ORAL HISTORY INTERVIEW

David DeBruyn

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STATUS OF INTERVIEW:
OPEN FOR RESEARCH

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Interview Conducted and Edited by:
George Petershagen
Historian
Bureau of Reclamation

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OF ORAL HISTORY INTERVIEW OF

DAVID DE BRUYN

1. In accordance with the provisions of Chapter 21 of Title 44, United States Code, and subject to the terms, conditions, and restrictions set forth in this instrument, I, David De Bruyn, (hereinafter referred to as "the Donor"), of 5913 Sage Crt. Carmichael, CA do hereby give, donate, and convey to the National Archives and Records Administration (hereinafter referred to as "the National Archives), acting for and on behalf of the United States of America, all of my rights and title to, and interest in the information and responses (hereinafter referred to as "the Donated Materials") provided during the interview conducted on 11/27/94, at CARMICHAEL, CA 95608 and prepared for deposit with the National Archives and Records Administration in the following format: ~~Carmichael, CA~~ cassette tape. This donation includes, but is not limited to, all copyright interests I now possess in the Donated Materials.

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Date:_____ Signed:_____
Archivist of the United States

Interviewer's Introduction

David DeBruyn was born in the northwestern farming community of Lynden, Washington. By the time he was ready to begin school, though, his family had relocated to Sonora, California. He graduated from Sonora Union High School and began his college career at California Polytechnic State University, San Luis Obispo. His college education was interrupted by World War Two, in which he served as an aerial gunner in the U. S. Navy.

Completing his college education under the G. I. Bill in 1952, DeBruyn found upon graduation that the Bureau of Reclamation was actively recruiting engineers in a number of disciplines. He was hired upon application and assigned to the Chico District Office as an hydraulic engineer. There he conducted a number of studies relative to groundwater supplies and participated in major flood studies.

Following his Chico assignment DeBruyn was transferred to the Tracy Pumping Plant where he increased his knowledge of groundwater and drainage issues. Subsidence, salt deposition, and drainage are all major problems confronted by DeBruyn over many years of his Reclamation career. DeBruyn also applied his expertise in these areas overseas in Egypt and Jordan, both while a Reclamation employee and as a consultant following his retirement from the Bureau in 1981.

George Petershagen, Bureau of Reclamation historian, interviewed David DeBruyn at the DeBruyn residence in Carmichael, California, on July 27, 1994. Barbara Heginbottom Jardee transcribed the interview, and Petershagen accomplished the editing.

Senior Historian's Introduction

In 1988, Reclamation began to create a history program. While headquartered in Denver, the history program was developed as a bureau-wide program.

One component of Reclamation's history program is its oral history activity. The primary objectives of Reclamation's oral history activities are: preservation of historical data not normally available through Reclamation records (supplementing already available data on the whole range of Reclamation's history); making the preserved data available to researchers inside and outside Reclamation.

The senior historian of the Bureau of Reclamation developed and directs the oral history program. Questions, comments, and suggestions may be addressed to the senior historian.

Brit Allan Storey
Senior Historian
Land Resources Division (84-53000)
Policy and Administration
Bureau of Reclamation
P. O. Box 25007
Denver, Colorado 80225-0007
(303) 445-2918
FAX: (720) 544-0639
E-mail: bstorey@usbr.gov

For additional information about Reclamation's history program see:
www.usbr.gov/history

Oral History Interview
David DeBruyn

Petershagen: This is George Petershagen conducting an interview of David DeBruyn on behalf of the Bureau of Reclamation. Today's date is July 27, 1994. We're at the DeBruyn residence in Carmichael, and this is Tape 1, Side A.

David, would you please acknowledge that you understand this interview is being tape recorded.

DeBruyn: I understand it is, yes, being tape recorded.

Petershagen: And with your permission?

DeBruyn: Yes, it is.

Petershagen: And this eventually becomes a gift by you to the government of the United States.

DeBruyn: That would be fine.

Petershagen: Thank you. Now, if we could get started, where and when were you born, please?

Born in Lynden, Washington in 1924

DeBruyn: Well, I was born in the state of Washington, in a small Dutch community called Lynden, Washington, right up near the Canadian border, about a mile from the Canadian border.

Petershagen: Great. As I remember Lynden, I think it was famous for poultry and turkey farms and that sort of thing.

DeBruyn: It is now. Then, in 1924, it was mostly dairy.

Petershagen: I see. And you were raised in Lynden?

DeBruyn: Yes, I was raised until I was about six years old, and then of course the Depression came along and my father was running a big dairy there for a man, and so

that was shut down and we migrated to California.

Moved to Sonora, California, at about the Age of Six

I actually was raised from then on in a small town called Sonora, California.

Petershagen: And so you went to Sonora schools?

Attended Grade School in Algerine and High School in Sonora

DeBruyn: Actually, a little one-room schoolhouse in a place called Algerine, near Jamestown for my primary grades. And then high school in Sonora, California.

Petershagen: And what high school did you graduate from?

DeBruyn: Sonora Union High School.

Petershagen: I see. And from there you went on to college?

Attended California Polytechnic State University at San Luis Obispo for about Six Months and Then Went into the U.S. Navy

DeBruyn: From there I went on to college, and, of course, the war came on about that time, and I attended Cal Poly [California Polytechnic State University][1] at San Luis Obispo, for a period of about six months, and then from there went into the service

1. A note on editorial conventions. In the text of these interviews, information in parentheses, ( ), is actually on the tape. Information in brackets, [ ], has been added to the tape either by the editor to clarify meaning or at the request of the interviewee in order to correct, enlarge, or clarify the interview as it was originally spoken. Words have sometimes been struck out by editor or interviewee in order to clarify meaning or eliminate repetition. In the case of strikeouts, that material has been printed at 50% density to aid in reading the interviews but assuring that the struckout material is readable.

The transcriber and editor also have removed some extraneous words such as false starts and repetitions without indicating their removal. The meaning of the interview has not been changed by this editing.

In an effort to conform to standard academic rules of usage (see *The Chicago Manual of Style*), individual's titles are only capitalized in the text when they are specifically used as a title connected to a name, e.g., Secretary of the Interior Gale Norton as opposed to Gale Norton, secretary of the interior; Commissioner John Keys as opposed to John Keys, commissioner. Likewise formal titles of acts and offices are capitalized but abbreviated usages are not, e.g., Division of Planning as opposed to "planning;" the Reclamation Projects Authorization and Adjustment Act of 1992, as opposed to "the 1992 act."

and spent about two years, two-and-a-half years or so in the United States Navy.

Petershagen: I see, and what was your rating in the Navy?

"I was trained as a Naval air gunner and a radioman. . . . I was in PBMs for a while, and then in what they called SB2C dive bomber. . . ."

DeBruyn: I was just a Seaman, and I was in the Naval Air Force. I was a Naval gunner and radioman.

Petershagen: I see. In flight status?

DeBruyn: Yes. I never got overseas, but I was trained as a Naval air gunner and a radioman.

Petershagen: What sort of planes?

DeBruyn: Well, I was in PBMs for a while, and then in what they called SB2C dive bomber.

Petershagen: I see. And following your military service, then you returned to college?

"After I got out of the military, I worked for a year or two, and then I decided maybe I'd better go back to college, and I went back to Cal Poly and. . . ended up graduating in 1952 with a degree in agricultural engineering. . . ."

DeBruyn: Right. After I got out of the military, I worked for a year or two, and then I decided maybe I'd better go back to college, and I went back to Cal Poly and changed my major. I was an aeronautical engineering major to start with, and then I went into agricultural engineering. I ended up graduating in 1952 with a degree in agricultural engineering.

Petershagen: I see. What sort of an educational pursuit did you take up following the military, before you went back to school?

Used the GI Bill to Continue His Higher Education

DeBruyn: Well, I kind of knocked around, and I worked for some friends of mine on farms

in and around the Turlock area–worked a little while in Los Angeles at different odd jobs, and decided, well, since the GI Bill was out there, that I would take advantage of that. Excuse me just a minute. (Tape turned off and on)

Petershagen: Then the GI Bill, I guess, and probably just the desire to get an education on top of that, was largely the prime attraction.

DeBruyn: That was the motivation, actually. I decided that since it was available and I was interested in agriculture, that it'd be a good opportunity. So I finally ended up graduating in 1952.

Petershagen: Then what did you do upon graduation?

". . . during the last three months or so . . . at school, the Bureau of Reclamation came around and was doing some recruiting for people, as well as a number of other firms and groups. . . . I became acquainted with the Bureau's activities and was quite interested in that and decided that

I'd take a job with the Bureau. They offered me a job. It isn't like it is now, you know. (Chuckles) They were *looking* for people then. There were just *hordes* of recruiters down there trying to get your attention . . ."

DeBruyn: Well, during the last three months or so, while we were still at school, the Bureau of Reclamation came around and was doing some recruiting for people, as well as a number of other firms and groups. It was then that I became acquainted with the Bureau's activities and was quite interested in that and decided that I'd take a job with the Bureau. They offered me a job. It isn't like it is now, you know. (Chuckles) They were ***looking*** for people then. There were just ***hordes*** of recruiters down there trying to get your attention to come work for them.

Petershagen: Had you heard of the Bureau or known very much about it before the recruiters showed up?

"I did know *something* . . . I had attended some workshops and had also taken some field trips where the Bureau was actively constructing some facilities. And also I was pretty interested in what was going on on the west side of the San Joaquin Valley, where at that time they were building the Delta-Mendota Canal. So this type of thing sort of interested me . . ."

DeBruyn: Yeah, I did know ***something*** about it. During school I had attended some workshops and had also taken some field trips where the Bureau was actively constructing some facilities. And also I was pretty interested in what was going on on the west side of the San Joaquin Valley, where at that time they were building the Delta-Mendota Canal. So this type of thing sort of interested me, and I decided it would be a good opportunity.

