

Colorado

Stream Lines

QUARTERLY NEWSLETTER OF THE OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

1313 Sherman St. Room 818, Denver, CO 80203 - (303) 866-3581

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Water Resources Enters World of GPS

By Chuck Roberts, Geologist

Global Positioning System or GPS is a method to determine the accurate position of an object utilizing a special radio receiver designed to read specially coded radio transmissions from 25 satellites circling the globe. It is the same technology used by U.S. troops during Operation Desert Storm to accurately identify locations.

GPS receivers are "mapping units" that are capable of determining a position within 2 - 5 meters after incorporating a "differential correction." "Differential correction" consists of utilizing data collected from a GPS setup on a known point (reference stations) to correct the GPS receiver errors experienced by the rover unit (unknown point). The software utilized for this is proprietary and is used under license from the Trimble Navigation Corporation.

In the water resource arena, GPS units may be used to determine:

- ◆ Locations of hydraulic works, wells, diversion points
- ◆ Ditch traces, lengths, distances to laterals
- ◆ Irrigated acreages; size, shape, lateral locations
- ◆ Surface areas of reservoirs/gravel pits
- ◆ Travel distances, e.g., river miles, road distance, as the crow flies
- ◆ Outcrop areas and traces, e.g., recharge areas
- ◆ GIS (Geographic Information Systems) support, accurate points, lines and areas
- ◆ Navigation, e.g., return to a known location

which will interface with the laptop computer that many water commissioners use. This will allow storage of all position data as well as attribute and feature information (headgate names, meter numbers, structure ID numbers). This combination of laptop computer and GPS will ultimately enable water commissioners, engineers and geologists to perform reconnaissance in the field with immediate, accurate locations and descriptions of observations.

Personnel are being trained with the immediate goal being transfer of GPS capabilities to each Division office. It is also envisioned that units eventually may be loaned to the public for use in field engineering studies, etc. It is hoped that in the near future, GPS receivers will become as common as the four wheel drive to water commissioners.

Currently, DWR is working on implementing software

Rule Making Process for Denver Basin Bedrock Aquifer Recharge Begins

By Glen Graham, Geologist

Any person or party who has a desire to participate in the rule making process for artificial recharge of the Denver Basin bedrock aquifers (the Dawson, Denver, Arapahoe, and Laramie-Fox Hills) should send their name, company, address, and phone number to 1313 Sherman St., Rm. 818, Denver, CO 80203, Attention: Glen Graham. You will then be notified as to timelines, proposals and information regarding this process.

This rule making process is a result of Senate Bill 94-97 passed this recent session and will set forth parameters for artificially recharging Denver Basin aquifers. Members of Willows Water District, Centennial Water District and the Denver Water Board have been actively involved in the process presently, along with representatives of the State Engineer.

A rough draft of the proposed rules and regulations, along with the statement of basis and purpose, is being developed and will be available for public consumption in the very near future. Once the draft rules are available, meetings with interested parties will be held for further development of the draft, and to address as many concerns as possible. Current time tables call for public meetings to be held during the month of November with formal rulemaking occurring between January and July of 1995. Pursuant to Senate Bill 94-97, the rules must be in place prior to July 1, 1995.

Bellis Appointed to Board of Examiners

Governor Roy Romer recently announced that he has appointed Janet Bellis to the engineering/geologist position on the Board of Examiners of Water Well Construction and Pump Installation contractors. Bellis assumed the position vacated by the retirement of Chairman Ken Rollin who served on the Board for eight years.

The Board of Examiners is responsible for licensing water well drillers and pump installers operating in Colorado. The Board also promulgates rules and regulations establishing standards for drilling and installing pumping equipment in water wells throughout the state.

Bellis graduated from Western State College in Gunnison, with a degree in geology. She has worked in mineral exploration in Wyoming for two years, as a ground water geologist for Wright Water Engineers in Denver for eleven years and has been a partner with Groundwater Specialists, located in Boulder, for the past five years.

