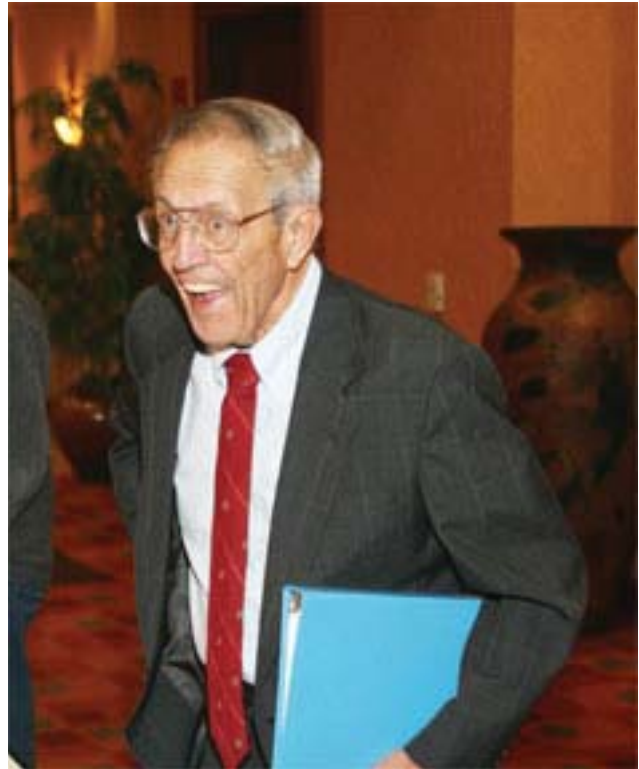


John W. Hernandez has been chosen to present the 2008 Albert E. Utton Memorial Water Lecture at this year's conference. New Mexico State University Professor Emeritus John Hernandez has been associated with the New Mexico Water Resources Research Institute for many years, most recently as a consultant on several projects. Recently, John worked with senior hydrogeologist John Hawley and others on determining the feasibility of reducing the transmission losses by Conchas Canal in the Arch Hurley Conservancy District. Since retiring from the Civil Engineering Department at NMSU in 1999, John has remained active in water resources management issues, particularly those related to water quality. He has produced several recent reports for the Bureau of Reclamation through the WRRI on conveyance alternatives to San Acacia from the Isleta Diversion; Pecos River management alternatives that minimize impacts to endangered species; and a study of institutional considerations for managing water in the Middle Rio Grande. John received a B.S. in civil engineering from the University of New Mexico in 1951; an M.S. in sanitary engineering from Purdue University in 1959; an M.S. in environmental engineering from Harvard University in 1962; and a Ph.D. in water resources from Harvard University in 1965. John was a faculty member at NMSU from 1965 to 1999, including Dean of Engineering in the late 1970s. John has broad experience regionally, nationally, and internationally in water resources issues and has published extensively. He received many awards throughout his career including the prestigious Donald C. Roush Excellence in Teaching Award from NMSU in 1990, and the Civil Engineering building at NMSU is now named Hernandez Hall in his honor. In 2005, John was made a Distinguished Member of the American Society of Civil Engineers.



Albert E. Utton Memorial Water Lecture

100 Years of Water Management in New Mexico — Stories about the People Involved

John W. Hernandez
Water Resources Consulting Engineer
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Las Cruces, NM 88003

*“The basic physical circumstances of our water resources are timeless.
They assume meaning only in terms of the people
who came to develop and to use them.”*

Stolen, in part, from Paul Horgan's *The Great River*

My talk today is not about New Mexico's limited water resources, but about the limitless energy of the people who have played a significant role in the development and beneficial use of our supply. Today, I want to focus on three dozen or more of the many people who have made a lasting but perhaps unintended impact on our understanding and on our use of New Mexico's limited water resources.

A year ago, Emlen Hall talked about Morris Bien (Fig. 1), the Reclamation or USGS lawyer who wrote the Territorial War Act of 1907, leading to the provisions that were made permanent in the state's 1912 constitution, giving us the mantra that I heard so often from Steve Reynolds: "... priority of appropriation, gives the better right ... beneficial use shall be the basis, the measure, and the limit of the right to the use of water."



Figure 1. Morris Bien, lawyer; BOR/USGS author of the 1907 Territorial Water Appropriations Act - the 1907 New Mexico Water Code

I start my list of significant and lasting contributors to water development with Morris Bien for a water code that has withstood at least 50 sessions of the state legislature – an enduring feat! And of course, Steve Reynolds (Fig. 2) makes my list, not for his management of the Office of the State Engineer, but for the many never enacted administrative rulings that have become precedent and that are still with us; for his courage in closing the Middle Rio Grande Basin to the appropriation of groundwater without permit; for his efforts in making the Navajo Irrigation and San-Juan Chama projects realities; and for the many important legal battles that he fought, losing only once, in protection of the State's water resources.