Petershagen: And when you left the Navy, that was a clean break–you didn't stay on in reserve status or anything like that?

DeBruyn: That's true, I didn't. I made a clean break of it and went to become a civilian. (Chuckles)

Petershagen: Then when you first went to work for the Bureau, what sort of a job did you have, and where was it located?

Went to the Groundwater Section in the Field Office at Chico, California, as a Hydraulic Engineer

DeBruyn: Okay, I was hired as a hydraulic engineer. My classification was hydraulic engineer. In those days–this was 1952–in those days they had field offices, and a lot of the field offices, of course, were doing investigative work. And there was a field office in Chico, California. And so they asked me

if I'd be willing to go to work for them in the Groundwater Section that they had established in Chico. They actually had a small office there in the airport area. They also had an office in the town of Chico. So I went into a field office and started doing field work and field investigations.

Petershagen: You mentioned the Chico Airport area. Is that the office location that you were at?

DeBruyn: That was it, yes. They had leased a small area out there from a private concern, and we were all housed there.

Petershagen: In speaking with Marshall Jones yesterday . . . . Of course he was the district manager in Chico at the time the office was closed down, or at least in its last days. (DeBruyn: That's true.) He suggested that about the same time that you were hired

with the Bureau is when the downsizing began, that it largely coincided with the Eisenhower election in 1952.

Reduction in Force (RIF) at the Beginning of the Eisenhower Administration

DeBruyn: That is true, yes. I was only employed about six months or so when we started to get some indications that things were going to be cutting back. There was another fellow that I had graduated with, a fellow by the name of Art Nelson, and he had a family and so I ended up suggesting that they RIF [reduction in force] me and keep him because he had a family to support, and I was a single man at that time. So they said, okay, they would do that.

Transferred to the Tracy Pumping Plant after about a Year

And then about two weeks later they changed their mind and went the other way, and then two weeks later they decided to keep us both, and they transferred Art Nelson down to somewhere around the Sacramento area here, and they transferred me down to the Tracy Pumping Plant. And so I was only in Chico for about a year, or a little over a year.

Petershagen: As a young fellow getting started in your professional career, what was your reaction when you started hearing about the downsizing and the potential of a RIF?

". . . I don't think it bothered me much, other than I thought, 'Well, I've got to go out and find another job.' I can't remember worrying much about it, because jobs *were* available, and you could get jobs, so it's a much different atmosphere than now . . ."

DeBruyn: Well, I was young, and I don't think it bothered me much, other than I thought, "Well, I've got to go out and find another job." I can't remember worrying much about it, because jobs ***were*** available, and you could get jobs, so it's a much different atmosphere than now, see. And I thought, "Well, this is the breaks in life. You just take them as they come." I know that there was a lot of consternation around the office, particularly with the folks that had ten-, twelve years service–if they were going to be losing ***their*** jobs, it was quite a worry. I didn't fall into that category because I was so new, right off the bat. Of course I felt some compassion towards them (chuckles) and understood what ***they*** were going through.

But that's true, Marshall Jones was the head of the office there towards the end of the closure part.

Petershagen: What was Chico like for a young, single engineer starting in life? Was life pretty good for you?

DeBruyn: ***Wonderful*** place. It was a wonderful town. It still is today. It's grown, of course, a lot. But the environment was just a wonderful place. Some of the older pioneers had seen to it that the area had a large park that had been donated to the city with a number of restrictions attached to it that were very difficult to break. And so the area was just sort of a paradise to live and work, you know, and the people were nice.

". . . I met my wife in Chico. . . ."

In fact, I met my wife in Chico. She was attending Chico State [California State University, Chico] at that time. Of course she wasn't my wife (Chuckles) at that time. But I enjoyed working in Chico.

Petershagen: What sorts of things did you work on in that relatively short tour of duty in Chico?

The Chico Field Office Was Looking at Water Needs on the West Side of the Sacramento Valley below Red Bluff to Arbuckle

DeBruyn: Well, we were investigating a couple of things. We were looking at . . . . The principal study area was out on the west side, extending down from about Red Bluff on the north to about Arbuckle on the south, a distance of probably 125 miles, something like that. And we were looking at what the potential and future

water needs were on a lot of that westside country.

Involved in Looking at Safe Yield Groundwater Development Combined with Sacramento River Development on the West Side

Some of the areas had developed up on groundwater supplies. I was in the Groundwater Branch, so we were trying to evaluate the groundwater potential and how much ***local*** supplies these folks could develop on the groundwater from the safe yield standpoint. And then we would try to match that and merge that in with any supplies that were available from the Sacramento River.

"The basic plan was to divert water around Red Bluff Diversion Dam, and bring it down the west side in a southerly direction, and serve a lot of that westside country that was without water, or without even a good groundwater supply. They actually ended up building a diversion dam there at Red Bluff, which came along later, but it has *two* canals that divert from that. One is the

Corning Canal, which is a pump lift supply; and then there's the direct diversion in the Tehama-Colusa Canal . . ."

The basic plan was to divert water around Red Bluff ~~, the~~ Diversion Dam, and bring it down the west side in a southerly direction, and serve a lot of that westside country that was without water, or without even a good groundwater supply. They actually ended up building a diversion dam there at Red Bluff, which came along later, but it has ***two*** canals that divert from that. One is the Corning Canal, which is a pump lift supply; and then there's the direct diversion in the Tehama-Colusa Canal, which is under operation now–both are operating, in and operating.

Petershagen: Great. So I guess one could say that even though you were specialized to a certain

degree in groundwater, the kinds of things that you worked on really did involve, as you mentioned, the eventual building of the Red Bluff Diversion Dam and the associated canals, and probably integrated into the whole need for the Trinity River Division, too, as another source of water.

DeBruyn: Yes. Of course that came on quite a bit later. At that time I was not aware of any Trinity River development. That may have been on the books, although as a young engineer, I was pretty much out in the field a lot doing surveys.

"After I'd been there about a week or two, they . . . had set up an investigation to see how much of the area below Shasta Dam would flood at different releases from the dam. So they sent a bunch of us young engineers out there, and they started making releases from the dams . . . a lot of that water was moving out into areas that had been developed . . . it was a case of where certain areas had been approved for development that shouldn't have been . . . and now here came the

water and everybody was, of course, blaming the federal government . . ."

I do recall one job: After I'd been there about a week or two, they were proposing and had set up an investigation to see how much of the area below Shasta Dam would flood at different releases from the dam. So they sent a bunch of us young engineers out there, and they started making releases from the dams to see how high the flood waters came. And of course (Chuckles) a lot of that water was moving out into areas that had been developed by various developers who shouldn't have ever developed this land. (Petershagen: Uh-oh!) And they were gone, and of course we were under fire for (Chuckles) flooding them out and so forth. It was all a bunch of nonsense, but it was a case of

where certain areas had been approved for development that shouldn't have been approved out on the flood plains, and now here came the water and everybody was, of course, blaming the federal government, and it was not the federal government's fault. So that was one of my first (Laughter) exposures!

And I did a lot of other related works, did some surveying work here and there and worked on groundwater programs, measuring programs, and analysis of our results–trying to determine the safe yield values of the groundwater. Those values would be meshed with other information as to what the total water needs were and so forth, so we could determine what the size of the canals

should be for that area, and the size of the diversion dams, of course. So it's all interrelated, and there are pieces and parts of it, you know, that are all put together by the final planners.

Petershagen: Interesting that in your Shasta Dam area experience there, where you're involved in a project that you're really trying to benefit people, but you come away looking like the guys with the black hats on.

". . . I drove . . . down onto the dry part of a flood plain area . . . and had to pass a sign that was probably ten feet by ten feet square . . . erected by the . . . Bureau of Reclamation, in letters that were probably eight to ten inches high was, 'Warning!' And under that, 'This area subject to flooding.'. . . I had people standing on their porches, and of course the water was all around, shaking their fists at me because they were going underwater as a result of this test program. . . ."

DeBruyn: That's true. It was very interesting because I had a pickup and I was out

running around staking high water marks, and I drove off of a bridge near Red Bluff, down onto the dry part of a flood plain area, and was driving along there and had to pass a sign that was probably ten feet by ten feet square, and on this sign that was erected by the United States government, by the Bureau of Reclamation, in letters that were probably eight to ten inches high was, “Warning!” And under that, “This area subject to flooding.” (Petershagen chuckles) And as I went down there, I had people standing on their porches, and of course the water was all around, shaking their fists at me because they were going underwater as a result of this test program. This was literally a test program by the Bureau to see . . . . We had airplanes

flying above taking aerial shots, and we were staking high-water marks. Later on we went in and surveyed all those stakes in to see if the photographs and the stakes and everything matched, you see.

Petershagen: Interesting. Now, did the Bureau do anything to try to get those people out of their homes before you started the test program?

DeBruyn: Well, like I say, I was only probably with the government a month (Laughs) when that happened, so I was out of that part of the loop. All I do remember is that there was a fellow there that loaned me his little rowboat. He had a little rowboat, and I rowed out to a dance hall that was underwater, had about three foot of water around it, and I nailed a stake on the side

of the dance hall (Laughs) to show how high the water had gotten. But that part of the loop I was not into much, so the politics of it, I didn't, of course, understand. (Laughter)

Petershagen: I see! So let's see, now if memory serves, you worked out of the Chico office roughly a year?

Transferred from Chico to the Tracy Pumping Plant after about a Year

DeBruyn: Yeah, I think it was about a year, somewhere there. And then from there I was transferred to the Tracy Pumping Plant. Tracy Pumping Plant is a facility right out of the town of Tracy that lifts water up into the Delta-Mendota Canal.

Petershagen: And what sort of a job did you have at Tracy?

