# Colorado Division of Water Resources

*Rio Grande @ Lobatos, 2004*

# Annual Report

# Division 3
# 2004

# COLORADO DIVISION OF WATER RESOURCES
# ANNUAL REPORT
# DIVISION 3 - 2004

## INDEX

*"He who expects the letter of the law in relation to irrigation to be executed with the precision of clockwork and that infallible results will be obtained, has a small conception of the tangled web of difficulties in the way, and a meager knowledge of the uncertainties of the element to be manipulated."*

*J.P Maxwell*
*State Engineer, 1890*

# ACCOMPLISHMENTS

## Water Administration

Following the drought of record in 2002, 2003 turned out to be the 6th driest year in recorded history that has been kept since 1890. 2004 started out looking good for snowpack with early snow water being over 100% of normal. However, an unseasonably warm March caused an early melt of a portion of the snowpack and April storms couldn't recover the deficit left by the unusual weather pattern. Then the descending limb of the snow melt hydrograph was virtually straight down and the runoff was over before it really got started This third consecutive year of much below runoff (25%, 49%, 81%) provided enough streamflow for most ditches to divert some water for about five to six weeks. The streams were back down to base flows that were much below normal. This lack of diversions once again resulted in a dramatic shortage of surface water for irrigation as well as for recharge of the aquifer that the wells are so dependant on. One additional issue that caused problems was that there was four separate peaks to the runoff and just as we thought we would get many of the junior diversions on for the first time in many years, the weather would cool and shut things off and the river would have to build itself all over again. This prevented any reservoir storage and most junior rights from being able to divert in all of 2004. This situation, along with very little natural recharge and very heavy pumping from both aquifers, caused another heavy draft on the aquifers of the San Luis Valley. Once again, the summer monsoon season never developed, which only added to the woes of those using surface water. Ironically, the warm, dry conditions again made ideal growing conditions for those with a groundwater supply and helped yield record crops. The area involved in the Rio Grande Water Conservation District (RGWCD) Unconfined Aquifer of the Closed Basin Change in Storage Study lost approximately 100,000 acre-feet in 2004 after losing 270,000 acre-feet in 2003 and 400,000 acre-feet in 2002. Added to previous years draft on the aquifer, the study indicates we are approximately 1,050,000 acre-feet below the storage levels that existed in 1976 when the study was initiated. The only positive hydrology in the summer was a very significant rainfall event in the later portion of September which added approximately 40,000 acre-feet of water to the

Del Norte flows and around 15,000 acre-feet to the Conejos flows as well as added much needed moisture to the soil profile in the mountains. As a result of the observed base flows, spring flows and inflows to reservoir over the winter, this rain event dramatically helped the soil moisture conditions. This event should provide a much better base from which the 2005 runoff can be more efficient than for the last few years. It is amazing to see what impact a single event can have on a river system. Ditches diverted almost all of the storm event flows in priority with little water taken to the state line for Compact delivery.

Most valley streams had low flows during the summer and fall. At one point in the latter part of August on the Conejos, there was only enough water to be able to deliver 40% of the number one priorities. At the same time the Rio Grande was delivering to Priority Number 163 with less than 180 cfs available for distribution. Stream losses were again a significant factor that had to be dealt with on most streams. Call records for all major streams are available in the table, River Calls, Irrigation Year - 2004.

Diversions for irrigation and recharge were not allowed after November 1st , 2004 on the Rio Grande because of our status under the Compact. No water was available for recharge. Diversions were shut off on the 10th of November, 2004 on the Conejos and Platoro Reservoir went into winter operation on that day as well, trying to bypass the inflow to the reservoir pursuant to Article 7 of the Rio Grande Compact. Diversions were allowed on all the other streams in the valley well after November 1st due to the open fall and the extreme dry conditions.

*Rio Grande Compact Administration*

As was mentioned in the previous section, the administration of the Rio Grande Compact was rather challenging in 2004. The dry weather conditions, the poor antecedent conditions, the lack of summer precipitation and the low base flows created another below average runoff. Even so, the Conejos River had significant Compact obligations for the year because of the initial forecasted index supply. There were relatively large curtailments of index supplies after April 1, 2004. As the year proceeded and the forecasted and actual index dropped, the curtailment was reduced to zero in the late summer. The Rio Grande curtailment was significant even though the index supply was forecasted to be below normal. The curtailment of ditches required during the irrigation season averaged about 14% until the beginning of August when the curtailment was reduced. Further decreases in the index supply forced the curtailment to be removed from mid-August through the end of October. The ditches were shut off and the pre-compact reservoirs went into storage on November 1. It is the belief in Division III that the higher than normal curtailment during these dry years is a direct result of the depletions from well pumping. The history of curtailment changes is detailed in the table, Compact Administration, 2004 Rio Grande Compact Report.

Overall, Colorado started the year with an accrued credit of 1,200 acre-feet as of January 1, 2004 and ended the year with a total accrued credit of 4,400 acre-feet. Diversions on the Rio Grande started April 1, 2004 and ended November 1st. Diversions on the Conejos started April 1, 2004 and ended November 10th. The Conejos system

started 2004 with 5,900 acre-feet of accrued intrastate credit, which contributed to there being less curtailment during the irrigation season. They were able to use all but about 3,700 acre-feet of the credit. On the 31st of March, 2004, Colorado relinquished and Texas accepted the 1,150 acre-feet of credit water in Elephant Butte Reservoir. This was a very good way to cover the approximately 1,200 acre-feet of water stored in Platoro Reservoir during the winter months in late 2003 and early 2004, contrary to Article VII of the Rio Grande Compact. Because of the inability to pass the winter inflow to Platoro Reservoir through the bypass valves, the reservoir gained this amount of water over the winter months. Approximately 43 acre-feet of the credit water in Elephant Butte Reservoir was evaporated during the January through March timeframe and therefore only 1,150 acre-feet was relinquished. This, therefore, left zero credit in Project Storage for Colorado and allowed the Conejos to retain the winter storage for use by the state and the Conejos District. Another approximately 900 acre-feet were stored during the late fall and early winter months of 2004. A similar arrangement for relinquishment of credit will have to be made with Texas or the water will have to be released prior to the 2005 irrigation season.

The release of water from Rio Grande Project Storage in 2004 totaled 400,500 acre-feet. This is approximately one-half of a normal release for the Project. Total Usable Project Storage at the beginning of 2001 was 998,800 acre-feet and ended the year at 655,900 acre-feet. Total water in Project Storage at the end of 2002 was 379,300 acre-feet. Credit water of Colorado and New Mexico was 307,800 acre-feet of that total. This left the Project to start 2003 with a total of 71,500 acre-feet of Usable Project Storage. New Mexico relinquished 122,500 acre-feet to Texas in March 2003 to ensure some potential storage in El Vado, provide minnow water, and help the districts below Elephant Butte Reservoir. Project Storage ended the 2003 calendar year with 81,000 acre-feet of usable water. This past year was the 2nd consecutive year in the last 25 years that the Rio Grande Project has not been allocated a full supply. New Mexico relinquished approximately 53,000 acre-feet on March 1, 2004 to Texas. That essentially eliminated the credit water they had in Elephant Butte Reservoir and allowed storage of native Rio Grande water in El Vado, McClure and Nichols Reservoirs in New Mexico. Usable Project Storage at the beginning of 2004 was 159,500 acre-feet, with 55,200 acre-feet of credit water additionally in storage. Usuable Project Storage was 210,700 acre-feet at the end of December, 2004 with 40,000 acre-feet of credit water in storage (4,400 for Colorado and 35,600 for New Mexico).

On July 2, 2002, Usable Project Storage dropped below 400,000 acre-feet. Consequently, Article VII of the Compact was implemented. Article VII prevents the upstream States from increasing storage in any post-Compact reservoir without relinquishment. The major Colorado reservoir affected is Platoro Reservoir. The U.S. Bureau of Reclamation (USBR) has taken the position that they can store Prior and Paramount rights for the New Mexico Pueblos in El Vado Reservoir regardless of the status of Article VII. The Commission has historically opposed this action to no avail. Colorado continues to take the position that the Conejos can re-regulate pre-compact direct flow rights in Platoro as long as they are released in the same season. Project Storage remained below 400,000 acre-feet the entire year in 2004, however the Bureau

of Reclamation forecasts indicate that Usable Project Storage may exceed 400,000 acre-feet for a short time during the middle and again at the end 2005.

New Mexico did not approve the accounting sheets for 2004 because they continue to be concerned about the USBR accounting for the evaporation of credit water on a monthly basis and releasing that water without concurrence of the Compact Commission.

The Rio Grande Compact meeting was held on March 25, 2004, in Alamosa, Colorado.

*Costilla Creek Compact Administration*

The Costilla Creek Compact Commission met in Alamosa, Colorado, on May 6, 2004. Once again, the Commission adopted the Watermaster Operating Manual drafted by the Engineer Advisers of the two compact States for operations during 2004. The Commission directed the Engineer Advisers to continue to review the manual for possible adoption at the 2005 Commission meeting.

It was possible to deliver the 1,000 acre-feet to Eastdale Reservoir by April 12, 2004 before the irrigation season started. Direct flow diversions were then allowed prior to the irrigation season. At the start of the 2004 irrigation season, May 16, 2004, Costilla Reservoir held only 9,142 acre-feet. The Commission determined that there was just a full water supply with no surplus water available for the year based on the forecast for the Costilla drainage.

Luis Trujillo continued as the Watermaster with an assistant Watermaster for the 2004 irrigation season. The Watermaster used the spreadsheet developed by New Mexico to track the daily water deliveries and to determine the delivery amounts available to each ditch. With the Operations Manual and the spreadsheets, administration has settled down to a fairly routine affair. The Watermaster e-mailed a daily diversion sheet (most days) to the Colorado Engineer Advisor.

