

Over-Appropriation & In-the-field Regulatory Activities Survey for the Western United States

by

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Arizona

Elizabeth Logan, Arizona Department of Water Resources (SW knowledge)

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Mark Frank, Phoenix Active Management Area (GW knowledge)

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Water rights are subject to a bifurcated system that differentiates GW from SW. Because there is no clear distinction, appropriation of GW subflow (to be administered as SW) has been the subject of extensive litigation. In a San Pedro River watershed ruling, the Arizona Supreme Court, *In re the General Adjudication of all Rights to use Water in the Gila River System and Source*, 198 Ariz. 330, 334, 9 P.3d 1069, 1083 (2000), provided guidance and also directed DWR to recommend a practical method to use in resolving subflow disputes.

“Basin-wide adjudications of surface water claims have been ongoing since the 1970s,” Logan said. Initially, the adjudications were begun as a means to forcefully quantify Native American claims. Under provisions of the McCarran amendment, adjudication of federal reserved claims was later included. Non-Native/non-federal claims round out the extent of basin-wide adjudications presently ongoing in 7 watersheds. Because existing diversions already make use of available supplies, Logan said the courts do not rely upon assessments of available un-appropriated water when rendering decisions.

When asked if over-appropriation is a substantial consideration when new applications to appropriate water come before the DWR (see Sec. R12-15-703 - “applicant will have sufficient supplies”), her reply was “we don’t do that.” Very little SW remains undeveloped, and DWR seldom receives applications for new appropriations, she explained. Judging by her remarks, most DWR administrative activities relate to proposed changes in the nature and location of use (agricultural to urban). Neither DWR nor the courts have formally closed a watershed to new SW appropriations.

Logan went on to say DWR staff members do not regulate water rights in the field. If regulation becomes necessary, she said individuals seek assistance from a county sheriff or through the county attorney’s office. Generally, she seemed uncertain what actions county officials might implement. To my question regarding a hypothetical dispute among competing water right holders within the same basin but located in different counties, she said regulatory procedures to

deal with such situations have not been established.

To secure federal funding for construction of the Central Arizona Project (approx. \$1.2 B) needed to exploit Arizona's share of flow in the Colorado River (1923 Colorado River Compact and *Arizona v California*, No. 8, Orig.), state officials agreed to adopt aggressive ground water management policies in the early 1980s. Among other things the legislation created the DWR which in turn has designated 5 Active Management Areas (AMAs) and 3 Irrigation Non-Expansion Areas (INAs).

Following some "squaring off of the sides and corners," Frank said the AMAs the INAs were created with particular stratigraphic units in mind. The declarations followed accumulation of records demonstrating ongoing and significant GW declines. Several regional investigations indicating pumpage far exceeded natural rates of recharge also were significant in the DWR decisions. At the time there was general acceptance of a need for regulation, and none of the declarations relied upon results of sophisticated mathematical models, he summarized.

Taken together DWR's Web page says "the AMAs include 80% of Arizona's population and 70% of the state's groundwater overdraft." Achieving safe-yield by 2025 is the objective in three AMAs situated in urbanizing locations. Prolonging access to available ground water supplies for as long as possible serves as the goal in another. A fifth AMA was established to address international, riparian and GW/SW issues; safe yield by an unspecified future date is the stated objective.

Frank said recent budget limitations have hampered field enforcement activities. During the past 5 years, the Phoenix AMA's workforce has been reduced by 1/3. Individual water meters are no longer checked routinely, and the AMA's water level measurement program was curtailed substantially. Rather than field checking irrigated acreage, Frank said those efforts are now accomplished with satellite imagery. "Our field services activities are less than desired," he said.

California

In conjunction with preparing this portion, electronic sources were found to be voluminous, and drawing upon them was deemed adequate to fulfill the assignment. – **MJ**

"Mutual Prescription" is the term associated with use of percolating GW [see *Pasadena v Alhambra*, 33 Cal. 2d 908 (1949)]. Such uses are not bound by principles of prior appropriation and not under the supervision of public officials. In contrast uses of underflow and uses of GW found in defined underground streams are handled differently. They are subject to prior appropriation.

In large portions of the state, competition among GW users tapping percolating sources has not become contentious, and regulation is not present. Where disputes have occurred, often in southern portions of the state, litigation has followed. So-called adjudicated GW basins are the

result of individual court rulings. Several date to the 1940s. Safe yield (balancing pumpage & aquifer recharge) is common to each. In some locations Watermasters or those having somewhat similar titles enforce court-decreed restrictions.

Provision for basin-wide, general adjudications is found in Sec's 2500 *et seq.* The so-called "statutory adjudication" proceedings are often initiated as a means of establishing a comprehensive tabulation of appropriations (including federal reserved & Tribal) prior to the State Water Resources Control Board assigning a Watermaster to regulate users. The Superior Court is responsible for the determinations, but its proceedings do not ordinarily involve unappropriated water determinations.

Depending upon where and when SW uses (including underflow and GW found in defined underground streams) occur, both riparian and prior appropriation principles are at work in California. To qualify as a common law riparian, SW uses must pre-date adoption of the 1914 Code, and the location of use must abut the source stream. During times of meager stream flows, available supplies are shared on a correlative basis. There are no un-appropriated water determinations, and exactly who, if anyone, is to enforce the sharing of supplies is not clearly established.

SW uses pre-dating Dec. 19, 1914 which occur at locations not abutting a source stream are bound by principles of prior appropriation. A set of adjudication procedures allows persons claiming such rights to seek official recognition of their appropriations. Assessment of unappropriated water is not a justiciable issue when the Superior Courts considers such claims.

For post-1914 SW users, applications for appropriations are processed by the State Water Resources Control Board (SWRCB). In the context of mandatory requirements, various statutory references [Ex's: Water Code Sec's 1253, 1260(k) & 1275(d)] mention unappropriated water in conjunction with Board actions in deciding whether to grant new applications.