"I went to work in the salinity management programs that they had going on. We had a number of measurement automatic stations in and around the Delta area, and we were actually measuring the salinity on a continuous basis with these various recorders. Of course, most of that area is all under tidal influence . . ."

DeBruyn: Well, I retained my hydraulic engineering status, and I went to work in the salinity management programs that they had going on. We had a number of measurement automatic stations in and around the delta area,[2] and we were actually measuring the salinity on a continuous basis with these various recorders. Of course, most of that area is all under tidal influence, so the salinity would go up and down. It was actually a program that was designed in an attempt to get a better handle on salinity conditions under certain flow conditions

2. Referring to the delta of the Sacramento and San Joaquin rivers in the northeast quadrant of the San Francisco Bay/San Pablo Bay.

that were within the delta. It's a very, very complex problem–still is to this day. People are still trying to understand the hydraulics of that system, and there's lots of political wrangling about the delta region because it's kind of the hub where all the water from there goes south, you know. It's a big political problem today particularly since the environmental movement came on some twenty years ago or so.

Petershagen: So how long were you at Tracy?

Moved from Tracy to the Regional Office's Groundwater Branch after about a Year and One-half

DeBruyn: I was at Tracy about, oh, a year-and-a-half or so, as I recall. From Tracy I had an opportunity to come to the regional office here in Sacramento, back into the

Groundwater Branch here. They had a job here, and it was a chance to move up in grade and also move back into an area that I was somewhat familiar with.

Switched to Working in the Land Resources Branch to Work on Drainage in the Regional Office in 1961

So I worked in the Groundwater Branch here in the Sacramento area for a number of years until– well, actually until 1961, I guess it was. And at that time I transferred into the Land Resources Branch, into drainage work.

Petershagen: Okay, before we get into that, you came to Sacramento, I guess, about 1955?

DeBruyn: Well, around in there–around 1955, that's correct.

Petershagen: Who did you work for in the Groundwater Branch?

DeBruyn: I worked for a man by the name of Dr. Gardner. He was heading up the Groundwater Branch here. My immediate supervisor was a fellow by the name of Bill Ellis. He was also a geologist. So I was one of maybe two engineers actually working in the Groundwater Branch. Most of them were geologists. I was one of two engineers that worked in the Groundwater Branch.

Petershagen: One assumes that the Groundwater Branch then did groundwater studies similar to what you had done in Chico.

DeBruyn: That's correct. Only we had responsibilities that ranged out, of course, quite a bit wider than the district office in Chico had.

Studies Bringing More Water to the Chico Area

They just had the responsibility for the Sacramento Valley and then also the Chico area. I forgot to mention that. We ***were*** making ***some*** studies in and around the Chico area, also, to look at bringing in water there, but that never did work out too well.

Petershagen: About what period of time did that planning effort cover? Was that just the time you were at the Chico office, or did those studies continue here [Sacramento]?

DeBruyn: No, we wound up most of the studies by ‘53–somewhere in there. We finished up most of the stuff, and about that time they were closing the office, as I recall. We wound those studies up, but a lot of them were concluded and finished here in the regional office, and finalized.

I had another thought, but it escaped me now. I can't think of it.

Petershagen: Well, maybe it'll come back in a few minutes.

DeBruyn: Yeah. But when we were working here in the Sacramento office, our responsibilities ranged, of course, for the whole region. We worked on some of the stuff off and on in the Sacramento Valley again, and in the San Joaquin Valley, and we made studies for individual districts to determine what their water needs were and what the local groundwater supplies would provide, and tried to manage that, you see, so that contracts could be prepared for water supply service from our canals.

Petershagen: I have a sense that there was a lot of groundwater usage historically in

California in the San Joaquin Valley area, (DeBruyn: Yes.) but far less north in the Sacramento Valley. Is that correct?

DeBruyn: That is true. The Sacramento Valley . . . . Well, the better climate and as a general rule, the better soils and so forth, are to the south. That's not one hundred percent true because you can find some of the best soils in the world in the Sacramento Valley, also, ***but*** as a general rule . . . . So a lot of the areas to the south developed up much earlier, particularly after the invention of the deep turbine pumps, so that the farmers could drill wells, and they could supply their farms with groundwater, usually of fairly good quality, and they would get along just fine.

Water Resources on the East and West Sides of the Central Valley

If you notice, in California, most of the development, as far as water resources are concerned, are on the west side of the valley as a whole. The east sides of the valley are, from a geologic standpoint, are from granitic sources, so the debris and also that that was eroded in, the aquifers are much better on the east side, and the water quality is much better than on the west side. A lot of the west side water qualities, particularly after you stress the aquifers for a while, become poorer and poorer with time. And so they were having not only supply problems on the west side– including the Sacramento, the San Joaquin Valleys, where they ***were*** developed–they were having a quality problem also, starting to have–particularly

in the San Joaquin Valley where there was heavy, heavy overdrafts in and around western Fresno County and all along the area south of Tracy, you might say. In fact, it's still going on to this day, because a lot of the environmental movements that have taken place have caused a great restriction, and droughts and so forth, and moving water to the south into these areas.

". . . a lot of the groundwater is now being started up again. In other words, wells are being developed and so we're getting almost back into an overdraft condition again. . . ."

And as a result, a lot of the groundwater is now being started up again. In other words, wells are being developed and so we're getting almost back into an overdraft condition again.

Petershagen: Okay, let me stop you right there because I have to change the tape.

DeBruyn: Alright.

END SIDE 1, TAPE 1. JULY 27, 1994.
BEGIN SIDE 2, TAPE 1. JULY 27, 1994.

Petershagen: David, as we completed the first side of the tape, you were talking about increased pumping now and so forth, more draft on the groundwater in the San Joaquin Valley. Would you like to continue that line of thinking, please?

"Initially, when we were investigating . . . the western San Joaquin Valley, we came to the conclusion that the groundwater was being overdrafted there by over a million acre-feet a year. This was causing all sorts of problems . . ."

DeBruyn: That'd be fine. Initially, when we were investigating, for instance, the western San Joaquin Valley, we came to the conclusion that the groundwater was being overdrafted there by over a million acre-feet a year. This was causing all sorts of problems such as subsidence. There was

land subsidence out there to the extent of up to eighteen to twenty feet the land was dropping.

". . . a lot of the west side work, as far as the United States government was concerned, was sort of a rescue type of proposition. The economies had built up and the big farming enterprises were supplying lots of food for the nation, and the federal government came in because they were overdrafting the groundwater so severely . . . So the San Luis Unit of the Central Valley Project is really sort of a rescue project, if you want to call it that, in which water was being imported to stop this severe overdraft on the west side. . . ."

So a lot of the west side work, as far as the United States government was concerned, was sort of a rescue type of proposition. The economies had built up and the big farming enterprises were supplying lots of food for the nation, and the federal government came in because they were overdrafting the groundwater so severely, and it was just a matter of time when they

would actually, literally, have to stop. So the San Luis [Unit of the Central Valley] Project is really sort of a rescue project, if you want to call it that, in which water was being imported to stop this severe overdraft on the west side.

Environmental Issues in the Delta

And of course everything was working along fine, but now as they discover and know more about the ecology and the sensitivity of the environment in and around the delta area, where all the water flows into, this has put greater and greater pressure on the farmers to cut back on their diversions. And of course the Bureau of Reclamation is very deeply involved in being sensitive to the fact that you just can't divert water and destroy, say, a

particular species that might live down in there.

". . . the droughts come along, and that cut back on the supply, and then the environmental movement is causing reductions in supply. . . . this year . . . they're only going to get about thirty-five percent of their supply. This causes, of course, reinstituting the wells, because these farmers have big investments out there. . . ."

So what's happening is that the droughts come along, and that cut back on the supply, and then the environmental movement is causing reductions in supply. For instance, this year, it's my understanding they're only going to get about thirty-five percent of their supply. This causes, of course, reinstituting the wells, because these farmers have big investments out there. They're trying to maintain their economies. And so they're in a sort of dilemma, so they're going back

to pumping groundwater. And of course a lot of this stuff is not of the best quality, so we can expect some other problems.

Petershagen: Let's continue along this line, and then I do want to go back and talk about things that may have happened earlier. But the Bureau supplies water to the San Joaquin Valley farmers, and some of the water that is transported down there replaces some of this groundwater. (DeBruyn: Yes.) But my sense is that the Bureau sells water and really has no regulatory authority over how much is pumped. Is that correct?

Since Groundwater Basins in California Have Not Been Adjudicated, There Is No Control of Pumping from Them

DeBruyn: In California that is true because the groundwater basins have not been adjudicated so you end up with part of the

equation that is not under control. The state has tried to do a little bit of this, but it has not gotten too far in the legislature in controlling the groundwater supplies.

Anyway, it's true, the Bureau does, like you say, sell water to farmers, but they don't sell it directly. They sell it through districts. (Petershagen: Right.) And they negotiate with individual districts, which of course are political entities that are formed under the laws of the state of California. Groundwater, as far as California is concerned, is considered to be owned by each individual farmer that overlies the groundwater basin. And as I said, there's no adjudication of that groundwater system. As a result there can be some heavy overdrafts in places that

occur if you have uncontrolled type of development because everybody's trying to go deeper and deeper and deeper all the time with their wells and competing with each other to get the water. And that's basically what happened on the west side, to the extent of lots of these other problems such as land subsidence and water quality deterioration and that type of thing.

". . . I'd say ninety-nine percent of the groundwater on the west side of the San Joaquin Valley originates from the east side through these aquifers that extend over into the west side areas. . . ."

Most of the water, in fact, I'd say ninety-nine percent of the groundwater on the west side of the San Joaquin Valley originates from the east side through these

aquifers that extend over into the west side areas. But en route the groundwater is pumped and reused and goes back to the system and is reused several times. It deteriorates in its quality going across the valley.

