court also quoted the following statement by a commentator about the reasonable pumping level concept in the Ground Water Act:

*"If 'reasonable pumping levels' were interpreted by the court as requiring each appropriator to alter his means of diversion a little each year, or a little with each subsequent appropriator until full development was achieved, the statute would accomplish its purpose. (Emphasis supplied) Comment, Who Pays When the Well Runs Dry, 37 U. Colo. L. Rev. 402, 413(1965)."*<sup>102</sup>

The references to reasonable pumping levels in the Act and the discussion in the Ore-Ida Foods case still leave many questions unanswered and difficulties unresolved. Among them are the following.

First, does the statutory reference to protecting "reasonable pumping levels" imply that a means of diversion consisting wholly of artesian pressure (i.e., no pumping) is not entitled to protection?

Second, in determining the actual pumping level of an existing well, where are the beginning and ending points of the measurement? Should the beginning point be affected by whether a well is located on a hill or in a valley? How far downward should the measurement be continued--to the water table, all the way down to the bottom of the cone of depression, or to some intermediate point? It might be argued that the measurement should include the drawdown caused by operation of a pump since section 42-226 refers to reasonable "pumping levels," not reasonable water table levels. Such an interpretation would generate complexity, however, since the drawdown of a well is in part a function of its efficiency, and taking drawdown into account would require a decision about permissible well efficiency. Also localized differences in transmissibility within an aquifer can produce a significant variation in drawdown. To what extent should that be taken into account?

Third, in furtherance of the policy of full economic development of groundwater stated in section 42-226, it would seem that economic, as well as physical factors should be taken into account in developing reasonable pumping level regulations. In doing so,

to what extent should or can it be recognized that the land overlying a groundwater basin may encompass areas of varying climates, soil types and crop yields? The only statutory guidance on this question is a clause in section 42-237a(g), which empowers the Director of the Department of Water Resources to:

"establish a ground water pumping level or levels in an area or areas having a common ground water supply as determined by him as hereinafter provided."

If the word "area" refers to overlying land and the words "common ground water supply" refer to an aquifer, then the phrase "areas having a common ground water supply" would seem to imply that the land overlying an aquifer can be divided into various areas according to such factors as topography, climate, and soil type. Furthermore, the work "levels" seems to suggest that different pumping levels may be established for different areas.

The foregoing analysis depends upon defining the word "area" in the above-quoted clause of section 42-237a(g) as referring to land overlying an aquifer. This is not implausible in view of the following additional language in the same section:

"[The Director] shall also have the power to determine what areas of the state shall have a common ground water supply and whenever it is determined that any area has a ground water supply which affects the flow of water in any stream or streams in an organized water district, to incorporate such area in said water district; and whenever it is determined that ground water in an area having a common ground water supply does not affect the flow of water in any stream in an organized water district, to incorporate such area in a separate water district . . . ."

The words "area" and "areas" here seem to refer to surface land areas.

If the land overlying an aquifer may be subdivided into various areas according to economic factors such as topography, climate, and soil type, may other economic factors be considered also--for example, the fact that a particular farmer may have just invested a lot of capital into a pumping plant, and if a reasonable pumping level is set lower than the physical capacity of his plant, he will suffer a significant economic loss? If the justification for considering economic factors is the policy of full economic development or a general concern with efficient resource allocation, then the answer to this question should depend upon whether or not protection of the farmer's investment will help to promote full economic development or efficient resource allocation. At first blush, protecting an existing investment in a pumping plant may seem to run counter to a policy of full economic development. After all, section 42-226 provides that "while the doctrine of 'first in time is first in right' is recognized, a reasonable exercise of this right shall not block full economic development of underground water resources."

A contrary argument can be made, however. Without investment in pumping plants by farmers and other water users, there will never be full economic development of Idaho's groundwater resources. If a farmer does not have a reasonable expectation that his investment in a pumping plant will yield a fair return, he will not make the investment. He can hardly have such an expectation if his existing investment in a pumping plant is totally irrelevant to the setting of reasonable pumping levels. One of the historic policies

underlying the appropriation doctrine has been the promotion of investment needed for water resource development by giving security of use.<sup>103</sup> Since section 42-226 does affirm the appropriation doctrine for groundwater--albeit modified by a policy against protecting historic means of diversion without regard to reasonableness, in the event that prior Idaho case law had interpreted the appropriation doctrine as affording such protection--concern about protecting existing investment in pumping plants and related capital outlays should not be totally irrelevant to setting reasonable pumping levels. Probably, it should be relevant but not a controlling factor.

Fourth, consideration of economic factors inevitably raises social issues as well. For example, there is evidence that due to economies of scale a large farm may be able economically to pump from a significantly greater depth than a small farm.<sup>104</sup> If pumping levels are set by reference to what is reasonable for large farms, small ones may be driven out of existence (except for those that, fortuitously, are able to combine in the construction and operation of a single well). Does the legislative delegation of power to regulate pumping levels really include a power to regulate farm size? If so, does the policy of full economic development compel a preference for larger farms if they are more efficient production units? Even among farms of the same size, the kind of crop produced will affect the reasonableness of a particular pumping level. Should the regulations be predicated upon, and thus perhaps encourage or require the production of one crop rather than

another? Suppose that the greatest dollar return from land in a given area (and, hence, the greatest pumping depth which would be economically feasible) could be attained by the production of some variety of irrigated opium. Surely, the full economic development policy of section 42-226 would be subordinate to social policy concerning opium production. Would the issue be essentially the same if the greatest dollar return could be attained by the production of malt barley, but the religious beliefs of a significant number of landowners in the area lead them to prefer not to produce a crop used to manufacture an alcoholic beverage. Finally, a reasonable pumping level for a small domestic user might be less than for an irrigator. What should be done about the small domestic user?

Fifth, it is likely that the reasonable pumping level statute was aimed at well interference disputes.<sup>105</sup> As noted earlier, the operation of a well may have other adverse effects even in the absence of a general condition of groundwater mining. There may be interference with surface water rights, compaction and land subsidence, or water quality impairment. To what extent may, or must, these potential adverse effects be taken into consideration in the consideration in the setting of reasonable pumping levels? Section 42-247a(g) empowers the Director of the Department of Water Resources to prohibit groundwater withdrawals which "would affect, contrary to the declared policy of this act, the present or future use of any prior surface or ground water right." Section 42-231 directs him "to do all things reasonably necessary or appropriate

to protect the people of the state from depletion of ground water resources contrary to the public policy expressed in this act." The full economic development policy of section 42-226 would seem to authorize an accounting for all costs--including not only costs in terms of interference with senior surface water rights expressly mentioned in section 42-237a(g) but also compaction and land subsidence costs and water quality impairment costs--in seeking to achieve an optimum allocation of the groundwater resource through the tool of reasonable pumping levels.<sup>106</sup>

As the foregoing discussion indicates, the Ground Water Act does not give very clear or specific guidance for the resolution of a number of questions or difficulties that must be faced in the development of reasonable pumping level regulations. The questions posed above are hardly more than the tip of the iceberg, and the analysis of the questions is more in the nature of arguments-that-can-be-made rather than hard and fast conclusions. Perhaps of major significance is the language in section 42-231 which empowers the Director "to do all things reasonably necessary or appropriate to protect the people of the state from depletion of ground water resources contrary to the public policy expressed in this act." (Emphasis added.)<sup>107</sup> It might be argued that this constitutes an implied delegation of authority to resolve those questions and difficulties which are not very well covered explicitly in the Ground Water Act in any way that would make sense in view of hydrologic, economic, and social considerations. In other words, the argument would be that the Director can consider factors, and make distinctions, which are reasonably necessary to accomplish the



public policy expressed in the Act. Some support for this implied powers approach may be found in the Ore-Ida Foods case, where the court did not hesitate in dictum to find an implicit delegation of authority to the Director to modify reasonable pumping levels from time to time to conform to changed circumstances.<sup>108</sup> The court did not explain its rationale for this conclusion, but the justification would seem to be that it is reasonably necessary for the Director to have the power of modification.