Assessment of unappropriated water is a complex aspect of the Board's permitting process. In addition to selection of appropriate analytical procedures, agency requirements vary for different times of the year and from one watershed to another. By cross-referencing the regulations of other State agencies, Board requirements are truly comprehensive. Seasonal flow needs for anadromous fish, for example, is an important consideration when weighing applications for many streams in northern portions of the state.

Worksheets to accompany all applications effectively place a multi-aspect responsive burden on applicants. Computation of "Bypass Flows" and calculation of a "Cumulative Flow Impairment Index" are specific requirements. To fulfill all of the requirements the Board's Web site suggests individuals seek professional assistance. The Web sites of several California consulting firms prominently mention preparation of assessments needed for water right applications.

On Nov. 19, 1998 the Board cited Water Code Sec's 1205 through 1207 when it unanimously

entered Order WR 98-08. The administrative order updated a previous ruling, and it closed 56 watersheds and stream reaches to further consumptive appropriation. The Board action was prompted by various petitioners and by the urging of its staff members. In summary fashion the Order says evidence demonstrated particular streams are “fully appropriated either year-round or during specified months.”

From reading the Order, it can be seen staff members aided the Board in accumulating a large volume of evidence. Staff members organized hearings to gather first hand testimony, made in-the-field surveys and conducted special studies.

In several instances the Order accepted the compromises and agreements negotiated among affected parties and staff members. Arithmetic assessments were cited as justification for closure of several watersheds and stream reaches. In conjunction with hardships potentially falling upon certain domestic users, the Order cites “public interest” considerations as its rationale for barring further access to certain water sources. Elsewhere, the Order notes Legislative intentions for advanced reservation of supplies to fulfill future contractual responsibilities of the Board’s sister agency, the Dept. of Water Resources. Where new appropriations would frustrate intentions of the State or federal Wild & Scenic Rivers Act, the Board imposed a moratorium within several stream reaches.

Watermasters enforce water appropriations in some 50 watersheds located mostly in northern portions of the state. Following the SWRCB’s grant of a petition from a minimum 15% of the holders of water appropriations (Water Code. Sec’s 4000 - 4126), Watermasters are assigned to particular locations. Each works under general supervision of the Board. Agency expenses are reimbursed (presumably on a proportionate basis) by those holding water appropriations from the supply being regulated.

Colorado

Alan Berryman, Northern Colorado Water Conservancy District (former Division Engineer for State Engineers Office in Greeley)
July 30, 2004

Use of SW and GW (which is tributary to surface streams) is governed by principles of prior appropriation. According to the State Constitution (Art. XVI, Sec. 6) water belongs to the public, and the right to appropriate unappropriated water “shall never be denied.” As opposed to a state agency, those seeking to appropriate water seek approval in one of the seven Water Courts (the jurisdiction of each generally corresponds to major SW drainage basins). Would-be GW appropriators must first seek a construction permit from the State Engineer before seeking approval from the Water Court. To obtain a decree for new uses (as opposed to existing uses which might include federal reservation claims), the Court must find existence of unappropriated water in the proposed source of supply - albeit even occasionally - and for GW users located outside designated basins, it must also approve a plan for augmentation.

In conjunction with review of GW applications, the State Engineer is responsible for conducting certain geological & hydrological investigations. As a result of those activities, GW underlying many locations is known not to be in hydraulic connection (i.e., statutorily “non-tributary”; 1/10 of one percent in 100 years) with nearby streams. Subsequent State Engineer recommendations to the Colorado Ground Water Commission have resulted in the Commission “designating” eight such GW basins. Use of GW there is governed by a modified prior appropriation system and permission from the Water Court is not required. While the terminology is different, the so-called Denver Basin, which includes four bedrock aquifers, is a ninth formally recognized area. Use of GW there is administered on an allocation basis and subject to authorization by the Water Court.

As a legal matter, pumping from designated aquifers or from those in the Denver Basin will not impact SW appropriations and may proceed without Court approval of a plan for augmentation. Colorado’s Constitutional provision is generally considered over riding, Berryman said. Thus, absolute closure of watersheds or GW basins to further new users has not been undertaken. When asked about certain un-appropriated water conclusions* attributed to former State Engineer Jeris Danielson, Berryman could not recall details. For whatever it might be worth, Danielson is reported to have concluded particular streams in two Water Divisions were over-appropriated. How Danielson arrived at his conclusions is unclear. [An effort to contact Danielson was unsuccessful. - MJ]

Berryman said employees of the State Engineer’s office routinely respond to calls for in-the-field regulation. Under general supervision of the State Engineer, seven Division Engineers, each assigned to particular locations, have responsibility for daily activities. He mentioned the South Platte River watershed when saying year-round regulation is frequently necessary.

*See Footnote 7 in “The Water Rights Determination and Administration Act of 1969: A Western Slope Perspective on the First Thirty Years,” Caloia, Sherry A., *et al*, Univ. of Denver Law Review, Fall 1999.

Idaho

Dick Larson, Idaho Department of Water Resources, was routinely mentioned as the agency’s knowledgeable spokesman. We were never able to speak with one another. The summary which follows was taken from electronic and printed sources. - MJ

SW and GW uses are governed by principals of prior appropriation. An adjudication process can lead to creation of appropriations for SW uses which pre-date May 1971. At one time similar provisions allowed creation of GW appropriations for uses which pre-dated 1963. Availability of sufficient unappropriated water for established uses is assumed, and analysis to determine its existence is not undertaken in adjudication proceedings.

Post-1971 SW uses can only be established by compliance with Sec. 42-203A which, among

other things, requires the Director of the DWR to consider whether “. . . the water supply itself is insufficient for the purpose for which it is sought to be appropriated . . .” Since March 1963, all would-be users of GW have been subject to the same statutory requirements. According to the statute, applications for SW or GW are to be rejected if the Director concludes sufficient water is not available. With that criteria cited as justification, the agency has considerable experience in rejecting individual applications.

Responsibility for distribution of water according to the terms of individual permits is detailed in Title 42, Chapter 6 of the Idaho Code. Prominently mentioned are water masters who work under the general supervision of the DWR. Water masters are appointed on an annual basis and their salaries are paid proportionally by affiliations of local water users (municipalities, irrigation districts; even individuals).