No Costilla Creek water made it to the confluence with the Rio Grande during 2004.

The New Mexico hydrologist remains concerned that the Canyon Mouth Gage, operated by the USGS, is not correctly determining the stream discharge at this location. Colorado again reviewed the operation of the gage and inspected the station. Colorado still agreed that the USGS operation and rating were within normally accepted standards, but suspected that the meter used by New Mexico might have been giving erroneous data.

Receiving daily diversion reports from the Watermaster helped relieve the time requirements. The State of Colorado has limited input into the supervision of the Watermaster and less in day-to-day activities, so receiving this document allows Colorado to ensure that water is being fairly divided. The Division Engineer remains involved in the finalization of the Watermaster Manual. The drafting and adoption of the Watermaster Manual has also helped to ensure that the Compact is fairly operated.

*Closed Basin*

The Closed Basin Project delivered 10,845 acre-feet to the Rio Grande in calendar year 2004. The entire delivery met water quality standards for the Rio Grande Compact and therefore was creditable to Colorado's delivery to the Stateline. The Project produced a total of 14,340 acre-feet for all of the various purposes outlined in the enabling legislation and the decree. The total amount delivered from the Project for all purposes was approximately 76% of last year's total.

The Project continues to be plagued by iron bacteria contamination, commonly known as biofouling. This biofouling continues to reduce the output capacity of the wells by a large percentage. Over the last several years, the USBR has tried various remedies for the problem, but has met with limited success. This deteriorating situation is of serious concern to the USBR, the State of Colorado, the RGWCD, and the water users on both rivers. In 2001, the USBR began a well re-drilling program in an attempt to increase the Project's production. The Bureau and Conservation district continue to re-drill wells to boost the projects production. Currently there have been 24 wells that have been redrilled with good success but not enough have been redrilled to make any difference in the overall production of the Project.

The Project was pumped at maximum sustainable capacity for nearly the entire year. Testing and rehabilitation of the contaminated wells reduced pumping levels at times and, therefore, the overall output of the Project. The Allocation Committee for the Project set the initial allocation at 60% for the Rio Grande and 40% for the Conejos early in the year and it remained there for the entire year. Of the 10,845 acre-feet of creditable water delivered to the river, 4,338 acre-feet were credited to the Conejos River and 6,507 acre-feet were credited to the Rio Grande. The 15-year cumulative allocation expressed as a percentage of the total is 60.1% for the Rio Grande and 39.9% for the Conejos.
Project deliveries made during 2004 were as follows:

800 acre-feet to the Blanca Wildlife Habitat Area
2,695 acre-feet mitigation delivery to the Alamosa National Wildlife Refuge
10,845 acre-feet (creditable) to the Rio Grande
14,340 acre-feet total volume

*Reservoir Operations and Dam Safety*

During the 2004 calendar year, the Dam Safety program goals for completion of inspections according to the frequency established by the State Engineer were generally met or exceeded. The stated program goal involves the regular safety inspection of all Class 1 dams every year, Class 2 dams every 2 years, and Class 3 dams every 6 years. In Division 3, all but one of the Class 1 dams and all of the Class 2 dams received full inspections in 2004, and all but 2 of the Class 3 dams which were due for inspection, received full inspections. The lone Class 1 exception (Sanchez – East Dike) is a subordinate feature to the main dam which very rarely serves any

impoundment function, while the two Class 3 exceptions are both located well within the Weminuche Wilderness, which prevented access in the time available for inspection. In all, full safety inspections were completed on 10 Class 1 dams, 15 Class 2 dams, and 7 Class 3 dams. Follow-up inspections were performed as deemed necessary to check for problems and compliance with requirements. A total of 4 follow-up inspections were completed, all on Class 3 dams.

Outlet inspections were performed on 2 Class 1 dams (Terrace, Rio Grande) and 1 Class 2 dam (Shaw Reservoir – North Dam) during the year, in order to evaluate the condition of those outlets. While conditions were found to be acceptable at both Rio Grande and Shaw, the full-length tunnel inspection at Terrace was done during a time of full reservoir drawdown necessitated by repairs to the gate valves. During drawdown in 2003, the trashrack was destroyed by excessive buildup of debris, and this required its complete replacement. Engineered plans were developed for a new trashrack, the State Engineer approved the design, and the new rack was fabricated and installed before the end of February. Repairs to the valves were completed shortly thereafter, and the reservoir was placed back into storage status to capture winter and spring flows on the Alamosa River. An additional project component to replace the valve operating system with a fully hydraulic system was approved as a change order, and was essentially completed during the year.

Three new reservoir restrictions were imposed during the year, in response to safety problems observed at those dams. Saguache Dam, a seldom-used Class 3 structure in District 26, was restricted to zero storage because of its general state of neglect and non-functional upstream outlet gate, while Eastdale #1, a Class 3 dam in District 24, was restricted to 1.3 feet below the spillway crest due to severe erosion damage to its upstream slope. Both restrictions essentially formalized operating procedures, which the owners were already observing.

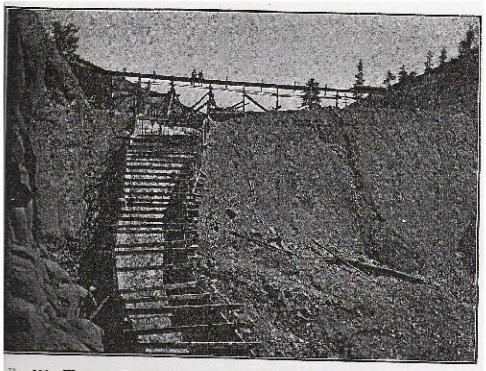


Fig. 100.—Waste way Flume for Flood Discharge over Lower Slope of Terrace Dam. Summer of 1907.

The most meaningful restriction was placed on Trujillo Meadows Dam, a Class 2 structure owned by the Division of Wildlife in District 21. This reservoir was restricted to 1 foot below the spillway crest due to excessive seepage through the left abutment experienced at higher reservoir levels, despite the remedial seepage control work completed on the dam in 1999. In order to maintain the reservoir at the restricted level, DOW designed a series of notches through the concrete spillway crest wall which were approved and constructed during the late summer. At the end of 2004, plans were being developed for further seepage investigation work at the site to more clearly identify the nature of the problem and possible remedial actions. The investigation work is expected to move forward in 2005.

No existing reservoir restrictions were removed during the year, as no progress has been made at resolving issues at those three reservoirs where restrictions were already in place.

Design reviews and construction inspections were completed as required during the year to support the above-described projects.

*Stream Administration*

Stream administration in Division III during 2004 was frustrating because of the continuing low runoff and drought. On most streams, we had less than an 80% runoff. This has many effects besides just not being able to satisfy the demand by the surface users. Issues of no return flows, little or no recharge and general impacts of wells on the hydrologic conditions caused a continuing difficult set of circumstances for the San Luis Valley. The well owners got by, but in many circumstances, at the expense of the senior surface users. This issue continues to fan the flames for groundwater administration. The River Call table later in this report is very illustrative of the shortage of water supply throughout the basin.

*Hydrography*

The Hydrographic Branch in Division 3 is staffed by four hydrographers and is managed by Lead Hydrographer Craig Cotten. The three other Division 3 hydrographers also perform hydro duties as well as manage portions of the hydrographic program. Hydrographic technician Scott Veneman manages the satellite monitoring system for this division as well as Divisions 4 and 7. Stan Ditmars, also a hydrographic technician, is the Division 3 construction manager, and Lee Conner, an Engineer-in-Training, is in charge of repair and maintenance of Division 3 hydrographic and construction equipment.

Division 3 operates and maintains 76 satellite monitoring stations. Of these, 70 are at stream or canal gaging stations and 6 are on reservoirs. 53 of the satellite systems are on published record stations. Sixty-four of the systems are owned or cost-shared by the Division of Water Resources. In addition, the Department of Health owns and operates 4 of their own stations with satellite monitoring systems, for which Division 3 hydros assist in the production of records.

Division 3 operates and maintains 57 streamflow stations for which it produces streamflow records. From these stations the Division 3 Hydro Branch produces 59 published water year streamflow records and 9 published calendar year streamflow records. In addition, the Hydrographic Branch in Division 3 cooperates with the Colorado Department of Health to produce and publish 4 streamflow records of other gaging stations in the San Luis Valley.

The Hydrographic Branch in Division 3 has the responsibility of providing accurate 'real-time' stream flow data and historic record production for streams in and around the San Luis Valley of Colorado. This includes the Rio Grande and its tributaries, the Conejos River and its tributaries, and those streams tributary to the Closed Basin. The

Hydrographic Branch also supports the water commissioners and other DWR personnel by providing services such as ditch measurements, seepage investigations, structure installations, water-related consultations, etc.

In 2004, the hydros in Division 3 measured and/or developed meter notes for stream and ditch measurements over 1,100 times. These measurements were used to develop fifty-nine water year records of flow, which will be published in the Division of Water Resources annual streamflow publication. In addition, Division 3 also assisted in the development and reviewed records from four Department of Health stations, which will also be published in the annual streamflow publication. The hydros also developed nine calendar year records for use by the Rio Grande Compact Commission.

Satellite Monitoring

The Satellite Monitoring System Repair Facility in Division III is responsible for the maintenance, repair, and calibration of all electronic data collection and telemetry equipment in Divisions III, IV, and VII. The facility provides technical support and assistance to field engineers and technicians in these divisions for system installation, field maintenance, and modifications. Approximately 35 percent of one full-time position is spent operating the facility.

In addition to the everyday repair and maintenance duties, several other functions were performed by the facility.

