VOLUME XVII, ISSUE 4
December 2003

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES

StreamLines

Quarterly Newsletter of the Office of the State Engineer

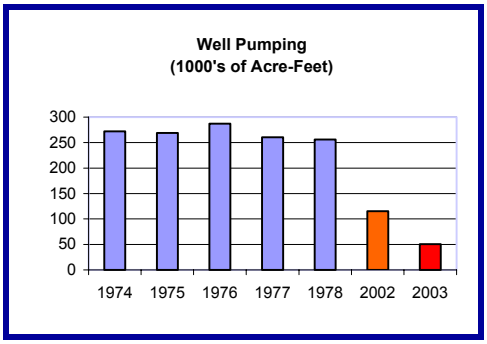
Use of Irrigation Wells Reduced in the Arkansas River Basin

Bill Tyner, Assistant Division Engineer, Division 2

The 2003 irrigation season in the Lower Arkansas River Basin was marked by improved stream conditions over the devastatingly low conditions experienced in 2002, but well owners in Pueblo, Crowley, Otero, Bent and Prowers Counties experienced a very difficult year with much lower than average well pumping due to a scarcity of replacement supplies.

During the drought period that occurred from 1974 through 1978, irrigation by wells in the lower Arkansas River Basin accounted for an average of 270,000 acre-feet of irrigation supply. With the advent of the 1996 Use Rules in the Arkansas Basin, well owners were required to replace out-of-priority stream depletions that result from well pumping. In 2002, there were sufficient replacement sources to allow irrigation well owners to still provide over 115,000 acre-feet to supplement surface supplies or to continue to irrigate portions of acreage served only by wells. In 2003, much of the stored replacement water had been exhausted and consequently irrigation pumping fell to approximately 50,000 acre-feet.

The Division of Water Resources' water commissioners had a very busy year monitoring farm pumping and working with well owners to ensure that they did not exceed the amounts of pumping approved for their farms.



Despite the dire conditions, there were some very creative responses developed by farmers in cooperation with their well associations. Among these creative solutions was a plan by well owners under the Catlin Canal, working through the Colorado Water Protective and Development Association and the Arkansas Groundwater Users Association, to ensure ground water would be available as a reliable source of supply for critical high dollar crops. A number of the Catlin Canal farmers had invested in drip irrigation systems to supply crops such as watermelons, cantaloupe, pumpkins and vegetables with water from their irrigation wells. On these lands there was no ability to use surface water available to the Catlin Canal for irrigation, so the owners worked with their well associations to use the water represented by their shares for augmentation of their well depletions.

In order to make the augmentation scheme work, the water available to the Catlin Canal had to be diverted from the Arkansas

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Use of Irrigation Wells Reduced in the Arkansas River Basin (cont.)

River and then routed through the ditch to two key points along the canal where shares used for augmentation were measured back through flumes to quantify the credits from historic consumptive use of the surface water and to maintain historic return flow patterns off of the Catlin irrigated acreage. Also instrumental to the Catlin plan was approval by other shareholders without wells and by the Southeastern Colorado Water Conservancy District of a plan that allowed well owners under the Catlin to use a portion of Catlin's water stored in Pueblo Reservoir for augmentation purposes.

Water from the Catlin Canal measured and returned for replacement of well depletions

Drip irrigation of melons under the Catlin Canal

Although pumping amounts were limited based on the amounts of water available in-priority for the Catlin Canal coupled with the amount of water stored Pueblo Reservoir, the Catlin well owners were able to have a dependable supply to crops through the critical summer months and generally had good harvests that reduced some of the economic impact of the drought.

Senate Bill 278—Water Administration Fees

Scott Richrath, Program Manager, Water Administration Fee Program

On May 1, 2003, Governor Bill Owens signed into law Senate Bill 03-278, implementing for the first time in Colorado a Water Administration Fee Program. The program authorizes the State Engineer to collect annual fees from the owners of specified water rights throughout the state. These fees will help partially fund ongoing administration of those rights through the work of the seven Division Engineer's offices and the State Engineer's Office. The legislature provided a two-year sunset provision in the bill; the program will expire in July 2005 if no further legislative action is taken.

In developing a set of rules to govern the program, Chief Deputy State Engineer Ken Knox and First Assistant Attorney General Linda Bassi conducted 15 public stakeholder meetings throughout the state during October and November. From Cortez to Walden, and Grand Junction to Pueblo, individuals, organizations, and municipalities were given the opportunity to learn more about the bill and to voice their concerns about the new program. Input gathered at these meetings not only helped shape the initial set of rules, but also will help contribute to the report that the State Engineer must provide to the General Assembly

Fee Schedule

Fees are assessed per decreed water right
and are billed to the owner of record.
Fee amounts are based on the decree of record.