Under authority delegated to the Director by Sec. 42-1805, moratoriums for certain basins and watersheds have been established in a variety of locations. A poor quality map (see Gerald Sehlke, *An Evaluation of the Conjunctive Management of Surface Water and Ground Water Resources in Idaho*, MS Thesis, University of Idaho, May 2000) is said to illustrate that “. . . in 1994 more than half the state of Idaho was listed as a Critical Ground Water Area, Ground Water Management Area, or was under some other form of moratorium (collectively called Water Management Areas; Figure 3).”

Many of the administrative rulings ordering designation of moratoriums can be examined on the agency Web site. For several, a need to maintain artesian pressure in certain aquifer systems was mentioned. In another situation it was acknowledged a federal court decision, which had awarded “all remaining unappropriated water” to federal reserve claimants (in that case, a National Forest), had effectively stripped the Director of further decision making responsibilities. Upon reaching that conclusion, granting a petitioner’s plea to invoke a moratorium was deemed a logical action.

Authority for water masters to effectively enforce measures directed at fair distribution of available supplies is severely hampered in many locations where all claims have not been adjudicated (Sec. 42-604). At least in portions of the Snake River drainage, resolution of that obstacle came through settlement of litigation brought against the DWR. In exchange for dropping the lawsuit, DWR agreed to a moratorium on processing new withdrawal applications. Soon thereafter, the agency promulgated comparable rules designed include other locations where similar circumstances exist.

Kansas

David Barfield, Kansas Division of Water Resources

July 14, 2004

Permits from the DWR to use either SW or GW are required by K.S.A. 82a-711. All SW and many GW applications are filed directly with the Chief Engineer. Within established GW

Management Districts, applications must first be approved by local officials before being forwarded to the Chief Engineer.

When reviewing applications the Chief Engineer is required to consider the demands of existing users, possible impacts upon established minimum desirable streamflow requirements and "the area, safe yield and recharge rate of the appropriate water supply." Interestingly, the Chief Engineer may not issue a permit to use "fresh water in any case where other waters are available for such proposed use and the use thereof is technologically and economically feasible."

Beginning some 25 years ago, Barfield said historical records of monitoring data and increasing calls for enforcement actions "prompted recognition of physical limits in many watersheds and aquifers." More formal conclusions followed several hotly contested administrative proceedings (frequently mentioned was a dispute involving a wildlife refuge near the mouth of Wet Walnut Creek) in which physical limitations were made obvious. As a practical matter, he agency staff members began to recognize issuance of new permits; a) didn't assure water would be available to holders of the permits, and b) would inevitably task the agency with additional and avoidable regulation requirements.

Across the state various regulatory mechanisms have been instituted. In each case Barfield said "safe yield" concepts are employed. A variety of watersheds are now officially closed to the approval of new SW applications. Many geographic areas overlying certain stratigraphic units are also formally closed to approval of new GW applications. In several cases the Chief Engineer has temporarily closed areas pending the outcome of ongoing investigation and assessment.

Water Commissions are headquartered in several locations, and regulation is an extensive agency activity. Besides fulfilling responsibilities for regulation of water users, field staff members perform other tasks (inspection of earthen dams for example) delegated to DWR.

Montana

Curt Martin, Montana Department of Natural Resources & Conservation

July 7, 2004

Key statutes (Sec's 85-2-311 & 85-2-508) stress positive findings of physical & legal availability (as well as third party impacts) of water when the agency reviews applications to appropriate SW or GW on a case by case basis. Statutes place the burden of proof on applicants; appropriations for less than 5 ½ cfs or 4,000 acre-feet/year - - - preponderance of evidence; larger appropriations - - - clear & convincing. The statutes and DNRC rules contemplate contested cases.

Rather than burdening the DNRC with need for continued examinations of individual applications from certain geographical areas, Martin said 30 locations are closed to additional consumptive appropriations:

Number of areas	Description
7	“Controlled Groundwater Areas”
10	“Administrative Rule Closures”
2	“Department Ordered Milk River Closures”
6	“Legislative Closures”
5	“Compact Closures”

Many closures were preceded by investigation and construction of mathematical models. Most locations falling under the first category (Controlled Groundwater Areas) were closed by the DNRC as a means of preventing public exposure to toxic mining waste. Most of the Administrative Rule Closures resulted from citizens and/or other public agency petitions to the DNRC. Agency officials’ initiative in pursuing such closures has not been aggressive, Martin acknowledged. Agreements reached in negotiating with Tribes and with the U.S. Fish & Wildlife Service resulted in each of the Compact closures. Within certain portions of the Upper Missouri River watershed, it was said Montana’s Compact negotiators opted for a moratorium on new uses instead of initiating administrative procedures to acquire instream flow water rights.

Montana law makers are known for being parsimonious (for a recounting see Sherow, James E., “The Fellow Who Can Talk The Loudest And Has The Best Shotgun Gets The Water, *Montana; The Magazine of Western History*, Vol. 54, No. 1, Montana Historical Society, Spring 2004). Consequently, Martin said “Montana has a weak enforcement process” and “compliance cannot be assured in the field.” Given that and the ongoing drought, he said media reports have recently become critical.

Montana has “never had a strong State Engineers office, and we were not allowed to comprehensively manage water rights until some 30 years ago.” We’re now “trying to catch up,” he said.

Nevada

Tim Wilson, Nevada State Engineer’s Office
July 12, 2004

Principles of prior appropriation apply to SW & GW. Adjudication of vested rights focuses upon pre-statutory (1905) SW claims and Native American and federal reserved rights. Adjudication of GW uses involves those uses established prior to: 1913 (artesian GW) and (1939 percolating GW). NRS Sec. 533.370 in part directs the State Engineer to deny applications for new water appropriations if “. . . there is no unappropriated water in the proposed source of supply, or where its proposed use or change conflicts with existing rights or with protectible interests in existing domestic wells . . . or threatens to prove detrimental to the public interest . . .”