Probably the most serious difficulty with the implied powers approach lies in the rule that an attempted legislative delegation of rule making power to a state agency is invalid unless the delegation is limited by legislatively prescribed standards to guide the agency, directing and channeling its discretion.<sup>109</sup> In upholding a delegation of rule making power to the State Tax Commission, the Supreme Court of Idaho phrased the limitation this way:

"It is an accepted rule of judicial decision that the legislative function has been complied with, where the terms of the statute are sufficiently definite and certain to declare the legislative purpose and the subject matter meant to be covered by the act; and that the legislature may constitutionally leave to administrative agencies the selection of the means and the time and place of the execution of the legislative purpose, and to that end may prescribe suitable rules and regulations."<sup>110</sup>

The central difficulty in applying the legislative standards requirement is to determine how tight the standards must be.<sup>111</sup> For example, it was noted earlier that the power to set pumping levels may entail a power to determine (and require a decision upon) minimum farm size.<sup>112</sup> Is this delegation of power adequately circumscribed by the statutory reference to the policy of full economic

development of the state's groundwater resources? It probably would be unwise to try to predict how the Idaho court would answer this question in view of the following two observations by Frank Cooper in his authoritative treatise on state administrative law:

1. "[W]hile the doctrine [of legislatively prescribed standards] has proved a useful tool and has provided a means of imposing workable controls on administrative discretion, nevertheless it cannot be relied upon as a basis for predicting judicial decision."<sup>113</sup>

2. "The courts soon came to recognize that the test must necessarily vary with the nature of the power conferred. It is quite all right to insist, with exactly measurable precision, that a liquor control commission may not license a dramshop within 500 feet of a church or school; but when the question is how many customers a contract motor carrier may serve, a greater measure of discretion must be accorded the agency, to permit it to fulfill the purpose for which it was created.

"It has been recognized that loose and imprecise standards--referrable to such elusive concepts as 'adequacy' of a service, or 'appropriateness' of a bargaining unit, or other criteria not susceptible of proof or disproof by objective tests--are valid whenever it is impracticable to lay down more precise controls. This concession has meant that the legislature may delegate such measure of discretionary power as the court considers wise and proper in the circumstances of a particular case. Thus, determinations of the validity of the delegations are governed not by jurisprudential analysis of the sufficiency or precision of the standard selected by the legislature, but rather by ad hoc assessment of variable and imponderable desiderata."<sup>114</sup>

After disclaiming the existence of any "logical basis" for determining how far the nature of a situation permits or prohibits the legislative fashioning of specific standards, Cooper seeks to identify practical considerations which have seemed to motivate judicial decisions on delegation questions.<sup>115</sup> He concludes that courts have been unwilling to sustain vague standards where the

arbitrary exercise of any agency's discretionary powers could have calamitous effects on substantial rights of property. This consideration seems to cut against the validity of the Ground Water Act delegation of power to develop pumping level regulations, at least insofar as there is a risk that some small farmers may be driven out of business by the regulations. On the other hand, Cooper notes that broad delegations tend to be sustained when judicial review is readily available to correct abuses (as it is under section 42-237e of the Ground Water Act), when there is an obvious need for agency expertise, and when there is a genuine and substantial need for administrative regulation. All these factors seem to cut in favor of the validity of the delegation in the Ground Water Act. It is impossible, however, to say with certainty how a court would weigh the competing considerations.

The statutes of a number of western states which apply the appropriation doctrine to groundwater either refer to protecting senior appropriators in the maintenance of reasonable pumping levels or contain equivalent language.<sup>116</sup> There is little on the face of these statutes which would aid in construing the Idaho Ground Water Act, however.

One of the more interesting out of state judicial decisions is the Colorado case of Kuiper v. Well Owners Conservation Association,<sup>117</sup> in which regulations issued by the State Engineer for the coordinated administration of surface and groundwater appropriations from hydrologically connected sources were challenged. The Colorado supreme court reversed the judgment and upheld the

regulations. The court stated that the regulations were presumed to be valid until shown otherwise by a preponderance of the evidence, and the plaintiffs had failed to prove invalidity of the regulations. One of the specific challenges which the plaintiffs made was that the regulations failed to maximize the beneficial use of all waters of the state as required by the Water Right Determination and Administration Act of 1969. In rejecting this challenge, the court said:

"It is reflected throughout the record that the studies of the Platte River were not completed. There was testimony that far more would be known about underground flows in two years from the time of hearing (September 1969) as a result of studies then in progress. It would be an impossibility for the State Engineer in 1969 to promulgate regulations which would realize the maximum use of all of the surface and ground water of the Platte. All that can be expected is that he exercise his best judgment, using information then available to attempt to reach the goal of maximal use, of course without being arbitrary or capricious."<sup>118</sup>

If the Idaho court were to adopt this attitude, it would greatly facilitate the prompt development of reasonable pumping level regulations in an effort to achieve a balance between the appropriation doctrine principle that first in time is first in right and the policy of the Ground Water Act to promote the full economic development of the state's groundwater resources.

#### D. Some Problems of Administration

1. Selection of Wells for Closure. In Baker v. Ore-Ida Foods, Inc.,<sup>119</sup> a groundwater basin was being depleted in violation of the prohibition against mining in section 42-237a(g). To correct the situation, the court simply applied the appropriation doctrine

principle that priority in time gives priority in right and ordered wells closed in inverse order of priority until the overdraft was stopped. Would the same solution fit if the problem were that junior wells had been interfering with the pumping level of a senior well owner but there was no general mining of the aquifer? Section 42-237a(g) provides:

"[E]arly appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the . . . [Director of the Department of Water Resources] as herein provided."

The Director has not yet issued pumping level regulations, but let us suppose that such regulations have been issued and a senior well owner's rights under those regulations are being violated. Which wells will be shut down--all those in the aquifer with priority dates junior to his or only some of them; and if only some are to be closed, which ones?

At the outset it should be observed that application of the appropriation doctrine principle that priority in time gives priority in right to groundwater allocation presents difficulties not encountered in the application of that principle to surface water allocation. Groundwater moves much slower than surface water, typically at rates ranging from five feet per day to five feet per year.<sup>120</sup> If a junior appropriator who is interfering with the flow of a senior's well is shut down, it may be years before the senior's flow is restored.<sup>121</sup> Also, because groundwater is not readily observable and most groundwater does not flow in confined channels, there may be greater difficulty in predicting the effect of shutting down a junior. To take a specific example, assume there are

30 pumpers in a basin, and number 26's pumping level protection is violated. Number 27 is close to number 26, and closing his well would restore number 26's pumping level in a relatively short time. Number 28 is farther away from number 26. Closure of his well would, by itself, restore number 26's pumping level, but it would take several years for this to happen. Number 29 is still farther away and closing his well might help number 26, but there is considerable uncertainty about that. Number 30 is situated so that it is inconceivable closing his well would have any noticeable effect upon number 26's well or the wells of numbers 27, 28, and 29. Which well or wells should be shut down?