She has experience ranging from ground water exploration, water well design and con-

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struction to ground water rights investigations in Colorado and several other western states. This technical experience, in addition to her active involvement in community affairs and training in environmental and public policy mediation, should be an asset to the Board.

Clarification of Well Ownership/Address Changes

In the last issue of *Streamlines* we notified you of the new law which required owners of wells to notify this office in the event of an address or ownership change. That notification, however, failed to address matters generally at issue with unregistered wells in Colorado.

Exempt and small capacity wells constructed and first used prior to May 8, 1972, are not specifically required to be recorded with the State Engineer unless there is a need to replace such wells. Thousands of these types of wells exist throughout the state. While the new law does not specifically require ownership notification, the State Engineer would still advise the owners of such wells that are not late-registered to file the change of ownership/address. They may also want to late-record their existing well at this time.

Of further note and clarification regarding the new law:

- ◆ If the well is an unpermitted or unregistered exempt type well constructed or first used after May 8, 1972, they will be advised that the well was illegally constructed and they will have to obtain a well permit or properly plug and abandon the well.
- ◆ If the well is decreed, but unpermitted or unregistered with the State Engineer, they can file the change of ownership/address form using the court case number and the owner's well designation in place of the well permit number.
- ◆ In the case of unregistered, unpermitted and undecreed non-exempt and high capacity wells, owners should be advised that they should file the change of ownership/address form and should obtain legal assistance to obtain a water right for the well since it is subject to curtailment under Colorado's water rights administration system.

Arkansas River Coordinating Group Meets

The Arkansas River Coordinating Committee, created by Governor Roy Romer to provide advice to the state on a wide range of water-related issues throughout the basin, held its first meeting on Thursday, September 22, in La Junta.

Romer told the group that problems resulting from the Kansas lawsuit against Colorado are among the "toughest we have to deal with in our state."

He emphasized that he is committed to preserving "as much of the agricultural base as possible" throughout the state to sustain the economic productivity and quality lifestyle of rural areas. Agricultural lands also contribute to the beauty of the state, he said.

A final decision on whether and the extent to which Colorado must repay Kansas for past depletions in the Arkansas River is more than a year away. Romer and other state officials emphasized the importance of using this lead time to bring all major stakeholders together to begin coordinating efforts to minimize potential conflicts and competition over water supplies to meet a variety of already identified needs.

The committee is made up of representatives selected by water conservancy districts, boards of county commissioners and water users such as ditch companies, municipalities and ground water associations from throughout the basin.

Attorney David Robbins, who represents the State of Colorado in the Kansas law suit, provided the committee with a brief history and current status of the case.

State Engineer Hal Simpson, who co-chairs the committee, outlined recent changes to well pumping rules and regulations. Simpson explained that better monitoring of ground water use was important to providing data that can help Colorado's legal defense. Colorado Water Conservation Board Director Chuck Lile, who is the other co-chairman, described the board's responsibility for protecting Colorado's interstate compact entitlement and the possibility of using the board's construction fund to help finance solutions to water needs in the river basin.

The committee agreed that the three major issues it should address in the coming months were:

1. Immediate steps necessary to curtail the further accumulation of potential liability to Kansas;
2. The form and method of repayment for past debts to Kansas, if any are determined by the court; and
3. Coordination of efforts to meet the water needs of agriculture, wildlife and recreation within the basin.

The problems created by the Kansas lawsuit are some of the "toughest we have to deal with in our state." Governor Roy Romer, on the Kansas vs. Colorado U.S. Supreme Court case.

Romer acknowledged that committee members represent different interests and may not reach agreement on all of the issues.

"But, I also know that you share a common commitment to the health of this valley," Romer said. He urged the group to build on that commitment to seek as much consensus as possible to strengthen the impact of their recommendations and advice to him, state water officials, and the legislature.