Direct flow (1+ cfs)	Storage (100+ acre-feet)
$10 – agricultural irrigation, recharge, stock watering	$25 – agricultural irrigation, recharge, stock watering
$250 – all other beneficial uses	$100 – all other beneficial uses

Measures for correcting or disputing ownership of a water right and associated fees are provided with your statement.

The February 2004 invoices cover the year ending 10/31/03. On or after 11/01/04, invoices will be mailed to cover the year ending 10/31/04.

Senate Bill 278 (cont.)

by December 1, 2004. The DWR will continue to gather opinions from the public in preparation for that report.

The rules were presented to State Engineer Hal Simpson and Deputy Attorney General Felicity Hannay at a December 1, 2003 Rulemaking Hearing. Five parties representing nine water rights owners throughout the state also presented their objections at the hearing. The State Engineer delivered the final set of rules to the Solicitor General on December 3. The rules are available at DWR's website (http://water.state.co.us/wateradminfees.asp). Though the published rules provide much more detail regarding the program, an abbreviated fee schedule is provided on the website.

The funds generated by the Water Administration Fee Program will be used to maintain the level of service provided by the Division. Those services include:

- Regulation of water distribution to water rights owners in legal priority.
- Maintenance of water diversion records for all beneficial uses.
- Hydrographic measurement of stream flow used by water planners and users.
- Enforcement of nine interstate compacts and treaties.

Tributary Well Operation in the South Platte Basin

Jim Hall, Division Engineer, Division 1

In 2003, well user groups in the South Platte basin found it extremely difficult to obtain replacement water supplies and State Engineer approval to allow operation of tributary wells in the South Platte basin. The great majority of these wells were used for irrigation purposes.

Part of the problem was the uncertainty created by recent litigation concerning how the State Engineer could continue to approve Substitute Water Supply Plans (SWSPs) for tributary wells absent a court-approved plan for augmentation. Historically, the State Engineer had used SWSPs to approve the replacement of out-of-priority depletions and operation of the majority of tributary irrigation wells. In response to a December 2001 Supreme Court ruling limiting his authority to approve SWSPs, the State Engineer proposed new rules to allow for such approval for tributary wells in the South Platte in 2002. In December of 2002, the Division 1 Water Court ruled that the State Engineer could not approve SWSPs under the proposed 2002 Rules and Regulations. The Colorado Supreme Court confirmed the Water Court's decision in April 2003. Legislation enacted in 2002 and 2003 provided a new mechanism for some users to obtain approval of SWSP's under certain conditions, but the criteria were not fully known until the irrigation season had begun. The recent rulings did not affect those well users who were entitled to pump under an existing decreed plan for augmentation.

Perhaps more important than the legal difficulties, the drought conditions in 2002 and early 2003 made it extremely difficult for well user groups to secure replacement water supplies for the 2003 season. This problem was compounded by new notice requirements that made securing water supplies in time for the irrigation season difficult even when water conditions improved.

Historically, replacement for the majority of tributary irrigation wells has been made by the Groundwater Appropriators of the South Platte (GASP). Because of the new requirements and water supply conditions, GASP was not able to obtain approval of a substitute supply plan that would have allowed these wells to pump in 2003. The State Engineer did approve a plan for GASP to replace delayed depletions created by pumping from previous years. Many individual well users with their own replacement resources from specific ditches and geographic areas were able to obtain approval of SWSPs that allowed pumping of their irrigation wells. While the majority of the approximately 4,000 wells in question were allowed to pump, over 800 irrigation wells could not be pumped because they were not covered under a SSP in 2003.

Division 1 became involved in enforcement activities far exceeding those previously required

Tributary Well Operation in the South Platte Basin (cont.)

for well administration. With the limited staff available, the Division issued orders to over 400 well users not covered by approved SWSPs to not pump or curtail pumping. The majority of these orders were issued by attaching a tag on the well indicating that the well could not be pumped. At that time, well information including electric and flow meter readings were taken. This information will provide the basis to assure there is not illegal pumping of these wells. Tagging will continue this winter for wells still not in a SWSP that allows well pumping. The Division is also beginning to file complaints with the Water Court against well users who have violated Division orders not to pump.