Generally, a junior appropriator who wishes to divert water has the burden of proving, by clear and convincing evidence, that his diversion will not injure any senior appropriator. Most of the Idaho cases applying this principle have been surface water cases;<sup>122</sup> but the court has applied it in the groundwater context as well,<sup>123</sup> although perhaps not consistently.<sup>124</sup> Even if number 30 has the burden of proof of no interference, he should be allowed to continue to operate his well. A possible solution as to numbers 27, 28, and 29 would be to shut down 27 and 28 but to allow 29 to continue to operate. Closure of number 27 would restore number 26's reasonable pumping level as promptly as possible. Closure of number 28 would, after several years, enable number 27 to resume operation of his well. For that reason, number 27 should be able to insist upon closure of number 28 at the same time his well is closed.<sup>125</sup> Under the rule that puts the burden of proof upon the junior to show that his diversion of water will not harm any senior,

it would appear at first blush that number 29 should also be closed. If that were done, however, it would not necessarily enable number 28 to resume pumping at some future time. The reason is that allowing number 28 to resume operation after some length of time may subsequently turn out to cause interference with number 26's protected pumping level, and then number 26 could insist on closure of number 27 to get the situation corrected promptly. Thus, number 27 ought to be able to insist that number 28 remain closed absent clear and convincing proof by number 28 that number 26 would not be harmed by allowing him (number 28) to operate after a period of time and relying on closure of number 29 to protect number 26. If number 28 must remain closed and that, in itself, will protect number 26, there would seem to be no point in also closing number 29. Arguably number 29 could be allowed to continue to operate, then, even under a rule that puts the burden of proof of no injury on him, upon the ground that if number 28 must remain closed it becomes clear that number 29's operation won't injure numbers 26, or 27 (it is assumed), or 28.

Turning away from the above hypothetical, let us assume a situation in which closure of a junior would restore a senior's protected pumping level but, due to the slow movement of groundwater, this will not occur for about 40 years. Should the time lag make the priority principle of the appropriation doctrine inoperative? In favor of an affirmative answer is the fact that by the time the senior's reasonable pumping level is restored, he may well have gone broke and lost the investment in facilities which

is protected by the reasonable pumping level concept. This would not necessarily happen, however, especially if the junior is held liable in damages to the senior for increased pumping costs until the reasonable level is restored. Although not squarely in point, a recent Colorado decision is worth noting in connection with the time lag problem. In Hall v. Kuiper,<sup>126</sup> the Colorado court affirmed the denial of applications to drill two wells into a groundwater source that was hydrologically connected with the Cache La Poudre River some 13 miles away. Operation of the proposed wells could not have materially affected other wells or surface rights in the area, but the permits were denied because operation of the wells would have reduced the amount of groundwater flowing into the Cache La Poudre River. Since the groundwater was moving toward the Cache La Poudre at a rate of only 3/10th of a mile per year, it is evident that there would have been a considerable time lag between commencement of operation of the wells and any impairment of appropriations from the Cache La Poudre.

2. Retroactivity. Can reasonable pumping level regulations be applied retroactively (1) to water rights which were acquired prior to the 1953 amendment to the Ground Water Act which authorized the promulgation of such regulations and (2) to water rights which were acquired after 1953 but prior to the issuance of reasonable pumping level regulations? The first step in analyzing this issue is to determine whether the legislature intended pumping level regulations to apply retroactively. Two sections of the Ground Water Act are in point. Section 42-229 provides that "the



administration of all rights to the use of ground water, whenever or however acquired, shall, unless specifically excepted herefrom, be governed by the provisions of this act." This provision, which has been a part of the Ground Water Act since its adoption in 1951, seems to indicate that pumping level regulations should apply retroactively--unless, of course, a specific exception for pumping level regulations were found elsewhere in the Act.

The Ground Water Act did not include any reference to pumping level regulations, however, until the Act was amended in 1953. One of the amendments, now appearing as section 42-237a(g), authorizes the Director of the Department of Water Resources:

"to supervise and control the exercise and administration of all rights hereafter acquired to the use of ground waters and in the exercise of this power he may by summary order, prohibit or limit the withdrawal of water from any well during any period that he determines that water to fill any water right in said well is not there available. To assist the . . . [Director] in the administration and enforcement of this act, and in making determinations upon which said orders shall be based, he may establish a ground water pumping level or levels in an area or areas having a common ground water supply as determined by him as hereinafter provided."  
(Emphasis added.)

The reference to rights "hereafter acquired" in this section, which specifically refers to pumping level regulations, seems to compel to the conclusion that the legislature did not want such regulation applied retroactively. It is true that the statute refers to closing "any well", but the context of this phrase appears to indicate that it should be read to mean "any well for which a water right is hereafter acquired." Section 42-237a(g) is not worded as a specific exception to the general retroactivity of section 42-229,

but as the later expression of legislative intent it should control. The unfortunate aspect of this line of reasoning is that an effective scheme of reasonable pumping levels could, in the certain fact situations, be impossible to achieve if pre-1953 groundwater rights were exempt from the system of regulation and were not subject to any comparable common law reasonable pumping level rule.

If the Ground Water Act scheme of reasonable pumping level regulations does not apply to pre-1953 groundwater appropriators, it then becomes important to determine what rights such appropriators have under the prior common law to protection of pumping levels. Six pre-Ground Water Act cases bear on the pumping level protection issue. In the first two cases, Bower v. Moorman<sup>127</sup> and Jones v. Vanausdeln,<sup>128</sup> senior artesian well owners sought unsuccessfully to enjoin the diversion of water from junior wells. The seniors were unsuccessful in both cases only because they failed to establish by clear and convincing evidence that operation of the junior wells would have impaired the artesian flow from their senior wells. The strong implication of both cases is that clear proof of permanent interference would have entitled the seniors to injunctions protecting their existing means of diversion.

In Nampa & Meridian Irrigation District v. Petrie,<sup>129</sup> an irrigation district had contracted with the United States for construction of a reclamation project consisting of both irrigation and drainage works. In connection with the project, the district calculated the benefits to the various tracts in the district from the project and levied assessments accordingly. The trial court

approved the assessments subject to modifications which are not material here. State statute provided that assessments must be made in accordance with the benefits which will accrue to each of the tracts. Various landowners appealed their assessments to the state supreme court. One of them argued that he would be benefited little by reclamation project water because he already had a groundwater right for his land and, therefore, his assessment was not in accordance with his benefits from the project. The court rejected the argument for the following reasons:

"If it should be conceded that appellant Blucher's use of the subterranean waters as shown by the evidence gave him a valid water right, nevertheless the additional water right furnished for his land under the . . . [project] would be sufficient benefit to the land to justify the assessment made. We concluded, however, that he had no right to insist the water-table be kept at the existing level in order to permit him to use the underground water. There is no proof that he secured water from a natural subterranean stream. The evidence tends to show that he secured it from water collected beneath the surface of the ground due to seepage and percolation. To hold that any land owner has a legal right to have such a water table remain at a given height would absolutely defeat drainage in any case, and is not required by either the letter or spirit of our constitutional and statutory provisions in regard to water rights."<sup>130</sup>

The latter part of the court's rationale is interesting. It seems to say that appellant Blucher had no right to prevent lowering of the water table below a level from which he could extract the water, i.e., he had no right to protection of his traditional means of diversion. How, if at all, does this square with the prior cases of Bower v. Moorman and Jones v. Vanausdeln? Several possibilities are considered below.

First, Bower and Vanausdeln could mean that a senior well owner's means of diversion is protected against interference by a junior well appropriator, while the Nampa & Meridian case says that the protection does not extend to interference by a drainage project. The court made no real effort to develop or justify such a distinction, however. Second, the court may have felt that a means of diversion which required a water table level that interfered with drainage from other lands was unreasonable under the circumstances and that such an unreasonable means of diversion should not be protected. None of this was made explicit by the court, however. Third, the Nampa & Meridian case came only one year after Public Utilities Commission v. Natatorium Company, which may have appeared to adopt the rule of absolute ownership of percolating waters that are not tributary to a stream.<sup>131</sup> Under the rule of absolute ownership, a well owner has no right to the maintenance of water table levels. Thus, the court may have been thinking that waters in the Nampa & Meridian case would be governed by the rule of absolute ownership rather than the doctrine of prior appropriation. Some support for this theory can be found in the fact that the court took care to point out that the waters did not form a subterranean stream, which is significant because the Natatorium case clearly left subterranean streams subject to the appropriation doctrine.