In Division 3, two gaging stations with no previous telemetry were equipped with new High Data Rate Satlink Loggers and shaft encoders. The first, Culebra Creek at San Luis, is a published record station and wasn't previously equipped with satellite telemetry due to vandalism concerns. The other station, San Francisco Creek at Upper Station near Del Norte, was determined to be critical for administration by the Division Engineer.

This year, nine more stations were upgraded to High Data Rate transmitter/loggers. This brings the total number of DWR owned HDR stations in Division 3 to 31. Numerous HDR firmware upgrade visits were made to all of the HDR sites to solve previous version bugs. Since there are 64 DWR owned stations in Division 3, the upgrade phase is almost half complete.

The unreliable submerged pressure transducer at Terrace Reservoir was replaced with an Accubar pressure transducer and nitrogen bubbler system. The nitrogen site feed and valve assembly was modified to accommodate two orifice tubes so the entire operating range of the reservoir could be monitored. An older shaft encoder was electronically modified and interfaced to the Accubar for a local digital readout.

Three days were spent with David Hutchens in Division 7. Several stations were visited on each day to troubleshoot and repair, update grounding techniques, or upgrade equipment to HDR. A trip to Vouga Reservoir in Division 4 was made to advise and assist in some new installations.

The National Weather Service provided four tipping bucket rain gauges to be installed and interfaced to DWR data logger/transmitters at Division 3 gages of their choice. These rain gauges were installed at South Fork of the Rio Grande at South Fork, Rio Grande near Del Norte, Rio Grande near Monte Vista, and Saguache Creek near Saguache.

New Stations/Rehabilitations/Modifications

The Hydrographic Branch of Division 3 is in the process of changing the location of the gaging station on the Rio Grande at the Rio Grande/Alamosa County Line. The current station is being affected by backwater from a downstream diversion structure, causing a decrease in the accuracy of our streamflow data. In November 2004, a new gaging station was constructed approximately ½ mile above the current station, and above the reach affected by the diversion. This spring we will bring the new gaging station online and eventually abandon the current station.

The gage house at Culebra Creek at San Luis, Colorado was modified to allow for the installation of a satellite system. This gage is in a location where we have experienced significant vandalism, and therefore the satellite system required more protection than that of a standard installation. A steel module was added on the roof of the existing steel shelter to better protect the antenna and solar panel from vandalism. A small window was cut in the steel and covered with 2x6 lumber for the antenna to transmit through.

The concrete control at La Garita Creek near La Garita, Colorado was repaired and the inlet pipes extended upstream to solve the problem of gage drawdown.

The existing inlet pipes at Conejos River below Platoro Reservoir were refurbished and another inlet pipe was added.

Refurbishment of eleven cableway A-frames was made this year to bring these A-frames up to correct specifications.

Flood Hardening

A new gage and control were installed on North Crestone Creek near Crestone, Colorado this year. The new installation consisted of an exposed aggregate concrete building and a new concrete ramp flume control. These structures were needed to replace the existing small wooden station and natural control that had been in place for over fifty years. In high water, the old gage would actually be standing in water. The high velocity of the flow over the natural control of boulders also caused a drawdown effect in the gage at times. The new station was built up to raise it up out of the flood area during high water, and the new control should allow the flow to slow enough to avoid the problem of drawdown in the gage.

Closed Basin

The Hydrographic Branch in Division III is charged with fulfilling the terms and conditions of a cooperative agreement between the State of Colorado and the USBR. This agreement provides for streamflow measurement and data collection on the Closed Basin Project. It is the responsibility of the Hydrographic Branch to measure, record, and disseminate flow information to the USBR and to other public entities. In addition, the Hydrographers are consulted on certain areas of concern regarding streamflow and measurement within the Project.

The current agreement between the State of Colorado and the USBR regarding the Closed Basin Project went into effect in October of 1999 and expired at the end of September of 2004. The Division of Water Resources is currently in negotiations with the Bureau of Reclamation to develop a new agreement for the next 5-year period.

## WATER ISSUES

The incredible conversion of the Great Sand Dunes National Monument to a National Park became a reality on September 13, 2004 when the Secretary of the Interior signed the official "Designation of the Great Sand Dunes National Park". Congress, under the "Great Sand Dunes National Park and Preserve Act", authored by Senators Campbell and Allard and Representative McGinnis, allowed for designation of the National Park once sufficient acreage with sufficient diversity of resources was acquired by the National park Service. With the acquisition of the Baca Ranch sufficient acreage had been acquired. The designation includes the original National Monument lands and an additional 31,000 acres adjacent to the park. The 31,000 acres were part of the original Baca Grant. The final acquisition of the ranch by the Nature Conservancy and the National Park Service was made possible by the end of litigation over the old AWDI/Stockmans Water Company holdings.

The continuing impacts of the drought in 2002, 2003, and 2004 were felt far and wide in the entire Valley. The depletion of groundwater supplies and the dry antecedent conditions caused much concern and changes to normal administration. River transit losses that occurred in 2002 and 2003 continued to be an issue in 2004. The Rio Grande gains have remained virtually neutral during the entire year compared to the normal condition of about a 5 to 10% gain in the system. There were below normal diversions into the Closed Basin again during the year. As a consequence of the lack of surface diversions and low precipitation during the irrigation season, massive amounts of ground water were again pumped in the Valley. The RGWCD Unconfined Aquifer Storage Study showed a loss of another 100,000 acre-feet in 2004 after a 270,000 acre-foot decline in 2003. Compared to the 1976 baseline, the study area contained approximately 1,050,000 acre-feet less water by the end of 2004. This situation makes all concerned very aware

of the importance of managing the aquifer systems to achieve an overall balance in the system. The importance of a coordinated recharge system and matching the demand to it is being recognized by even the most skeptical. In early 2004, SB-222 was passed at least in part because of this well and aquifer situation and provides the State Engineer a mechanism in which to proceed if he thinks that well administration is necessary.

SB-278 was passed in 2003 and provided for a water administration fee to help fund the Colorado Division of Water Resources personnel budget after facing severe budget cuts. So many complaints were lodged with the JBC that the recommendation was made by them to the legislature to repeal the bill, which the legislature did during the 2004 session.

The ramifications of the repair of Terrace Reservoir during the winter of 2003-04 were extensive and caused great concern for all involved. As is described in the Dam Safety Section above, the repairs were extensive and required that the reservoir pool be virtually dry to allow for work in the tunnel to remove and repair one of the main gate structures, install a new control system and repair the failed trash rack on the entrance to the outlet tunnel. At every turn, Murphy's Law provided a large amount of frustration and delay in trying to get the project complete. The main issue for administration was the large amount of sediment that washed out of the reservoir during the draining of the reservoir and during construction, when the water stored in a small coffer dam during the time workers were in the tunnel was released at night. The amount of sediment that has been deposited in the reservoir over the past 30 years is significant and a large amount was eroded from the newly established channel through the sediment layer above the dam. With no flow through the dam for 12 hours a day and then a large release of water during the night in cold weather, created large depositions of ice and sediment for miles below the reservoir. In some places several feet of sediment and ice were formed and it left the channel and spread into the flood plain. There was much concern over how that sediment would effect diversions when the ice flow melted in the spring of 2004. The accumulation was so bad at the gage below the dam that all equipment in the gage had to be removed and the channel was completely filled with sediment several feet in depth. The construction was completed in mid-February, fortunately in time to store some water in the reservoir pool to act as a buffer for the spring flows. As spring approached and the ice layers in the channel melted, extensive sedimentation was obvious in the channel for a number of miles. When inflows were passed through the dam starting on April 20th , the silt moved quickly out of the upper reaches of the river below the dam and scoured down to the original bed in most places. Most water users would not place a call for water until the water had cleared up but the Head Overflow No. 5 did call for the "slurry" and had much difficulty keeping ditches open. A significant amount of silt still lies in the channel on the extreme lower end of the river above the Head Overflow headgate but most of the channel has recovered. It remains to be seen if the silt will continue to move with large flows of water with most of it being deposited in fields and meadows.

For the last two years, the Rio Grande Water Conservation District (RGWCD), through its president Ray Wright, has attempted to form groundwater subdistricts to attempt to manage portions of the aquifer system. These efforts have as their primary purpose, to restore historic aquifer levels and manage them in a manner that would provide a sustainable system. After dozens of meetings over this period, the District has still not achieved the necessary number of acreages nor number of landowners to create a subdistrict in the Closed Basin area. Another attempt is ongoing in the alluvial aquifer on the south side of the Rio Grande between Del Norte and Alamosa. This effort is proceeding and is very close to having the numbers to allow it to move forward. These types of subdistricts were recognized in SB-222, discussed below. They would have as their goal to stabilize the aquifers associated with each subdistrict and prevent injury to senior rights and restore the historic stream aquifer connection. Absent some kind of entity and effort to address the impact of wells on the system, the State Engineer will surely have to step in and require some kind of administration of the aquifers to address these issues. SB-222 and the State Engineer is giving the well owners every chance to address the depletion issues themselves but at some point will have to act.

SB04-222 was passed in the 2004 session of the Colorado legislature. This bill was the combined effort of the water entities in the valley to address the confusion revolving around the ability of the State Engineer to promulgate rules regarding well administration. It cleared the way for that to happen while allowing considerable flexibility to the state in addressing these issues. The three primary goals of any plan would be to restore and stabilize the aquifers, minimize injury to senior vested rights, and insure that the State can meet her Compact obligations. The bill recognizes entities like the subdistrict outlined above, to provide a vehicle to address these issues within the valley without having the State come in and promulgate rules that would be much less flexible. The bill also recognizes the ability of the State to consider many different issues in the overall issue of management of the aquifer.