Figure 2. Steve Reynolds, New Mexico State Engineer, 34 years of leadership in the development of New Mexico's water resources

The 1907 Water Code had a major impact on the development of the state's water resources. If you read the First Biennial Report of the Territorial Engineer, 1907-1908, you will find that the new law opened up a flood-gate of requests for appropriations of water. From May 17, 1907 to December 1908, there were requests for over 2,000,000 acres of newly irrigated lands. In 1907-1908, the territorial engineer approved the appropriation of water for 700,000 of those 2,000,000 acres. The list of requests in the First Biennial Report covers four pages of small type (they came from every county), all from private individuals or water development companies on creeks I have never heard of – Tortilla Creek, anyone?

The First Biennial Report did not include already approved requests by the Reclamation Service: 20,000 acres in Carlsbad; 19,000 acres on the Hondo; 10,000 acres at Las Vegas; 180,000 acres in the Rio Grande Project; and 60,000 acres at Urton Lake, which I had never heard of either. It seems as if everyone requesting a new water appropriation tended to greatly overestimate the supply available to them. As statehood approached in 1912, the Territorial Engineer predicted that within the next 10 years, irrigated acreage in New Mexico would grow to 4,000,000 acres. I think that a true accounting of the acre-feet involved in all these applications will show that the state's surface water supply was already over-appropriated by 1912 – my bad! Fully appropriated, sorry Phil Mutz.

The next group that I will recognize for their contributions are the “risk takers,” the many folks who put their money and their hard work on the line in the development of the beneficial use of water. Very few of the early private ventures were profitable; almost none remain in private hands today. Most evolved into the ignominy of being a Reclamation project.

One of the earliest of the many private irrigation projects was that of the Pecos Irrigation Company. It had other names that I have forgotten, but that’s what it was called at the time it was purchased by the Reclamation Service in early 1904 to become one of their first projects. In 1887 or so, C.B. Eddy (Fig. 3), a man with empire ambitions, and Pat Garrett (Fig. 4), an out-of-work sheriff after he killed Billy the Kid in 1881, started corporate irrigation in the Carlsbad area as an under-capitalized Pecos Valley Land and Ditch Company. There were many associates: Joseph Stevens, Robert Tansill, Charles Greene, and Francis Tracy (Fig. 5), but Pat Garrett was soon eased out. The talk was of irrigating 400,000 acres. Bonds were sold and more and more capital was raised. The real money came in 1889 when J.J. Hagerman (Fig. 6), a Cripple-Creek Coloradoan, joined the gang. The original company built two dams on the Pecos (Avilon and McMillan), miles of canal, and at least one large wooden flume, and then rebuilt them after the flood of 1893. The floods of 1904 washed-out parts of their dams again. But it was debt and more debt that doomed the project to be a federal take-over case. Risk takers J.J. Hagerman, C.B. Eddy, Pat Garrett, and Francis Tracy make my list of significant water resources developers.

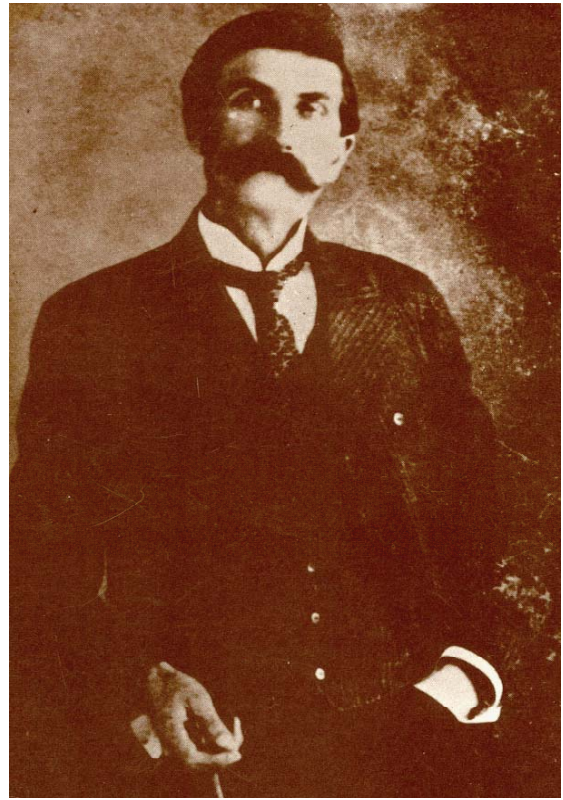


Figure 4. Pat Garrett, Ex-Sheriff; Pecos Irrigation Company risk taker in too many ways



Figure 3. C.B. Eddy, an entrepreneur; a risk taker in a dozen projects including railroads and the Pecos Irrigation Company



Figure 5. Francis Tracy; risk taker and long-time manager of the Carlsbad Irrigation District (his son followed him in the job)



Figure 6. J.J. Hagerman; Pecos Irrigation Company Colorado Miner and railroad entrepreneur; a real risk taker, he threw money at the Pecos River