The next competing well owner dispute to reach the court was Hinton v. Little,<sup>132</sup> in 1931. As described previously,<sup>133</sup> the court there refused to construe the Natatorium case as adopting the rule of absolute ownership for waters percolating through the soil. To

the extent that the court's pronouncements concerning water table levels in the Nampa & Meridian case are based upon the Natatorium case, then, they should be viewed as suspect after Hinton v. Little.

The plaintiffs in Hinton v. Little were senior artesian well owners who complained that the defendants' wells, which were junior in time, were reducing artesian pressure and thus interfering with the flow from their wells. The trial court entered an injunction pendente lite, and the defendants appealed immediately. The bulk of the appellate opinion discusses whether or not the appropriation doctrine should govern the dispute. Upon deciding that question in the affirmative, the court, without further discussion, said it followed that the injunction was proper. In other words, the seniors were entitled to protection of their means of diversion against interference from the junior well owners.

In Silkey v. Tiegs,<sup>134</sup> decided the same year as Hinton, the plaintiff and the defendants had flowing artesian wells which tapped the same source. The plaintiff's wells were senior in time. The trial court found that the defendants' wells were diminishing the flow from the plaintiff's wells and entered an injunction against further interference. On appeal the main issue was whether or not the plaintiff had valid appropriations since she had obtained no permit for the wells. Upon deciding that no permit was necessary, the court affirmed the injunction because "there is insufficient water to satisfy the prior rights in full."<sup>135</sup> Affirmance of the injunction implies, of course, that the plaintiff had a right to her existing means of diversion, namely, artesian pressure.

The last pre-Ground Water Act case is Noh v. Stoner,<sup>136</sup> decided in 1933. Again, the court protected a senior appropriator's means of diversion by enjoining junior well owners from depleting the same artesian basin tapped by the senior well, although it added that the owners of the junior well could avoid an injunction by paying all expenses connected with lowering the pump in the senior well so it would produce the same amount of water as before.

In summary, the pre-Ground Water Act cases, except for Nampa & Meridian, indicate that a senior well appropriator may be protected in his existing means of diversion against interference by a junior well appropriator. The protection might take the form of either: (1) an injunction prohibiting the junior from interfering with the flow from the senior well, (2) an arrangement whereby the junior furnishes lost water to the senior at no cost to the senior, or (3) a payment by the junior to compensate the senior for increased water extraction costs. Still to be considered, however, is whether the pre-Ground Water Act cases protect a senior groundwater appropriator's means of diversion without regard to its reasonableness or whether the protection applies only if the senior's means of diversion is reasonable.

In Bower v. Moorman and Jones v. Vanausdeln, senior appropriators were denied injunctions to protect their existing means of diversion but only because the requisite proof of causation of interference by junior wells was lacking. In Hinton v. Little and Silkey v. Tiegs, senior appropriators did obtain injunctions which protected their existing means of diversion. In all four cases, the senior wells were flowing artesian wells, i.e., the

sole means of diversion was artesian pressure. In none of the cases was the reasonableness of the means of diversion questioned. In evaluating these cases, the last of which was decided in 1931, it should be borne in mind that it was not until about 1937 that the vertical turbine pump was perfected and commercialized.<sup>137</sup>

"Prior to commercialized use of the deep well turbine pumps, the depth from which water could be pumped was restricted by the practical physical limitation of the suction-lift pump to approximately 25 feet of lift, although there was some tendency to set suction lift pumps in excavated pits which permitted pumping from slightly greater depths."<sup>138</sup>

In Bower the senior artesian wells were 360 feet deep; in Vanausdeln they were 550 and 560 feet deep; in Hinton the depth is not given; in Silkey the wells were 1200 feet deep. Given the state of pumping technology, it is not at all clear that the senior appropriators could reasonably have been expected to accept much reduction in artesian pressure and to install pumps at their own expense. The court may well have had in mind the state of the art when in Silkey v. Tiegs, it characterized the situation as one in which "there is insufficient water to satisfy the prior rights in full."<sup>139</sup> Arguably, then, Bower, Vanausdeln, Hinton, and Silkey do not compel protection of a senior appropriator's means of diverting groundwater if that means would, under modern pumping technology, be regarded as unreasonable.

Noh v. Stoner is the most important pre-Ground Water Act case on the question of whether a senior groundwater appropriator's means of diversion will be protected without regard to its reasonableness. The senior appropriators had two wells which apparently used a combination of artesian pressure and pumps for diverting the water to

the surface. They obtained an injunction prohibiting the owners of a junior well from interfering with their flow despite an argument by the juniors that the seniors' means of diversion were not reasonable. The court's rationale deserves careful scrutiny because it is important to determine whether the injunction was allowed (1) because the seniors' means of diversion was in fact determined to be reasonable under the circumstances, or (2) because the reasonableness or unreasonableness of their means of diversion was irrelevant.

In support of their contention that the seniors' means of diversion was unreasonable and thus should not be protected, the owners of the junior well relied mainly upon two California authorities--Natoma Water & Mining Co. v. Hancock,<sup>140</sup> and the California Jurisprudence encyclopedia. The court's analysis of these two authorities is interesting. It found no support in the Natoma case for the juniors' theory because that case:

"rests upon Barrows v. Fox, 98 Cal. 63, 32 Pac. 811, and approves the doctrine therein to this effect: an earlier appropriator is not required to bear the expense incident or necessary to secure a flow of water to a later appropriator." (Emphasis added.)<sup>141</sup>

This statement by the Idaho court is something of an oversimplification. In Barrows v. Fox the California court refused to require a surface stream appropriator to increase the efficiency of his means of diversion, which was "the usual and ordinary means of diverting water . . . in . . . [the] state."<sup>142</sup> The Barrows and Natoma cases together mean that: (1) a senior appropriator (in the words of the Natoma court) "must use . . . reasonably efficient



appliances in making his diversion, in order that the surplus may not be rendered unavailable to those [juniors] who are entitled to it,"<sup>143</sup> but (2) usual and ordinary means of diverting water are reasonable.<sup>144</sup> Neither Barrows nor Natoma says that a means of diversion will be protected without regard to its reasonableness.

Under the Barrows and Natoma cases, the Idaho court could have supported its result in Noh v. Stoner by finding that the seniors' means of diversion was usual and ordinary and, thus, reasonable. The Idaho court did not say that, however, and one is left wondering whether the court regarded the question of reasonableness as irrelevant, so that the seniors were entitled to protection of their means of diversion even if it was not reasonable. Some clue to the court's thinking can perhaps be found in its citation of seven cases which it said sustain the doctrine of Barrows v. Fox.<sup>145</sup> Most of the cases indicate that an appropriator's means of diverting water or of transporting water to his place of use will be protected only to the extent that it is not wasteful. Certainly, none of the cited cases is inconsistent with that principle. Thus, it is not at all clear that the Idaho court intended in Noh v. Stoner to reject the reasonableness criterion when it found the Natoma case unpersuasive.

