Aquifer Recharge

MANAGED AQUIFER RECHARGE

PART II: LEGAL ISSUES IN THE WESTERN UNITED STATES

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INTRODUCTION

As noted in part one of this three-part series on laws and regulations affecting managed aquifer recharge in the western United States (*Managed Aquifer Recharge: An Overview of Laws Affecting Recharge in Several Western States, TWR* #127), expanding the use of aquifer recharge is becoming increasingly important for our growing, water-dependent, society.

A thorough understanding of the involved legal rights is necessary for establishment and operation of an effective and efficient managed aquifer recharge project. However, relevant laws addressing groundwater recharge remain relatively undeveloped in most states. Many questions remain largely unanswered.

Legal Issues

Legal questions concerning groundwater recharge include:

- Is recharging water into an aquifer a "beneficial use"?
- Can an overlying landowner prevent others from storing water in aquifers beneath his land without his consent?
- Is an entity trespassing when its recharged water runs under another person's land?
- Does the "Takings Clause" in the US Constitution's Fifth Amendment — requiring "just compensation" for private property taken for public purposes — apply to managed aquifer recharge projects, and if so, to what degree?
- If the aquifer storage space is limited, should some entities receive preferential treatment?
- Should a water user be required to substitute their water supply from another available source before making a "call" to protect their senior water right?
- Can a managed aquifer recharge project abandon or forfeit water that is put into an aquifer? If so, at what point is the right to use the water lost?
- Does a recharge project get credit for the water put into the ground? For example, can a recharge project put an acre-foot of water into an aquifer and be sure they will be able to remove an acre-foot from somewhere else?
- What water quality laws and regulations should apply to a managed aquifer recharge project?

This article will review these legal issues from the viewpoint of current approaches in various western states, addressing: whether recharge is a beneficial use; who owns the aquifer space; whether substitution is required; why water quality concerns are important; the potential for forfeiture and abandonment; and the importance of recharge credits.

STATES' LAWS & PROGRAMS

Many western states now have legislation that expressly authorizes managed aquifer recharge projects. This section gives an overview of some of the differing methods that Colorado, California, Arizona, and Idaho have adopted to address these legal concerns.

Beneficial Use

Beneficial Use

The requirement that water be put to a recognized beneficial use is a core aspect of western water law's Doctrine of Prior Appropriation. As such, making sure that managed aquifer recharge is considered a beneficial use is a threshold question that must be answered at the very beginning of any aquifer recharge project.

Nearly all of the jurisdictions examined for this article have deemed managed aquifer recharge a beneficial use. Idaho Code §42-234 unambiguously proclaims "the appropriation of water for purposes of ground water recharge shall constitute a beneficial use of water." Idaho Code Ann. §42-234. California, under Water Code §1242, proclaims "the storing of water underground…constitutes a beneficial use of water if the water so stored is thereafter applied to the beneficial purposes for which the appropriation for storage was made." In California, various local governments have also found groundwater recharge to be a beneficial use. For example, the San Francisco Bay Basin Water Board has stated that: "uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers" is a beneficial use. *See Water Quality Control Plan for the San Francisco Bay Area* at: www.waterboards.ca.gov/rwqcb2/water_issues/programs/planningtmdls/basinplan/web/docs/bp_ch2+tables.pdf.

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Indirect Recognition

Other states have found managed aquifer recharge a beneficial use by implication. Arizona has stated that "beneficial use shall be the basis, measure and limit to the use of water." Ariz. Rev. Stat. Ann. §45-141. Moreover, with Arizona's enactment of Underground Water Storage and Recovery Act of 1986 and the Underground Water Storage, Savings, and Replenishment Act in 1994, Arizona further defined the recharge program and guaranteed that the water recharged would be legally defined and be able to be recovered. Colorado requires a permit to extract artificially recharged water — which clearly infers that Colorado recognizes artificial recharge as a beneficial use of water. 2 Colo. Code Regs. 402-11:6. Thus, by limiting water uses to beneficial uses and allowing water to be used for recharge, the Arizona and Colorado statutes designate recharge as a beneficial use by implication.

Overall, as evidenced by the differing statutes, case law, and administrative regulations across the West, the question of whether aquifer recharge is a beneficial use appears to have been answered in the affirmative. Areas of law less clearly established include: 1) whether storing water in an aquifer is a Fifth Amendment "taking" of storage space; or 2) constitutes trespass. These two areas will be analyzed together in the following section, since the ability to bring either claim turns on whether the landowner has the exclusive right to the aquifer space under their land.

Aquifer Control

Ownership of Unused Aquifer Space

Do overlying landowners own or control the underlying usable space in aquifers such that they can prevent others from using it to store water, or at least exact a "rental" fee for such use? *See* Keil, Peter J., *Banking Groundwater in California: Who Owns the Aquifer Storage Space?*, 18. Nat. Res. & Env. 25 (Fall 2003). Proponents of managed aquifer recharge argue that unused aquifer space is a common property resource that can be utilized by any overlying landowner without obtaining consent of other overlying landowners and without paying compensation to them. Alternatively, challengers to managed aquifer recharge projects claim that overlying landowners own the aquifer space underneath their property, and therefore have the right to exclude others from utilizing that space; or at least require that they be compensated for the use of the aquifer space. The majority of these issues arise under either the Fifth Amendment's Takings Clause or, alternatively, in the form of trespassing claims. The Takings Clause is only applicable when a government entity is doing the recharge. If it is a private entity occupying the underlying aquifer through recharge, it is a question of trespass. For this article, takings claims and trespassing claims are analyzed together due to the close nature of the two claims.

