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IN THE SUPREME COURT OF THE UNITED STATES

VOLUME 23 OF 25 VOLUMES

TRANSCRIPT OF TRIAL PROCEEDINGS

STATE OF MONTANA
Plaintiff,

v.

STATE OF WYOMING

and

STATE OF NORTH DAKOTA
Defendants.

BEFORE THE HONORABLE BARTON H. THOMPSON, JR.
Special Master
Stanford, California

James F. Battin United States Courthouse
2601 2nd Avenue North
Billings, Montana 59101
8:33, Monday, December 2, 2013

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MONDAY, DECEMBER 2, 2013, 8:33 A.M.

SPECIAL MASTER: Okay. Everyone can be seated.

So good morning. I hope everyone was able to get home, have a pleasant Thanksgiving with their families, maybe even enjoy more than the one day off.

So I thought I should probably start out this morning getting sort of a sense of where we are this week. We're obviously on the homestretch at this stage, or at least I hope we're in the homestretch.

And just to let you know, I have two constraints this week. The first is that this afternoon I'm going to have to take a slightly longer break, probably like 20 minutes or so, because I have a phone conference call I have to be involved with about 3:30. So that, hopefully, won't be too disruptive.

And then the other, as I think I mentioned before, is I have a flight from San Francisco to Australia on Thursday because I have to give some presentations in Australia. And the last flight out of here on Wednesday is 4:35, or something of that nature, which would mean on Wednesday we would need to stop by about 3:00, or no later than 3:15, so I can get back to the hotel and get the van out to the airport.

So those are my constraints at the moment.

So why don't we sort of see where we think we are.

So Mr. Kaste.

MR. KASTE: Well, we have two more witnesses to present for the State of Wyoming, Mr. Doyl Fritz and Mr. Bern Hinckley. I anticipate for our part we'll most likely be done with direct examination of Mr. Fritz sometime around noon today, and Mr. Hinckley's direct examination wouldn't take much longer than that.

So I anticipate resting the defense case sometime early tomorrow.

SPECIAL MASTER: Okay. That would be great. Just to also let you know, I have really carefully read the expert testimony, so I think I'm pretty familiar with it.

Based on my reading of it right now, also to let you know, my guess is I'll probably have a fair number of questions of Mr. Fritz, fewer of Mr. Hinckley. And that just is based on the number of sort of questions I wrote in the margin as I was going along.

So anyway, my guess is probably somewhere between a half an hour and hour's worth of questions for Mr. Fritz; 20 to 30 minutes for Mr. Hinckley.

Mr. Draper.

MR. DRAPER: We will, of course, have cross-examination of both witnesses, certainly their two main experts. And Mr. Wechsler will be doing the cross-examination of Mr. Fritz. We think that will take maybe a couple hours. I guess that has to be taken with a grain of salt when you get into cross-examination. And something roughly similar for Mr. Hinckley.

So, you know, a half day each is probably going to be ample.

SPECIAL MASTER: Okay. Well, we'll see how fast we can go on all of this. Obviously, the faster we can go, the better.

And does Montana at this point anticipate having any rebuttal witnesses?

MR. DRAPER: We have not made any decisions about that. I think what's going to occur over the next two days will have a major impact on that decision.

So we're looking at it very closely and have made no decisions. And we'll just have to look at that as we get close to the end of the defense case.

SPECIAL MASTER: Okay. I will probably ask again tomorrow morning, with the notion that hopefully by tomorrow morning we'll be down to just one witness,

and that will give you a much better sense of whether there's likely to be any rebuttal testimony.

Also, to the degree possible, if there is going to be any rebuttal witnesses, would love to have an opportunity to talk about that sooner rather than later simply so that if there's any question as to the admissibility of the particular rebuttal testimony, we actually have an opportunity to talk about it.

MR. DRAPER: Yes.

MR. WECHSLER: I can tell you, from our point of view, we're not going to stray too far from these reports, so there's not likely to be any opportunity for subjects on rebuttal.

SPECIAL MASTER: Okay. Sounds good.

So with that in mind, are we ready to begin, or do we have any other issues to talk about?

MR. WECHSLER: I think we are ready.

SPECIAL MASTER: Okay.

MR. DRAPER: Yeah.

SPECIAL MASTER: Sounds good. So, Mr. Kaste, if you want to call your next witness.

And, Mr. Wechsler, you're going to be cross-examining Mr. Fritz?

MR. WECHSLER: Yes, Your Honor.

SPECIAL MASTER: Thank you.

MR. KASTE: At this time, the State of Wyoming would call Mr. Doyl Fritz.

SPECIAL MASTER: Okay. Mr. Fritz, you can come forward and be sworn in.

(Doyl Fritz sworn.)

THE CLERK: Have a seat, please. Once you're seated, state your name and spell it for the record.

THE WITNESS: Doyl, D-o-y-l, Fritz, F-r-i-t-z.

SPECIAL MASTER: Good morning, Mr. Fritz.

THE WITNESS: Morning.

SPECIAL MASTER: Mr. Kaste.

MR. KASTE: As you know, Wyoming's position is that this case is decided based on straightforward application of Article V, C3, and that's the end of the matter. Nevertheless, Mr. Fritz is here to talk about his review and criticisms of the reports and analyses done by Mr. Book.