The junior appropriators in Noh also relied upon the following statement from the California Jurisprudence encyclopedia:

"A court of equity may, under proper circumstances, compel a prior appropriator to change the manner of his use so as to prevent unnecessary injury to those having subordinate rights, . . . ."<sup>146</sup>

The Idaho court found no support in this for the junior appropriators because:

"The . . . [encyclopedia], however, has this in addition: 'Of course, any interference with the rights of prior appropriators is actionable. Whether a subsequent use causes such interference is a question of fact.' Herein the [trial] court has found on substantial though conflicting evidence that appellants' use interferes with respondents'." (Emphasis added)<sup>147</sup>

Under the last-quoted language the crucial question is whether any rights of the seniors were violated. Specifically, did their appropriation include a right to use water stored in the basin for pumping lift? The court's analysis begs that question.<sup>148</sup>

Idaho court in Noh also relied for its result upon the earlier case of Bower v. Moorman. As argued earlier,<sup>149</sup> that case does not necessarily require protection of a senior's means of diversion, however, if that means would be regarded as unreasonable in view of modern pumping technology. The Noh court also found applicable the principle that an appropriator may not change his point of diversion to the injury of another appropriator, even a junior appropriator.<sup>150</sup> The relevance of this rule is difficult to grasp. At least, this writer has found no other authority which has regarded it as a helpful analogy in pumping level disputes. The question begging nature of the analogy is made apparent by the following hypothetical. Suppose there are two surface stream appropriators, with the senior appropriator's point of diversion and place of use upstream from the junior's such that return flow from the senior's irrigation returns to the stream above the junior's point of diversion. The senior then decides that he wishes to move his

point of diversion and place of use downstream below the junior's. Under the no-injury rule for water transfers, the senior may not make the transfer if the resulting change in return flow pattern will "injure" the junior. Is the junior "injured" if he could still receive his appropriation by making reasonable improvements in his means of diversion? The Idaho court has never passed on whether a junior appropriator is entitled to protection of his historic means of diversion without regard to its reasonableness in the transfer situation. For that reason, the court was relying on an empty analogy in its reference to the no-injury rule for water transfers.

A more appropriate analogy would seem to be the principle - reaffirmed by the Idaho court as recently as 1972<sup>151</sup> - that the public policy against wasting water prohibits unreasonable loss in the transportation of water from the point of diversion to the place of use. The court has said that an appropriator must construct flumes, pipes, or other lining if necessary to prevent unreasonable loss in the transporting of his water.

Finally, the court reasoned in Noh that if the owners of the junior well could in effect compel the seniors to deepen their wells in order to restore their flow, the result would be a race for the bottom of the basin and that would be undesirable. There was no indication in Noh, however, that aggregate net benefits accruing from the groundwater basin would be increased by holding for the owners of the junior well. If it were shown in a particular case that judicial refusal to protect an unreasonable means of diversion would maximize net benefits from the water resource, the issue would seem to be different from that in Noh.

Arguably, then, Noh v. Stoner does not necessarily have to be read as protecting a senior well owner's historic means of diversion without regard to its reasonableness. Nevertheless, it has generally been so interpreted.<sup>152</sup> Furthermore, that is how the Idaho court construed it in dictum in the recent case of Baker v. Ore-Ida Foods, Inc.<sup>153</sup> The court observed that "[a]pparently our Ground Water Act was intended to eliminate the harsh doctrine of Noh." It also found - in a 1963 amendment to the state constitution which was intended to enable the legislature to create a water resource agency with power to formulate and implement a state water plan, construct and operate water projects, issue bonds, generate and sell electric power, and appropriate water<sup>154</sup> - a constitutionally enunciated policy of general application to promote the optimum development of water resources in the public interest. The court further stated: "We hold Noh to be inconsistent with the constitutionally enunciated policy of optimum development of water resources in the public interest."<sup>155</sup> This statement probably should not be read as overruling Noh since technically it is only dictum, notwithstanding the court's introductory phrase "We hold." Nevertheless, it is a strong indication that the court is prepared to overrule Noh if the occasion presents itself.

Assuming that Noh does protect pre-Ground Water Act appropriators in their historic means of diversion without regard to the reasonableness of those means, where would those appropriators stand if the court should overrule it? Unless an overruling decision is made prospective only in application, the overruled case becomes non-law.<sup>156</sup>

In other words, Noh would be regarded as never having been the law at all, and pre-Ground Water Act appropriators would, under the common law, be protected only in reasonable means of diversion. This would be the result unless the court should find some constitutional basis or judicial policy reason for not giving the overruling decision full retroactive effect. It is now generally established that such retroactive application of an overruling decision is not prohibited by the due process clause or any other constitutional provision even when property rights are involved.<sup>157</sup> As a matter of judicial policy courts may decline to give an overruling decision retroactive effect where (1) the prior rule has been justifiably relied upon, or (2) the purpose of the new rule can be adequately accomplished without applying it retroactively, or (3) retroactive application would burden the administration of justice by allowing many cases to be relitigated.<sup>158</sup> Thus, for example, the Idaho court made its recent decision to abolish the sovereign immunity defense in tort cases prospective in order to protect the reliance interest of public bodies on the existing state of the law.<sup>159</sup> The overruling of Noh would not likely present any judicial policy reasons for denying retroactive application to the decision. First, pre-Ground Water Act appropriators would not seem to have a worthy reliance interest in claiming protection for unreasonable means of diversion. Even if the overruling decision were retroactive, such persons would still be protected in the maintenance of reasonable pumping levels. Thus, they are not likely to be subjected to undue hardship by retroactive operation of an overruling decision. Second, in cases where

pre- and post-Ground Water Act wells are in close proximity, it may be difficult, if not impossible, to develop a workable pumping level scheme for the post-Act wells if the pre-Act wells are protected in unreasonable means of diversion. Furthermore, if the overruling of Noh were to apply only to water rights acquired after announcement of the overruling decision, there would be no point in overruling it because such rights would not be governed by the common law of prior appropriation but by the Ground Water Act. Third, retroactive application of a decision overruling Noh, unlike perhaps retroactive application of a criminal law decision on the right to counsel, would not lead to relitigation of many cases.

Thus, even though the 1953 statute authorizing the administrative issuance of reasonable pumping level regulations appears not to have been intended to apply retroactively, it is not necessary to conclude that pre-Act wells are protected in their historic means of diversion without regard to reasonableness. Arguably, at least, Noh v. Stoner did not hold that an unreasonable means of diversion is legally protected. If, however, it did so hold, the Idaho court has in Baker v. Ore-Ida Foods, Inc. signalled a willingness to overrule that decision and subject such wells to a common law reasonable pumping level rule.

## FOOTNOTES

1. The current Ground Water Act consists of Idaho Code Ann. §§ 42-226 to -231, 42-233a, 42-237 to -239.
2. Idaho Code Ann. §42-229 (Supp. 1973).
3. Idaho Code Ann. §42-230(a) (Supp. 1973).
4. E.g., Silkey v. Tiegs, 51 Idaho 344, 5 P.2d 1049 (1931). Intent to make an appropriation is also necessary, e.g., State ex rel. Reynolds v. Miranda, 493 P.2d 409 (N.M. 1972) but that is so seldom lacking that it usually is not even listed as an element of an appropriation.
5. The agency formerly was called the Department of Water Administration, and before that the Department of Reclamation. Most of the statutes in the Idaho Code referring to the Department of Reclamation have never been amended on an individual basis to reflect the changes in name of the agency. Idaho Code Ann. §42-1801a instead provides: "Wherever the words Department of Reclamation or Department of Water Administration appear in the Idaho Code they shall mean the Department of Water Resources, and wherever the words State Reclamation Engineer or Deputy State Reclamation Engineer appear in the Idaho Code they shall mean the Director of the Department of Water Resources or the Deputy Director of the Department of Water Resources, respectively."
6. Idaho Code Ann §§42-202, -229 (Supp.1971). An application for a permit must contain certain information about the proposed project and be accompanied by a plan and map of the facilities and payment of a fee which varies with the size of the appropriation. Idaho Code Ann. §§42-202, -221 (Supp. 1973). The Department then publishes notice of the application, and if anyone files a protest against approval of the application, a hearing is held. Idaho Code Ann. §42-203 (Supp.1973).
7. H.B. No. 146, §1 [1903] Idaho Sess. Laws 223.
8. Idaho Code Ann. §42-203 (Supp.1973). See also section 42-233a regarding denial of permits for wells in areas designated as critical groundwater areas.
9. Idaho Code Ann. §§42-219, -220 (Supp. 1973).
10. Idaho Code Ann. §42-223a (Supp.1973).