Figure 7. Matias Romero, an educated, experienced ambassador for Mexico in Washington D.C.; a champion for Mexico's right to Rio Grande water at Juárez

The least successful risk-capital project, but one of the most interesting, was that of Nathan Boyd and the Rio Grande Dam and Irrigation Company. In discussing the Boyd controversy, historian Doug Littlefield was driven to state that: "one is almost driven to account for its extraordinary irrelevancy" and now I am driven to tell you about it. The history of the venture had its roots in the 1880s and 1890s 'drying' of the Rio Grande in the Mesilla Valley and in the Juárez/ El Paso Reach. Matias Romero (Fig. 7), Mexico's plenipotentiary in Washington D.C., complained and complained as Mexico became more and more irritated as the U.S. consistently failed to act to constrain upstream use. In 1890, Major John Wesley Powell (Fig. 8), a famous and greatly respected scientist, and an outspoken advocate for preserving the arid public-domain lands in the West, was sent by the Interior Department to Colorado to investigate claims that the river had gone dry because hundreds of thousands of new irrigated land had been put into service in Colorado. Major Powell found this to be true, and in 1890 reported to Congress that he believed that the waters of the Rio Grande were much better used on a million acres in Colorado than used less efficiently on two or three hundred thousand acres downstream in New Mexico and Mexico. Powell's findings did little to settle Southern New Mexico's and Mexico's concerns. It became clear that a dam and reservoir were needed to store Rio Grande flood waters. About that time, an

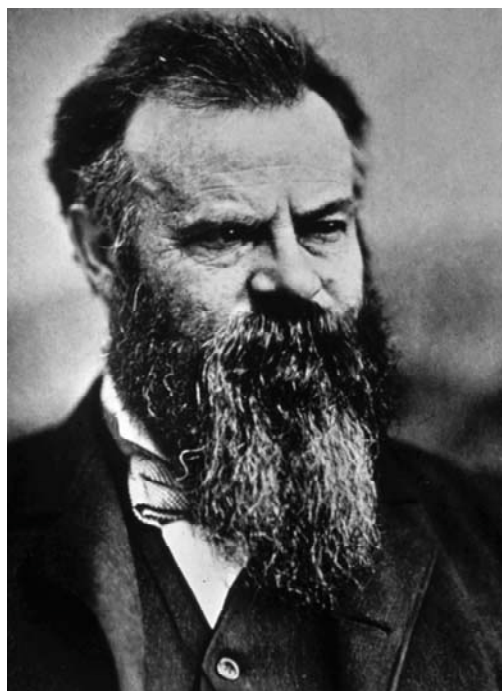


Figure 8. John Wesley Powell, a scientist who worked for limited western lands development

El Paso leader Anson Mills (Fig. 9) called for a dam to be built four miles above the narrows at El Paso that would flood 40,000 acres of the Mesilla Valley in New Mexico. That idea didn't go over too big in Las Cruces.



Figure 9. Major Anson Mills was an El Paso leader and first U.S. International Boundary Commissioner; he helped make Elephant Butte a Reclamation Project

A group of El Paso and Las Cruces businessmen who opposed the Mills dam had heard that Doctor Nathan Boyd (Fig. 10) had a pocketful of British money and was looking for a water project in New Mexico. They asked for Boyd's help. In 1893, the Rio Grande Dam and Irrigation Company was formed. Shares were sold and the owners of much of the existing irrigated lands joined. A USGS engineer, W.W. Follette, had made a study of possible dam sites in Texas and New Mexico and the Boyd Company picked the most likely Rio Grande site – the one upstream at Elephant Butte. In 1894 or so, Boyd applied to the U.S. Department of the Interior for a permit to build a dam, on the federal domain at that site and to build other diversion dams and canals to support irrigation. The permits were granted and Boyd and Company went to work and started to build a dam at Elephant Butte and a diversion dam at Leasburg.

The people in Mexico were not enthralled with the idea of a private dam company and in 1895 Matias Romero sent the U.S. a bill of particulars as to why water deliveries to Mexico from the Rio Grande were

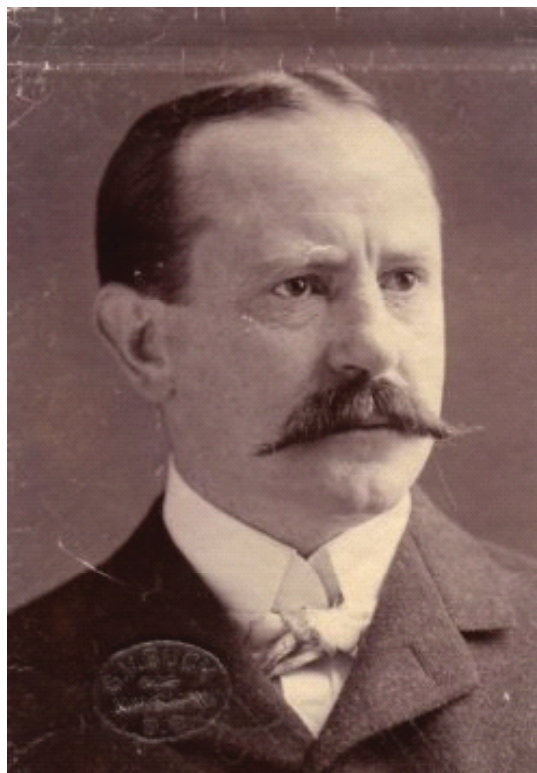


Figure 10. Nathan Boyd, Rio Grande Dam and Irrigation Company risk taker and victim