"Takings" v. Trespass

Incursion of Space

Generally a property owner has the right to full enjoyment and use of his own property. When surface water is recharged, however, there is no ability to control the migration of the water through the strata beyond the property boundaries and thereby prevent an incursion of the space underlying the land of others. Under traditional property law, "any unauthorized physical invasion on or beneath another's property is a trespass that is compensable, even without actual damages." *Id* at 27. If the recharge project is being undertaken by a government entity, the entity is potentially exposing itself to liability for "taking" of subsurface property.

Water Rights Takings

The takings doctrine remains a highly disputed area of law within water rights litigation and has become a new front in the takings legal arena. *See* Owen, Dave, *Taking Ground Water*, 91 Wash. U. L. Rev. 253, 271 (2013). In general, "two observations can be made about takings litigation in the water rights context to date. First, most cases involve appropriative rights or rights that are similarly relatively well defined. Second, when courts have found a taking of water rights, it is generally because the government action has effectively destroyed the entire right." Craig, Robin Kundis, *Defining Riparian Rights As "Property" Through Takings Litigation: Is There A Property Right to Environmental Quality?*, 42 Envtl. L. 115, 125 (2012). Most takings tests look for physical invasions and direct appropriations of property, which result in a complete diminishment of value. *Taking Ground Water, supra*. Even more troubling, the Takings Clause seems to be in total flux regarding even the starting question of whether the regulation of water use is a physical or regulatory taking. One scholar, however, has proclaimed that "takings litigation can become a productive occasion for defining the status and nature of water rights." *Defining Riparian Rights, supra*. The Takings Clause, unlike other legal issues presented here, deals largely with precedent established by the United States Supreme Court, rather than by any particular state. The Takings Clause states that "private property [shall not] be taken for public use, without just compensation." U.S. Constitution, Amendment V.

Ownership Question: Storage Space

A threshold question to be answered in takings cases is whether the plaintiff actually owns the allegedly taken property. In the case of managed aquifer recharge, the Takings Clause does not actually involve the taking of the water itself. Rather, recharge involves the taking of the storage space that the recharged water is put into, i.e., the underlying aquifer. Under traditional property law it was believed that a landowner owned everything above and below his parcel of land. This common-law doctrine is best explained by the Latin phrase *cujus est solum ejus est usque ad coelom et ad inferos* (cujus doctrine), which translates to: "To whomsoever the soil belongs, he owns also to the sky and to the depths." Although

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Common Sense

the leading US Supreme Court (Supreme Court) precedent dealing with the cujus doctrine focuses on air space, its stark language is instructive on how they viewed the cujus doctrine as a whole. *See United States v. Causby*, 328 U.S. 256 (1946). The Supreme Court stated that the cujus "doctrine has no place in the modern world. The air is a public highway…Were that not true, every transcontinental flight would subject the operator to countless trespass suits. Common sense revolts at the idea. To recognize such private claims to the airspace would clog these highways, seriously interfere with their control and development in the public interest, and transfer into private ownership that to which only the public has a just claim." *Id.* at 261. At the same time, those managing an aquifer recharge project must be aware that there is bound to be liability if injection of water causes harm — e.g., contamination of well water, flooding, etc.

Given their growing importance as a viable water management option, aquifer recharge projects could well become as important to society as air travel. As such, the idea of allowing a single landowner to interfere with the control and development of entire aquifers is against common sense and "has no place in the modern world." Subjecting a managed aquifer recharge project to potential liability from every overlying landowner would make any such project unfeasible. This development thus seems unlikely to be required due to the many benefits derived from recharging depleted aquifers. Unfortunately, the Supreme Court has not heard a case regarding the taking of aquifer space specifically — so different states must be examined for further guidance.

Colorado Decision

While it is still relatively unsettled as to who actually owns the aquifer storage space in most states, Colorado courts have definitively stated that "by reason of Colorado's constitution, statutes, and case precedent, neither surface water, nor ground water, nor the use rights thereto, nor the *water-bearing capacity of natural formations* belong to a landowner as a stick in the property rights bundle. *Bd. of County Com'rs of County of Park v. Park County Sportsmen's Ranch, LLP*, 45 P.3d 693, 707-710 (Colo. 2002)(emphasis added). In fact, in that case the court proclaimed that "the holders of water use rights may employ underground as well as surface water bearing formations in the state for the placement of water into, occupation of water in, conveyance of water through, and withdrawal of water from the natural water bearing formations in the exercise of water use rights." *Id.* The court did, however, place a limit on the right to use underground aquifer as storage: "When parties have use rights to water they have captured, possessed, and controlled, they may place that water into an aquifer by artificial recharge and enjoy the benefit of that water as part of their decreed water use rights, if the aquifer can accommodate the recharged water without injury to decreed senior water rights." *Id* at 693. The "no-injury" requirement expressed by the Colorado courts is a common theme throughout Prior Appropriation states.