11. Id.
12. Silkey v. Tiegs, 51 Idaho 344, 5 P.2d 1049 (1931).
13. Silkey v. Tiegs, note 20 supra says that a priority under the permit procedure "dates from the date of the permit." 51 Idaho at 353, 5 P.2d at 1053. This appears to be loose language in view of prior analogous surface water cases which say that a permit procedure appropriation dates from the time of filing an application for a permit. Reno v. Richards, 32 Idaho 1, 10-11, 178 P. 81,84 (1918); Crane Falls Power and Irrigation Co. v. Snake River Irrigation Co., 24 Idaho 63, 81-82, 133 p.655, 661 (1913).
14. Idaho Code Ann. §42-220 (1948).
15. Idaho Code Ann. §42-607 (Supp.1973).
16. Ch. 216, §1, (1963) Idaho Sess. Laws 623.
17. State ex rel. Tappan v. Smith, 92 Idaho 451, 444 p.2d 412 (1948).
18. See State ex rel. Tappan v. Smith, 92 Idaho 451, 444 P.2d 412 (1968).
19. Idaho Code Ann. §42-227 (Supp.1973). Section 42-230(d) defines "domestic purposes" as follows: "Water for household use or livestock and water used for all purposes including irrigation up to one-half ( $\frac{1}{2}$ ) acre of land in connection with said household where total use is not in excess of thirteen thousand (13,000) gallons per day. For the purposes of the exception in, section 42-227, Idaho Code, 'domestic purposes' shall not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments."
20. Idaho Code Ann. §42-228 (Supp.1973).
21. Id.
22. Idaho Code Ann. §42-226 (Supp.1973).
23. See 3H. Farnham, Waters and Water Rights §935 (1904).
24. J. Gould, Waters §§280-91 (1883). There was, and continues to be, some dispute in the law as to the categories and sub-categories of groundwater. E. Hanks and J. Hanks, The Law of Water in New Jersey: Groundwater, 24 Rutgers L. Rev. 621, 628 (1970). For an elaborate scheme of classification see 2 C, Kinney, Law of Irrigation and Water Rights §1152 (2d ed. 1912).
25. J. Gould, Waters 281 (1883); J. Long, Irrigation §43 (2d ed. 1916).



26. See 2 S. Wiel, Water Rights in the Western States §§1039-66 (3d ed. 1911); E. Hanks and J. Hanks, The Law of Water in New Jersey: Groundwater, 24 Rutgers L. Rev. 621, 630-39 (1970); M. Kirkwood, Appropriation of Percolating Water, 1 Stan. L. Rev. 1 (1948)
27. E.g., 6A American Law of Property, §§28.65-28.68 (A. Casner ed. 1954); 5 R. Powell, Real Property ¶ 725-27 (1968); E. Hanks and J. Hanks, The Law of Water in New Jersey: Groundwater, 24 Rutgers L. Rev. 621 (1970).
28. C. Corker, Ground Water Law, Management and Administration, National Water Commission Legal Study No. 6, at 112-13 (1971).
29. The leading case is Acton v. Blundell, 12 M. and W. 324, 152 Eng. Rep. 1223 (Ex. 1843). While Acton v. Blundell is usually regarded as the genesis of the rule of absolute ownership, Wiel points out that an earlier American case, Greenleaf v. Francis, 18 Pick (Mass.) 177 (1836), reached much the same result on similar facts. 2 S. Wiel, Water Rights in the Western United States §1039, n. 1 (3d ed. 1911).
30. The only limits are that the water must not be extracted for a malicious purpose and it must not be allowed to go to waste. F. Maloney, S. Plager, and F. Baldwin, Water Law and Administration: The Florida Experience §54.2(a) (1968). Even these limits are not universally accepted. In the infamous case of Huber v. Merkel, 117 Wis. 355, 94 N.W. 354 (1903) it was held that a farmer could allow an artesian well on his land to flow and the water go to waste, for the malicious purpose of injuring his neighbor's well.
31. 5 R. Powell ¶725 (1968) reports cases from twenty-eight states which had accepted the rule at some point prior to 1922. An exhaustive collection of early cases can be found in Annot., 55 A.L.R. 1385, 1390-98 (1928). See also 2 S. Wiel, Water Rights in the Western United States §1039 (3d ed. 1911).
32. Bassett v. Salisbury Manufacturing Company, 43 N.H. 569, 577 (1862).
33. Forbell v. City of New York, 164, N.Y. 522, 58 N.E. 644 (1900) The New York court did not even mention the earlier New Hampshire decision. It is ironic that while Forbell is now regarded as a landmark reasonable use decision, the court expressly declined to reject the absolute ownership decisions and sought instead to distinguish them on their facts. Several respected commentators have concluded that the rule of absolute ownership still governs certain fact situations in New York. See F. Trelease, Water Law 105 (1967); E. Hank and J. Hank, The Law of Water in New Jersey: Groundwater, 24 Rutgers L. Rev. 621, 636 (1970); M. Kirkwood, Appropriation of Percolating Water, 1 Stan L. Rev. 1 (1948).

34. 2 S. Wiel, Water Rights in the Western States §1041 (3d ed. 1911). Accord, E. Huffcut, Percolating Waters: The Rule of Reasonable User, 13 Yale L.J. 222 (1904).
35. Meeker, v. City of East Orange, 77 N.J.L. 623, 74 A. 379 (1909) (dictum).
36. E.g., Meeker v. City of East Orange, 77 N.J.L. 623, 74 A. 379 (1909); Forbell v. City of New York, 184 N.Y. 522 (1900). For recent scholarship on the line of demarcation between a reasonable and an unreasonable use, see F. Maloney, S. Plager, and F. Baldwin, Water Law and Administration: The Florida Experience §54.2(b)(3)(1968); E. Hanks and J. Hanks, The Law of Water in New Jersey: Groundwater 621, 636-37 (1970).
37. Katz v. Walkinshaw, 141 Cal. 116, 70 P.663, 74 P.766 (1903).
38. See 2 S. Wiel, Water Rights in the Western States §§1041-65 (3d ed. 1911).
39. See J. Sax, Water Law, Planning and Policy 462 (1968). The correlative rights doctrine resolves disputes between competing well owners who are both using the water on non-overlying land by giving preference to the prior appropriator. Katz v. Walkinshaw, 141 Cal 116, 70 P.663, 74 P.766 (1903). When the conflict is between an overlying user and a non-overlying user, the overlying user is paramount regardless of when he began his use. The non-overlying user is entitled to water only if there is a surplus beyond reasonable overlying needs. Burr v. Maclay Rancho Water Co., 154 Cal. 428, 98 P.260 (1908); Katz v. Walkinshaw, 141 Cal. 116, 70 P.663, 74 P.766 (1903).
40. Substitute for H.B. No. 183, §2 (1899) Idaho Sess. Laws 380 (emphasis added). The statute remained in force unchanged until 1971 when it was amended slightly in several respects not relevant here. See Idaho Code Ann. 42-103 (Supp.1973).
41. See appellant's brief in Bower v. Moorman, 27 Idaho 162, 165-66 (1915); Note, 80 U. Pa. L. Rev. 133 (1931).
42. Note, 80 U. Pa. L. Rev. 133 (1931), See also C. Corker, Ground Water Law, Management and Administration, National Water Commission Legal Study No. 6, at viii (1971).
43. 15 Idaho 405, 98 P.415 (1908).
44. See, e.g., Hinton v. Little, 50 Idaho 371, 296 P.582 (1931); W. Hutchins, The Idaho Law of Water Rights, 5 Idaho L. Rev. 1, 115-16 (1918)