## ON-GOING PROJECTS

*RGDSS*

The Rio Grande Decision Support System project was deemed sufficiently complete in 2004 that the State Engineer could promulgate Rules and Regulations for new appropriations from the confined aquifer as required under the RGDSS enabling legislation (HB98-1011). After extensive model runs the rules were filed with the Secretary of State and the Division 3 water court on June 30, 2004. Statements of Opposition both in support of and opposing the rules were filed with the court by various entities. The Water Court has scheduled a trial on the validity of the rules for six weeks starting January 30th, 2006.

*Rio Grande Silvery Minnow*

The Rio Grande Silvery Minnow continues to cause everyone on the Rio Grande in New Mexico to reconsider how and why things are done and where to find enough water to

keep the river wetted throughout the reach from Albuquerque to Elephant Butte. The State of New Mexico relinquished water (57,873 acre-feet) to Texas in April of 2004 in order to store water in El Vado, McClure and Nichols Reservoir. A portion of that water was dedicated to the recovery of the minnow as part of an agreement to get the final Biological Opinion approved by the USFWS. The minnow had adequate water throughout the 2004 season pursuant to the BO but a considerable portion of the river did go dry during the year below Albuquerque. The 10th Circuit decided that the USBR did not have discretion over the SJC water and ruled Judge Parker's Federal District Court ruling moot. The minnow population census in late 2004 showed some recovery over the past couple years but remains in a very difficult situation. New Mexico's Congressional delegation got legislation passed this passed in 2004 which made it abundantly clear that San Juan Chama water could not be used by the Bureau of Reclamation (USBR) without a willing buyer and willing seller agreement for the lease of contractors water. USBR had up to that time used water at their whim to provide water to the river for the minnow.

*Southwestern Willow Fly Catcher*

During 2004 the USFWS (Service) re-designated proposed critical habitat for the endangered Southwestern Willow flycatcher. In Division 3 the new designation includes the Conejos River up to HWY 285 and the Rio Grande up to Del Norte. The Division is concerned about the potential affect this may have on water administration and compact operations. The RGWCD is working with the Service to develop a Habitat Conservation Plan (HCP) which may mitigate some of the potential impacts to water administration.

*Upper Rio Grande Water Operations Model*

The Upper Rio Grande Water Operations Model being constructed by the Federal agencies in New Mexico is basically complete. The Bureau of Reclamation and Army Corps of Engineers have used it for the accounting since 2000. The accounting module has been approved in its present state by the Engineer Advisers and the Commission for use in the future. The model is being refined on a continuing basis. Two USACE employees involved with this and many other projects in the Rio Grande Basin( Dick Kreiner and Gayle Stockton) have retired and both will be sorely missed.

*Alamosa River Restoration Project*

The Alamosa River Watershed Restoration Committee obtained funding via a settlement with the parties involved in the Summitville Mine project. There are severe restrictions on the use of those funds. The Committee is working with the Colorado Water Conservation Board and an independent engineering firm to analyze the needs of the watershed and determine the best use of the acquired funds. The Division has attended scooping and planning meetings to provide input on the water rights implications of various proposed projects. The Committee has developed a list of projects which includes items from river

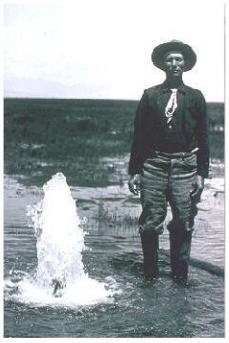
stabilization structures, instream flows, to grazing management in riparian areas. The Committee is completing ranking the projects and will soon move on to drafting a Master Plan for the watershed.

*Rio Grande Headwaters Restoration Project*

With the completion of the feasibility study, the Rio Grande Restoration Project is now in transition to implementation. The report in that study will be used to continue the project in the implementation phase and will be a guide for the work to be done. The advisory team was very pleased with the product and is now pushing hard to start the project.

*Groundwater Enforcement*

Throughout the last two to three years a concerted effort has been made by the Division III staff to address numerous issues regarding the use of groundwater. Since there are no groundwater administration rules in effect, the staff has tried diligently to address issues of expanded use, improper use of wells on land they were not intended to serve and change of uses without confirmation by the State Engineer or the Water Court. Terms and conditions on permits, late registrations and decrees provide our initial guidance along with extensive aerial photo interpretation. These issues arise in various ways, but many find us without any effort on our part. Numerous issues, particularly in regards to expanded use come to our attention by people participating in the EQUIP program of the NRCS. With the Federal government's large cost share in this program, users have in many instances tried to add new acreages beyond that of a wells stated or historic service area. The delivery efficiencies of new pipelines, sprinklers and regulating reservoirs in many instances creates "extra water" that they want to take to new ground and dramatically increase the consumptive use of a wells production. There is little understanding that the increase in consumptive use in an overappropriated system is detrimental to the entire area. NRCS staffs have in some cases not grasped the concept that conservation and efficiency cannot and does not create the ability to add new acres. It is very hard for many to understand that there is no water savings just because there may be less water pumped but the new system and its efficiency has increased consumption. On numerous occasions we have questioned the use of these and other individual plans. These efforts take considerable resources but are absolutely essential to us holding the line on overall consumptive use in the Rio Grande Basin. The Rio Grande and Conejos River systems are consumptive use limited pursuant to the Rio Grande Compact, and since the Basin is already overappropriated we cannot afford any new depletions to the system.



## ON-GOING ISSUES

*Water Court Activities*

Thirty-five cases were filed in the Division III Water Court during 2004. The majority of the cases filed during the year sought a change of underground water right. Typically,

the Applicant sought to adjudicate an existing alternate point of diversion or supplemental well or convert the historic use to a new use. The Division continues to oppose those Water Court applications that seek to deepen an existing non-exempt well or construct a new alternate or supplemental point of diversion. Pursuant to Policy 2003-3, the State Engineer has denied well permit applications for deepening wells and/or construction of a new supplemental or alternate point of diversion. This policy has been backed by Statements of Opposition filed against such claims. A trial, scheduled to be heard in front of Judge Kuenhold during November, 2004 on this matter, was dismissed as the Applicant chose to pursue assistance with formation of a groundwater subdistrict rather than defend his right to a change of water right in Court.

While most cases in Division III are resolved through the Division Engineer's recommendation and negotiation of those terms and conditions placed in the decree, some require a hearing or a trial. Judge Kuenhold remains the Water Judge and Margaret "Peg" Russell continued as Water Court Referee.

Water Court casework is currently assigned to Steve Vandiver, Mike Sullivan, Craig Cotten, or Pat McDermott. The Water Commissioners also lend help when needed via field inspections or historical knowledge of the claim.

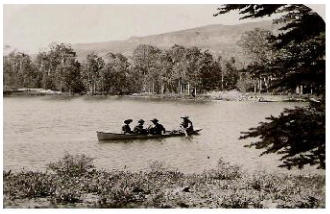
## INVOLVEMENT IN THE WATER USER COMMUNITY

As always, we strived to be as involved as possible in the water user community again in 2004. Our staff attends the regularly scheduled meetings of the Rio Grande Water Users Association, the San Luis Valley Water Conservancy District, the Conejos Water Conservancy District, the Rio Grande Water Conservation District, the Closed Basin Operating Committee, the Trinchera Irrigation Company, and all other Water User group meetings that we are invited to attend.

Additionally, the staff has given presentations to various elementary and high schools around the Valley. The Water Commissioners make themselves available and attend many of the ditch company meetings held in their districts. It has become apparent that in order to reach higher numbers of people and inform them about water issues in the Valley, attendance at ditch company meetings and smaller user group meeting is going to be required.

We have actively participated in the San Luis Valley Wetlands Focus Group, the Rio Grande Silvery Minnow Recovery Plan Team, the Southwestern Willow Fly Catcher Recovery Technical Advisory Team, the Bureau of Land Management Rio Grande Corridor Plan, the RGDSS Advisory Team, Upper Rio Grande Water Operations Model Advisory and Technical Teams, The Upper Rio Grande Water Operation Plan Review, The Rio Grande Headwater Restoration Project, and many other public forums which require input on water issues.

The Division staff have attended and provided input on the formation of Subdistricts under SB222.



The staff of Division III participated in a number of public forums relating to water. The Division Engineer has also been involved in a number of conferences and seminars in the San Luis Valley concerning the drought. The level of interest is very high since 2002 especially regarding the aquifer conditions and the lack of streamflow and how to incorporate wells into the priority system. Several hundred people have attended these conferences and much information has disseminated. Several voluntary actions are being suggested for well owners to reduce their draft on the aquifer and impact to stream system. Another area that the Division staff has been involved in is the Saguache Water Users Association. Issues about winter water use and well impact are a continuing issue to be dealt with.

## PERSONNEL/WORKLOAD ISSUES

*Well Administration and Permitting Activities*

The well permitting workload continued to be very high in 2004 with over 500 exempt permits issued from the Division III office. The continuing drought and drawdown of the aquifers caused many domestic wells to cease functioning. A good portion of these wells were Late Registrations/Replacements resulting in the need for the well permitting staff and water commissioners to spend many hours inspecting/verifying use of these wells. Additionally, many non-exempt wells are going dry or collapsing. These replacement applications require a thorough inspection and write-up to assure no expansion of use occurs. The State Engineer determined that no deepening of non-exempt wells would be permitted, as this may be an expansion of use. Any applicants seeking to deepen an existing non-exempt well or construct a new alternate point of diversion are advised to file a Water Court application.