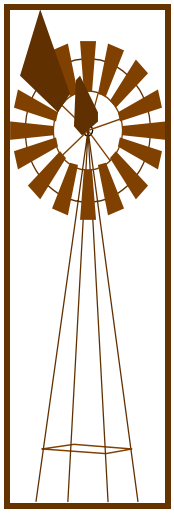
Senate Bill 73, approved in the spring of 2003, requires that all well user groups file for approval of a Plan for Augmentation with the Water Court by December 31, 2005. Plans have already been filed for the majority of wells in the basin. Those wells that are not included in such plans will not be able to pump.

Dam Owner Training

The Dam Safety Branch has begun offering dam owner training with a class scheduled for March 18, 2004 in Berthoud, Colorado. The training will be provided by the Greeley office personnel, and will be hosted by the Northern Colorado Water Conservancy District at their new offices. The class will be a one-day program, focusing on providing owners and caretakers a better understanding of what the dam safety engineers look for when they perform inspections. The initial class in March is primarily for owners in northern Colorado, with additional classes planned to be offered around the state.

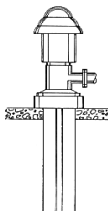
For additional information, contact your local dam safety engineer: Mike Graber or Bill McCormick, Pueblo (719-542-3368); John Blair, Glenwood Springs (970-945-5665); John Blair, Steamboat Springs (970-879-0272); Jim Norfleet, Montrose (970-249-6622); Dennis Miller, Durango and Alamosa (970-247-1845).

Water Well Testing Class



The Colorado Division of Water Resources is planning a *workshop/class* on Water Well Testing intended for well drillers, pump installers and other persons interested in performing water well measurement tests pursuant to the Well Measurement Rules of the State Engineer for the Arkansas River Basin, Designated Ground Water Basins, and for well measurement programs in other areas of the state. The class is scheduled to be held in Pueblo from May 5 through May 7, 2004. The cost of the class is $250 for three days of classroom instruction and field exercises.

The class is designed to give an overview of ground water hydrology, well hydraulics, water measurement methods, methods of collecting and analyzing data for determining power coefficients, well efficiency, system head considerations, reporting requirements, totalizing flow meter verification and more. Attendees will be allowed to take a test at the end of the class to obtain Division of Water Resources approval as a water well tester.



Interested individuals may respond to be placed on the mailing list to receive the upcoming formal announcement and registration packet by writing Ms. Janet Kuzmiak, at the Colorado Division of Water Resources, 310 E. Abriendo Ave, Suite B, Pueblo, CO 81004, or by e-mail at janet.kuzmiak@state.co.us, or telephone at 719-542-3368 Ext. 2101.

Beavers and Water Rights

Steve Kastner, Assistant Division Engineer, Division 2

The North and South Colony Creek drainages are located on the east slope of the Sangre de Cristo Mountains in Custer County. Named for the colony of German settlers who came to the area 130 years ago to farm and ranch, these streams flow essentially parallel to each other, and at one point converge to within one hundred feet before once again diverging. The topography where the streams converge is fairly flat aspen meadowlands extending downstream approximately one-half mile and is prime habitat for Castor canadensis (the North American beaver).

Second only to man in their ability to alter their habitat, the resident beavers had been industriously working as usual on their dams during the spring of 2002. The effect of their efforts was to store stream waters, and to route water out of stream channels, leading to intermixing of the waters of North and South Colony Creeks. This rerouting and intermixing of the two streams made the administration and delivery of water to the proper downstream water right owners impossible. While some benefited from the beavers' activities, others were deprived of the waters they would have normally received.

While not historically denied access to the upstream properties, the water right owners were frustrated at the continued need on their part to clear the

dams on other parties' properties and any liabilities that this entails. For their part, the upstream landowners who do not use their properties for farming or ranching purposes did not feel an obligation to remove the dams for the benefit of others.

Phone calls and contacts to the Division Engineer's office began in earnest in the drought-ridden spring of 2002. Tired and frustrated with the historic practice of having to remove beaver dams on property belonging to others in this convergence area, downstream water users called on the Division of Water Resources to facilitate the removal of these dams.

Efforts by the Division Engineer's office and the parties at finding a solution to the problem were unsuccessful. Continued frustrations by the water right owners led to an order being issued to two upstream property owners to clear and maintain the stream channels through their property of any unnecessary obstructions. These orders were complied with by means of running a track hoe up one stream and down the other. Although debate continued about responsibility for stream maintenance, the track hoe and the low water levels the remainder of 2002 solved the problem for the season.

The spring of 2003 brought about a rebuilding of dams with potential intermixing of stream waters during the runoff period, but a certain level of maintenance by the upstream land owners and oversight by the Water Commissioner resulted in the waters of the two main stream channels for the most part staying in their channels and prevented their intermixing.