". . . you end up with water qualities on the east side [of the San Joaquin Valley] that are a hundred parts per million, which is excellent quality, and ending up over on the west side with water qualities that are 2,000 to 3,000 parts per million . . ."

So you end up with water qualities on the east side that are a hundred parts per million, which is excellent quality, and ending up over on the west side with water qualities that are 2,000 to 3,000 parts per million, that type of deterioration.

Construction and Delivery of Water from the San Luis Unit

After the San Luis Unit was installed–we started construction of it about 1961 or so[3]–well, maybe it was a little later, just a couple of years later than that–we started importing water, probably in '65 maybe '66.

When the San Luis Unit started delivering water ". . . the wells stopped pumping water, and of course the water table started to recover right away–you can see this happening. But that is now being reversed back the other way again. . . ."

There was a general slacking-off of the groundwater systems, and the wells stopped pumping water, and of course the water table started to recover right

3. In 1951 Reclamation already had completed the Tracy Pumping Plant and Delta-Mendota Canal, which later delivered water to the San Luis Unit from the delta.

San Luis Dam is a joint project of Reclamation and California's State Water Project. Authorization of the San Luis Unit, West San Joaquin Division, of the Central Valley Project came in 1960, and construction on most of the major dams, canals, pumping plants, and pump-generating plants occurred 1963 to 1968. First delivery of water into San Luis Reservoir occurred in 1967, and dedication of the dam took place in 1968. San Luis Reservoir filled for the first time in 1969 and is now known as the B. F. Sisk Dam and Reservoir.

away–you can see this happening. But that is now being reversed back the other way again.

Alternatives for Dealing with the Issue of Total Dissolved Salts in the Groundwater

Petershagen: When you were talking about a diminishing of water quality as the water moves from east to west, you talked in terms of parts per million of various contaminants. I assume you're talking about salts (DeBruyn: Total salts, that's correct.) and things that the water picks up as it goes through the various pumpings and makes its movement westward. (DeBruyn: Right.) I guess there's no way to stop that other than to tell people that they can't use the groundwater in certain areas or by massive water imports, correct?

". . . land retirement programs are being discussed now. . . ."

DeBruyn: That's true. Either that or there's probably a third alternative, which some people are talking about, and that is decrease the amount of agriculture you've got, and land retirement programs are being discussed now.

". . . on the west side there are . . . basin rim soils. . . . that probably should not be irrigated . . . they're very, very heavy soils. They're very difficult to manage . . . the only crops you can grow on them are such things as cotton, which is a saline-tolerant crop. . . ."

It is true that on the west side there are some what they call the basin rim soils. There are some of those soils that probably should not be irrigated, simply because they're very, very heavy soils. They're very difficult to manage, and they're raising certain types of crops like–

primarily they're high-saline soils–so the only crops you can grow on them are such things as cotton, which is a saline-tolerant crop. And so you end up growing maybe surplus amounts of cotton on some of these soils that probably shouldn't be irrigated. But the Bureau of Reclamation could never manage things like this, because we weren't into dictating propositions.

"It's a free country we live in . . . we had to provide water to the district in the amounts that were agreed . . . like the Westlands Water District . . . In the end . . . it was negotiated as to the quantities of import water that they really needed integrated with their groundwater supplies. And, of course, where they distribute that water is the business of the district. It's not the business of the federal government to interfere in things like that. And we had no authority . . . We didn't get into that type of micro-management. We just dealt with the districts . . ."

It's a free country we live in, and these lands were part of a political subdivision that were all-encompassing

and so we had to provide water to the district in the amounts that were agreed-upon, usually by studies that were made by the Bureau of Reclamation–usually. But in some cases like the Westlands Water District, which is a very, very large district on the west side of the San Joaquin Valley, they had a lot of their own staff, so they could make some of their own studies. In the end, there was a negotiated settlement of all of this, and it was negotiated as to the quantities of import water that they really needed integrated with their groundwater supplies. And, of course, where they distribute that water is the business of the district. It's not the business of the federal government to interfere in things like that. And we had

no authority to do that anyhow, to interfere as to, "Well, you can't pump this groundwater because the quality is this, and so forth and so on, you see." We didn't get into that type of micro-management. We just dealt with the districts and tried to balance the equation so that the groundwater and the surface water import would meet their total needs.

Petershagen: Now there are other areas of the country, though, where groundwater ownership ***is*** integrated with surface irrigation and so forth, correct?

DeBruyn: Oh, yes. Yeah, there are other states where they adjudicate the groundwater system. There is a little bit of adjudication that is taking place in California, mainly down in the Los Angeles Basin, very critical area

down there–sea water intrusion problems–and so there was a little adjudication done there. But as a whole, it's not something that's done in California. It's probably coming.

Petershagen: And that's going to be a uniquely California situation.

DeBruyn: I think so, yes. I understand some of the other states have adjudicated their groundwater systems.

Petershagen: Now your part in all the studies you did, that relate to this sort of thing, really came about as a result of your career here in Sacramento, correct?

DeBruyn: Yes. Right, and working with the Bureau, of course, and groundwater. And then as I said earlier on, I did transfer from

groundwater systems into evaluation of drainage problems and so forth.

Petershagen: But that was still here in Sacramento?

DeBruyn: Right. That came on about 1961-62.

Petershagen: Okay, so you went from developing your knowledge in the areas of supply, so to speak, clear to the other end of the equation.

DeBruyn: Yes.

Petershagen: Well, if the Bureau is interested in selling water–I'll just say it that way–why are they also interested in drainage?

DeBruyn: Well . . . see, the Bureau of Reclamation in all of their projects, by law, other than for the subsidized portions of those projects, was required by law to return the money, the costs of those projects, back to the United States Treasury. So, in a sense, the

Bureau was acting as a banker, if you will. In some cases, what they call the "9.D" contracts, the Bureau actually constructed the facilities. This was done under Bureau design, Bureau supervision, by private contractors under their supervision. In other cases where they're called the Public Law 130 loan programs, Public Law 984[4] programs, we acted as the banker. In both cases we sort of act as the banker. Well, if you view it from a banker's standpoint, you want to assure yourself that the project has the ability to repay because you're

4. Apparently referring to:
- Distribution System Loans Act of July 4, 1955, ch. 271, 69 Stat. 244. Listed in "Table of Contents" of United States Department of the Interior, Bureau of Reclamation. F*ederal Reclamation and Related laws Annotated, Volume III of V, 1959-1966*. ed. Richard K. Pelz. Washington, D.C.: U.S. Government Printing Office, 1972, as "Pub. L. 130."
- Small Reclamation Projects Act of 1956 of August 6, 1956, ch. 972, 70 Stat. 1044. Indexed as P.L. 84-984. Listed in "Table of Contents" of F*ederal Reclamation and Related laws Annotated, Volume III of V, 1959-1966*, (see citation above) "Pub. L. 984."

required by law to repay the costs of that project, except for the subsidized portions, back to the United States Treasury.

"Drainage became important because if the land became so wet or became swamped out, it lost it's productivity. The repayment of that project is contingent upon the productivity of the land to repay the costs, you see. So that was our interest . . ."

Drainage became important because if the land became so wet or became swamped out, it lost it's productivity. The repayment of that project is contingent upon the productivity of the land to repay the costs, you see. So that was our interest, both from the Public Law 130/984 programs, also from the 9.D programs, which is a 9.D type contract. There is where the government builds the distribution systems, they build the drain systems, they build everything, under

contract, of course, to the district. In either case, the interest was that we needed to protect our investment, so to speak, because we were required to.

Petershagen: Yeah, it sounds really harsh and really mercantile in the application. You're saying that you needed to keep the farmers in business so they could pay for the project.

Drainage on Projects and Reclamation Issues with it

DeBruyn: That's correct. And of course the project costs, all of the project costs, were analyzed, and a benefit cost ratio was developed to see if it was a good investment or not to start off with. Now, in the case of building projects, everybody, the engineers, understood that in areas that, like California, where you have long

climate, long growing seasons, ideal conditions for growing, everybody understands that if you apply water to the land you can grow crops. Not everybody understood that at some times when you apply water that drainage problems will occur that will ***damage*** your productivity, here again.

". . . part of our analysis as to the costs of all of these projects was to include the drainage costs along with the distribution system. . . ."

So part of our analysis as to the costs of all of these projects was to include the drainage costs along with the distribution system.

". . . they tried to ignore it. . . . and as a result did not present the total costs of the project to Congress correctly, see. So you end up having to bail the project out. The Columbia Basin Project is a good example. There they ignored potential drainage problems to the extent of probably half a billion dollars' worth, and that had a serious,

serious impact on the repayment ability of that project . . ."

See, most of the people in the Bureau of Reclamation focus–ninety-nine percent of them–focus their attention on bringing water to land ***to*** produce. When it came to the drainage part, they said, "Well, wait a minute, that's costly." So they tried to ignore it. So the Bureau, you know, was burned a few times in projects around the country where they didn't analyze the drainage problems nearly fully enough, and as a result did not present the total costs of the project to Congress correctly, see. So you end up having to bail the project out. The Columbia Basin Project is a good example. There they ignored potential drainage problems to the extent of probably half a billion dollars' worth,

and that had a serious, serious impact on the repayment ability of that project to repay back what they needed to put back in United States coffers, you see.

"Drainage is a kind of–as groundwater is–a kind of a 'voodoo science.' It's something you can't see, so most engineers don't understand it . . ."

But of course those are the rules we were supposed to operate under. (both chuckle) Drainage is a kind of–as groundwater is–a kind of a "voodoo science." It's something you can't see, so most engineers don't understand it, because they can't see it. You see, if you build a canal you can see the water running in the canal. If you get facilities above ground, a dam, powerplants, concrete and steel, they understand all that. Or transmission

towers. You know, it's all above ground. You can see it.