45. Of course, hydrologists would scoff at the compartmentalization of the hydrologic cycle implicit in a negative answer to this question. See G. Widman, Groundwater - Hydrology and Problems of Competing Well Owners, 14 Rocky Mt. Min. L. Inst. 523 (1968).
46. See Public Util. Comm. v. Natatorium Co., 36 Idaho 287, 302 211 P.533, 535 (1922) for a suggestion that the answer to this question should be negative.
47. 27 Idaho 162, 147 P.496 (1915). Four years earlier the court applied the appropriation doctrine to a spring and an artesian well, but apparently neither party to the litigation urged the court to consider any other doctrine. Youngs v. Regan, 20 Idaho 275, 118 P.499 (1911).
48. 27 Idaho at 179, 147 P. at 501.
49. See note 46 infra and accompanying text.
50. 28 Idaho 743, 156 P.615 (1916).
51. 28 Idaho at 749, 156 P. at 617.
52. See n. 9, supra.
53. 36 Idaho 287, 211 P.533 (1922).
54. One wonders whether the water source would not, today, be regarded as geothermal water. For a discussion of geothermal resources, see O. Olpin, The Law of Geothermal Resources, 14 Rocky Mt. Min. L. Inst. 123 (1968). Discussion of recent federal legislation on the development of geothermal resources under public lands can be found in A. Bible, the Geothermal Steam Act of 1970. 8 Idaho L. Rev. 86 (1971). In 1972 the Idaho legislature enacted a geothermal resources act. H.B. No. 732 (1972) Idaho Sess. Laws 749.
55. 36 Idaho at 299, 211 P. at 534.
56. 36 Idaho at 300, 211 P. at 534-35.
57. Fire Dist. No. 1 v. Graniteville Spring Water Co., 103 Vt. 89, 91, 152 A.42, 43 (1930). See also Acton v. Blundell, 12 M. and W. 324, 354-55, 152 Eng. Rep. 1223, 1235 (Ex. 1843)(the leading case on the rule of absolute ownership); F. Maloney, S. Plager and F. Baldwin, Water Law and Administration: The Florida Experience §54.2(a)(1968).
58. 36 Idaho at 300, 211 P. at 535.
59. 36 Idaho at 311, 211 P. at 539.

60. Id.
61. Union Central Life Ins. Co. v. Albrethsen, 50 Idaho 196, 294 P.842. (1930).
62. 50 Idaho at 204, 294 P. at 845.
63. 50 Idaho 371, 296 P. 582 (1931).
64. See note 39 supra and accompanying text.
65. 50 Idaho at 379, 296 P. at 584.
66. Id.
67. See Stevenson v. Steele, 93 Idaho 4, 453 P.2d 819 (1969); State ex rel. Tappan v. Smith 92 Idaho 451, 444 P.2d 412 (1968); Noh v. Stoner, 53 Idaho 651, 26 P.2d 1112 (1933); Silkey v. Tiegs, 51 Idaho 344, 5 P.2d 1049 (1931), modification of decree denied 54 Idaho 126, 28 P.2d 1037 (1934).
68. See Note, 1 Idaho L.J. 190 (1931).
69. Baker v. Ore-Ida Foods, Inc. 513 P.2d 627 (Idaho 1973).
70. Idaho Code Ann §42-230 (Supp. 1973).
71. The data in this section derives from J. Crosby, A Layman's Guide to Groundwater Hydrology in C. Corker, Ground Water Law, Management and Administration, National Water Commission Legal Study No. 6, Chapter II, 38-49, 56-70 (1971); Muckel, Pumping Ground Water so as to Avoid Overdraft, U.S.D.A. the Yearbook of Agriculture-1955 (House Doc. No. 32, 84th Cong., 1st Sess.) 294-99; D. Todd, Ground Water Hydrology 17, 26-29, 149-51 (1959).
72. Due to capillary action the zone of saturation may be somewhat above the water table.
73. See D. Todd, Ground Water Hydrology 201 (1959); W. Walton, Groundwater Resource Evaluation 608 (1970).
74. See Muckel, Pumping Ground Water so as to Avoid Overdraft, U.S.D.A., the Yearbook of Agriculture-1955 (House Doc. No. 32, 84th Cong., 1st Sess.) 300; W. Walton, Groundwater Resource Evaluation 611 (1970).
75. This section is based upon D. Todd, Ground Water Hydrology 151 (1959); W. Walton, Groundwater Resource Evaluation 168 (1970).

76. This section is based W. Walton, Groundwater Resource Evaluation 623-27 (1970).
77. This section is based on D. Todd, Ground Water Hydrology 177-78 (1959).
78. 513 P.2d 627 (Idaho 1973).
79. See also Baker v. Ore-Ida Foods, Inc. 513 P.2d 627, 637 (Idaho 1973):
80. 513 P.2d at 629.
81. Bagley, Water Rights Law and Public Policies Relating to Ground Water "Mining" in the Southwestern States, 4J. Law and Econ. 144, 145 (1961).
82. See note 73, supra.
83. It is even possible that total recharge could come to exceed total discharge by this process even though there is no reduction in the operation of wells.
84. Muckel, Pumping Ground Water so as to Avoid Overdraft, U.S.D.A. the Yearbook of Agriculture-1955 (House Doc. No. 32, 84th Cong., 1st Sess.) 294,295. See also D. Todd, Ground Water Hydrology 212-13 (1959); W. Walton, Groundwater Resource Evaluation 607 (1970).
85. Ibid.
86. See W. Walton, Groundwater Resource Evaluation 364-68 (1970).
87. C. Corker, Ground Water Law, Management and Administration, National Water Commission Legal Study No. 6 at 58 (1971).
88. D. Todd, Ground Water Hydrology 251 (1959).
89. W. Walton, Ground Water Resource Evaluation; 364 (1970).
90. D. Todd, Ground Water Hydrology 256 (1959).
91. J. Crosby, A Layman's Guide to Groundwater Hydrology in C. Corker, Ground Water Law, Management and Administration, National Water Commission Legal Study No. 6, at 56-60 (1971).
92. Idaho Code Ann. §42-226 (Supp. 1973).
93. Colo. Rev. Stat. Ann. §148-18-1 (Supp. 1965).

94. Thompson and Fiedler, Some Problems Relating to Legal Control of Ground Waters, 30 J. of American Water Works Assn. 1049, 1075 (1938). See also W. Hutchins, Selected Problems in the Law of Water Rights in the West 179 (1942).
95. See 22 Idaho State Bar Proceedings 52 (1948); 23 Idaho State Bar Proceedings 19 (1949).
96. 513 P.2d 627, 636 (Idaho 1973).
97. Trelease, Policies for Water Law: Property Rights, Economic Forces and Public Regulation, 5 Nat. Res. J. 1, 4 (1965).
98. Id. at 4.
99. C. Corker, Ground Water Law, Management and Administration, National Water Commission Legal Study No. 6 at 129 (1971).
100. 513 P.2d at 636.
101. Id.
102. Id. at 635.
103. C. Meyers, A Historical and Functional Analysis of the Appropriation System, Legal Study No. 1, page 6 (1971).
104. See Cheline, An Economic Approach to the Agricultural Use of Ground Water in the Oakley Fan Area of Cassia County, Idaho (unpublished master's thesis, University of Idaho, 1968); see also Von Bernuth, Factors Affecting Irrigation Pumping Costs (unpublished master's thesis, University of Idaho, 1969).
105. See text accompanying notes 94-95, supra.
106. See the quotation in the text, supra, indicated by footnote 99.
107. In Hart v. Stewart, 519 P.2d 1171 (Idaho 1974), the court held that the Department is authorized to issue rules of practice or procedure for proceedings before the Director or before a local groundwater board constituted under section 42-237d of the Ground Water Act. The court found this authorization in section 42-406 of the Idaho Code, which empowers the Director "to make such rules and regulations as may be necessary . . . to the proper administration . . . of this chapter." The result seems sound but the implied delegation theory would have been a more appropriate rationale than section 42-406, since that statute appears in a chapter of the Idaho Code which deals exclusively with appropriations for use outside the state, rather than in the chapter containing the Ground Water Act.