No-Injury Rule

Water Distribution

Idaho courts have not specifically ruled on the ownership of the aquifer space, but they have briefly discussed the Takings Clause in the water law context. In *Nettleton v. Higginson,* two water districts were combined to make one and the watermaster was required to consider both creeks when making decisions on water delivery-calls. 558 P.2d 1048 (Idaho 1977). The plaintiff argued that by distributing the water as proposed he would not get his full use right, which constituted a taking of private property for public use without just compensation, contrary to Idaho's Constitution. The Court held that "the right of appropriation does not carry with it an unconditional guarantee of water regardless of the supply of water available" and that the taking in question was not a Fifth Amendment taking, per se, but was simply based on the users' relative priority dates: "The fact that his diversion must be shut off to allow those with an earlier priority to receive water cannot be complained of as being a violation of Article 1, § 14 of the Idaho Constitution." *Id.* The Court was dismissive of the takings argument and instead focused on Idaho policy considerations. The Court stated that "the entire water distribution system under Title 42 of the Idaho Code is to further the state policy of securing the maximum use and benefit of its water resources." *Id.* at 1048. Arguably, it is a fair assumption that aquifer recharge likewise would be viewed as helping to secure the maximum use and benefit of the state's water resources and therefore outside the Takings Clause realm.

Maximum Use & Benefit

"Natural" Storage

California does not have a statute directly bearing on aquifer recharge takings claims, but its courts have strongly suggested that takings claims and real property trespass claims do not apply to all managed aquifer recharge projects. In *City of Los Angeles v. City of Glendale*, the California Supreme Court upheld a municipality's right to store surface water in aquifers without overlying landowners' permission and without paying compensation. 142 P.2d 289 (1943). Aquifers were deemed an economical and efficient method of "natural storage." *Id.* at 294. The Court stated that "[E]arly in the history of [California], this court recognized the advantage of permitting the use of natural surface facilities…for the transportation of water…'It would be a harsh rule to require those engaged…to construct an actual ditch along the whole route through which the waters were carried, and to refuse them the economy that nature occasionally afforded.'" (citation omitted). *Id.* Thus, California, has authorized managed aquifer recharge "subject to the limitation that storage and withdrawal does not harm other groundwater users, including interference with natural recharge: '[n]o necessity is shown for interfering with this right to use the basin for storage, for there does not appear to be any shortage of underground storage space in relation to the demand thereof.'" (citation omitted). *Who Owns the Aquifer Storage Space, supra* at 28.

Storage Right

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Gravel Pit Flooding

Another California case, *Niles Sand and Gravel Co. v. Alameda County Water Dist.*, 37 Cal.App.3d 924, 112 Cal.Rptr. 846 (1974), involved a local water district that was engaged in a continuous water recharge program within the basin, collecting water on the land surface and storing it "in sufficient quantity so that the pressure of its weight and density forces it to percolate through the underlying soil and into the basin proper. This process inevitably results in raising the underground water table." *Id*. at 37 Cal.App.3d 928-929. The raising of the water table flooded the pits of a local sand and gravel business, forcing the gravel company to pump water out of its pits. The gravel company argued that "they have the absolute right to use their land, to unlimited depths below its surface, because Civil Code section 829 vests in them 'the right to the surface and to everything permanently situated beneath...it.'" *Id*. at 932-933. The gravel company maintained that "the flooding of their pits below ground level, as a result of the district's water replenishment program, has interfered with their subterranean rights in their land, and with their sand and gravel business, so as to constitute a 'taking' or 'damaging' of their property which is for a public use and for which article I, section 14, therefore entitles them to compensation." *Id* at 933. The court, however, held that the recharge program served reasonable and beneficial purposes and that overlying landowners cannot object to a managed aquifer recharge project even if they suffer some harm.

Overlying Owners' Rights

Although California does not have a statute specifically acknowledging the ownership of aquifer storage space, the California Supreme Court has endorsed managed aquifer recharge programs. California does not recognize a proprietary right to an underlying aquifer on behalf of overlying owners. Overlying owners, therefore, cannot object to groundwater storage beneath their property absent a showing of harm to a recognized right associated with their property ownership. This harm could come in the form of interfering with the right to extract their correlative share of the aquifer's native yield or damage to property from elevated groundwater tables. *Who Owns the Aquifer Space?, supra*. It is important to keep in mind that California, unlike most prior appropriation states, recognizes the correlative rights doctrine. The court in *Niles, supra* at 934, explained the correlative rights doctrine: "…as between the owners of land overlying strata of percolating waters, the rights of each to the water are limited, in correlation with those of others, to his 'reasonable use' thereof when the water is insufficient to meet the needs of all." (citations omitted). For a more detailed explanation of the correlative rights doctrine, please see Part I of this article (*TWR* #127, page 20).

Correlative Rights

Shared Asset

It seems likely that the courts of all western states will ultimately determine that the unused storage space in an aquifer is a *shared asset*. Further, any entity — private or public — will probably be deemed able to use an aquifer for storage of recharged water. This ability to utilize an aquifer will, of course, still be contingent upon no actual injury to other groundwater users. In such circumstances, no entity — including overlying landowners — will be able to exclude others from using the aquifer storage space nor exact a "rental" fee for such use.

Priority Date

Allocation of Storage Space

Another question arises for states where more entities seek to store water than there is aquifer space available. Under such conditions, who has priority to use the aquifer storage space? Thus far the law offers little guidance in this regard. In Prior Appropriation Doctrine states, it seems logical that, lacking other explicit guidance, the priority date for the projects would govern the allocation of aquifer space. In other words, the date an entity begins the official process to obtain a permit for the project would become the project's priority date. Any later projects would have a junior (later) priority date and the project with a senior (earlier) priority date would be entitled to its allocation of aquifer space — i.e. if aquifer storage space is limited, the senior project would have the first right to utilize the space.