The committee held a meeting on Wednesday, October 12, in Pueblo. Another meeting is set for 1 p.m. on Thursday, October 27, in La Junta.

For more information about the Arkansas River Coordinating Committee, contact Steve Miller at (303) 866-3441 or Will Burt at (303) 866-3581.

New Phone System Causes Some Frustration

The Division of Water Resources recently installed a new phone system to better service its customers last August. While the new system was installed, as with any new technology, customers did experience minor delays while "bugs" in the system were worked out. If you were one of our customers who found it difficult to get through the system during the month of August, we apologize.

After the "bugs" were worked out, the system has been working extremely well, and allows better customer service to those people who use our Ground Water Information Desk and frequently call the Records Section for information.

The main phone number for the Division, (303) 866-3581, has not changed. Also, our FAX number remains (303) 866-3589. Again, we thank you for your cooperation and patience during the change over.

Phone Numbers for our Customers

Division of Water Resources

(303) 866-3581

FAX

(303) 866-3589

Ground Water Info

(Hours 8 a.m. to 5:00 p.m.)

(303) 866-3587

Records Section

(Hours 10 a.m. to 3:30 p.m.)

(303) 866-3447

Meetings Held Regarding Long Term Augmentation

It is estimated that 177,000,000 acre-feet of water underlies portions of the Eastern Slope in the Denver Basin aquifers outside of designated basins. Of that amount, approximately 108,000,000 acre-feet is designated as nontributary, requiring no long-term replacement. 69,000,000 acre-feet is deemed non-tributary with some sort of post-pumping replacement required.

On August 31 and again on September 28, staff for the State Engineer met with various water user groups, attorneys and engineers to discuss differences of opinion regarding the requirement for post-pumping augmentation of wells that derive their source of water from what is known as the not-nontributary Denver Basin aquifers.

Denver Basin aquifer water, sometimes referred to as Senate Bill 5 water, underlies much of the front range metropolitan areas. The waters are found in deep aquifer bedrock in the Dawson, Denver, Arapahoe and Laramie-Fox Hills formations. Use of these waters is based upon land ownership or consent to use the water from the landowner.

In 1985, the legislature passed Senate Bill 5, which set forth certain criteria for the development of this resource, and required the State Engineer to promulgate rules and regulations governing the quantification and classification of these waters. Certain waters underlying property owners land are deemed to be "nontributary" water, while other waters are defined as being "not-nontributary." Nontributary water is required to only relinquish 2% of the water withdrawn to the stream system while not-nontributary water can be required to replace varying amounts of water well into the future (sometimes 1000's of years), after pumping of that resource has ceased. It is with this post-pumping augmentation requirement that differences of opinion have arisen and been the subject of much litigation over the past 9 years.

In simplistic terms, many land developer interests believe that post-pumping replacement obligations to the stream system are not required or ridiculous in that the requirements can last so long into the future. The State Engineer, some municipalities, and the Colorado Farm Bureau believe that injury to vested water rights is injury, and the development of those resources cannot be allowed unless protection to water rights, no matter how long it takes, must be forthcoming.

The meeting on August 31 set forth the positions of all of the parties in attendance, and it was agreed that an informal sub-committee was to be formed to look for possible solutions to the problem. On September 28, that sub-committee met to brainstorm for solutions and discuss any ramifications. The tone of the meeting was optimistic with solutions proposed varying from doing nothing to creating a water authority to purchase future water supplies to off-set depletions that are caused by the pumping of the wells.

Meetings of the sub-committee are being planned for the future. If you desire further information regarding this issue, please contact Joseph (Jody) Grantham at (303) 866-3581. *Streamlines* will keep its readers informed in future issues as to the outcome of these negotiations.

Endangered Species Listed on Rio Grande

By Steve Vandiver, Division Engineer, Water Division 3

The silvery minnow was listed as an endangered species in the Rio Grande Basin, thus adding to the number of rivers in the State of Colorado which are impacted in some way by this powerful issue.