". . .when you start talking about drainage, it's underground. (Laughs) A lot of them lose sight of it. It's why the Bureau *did* get burned in a few projects. . . ."

You can look at the benefits, but when you start talking about drainage, it's underground. (Laughs) A lot of them lose sight of it. It's why the Bureau ***did*** get burned in a few projects.

Petershagen: It's easy to understand because, even if you read the Bureau's official histories, all of it's propaganda, see the movies–*Water for the West*, for example–all of that, (DeBruyn: Yes.) that's what you see, is water being stored and delivered and (DeBruyn: That's right.) green crops result. Nobody says, "We're the Bureau of

Reclamation. We're here to take care of drainage so you don't have problems."

Litigation and the San Luis Drain

DeBruyn: Yes. We have some very serious litigation matters that are coming to the forefront now, on the matter of drainage.

"I worked on the San Luis Drain from practically 'day one.' That was an integral part of the San Luis Unit as a project. It was conveyed to Congress as an essential part of maintaining the productivity of that unit . . . over 600,000 acres . . ."

I'm sure you've heard of the San Luis Drain. I worked on the San Luis Drain from practically "day one." That was an integral part of the San Luis Unit as a project. It was conveyed to Congress as an essential part of maintaining the productivity of that unit, which is incidentally over 600,000 acres, about the land area size of Rhode Island, somewhere

in that area. So you have a requirement here to build that drain. Yet in their attempts to build it, there was so much concern and worries and political problems connected with constructing the San Luis Drain to its proposed outlet, which was the western delta, that the Bureau could not finish the drain. They just, from the political standpoint, could not get it done.

The Baldwin Amendment, the San Luis Drain, and Litigation

There was a Senator Baldwin[5] who put the Baldwin Amendment on the Bureau's budget, tied it right back to the appropriations of the San Luis Drain, and said that "you cannot build this drain

5. Most likely this reference is to: John Finley Baldwin Jr. who served in the House of Representatives from California from January 3, 1955, until March 9, 1966; Senator Raymond Earl Baldwin, from Connecticut, who served from January 3, 1947, until December 16, 1949; or to Representative Joseph Clark Baldwin of New York who served from March 11, 1941, until January 3, 1947.

unless you get the State of California, the EPA [Environmental Protection Agency], and the Bureau of Reclamation to agree upon a safe disposal point." Well, that was essentially the kiss of death to that drain, and it is to this day. Yet they continue to deliver water into the San Luis Unit. So you have a dilemma. There are people down there suing, saying, "Wait a minute, part and parcel of this whole project, being essential to the whole project, is the San Luis Drain. You're not finishing your commitment." Well, Congress somehow administratively decided that the drain should be stopped until all these studies, I guess, are finished and completed. But in the meantime, they continue to deliver water, and in the meantime the water table

is rising, and in the meantime people down slope are claiming, at least, they're being damaged. And others within the Unit are claiming to be damaged–and some of them are.

Petershagen: Now what would be the basis of that claim? Because of the water table rising so high?

DeBruyn: Yes.

Petershagen: Just the water table, or because . . .

DeBruyn: Nope, shallow water tables.

Petershagen: Just because the water is contaminated at the same time.

DeBruyn: Both. You have conditions there where you have a deep groundwater system. You can pump that groundwater, but it's essentially separated form an upper system that is–the lower system is confined under

heavy layers of clay and so forth that lie above it. So you end up with a system up above, a shallow system, that when the farmers apply water will perch the water table and as long as he continues to apply water, which he needs to to feed his crops, it brings the water table up because he can't operate at a hundred percent efficiency, so some water percolates on down. That causes the water table to rise, and pretty soon the water table's up into his root zone. Now it's bad quality, one, usually running anywhere from 5,000-10,000 parts per million total salts. So that affects the crop plus the water table tends to drown the crop. So now you're affecting the productivity. See, you're cutting back on his yield. And the margins

that a lot of these farmers operate on, you know, you don't reduce that yield very much and you're hurting very seriously. This is occurring. It's occurring now in some of these projects.

Petershagen: So perhaps some of this litigation then will eventually clear up an issue that Congress appears to not choose to come to grips with right now.

DeBruyn: Hopefully, that's the aim. My experience on the litigation side, which has been fairly extensive now–since my retirement, particularly–is that once you get into litigation (Chuckles) things seem to get worse and worse. (Petershagen chuckles) I worked on a project in Nevada, for instance, where it took over fifty years to sign one decree. From the time it was

brought into court to the time of the signing it was like fifty-five years. So you wonder if litigation is the answer, too. (Both chuckle) I don't know. It's what it is, I think, to solve these problems. We can solve them, we know how to solve them–it's political will. We don't seem to have a lot of that anymore. Everybody is maneuvering for the best, how they look and so forth and so on, and the problems continue and get worse. But that's what it's going to take, some tough political will, and a lot of times that's not too popular, you know.

Petershagen: Okay. If you look back on the experiences you've had now . . . I guess what I'm trying to get at is there's just no way that as a young man, say, when you were a

senior at Cal Poly, that you could have looked forward to see this career at all, and the kinds of things that you've become involved in.

". . . I've noticed over the years that a lot of people retire from the Bureau, and retire being somewhat bitter . . ."

DeBruyn: No way under the sun! (Laughter) I had no idea where this thing was going to lead and take me, you know. I can say this, I've noticed over the years that a lot of people retire from the Bureau, and retire being somewhat bitter, but I did not. I had a great time. I enjoyed my job, I enjoyed . . . In fact, I'm over there, still, working today for the United States Justice Department as a consultant. I go over to the Bureau probably two or three times a week and still know people over there, you

know. It's getting kind of thin (Laughs), but I still know a few. So I've been very, very happy with my career with the Bureau. I felt, you know, that the Bureau was–well, the Bureau was building the country. They were trying to do something. It's true, maybe it wasn't perfect, but it's imperfections were probably brought about by the laws that were written by Congress and so forth, not the intent of the people that worked at the Bureau. By and large, a very professional outfit–top notch, as far as I'm concerned. So I have nothing more than to say it's a very, very good outfit, in my book.

Petershagen: I think everyone that has participated in the oral history program says something that sounds very much like that about the

Bureau, but there is a difference, and that is that with a lot of the people, especially those involved in building things, (DeBruyn: Yes.) there is that hint of bitterness or cynicism or disappointment, however it comes across, because there isn't any more building going on. (DeBruyn: Yes.) I think maybe for David DeBruyn it's a little bit different, though, because with drainage and issues like that, you still see a future role for the Bureau that may not be there for somebody that thinks the role is dam-building.

Petershagen: Right. Yeah, I think that is true. You see, the Bureau of Reclamation is principally an engineering concern. I am one. However . . . well, as time developed, and as we were building projects, there was

that idea developed that, "Just get the hell out of the way. We'll build this project and then we'll got on to the next. Just stand back. Get out of the way."

Petershagen: Let me just stop you right there. I hate to do this.

END SIDE 2, TAPE 1. JULY 27, 1994.
BEGIN SIDE 1, TAPE 2. JULY 27, 1994.

Petershagen: David, you were talking about kind of a common attitude on the part of a lot of people in the Bureau of just kind of "stand back and let us build things." Would you care to follow up on that?

The Environmental Movement Affected Reclamation Work and Staff

DeBruyn: Yeah, and with men who are used to getting things done, constructing things and then looking back and saying, "This is something we accomplished," I can

understand that, but as the environmental movement came about, gradually and slowly, where they had to start considering other things that was a great disappointment to a lot of them, and some of the environmental issues and things were nonsense, it's true. But a lot of them weren't. And by not recognizing that and changing their attitudes to say, "Well, these folks are here, and they're here to stay. We'd better start seeing how to work with these folks," a lot of people ended up being kind of bitter, leaving the Bureau in sort of a bitter way, which is really unfortunate. If you spend thirty years with an organization and leave bitter, you know, God, that's terrible, I think. That did not happen to me. I decided that it was time to

start listening and maybe following along on some of this stuff. I remember having lots of arguments with environmentalists and so forth, but starting gradually seeing what some of their ideas were and positions were. And I think that's something you have to do. Times change. You'd better change with them!

(Chuckles)

Petershagen: If I could try to pin you down, is there a time you might be able to point to that you started seeing some of these changes?

DeBruyn: (sigh) Well, time slips by on me so fast that whenever the environmental movement came about, let's see, that was probably starting about the early '70s, in there, if I'm right, where some of the main things started coming on. Early '70s to

mid-‘70s, I would judge, things started to, you know–there were questions starting to be asked, and challenges were being made, you know, which was, “How dare they challenge us! (Laughs) We’re the experts in the water field, you know.” And some of the challenges were nonsense, it’s true, but they certainly weren’t going to go away, you know.

It’s kind of interesting, when you think of it with respect to time. A good example lies about less than a mile away from here, the American River. I’m a half a mile away from the American River. I can remember the American River essentially almost going dry in the summer. You would have maybe 100 second-feet. Well, the Corps of Engineers

built Folsom Dam and turned it over to the Bureau of Reclamation for operation. The Bureau was trying to develop the Folsom South Canal, and because of the politics and so forth couldn't get it fully developed. So here we had the reservoir developed. We could impound lots of water, lots of flood control, and in the summertime we integrated that reservoir into the Central Valley Project operations. So now we just let the water run down the stream. Well, that occurred over twenty-five years, thirty years. You had a whole generation or two grow up that now saw the river running full in the summertime. ***That*** was normal to them. Now, that new normalcy has become the thing that you have to maintain now! Simply because

time went on, and the water kept flowing, and what ***they*** saw was normal, and the real ***normal***, they never saw. So now what do you do? They're talking about taking the water and releasing it down clean to Hood and pumping it all the way up, just to maintain that stream, you see, that people are used to seeing, and want there now. That's how things change.