justified. U.S. Secretary of State Richard Olney made a mistake and sent Romero's rational to Attorney General Judson Harmon (Fig. 11) for an answer. The result was the much hated (in Mexico) Harmon Doctrine of the Absolute Sovereignty that sounded like something out of the Bush Attorney General's Office. The Harmon Doctrine held that every drop of water that fell on the U.S. was ours and that we had no obligation to share it with any other country. Anson Mills could see that a privately owned irrigation company was not the answer to the U.S. problems with Mexico. In 1896, he recommended that the U.S. and Mexico solve their differences with a treaty. Boyd's bad luck was that, by that time, Mills had been named the first U.S. Commissioner for the International Boundary Commission. Mills worried others. As a result, in 1897 the U.S. Secretary of the Interior, David R. Francis, revoked Boyd's permits to build a dam and instituted an embargo against any development of the water supply of the Rio Grande anywhere on the public domain in New Mexico or Colorado. His rational was that the Rio Grande was a navigable river and that the 1848 Treaty of Guadalupe Hidalgo required that the U.S.



Figure 11. Judson Harmon, U.S. Attorney General; author of the much hated (in Mexico) Harmon Doctrine

maintain navigation on the river. The Boyd project was dead. The rest is history. In 1902, the Reclamation Service was formed, they obtained a permit from the New Mexico Territorial Engineer in 1907, and they built the dam on the navigable Rio Grande at Elephant Butte, paid for in part by the U.S. State Department. And yes, there was also the Treaty of 1906 that promised 60,000 acre-feet to Mexico each year. And Boyd spent the next 25 years in U.S. courts where the answer was always “NO!”

Now to my list: first, Matias Romero for consistently complaining; John Wesley Powell, since Reclamation would never have built a dam at Elephant Butte had Powell recommended that water use in Colorado be constrained; next, Judson Harmon and his unintended effect on the process; Anson Mills who blew the whistle on Boyd’s private development; and finally Nathan Boyd, the “risk taker.” Yes, put Boyd, Romero, Mills, Harmon, and Powell on my list of those having a major impact on the development of our water resources – as I said some made an unintended impact.

Although in the minority, there were some successful risk takers. I add Frank and Charles Springer (Fig. 12) to the list; their Land and Cattle Company was a success. In the early 1900s, they built Eagles Nest Lake and an irrigation project on the Vermejo River. The lake now belongs to the Game and Fish Department, but irrigation by Charles’ heirs continues. The most successful irrigated farmer was the Rio Grande Project’s Dean Stahmann (Fig. 13), who developed the world’s largest pecan farms, 6,000 acres, here and in Australia. His off-spring continue to be “risk-takers.” Dean Stahmann is certainly on my list.

The next group on my list is those who helped New Mexico make the best of a bunch of not very favorable interstate compacts. Interstate compacts have had and will continue to have an impact on water use in New Mexico. Compacts are fertile grounds for lawyers! Where New Mexico has done well (for a state with so few votes) is in the Congress – in getting Congressional appropriations and funding for new water projects. Those in Congress who did the most to help the state benefit from its interstate compacts were Dennis Chavez (Fig. 14), Clinton P. Anderson, Carl Hatch (Fig. 15), and Tom Morris. Add them to my list.



Figure 12. Charles (left) and Frank Springer, successful early water resources developers – Eagles Nest Lake; successful risk takers



Figure 13. Dean Stahmann, pecan farmer and water developer, successful risk taker

Work on the Rio Grande Compact started in 1929 when the framework for an eventual agreement was signed in 1939. The only New Mexican that I found who had a profound and lasting impact on the drafting of the Rio Grande Compact was State Engineer Tom McClure (Fig. 16), and he makes my list. McClure was successful in getting provisions in the Compact to allow the transfer of San Juan water into the Rio Grande Basin; a method of accounting for water salvaged from the San Luis Basin in Colorado; and a means of allowing the construction of new reservoirs for flood and sediment control. New Mexico made use of this last provision in the early 1950s, when Senators Chavez and Hatch introduced legislation to aid in the rehabilitation of irrigation facilities in the Middle Rio Grande Basin.