However, questions remain. It is not uncommon for more than one public entity to use a single aquifer for managed recharge purposes. What if two public entities are competing for the same space — how would priority apply? *See Aquifer Storage and Recovery: Lessons from the Western United States*, 45 RMMLF-INST 25 (1999).

Settlement Agreements

In an adjudicated basin, this legal uncertainty has been addressed through negotiation of detailed agreements, often in the form of a stipulated judgment. *Id.* If parties are unable, or unwilling, to come to a detailed agreement, the likely arena used to resolve the dispute will be the court system, in the form of eminent domain litigation. While a detailed explanation of eminent domain litigation is outside the scope of this article, each agency would likely have to establish that its project would result in the best use of the available aquifer storage space. *Id.* This could be done through a detailed and comprehensive cost-benefit analysis for the different managed aquifer recharge projects.

Agency Regulation Option

To avoid litigation between government entities, a state could find it appropriate to take another approach — authorizing a government agency to regulate the aquifer storage space as between public entities. This agency would provide regulations, policies, and oversight for public managed aquifer recharge projects. One current example of this approach is the extensive regulatory program for the allocation of underground storage in Arizona.

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Source Substitution

Mandatory?

Groundwater/ Surface Water Priority

Reasonable Diversions Protected

Reasonable Means of Diversion

Introduced Quality

Substitution of Source by Senior Users

The National Water Commission recommended to states with heavy groundwater use impairing surface water appropriations that "where it is hydrologically indicated, maximum use of the combined resource should be accomplished by laws and regulations authorizing or requiring users to *substitute* one source of supply for the other." *Nat'l Water Comm'n, Water Policies for the Future: Final Report to the President and to the Congress of the United States* 233-34 (1973)(emphasis added). Typically, adhering to this recommendation requires surface water users to divert groundwater instead of surface water in order to satisfy their water right. There are times, however, when efficiency in water management may be better served by traditional groundwater users using surface water to fulfill their water rights — e.g., in times of surface water abundance. As discussed in Part I of this series of articles (*TWR* #127), Colorado and Idaho both require some sort of substitution plan, i.e. mitigation or augmentation plans, in certain situations. Requiring a substitution plan, however, is different than mandatory substitution required by the state. Mandatory substitution would almost certainly increase the value and need for managed aquifer recharge projects by increasing the overall demand for groundwater.

Colorado has discussed the idea of mandatory substitution, most prominently in the San Luis Valley. Colorado's Supreme Court specifically discussed the idea of mandating supply substitution in the 1984 case of *Alamosa-La Jara Water Users Protection Ass'n v. Gould,* 674 P.2d 914 (Colo. 1984). In order to meet the requirement of an interstate compact, Colorado's State Engineer called for the widespread shutdown of groundwater pumping in the San Luis Valley. Groundwater users challenged the State Engineer's proposed shutdown of wells and claimed that the senior surface appropriators had a duty to switch to diverting groundwater rather than to enforce their priorities against well owners. *Id.* The court sided with the groundwater pumpers and remanded the case back to the State Engineer to take into account all relevant factors. In the end, the State Engineer did not have to curtail the pumping for full interstate compact compliance. Douglas L. Grant, *Conjunctive Management of Hydrologically Connected Surface and Ground Water: The Problem of Sustainable Use*, 54 RMMLF-INST 14-1 (2008).

However, in 2004, the Colorado State Legislature directed the State Engineer to regulate the confined and unconfined aquifers in the San Luis Valley "so as to maintain a sustainable water supply in each aquifer system, with due regard for the daily, seasonal, and long-term demand for underground water." Colo. Rev. Stat. Ann. § 37-92-501 (2014). The Legislature expressly required that the State Engineer "not require senior surface water right holders with reasonable means of surface diversions to rely on underground water to satisfy their appropriative water right." *Id.* The Colorado Supreme Court approved these rules in 2008. *See Simpson v. Cotton Creek Circles*, *LLC*, 181 P.3d 252, 254 (Colo. 2008). Thus, surface water users are not required to augment their surface supply with groundwater but they are still allowed to. This is generally done through substitution or augmentation.

In Idaho, the Conjunctive Management (CM) Rules require that administrative enforcement of priorities can occur only when "material injury" has occurred and the water is being used efficiently and without waste. Similar to Colorado's requirement, Idaho's CM Rules require the Idaho Department of Water Resources (IDWR) to consider whether the senior water right could be filled without shutting down junior wells if the senior appropriators used "alternative reasonable means of diversion or alternative points of diversion, including the construction of wells or the use of existing wells…". CM Rule 42.01.g. The Idaho Supreme Court has even required, in one instance, that senior users interconnect individual wells or well systems across a project before a delivery call can be filled. In *A&B Irr. Dist. v. IDWR*, groundwater users "alleged that junior priority groundwater pumping from the ESPA had, since 1959, lowered the water table an average of twenty feet and up to forty feet in some areas, which resulted in a 126 cfs reduction of A & B's diversion rate." 284 P.3d 225, 229 (2012). The IDWR Director determined that A & B had to take reasonable steps to maximize use of interconnection to move water within the system *before* it could seek curtailment of, or compensation from, junior water right holders in order to fulfill their senior water rights. The Supreme Court found the Director did not act "arbitrarily or violate Idaho law when he found that A & B must work to reasonably interconnect some individual wells or well systems before a delivery call can be filed." *Id* at 241.