Basin-wide adjudications have resulted in numerous federal, State and civil decrees which often include formal determinations declaring certain river basins fully or over appropriated. Because

each decree is unique, Wilson was unable to generally describe procedures used in arriving at such all-encompassing conclusions. As a practical matter, stream flows in most watersheds have been declared fully appropriated, he said. Because comprehensive water right adjudications are nearly completed in Nevada's river basins, few applications for new SW appropriations get filed in the State Engineer's office. "If a new application specifies diversions in a fully appropriated basin mentioned in one of the decrees, it is simply rejected," Wilson explained. In such cases, I gathered staff member denial recommendations are not backed up with results from hydrological assessments.

Responsibility for field administration of SW rights is mixed. In several small watersheds Wilson described water users as conciliatory and said they are "self regulating." In others the State Engineer has ordered competing water users to employ a water commissioner. Elsewhere, Wilson said regulation in the field falls to water commissioners employed by the State Engineer's office. Finally, water rights are regulated by federal water commissioners in the Humboldt, Truckee and several other river basins. Judging by what was heard, field regulation is extensive and continuous.

Adjudication of GW rights does not include potential future users; therefore, determinations of un-appropriated water are not included in the proceedings.

Before acting on applications to the State Engineer for new GW uses, Wilson said staff members consult relevant hydrological reports (mentioned were several publications authored by USGS scientists). Also before making "perennial yield" recommendations to the State Engineer, staff members sometimes examine potential impacts by using mathematical models. As described, staff member analysis procedures seemed straight forward. Additional GW withdrawals are permitted only if cumulative withdrawals do not exceed rates of natural recharge. When asked if the staff member analyses amounts to assumption of the burden of proof, Wilson paused and ultimately said he believes it does. Applicants assume the burden of proof if they opt to contest one of the State Engineer's official decisions, he said. Except for several instances where GW contamination threatens public health, the State Engineer has not formally closed an aquifer to further exploitation.

Without being specific Wilson said field regulation of GW users is substantially less intensive than that undertaken for SW users. From what he said, I gathered agency staff members believe satisfactory compliance is achieved through imposition of restrictions placed on permits; Ex's: irrigated acreage limitations, urban service area limitations.

New Mexico

Jay Stein, Stein & Brockmann, P. C. (former chief counsel, State Engineer's office)

July 20, 2004

Principles of prior appropriation apply to uses of both SW and GW. Adjudication procedures (they're still ongoing in numerous locations) permit formal recognition of uses prior to 1907

(SW) and prior to 1931 (GW). Adjudications must be preceded by a Hydrographic Survey prepared by the State Engineer's office. The reports are important in establishing appropriations through judicial processes or by negotiation where the State Engineer's office prepares "offers of judgement." Consideration of un-appropriated water is not a factor in either activity.

Proposed new water uses do not stand for judicial review but must be OK'd by the State Engineer. In such instances statutory provisions (Sec's 72-5-6 & 72-12-3) indicate a permit shall be issued "... if applicant has provided reasonable demonstration that: ... (2) the project is hydrologically feasible ...". According to Sec. 72-5-7, SW applications are to be rejected if there is no unappropriated water.

The State Engineer is authorized by Sec. 72-12-1 "to declare" particular ground water basins if irrigation development is judged to be excessive, if compliance with interstate compacts cannot be assured or for a variety of other reasons. Some 20 years ago, Stein mentioned a State Engineer-declared moratorium after El Paso, Texas threatened to construct municipal wells in New Mexico. From another source, *High and Dry*, written by G. Emlen Hall (Univ. of New Mexico Press, 2002), it sounds like former State Engineer Steve Reynolds often played it fast and loose when deciding whether additional GW uses could be allowed in particular locations (esp. ground water sources hydraulically connected to the Pecos River).

Judging by what Stein said, reasons for a recent Legislative moratorium (Sec. 72-12-3.1) are similar to those experienced by Reynolds some 25 years ago. The 24-month moratorium is for the Lower Rio Grande watershed where several municipalities from Texas (Stein also mentioned Juarez, Mexico) publically indicated interest in constructing wells in New Mexico. Notably, the Legislature's apparent rationale also suggests elements of a hydrological assessment. In pertinent part it says:

"... the amount sought to be appropriated in pending applications far exceeds available supplies and the allocation of surface water between the states of New Mexico and Texas needs further clarification."

Beyond the recently adopted Legislative moratorium, Stein said there have been no official watershed or ground water basin closures. As a practical matter, however, he said it is generally recognized that diversion of water is likely to be infeasible in many locations. As an example, he mentioned the Pecos River watershed, subject to the amended decree in *Texas v New Mexico*, No. 65 Original 494 U.S. (1988) which mandates compliance with certain state-line delivery requirements. By implication he said severe limitations exist in that watershed.

The State Engineer maintains offices in various locations. Responsibilities vary from one to another, but Stein said Water Masters assigned to some locations are responsible for field regulation of water appropriators. The decree in *Texas v New Mexico* created a special Water Master to supervise water diversions in the Pecos River watershed. As opposed to regulation of water users, Stein said field activities in many locations are limited to data collection efforts. Hall's book (he's on extended leave & could not be reached) generally agrees with Stein's

assessment. They both claim the State Engineer's office has a long history of attempting to avoid priority regulation . . . a politically messy and career-threatening activity.

Finally, the statutes mention County Artesian Well Supervisors. Such officials are to serve in locations where Artesian Conservancy Districts exist. Stein was aware of the Pecos Valley Artesian Conservancy District but was unsure whether field supervisors have been appointed. Hall's book sheds no additional light on the status of such supervisors.

North Dakota

Bob Shaver, North Dakota Water Commission

July 12, 2004

Principles of prior appropriation apply to both SW and GW diversions. A requirement for the State Engineer to consider whether water supplies are sufficient to satisfy proposed uses contemplated in new applications is not explicit, but Shaver said it is routinely inferred from six elements falling under "public interest" criteria specified in Sec. 61-04-06.

Sustainability is the underlying criteria for all GW decisions. "That means extractions must be in balance with natural rates of recharge. Given variations in climate, we review all applications and continue permitting most diversion proposals," Shaver explained. Mathematical models have been developed for most GW aquifers. Receipt of new information (Ex's: annual water-use reports, new test hole & pump test data) permits refinement of agency analytical methods.