Petershagen: That's an interesting perspective. And I like it because I have some of those same views! (Laughter)

Trinity Project

DeBruyn: Sure. You mentioned earlier on–and I don't want to distract you from what you're going by (Petershagen: Go right ahead.)–the Trinity Project came on later. And in my earlier days, I didn't know if

that was on the books. I suppose it always had been, as part of the California Water Plan. But the Trinity Project, of course, is sort of a controversial project in the sense that there's concern over the salmon and so forth, and diverting water from one basin into another basin type of thing. So that sits there as a constant . . . I never got much involved in the Trinity Project, but I was introduced to it from about . . .

1974 Flood and Resulting Litigation Against Reclamation

In 1974 we had a big incident that happened here. We had a big flood that came down the Sacramento River very late in the season. It was like in April, and we were full-up on Shasta Dam because we were following the flood control parameters as laid out by the Corps, and

we were allowed to fill. And suddenly we had twelve inches of rainfall in behind Shasta Dam. They were diverting water out of Trinity, over across through Whiskeytown, and back-dumping it into the Sacramento River at the same time this flood was going on. It wasn't much, it was only 2,000-3,000 second-feet. Well, the flooding caused a considerable amount of damage down the river, in that a number of beautiful walnut orchards were killed, and there was a lawsuit started about 1975-76, in there, in which the government was sued for damages for the mis-operation of the Shasta Dam and the Trinity System. And I was assigned as the principal investigator to investigate that for the Bureau of Reclamation from a technical

standpoint. I did that and wrote a report on that. And one of the things that struck me was that even though the flooding was occurring on the downstream side. It was raining above Shasta, it was raining below Shasta, and the streams were all full, and we were bringing water over from Trinity. And that struck me as saying, "Well, you know, these folks might have a point." It didn't last very long. It only lasted three or four days, and there was so much water that that small increment was just a drop in the bucket to the whole project. That was my introduction (Laughs) to the Trinity. We went to court on that claim. It was a $36 million lawsuit. We fought it through the Court of Claims and the United States Justice Department took it over, and we

won the case. But you wondered, sometimes. But we're not responsible for unusual, unique events, so basically that's how we got out from under it.

Petershagen: I guess the simple question is, "Why was water diverted still during that time?" Couldn't it just be flushed out the Trinity and on into the Klamath, the way it used to be?

DeBruyn: Sure it could. And they did do that eventually, but it took them three or four days to do it. And they seized upon that. They said, "Well, you know, that's the straw that broke the camel's back." There were other physical factors down the river that helped save us, too. There are some overflows. Well, you had 3,000-4,000 second-feet of Trinity water in there. It

made no difference at all because it flowed over. It was already full. Everything was full, and see, that additional water for three or four days really made no difference. ***But***, it raised the question, you see, as to the operation. "What is your intent here? Are you intending to flood us? You ***knew*** we were flooding out. Why didn't you shut that off?" It's a natural question. So anyway, we were fortunate, I think. We won the lawsuit. The taxpayers didn't have to pay $36 million out of their pocket. And I was ***heavily*** involved in that. I had already retired. By the time we tried the case, it was 1982, so I was already retired.

Petershagen: So you were a consultant to the Bureau?

DeBruyn: To the Justice. . . .

Petershagen: To the Justice Department.

DeBruyn: Yeah. See, I had prepared a report, and when the Justice got into it, they wanted to know, and they said, "Well, we've got this report." And of course the report had my name on it, and then they came and sought me out, see.

Petershagen: Do power generation criteria ever come into these sorts of things in determining outflows? Just hypothetically, let's go back to this flood situation you were just talking about. Would somebody keep diverting water out of the Trinity just to maintain a level of generation?

DeBruyn: That was the main reason why they continued to drop water out of Whiskeytown into the Sacramento River was power generation.

Petershagen: I see. It makes sense because we get so much more power per droplet of water, if I can say it that way, out of Trinity (DeBruyn: That's right.) than we do most of the other areas.

DeBruyn: That was the motivation, you know. And it was a unique situation. We'd never had that before or since. Twelve inches of rain fell behind Shasta Dam, and we were full on the dam so we had to make releases. It also just poured rain below, so all the tributaries below Shasta Dam, where there was no control on, no dams, were filling up, and so there was just water . . . All the trees, the almond trees, the walnut trees– ***beautiful*** walnut groves, you know–had all broken dormancy, and so they were growing, they weren't any longer dormant.

And so they were taking up water, and all of a sudden here they're hit with this flood, and they had water up to five feet on their trunks, you see, for a period of a couple of weeks. Well, it killed them. There was no doubt the water did the job, but whether it was the government's fault, that's another thing.

Petershagen: So the argument wasn't whether the water killed the trees, but whether it was the government's operation of the system that allowed the water to be there.

"When you get into some of the law, apparently Congress wrote an immunity section on a lot of these projects that have flood control aspects . . ."

DeBruyn: Right. It's kind of interesting. When you get into some of the law, apparently Congress wrote an immunity section on a lot of these projects that have flood control

aspects to them–one of the purposes of the project is flood control–that they immunized themselves from any damage that might occur downstream as a result of some future floods that could not be controlled or something like that. Section 9.02.c or something like that, in some law that immunizes the federal government from damages that occur, and it's held up over time. And that was the one we beat them on.

Petershagen: I see. Now just one other point of interest that kind of strikes me in that whole case. In the case, the lawyers were arguing about floods, but this must have been going on in that '76-'77 time-frame, a period of drought when there was no water anyplace,

and you're arguing about floods!

(Laughter)

DeBruyn: Right. It was actually in 1974. That's when the flood occurred, in April of '74. You know, it's either feast or famine. We had all this water and just no place to put it, and it was just going everywhere. And it was a very unique storm in that it came so late in the season, see. And we were allowed to fill Shasta Dam according to the Corps' flood control parameters. They have a diagram that you follow with your level, a diagram that says, "Okay, what level should the reservoir be at with respect to time?" And so they start pulling it down to a certain level, and you keep it down at a certain level until February 1, and then you could allow it to come on up.

It's all worked out statistically. And by April 1 the flood control diagram allowed us to be full. Well, that's when the storm hit! It was March 31 and April 1 and 2. God, we didn't have anyplace to put the water! (Both chuckle)

1965 He Became the Head of the Region's Drainage Program

Anyway, these are some of the things I worked on, besides drainage and that type of thing. I actually, to go back, after I got into drainage work, then by 1965 or so, my boss had retired, my immediate supervisor, a fellow by the name of John McKay. He retired, and then I took over the drainage work for the whole region, and was responsible for all the studies and so forth, to make sure that

we had evaluated the drainage problems on these projects.

About 1978 He Became Chief of the Land Resources Branch

I continued in that job until about 1978, in which time I became the branch chief. I took over the Land Resources Branch, which had under it the drainage and land classification work, as well as withdrawn lands. On our projects we withdrew lands for certain types of projects, you see, from the Bureau of Land Management, and also maintenance of our right-of-ways under our power lines and things like that. So I had most of that stuff under me, plus there was a cropping report that Congress

required the Bureau to put out for each region, and I was responsible for that. So I ran the Branch from ‘78 to ‘81.

Retired from Reclamation in 1981

In ‘81, I retired.

Petershagen: So you worked for the Bureau roughly thirty years?

DeBruyn: Yeah, right.

Petershagen: And then, of course you say you retired– my view of it, it looks like you filed your papers for retirement, and you were placed in a retired status, but (DeBruyn laughs) you kept up a pretty active life.

Beginning in 1969 Was Loaned to USAID to Work in Jordan

DeBruyn: Yes, I did. I spent, starting in ‘69–this is just a sidelight–but in ‘69 I went overseas. I was loaned to the State Department for a

U-S-A-I-D [United States Agency for International Development] project in the country of Jordan, in the Jordan Valley, actually. And I went to Jordan four times, ‘69, ‘71, ‘73, and ‘75.

After Retiring Worked for Reclamation in Spain and Portugal

And after I retired, I was called back by the Denver office, and I took a trip to Spain and Portugal with the Bureau–with two other Bureau personnel on a project the Bureau had in Spain. They had an irrigation technology program to improve Spain’s irrigation capabilities, and we went over there to look and see how they were doing–just a two-week trip.

Also Worked Overseas for Harza Engineering

Then I have other overseas experience after I retired. I went to work

for Harza Engineering Company and went to Saudi Arabia a couple of times. I also went to Egypt for three months. So that's been part of my experience, too. Most of this has been related to drainage work and irrigation–supplies and things like that. That was intermixed with my regular career, you see, a lot of it.

Petershagen: When you made these foreign trips, once again, it would seem that the Bureau's announced intention is, "We're going to help you people bring water to someplace," and you show up as a drainage kind of a guy. (DeBruyn laughs) How are you received? Generally, did they understand that they were going to have drainage problems associated with this?

"I generally wasn't called until they started having problems, and then they wanted to know what to do. . . ."

DeBruyn: Yes, they did. In fact, I generally wasn't called until they started having problems, and then they wanted to know what to do.

Petershagen: I see, so you were more of a fix-it kind of a guy than an avoid-it kind of a guy, if I can say it that way.

". . . they were having drainage problems downslope. And so I went over there to see what was going on . . . I'd leave them with instructions as to what investigations they should make, and I'd come back two years later and nothing had been done. . . ."

DeBruyn: That's exactly right! Particularly in Jordan they had no idea, and in the northern part of the project–actually, the Bureau built this project over there, the East Gor Project. They had no idea what was happening. They were raising bananas in a good part of the area, and they really pour

water to the bananas, and so they were having drainage problems downslope. And so I went over there to see what was going on, and we identified a number of drainage problem areas. And then of course I'd leave them with instructions as to what investigations they should make, and I'd come back two years later and nothing had been done. That's particularly the way the Arabs work (Chuckles) anyway. And I don't mean to be derogatory of the Arabs. I have a lot of Arab friends, but it's kind of the way they operate. So I'd go back and "give 'em hell," you know, and write another report and tell them to do this and do that, and I'd come back two years later (Chuckles), nothing had been done! So I had quite a

time, but they're in there fixing it now, they're draining the area.