And Mr. Hinckley will be essentially the same thing later today.

SPECIAL MASTER: All right. Thanks.

DOYL FRITZ,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KASTE:

Q. Morning, Mr. Fritz.

A. Morning.

Q. Can you tell us a little bit about -- obviously, we're going to talk a little bit about your background. And everybody here knows that you're an engineer, but I'd like to talk a little bit about your education if you can.

A. Okay. I have a BS in civil engineering from the University of Wyoming. Specialty was hydraulics and hydrology.

I did one semester of graduate work at the University of Wyoming under a teaching assistantship working on the Water Resources Research Institute. My duties that I performed there that are relevant to this case, I think, I reduced a lot of hydrologic data from hydrometeorological sites. And we were also gauging streams using a new dye-dilution technique and checking with current meter measurements. So hydrologic data collection and reduction were my main duties.

I then transferred to Arizona State University and got a master's in civil engineering

there, again specializing in hydrology and hydraulics.

I was on a teaching assistantship down there, teaching an undergraduate fluid mechanics lab. And did a paper at that time studying the equilibrium of moisture gradients around a microporous plastic irrigation pipe that was under development by a division of International Plastics. So soil moisture and irrigation use were part of my master's thesis.

Q. And you told us you have an undergraduate and graduate degree. When did you obtain those degrees?

A. Bachelor's in '68 and master's in '70.

Q. All right. And after you obtained your master's degree, what did do you then?

A. My first job after school was at the state engineer's office in Wyoming, a division of the state engineer's office called the Water Planning Program.

That was Wyoming's first effort at basin planning. And this was in the early '70s. And mineral development was large in everyone's mind. Coal mining was developing quickly.

And our duties at the basin plan, we went around the state basin by basin and inventoried water resources, inventoried water uses, looked at institutional constraints on development -- water rights is the big one, but also interstate compacts and

court decrees -- and projected future water uses. And then made basinwide big-picture plans for the development of undeveloped compact water supplies in the state.

Q. We've seen a 2002 basin plan in this case. Is the work you're describing there, is that the result of something akin to the basin plan we've seen?

A. It's akin. It's basically an update of the original basin plan.

Q. How long did you work for the state engineer's office?

A. I worked there about three years.

Q. And what did do you after leaving your employment with the state engineer's office?

A. My next job was as a water resource engineer here in Billings for a consulting firm, Hurlbut, Kersich and McCollough, which is now called HKM Engineers.

My work continued in water resource inventories. We had a big contract to inventory water resources on the Wind River Indian Reservation, and I spent a good bit of my time there.

Also, in Montana there was a big push to develop water supplies for future energy projects:

coal-fired power plants. There was some early talk about coal gasification. So several major energy companies were looking at ways to secure water supplies for their future development plans.

Q. And how long were you with HKM Engineers?

A. I worked there about three years.

Q. What did you do after that?

A. My next job -- I moved back to Wyoming. The Wyoming Department of Environmental Quality was planning to open a district office in northeastern Wyoming, which is where the Powder River Basin is and was the site of a considerable amount of this energy development I've been talking about.

They wanted to open a district office for the Land Quality Division, which was the part of DEQ that reviews mine permit applications and issues permits. And it also does compliance monitoring on the ongoing mining operations.

So I became the district engineer for northeastern Wyoming in the land quality division and opened and ran that office for about three years.

Q. So can you tell me, as the district engineer, what your responsibilities were?

A. Well, that was the title given to the person who was the office administrator. So I staffed the

office, first of all. We used different resource experts -- soils, vegetation, wildlife, hydrology -- in order to provide technical review capabilities on mine permit applications.

A big part of our work at that time, the Federal Strip Mine Control and Reclamation Act of 1977 had just been passed and the federal agencies had developed their regulations. But in order for a state to be -- to have primacy for administering the regulation, they had to have their own regulation that was at least as stringent as the federal regulation.

So we also spent a great deal of time writing -- or helping -- there was a large number of people working on it. I was just one -- but writing the state regulation.

Q. You talked about having responsibility for mine permits.

Is there a hydrologic component to coal mining?

A. There's a very big hydrologic component. That was one of the major concerns. Most of the coal mining in Wyoming, and all the big coal mines, take place on federal land. And some of the major issues were the hydrologic consequences of mining.

Alluvial valley floors was a big issue. You

had to preserve and protect alluvial valley floors. You couldn't mine if there was an alluvial valley floor that was significant to farming. And so there were several hydrologic issues that came about as a result of the Federal Strip Mine Act.

Q. After working for the Department of Environmental Quality, what did you do next?

A. That's when I started a company of my own. A former professor -- in fact, he was the director of the Water Research Institute when I did my teaching assistantship there -- he and I got together with another person, a geologist, and started a firm called Hydrology Associates, Incorporated, specializing in water resource engineering and basically kind of a carry-on of the type of work I had been doing.

Q. Where was that business located?

A. My partner, Paul, and my other partner were always in Laramie, and I opened an office in Sheridan.

Q. And can you explain in some more detail, if necessary, what kind of work Hydrology Associates, Inc., did?

A. Well, in those early days, a lot of it had to do with the hydrologic effects of mining. Having written these strip mine statutes and regulations, compliance with these became a big issue. And so a lot

of our work was contracting to energy companies to help write permits, design reclamation plans that were in compliance with the environmental regulations at the time. And that's what my office in Sheridan specialized in.