SW also is regulated with sustainability as an underlying criteria. Shaver said agency staff recommendations are presently based upon 80% exceedence criteria. He was unaware of Oregon's mathematical procedures, but after hearing them described, he said North Dakota staff members employ a substantially similar methodology when reviewing permit applications. He said the State Engineer has not formally closed any watersheds in North Dakota.

The State Engineer's office is not often called upon to regulate users in the field. Instead, staff members make inspections to verify compliance with specific requirements included in permit application approvals. In response to my question about water meters and maintaining their precision over time, Shaver said agency field personnel do not routinely check their accuracy. If administration of prior rights is requested, the State Engineer's office first requires individuals to make a "reasonable effort to capture" available water (i.e., wells drilled to bedrock, stream channels dredged to direct flows toward headgates, etc.). From his remarks, I gathered priority regulation in the field is not frequent.

Sec. 61-04-31 ("Reservation of waters") creates authority for the State Engineer ". . . to withdraw various waters of the state from additional appropriations . . ." Shaver said the legislation was enacted in the 1970s and was a political reaction to concern over several large-scale industrial pipeline proposals. Reservations contemplated by the statute have never been pursued, he said.

Oklahoma

Mary Bruegger, Oklahoma Water Resources Board

July 14, 2004

Use of SW is subject to prior appropriation requirements. Before granting permits for its use, the 9-member Oklahoma Water Resources Board (OWRB) must find “unappropriated water is available in an amount applied for.” For diversion of stream flows, administrative procedures (agency rule Sec. 785:20-5-5) indicate such determinations “. . . shall taken into consideration the mean annual precipitation run-off.” Bruegger said agency staff members recently urged adoption of additional analytical criteria. Its approval is pending.

As opposed to closing basins to approval of additional appropriations, OWRB continues to grant new permits. Those unable to divert because their permits are out of priority, must simply “wait in line” until flows increase or until senior rights are relinquished or expire due to non-use, she explained. None of the state’s watersheds have been declared over-appropriated, and judging by her remarks, it sounded like such a move has not been considered.

GW is private property subject to reasonable regulation by the OWRB. As described on the OWRB web site, permits for GW use specify annual pumping volumes “. . . based upon the amount of land owned, generally two acre-feet per acre of land: *slightly more or less in basins where detailed hydrologic surveys have been conducted.*” Preparation of the hydrologic surveys is an ongoing responsibility delegated to and given prominence by the agency. Inherent in completion of the surveys is attention given to the “Life of a groundwater basin or subbasin,” a term of art defined by agency rule (Sec. 785:30-1-20):

“. . . that period of time during which at least fifty (50) percent of the total overlying land of the basin or subbasin will retain a saturated thickness allowing pumping of the maximum annual yield for a minimum of twenty (20) year life of such basin or subbasin, provided that after July 1, 1994, the average saturated thickness will be calculated to be maintained at five feet (5') for alluvium and terrace aquifers and fifteen (15') for bedrock aquifers . . .”

Notwithstanding the ultimate conclusion that criteria suggests, Bruegger said she doubted the OWRB would ever close particular geographic areas or stratigraphic units to further exploitation. From her remarks, I gathered recognition of private ownership has everyone “spooked,” and it has generally discouraged consideration of such a move.

Despite agency hesitations, an 88-mile pipeline proposal to deliver water supplies to several growing urban areas in southern Oklahoma prompted a recent Legislatively mandated GW moratorium. Pending completion of a special investigation, the moratorium (Senate Bill 288, 2003 Leg. Session) bars OWRB from approving permits to export GW pumped for use outside any county which overlies the Arbuckle-Simpson aquifer.

Besides the emotion associated with exports of large quantities of water, Bruegger said other

local circumstances create additional complications. The Arbuckle-Simpson aquifer is a “sensitive sole source ground water basin” and pumping from it adversely impacts flow in several streams which ultimately pass through the scenic Chickasaw National Recreation Area.

At this juncture, Bruegger said “we are awaiting the outcome of litigation over whether private property considerations make Senate Bill 288 unconstitutional.” Regardless of that outcome, she said the special investigation has been ongoing for more than a year.

Bruegger mentioned routine field inspections to verify compliance with permit requirements and only periodic field enforcement of priority rights for SW users. Judging by her remarks, it didn’t sound like priority regulation is extensive. When needed, it mostly involves requiring SW appropriators to forego diverting small quantities needed by livestock grazing downstream.

Oregon

Principles of prior appropriation apply to both SW and GW diversions. The statutes set out a 3-step process for obtaining water rights. In seeking WRD approval, the burden of proof is on applicants to demonstrate sufficient water is available at the location and at the time of proposed use.

Richard M. Cooper, Oregon Water Resources Department (SW knowledge)
July 8, 2004

Out-of-stream diversions having origins prior to 1909 (continuous operation is an essential factual determination) are recognized through agency adjudication procedures devoid of water availability assessments. Exempt from more rigorous permit requirements are small-volume water consumption activities (Ex: individual households & commercial establishments), diversions needed for fish hatcheries and several other categories.

Some 12 - 13 years ago, Cooper said WRD staff members informally concluded natural stream flows (i.e., after taking release of impounded supplies into account) in nearly all locations were “fully if not over-committed.” In large part that assessment was based upon the experience of agency Water Masters’ (similar to game wardens, but instead of fish & game regulations, they are charged with water regulation & distribution responsibilities) routine regulation of stream flow users. In effect “the central office was issuing permits in the morning, and our Water Masters were closing down the same people later that day; it didn’t make sense,” he said.

Of equal concern with increasing but avoidable agency enforcement expenses was the creation of misleading expectations. “Obtaining a piece of paper (i.e., a water right) from us” became the basis for unintended, unwise investment decisions, he explained.

After sharing their assessment with members of the Water Resources Commission (WRD’s policy setting body), staff members’ recommendations to develop new procedures and needed

legislative proposals were advanced.