Drainage Issues in Egypt after Construction of the High Aswan Dam

And in the case of Egypt, God, the World Bank is in Egypt, working like crazy. The Russians built the High Aswan Dam, and ever since then, they've had ***nothing*** but trouble with drainage problems in the Nile Valley, from one end of it to the other, particularly the Lower Nile Valley. They've got, oh, maybe four to five ***billion*** dollars' worth of drainage problems there. They're trying to save the land.

Petershagen: And again, I take it that this is probably because drainage was once again an afterthought rather than part of the original plan.

DeBruyn: That's right. In the case of the World Bank, the job I did–actually, I was working for Harza Engineering, who had a contract over there, and this was tied to the World Bank, because they were financing all of this. And so they wanted me to set up a program to evaluate–they had spent about a billion dollars on drains, and they wanted me to set up a program to evaluate how well their investment was doing, so I went in there and set up a technical measurement program, so they set it all up in the computers and all of that, so that they could evaluate how well the monies they were spending on drainage was working for them. The bank was worried, you know, that they were putting good money after bad, maybe, and they had a

couple of more billion dollars to spend out there, and so they wanted an evaluation program. I did that for them, yeah.

Petershagen: Big project.

DeBruyn: Big project. Big, ***big*** project, I tell you! (Laughs) It was so big I could hardly get hold of it.

Petershagen: Let's get back to when you were working in the Bureau. As you progressed through the ranks, so to speak, did you feel that the Bureau had adequately prepared you to take on supervisory and managerial kinds of roles?

DeBruyn: (pause) In my case, probably not, although in defense of the Bureau, they did have some very good programs in which they moved some of their people that they had– perhaps ideas for high-level positions. I

did do ***some*** training, but probably not quite enough to prepare me for it. I had a great crew. I had about sixteen-, seventeen people working for me, and they were all professional people, and I didn't have any problems, fortunately.

I had one problem with the secretary–administrative type of thing. She couldn't quite do the job. And that was it, the three years. I had a good crew, and I could depend on them, so I pretty much left them alone (Laughs) and stayed out of their bailiwicks and let them do their jobs. But I saw that the Bureau did have some good programs. They sent people back to Washington, and I think they prepared them pretty well.

Petershagen: Did you spend very much time in Denver–

meetings, conferences, that sort of thing?

Working with the Technical Staff in Denver

DeBruyn: To some extent, yes, but mostly on technical matters. We'd be working on a project, or we were going to be sued on something, so we'd have to set up a measuring program or something, and I'd work with the groundwater people or the drainage people in Denver, setting something up, you see. Most everything from the technical standpoint–not much of anything from an administrative type of thing. I was working on hard data and actual jobs, you see. I never got into a lot of this administrative stuff, until a little later, until I took over the branch. Then I would have some association. That's when I got to know the regional directors

real well, and stuff like that.

Petershagen: How were relationships with the Denver office from your perspective?

DeBruyn: From my perspective, ***wonderful***–really were. I got to know some people there that I really sort of got to depend on, particularly–I think some of them are retired now–mathematicians that were just wonderful, that could help me get through some of these problems.

Petershagen: Did the staff in Denver that you dealt with seem to really be able to come to grips with California's unique problems?

DeBruyn: I think so. Like I say, the people that I worked with, I found to be very receptive and would listen, because every area will be somewhat unique. But I never had any problems that way. We would talk

through them, mostly technical, you know, engineer-to-engineer type of things. It was a matter of being able to converse with them. I never had any problems with the Denver office. In fact, all of my associations with the Denver people have been wonderful, really, over the years.

Petershagen: How about with other agencies that you might have had to work with? Certainly the Corps of Engineers would come to mind.

Work with Other Bureaus and Agencies

DeBruyn: Yeah, I never had too much contact with the Corps in my work, because it was more a land-oriented, related to project areas, and they were more into the flood control type of things and hydrology, which I didn't get in too much. But I did have, in

my view, I had always a good association with counterparts in the Department of Water Resources, people who were doing somewhat similar type of things. Great relationships. There was some competitiveness there, but basically from my end of things, from the technical end, we really didn't get into much of that. We'd kid each other once in a while, you know, about stuff. But that was about it.

Petershagen: Okay, I'm going to stop the tape here to turn it over. This is a little bit early, but I want to go into a whole new line of questions, if that's alright.

DeBruyn: Sure, fine.

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Petershagen: David, I mentioned I wanted to start a new line of questioning. I didn't do that to

scare you. I'm really almost done.

DeBruyn: Okay. (Laughs)

Petershagen: In dealing with Bureau employees, you must have noticed when you started your career that it was almost an all-male organization, probably with the exception of secretarial-types, and then slowly but surely, women started coming into the professional ranks.

DeBruyn: Yes.

Petershagen: Did that cause any kind of upset or concern, not necessarily on ***your*** part, but maybe just something you noticed in people around you?

Women Coming into Technical Positions in Reclamation

DeBruyn: Well, I'd say there was, there were some problems that people had. And there are some problems that people continue to

have to this day that I'm aware of. From my end of things, I was one of the first, I think, that hired a woman professional soil scientist, who today is a division chief and she's ***very*** good at her job. But I know that there were comments made, you know, "What's the organization coming to?" and one thing and another like that. I don't think, I never got the feeling at least, maybe I was going around in a fog or something, but I never got the feeling it was very extensive. There was some of that going on, as you would expect, but by and large, not a great deal of it. And that might be that I sort of maybe refused to see it, I don't know. I raised four daughters of my own, and that is a good awakening call, to, you know, this gender business, and I

heard about it at home if there was ever a little (Chuckles) statement made or something. So I think I was sensitive to it, but it was never a big deal with me in the Bureau, personally, and I didn't seem to notice a lot of it. Some remarks here and there that were made or something, from time-to-time, but I don't think it affected the work, let me put it that way.

Petershagen: Okay. Another ***big*** change in our lives that we've all had to adjust to has been the coming of computers and all sorts of electronic replacements for things such as slide rules that you really learned on. (DeBruyn: Yes.) John Turner used a term that I can't remember exactly now, but it was "slide rule flippers," or something like that. (Laughter) (DeBruyn: Right.) Or

"slide rule shooters." As electronic means of doing business became more and more popular, did you have any problems making that adjustment?

Dealing with Computers in the Workplace

DeBruyn: I did. I personally did–quite a bit of problems. That was brought about because . . . It was kind of strange. I don't know if you've talked to Jake Ossofsky or not. (Petershagen: Yes, I have.) Okay. Now, Jake and I and another fellow were assigned to a committee to select the first computer the Bureau would buy out here in the region, and I remember we went to the state and we went all over, looking. We ended up deciding on an IBM 1620, and it had a memory of 64K and it was a big deal. It was about eight foot long and

four foot thick, and about four foot high or so, and it had flashing lights all over it, and we thought we were really uptown with this rig, you know.

Petershagen: And if it had a memory of 64K, it'd be like a Commodore 64 or something like that.

DeBruyn: Right. And I know I'd been very impressed. Now I worked on that, and my position was I wanted the Bureau to get into this, because I could see this was the upcoming thing. Jake was a very progressive guy, and he also. So we worked pretty hard to get that thing in there. But the application of it from a personal standpoint for a number of years was very difficult for me. And then as I got into the administrative end of things, that was just another excuse for me to

avoid that computer some more. (Laughter) So I let my people take care of it, and they were good at it, and I said, "I'm never going to get into this." Well, I can take you into my house, and I've got one of the nicest computers you'll ever see, and I know how to run it!

Petershagen: You just anticipated my question! (Laughter)

DeBruyn: Yes, I was forced into it, and fortunately I knew some young men and people who had graduated and knew computers frontwards and back, who were patient enough with me to sit down and teach me here and there and so forth, and I went to a few schools. I'm not very adept at it, but I can do enough to get by. I don't know if that answers it exactly, but . . . (Laughter)

Petershagen: I'm sure that to try to maintain your consultant status and so forth, you'd have to keep up with things, that's for sure.

DeBruyn: Right, you bet.

Petershagen: You couldn't just get by with a Dictaphone and a typewriter.

DeBruyn: No. And to do the technical work, because there's so much data out there and you need these big database programs, you know. I work in what they call D-Base a lot now. God! It's not uncommon to have a file that's 18,000-20,000 lines long, with maybe 100 bits of data in each line, you know, or 150 bits of data in each line, so you're just working with mountains of information and data that the only way you can analyze it is to run it through the computer and have it do it. And still, it's a

big job even then.

Petershagen: And now that you're adjusted to it, how often do you have the thought that, "Oh, I wish I had this when I was in college," or "I wish I had this in Chico"?

DeBruyn: (Laughing) Right! Well, it would have made our job ***much***, much easier. It's funny, you know, once you learn something, then it became easy. But like I say, I'm no whiz at it. I run into problems, and I know some people over at the Bureau who I call up and they help me get through a little problem or wrinkle here and there. And I'm probably never going to be real proficient at it, like they are, because they just live this stuff. But it's the only way you can go, really, anymore, you know. You're lost without it, really.

And we use it here. My wife uses it as a . . . (Petershagen: Word processor?) word processor. I was doing some work on it before you got here this morning. I was working in a D-Base program. Most of my stuff''s word processing and D-Base programs type of things.

Petershagen: Let me jump, once again, to a whole new area. We've avoided probably the ugliest word in California, and you must know a lot about it, and that's Kesterson.

DeBruyn: Yes.