Q. How long were you with Hydrology Associates?

A. The three of us stayed in partnership for a fairly short time, about a year. And then Paul and I started our own company, which was called Western Water Consultants, Incorporated. And that was in the fall of 1978, and that's the company that I still work for today.

Paul remained the president until his retirement, and then I took over as president.

Q. What kinds of work does Western Water Consultants do?

A. Well, we kept doing the same type of work we'd been doing with the specialty in water resources.

Because we had an office in Laramie and one in Sheridan, the two offices had sort of different market areas. Our Laramie office did work for the state, quite a bit of state water planning work.

And I continued to work for the coal mines. Other mines too, but coal mines was a big part of our work. And our work developed to match the requirements

of these large mines.

And if you haven't seen one of these major surface coal mines, they are huge, and they do a variety of things. So our work was not limited just to hydrology. We began to design dams, roads, whatever facilities they might need, and hired engineering and geological staff to support that.

So our work continued to grow and diversify in that way. And, eventually, we got to doing a lot of work for the state transportation departments: highway design, rest area water supply, and waste disposal.

And I was asked a question one time why they would hire a water consultant to do their highway design, and we decided we need to generalize our name a little. It was sort of limiting. So we began -- we're still incorporated as Western Water Consultants, Incorporated, but we do business now as WWC Engineering to reflect the variety of work we do.

We've also since opened other offices. We now have one in Casper, Wyoming, and one in Helena, Montana.

Q. In addition to the work that you described at the coal mines and for the Department of Transportation, have you, in the course of your long

career with WWC Engineering, had opportunities to do other work related to hydrology?

A. Well, the work I've done has pretty much always been related to hydrology.

Even though I mentioned my work as a teaching assistant doing hydrologic data reduction, at the water plan, in addition to calculating allocations under interstate compacts and court decrees to try to estimate water that was available for development, I also was able to help map the irrigated lands for the 1978 basin plan in northeastern Wyoming.

Q. Have you done things like that, mapping irrigated lands or doing water-related work for individuals or companies?

A. Well, in our practice, we've done lots of water right applications, changes to water rights, movement of water.

We've helped people convert from flood irrigation to sprinkler irrigation, helped them with their -- prepare their plans and petitions to either the Board of Control or the state engineer. Many of those changes require quantification of existing uses.

I mentioned earlier our work on alluvial valley floor studies for coal mining companies. That has always involved identifying either natural or

artificial irrigation practices, doing geologic studies to see how much of the irrigation could be natural from subirrigation.

And that's an ongoing thing. We've done that for a number of years.

Q. So it sounds like, if I have this right, in the course of your career, you've had opportunities to conduct the historical investigations into water use?

A. I've done many investigations similar to what was done for this case, yes.

Q. Now, you described the growth of Western Water Consultants, or WWC Engineering.

Do you continue to be the president of WWC Engineering?

A. No, I'm no longer the president. In about 2008 or 2009, we had a major engineering firm express an interest in purchasing our firm, and I had reached an age where I was receptive to that offer. But the employees didn't want to do it, and I didn't want to make them do it.

So we reached an agreement where the employees bought me out over a period of time. Went through an ownership and leadership transition. And we have a new president, and I'm just an hourly employee engineer. They call me a senior technical advisor now.

Q. I notice you still have the front office, though.

A. They haven't evicted me yet, but I haven't been there for a couple days.

Q. All right. So in the course of your career, have you had an opportunity to do things like draft an environmental impact statement?

A. Yes, we have. The coal mines that I've talked about quite a bit continue to expand, and they expand under federal regulations called Leases by Application. And when they apply for admissions to their lease area, they have to go through NEPA, and it involves quite an involved environmental impact statement. We've written -- I don't know the exact number -- many of those as a third-party consultant to BLM, who is in charge of mineral leasing.

Q. Have you had opportunities as an engineer to design things like dams and hydrologic control structures?

A. Yes. That's one of the specialties of our firm: sediment control facilities, flood control facilities. Even in the semi-arid west, when they are mining through drainages, they need to worry about sporadic flood events, so they need to protect their pit and their equipment from floods. Flood control has

been a major function of ours.

Q. Have you had opportunities over the course of your career to become familiar with Wyoming water rights and how irrigation occurs in Wyoming?

A. Yes. We've assisted several people, as I mentioned before, in modifying water rights, changing from flood to sprinkler irrigation, applying for new water rights. The water rights in the state are constantly being changed and modified, and we help people do that.

Q. I think you talked, in your work with the mines, about mine plans.

Have you had opportunities to design mine plans and reclamation plans?

A. Yes, we have. One of the big issues with federal surface mines in the west is -- it sounds like a blessing, but it can be a curse -- is thick coal seams and thin overburden. And when you mine a thick coal seam in a thin overburden area, you end up oftentimes with a deficit of materials to restore the surface to what the Federal Strip Mine Act refers to as approximate original contours. They use an acronym called AOC.

Anyway, restoring drainage so these don't just become big holes in the plains was a major item of

design for these coal mines, and we spent a lot of time doing that.