Pursuant to the Well Permitting Guidelines for Water Division III dated October 28, 1999, the Division staff continues to submit recommendations with all non-exempt well permit applications processed by the Denver staff. Dozens of non-exempt irrigation wells were replaced during 2004 as aquifer levels continued to decline. The age of the wells is playing a bigger role on how the well functions. A great deal of research goes into each checklist before it is submitted to the Denver office. Although this process is cumbersome at times, it allows the staff the opportunity to discover any discrepancies with the existing permits and decrees and prevent expansion of use.

*Water Records and Information*

In this age of satellite uplinks and computer record keeping the Water Commissioners would not be able to perform their duties without the computer. The availability of gage information from the computer each morning allows the Commissioners to make and implement decisions regarding diversions early in the day. The administrative gages in District 20 and 22 have greatly assisted in “setting the river” and delivery of water to the users. This information, published daily in the stream administration sheet that is

available to the water users, allows for more efficient allocation of this valuable resource. It also keeps the water users more informed about the conditions on the river each day. Daily diversion sheets are posted in all districts and are available in the division office. The division continues to look toward improving the daily sheets to better serve our users.

Diversion records went smoothly this year with the division again using Hydrobase for diversion records. This program is an improvement over the old system and the Division appreciates the efforts of the programming team. The division also participates in the Hydrobase team meetings in efforts to standardize record keeping and production. The Team met several times last year and succeeded in reviewing the water rights tabulation system. Much staff time was dedicated to SB278 ownership determination early in the year. The subsequent demise of the legislation has relieved the staff of an unneeded workload. The information gathered has proved useful, however without funding for continual updating the datas usefulness and accuracy will degrade over time.

*Personnel Changes*

Jerri Baker decided to pursue other career options after 10 years with DWR. Jerri has moved out of the division and is working as an IT specialist with a private company. Jerri had been the Program Assistant for Division 3 for many years. She had transferred to the Well Commissioner position in the Alamosa office in 2003.

Roberta Barela was hired in March as the Program Assistant for the Division office. Roberta had worked for the University of Colorado in the valley doing administrative work for a multi-year study. She also spent some time working for Head Start which qualifies her for taking care of the Division office. Roberta is quickly mastering the duties associated with the PA position.

Wayne Peck was hired in April as the Deputy Water Commissioner for WD 21 (Alamosa river). Wayne was manager of the Elk Creek Ranch on the upper Rio Grande. He was in charge of all irrigation systems, maintenance of all buildings, and taking care of the multitude of owners of the ranch. He has also worked at Summitville and is familiar with that issue on the Alamosa River.

Ray “Tom” Stewart was hired in April as the Water Commissioner for WD 25/26 (Saguache and San Luis Creeks). Tom grew up near Sanford and had been running the irrigation systems on the Willet ranch for many years. Tom is on the local School Board and has been a deputy sheriff for many years. He has recently been transferred to District 22 and will be the deputy water commissioner and will work with Rob Phillips in that District.

Robert “Bob” Schultz was hired in April as the Water Commissioner for WD 35 (Trinchera Creek). Bob had many years with the National Park Service, choosing to retire near the Great Sand Dunes. Bob has extensive programming experience and has

been the head of the Zapata Ranch Homeowners Association and was responsible for assuring that their complex augmentation plan operated properly.

Rob Phillips was transferred to WD 22 as the Lead Water Commissioner. Rob had been working as water commissioner in WD 25/26 for 4 years. Prior to that he was the assistant superintendent of the Rio Grande Canal, one of the largest canals in the state.

Larry Hakes joined the Division 3 staff as the Well Inspector. Larry transferred from Division 2 where he was involved in the well measurement program. Larry brings lots of drilling experience to the position. He has developed a good rapport with the drilling community and his contributions to the Well Inspection programs are appreciated. With Larry came the ability for the Division to inspect wells and well construction in the San Luis Valley. We feel very fortunate to now have an inspector to insure that the drilling community is following proper construction procedures and therefore protect the aquifer that so many depend on. Larry has already made a significant difference in these areas.

Division III currently has two unfilled positions, that of the Well Commissioner and the deputy Water Commissioner in Districts 25/26.

*Training Activities*

Training in Division III centered on new computer applications and safety requirements for our employees. Additionally the Program Assistant attended COFERs training and three Water Commissioners attended Supervisory training in January 2005.

*Workload Issues*

We continue to try to diversify the experience of our staff by involving them in as many issues and situations outside their primary responsibilities as time allows. Many of the water commissioners have been assisting in well permitting by performing field inspections on “late registrations” and non-exempt well permit applications. Additionally some water commissioners assisted in the RGDSS effort by performing multiple cross-sections of the major rivers and rectifying permit/rights files. With a large number of Senior Water Commissioners retiring, the Division has been actively cross-training younger water commissioners to try and keep the knowledge and experience within the Division. The Division relied on the experienced Water Commissioners to help carry us thru the times when we were short staffed.

As is true throughout DWR the workload continues to increase. The increasing complexity of water court cases, the impact the drought has had on well permitting requests and requirements, and new legislation with regard to subdistricts and rulemaking authorities, have all contributed to the staff’s workload.

## EMPLOYEE RECOGNITION

*Water Commissioner of the Year*

Rob Phillips was chosen as Water Commissioner of the Year for 2004 because of his efforts to provide consistent and diligent water administration. Rob has also been pursuing his studies receiving his BSc in Hydrology in 2002 and in continuing his studies at UNM to obtain a Master degree. Rob was asked to take on the administration of WD 22 and managed to do that and still keep up his academic endeavors.

Jim Horton, Charlie Quintana, and Art Rivale received certificates of appreciation for their excellent work in their respective Districts.

## PUBLIC RECOGNITION

*Water Manager of the Year*

Ella Mae Herrera was honored as the "Water Manager of the Year" for 2004. Ella Mae has worked for the USBR for a number of years and within the last couple years has been promoted to the Project Manager for the Closed Basin Division of the San Luis Valley Project. She has done an excellent job at her new duty and has brought a new spirit of cooperation in between the USBR and the other entities they work with in the San Luis Valley. We truly appreciate the help and access that we have to the Bureau's work and integral efforts that we have in administering the Rio Grande Compact.

*Ditch Superintendent of the Year*

Dave Lucero was honored as the "Ditch "Superintendent of the Year" for 2004. Dave has been with the US Fish and Wildlife Service for a number of years and runs the water on the Alamosa Wildlife Refuge. He helps the District 20 Commissioners and the Division III office on many occasions in dealing with the issues on the Refuge and the lower end of the Rio Grande administration.

## KEY OBJECTIVES AND GOALS

Many of our key objectives and goals are on-going from year to year, but they form the basis for what we do and how we do it. The following are our key objectives for the year 2005.

1. Administer the Rio Grande and Costilla Creek Compacts in a manner that ensures the entitlements of Colorado under each Compact are fully realized and utilized and that Colorado's obligations are met.
2. Operate the Division III office in a manner that allows us to stay within our budget, including the development of a budget process acceptable to the State

Engineer for the utilization of Compact funds for Compact related expenses. This issue continues to be important with the fiscal tightrope the State is walking. Trying to devise ways to continue the critical programs and do what is necessary to administer water rights will be a challenge.

3. Implement the provisions of the Long-Range Plan.
4. Continue to develop and implement the quality assurance/quality control program for Division III data, including historic diversion records, water rights information and ownership information.
5. Provide training to our staff in the use of the computer applications available to us - in particular word processing, spreadsheets, communications, databases and Hydrobase.
6. Correctly issue well permits on a timely basis under the well permit decentralization program. This item will take an extra effort with wells continuing to go dry and with recent replacement of our well commission.
7. Constantly improve the quality of our hydrographic and diversion records and meet all deadlines for the completion and submittal of final records.
8. Coordinate with water user groups, individuals and other State and Federal agencies on issues such as endangered species, instream flows, Compact administration, Interstate litigation and Water Court applications, in order to maximize cooperation and minimize disputes.
9. Work with CWCB, the SEO, and the consultants on the RGDSS project to ensure that the system meets the needs of the users and that it is correctly done and leads to useful and administrable rules for new appropriations from the confined aquifer.
10. Continue to implement Principal Centered Leadership.
11. Identify any problems with and improve water administration at every level in the organization.
12. Try to help restore the travel, personnel services and the operating budgets that has been cut substantially over the last few years.
13. To effectively accomplish the Water Court process responsibilities with efficiency to provide terms and conditions that will practically and effectively deal with impact to other vested rights.
14. Insure that all dams in Division III are monitored frequently enough to recognize any deficiencies and promptly work with owners to correct them. All these efforts to insure the integrity of our dams and to provide public safety as it involves those structures.
15. Provide sound judgment and encouragement to the Districts and wells owners to move to a sustainable system that they understand and agree with and that addresses impact to the surface stream and protects the river in all ways.
16. Promulgate effective rules that identify and address the issues facing this valley with regards management of the aquifers, senior rights, and our Compact compliance.

## MAJOR ACTIVITIES IN 2005

The potential for an above average runoff is a real possibility as of this writing. At present, the March 1, 2005, forecast is being predicted at approximately 145% on the Rio Grande and slightly lower on the Conejos system. Several activities will affect our workload in the coming year. Foremost the Promulgation of Rules and Regulations for new appropriations in the confined aquifer will most assuredly require additional staff time. The proposed rules were filed in June 2004 and court review is expected in early 2006. Additionally, the Division expects the number of well permit applications to continue to increase as the continuing drought takes its toll on surface water and the groundwater aquifers.

The State Engineer has distributed "draft measurement rules for well pumping" to water users for discussion. The rules will most likely be promulgated during 2005.

Additionally the staff will be reviewing/drafting rules for post compact depletions above the Compact index gages for possible promulgation in late 2005 or early 2006.

A real concentration on quality water administration and record keeping will be one of the top priorities of 2005.