WRD's current policy is now spelled out in ORS 690-400-010 (11)(a)(A):

Over appropriation means a condition of water allocation in which the quantity of surface water available during a specified period is not sufficient to meet the expected demands from all water rights at least 80% of the time.

With reference to field data collected at measurement sites or by analyses resulting from specific stochastic methods, WRD developed a statistical methodology for determining whether particular watersheds or stream reaches are over-appropriated. The same methodology is used in reviewing individual applications. Decisions are based upon analyses of monthly stream flow data. "Even if the numbers are less than the 80-percent level, applications are sometimes rejected because other factors are over-riding," Cooper said. WRD's computation procedures are laid out in Cooper's technical report (*Determining Surface Water Availability in Oregon*, August 2002). Copies in electronic or hard copy are available from WRD.

For out-of-stream growing season uses (generally April thru October), most watersheds were closed to new appropriations in the 1990s, Cooper said. Additional non-irrigation season diversions could be allowed on a few streams in eastern portions of the state, he added.

Doug Woodcock, Oregon Water Resources Department (GW knowledge)
July 28, 2004

Woodcock provided an internal agency memorandum which briefly outlines Oregon's various regulatory schemes for managing use of GW. The overall objective of his state's regulations is to "... maintain ground water resources as stable and renewable water supplies, while at the same time conserving maximum supplies for new beneficial uses." Commission members tend to be pro-active, he said. The statutes describe five distinct mechanisms. At one location or another, each has been implemented:

1. Withdrawal of unappropriated water (ORS 536.410). A stratigraphic/geographic area may be withdrawn if the Commission determines it is necessary to ensure compliance with State water policy or is in the public interest to conserve water. The withdrawal doesn't affect existing users, and it must specify what types of new uses (i.e., industrial, irrigation) are prohibited.
2. Classification of water (ORS 536.340). Upon identifying stratigraphic/geographic boundaries the Commission is authorized to designate the purposes for which remaining unappropriated water may be developed. Woodcock mentioned several high value, specialty crops and said the purpose of this declaration is to assure GW is used for the "highest and best use."
3. Serious water management problem area designation (ORS 540.435). Again after designation of stratigraphic/geographic boundaries the Commission is authorized to require meters and submission of annual reports of GW use. Woodcock said SWMPA

designations have been implemented where long-term GW declines exist, where well interference problems are known to occur and where shortages are periodic.

4. Regulation for substantial or undue interference (ORS 537.775, 537.777 & 537.690). On the surface I found it difficult to distinguish between this authority and that discussed previously. In mentioning well pumping drawdowns as they may intercept nearby streams, the memorandum provided clarity. At least partly under authority of such designations, Woodcock said WRD personnel regulate SW and GW users conjunctively.
5. Critical ground water area designation (ORS 537.730 to 537.742). If conditions are severe the Commission is authorized to order a “cut back on existing uses of GW.” Reduced pumpage by existing users can be ordered as a means toward reversing overdraft, reducing interference among well operators, retaining water quality in an aquifer and for variety of other reasons.

Agency personnel assigned to its GW section work closely with USGS scientists. Joint efforts are directed toward data collection & analyses. Studies having a basin-wide scope are most useful for agency purposes, Woodcock said. “We attempt to be forward looking, but with existing budget limitations, it’s difficult to be proactive.”

From his description in-the-field regulation has been less successful than agency personnel had expected. He mentioned “mixed results” in several locations which have been designated as critical. In reference to budget reductions, he said “We haven’t been hit lately,” but he said in-the-field regulation was scaled back during previous shortfalls.

South Dakota

Ron Duvall, South Dakota Department of Environment & Natural Resources

July 14, 2004

Principles of prior appropriation were first adopted by the Territorial legislature and now apply to users of SW and GW. Applications for water appropriations can be permitted only after DENR determines there is a “. . . reasonable probability that there is unappropriated water available for the applicant’s proposed use . . .” (SDCS 46-2A-9). An exception to the permit procedures is made for small volume domestic uses. The existence of sufficient unappropriated water is inherent in an adjudication process for establishing pre-1955 GW appropriations.

Besides the general requirement mentioned above, an additional provision (SDCS 46-6-3.1) says a new GW appropriation may not be granted if “. . . the quantity of water withdrawn annually . . . will exceed the quantity of the average estimated annual recharge . . .” The latter requirement is not applicable for withdrawals from stratigraphic units older than the Greenhorn Formation (a unit deposited some 63 - 138 M years ago).

The 7-member Water Management Board (sets general policies, hires an agency executive & is responsible for making certain decisions) has not formally closed any watersheds to applications for SW appropriations. And, they “don’t have the heart to turn down individual applications,”

Duvall said. As a result, agency files contain many pending applications.

New appropriations in the James River basin may prompt a change in that policy, Duvall said. Board members tentatively agreed cumulative “basin-wide diversion approvals should stop at 300 cfs.” New applications for that region have not been received, and whether the Board will actually deviate from its long-standing policy remains to be seen.

On a practical basis, Duvall said most “tributaries coming from the Black Hills are over-appropriated, and we (i.e., staff members) always recommend new applications be denied.” When asked for a technical explanation, he mentioned cumulative numbers of permitted diversion rates and contrasted them with statistical parameters obtained from pertinent measuring station data; 50% exceedance was mentioned specifically.

In contrast to their SW decisions, Board members have rejected applications for new wells when staff members report cumulative pumpage exceeds estimated rates of recharge. Staff member recommendations are nearly always based upon individual county investigation reports authored by USGS scientists. It sounded like each report includes a single, county-wide recharge estimate. Generally, staff members take published values at face value. Agency analytical procedures are mathematical and straight forward. If, after the proposed pumping rate specified in an application is added to pumping rates of all existing wells, cumulative pumping from an aquifer is less than published recharge figures, staff members recommend approval of new applications.

Duvall said his agency lacks adequate staff member numbers to fully monitor SW diversion activities. Complaints are routinely handled by staff members issuing written closing orders. Field enforcement is pursued by agency staff members only if complaints persist. The latter activity occurs rarely.