An interstate compact on the Pecos was a long time in coming – a really long time. After about 1910, groundwater development really got going in the Roswell area. Water use in New Mexico increased. As early as 1916, Texas complained to the Interior Department as Reclamation was responsible for the Carlsbad Irrigation District. A “cold war” set in. Real work on a Pecos River Compact started in 1923. A compact was signed in 1925, but lots of things got in the way – competing interests in New Mexico (Roswell’s groundwater vs. Carlsbad’s surface supply) lead to a governor’s veto. Multiple efforts in the 1920s failed. In 1935, in order to get federal appropriations for a flood control and storage reservoir at Ft. Sumner, Congressman Dennis Chavez swore on bent knee, on the floor of Congress, that New Mexico would enter into a compact agreement. Through the forceful efforts of lawyer Irwin Moise (Fig. 17), legal advisor to New Mexico’s compact commissioner, and Royce Tipton (Fig. 18), a Colorado



Figure 14. Senator Dennis Chavez, COE generals were regular visitors to his office; he would invite any New Mexican to join them and have a seat



Figure 15. Senator Carl Hatch, author of the Hatch Act that kept federal employees from political activities; a good senator in the 1930s and 1940s



Figure 16. Tom McClure, State Engineer 1932-46; an engineer with a vision of the future water needs of New Mexico and acted to set the table for projects to meet these demands

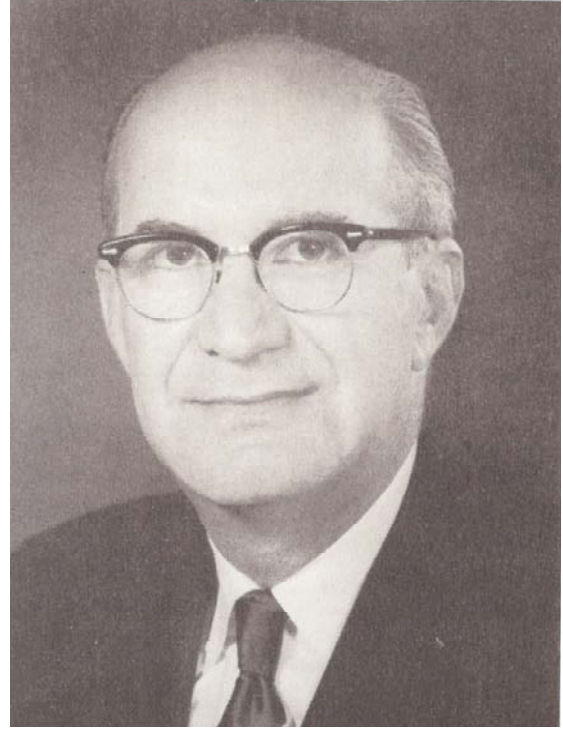


Figure 17. Irwin Moise, legal advisor on the Pecos; a water-knowledgeable State Supreme Court Justice who Steve Reynolds really admired

engineer, a compact agreement with Texas was finally reached in 1948. From New Mexico's point of view, the compact has been a dismal failure. Still, I put Judge Moise and Royce Tipton on my list, because they successfully managed the adoption of a compact. Royce was not the first or the last to believe that salvation on the Pecos lay in water salvage through salt cedar eradication. McClure thought it possible; John Bliss (Fig. 19) and Steve Reynolds did too. I worked water salvage a couple of times at the OSE. The only one at the Office of the State Engineer Office who was at all pessimistic was Carl Slingerland (Fig. 20) who believed salt cedar control to be a zero-sum game. Carl was also the technical source of the Pecos River buy-out plan of the 1990s. I just pushed his ideas. Slingerland goes on my list. I will also add Alfred G. Fiedler, a USGS groundwater geologist, and State Engineer Herbert W. Yeo to my list of contributors for their work in regulating groundwater use in the Roswell basin. Both were strong supporters of the "groundwater appropriations code" that finally became law in 1931. Without a groundwater code, New Mexico's water rights could never have been administered.

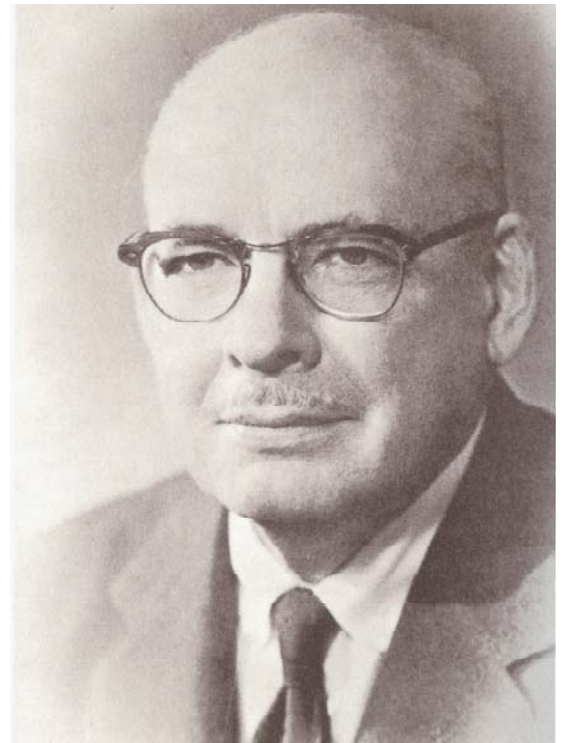


Figure 18. Royce Tipton, a beat-up engineer; an internationally recognized authority on water resources and an advisor to the 1942 U.S. Pecos River Joint Investigation Report