Water Quality

Protection of groundwater quality is a complicated area of law. Naturally, managed aquifer recharge projects raise a concern regarding the quality of the water introduced into the aquifer. While numerous activities can affect groundwater quality, managed recharge is a concern because it places large quantities of water into an aquifer. Widespread reliance on aquifers as a source of drinking water for vast populations emphasizes the importance of maintaining high quality water in the aquifers. In fact, groundwater accounts for nearly 95% of drinking water in some states (*see* www.deq.idaho.gov/water-quality.aspx). Water quality is regulated, to some degree, at both the state and federal level. This section will give an overview of the legal issues pertinent to managed aquifer recharge on both levels.

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Federal Laws

Starting with federal law, there are two main acts that could potentially apply to managed aquifer recharge projects: 1) the Clean Water Act (33 U.S.C.A. § 1251); and 2) the Safe Drinking Water Act (42 U.S.C. §§300f-300j-9). The Clean Water Act (CWA) establishes the basic structure for regulating the discharge of pollutants into the water of the United States and regulating quality standards for surface waters. Section 301(a) of the CWA provides that, in the absence of a permit, "the discharge of any pollutant by any person shall be unlawful." 33 U.S.C.A. § 1311(a). The phrase "the discharge of a pollutant" is defined by § 502(12) as the "addition of any pollutant to navigable waters from a point source." 33 U.S.C. § 1362(12). Section 502(7) defines the term "navigable waters" as "waters of the United States, including territorial seas." 33 U.S.C. § 1362(7). Thus, the question arises whether an aquifer is considered a navigable water.

Hydrological Connection

Determining whether the CWA applies to a managed aquifer recharge project depends on whether the groundwater that is being recharged is hydrologically connected to surface water of the United States. The US District Court in Idaho was faced with this very question in *Idaho Rural Council v. Bosma*, 143 F. Supp. 2d 1169 (D. Idaho 2001). In *Bosma*, the issue to be determined was whether the defendant's alleged discharge of pollutants into groundwater hydrologically connected to plaintiff's artesian springs constituted a violation of the CWA. *Id*. The Court stated that "all courts agree — that the CWA does not regulate 'isolated/non-tributary ground water' which has no affect on surface water." *Id.* The Court held, however, that Congress did intend to regulate discharges into hydrologically connected groundwater which adversely affected surface water. *Id* at 1180. The Court tempered this far-reaching pronouncement with the acknowledgment that plaintiffs must "demonstrate that pollutants from a point source affect surface waters of the United States. It is not sufficient to allege groundwater pollution, and then to assert a general hydrological connection between all waters. Rather, pollutants must be traced from their source to surface waters, in order to come within the purview of the CWA." *Id*., quoting from *Washington Wilderness Coalition v. Hecla Mining Co*., 870 F.Supp. 983, 990 (E.D.Wa.1994).