After a five month delay, the Rio Grande silvery minnow was listed on August 19, by the U.S. Fish and Wildlife Service. The small minnow exists primarily in the middle Rio Grande Valley of New Mexico, between Cochiti and Elephant Butte Reservoirs. The minnow exists in several areas including drains and ditches operated by the Middle Rio Grande Conservancy District (MRGCD), as well as the main stem of the river.

The concern of the listing and the future recovery plan is several fold, but three issues stand out. First, the service may call for flows in the main stem during the late summer and fall, which have historically been dewatered by diversions. The MRGCD has used a series of ditches and drains and the low flow conveyance channel to transport water through this reach in order to more efficiently and effectively deliver water to their users and to Elephant Butte Reservoir, where New Mexico's compact deliveries are measured. These instream flows would cause new losses which would effect the Rio Grande Project water supplies below Elephant Butte, New Mexico Compact deliveries, Colorado and New Mexico entitlement under the Rio Grande Compact concerning spill of Project storage, and potential treaty entitlement of Mexico.

Secondly, the listing may impact the operation of Federal reservoirs and projects upstream of the fish habitat by requiring Section 7 consultations when operations are proposed which influence the reach. This could cause increased expenses and delays on future projects within the basin.

Third, the critical habitat for the minnow has not been firmly established. Because of this, there is no way to determine what reach will ultimately be selected, if at all.

At the August 29, meeting of the Rio Grande Compact Commission, it was unanimously voted to request that the Fish and Wildlife Service be included on the Recovery Plan Team to ensure that their input is included in the process. The Commission believes that since operation of the river in the three Compact states is so critical and complex that it would be best to include the Service up front, to hopefully eliminate future controversy. No final makeup of the Recovery Plan Team has been announced as of this date.

Other threatened and endangered species listings may be on the horizon for the Rio Grande and it is hoped that a genuinely cooperative effort can be made in this first listing to set a precedent for future plans.

Calendar of Events

- November 9, 1994 Colorado Water Conservation Board, the Upper Colorado Compact Commission meeting, in Las Vegas, NV. Contact CWCB at (303) 866-3441.
- November 9-10, 1994 Board of Examiners of Water Well Construction and Pump Installation Contractors, hearing for the Rules and Regulations, Room 318, 1313 Sherman Street, Denver, CO. Contact Marta Ahrens at (303) 866-3581.
- November 9-11, 1994 Colorado Water Conservation Board, the Colorado River Water User meeting in Las Vegas, NV. Contact CWCB at (303) 866-3441.
- November 15, 1994 Colorado Water Congress Workshop for Board Members of Water Conservancy/Water Conservation Districts, Holiday Inn, Northglenn, CO. Contact CWC at (303) 837-0812.
- November 16, 1994 Colorado Water Congress Workshop on a Review of Federal Environmental Laws Impacting Water Interests, CWC Conference Room, Suite 312, 1390 Logan Street, Denver, CO. Contact CWC at (303) 837-0812.
- November 18, 1994 Colorado Ground Water Commission meeting, 9:00 a.m., Room 318, 1313 Sherman Street, Denver, CO. Contact Marta Ahrens at (303) 866-3581.
- November 18, 1994 Colorado Water Congress Workshop on What You Should Know About the Legislative Process: The Law, The Rules & The Practices, CWC Conference Room, Suite 312, 1390 Logan Street, Denver, CO. Contact CWC at (303) 837-0812.
- November 22, 1994 Colorado Water Congress Workshop on The Federal Process: Lobbying Federal Agencies & the Congress, CWC Conference Room, Suite 312, 1390 Logan Street, Denver, CO. Contact CWC at (303) 837-0812.
- December 13, 1994 Board of Examiners of Water Well Construction and Pump Installation Contractors meeting, 8:30 a.m., Room 719, 1313 Sherman Street, Denver, CO. Contact Marta Ahrens at (303) 866-3581.
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OFFICE OF THE STATE ENGINEER

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