Figure 19. Engineer John Bliss, a long time laborer in the water field as State Engineer 1946-53, and other duties as assigned; a good engineer and a fine man

The Colorado River Compact of 1922 was based on an agreement that the Colorado River would be divided into an Upper and a Lower Basin at Lee's Ferry – each basin to get half of the flow. Both groups thought they had won, but it turned out that Reclamation had over-estimated the normal flow at Lee's Ferry. New Mexico came off "OK" as we are both an Upper Basin (the San Juan) and a Lower Basin state (Gila and Little Colorado), but we failed to get a share of the power revenues from major Colorado River dams.

An Upper Colorado River Basin compact was a long time in coming. When it came in 1949, it was filled with complex conditions, as it is based on the allocation of anticipated consumptive use of water and not on historical river flows and diversions. New Mexico got less than any other state in the Upper Basin – only 11.25 percent of the apportioned depletions. While the jury is still out on how New Mexico will fare in the long-term, thanks to Senator Dennis Chaves we got a 17 percent share of the excess profits from power generation. In 1953-1954 Governor Ed Mechem (Fig. 21) and Senator Clinton P. Anderson (Fig. 22) worked, most of the time together and sometimes not, to ensure that the Navajo Irrigation Project and the San Juan-Chama diversion project were included in legislation authorizing and funding various upper basin projects. Add Clinton P. and Governor Mechem to my list.



Figure 20. Carl Slingerland, engineer advisor, on the Pecos River, short-time State Engineer in 1990, and a friend who I greatly admired



Figure 21. Ed Mechem, a good natured multi-time governor, a one-term senator, and the long-time judge in the Aamodt case that moved the case almost to closure; a fine man, too!



Figure 22. Clinton P. Anderson, a champion of the San Juan-Chama diversion and water for Navajo lands; famous for his political action on Gila water



Figure 23. Engineer Eluid Martinez, ex-student, Martinez followed Reynolds as State Engineer in a period of change and then went on to Reclamation as Commissioner; a good friend

Opposition to the San Juan-Chama project developed from all sides. It took the efforts of everybody: Chavez, Anderson, and Tom Morris, until June of 1962 for the project to finally be authorized. John Bliss and Steve Reynolds were both greatly involved in a lot of arm-twisting in the Congress and all over the state. Tom Morris and John Bliss join my list. The staff at the Office of the State Engineer worked hard to conclude needed hydrographic surveys of farms on the many acequias on the Chama and Rio Grande. This work was driven by Eluid Martinez (Fig. 23). The “Mission Impossible” was moving stream-system adjudications through the Northern New Mexico courts. This activity was directed by the head of the small legal staff at OSE, Paul Bloom. Both Martinez and Bloom join my list. Without successful adjudication of existing rights, the accounting for San Juan water would have been impossible. In 1963, Albuquerque signed up to pay \$30 million for its share of the 110,000 acre-feet authorized for annual transfer, and the Middle Rio Grande Conservancy District agreed to pay \$3.4 million for its allocation.

In 1956, Steve Reynolds had declared the Middle Rio Grande a groundwater basin. The relationship between surface and groundwater was a key issue in the 1962 case of the City of Albuquerque *v.* Reynolds where the State Engineer held that underground waters in the Rio Grande Basin were hydraulically connected to the

surface flows of the Rio Grande and thus subject to regulation. The New Mexico Supreme Court found that statutes gave Reynolds the authority to regulate both. To regulate the basin two things were needed: a mathematical solution to the complicated partial differential equations that related groundwater potential to surface water flows, and geologic studies that identified the basin boundaries, the geologic structure of the aquifer system, and the aquifer characteristics. Don Akin (Fig. 24), a civil engineer at the Office of the State Engineer, modified the basic equation developed by C.V. Theis and wrote the programs to provide solutions. The geologic analysis was put together by Zane Spiegel (Fig. 25) who worked for Steve in those years. He went on to author a large number of studies, two in 1962 on stream connected aquifers, and an earlier one on the Santa Fe Basin. Understanding the relationship between groundwater in the Roswell Basin to the flow of the Pecos also depended on Akin’s work. I add both Don Akin and Spiegel to my list of “good guys.”