In discussing resolution of GW users’ complaints in eastern South Dakota, Duvall said Sioux Falls officials recently agreed to provide water to several individuals who own shallow wells adversely impacted by operation of nearby, large capacity wells owned by the municipality. He said the agency has no history of shutting off GW users as a means a) of enforcing priority rights among well operators or b) to increase flows in hydraulically-connected streams.

Texas

Kellye Rila, Texas Natural Resource Conservation Commission (SW knowledge)

July 26, 2004

Gregg Eckhardt, Edwards Aquifer Authority (GW knowledge)

July 26, 2004

Use of SW (public property) is subject to appropriation under a system of prior rights. Formal authorizations for pre-1967 uses of SW are subject to adjudication procedures largely delegated to the TNRCC. On a state-wide basis the agency Web site says the adjudications are nearly

complete. Assessment of available supplies is not a consideration in such proceedings.

Sec. 11.134(b)(2) instructs the TNRCC to grant post-1967 applications if there is unappropriated water in the proposed source of supply. A seven-member Review Team (Rila is the designated team leader) is charged with making recommendations to TNRCC members. Because water rights are granted on a "first come-first served" basis, the Web site says there are "areas of the state where all of the water available for appropriation has already been permitted." It goes on to say, "There are other areas of the state where water is only available for appropriation for a period of time which may or may not be extended depending on the development of existing senior water rights." In response to questions about the various watersheds, Rila identified only the Rio Grande.

Criteria used by the seven-member Review Team are spelled out on the Web site. Narration contained therein seems more absolute than Rila described, however. She said the TNRCC sometimes ignores recommendations coming from the Review Team. With that in mind (and for whatever it they may be worth) when evaluating individual applications, the Web site claims these "three rules of thumb" guide decision makers in Texas:

- for most users, if the record shows that at least 75% of the water can be expected to be available at least 75% of the time, the TNRCC will usually issue the permit;
- for municipalities, the TNRCC will issue a permit only if the record shows that 100% of the water can be expected to be available 100% of the time, unless a backup source is available;
- for a municipality that has access to a backup supply, the TNRCC may decide to issue a permit to use water that can be expected to be available less than 100% of the time.

Across the state SW shortages are neither common nor universal. According to the Web site, "In most areas of the state, the honor system governs compliance with water rights." Consequently, field regulation is limited to particular locations. Rila said field regulation is "intense in the Rio Grande" watershed.

Mentioned on the Web site are Watermasters for South Texas streams and the Rio Grande River. When necessary, each is authorized to regulate or close down junior appropriators. Those intending to begin pumping from the river "must notify the Watermaster in advance of beginning their diversions," Rila explained.

GW use is a private property right and not generally subject to supervision by public agencies. An exception is use of GW from the Edwards Aquifer. Pumping from the aquifer is known to adversely impact the flow of springs important for endangered species habitat near San Antonio. With claims of an incidental take, the Sierra Club initiated litigation starting in 1991.

The Texas Legislature responded to that situation by creating the Edwards Aquifer Authority in 1993. (NOTE: Perhaps because its provisions are scattered across seven chapters of the Texas

code, making specific references is difficult; Rila and Eckhardt mentioned "the Act" or "Senate Bill 1477" when speaking with me. After spending 45 minutes in an unproductive search, I gave up attempting to identify specific references.) As a means of preserving the magnitude of discharge from large springs which discharge directly into pools inhabited by federally-listed fish, the Authority is charged with limiting GW withdrawals.

The Authority's jurisdiction is limited to the 8-county area overlying the Edwards Aquifer. Among other things Board members have adopted management goals which call for reducing annual aquifer withdrawals to 450,000 acre feet by Dec. 31, 2007. Thereafter, annual withdrawals are to be 400,000 acre feet. Those quantities (but not the target dates) are mentioned specifically in the enabling legislation. Eckhardt said they resulted from extensive field testing and mathematical modeling analysis. Passage of the Legislation effectively created a moratorium which limits cumulative GW extractions from the aquifer, he acknowledged.

The burden for achieving those objectives falls largely to the Authority. To reduce GW withdrawals prior to the end of 2007, it is solely responsible for purchase and permanent retirement of existing uses. After achieving the 450,000 acre feet objective, the expense of further pumpage reductions is to be shared with other users located downstream from the springs.

In pursuit of its objectives, Eckhardt said Board members have adopted a variety of regulations which include meter installation requirements and pumpage limitations. The Authority employs a large staff, including those responsible for enforcement activities in the field.

Utah

Dorothy Bolton, Utah State Engineer's Office
July 15, 2004

All waters are public property, and uses of SW and GW fall under rules of prior appropriation. Applications are made to the State Engineer, who before approval, is required to make an affirmative finding that unappropriated water is available (Utah Code, Title 73, Chapter 03). The statutes contain provisions for filing so-called "diligence claims" for pre-1903 use of SW and "underground water" claims for pre-1935 use of GW. To force quantification of federal reserve rights under provisions of the McCarren amendment (not mentioned was possible adjudication of Native rights), general stream adjudications are ongoing in several watersheds. The State Engineer is delegated certain responsibilities (Utah Code, Title 73, Chapter 04) to assist non-federal interests in general adjudication proceedings.

Closing areas to further development started many years ago; first with gubernatorial proclamations and later under rule making authority granted to the State Engineer. According to Bolton, agency decisions to close areas to approval of new applications resulted from regulatory experiences; mentioned were futile calls, increasing numbers of interference problems among GW users and interstate compact limitations. Also, for several watersheds authors of agency-sponsored technical investigations reached specific conclusions which the State subsequently

found persuasive. Closures are formally promulgated in "State Engineer Policies," she said.

Nearly every watershed is closed to approval of SW appropriations. Judging by a map of Utah, approximately 1/4 of the state (central) also appears closed to approval of new GW applications. Elsewhere, the map suggests conditions are less severe; perhaps 30% of Utah (approximately) is labeled "Restricted," a slightly larger portion of the state (west & northwest) is labeled "Open." A Policy requirement in one of the "Restricted" areas allows operation of individually-owned domestic wells until such time as home owners can obtain supplies from nearby municipalities, Bolton explained.