Q. And I understand that you did some work for the U.S. Congress in that regard. Can you explain that?

A. Yes. In 1987, ten years after the passage of the SMCRA, the U.S. Congress Office of Technology Assessment conducted a study to see how well their rules were being implemented and how different technologies had developed in response to these new rules and regulations.

So they contracted with firms, particularly in the west 'cause that's where the federal mines were concentrated, to do studies of hydrologic technologies, soil and overburden technologies, vegetation, wildlife, the different disciplines that are involved in mine and reclamation. And we were awarded the contract to study the development of hydrologic technologies in western surface coal mining.

Q. Now, I assume as an engineer you have a professional license.

A. I do. Right now I'm licensed as a professional engineer in Wyoming and Colorado. I used to be also licensed in Montana and Louisiana, but I've let those licenses elapse due to no longer having the

need for them.

Q. And are you a member of any professional organizations?

A. Yes. I'm a life member of the American Society of Civil Engineers and a past state section president of that organization.

I'm a member of the American Counsel of Engineering Companies. Our firm is a member firm. They also have a state chapter called ACEC Wyoming. I'm a past state president of ACEC Wyoming, and also served for a time as national director to ACEC.

Q. And do you have any affiliation with the University of Wyoming?

A. I do. I just finished eight years at the University of Wyoming on the National Advisory Board, which is a board comprised of engineers, not necessarily Wyoming alumni, but engineers who meet two or three times a year at the university and meet with the dean and department heads and students.

And it's a chance for us to learn what's going on at the university, but also to contribute our thoughts on where the industry is heading, curriculum, and issues.

Fundraising, obviously, is always a big part of what a board does. Like I said, I just finished

eight years, the last two of which I was the chairman of that board also.

Q. And I understand that the University of Wyoming gave you an award at one time called the Wyoming Eminent Engineer.

Can you explain what that is?

A. Yes. Each spring, the Tau Beta Pi, which is the engineering honorary, has an awards banquet, and all the engineering students get together and they receive their scholarships and that type of thing. And they also select someone to be the Wyoming Eminent Engineer, and I received that award in 2001.

Q. Have you ever served as an expert witness before?

A. Yes, I have.

Q. Can you tell us about your experiences serving as an expert witness? Where? When? What did you do?

A. Well, it hasn't been a huge part of our practice, but on occasion, water rights changes are one of the reasons I do often serve as an expert witness because oftentimes they're either mandatory hearings, depending on what type of a change is proposed.

And these are hearings before the Wyoming State Board of Control. Or there are contested case

hearings where someone is objecting to a certain change in a water right.

Both of those, I've served on as an expert witness in those types of hearings on probably half a dozen occasions.

Q. Those are in front of the state engineer or the State Board of Control?

A. Yes.

Q. Have you ever served as an expert witness in a court?

A. I have. Mostly over environmental issues, water resource-type issues.

One recent one was a water user was suing a coal bed methane company claiming that a pond that they had built on their property or near their property was flooding their basement. So they hired us as an expert witness to test whether that was true and prove their side of the case. That was in a state court, I think, in Gillette.

Q. So the residents, owner, thought the CBM impoundment was leaking water into their basement?

A. Yes.

Q. Was it?

A. No.

Q. Too far away or what?

A. Too far away and no hydrologic connection. There was about a half mile of pretty impervious shale between the two locations.

Q. Half a mile?

A. Well, horizontally.

Q. You talked about the proceedings before the State Board of Control that you participated in.

Those were change-of-use kinds of proceedings?

A. There have been change-of-use types of proceedings, in which case you have to prove what the historic consumptive use was. So those entail a consumptive-use study.

Quite a few of them have just been a change of place of use or a change of point of diversion or a change of means of conveyance. A good example might be a conversion from flood irrigation to sprinkler irrigation.

In those cases, historically, the board hasn't required a consumptive use study if you're keeping the use of irrigation but just changing the location of it, but I've been involved in even some of those that went to contested case hearings.

Q. Okay. In those kinds of hearings, what is your role?

A. In those kind of hearings, if we've prepared the petition, our role is to explain our reasoning and our process, usually prepare a map showing what the situation was on the ground prior to the petition, and then a map showing what it will be if the petition is approved.

And so our role usually is to prepare those two maps and then be on hand to answer questions during hearing as to why it will or will not affect other water users, which is one of the primary bases for the state to approve one of these, is that no one is adversely impacted.

Q. And in order to do that, you have to compare the historic use with the supposed future use; is that right?

A. That's right.

Q. Now, you've been hired as an expert in this case. And can you tell us what you were asked to do?

A. Yes. Our work on this case was to look at the situation that prevailed at the time this took place and focusing on the drought years in the early 2000s; evaluate what was going on; what were the regulatory activities at that time; and then -- all of which is reported on in our report.

And then also to review the Montana expert

reports and evaluate those with respect to the work that we had done.

Q. Probably fair to say you started out with a different assignment at the beginning of this case.

When did you start working on the case?

A. We actually started working on the case in 2007.

Q. And can you just describe how your assignment changed over time?

A. Right. At that time, our work that was assigned to us, we looked at a test project in part of the Little Goose Basin. And one of the goals was to evaluate the effects of the change from flood irrigation to sprinkler irrigation.

So in a test pilot area, we tabulated the water rights, mapped the water rights into GIS, distinguished between pre- and post-'50 water rights, and then began to correlate the water rights with the actual water uses and were heading towards seeing how those uses changed during that period of time when that work got suspended.