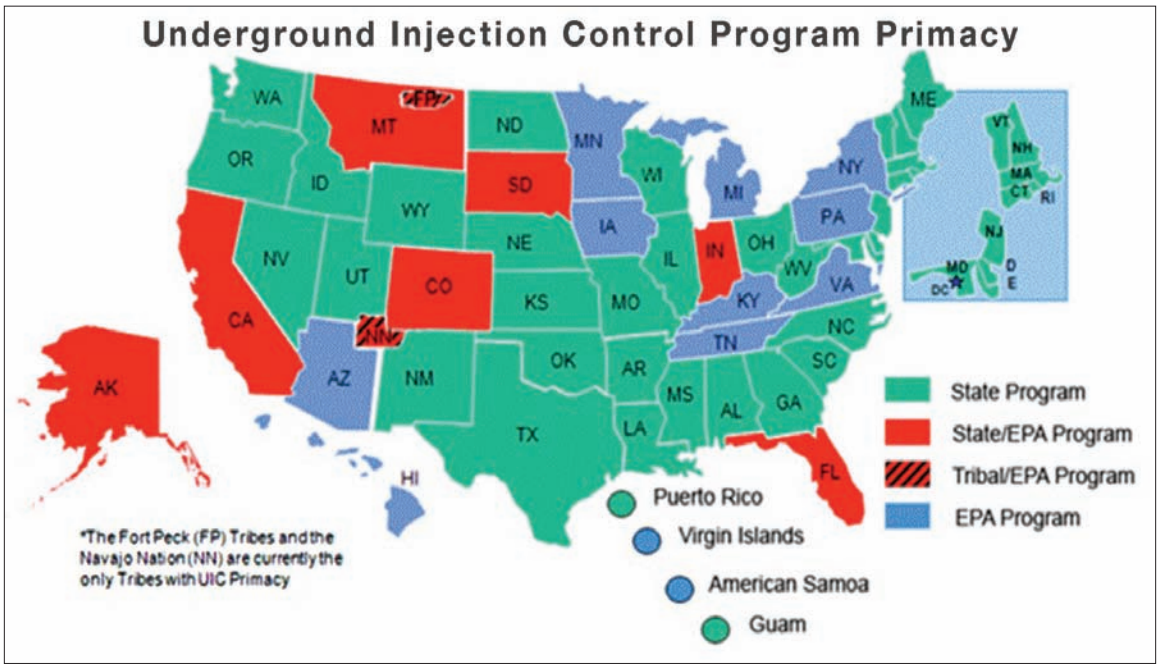
Causation Proof

Safe Drinking Water Act

The federal Safe Drinking Water Act (SDWA) is considered the main federal law regarding the quality of Americans' drinking water. The SDWA authorizes the US Environmental Protection Agency (EPA) to set national standards for drinking water to protect against both naturally-occurring and man-made contaminants. *See* http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm. The SDWA deals largely with public drinking water systems, underground waste injection control, and "sole source" aquifers. *Law of Water Rights and Resources, A. Dan Tarlock,* § 4:34 (2014 ed.). (At least 10 aquifers nationwide have received "sole source" designation). [Editor's Note: EPA defines a sole or principal source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend on the aquifer for drinking water. EPA website at: http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/solesourceaquifer.cfm].

"Sole Source" Aquifers

UIC Primacy



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SDWA Authority

The DC Circuit Court described the SDWA regulatory regime thusly:

> The SDWA, 42 U.S.C. §§ 300f to 300j-9, directs the EPA to prescribe both primary and secondary maximum levels for contaminants in public drinking water systems. Primary regulations specify federally enforceable maximum [contaminant] levels (MCLs) for "contaminants which, in the judgment of the Administrator, may have any adverse effect on the health of persons." 42 U.S.C. § 300(f)(B). Secondary regulations (SMCLs), which are enforceable only in the discretion of the states, specify "maximum contaminant levels which, in the judgment of the Administrator, are requisite to protect the public welfare." 42 U.S.C. § 300f(2). *Nat. Resources Def. Council, Inc. v. E.P.A.*, 812 F.2d 721, 723 (D.C. Cir. 1987).

Underground Injection

EPA works closely with its regional offices, states, tribes, and other partners to protect public health through implementing the SDWA. The SDWA pays special attention to underground injection of fluids, as evidenced by the creation of the Underground Injection Control Program (UIC). The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal. The UIC Program requirements were developed by EPA and designed to be adopted by states, territories, and tribes. States, territories, and tribes can submit an application to EPA to obtain primary enforcement responsibility, or primacy. Agencies that have been granted this authority oversee the injection activities in their states. The requirements for primacy programs are outlined in the UIC regulations at 40 Code of Federal Regulations Part 145. *See* EPA UIC Program webpage: http://water.epa.gov/type/groundwater/uic/index.cfm.

Primacy Programs

Notably, the SDWA was created with the idea that the states could have primary enforcement responsibility, or primacy, over the UIC Program requirements. As shown in Figure I, states vary greatly with regards to EPA approved primacy programs but the majority have chosen full primacy. *See* http://water.epa.gov/type/groundwater/uic/Primacy.cfm. Among the states covered in this article, Idaho has full primacy, Colorado and California share primacy with EPA, and Arizona is the only western state that has no degree of SDWA primacy.

Injection Wells Regulation

Under the UIC Program, injection wells are categorized into six classes. Class V injection wells are "authorized by rule" (40 CFR 144). This means that Class V injection wells do not require a permit if they can be shown to not endanger underground sources of drinking water and comply with other UIC program requirements. As concerns aquifer storage and recovery, the no-endangerment requirement may mean that the water to be injected must meet the drinking water standards. Getting Class V status is important to a managed aquifer recharge project because the alternative permit processes are often costly. Currently, the EPA estimated that there are over 650,000 Class V wells in use nationwide. Common examples include septic systems, cesspools, and stormwater drainage systems. Although the vast majority of wells are unsophisticated shallow systems, a small number are Class V wells include aquifer storage and recovery wells. Thus, the quality of the water that is being used to recharge is of concern for a managed aquifer recharge project, if it wishes to avoid the complex regulation established under the SDWA. If an entity can ensure that the water received is of drinking water standard and does not threaten human health, a permit is not necessary. *Law of Water Rights and Resources, supra* at § 4:34.

Wastewater Use

In Idaho, groundwater quality is regulated by the Idaho Department of Environmental Quality (IDEQ). IDEQ has been granted primacy over both the SDWA and certain aspects of the CWA, and operates under the Idaho Rules for Public Drinking Water Systems. With regard to wastewater used for recharge, permits are required from IDEQ before reuse of the water. IDEQ has a wastewater program that "establishes standards for on-site wastewater systems (septic systems) and issues wastewater reuse permits limiting the amount of wastewater that may be land-applied for irrigation." When surface waters are "land applied with the intent to recharge an underlying aquifer" no permit is required — though IDEQ may require an approved program to monitor the water quality under Idaho Administrative Rule §58.01.16.600. The land application option provides an important exemption for managed aquifer recharge projects in Idaho because it reduces the overall cost of starting and maintaining the project. Injection wells, on the other hand, are regulated by the Idaho Department of Water Resources (IDWR) and a permit is required. (*See* IDEQ website: www.deq.idaho.gov/water-quality).