Petershagen: What are we going to do to fix that? See, I started out with the easy question, didn't I? (Laughter)

Kesterson and San Luis Drain Environmental Issues

DeBruyn: Well, I worked probably somewhat from a bias on this. Going back into the history of

it, when the first problems started to rise by individuals who were against the drain discharging into the western delta, was from the standpoint that it would create tremendous problems in the delta from an algae bloom standpoint. And what would cause the algae blooms was these large quantities of nitrates that existed within the drain water. Well, I was working for a man, like I say, by the name of John McKay, who was a very, very sharp man. When we got into that, we knew, right from the outset, we knew it was nonsense, because the delta, being under tidal, is turbid. You can't see beneath the water more than a quarter of an inch, because the muds are being constantly stirred by the tidal action. To grow algae, you need light

penetration–can't grow it without it, it won't grow. Well, there was no light penetration in the delta. So the nitrate scare was baloney, and we knew that from the start. There were only a few of us that knew that. ***But*** it got such a momentum going that we spent millions of dollars, set up big research centers and so forth, and went in through all kinds of ways to get rid of nitrate, and we figured out ways to get rid of it.

Well, the next thing that came on was–it wasn't nitrates, it was nitrates and phosphates combined, right at the outset. We knew ***that*** was nonsense because all the phosphates are basically tied up in the soil. So this was baloney, but we studied that.

And finally it kept going on to one thing [after another]. Then it was the insecticides and pesticides. Well, they set up big programs to investigate that. Insecticides and pesticides turned out not to be a problem because most of that stuff, 99.99 percent of it was removed in the soil profile with the water moving to the drains. So the drain water wasn't exhibiting this stuff as they claimed.

Well, they worked on and on and on, and what all this was, was a way and means of delaying the project, as I viewed it. So in ***my*** opinion, they were doing this as a delaying mechanism, and finally they said, "Well, until a lot of these issues are settled, the holding reservoir that we had designed is not a holding reservoir." That

was never intended to be a holding reservoir.

How Kesterson Reservoir Was Supposed to Be Used

It was an ***operating*** reservoir. You see, we had a certain capacity in the drain coming into the reservoir, and then we purposely enlarged that capacity by fifty percent or more, I think, going out the rest of the way to the delta. And that was for surging water out to the delta. We would use the operating reservoir to temporarily store water for a week or two or three, in case we were having some problems at the outlet–then we could surge it out. The idea was to surge it out on the tidal cycle, so when the tides were going out, we had bigger capacity to push more water out the drain. Then as the tides came in, we would

reduce.

How Reclamation Ultimately Used Kesterson Reservoir

Well, this never did satisfy the folks, and so Congress said, "Stop building the drain to the outlet until these questions are answered"–Senator Baldwin's amendment–"and then we'll just store the water in the Kesterson Reservoir," which was never intended, ***never*** intended, for that purpose. Well, that storage is what concentrated the salts and so forth.

And then the problem of selenium came up.

"It's my view to this day that it's still nonsense, because if that drain had been put in to the western delta where it was intended to, no one would have ever had any problem with it because there's so much dilution going on that you'd never see it. . . ."

It's my view to this day that it's still

nonsense, because if that drain had been put in to the western delta where it was intended to, no one would have ever had any problem with it because there's so much dilution going on that you'd never see it.

"There's over 700,000 acre-feet of water that sloshes in and out of the delta four times a day, on the high tide and low tide, and the high tide and low tide. So a lot of this stuff is just absolutely nonsense . . ."

There's over 700,000 acre-feet of water that sloshes in and out of the delta four times a day, on the high tide and low tide, and the high tide and low tide. So a lot of this stuff is just absolutely nonsense, but there again, you got to go. So we extended the outlet further on down to Shipp's Island. Well, the opposition wouldn't go for that either–they didn't want the drain

there at all. And I understand the psychology of that, too, you know. But there was much more made of it, and much more misinformation about it than it warranted. And it's unfortunate.

"We tried to go out to the Monterey Bay with . . ." the San Luis Drain

We tried to go out to the Monterey Bay with it. Of course Monterey Bay is an ***extremely*** sensitive area, because of its uniqueness. But there's a big submarine canyon–we could put a big diffuser out there, and we could run it out there for four miles. Nobody'd ever know about it. I've always contended that once that drain got into the western delta, the main problem you'd have is that you'd have so many damned little boats out there, and fishermen reeling in these big fish

(Laughter) big boats couldn't get up through there anymore. But you know, you can't get past a lot of that stuff. And I don't know the solution–you asked me what's the solution–and you know, we've looked at all different ways of handling that. To me, the solution is somewhere an ocean outfall. And I don't think it would hurt anything–in fact, it might, if you put a diffuser, for instance, into Monterey Bay, it might actually increase the fishery, because of the nutrient load that you're putting in there. It may be a plus.

". . . you literally can't get anything done. And here we go back to the same thing I said before, and that is, we lack the political will to do anything anymore. Yeah, we can solve these problems, it's just we lack that political will . . ."

But there's so much scare and so much fear that's driving all of this, that you

literally can't get anything done. And here we go back to the same thing I said before, and that is, we lack the political will to do anything anymore. Yeah, we can solve these problems, it's just we lack that political will–nobody wants to take it under their hide, you know. So I don't know what the answer is.

Petershagen: But clearly, out of all the options I've heard you discuss, sooner or later, some sort of a drain to the ocean is going to have to be built.

DeBruyn: Have to be built, eventually, yeah, because you can't leave the water in the valley to evaporate, because of the selenium hazard. And apparently there ***is*** truth to that, that salinity does cause a problem for the birds, so that has some validity. And so when

you try to build ponds to store it and solar to evaporate it, you know . . .

". . . it all depends on your agenda. . . ."

Now, it all depends on your agenda. If your agenda is to maintain the productivity of the land and to maintain that for future generations, then the solution to me is to go to an ocean outfall. And I think it's worth doing that because someday we're going to be looking for land, and that land out there is wonderful stuff to grow stuff on. Notwithstanding all the arguments about all the rich farmers and all of that nonsense. Some of that's true probably, too. But the resource is there, and if we continue to irrigate that land we're going to destroy a lot of it. And we may get it to the point of where we

can't reclaim it, and that would be a real loss to the nation. So I don't know. It's a tough one.

Petershagen: In your view, how would you describe the future of the Bureau of Reclamation?

". . . I think the Bureau has a new mission. . . . to operate the projects that we have in an efficient manner. That has been very, very difficult for the Bureau to transition into. . . ."

DeBruyn: Well, I'd say it's pretty dim. I think the Bureau has a new mission. I don't know if you know what that is or not, but the mission as I understand it is to operate the projects that we have in an efficient manner. That has been very, very difficult for the Bureau to transition into. It almost seems like they don't know what to do. I understand why, because our historical past has always been geared not to work specifically and get into the business of

operating things with the districts. That's been a hands-off. We just sell them water, and sort of walk away from it. Now, if we're going to get into micro-managing some of these things, that takes a different attitude and a different outlook. I think there's some real great opportunities.

Consulting on the Newlands Project in Nevada

One of the projects that I'm working on as a consultant is the Newlands Project in Nevada, and I think that could be a guiding way for the Bureau's future, to get into some of this kind of work. Now if they can't transition into it very well, then it doesn't look that bright for the Bureau as I see it.

Petershagen: When would you say that the Bureau's mission changed?

DeBruyn: Oh, I think it's been coming about, probably, for ten, fifteen years, but in the last five years for sure, that mission was enunciated a little more clearly. But I think it was coming about before that.

Petershagen: Probably a de facto mission before it was actually written down.

DeBruyn: Right. I see some real great opportunities, but it would have to be done right without getting too damned bureaucratic about it, you know, and getting too dictatorial about things, because we do live in a free society and we don't want to be telling farmers what they should be doing and shouldn't be doing. But I think there's ways to do that, you know, in cooperation with the Department of Agriculture and the Soil

Conservation Service and other groups that have more experience in this. I think there's ways that we could help them out a lot, and conserve our resources in the process–do a better job, be more efficient.

Issues on the Newlands Project

You see, in the Newlands Project, the Secretary of Interior's got a real problem. He's got an endangered species in the Truckee River, which involves the Department of Interior; under the Department of Interior, the Bureau of Reclamation, the Fish and Wildlife Service, and the Bureau of Indian Affairs–and they're all involved, all three. So he's got to balance, I think, and that's what we're working on. And I think these things can be done . . . but it's tough, it's

tough.

Petershagen: Very good. Now if I back away totally and say you can talk about anything you want, is there anything that we haven't covered that you'd like to address?

". . . my tenure with the Bureau was, as far as I'm concerned, was a very rewarding experience. I left, you know, a happy man. I enjoyed my job, and I enjoyed the people very, very much. . . ."

DeBruyn: You know, I think we've covered it pretty well. Nothing that comes to mind–other than I emphasize that my tenure with the Bureau was, as far as I'm concerned, was a very rewarding experience. I left, you know, a happy man. I enjoyed my job, and I enjoyed the people very, very much. Pretty much a very professional outfit. I think that unless some changes are made, though, (chuckles) the Bureau may be history. You know, another fifteen, twenty

years, maybe, they'll be gone. And maybe it's time for it, I don't know. You know, they were part of building the West.

Other than saying that, I think we've covered pretty much everything that I had done.

Petershagen: Alright. Well, for my part, I certainly do thank you for taking the time to go through this.

DeBruyn: You're welcome. I enjoyed it.

Petershagen: I'm sure I can extend that thank you on behalf of the Bureau at the same time. And I'll just say that I need once again before we close to get your acknowledgment on the tape that you understand that this interview does become the property of the United States, and that you're granting that to the United States

and giving up whatever rights you may have to it.

DeBruyn: Yes, I do.

Petershagen: Thank you very much.

DeBruyn: You bet.

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END OF INTERVIEW