Q. And it got suspended, I think everybody knows, 'cause there was a decision in the case; right?

A. Right.

Q. After that decision, then how did your work

change?

A. Actually, we didn't do any more work on this case until, I think, about 2011. And we were called back in then to look at our water uses and water administration during these drought years and see if we could help understand how any post-'50 water use could be having an adverse effect on anyone.

Q. I assume it's fair to say that at the beginning of that time, you were also looking at the Powder River Basin and that ultimately fell away?

A. Yes. We were looking at the Powder River Basin, the Little Powder, the whole of northeastern Wyoming.

Q. And, ultimately, we have the report now that's limited to just the Tongue River Basin; is that right?

A. That's right.

Q. Can you tell us -- explain just the process you went through in order to form the opinions that we ultimately find in your report? Just walk us through the steps.

A. I'm sorry. Are you talking about -- which part of the -- there's three pretty distinct parts of the report.

Q. One at a time. Do all three.

A. Okay. Well, the report is kind of divided into four parts. The first is just some general statements and my qualifications, and the conclusions that are reached in the report are summarized there.

The second part talks about the hydrology of the basin in kind of a general way; water rights, and how water rights, in general, are administered in the state of Wyoming.

Then the third part goes through specifically how water rights were administered during the years 2004, 2005, and 2006. And it's primarily geared at the Tongue River Basin.

And, by example, we use Wolf Creek, which is a pretty typical example. That shows how regulation gets administered. And that's all in District 5. And that's what most of this part of the report is geared to, a tabulation of existing rights in District 5 on the major streams and then quantification of those pre-'50 and post-'50 rights and then a discussion of how the water was administered on Wolf Creek during those three years.

And then we move into District 4 a little bit, which is Big Goose and Little Goose. And we don't go into quite as much detail in that section. That part is mostly to illustrate how the mountain

reservoirs are used in the regulatory process. Because District 5 doesn't have the mountain reservoirs.

And then we move from there into District 11, which is Prairie Dog Creek. And that one, again, we don't get into a lot of detail in the report, but that illustrates the import of water from the Powder River Basin into the Tongue under post-'50 permits that reach Prairie Dog Creek and tributaries of Little Goose.

And then the fourth part of the report is a rebuttal to the expert report by the Spronk Water Engineers, Dale Book.

Q. In forming your opinions, can you tell us what kinds of things you looked at? What were the sources of information?

A. Well, streamflow data is always critical in any hydrologic study. We use USGS data. We also use data collected by the state and provided in their annual hydrographer reports. Those annual hydrographer reports are used extensively in this.

We used what they call the tab books, the tabulation of adjudicated water rights for District II -- or Water Division II. We used aerial photography from various years. We used the e-permit system, the online permit system from the state engineer.

And we used a lot of personal contacts with

people knowledgeable about water use, including the hydrographer commissioners and the water users.

Q. In the course of preparing a historic investigation of water use in the past, is it normal or typical for you to interview the water users and hydrographer commissioners?

A. Yes, it's very normal. I think they are the most knowledgeable people about the actual application of water.

Q. And are the -- is the information that you received from these folks the kind of thing that you would typically rely on in conducting a historic investigation?

A. Yes, it is.

Q. Did you also look at the hydrographer diaries?

A. Yes. I'm sorry. I forgot to mention those. We did look at their diaries also.

Q. Could you make sense of them?

A. Well, when you first look at them, it's a little hard to do. They have their own type of shorthand.

They -- for example, they abbreviate ditch names. DD might stand for the Diamond Ditch. And until you've been through these, you might not get too

much out of just reading their diary.

But you also learn how intricate their regulatory activities are. Sometimes you'll see a remark in there that they cranked some headgate down three threads on the gate stem. When you first look at that diary it will say, "Down three threads." And you'll wonder, what in the world? Until you talk to the hydrographer, you don't know what they are saying.

So I did have to go back to them, at least for the first two or three times, to -- seasons in order to be able to interpret those diaries.

Q. Ultimately, were you able to do that and make sense of the diaries and the annual reports?

A. Yes, I was.

Q. Were you able, from that information and the other information that you reviewed that's outlined in detail in your report, to get a good handle on the regulatory activities that occurred in 2004 through 2006?

A. Yes. Not only get a good handle on how it occurred, but you get a good appreciation for just how much work they go through during the regulation season with their constant adjustments of this headgate to provide water for that user. Up and down changes through the season when people turned off to hay, then

someone else might have some water available.

And it's a constant travel up and down that stream to adjust headgates and make sure that senior water rights are getting the water that's available to them.

Q. And did you have an opportunity also to review expert reports prepared by the folks retained by the State of Montana?

A. I reviewed at least some of them. I'm not sure I reviewed them all, but I did some of them.

Q. Mr. Book's?

A. I did review that.

Q. Mr. Allen's?

A. Yes.

Q. Mr. Smith?

A. I don't think I reviewed that.

Q. His stuff focuses on Montana, so I don't know why you would have.

A. Right.

Q. What about Mr. Larson?

A. No. I read through parts of it, but I didn't review it.

Q. And everybody knows you're here primarily to talk about your conclusions with regard to Mr. Book's report.

So you read that one?