Land Application

Aquifer Categorization

Aquifers in Idaho are categorized so as to offer different levels of protection. This categorization is based on the "vulnerability of the ground water, existing and future beneficial uses of the ground water, existing water quality, and social and economic considerations." In Idaho, recharge project managers should be aware of what aquifer they are planning to recharge and the differing water quality standards of each. *See Idaho Ground Water Quality Plan*, at: www.deq.idaho.gov/media/462972-idaho_gw_quality_plan_final_entire.pdf.

Aquifer Recharge

Retrieval Timing

Abandonment or Forfeiture

"Use it or lose it" is a fundamental axiom of western water law. If an entity decides to store water underground through managed aquifer recharge, it must be able to retrieve that water at a later time. If retrieval of the recharged water occurs a number of years later, the entity may run into abandonment or forfeiture issues. Recall that water appropriation rights are considered usufructory rights (i.e. the right to use, as opposed to outright ownership of water) and may be lost due to non-use. *Law of Water Rights and Resources, supra* at § 5:89. Generally this occurs through either abandonment or forfeiture, depending on the governing statute in the jurisdiction of the water right. *Id.* "Although abandonment and forfeiture share certain common features, the two are distinct legal concepts. Abandonment is a common law doctrine involving the occurrence of: 1) an intent to abandon; and 2) an actual relinquishment or surrender of the water right." Moreover, the Idaho courts have found that the "the intent to abandon a water right must be evidenced by clear, unequivocal and decisive acts and mere non-use is not per se abandonment." *Sears v. Berryman*, 623 P.2d 455, 459 (1981). Forfeiture, on the other hand, is predicated upon the statutory declaration that all rights to use water are lost where the appropriator fails to make beneficial use of the water for a continuous [statutorily defined] period." *Id.* Under the Idaho Code, all rights to the use of water are forfeited by a failure to apply the water to a beneficial use for a period of five continuous years, in the absence of a valid defense that would excuse the forfeiture. Idaho Code Ann. §42-222(2).

Non-Use Period

Municipal Exception

Idaho courts created an exception to abandonment and forfeiture doctrines for municipalities. *Beus v. City of Soda Springs*, 107 P.2d 151 (Idaho 1940). In *Beus v City of Soda Springs*, the court proclaimed that a municipality may "acquire water for its municipal needs, but it is not required to [use that water] in order to avoid a loss of the water on a charge of abandonment." *Id* at 154. The Court further held that a city has the implied power to appropriate water for the "probable future demands of its population" and therefore to allow abandonment would essentially nullify this power. *Id.* Therefore, a municipality must only show a reasonable future need to obtain a water right for future use. This common law exception was codified by the legislature, as indicated below, to allow a municipality to determine the amount of water it needs for future use.

The Idaho legislature has created numerous exceptions to forfeiture.

Forfeiture Exceptions

Pertinent to managed aquifer recharge projects are the following exceptions:

1) If the water right is held by a municipal provider to meet reasonably anticipated future needs (as described above);
2) If the reason for the nonuse of the water is to comply with the provisions of a groundwater management plan;
3) If the water right is placed in the water supply bank or is retained in or rented from the water supply bank; and
4) If the water right held by an irrigation district, a Carey Act operating company, or any other company, corporation, association, or entity which holds water rights for distribution to its landowners, shareholders or members shall be lost or forfeited due to nonuse by such landowners, shareholders or members, unless the nonuse is subject to the control of such entity.
   [Editor's Note: The Carey Act of 1894 (also known as the Federal Desert Land Act) allowed private companies in the US to erect irrigation systems in the western states. 43 U.S.C. 641 et seq. The Act provided for an alternative disposal of public desert land, based on the determination that erecting large irrigation systems was too daunting for individual settlers].
5) If the nonuse results from the water right being used for mitigation purposes.

Idaho Code § 42-223.

Avoiding Forfeiture

Given these exceptions, it seems that a recharge project should be able to avoid forfeiture of their rights under current Idaho law. Idaho's explicit designation of groundwater recharge as a beneficial use of water seems to avoid the non-use issues entirely because there is no abandonment if the water is being used. However, so long as the entity can also prove that it falls under one of the above-mentioned exceptions, its recharged water would be "double-protected." For a private recharge project, there is a good argument that they also fall within exception #4, above. This is because a private recharge entity should be able to argue that it is holding water rights for distribution to its members and that the water is "subject to the control of the entity." Proving that the water is actually under the control of the recharge entity may be the difficult part because proving "control" of water that is under the ground seems a bit tenuous. However, the answer could hinge on the ability of the recharge project to be able to track the water and its movement in the aquifer. As computer modeling becomes more sophisticated and reliable, the control requirement

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will likely be easier to satisfy. Idaho may also need to consider expanding the application of the state water bank to include managed aquifer recharge — but this is outside the scope of this article. A private entity would also likely argue that #5, from above, is also an exception. However this could prove to not be the case, as will be discussed in the next section.

Recharge Credits and "Taxes"

Recovery

A managed aquifer recharge project is largely concerned with its ability to recover the water after it is recharged. While this may not be as important for public entities that are recharging for the public good, a private entity intending to store water underground is counting on being able to effectively and efficiently recover the stored water for use. If uncertainty exists about whether the water will be recoverable, potential investors may find the risks outweigh the potential rewards and, therefore, not invest in the project. In order to provide the certainty that is needed for privately managed recharge projects, states need to recognize "recharge credits" by establishing an accounting method for water added to an aquifer. Arizona has provided for the accounting of recharge water for decades.