Given the events and results of the 2003 season, the two outstanding orders have now been rescinded, however, neither the water right owners nor the upstream property owners appear satisfied and opinions remained entrenched. The Division Engineer's office continues with the stated opinion that orders will again be issued for stream maintenance to the extent stream obstructions are causing injury to water rights. Meanwhile, the beavers remain and next spring is only four months away.

Other activities this past year included GPS /GIS mapping and inspections of dams by the Division Engineer's office to monitor for any detrimental changes, a letter writing campaign to elected officials by the downstream water right owners who remain unsatisfied with any upstream water storage or dams, a series of meetings between all parties seeking solutions, and complaints by the upstream land owners that administrative orders which are continuous in nature constitute a taking of property and are, therefore, unconstitutional.

Ongoing Drought Issues

Mike Sullivan, Assistant Division Engineer, Division 3

The epic drought of 2002 continued in large part through the 2003 season. While 2002 was the lowest year in recorded history on all the streams and rivers in the Rio Grande Basin, 2003 appears to be in the bottom five of the lowest years at the date of this writing. With back-to-back years like that and with increased well pumping, tremendous drafts occurred to the aquifers of the San Luis Valley. In the last two years, between 650,000 and 700,000 acre-feet of water were depleted from storage in the unconfined aquifer in the closed basin area north of the Rio Grande inside the Rio Grande Water Conservation District study area boundaries. This study area encompasses the vast majority of the intensively irrigated areas that are served by wells. This decline resulted from little to no recharge from diversions and natural sources, and very dramatically showed how dependent that aquifer is on the recharge processes that are inherent to that area of the Valley. Because of this decline, many areas in the closed basin suffered enough drawdown to dramatically reduce the production of many wells or dried them up completely. Even with a voluntary reduction in the number of irrigated acres under sprinklers in 2003, the overall drop in the aquifer levels and storage was very large (250,000 acre-feet).

Stream flows have reached record low levels many times during the last two years and provided only the very most senior users with a water supply. Wells continued to pump and provide a full supply in many cases, a practice that has caused a great deal of concern and turmoil and a request for well administration by some. As of this writing, the RGDSS model is not complete and the state is unable to provide any guidance on pumping impacts on the river. There is a perception by some that there are significant impacts on the river and streams in the valley from wells pumping and no effort is being made to compensate those senior surface users for those impacts. It is a serious situation made much worse by the drought as pumping has not changed significantly due to moratoriums on new well construction put in place over 20 years ago.

Human Resources

New Employees

Jay Bloomfield began working in the Records Section in July of 2003. He has a background in customer service work and his skills are an asset to the Records Section. Jay works with the public providing customer service to walk-in and telephone customers. He assists internal and external customers with research questions regarding wells, water rights, diversion reports, and other records within the division. Jay is also involved in preparing and scanning the new well permit files into the visual information system.

Patrick Tyler started in October as an Engineering/Physical Science Technician I in the Denver office. Patrick has a BA degree in geology from Wichita State University and will be working primarily on exempt well permits for Division 1, for the area outside of the Denver Basin.

Sandy Seaholm began working with the Records Section in October of 2003. Her background experience is in accounting, court systems and water issues. Sandy works with internal and external customers to provide information on well permit and court case files. She maintains filing systems for various records within the section and performs quality assurance of images in the visual information system.

Pat Morrison began working with the Records Section in October of 2003. His background consists of many years of researching and investigating customer questions and working with the public daily. Pat provides customer service to internal and external customers with questions regarding well permits and water court case files. He also maintains filing for various records within the section and the quality assurance of images in the visual information system.

William McCormick started on October 27 as a Dam Safety Engineer in Division 2 in Pueblo. Bill's initial primary area of responsibility will be El Paso County, and other areas in the northern part of Division 2. Bill has a Masters Degree in Geological Engineering and approximately 14 years of experience, most of that time directly involved in geotechnical design and analysis of dams in Division 2. Bill's education and experience will be a real asset to the Dam Safety Branch.

Human Resources (cont.)

Scott Richrath began November 3 as Water Administration Fees Program Manager. Scott joins us from Hilton Garden Inn, where he served as Front Office Manager for the two years since he and his wife moved to Denver from the Green Bay, Wisconsin area. Scott is happily more than half way toward completion of his MBA at the University of Denver.

Ivone Lucero began on December 1 as Administrative Assistant for the Water Administration Fees Program. Ivone previously worked at the Secretary of State's Office where she had admirably assisted customers in the call center. Currently working toward a degree in geology at Metro State, she looks forward to the opportunities available in natural resources.