A. I did.

Q. What did you do after reading it?

A. Well, I guess the -- I set about performing the independent review of each of the sections of his report to see if we agreed or disagreed with his calculations and conclusions.

Q. And what kinds of things did you do to determine whether you agreed or disagreed?

A. Well, depending on which part of his report we're talking about, the activities we did were a little different.

There's a section where he talks about use of water on post-'50 irrigated lands. There's a part where he talks about consumptive use of water from post-'50 reservoirs, consumptive use of water from post-'50 compact reservoirs. The distinction there being those are reservoirs that are reported to the compact Commission at their meetings and routinely regulated by the state people.

So for each of those phases of the report, our activities were a little different.

Q. Well, we talked a little bit about the report; I'm going to give it to you now. I'm going to hand you what's marked as Exhibit W2.

A. Thank you.

MR. KASTE: I assume you have a legible copy?

SPECIAL MASTER: I do.

BY MR. KASTE:

Q. Would you take a look at Exhibit W2 and tell us whether that is, one, your report and, two, whether it's complete?

A. Well, it is a copy of our report, and it looks complete from thumbing through it. I can't verify every page is here, but it sure looks complete.

Q. All right. And was that report prepared by you or by individuals at WWC Engineering under your direction?

A. Yes, it was.

MR. KASTE: I would move for the admission of Exhibit W2.

MR. WECHSLER: No objection.

SPECIAL MASTER: Okay. Then Exhibit W2 is admitted into evidence.

(Exhibit W002 admitted.)

BY MR. KASTE:

Q. Now, your report is extensive and the Special Master has read through it, as you heard. So what we're not going to do is go through it in minute detail.

But we want to talk about some of the important things in it. And I think the best place to do that is to start on page 7 where you've listed a summary of opinions. Got it?

A. Got it.

Q. All right. Now, don't read it. I just want to talk about each of the opinions that you have listed on that page and have you explain why you hold the opinions.

So, in essence, opinion No. 1 is that post-1950 rights constitute a small portion of the total water rights in this basin; is that right?

A. That's right.

Q. All right. Can you explain how you determined that ratio?

A. Well, the report contains tabulations of pre-1950 water rights in the Tongue River, on the main stem of the Tongue River; on Wolf Creek; Smith Creek; the Little Tongue River; and Columbus Creek. And when you look at those tabulations -- and they are presented as tables in this report -- and sum those, you get total water rights in good standing for those tributaries in acres or cubic feet per seconds.

And then there's another table where we tabulated the post-'50 rights and talk about the

relationship between the two. But the -- if you look at that, the post-1950 water rights are a very small portion of the total water rights in this basin.

Now, this is just the Tongue, but that same conclusion is true throughout northeastern Wyoming.

Q. When you say "a very small portion," can you give us a sense of the ratio between the pre- and post-1950 rights?

A. I think on the Tongue River main stem itself, the post-'50 rights are less than 2 and a half percent of the total pre-1950 water rights on the Tongue River. Very small percentage.

Q. So if there's 100 percent of water rights, 2 and a half percent of them are post-1950?

A. Yes.

Q. And all the rest are pre-1950?

A. Yes.

Q. All right. And then the second opinion you have in your summary is that essentially Wyoming has a well-established regulatory system that makes it highly unlikely for a senior appropriator to be injured by any junior appropriators.

Do I have that about right?

A. Yes.

Q. Can you explain how you formed that opinion,

and what does it mean?

A. Well, that opinion arises out of Section 3 of this report where we go through a day-by-day activity list of what was done by the hydrographers to regulate for senior appropriators through the irrigation seasons of 2004, '5, and '6, and you'll often see turning one ditch down to make water for the No. 1 or the No. 2 or the No. 3 ditch. Then they go evaluate. Did they get the water they needed? Or if not, another adjustment is necessary. If too much, they might have to crank it back.

But you get an appreciation of how they work through the season to administer by priority on that system.

Q. And how does that regulatory activity protect senior appropriators from junior appropriators?

A. Well, if the senior appropriator is not getting his appropriation and if the reason is not because of something he's doing wrong, if water isn't going past his headgate because of a poorly maintained headgate or something like that, but if he's not getting his water, they'll go to successively junior appropriators upstream and start cutting them down to make sure that he gets his water.

Q. Did you see examples in the hydrographer

commissioners' diary of them noting, for example, the calling right had a problem with their diversion works, or something like that, that prevented them from regulating juniors?

A. I don't remember. They are pretty aware of the need to maintain their headgates. I don't think there are too many cases that I recall where people couldn't divert pretty much the entire flow of the stream, if that's what their water right called for, on these tributaries, Wolf Creek, Smith Creek, Columbus Creek, and the Little Tongue River.

Q. So the Wyoming irrigators know they are obligated to take the full stream when they want to make a call; right?

A. Yes.

Q. Now, with regard to this opinion about the protection of seniors from juniors, did you find that that was working with regard to pre- and post-'50 rights, say, on Big Goose and Little Goose Creek?

A. Yes, it's a very effective system. And Mr. Book, in his report, also made the same conclusion, that the system of regulation takes care of Big and Little Goose Creeks, and there's little likelihood that any post-'50 rights are having an adverse effect.

Q. Is the situation a little bit different on

the Tongue River?