"Transported" Water

The main goal of Arizona's Underground Water Storage, Savings, and Replenishment Program (UWSP) is to account for water stored underground so the water can be used in the future. In order to accomplish this, the UWSP has two primary purposes. Ariz. Rev. Stat. Ann. §§45-801.04-898.01). First, the UWSP promotes the use of renewable water supplies — such as effluent, surface water, and Central Arizona Project (CAP) water — by allowing for effective and flexible storage and recovery of those supplies. *Id* at § 45-801.01. Second, the UWSP provides for the efficient use of all water resources by allowing water to be "transported," that is, allowing a party to store a quantity of water in one location and recover the same quantity of water in another. *Id.* The UWSP also allows water users to accrue "long-term storage credits." When eligible water is stored underground for more than one year, long-term storage credits may be issued. Long-term storage credits are recharge credits earned in the process of storing water. These credits can be recovered in the future to be used for various reasons, including establishing an assured water supply or fulfilling replenishment obligations.

Long-Term Storage Credits

In Arizona, stored water is usually eligible for long-term storage credits when all of the following three requirements are met:

1) The water cannot reasonably be used directly
2) The water was not recovered on an annual basis
3) The water would not have been naturally recharged within an Active Management Area

Ariz. Rev. Stat. Ann. § 45-802.01(22).

Legal Character

Under Arizona's system, stored water always *maintains the legal character of the original source water*, regardless of where it is recovered or how it is used. Thus, if CAP water is stored, no matter where recovery occurs, the water is considered to be CAP water when it is recovered and may be used in any way that CAP water could be used. *See Recharge Credits and Accounting,* Arizona Department of Water Resources, at: www.azwater.gov/AzDWR/WaterManagement/Recharge/RechargeCreditsandAccounting.htm. Also, a holder of long-term storage credits may assign all or part of their credits to another. This creates a market for water stored underground, which in turn helps lead to the maximum usage of the scarce resource.

Assignment of Credits

Storage Tax

Uniquely, Arizona's UWSP program requires a cut, or a tax, on water stored in an aquifer. The statute provides that only 95% of the recoverable amount of the water that is stored is registered to a long-term account. This ensures that 5% of the water stored will remain in the aquifer and will provide a continued benefit to the aquifer as a whole.

This tax to benefit aquifer water accrual is required unless the stored water was:

1) Imported into the Active Management Area (AMA) through the efforts of the storer (no cut);
2) Stored outside an AMA and imported into a groundwater basin through the efforts of the storer (no cut);
3) Effluent stored at a constructed underground storage facility (no cut); or
4) Effluent stored at a managed underground storage facility (50% cut).

See Ariz. Rev. Stat. Ann. § 45-852.01.

Idaho Limitations

On the other end of the spectrum lies Idaho, which only recognizes recharge credits if they are created as mitigation for a delivery call (i.e., a call by senior water rights holders to curtail the use of junior rights holders in times of shortage) or for a new appropriation that has been filed as an application for permit. This does not mean, however, that entities are not trying to change this limitation. In 2012, a group of prospective recharge entities (hereafter referred to as the "Alliance") filed a *Request for Recognition of Recharge Credits* (Request). According to the Request, the purpose of the Alliance was "to develop,

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implement, and maintain privately funded and managed programs to deliver recharge water to the Eastern Snake Plain Aquifer (ESPA) from the Snake River to enhance aquifer levels and discharge at strategic locations and to develop a market for the resulting mitigation credits." *Final Order Denying Request for Mitigation Credits, In the Matter of a Request for Recognition of Ground Water Recharge Credits in the Name of the Eastern Snake Plain Recharge Alliance,* IDWR (March 23, 2012). The Idaho Department of Water Resources (IDWR) denied the request for mitigation credits, stating that "there is no provision in Idaho law that allows the Director to authorize, much less approve, mitigation credits for applications for new water rights or transfers of existing water rights that have not yet been filed." *Id.* at 3. The Director did go on to explain IDWR's support for the parties' efforts at recharging the ESPA, and to suggest support for the parties' efforts in advancing legislation or formal rulemaking on the subject. Ultimately, the Director stated that without a specific procedural mechanism to authorize mitigation credits, the Director could not approve the request. In order for Idaho, as well as any other state, to promote managed aquifer recharge projects, suitable legislation or formal rulemaking allowing for recharge credits would be helpful. Without such legislation in place, a careful application of existing statutes is necessary, but as in Idaho, could result in denial of a project.

CONCLUSION

Managed aquifer recharge projects are indispensable for the continued maximum usage of a state's water resources. They provide much needed flexibility for enhancing maximum usage of water resources by significantly increasing the water storage capacity of a state. In the arid regions of the western United States, this increased storage capacity could mean the difference between a running water faucet and dried up wells. In order to provide the foundation needed to establish successful recharge projects, important legal issues including those discussed in this paper need to be considered and addressed. Unfortunately for many states, these important legal issues are not fully resolved and may require additional statutes, formal rulemaking, or litigation to provide certainty. However, with the ever-increasing awareness of the benefits of managed aquifer recharge, it seems only a matter of time before the legal landscape in many more western states evolves in the manner necessary to support efficient water markets — and truly efficient water markets will necessarily involve the use of aquifers as storage facilities.

An upcoming article in *The Water Report* will explore practical application of these legal issues in the development of managed aquifer recharge projects via public-private partnerships.

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