At the start of my talk, I put Steve Reynolds on the top of my list for having defended New Mexico’s limited water resources in various court actions, losing only once. Well, he had help. Lawyer Richard Simms was at Steve’s side for about ten years fighting interstate compact quarrels and the federal government’s claims of reserve water rights. And he was very successful, particularly in fending off the feds. He sent me a col-



Figure 24. Don Akin, engineer; a very smart man, a very quiet man, and very nice man, who got along well with Steve Reynolds for those reasons

ored drawing of him standing before the U.S. Supreme Court. As I didn't recognize all of the other folks in black robes in the picture, I decided not to include it in my story. No picture, but add Richard Simms to my list of significant contributors.



Figure 25. Dr. Zane Spiegel, geologist; a man who was a thorn under the saddle of many engineers; a good friend

I need to close by talking about two groups of folks who helped make the most of the limited water resources that we have. First, New Mexico's geo-hydrologists: a group of scientists who are unknown to many in our field and who are the most under-appreciated professionals in water resources development. Without their field work and insight, we would never come to appreciate our groundwater resources or to even fully understand that our surface water and groundwater are one and the same. First to be added to my list is Dr. John Hawley (Fig. 26), the complete geo-hydrologist.

He has done fundamental work in most water basins in the state. He incorporates geologic structure with his understanding of groundwater flows and system recharge. He talks, and people listen and trust him. Incredible! I learn more and more every time I work with him. John certainly belongs on my list, as does Vince Kelley (Fig. 27), who was a professor of geology at UNM in the 1950s and '60s. I was in his engineer geology class in 1948- I certainly don't blame him for my not knowing more. Dr. Kelley authored geologic reports on many sections of New Mexico that are still the best source available. I also add the very gentle Frank Kottowski (Fig. 28), director of the New Mexico Bureau of Mines and Mineral Resources for about 15 years and responsible for the fine body of work the Bureau produced and its archives of basic groundwater data that remains in use.



Figure 26. John Hawley, geo-hydrologist; author of *Five Million Years of Landscape Evolution in New Mexico*; if you listen to John long enough, you can learn all the geohydrology you need to know



Figure 27. Vince Kelley, geologist; introduced UNM civil engineering students to geology in the late 1940s; a good teacher



Figure 28. Frank Kottlowski, economic geologist; the man responsible for the high quality work done by the Bureau of Mines and Mineral Resources



Figure 29. Elliott Barker, New Mexico Game and Fish Director; Barker added dozens of fishing lakes to the State's inventory – he liked dam builders

And to my final group of those who made lasting contributions to water resources development in the state, a group that I think of as conservationists, people who added to the resource instead of diminishing it. I think of them as leaving something ahead for the future. First, a real conservationist, Elliott Barker (Fig. 29), longtime head of the New Mexico Game and Fish Department. Barker led the agency into the ownership of fishing lakes across the state and to the employment of engineers who just wanted to build dams. I also add another man that I worked for to my list: Charlie Caldwell (Fig. 30), the engineer who created the mutual domestic water development system that now provides safe drinking water in over three hundred small villages in the state.

Next, two legislators, who after Steve Reynolds died listened to all sides and lead the legislature away from willy-nilly activities to the formation of an effective water committee. They are G.X. McSherry (Fig. 31) and Joe Stell (Fig. 32).

Next, the writers and historians who have left ahead for the future records of our progress, and our setbacks, in the development and use of our water resources: Ira Clark (Fig. 33) and Em Hall (Fig. 34).

If there is such a thing as a research entrepreneur, then Ralph Stucky (Fig. 35) was one. Interdisciplinary water research became a reality under Boss Stucky. He would get us all together, lay out the sketchiest plan, find the



Figure 30. Charlie Caldwell, State's first sanitary engineer, creator of mutual domestic water consumers program

money and say "GO!" And we went to work. Ralph worked hard at the national level for a system of water resources research institutes in every state and he was successful. Stucky was never fazed by the word "NO." When Stucky struck, Stucky stuck! He's on my list!

And finally, I recognize Al Utton (Fig. 36), a man who championed regional water planning for New Mexico; an educator who fostered the study of water law at UNM and the excellence of the *Natural Resources*



Figure 31. G.X. McSherry, legislator; knew agricultural water issues; he worked well with other legislators to make the legislative water committee effective

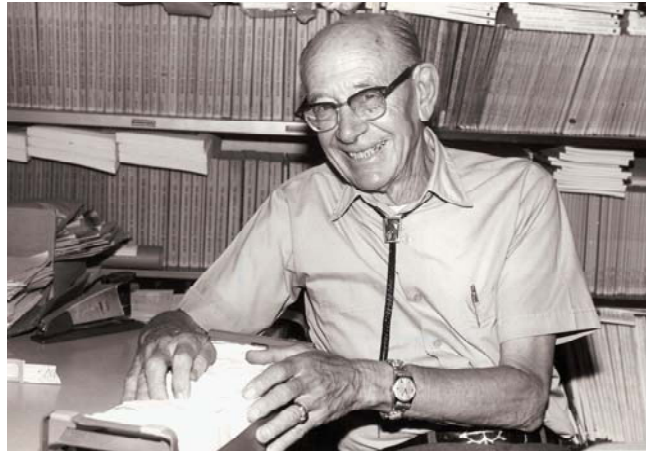


Figure 33. Ira Clark, historian at NMSU; this talk would have been an empty vessel had I not consulted Clark's book, *Water in New Mexico*, again and again