SW use regulations are enforced by River Commissioners who confine their efforts to particular watersheds or stream reaches. Individual water users, districts, municipalities and companies collectively hire and pay their salaries. A few work full-time, but most are employed only during the irrigation season.

Recently, Bolton said GW users in several locations also began hiring Commissioners. Exactly what functions are performed by them was not known to her.

"In large part Utah is a desert," Bolton said. In many locations water is very scarce. When reviewing whether an irrigation water right can be relocated to another location or transferred to municipal use, Bolton said beneficial use considerations include such things as minimum crop water needs (related to specific forage, grain or perennial trees/vines) and efficiency in delivering water to particular fields.

Washington

Doug McChesney, Washington Department of Ecology

Despite periodic exchange of phone messages, I was unable to speak w/McChesney. - MJ

Uses of SW and GW are governed by principals of prior appropriation. In situations where uses from both sources are inter-related, referred to as "hydraulic continuity," the policy is one size fits all. The so-called "one molecule theory" is complete and total. GW & SW users are to be jointly regulated no matter how minuscule the physical connection between them and without regard to time delays.

For pre-1917 SW users, a claims registration process leads to acquisition of vested rights; similar procedures are available to pre-1945 GW users. The Water Code (RCW Chapter 90.03) applies to new applications made subsequent to 1917 (SW) and 1945 (GW). Prior to creation of a new water appropriation, the Code directs Ecology to "... determine what water, if any, is available for appropriation ..."

Beginning nearly 20 years ago, Ecology initiated negotiated rule-making activities aimed at preserving flows in streams deemed necessary for salmon and other anadromous fish. By subsequent regulation (WAC Sec's 173-500 *et seq*) the agency specified minimum necessary

instream flow quantities, compared those figures with existing out-of-stream water appropriations and concluded many streams are “totally appropriated.” Ten tributary streams and stream reaches in the Walla Walla basin, for example, are closed to new appropriations under WAC 173-532-040. Elsewhere, preservation of artesian aquifer conditions or a desire to maintain certain water table levels has been the subject of additional rule making efforts. Similarly, agency regulations WAC Sec’s 173-100 thru 173-136, for example, establish limits for extraction of GW in particular locations. In both SW & GW situations, Ecology’s subsequent analyses that particular new applications cannot be allowed due to lack of un-appropriated water was based upon its earlier rule-making activities.

Agency determinations to allow new appropriations are not conclusive, however. In *Rettkowski v Dept. of Ecology*, 122 Wn.2d 219, 858 P.2d 232 (1993), a majority of the Supreme Court cited, among other things, the State’s comprehensive statutory procedures in concluding that only the Superior Courts have responsibility to ultimately create water appropriations. Thus, while agency determinations filed with the Superior Courts in such matters are often given significant weight, they are not the last word. Also in *Rettkowski*, the Court said Ecology could not enforce its cease and desist orders in advance of the Superior Courts’ concluding basin-wide adjudication proceedings.

Basin-wide adjudications are complete in more than 80 watersheds. Judging by the list, more than half include only SW uses, however. Both SW and GW uses have been adjudicated in the remaining watersheds.

Judging by Ecology’s allocation of resources, enforcement is not a high priority. A pie chart seen on one of its Web pages says 3% percent (\$1.2 M) of the agency’s annual budget (\$35.6 M) is spent for in-the-field compliance activities. Attention is said to be focused upon a) attaining 80% compliance with court-ordered measuring device requirements and b) enforcement actions in egregious circumstances, for endangered species protection and in “high water use sectors.” Of the 151 persons employed by Ecology, one of the agency Web pages says only nine are assigned enforcement responsibilities.

Wyoming

Depositions of various witnesses in *Nebraska v Wyoming*, No. 6, Original.
1986-1998

Since territorial times SW use has been subject to prior appropriation requirements. A set of adjudication procedures, spelled out in Sec’s 41-4-101 thru 41-4-408, delegates responsibility for their execution to the Board of Control. Post-1890 SW uses must be authorized by the State Engineer. According to Sec. 41-4-503 it is the “. . . duty of the State Engineer to reject such application and refuse the permit asked for . . . (if) there is no unappropriated water in the proposed source . . .”

Use of GW is authorized by the State Engineer and falls under somewhat similar requirements.

Since 1969 a permit has been required prior to construction of all water wells. According to Jacobs, Tyrrell and Brosz (*Wyoming Water Law - a summary*, Univ. of Wyo. Agricultural Experiment Bulletin B849R, May 2003), GW permits are “usually granted as a matter of course.” Three Control Areas have been established by the Board of Control, and when permit applications are reviewed, Advisory Groups representing the respective areas sometimes make recommendations to the State Engineer. Reportedly, the recommendations sometimes include denial if cumulative GW pumpage is approaching recharge rates or if GW water levels are declining or have already declined excessively.

Among those deposed in *Nebraska v Wyoming*, No. 6, Orig., were former State Engineer George Christopulos and (then) State Engineer Jeff Fassett. Others deposed included Earl Michael (a former member of the Board of Control), Brian Pugsley and Doug Oliver. When asked, none of them said he knew of watersheds or ground water basins having been formally closed to issuance of new appropriations.

After reviewing those depositions and other evidence, representatives for Nebraska also concluded field enforcement of water appropriations was largely ignored by responsible Wyoming officials. After nearly half a day of questioning, for example, Christopulos finally acknowledged having extended no genuine effort regulating reservoirs in the North Platte drainage.

Later, Wyoming officials produced a document which described a complex regulatory scheme supposedly used to guide enforcement activities in the North Platte watershed. On several occasions it became the subject of extensive discussion before the Special Master. Generally, the document indicated enforcement actions would only follow the existence of certain sets of circumstances and be applicable only to particular geographical locations.

Actual in-the-field activities described by Michael, Pugsley and Oliver during their depositions, however, indicated little knowledge of the written criteria developed by Wyoming’s legal representatives and given to the Special Master. Not only did they not follow the written guidelines, but through the depositions of these Wyoming employee witnesses and others, Nebraska officials ultimately concluded Wyoming’s enforcement activities were haphazard, lax or more often, nonexistent.