A. It's a little different for the Tongue. It's the same system, same regulatory system. There just haven't been the same types of calls on the Tongue River that they have on these other systems.

Q. And is that -- is the main stem of the Tongue River a little bit different than the tributaries to the Tongue River, like Wolf Creek and Smith Creek?

A. It is different. It's a much larger stream. It has relatively more water per length within the state of Wyoming than these other streams. These other streams are entirely contained within the state of Wyoming.

The Tongue River, for its size, has a relatively short reach between Dayton and the state line, and so it hasn't been plagued with the water shortages that these other tributaries have.

Q. The other tributaries that are along the main stem of the Tongue River, like, for example, Wolf Creek, is it in the same situation as, say, Big Goose and Little Goose are, that the regulatory system is basically preventing post-1950 use through much of the irrigation season?

A. Yes, it is.

Q. Now, in studying the regulatory activities of

2004 through 2006, did you determine whether or not Wyoming's regulatory system takes into account the effective return flows?

A. Yes, it does.

Q. How does it do that?

A. Well, one of the examples that we talk about in there is, for most of these streams, they have -- I'll call them indicator flows. The hydrographers, through all these years of regulation on the stream, have come to learn that if the flow rate at certain locations on the stream is above a certain level, generally they are not going to get a call for regulation.

And those indicator flows are shown in here in the report for various streams, and as the -- and if you'll notice, the indicator -- a good example is Wolf Creek, the indicator flow is about 20 CFS. In other words, at flows above 20 CFS, there's usually not a call for regulation on Wolf Creek. And yet if you look at the water rights on Wolf Creek -- I don't remember the exact number; it's in a table in here -- but it's about 90 CFS of pre-'50 water rights.

And there are actually about 4000 irrigated acres on Wolf Creek, which if you divide by 70 is somewhere around 50 to 60 CFS of demand. And those

demands can be met with a flow of 20 CFS on the gauge at Wolf Creek because of the use of return flows as it goes down the stream.

Q. Is that an important part of the management of any stream, take into account return flows and how they affect folks on down the line?

A. It's a very integral part of the regulation.

Q. Now, you talked about indicator flows. And I think in the report you used the term "key flow rate"; is that right?

A. Yes.

Q. What do you mean when you talk about the key flow rate?

A. Well, again, from practice, the hydrographer commissioners have learned that above those levels they are usually not going to expect a call for regulation on that stream and below that level -- and they can usually predict by watching the hydrographer.

We've got several example hydrographs in this report. By watching that, unless an event comes up, like a rainstorm or something like that, they can kind of predict ahead of time when regulation is likely to come in, when somebody's likely to make a call.

And they can start talking to their water users and putting them on notice that sometime next

week, you might either run out of water or be required to call for your storage.

Q. Do you have an understanding about whether -- when the gauge hits that particular key flow rate, whether the hydrographer commissioners go out without a call and start turning off headgates?

A. No. It's -- that's not an automatic call. It's a general indicator of when regulation is not likely to be required if it's above that.

Q. Well, there's a couple points in your report where you say, well, regulation starts in this circumstance without a formal call.

Are you referring to formal as in a written document or something else?

A. In that -- yes. The formal written call is one way to call for regulation. But because this happens every year in some form at some time during the year, by practice, they've learned who the most likely first caller is. They can start talking to them, warn them that regulation is likely to come soon.

But -- and so those communications can constitute a call. They don't have to be a formal written call.

Q. And you have example hydrographs inside your report. We don't need to look at them specifically.

But is it fair to characterize the drop from the spring runoff to the point where regulation is imminent as a relatively fast occurring event?

A. Yes, it is. For each of these hydrographs, I've plotted this key flow rate. And you can see that the rising limb and the declining limb of the hydrographs during these years -- but these years wouldn't be unusual in that regard -- are very steep.

Q. And when they're steep, does that mean that the flow rate is decreasing rapidly?

A. Yes, it does.

Q. And so we go from a period of free river to regulation over what span of time, typically?

A. Like I said, unless there's another event, like a rainfall event on the mountain or something that brings streamflows back up again, it's a matter of a few days to maybe a week.

Q. And when that occurs, is it this gradual progression of turning off one right and turning off the next and so forth, or is it just wham, we're at 1886?

A. It's quick. And typically, they go right from no regulation to generally regulating for very early priority water rights, 1900 or before, oftentimes territorial rights, right away.

Q. And during the spring runoff period, during the period of free river, one, how long does that period typically last, the runoff?

A. We state in here the duration of that during -- in this report, but it really varies year by year. Generally speaking, it's the months -- generally the months of May and June.

Q. And during that period of time, we've heard a couple people talk about water right holders from 1945 and before having an opportunity to take a second CFS. I mean, you probably heard some of that discussion when you were here and Mr. Tyrrell was on the stand.

How often are irrigators in the Tongue River Basin able to take that second CFS?

A. In my experience in this area, it doesn't happen. I don't remember it coming up. For one thing, most of the ditches don't have capacity to take double the appropriations.

Q. And what does that mean, the "capacity to take double appropriations"? The ditch itself is constructed so it will only hold 1 per 70.

A. Generally, that's true.

Q. Now I want to talk about the third opinion you have on page 7.

SPECIAL MASTER: Mr. Kaste, I wonder whether

or not, before you go on to the third opinion, whether this would be a good time for the morning break?