Retirements

Cliff Davis retired on November 30 after nine years of service with the Division. Cliff was Water Commissioner for the Muddy and Anthracite Creek drainages, and administered the augmentation plans for the coal mines in the North Fork Valley. Cliff is a life-long resident of the Paonia area and his knowledge of local water issues will be missed.

Janet Godwin retired on November 30 after 18 years with the Denver office. Janet was an Administrative Assistant for the south teams Water Supply Branch. Janet's hard work and dedication to her job will be greatly missed.

Wayne Williams retired on November 30 after 14 years with the Division of Water Resources. Wayne was responsible for administering District 35, the eastern part of the San Luis Valley where the few precious drops of water that melt from the Sangre de Cristo Range are already well over-appropriated. Wayne is very musically talented and plans to pursue this and his other interests that include hang-gliding and baby-sitting his grandchild. We'll certainly miss Wayne's skill at organizing the annual multi-agency field trip (including the BBQ feast) to shut off the Medano Creek transmountain diversions.

Harold Baxstrom worked in Division 7 since 1988. He started in the Pagosa Springs area and then moved to the Florida River when promoted to full-time. He has also been active in the CWOA and provided key support in the Division office when needed. Harold retired on November 30.

Hal Pierce retired on November 30. Hal began working in 1985 on the Pine River, Water District 31. He moved to District 30 and into the well commissioner job in 2001. Hal has been very active in coordinating and directing water administration on the Pine River as well as working with the Southern Ute Tribe on water administration.

Paul Clark leaves state employment after an amazing 35 years of service. He spent 14 years with the Department of Revenue before joining the Division of Water Resources as a Water Commissioner. His 21 years of experience with the Division, mostly as the lead Water Commissioner in District 22 – the Conejos River and its tributaries – will be sorely missed. Paul had an uncanny ability to get water out to his Colorado users and still meet the Rio Grande Compact delivery obligation every year. His last day with us will be December 31, 2003. Paul will continue to ranch and spend time with his wife nd their children. We wish Paul the best of luck with his future pursuits. Ralph retired on December 31.

Bob Starr retired on December 31 after 26 years of service with the Division. Bob was the lead Water Commissioner for the North Fork of the Gunnison River. He supervised three deputies and ran the Leroux Creek drainage, including its 28 reservoirs. Bob looks forward to having more time for hunting and outdoor activities.

Keith Kepler started with the Division of Water Resources in Denver in March 1981, and was initially assigned to reviewing subdivision water supply applications. After a few years, he was promoted to supervising the Designated Basins Branch. In 1987, Keith transferred to Division 4 in Montrose. In early 1994, he transferred to Division 2, in Pueblo, as an Assistant Division Engineer. During his ten years in Division 2, Keith has led the implementation of ground water rules and supervised dam safety activities and some of the water districts. Keith retired on December 31.

George Van Slyke retired on December 31 after 30 years with the Division. In 1973, he began work as a geologist in the Engineering Section working on subdivision reviews. In 1980, the Geotechnical Services Branch was formed, under George's supervision, and combined all of the geological functions within the Division. During the early 1980's, the branch defined the Denver Basin aquifers as they are known today. George became the expert on the Denver Basin and has been repeatedly asked to make presentations regarding the basin throughout the region. This work culminated in the development of all the geologic data for SB-5 and in the development and implementation of the Denver Basin Rules. Other work he supervised was the development of irrigated acreage mapping for the Arkansas Litigation and for the Colorado River DSS. In the late 1980's and into the 1990's, George developed the statewide ground water monitoring network that now includes almost 2,000 wells.

CALENDAR OF EVENTS

January 27-28	Colorado Water Conservation Board Meeting, Denver, Colorado; for more information, contact Catherine Gonzales at 303-866-3441
February 3	Colorado Board of Examiners of Water Well Construction and Pump Installation Contractors Meeting, Denver, Colorado; for more information, contact Gina DeArcos at 303-866-3581
February 23	Ogallala Aquifer Symposium; Wray High School, Wray, Colorado; for more information, contact Joel Schneekloth, Great Plains Research Center at 970-345-0508
February 24	Colorado Ground Water Commission Meeting, Wray Community Room, Wray, Colorado; for more information, contact Marta Ahrens at 303-866-3581
March 23-24	Colorado Water Conservation Board Meeting, Denver, Colorado; for more information, contact Catherine Gonzales at 303-866-3441

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***STREAMLINES** is published by the Colorado Division of Water Resources on a quarterly basis. Subscriptions are available for $10 per year to cover the cost of printing and mailing.*