108. 513 P.2d 627, 636 (Idaho 1973). The implied powers approach would be entirely consistent with the following attitude expressed in *Keller v. Magic Water Co.*, 92 Idaho 276, 282-83, 441 P.2d 725, 731-32 (1968), a surface water case:  
 "(I)t is seldom that a court will interfere with the discretionary action of the state engineer [now the Director of the Department of Water Resources] upon matters involving the administration of the water laws of the state . . . . As stated by Mr. Justice Holmes, the state engineer is the 'expert on the spot,' *Mayer v. Peabody*, 212 U.S. 78, 85 S. Ct. 235, 237, 53 L. Ed. 410, 416 (1909), and we are constrained to realize the converse, that 'judges are not super engineers.' . . . The legislature intended to place upon the shoulders of the state engineer the the primary responsibility for a proper distribution of the waters of the state, and we must extend to his determinations and judgment, weight on appeal."
109. For modern Idaho cases on the delegation of rule making authority to state agencies, see *Abbot v. State Tax Commission*, 88 Idaho 200, 398 P.2d 221 (1965); *State v. Heitz*, 72 Idaho 107, 238 P.2d 439 (1951); *State ex rel. Taylor v. Taylor*, 58 Idaho 656, 78 P.2d 125 (1938). See also 1 Cooper, *State Administrative Law* 54-61 (1965) for discussion of cases from other states.
110. *Abbot v. State Tax Commission*, 88 Idaho 200, 398 P.2d 221, 223 (1965).
111. 1 F. Cooper, *State Administrative Law* 61 (1965).
112. See text accompanying note 103, supra.
113. 1 F. Cooper, *State Administrative Law* 55, (1965).
114. Id. at 61-62.
115. 1 F. Cooper, *State Administrative Law* 71-91 (1965).
116. Alaska Sta. §46.15.050 (1966); Colo. Rev. Stat. Ann. 148-18-1, 148-18-10 (b), 148-18-6 (4), (5) (Supp. 1965); Kan. Gen. Stat. Ann. §82a-711a (1969); Nev. Rev. Stat. §534, 110 (4)(1967); Wash. Rev. Code Ann. §90.44.070 (1961).
117. 490 P.2d at 268 (Colo. 1971).
118. 490 P.2d at 278-79.

119. 513 P.2d 627 (Idaho 1973).
120. J. Crosby, A Layman's Guide to Groundwater Hydrology in  
C. Corker, Ground Water Law, Management and Administration,  
National Water Commission Legal Study No. 6 at 42 (1971);  
C. Meyers and A. Tarlock, Water Resource Management 562 (1971).
121. Ellis, Water Rights: What They Are and How They Are Created,  
13 Rocky Mtn. Min. L. Inst. 451, 470 (1967).
122. E.g., Jackson v. Cowan, 33 Idaho 525, 196 P.216 (1921);  
Josslyn v. Daly, 15 Idaho 137, 96 P.568 (1908); Moe v.  
Harger, 10 Idaho 302, 77 P.645 (1904).
123. Silkey v. Tiegs, 54 Idaho 126, 28 P.2d 1037 (1934); see  
Martiny v. Wells, 91 Idaho 215, 419 P.2d 470 (1966).
124. See Jones v. Vanausdeln, 28 Idaho 743, 156 P.615 (1916);  
Bower v. Moorman, 27 Idaho 162, 147 P.496 (1915), See also  
Hart v. Stewart, 519 P.2d 1171 (Idaho 1974).
125. See Martiny v. Wells, 91 Idaho 215, 419 P.2d 470 (1966).
126. 510 P.2d 329 (Colo. 1973).
127. 27 Idaho 162, 147 P.496 (1915).
128. 28 Idaho 743, 156 P.615 (1916).
129. 37 Idaho 45, 233 P.531 (1923).
130. 37 Idaho at 51, 223 P. at 532.
131. See text accompanying notes 63-60, supra.
132. 50 Idaho 371, 296 P.582 (1931).
133. Text accompanying notes 63-66, supra.
134. 51 Idaho 344, 5 P.2d 1049 (1931).
135. 51 Idaho at 359, 5 P.2d at 1055.
136. 53 Idaho 651, 26 P.2d 1112 (1933).
137. J. Crosby, A Layman's Guide to Groundwater Hydrology in  
C. Corker, Ground Water Law, Management and Administration,  
National Water Commisison Legal Study No. 6, at 64 (1971).
138. Id.
139. See note 134, supra, and accompanying text.



140. 101 Cal. 42, 35 P. 334 (1894).
141. 53 Idaho at 654, 26 P.2d at 1113.
142. 32 P. at 812.
143. 35 P. at 337.
144. Id.
145. Actually the last two of the seven cases listed are in fact the same case at two different levels of the federal judicial system.
146. 53 Idaho at 654, 26 P.2d at 1113.
147. Id.
148. The junior appropriators also relied on a Minnesota case which the court dismissed quickly as being "based on the doctrine of 'correlative use,' which does not obtain in Idaho." Ironically, the court did rely to some extent upon California cases which were decided after California began applying the correlative rights doctrine to groundwater. See notes 37-39, supra, and accompanying text.
149. Text accompanying notes 136-38, supra.
150. 53 Idaho at 655, 26 P.2d at 1113.
151. Glen Dale Ranches, Inc. v. Shaub, 94 Idaho 585, 494 P.2d 1029 (1972).
152. See note 94, supra.
153. 513 P.2d 627 (1973).
154. Idaho Const. Art. 15 §7. For a statement of purposes of the amendment, see Senate Joint Resolution No. 1 (1964, Extraordinary Session), Session Laws 1965, P.22. The constitutional amendment was made desirable, if not necessary, by State Water Conservation Board v. Enking, 57 Idaho 722, 58 P.2d 722 (1936), which might be read as prohibiting state agencies from appropriating water in the absence of such constitutional amendment.
155. 513 P.2d at 635.
156. W. Leach, Property Law Indicated! 15 (1967); Freeman, The Protection Afforded Against the Retroactive Operation of an Overruling Decision, 18 Colum. L. Rev. 230 (1918). See also Annot., Prospective or Retroactive Operation of Overruling Decision, 10 A.L.R. 3d 1371, 1382-84 (1966).

157. Annot., Prospective or Retroactive Operation of Overruling Decision, 10 A.L.R. 3d 1371, 1391 (1966). See also Freeman, The Protection Afforded Against the Retroactive Operation of an Overruling Decision, 18 Colum. L. Rev. 230 (1918).
158. Thompson v. Hagan, 523 P.2d 1365 (Idaho 1974); annot., Prospective or Retroactive Operation of Overruling Decision, 10 A.L.R. 3d 1371 (1966).
159. Dawson v. Olson, 94 Idaho 636, 496 P.2d 97 (1972); Sims v. State, 94 Idaho 801, 498 P.2d 1274 (1972).