Dealing with the ESA issues both in Colorado and downstream in New Mexico will be another major activity in 2005. The Southwestern Willow Flycatcher, which is currently listed and has proposed critical habitat on the Rio Grande and Conejos rivers and the potential for the Rio Grande Cutthroat to be listed, are areas of concern that will have to be closely monitored. The imperiled Silvery Minnow continues to effect water administration on the Rio Grande in New Mexico.

The administration of the two Interstate Compacts in Division III will be a major interest in our workload. After the past three years, we are reminded of how fickle the systems can be and how carefully we must consider the action we take, the effects of those actions and how we set up the river administration as the season goes by.

The US park Service filed an application at the end of 2004 to preserve and protect the aquifer under the Great Sand Dunes. This unique application claims all unappropriated water in the aquifers below the dune mass. This application will surely cause us to spend more time in the court room.

## INNOVATIVE ADMINISTRATION TECHNIQUES

At the request of the State Engineer, we will attempt to describe a few techniques to solve problems that we have or are working on to address problems that do not lend themselves to normal remedies:

1. The outlet gate structure in the dam at Rio Grande Reservoir has suffered damage on several occasions apparently due to unusual turbulence conditions in certain ranges of flow. Through the joint efforts of the San Luis Valley Irrigation District, the users on the Rio Grande, other reservoir owners, and Division of Water Resources, operating criteria will continue to be reviewed and developed to release flows outside of the damaging range of flow and protect the downstream vested rights. This criterion will have to ensure that no senior users downstream or our ability to deliver Compact water to New Mexico is impacted by this release restriction. We continue to be in contact with the District to find those tools necessary to accomplish the above.
2. During extremely dry winter months as seen in the last two years, there are areas in the San Luis Valley that are prone to domestic wells going dry and the problem of stock out of water. After several different scenarios were suggested, tried, and failed, we will amend our normal Compact administration in some cases when possible. We will try to let specific ditches divert small amounts of water during the winter and pay the Compact back later in the spring by giving up a part of their irrigation supply. This has been accomplished over the past couple years with great success. We continue to have extremely dry warm winters on the Valley floor and this issue is very persistent.
3. Similar to that, we are working with ditches that want to divert earlier than the majority wants the irrigation season to start. We are allowing the diversion of what, in the past, has been Compact water under terms and conditions that require repayment later in the season to the extent there is a Compact curtailment.
4. We are currently working on an operating plan that would allow the use of a pre-Compact reservoir to "pre-store" Compact water that would normally be run to the Stateline to try to minimize the over- or under-delivery of our obligation.
5. The use of private irrigation reservoirs to control flooding. With the agreement of a reservoir company, we are trying to re-regulate the peak of the hydrograph in high years to prevent flooding of vulnerable areas downstream on several river basins in Division III.
6. We are cooperating with the RGWCD and the well owners in the Valley to try and reduce the demand on the aquifer. In 2005 this will amount to a continuing request to reduce the amount of irrigated acreage under wells by 20%. This may help stop the fall in water tables and help reduce the amount of stream depletions that we have seen these past years. With the large runoff coming, many well owners believe the drought is broken and we can go back to business as usual. With the continuing decline in many portions of the aquifer we are still urging well users to continue to reduce their pumping to the extent possible in their individual operations to jump start any recovery.

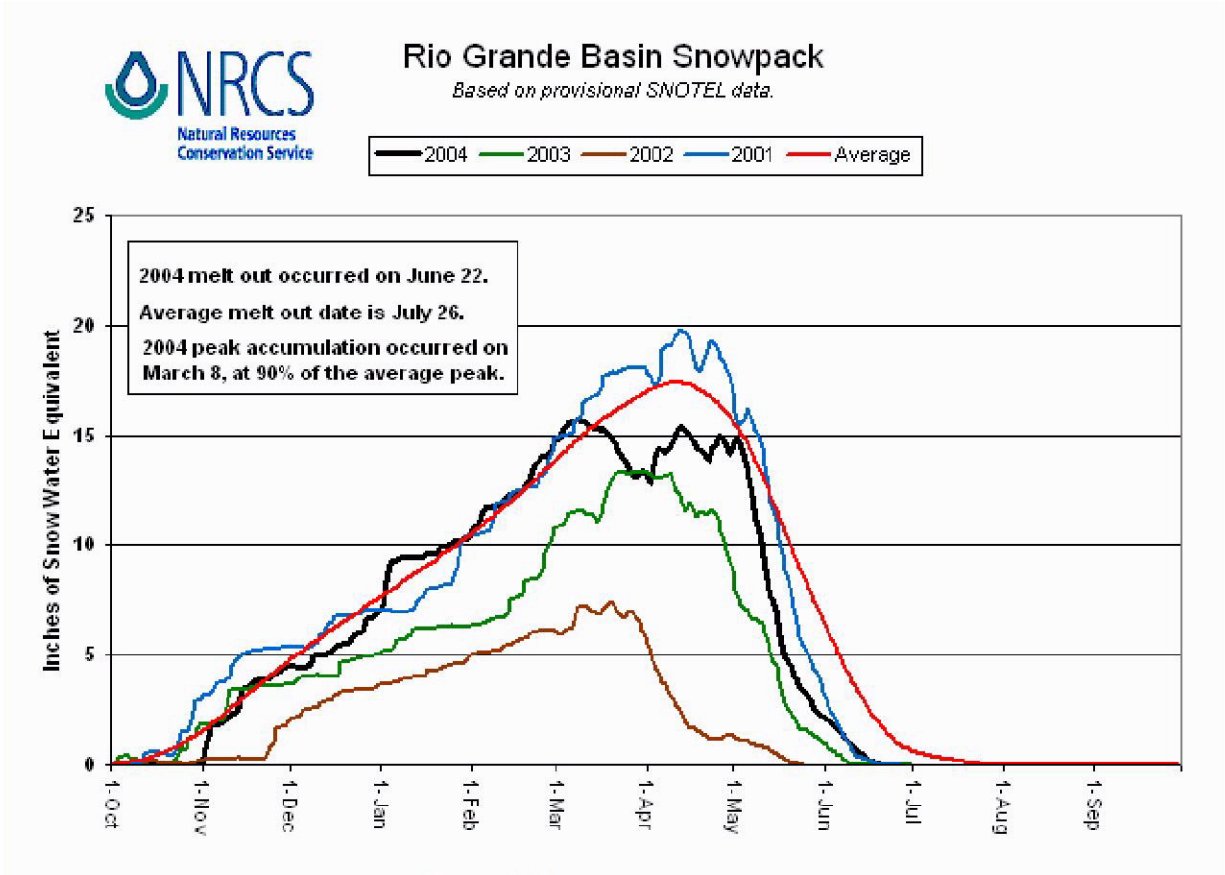
## MOST IMPORTANT EVENTS OF 2004

The Rio Grande drainage continued to experience conditions unequaled in the history of the Rio Grande Compact. The third year of drought including the drought of record made it another very difficult water year for the water users. The Rio Grande index

came in at about 81% of average. Both rivers delivered their Compact obligation very closely and will both have just a very small amount of credit to begin this very high runoff year. New Mexico reached accord with Texas on relinquishment of stored credit water late in the spring. This allowed New Mexico to store some water in post-compact reservoirs and generated enough water for the users below Elephant Butte to enhance their partial water supply.

Resolution of the purchase of the Baca Grant and the formation of the San Dunes National Park was good news for the basin. The Nature Conservancy's and US government's purchase of the Baca Ranch may reduce the threat of exportation of large amounts of water from the Rio Grande basin. The potential for a new groundwater project to be filed in court remains but the chances of its success are now much more difficult.

The RGDSS development is continuing with the primary work on the groundwater model completed. Rules and regulations for new appropriations from the confined aquifer were originally required to be written by July 1, 2001. Legislation passed delayed implementation of rules and regulations until June 30, 2004. This was accomplished and it remains to seen what the challenges to the proposed rules will mean to the final rules. The RGDSS team spent many hours doing peer review of the model and tying up loose ends.



## A. TRANSMOUNTAIN DIVERSION SUMMARY—INFLOWS

| RECIPIENT | | | | | | | | SOURCE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10-Year Average | | Current Year | | | | |
| WD | ID | NAME | STREAM | AF | DAYS | AF | DAYS | WD | ID | STREAM |
| 20 | 917 | Don LaFont #1 Ditch | Trib Red Mtn Creek | 0 | 0 | 0 | 0 | 78 | 4670 | Trib Piedra River |
| 20 | 918 | Don LaFont #2 Ditch | Trib Red Mtn Creek | 22 | 19 | 0 | 0 | 78 | 4671 | Trib Piedra River |
| 20 | 919 | Pine River | Weminuche | 423 | 61 | 240 | 52 | 31 | 4638 | NF Los Pinos |
| 20 | 920 | Tabor | Trib Clear Creek | 742 | 139 | 656 | 155 | 62 | 774 | Cebolla Creek |
| 20 | 921 | Treasure Pass Ditch | SF Rio Grande | 138 | 32 | 214 | 40 | 29 | 4669 | Wolf Creek |
| 20 | 922 | Weminuche Pass D | Weminuche | 558 | 18 | 565 | 21 | 31 | 4637 | Rincon LaVaca |
| 20 | 923 | Williams Creek Squaw Pass | Squaw Creek | 329 | 91 | 397 | 105 | 78 | 4672 | Williams Creek |
| 26 | 702 | Tarbell | Saguache Creek | 642 | 77 | 693 | 85 | 28 | 4656 | Cochetopa Creek |