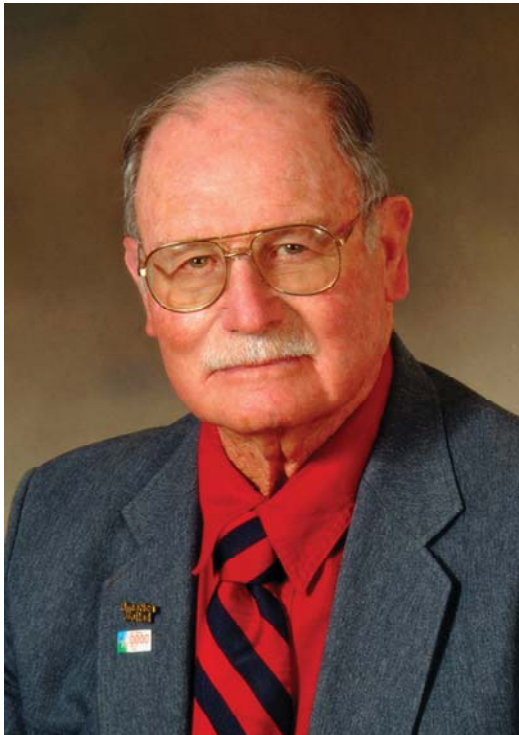


Figure 32. Joe Stell, effective legislative leader; a hard worker who listened to all sides of many water issues, supported mediation measures



Figure 34. Em Hall, writer and UNM law professor; wrote about the history of the water wars in the use of the water resources of the Lower Pecos

Journal, and a man who was recognized by Mexico with the Aztec Eagle Award for his work on conflict resolution on border water issues. Al was a good friend who I came to appreciate in his years as a steady hand at the Interstate Stream Commission. I am delighted to add him to my list of outstanding contributors.



Figure 35. Ralph Stucky, water economist, educator; director of the Water Resources Research Institute and founder of the long running annual water conference

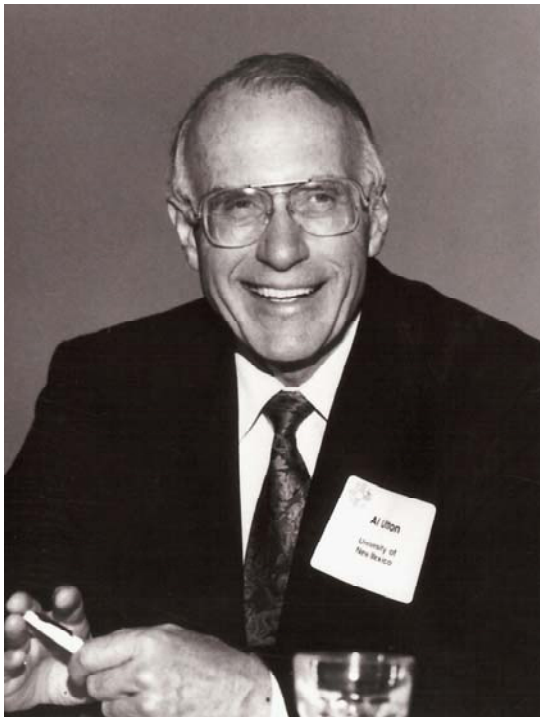


Figure 36. Al Utton, educator, lawyer, civil servant, outstanding contributor to water resources management; a friend and an easy-going man who was always looking for the “perfect Margarita”

A SPEAKER’S DISCLAIMER FOR YEA OF LITTLE FAITH

You may think that much of what you have heard and seen today is not true and you may be right – all that I claim is that I believe that most of what I have had to say is more or less based on the facts as I know them.

John Whitlock Hernandez

THOSE TO BE THANKED FOR HELPING ME!

- Cathy Ortega Klett, WRI editor
- Peggy Risner, WRI Do-it-All
- John Hawley, a good friend
- Walt Hines, water resources engineer
- Virginia Dodier, museum curator
- Francis West, understanding geologist
- Scott Boyd, water-right defendant
- Paul Bloom, water-law lawyer
- Gary Daves, water-right administrator
- Wayne Canon, OSE
- Polly McCord, OSE librarian
- Julie Maas, OSE
- Tracey Kimball, Legislative Council
- Leslie Coleman, N.M. Game & Fish
- Kirk Davis, C.S. Cattle Ranch
- Tim O’Neill, Rancher
- Sally Stahmann, pecan entrepreneur
- Sally Spener, International Boundary & Water Comm.
- Martin Frenzel, N.M. Game and Fish
- Caroline Martinez, Utility Operators
- Kristina Eckhart, OSE