## B. TRANSMOUNTAIN DIVERSION SUMMARY--OUTFLOWS

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 79 | N/A | Hudson Branch Ditch | Huerfano River | 128 | 41 | 152 | 64 | 35 | 657 | Medano Creek |
| 79 | N/A | Medano Ditch | Huerfano River | 563 | 51 | 738 | 73 | 35 | 658 | Medano Creek |

**RESERVOIR STORAGE SUMMARY**
**IRRIGATION YEAR – 2003**
**AMOUNT OF STORAGE**

| WD | ID | RESERVOIR NAME | SOURCE STREAM | MINIMUM AF | MINIMUM DATE | MAXIMUM AF | MAXIMUM DATE | END YR |
|---|---|---|---|---|---|---|---|---|
| 20 | 3532 | Beaver Park | Beaver Creek | 2553 | 10/31/2003 | 4511 | 5/24/2004 | 2923 |
| 20 | 3536 | Continental | North Clear Creek | 977 | 8/14/2004 | 6197 | 5/19/2004 | 1048 |
| 20 | 3554 | Rio Grande | Rio Grande | 4090 | 11/1/2003 | 14726 | 5/15/2004 | 6352 |
| 20 | 3558 | Santa Maria | North Clear Creek | 3366 | 6/30/2004 | 5348 | 3/31/2004 | 4761 |
| | | | | | | | | |
| 21 | 3582 | La Jara | La Jara Creek | 252 | 10/31/2003 | 1687 | 4/21/2004 | 786 |
| 21 | 3583 | Terrace | Alamosa River | 0 | 2/15/2004 | 7025 | 6/8/2004 | 1954 |
| | | | | | | | | |
| 22 | 3574 | Platoro | Conejos River | 7284 | 11/5/2003 | 17115 | 6/24/2004 | 8226 |
| | | | | | | | | |
| 24 | 3576 | Sanchez | Culebra Creek | 6514 | 10/31/2004 | 16746 | 5/13/2004 | 6514 |
| | | | | | | | | |
| 35 | 3529 | Mt. Home | Trinchera Creek | 901 | 9/18/2004 | 6088 | 6/12/2004 | 1093 |
| 35 | 3530 | Smith | Trinchera Creek | 25 | 11/1/2003 | 3458 | 5/19/2004 | 381 |

# WATER DIVERSION SUMMARIES

| | STRUCTURES REPORTING | | | ALL OTHER STRUCTURES | | | | | TO IRRIGATION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WD | With Record (1) | No Water Avail. (2) | No Water Taken (3) | No Info Avail. (4) | No Record (5) | # Visits Structure | Total Diversions AF | Total Diversions to Storage, AF | Total Diversions, AF | Number of Acres Irrigated | Average AF Per Acre |
| 20 | 268 | 57 | 34 | 22 | 7,786 | 11,295 | 500,665 | 20,041 | 495,296 | 248,405 | 1.99 |
| 21 | 90 | 13 | 3 | 2 | 965 | 4,446 | 115,792 | 8,461 | 80,501 | 54,583 | 1.47 |
| 22 | 126 | 0 | 19 | 4 | 1,637 | 4,896 | 225,720 | 9,096 | 220,659 | 83,707 | 2.63 |
| 24 | 75 | 2 | 5 | 15 | 382 | 5,029 | 66,355 | 15,882 | 60,533 | 28,923 | 2.09 |
| 25 | 80 | 49 | 19 | 8 | 660 | 3,266 | 45,374 | 0 | 45,228 | 16,520 | 2.73 |
| 26 | 69 | 83 | 12 | 8 | 1,390 | 3,909 | 35,380 | 0 | 34,322 | 9,860 | 3.48 |
| 27 | 30 | 7 | 11 | 5 | 1,263 | 951 | 15,850 | 0 | 14,997 | 4,672 | 3.20 |
| 35 | 56 | 6 | 40 | 23 | 622 | 3,124 | 64,797 | 14,298 | 33,663 | 19,947 | 1.68 |
| TOT | 794 | 217 | 143 | 87 | 14,705 | 36,916 | 1,069,933 | 67,778 | 985,199 | 466,617 | 2.11 |

## WATER ADMINISTRATION DATA SUMMARIES

RIVER CALLS - IRRIGATION YEAR – 2003

| District | Most Senior Priority Curtailed | Most Junior Priority Served | Calling Right in Spring |
|---|---|---|---|
| 20<br>Rio Grande | #146<br>Rio Grande & Piedra | 1903-30C<br>Rio Grande Canal | #217<br>Rio Grande & Lariat |
| 21<br>La Jara | #6<br>Garcia #1 & Le Mita #2 | #87<br>Coddington Ditch | #57<br>Coddington |
| 21<br>Alamosa | #1<br>Alamosa Creek Canal & El Veigo | #76<br>Terrace Main Canal | #27<br>Head Overflow #5 |
| 22<br>Conejos | #1<br>Guadalupe, Romero and Manassa | #189<br>Bosque Ditch | #24<br>Rincones Ditch |
| 22<br>San Antonio | #4<br>El Coda | #194<br>8-mile Ditch | #4<br>Llano Ditch |
| 24<br>Culebra | #12<br>Cerro Canal | 2002<br>North Ventero Ditch | #12<br>Cerro Canal |
| 26<br>Saguache | #9<br>Lawrence Ditch #3 | #32<br>Nehls Company Ditch | #32<br>Nehls Company Ditch |
| 27<br>La Garita | #8<br>Home #1 Ditch | <br>All | #5<br>Home #1 Ditch |
| 27<br>Carnero | #17<br>La Mogote #2 Ditch | 1988<br>Green Ditch | #10<br>Shown Ditch |
| 35<br>Trinchera and Tributaries | #3<br>Sangre De Cristo #3 | #71<br>Garland Headgate #2 | #44<br>Beckwith Ditch |

Because of the idiosyncrasies of the administration scheme in District 25, no such information could be obtained which made sense.

## WATER ADMINISTRATION DATA SUMMARIES

WATER DIVERSION SUMMARIES FOR VARIOUS USES - IRRIGATION YEAR 2003

| WD | TRANS-MOUNTAIN OUTFLOW | TRANS-BASIN OUTFLOW | MUNICIPAL | COMMERCIAL | INDUSTRIAL | RECREATION | FISHERY | DOMESTIC & HOUSEHOLD | STOCK |
|---|---|---|---|---|---|---|---|---|---|
| 20 | **0** | **15486** | **6164** | **350** | **0** | **0** | **1236** | **163** | **0** |
| 21 | **0** | **0** | **60** | **0** | **0** | **0** | **0** | **0** | **0** |
| 22 | **0** | **0** | **2047** | **0** | **0** | **0** | **0** | **2780** | **0** |
| 24 | **0** | **0** | **333** | **0** | **0** | **0** | **0** | **0** | **0** |
| 25 | **0** | **0** | **63** | **542** | **0** | **0** | **0** | **0** | **0** |
| 26 | **0** | **0** | **229** | **0** | **0** | **0** | **0** | **0** | **0** |
| 27 | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 35 | **890** | **71** | **281** | **2** | **0** | **0** | **130** | **42** | **0** |
| **Total** | **890** | **15557** | **9177** | **894** | **0** | **0** | **1366** | **2985** | **0** |

## WATER ADMINISTRATION DATA SUMMARIES

WATER DIVERSION SUMMARIES FOR VARIOUS USES - IRRIGATION YEAR 2003

| WD | AUGMENTATION | EVAPORATION | GEOTHERMAL | SNOW-MAKING | MINIMUM STREAMFLOW | POWER GENERATION | WILDLIFE | RECHARGE | OTHER |
|---|---|---|---|---|---|---|---|---|---|
| 20 | **3477** | **158** | **0** | **0** | **0** | **893** | **4670** | **3558** | **11562** |
| 21 | **5** | **4** | **0** | **0** | **0** | **0** | **0** | **5** | **41231** |
| 22 | **4888** | **4** | **0** | **0** | **0** | **0** | **0** | **227** | **0** |
| 24 | **2** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **426** |
| 25 | **0** | **0** | **0** | **0** | **0** | **1234** | **0** | **0** | **83** |
| 26 | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **841** | **0** |
| 27 | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **892** | **0** |
| 35 | **248** | **0** | **0** | **0** | **0** | **225** | **0** | **353** | **4585** |
| **Total** | **8620** | **168** | **0** | **0** | **0** | **2352** | **4670** | **5876** | **57887** |

**Compact Administration**

2004 RIO GRANDE COMPACT REPORT

Preliminary Figures

| | A. F. |
|---|---|
| 1. Adjusted Rio Grande Index | 527,800 |
| *Adjusted Rio Grande Delivery | 136,900 |
| Required Rio Grande Delivery | 136,500 |
| Less Paper Credit per agreement | 5,000 |
| Net Required Rio Grande Delivery | 131,500 |
| 2. Adjusted Combined Conejos Index | 265,100 |
| **Adjusted Conejos Delivery | 79,300 |
| Required Conejos Delivery | 85,300 |
| Less Paper Credit per agreement | 5,000 |
| Net Required Conejos Delivery | 80,300 |
| 3. ***Total Delivery at Lobatos | 216,200 |
| Total Required Delivery at Lobatos | 221,800 |
| Less Paper Credit (See Compact) | 10,000 |
| Net Required Delivery at Lobatos | 211,800 |
| Margin | 4,400 |

4. Rio Grande Curtailment

| Delivery Target | (% of Index) | Estimated Curtailment of Ditches | (% of Index) |
|---|---|---|---|
| January 1 - March 31 | 100% | January 1 - March 31 | 100% |
| April 1 - May 19 | 15% | April 1 - May 19 | 15% |
| May 20 - August 2 | 14% | May 20 - August 2 | 14% |
| August 3 - August 30 | 7% | August 3 - August 16 | 7% |
| August 31 - October 5 | 0% | August 17 - October 5 | 0% |
| October 6 - October 31 | 50 cfs | October 6 - October 31 | Return flows |
| November 1 - December 31 | 100% | November 1 - December 31 | 100% |

5. Conejos Curtailment

| Delivery Target | (% of Index) | Estimated Curtailment of Ditches | (% of Index) |
|---|---|---|---|
| January 1 - March 31 | 100% | January 1 – February 5 | 100% |
| April 1 - May 5 | 21% | April 1 - May 5 | 25% |
| May 6 - May 18 | 24% | May 6 - May 18 | 0% |
| May 19 - June 4 | 18% | May 19 - June 4 | 20% |
| June 5 - August 4 | 11% | June 5 - August 4 | 13% |
| August 5 - August 16 | 4% | August 5 - August 16 | 0% + returns |
| August 17 - November 9 | 0% | August 17 - November 9 | 0% |
| November 10 - December 31 | 100% | November 10 – December 31 | 100% |

*Includes 6,507 a.f. of the creditable Closed Basin Project production.

**Includes 4,338 a.f. of the creditable Closed Basin Project production.

***Includes all the creditable Closed Basin Project production (10,845 a.f.).

## Water Court Activities
## January 1 – December 31, 2004

**Water Court Applications in 2004 - Type of Claim**

| Type of Claim | Number of Cases | Number of Structures |
|---|---|---|
| Underground Water Right | 5 | 5 |
| Surface Right | 5 | 7 |
| Storage Right | 0 | 0 |
| Plan for Augmentation | 1 | 6 |
| Exchange | 0 | 0 |
| Change of Underground Water Right | 17 | 26 |
| Change of Surface Right | 2 | 6 |
| Change of Plan for Augmentation | 0 | 0 |
| Rules: Confined Aquifer | 1 | N/A |
| Verified Complaint | 1 | 1 |
| Petition to Correct Location | 1 | 1 |
| Finding of Diligence | 0 | 0 |
| Instream Flow Right | 0 | 0 |
| Diligence - Make Conditional Absolute | 2 | 5 |
| **Total** | 35 | 57 |

Note- Some applications in 2004 contained more than one type of claim or action (e.g. Change of Water Right and Plan for Augmentation). The type of claim was tabulated above under only one category of application.

**Type of Decree Entered in 2004**

| Type of Claim | Number of Cases | Number of Structures |
|---|---|---|
| Finding of Diligence on Conditional Rights | 5 | 13 |
| Cancellation of Conditional Rights | 1 | 2 |
| Conditional Right Made Absolute | 1 | 2 |
| Conditional Right Adjudicated | 0 | 0 |
| Surface Right Adjudicated | 4 | 6 |
| Underground Right Adjudicated | 3 | 3 |
| Injunction: Abandonment | 1 | 1 |
| Petition to Correct Location | 1 | 1 |
| Plan for Augmentation Adjudicated | 6 | 9 |
| Change of Surface Right Adjudicated | 1 | 2 |
| Change of Underground Right Adjudicated | 16 | 29 |
| Change of Plan for Augmentation | 1 | 97 |
| Complaint for Declaratory Judgment Resolved | 0 | 0 |
| Complaint Resolved | 0 | 0 |
| Total | 40 | 165 |

## Water Court Activities January 1 – December 31, 2004

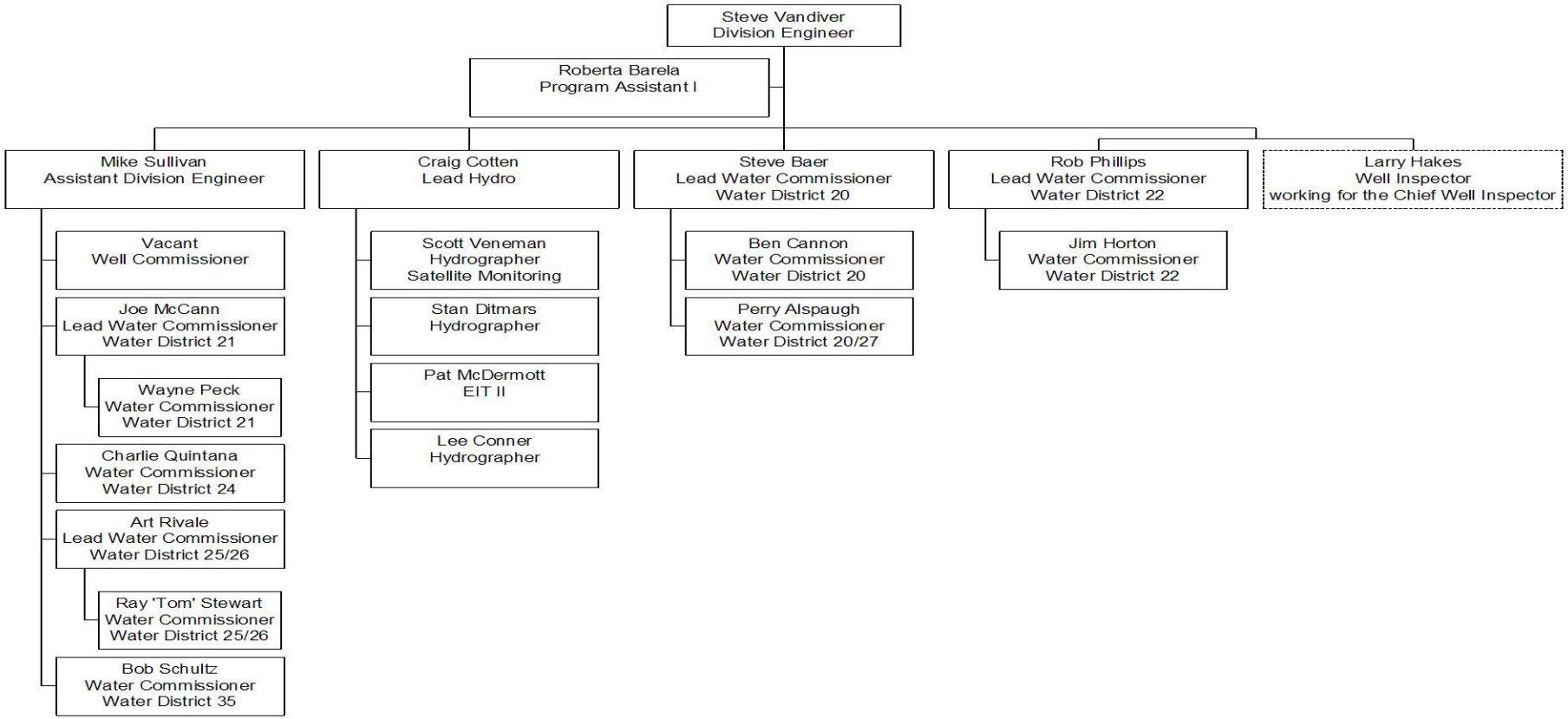
(Continued)

| | |
|---|---|
| Number of Open Cases as of December 31, 2004: | 73 |
| | |
| Number of Cases Dismissed in 2004: | 2 |
| Number of Cases Withdrawn in 2004: | 3 |
| Decrees Issued by the Court in 2004: | 40 |
| Cases Closed in 2004: | 45 |

**DIVISION III**
**ACTIVITY SUMMARY**
**2003 CALENDAR YEAR**

| ACTIVITY | TOTALS |
|---|---|
| Number of structures observed | 1241 |
| Number of surface rights | 2884 |
| Number of reservoirs* | 343 |
| Number of wells** | 22627 |
| Number of observations | 36916 |
| River measurements | 958 |
| Ditch measurements | 145 |
| Dam inspections | 36 |
| New water rights administered | 9 |
| Number of Augmentation Plans | 90 |
| Plan of Augmentation Structures*** | 1058 |
| New Plans of Augmentation | 6 |
| Wells administered | 22627 |
| Active SSPs | 2 |
| Applications for decrees | 35 |
| Decrees issued by Water Court | 40 |
| Division Engineer Recommendations Filed | 36 |
| Water Court Appearances | 194 |
| Meetings with water users | 455 |
| Meetings to resolve water related disputes | 73 |
| Public assistance contacts | 52450 |
| Well permits issued | 524 |
| Miles driven by staff | 235371 |
| Professional and Technical Staff | 9 |
| Clerical Staff | 1 |
| Water Commissioner FTE (Full/Part-Time) | 4/5.75 |

* includes Non-Jurisdictional Impoundment filings
** includes permits
*** includes "domestic" wells under aug plans. # calc from Hydrobase & Welltools data.


Steve Vandiver
Division Engineer
Roberta Barela
Program Assistant I
Mike Sullivan
Assistant Division Engineer
Craig Cotten
Lead Hydro
Steve Baer
Lead Water Commissioner
Water District 20
Rob Phillips
Lead Water Commissioner
Water District 22
Larry Hakes
Well Inspector
working for the Chief Well Inspector
Vacant
Well Commissioner
Joe McCann
Lead Water Commissioner
Water District 21
Wayne Peck
Water Commissioner
Water District 21
Charlie Quintana
Water Commissioner
Water District 24
Art Rivale
Lead Water Commissioner
Water District 25/26
Ray 'Tom' Stewart
Water Commissioner
Water District 25/26
Bob Schultz
Water Commissioner
Water District 35
Scott Veneman
Hydrographer
Satellite Monitoring
Stan Ditmars
Hydrographer
Pat McDermott
EIT II
Lee Conner
Hydrographer
Ben Cannon
Water Commissioner
Water District 20
Perry Alspaugh
Water Commissioner
Water District 20/27
Jim Horton
Water Commissioner
Water District 22