MR. KASTE: Sure.

SPECIAL MASTER: So why don't we take a break now, and we'll come back at a quarter to the hour, then.

(Recess taken 9:35 to 9:49 a.m., December 2, 2013)

SPECIAL MASTER: Everyone can be seated.

Mr. Kaste.

BY MR. KASTE:

Q. We had been talking a little bit about some of the terms that you used in your report, and one of which I didn't mention but I think it'd be nice for you to explain is the word "flood rights."

At various times in your report you talk about certain rights being essentially flood rights, and I think it would be helpful for you to explain what you mean when you talk about flood rights.

A. Right. I'm not sure that's any sort of a legal term. It's kind of a common-use term, often associated with late priority water rights. They're called flood rights.

The only time they get exercised is when the stream is in flood and the flows are far in excess of

any need for regulation. And so they're kind of commonly called flood rights.

Q. So it's not a particular denomination under Wyoming water laws; it's sort of a statement of fact that they only get water at these periods of high flow?

A. Yes.

Q. Now, turning to opinion No. 3 in your report or summary of opinions, that one essentially says only sufficient natural flow typically exists to satisfy all active irrigation rights for only a brief time during spring runoff.

Is that about right?

A. That's correct. And that, again, is illustrated by several hydrographs that are presented in this report on which we've also plotted the indicator flows or the key regulatory flow rates. And you can see that the period when the streamflow is above that line is very brief, particularly during these very dry years.

Q. So once things switch over from a free river to a period of regulation, are there a lot of pre-1950 rights in Wyoming that aren't getting any water?

A. Most of them, in fact. Yeah, if you look at Section 3, they often regulate back on all these tributaries. They will regulate back to one or two

Powder River water rights on the whole system. By July and August, they're down to only the most senior rights on the stream.

Q. And if I understood right from one of your earlier opinions, the pre-1950 rights are about 97 and a half percent of all the rights?

A. That's right.

Q. So once regulation begins and as it progresses throughout the course of the irrigation season, what, 90-some percent of the pre-1950 rights aren't getting any water?

A. Yes, that's a good generalization.

Q. Another term that you use in the course of your report, you talk about enlargements at various times as you're describing things on the Tongue River.

What is an enlargement?

A. Yeah, I think there's a misconception about enlargements. When a person wants to add some irrigated lands under an existing ditch, in order to provide a paper record, that they file an enlargement on that ditch.

For example, the Interstate or Pennoyer Ditch has several enlargements. What that means is that owner has gone to the owners of the ditch and gained their agreement to use that ditch to convey these flows

to these new lands, but it doesn't necessarily, and in my experience it seldom involves a physical enlargement of that ditch.

So what they're doing is getting permission to use the ditch, permission to participate in the maintenance of the ditch. And they use water when the other water users have some and pass on what they're needing in their headgates.

But it's not -- it's not usually a physical enlargement, particularly on the Interstate Ditch. For example, there are several structures on that ditch, flumes, inverted siphons that go into draws. Those structures don't get enlarged for these flows.

Oftentimes, and in these cases here, it's true these enlargements are fairly well down the ditch. So the ditch has a much smaller capacity at that point than it does in its diversion reflecting kicking water out at various users along the way.

Q. Does the fact that an irrigator got an enlargement indicate they're using more water?

A. It's not necessarily an indication that they're diverting more water. It means that when water is available in that ditch, when the original owners of the ditch aren't diverting for whatever reason -- they might be out of the town for a weekend, they might have

turned off the gate, whatever -- the water available in the ditch, then people under that enlargement can use the water.

Q. So it's not a situation where an irrigator applies for an enlargement, gets an enlargement, and then you see more water coming in at the headgate of the ditch?

A. I'm not saying that doesn't happen, but in my experience, I'm not aware of situations on ditches where that has happened.

Q. And I think we probably touched on the important substantive parts of your opinion No. 4, but essentially that regulation typically goes to the early 1900s or earlier ones pretty much; right?

A. Yes, that's right.

Again, if you look at -- well, a quick way to illustrate this, we used Wolf Creek, for example. If you look at table 3-3, for example, which is on page 22, you'll notice the No. 1 and 2 water rights on that stream total about 9 CFS. When they are in full regulation late in the summer, oftentimes those will be the only water rights that are getting their water. No one else.

Wolf Creek, I should also mention, is a little different from some streams because its No. 1

water right is clear down near the mouth of the stream.

If on the other hand it was fairly well up on the stream and then they regulated for it, then their return flows would be available on downstream and the regulation would take place a little differently. So it does depend on where the most senior water rights are on the stream.

Q. But Wolf Creek is an example of the senior water rights all the way down at the bottom of the tributary?

A. Yes. So in this table we just talked about, that -- and you'll see references to this in part 3 when we talk about the regulation on Wolf Creek -- there are times when only the 1 and 2, and sometimes not even entirely the No. 2, received their full supply. So 9 CFS out of 90 CFS of pre-Compact rights are all that's getting their water.

Q. Opinion No. 5 is essentially that the impacts reported by Mr. Book are significantly overstated; is that correct?

A. That's my opinion, yes.

Q. And we're going to talk about the particulars of that opinion in some detail here in a bit, so I don't want to spend too much time on that overview that you have in your summary.

I want to kind of move into opinion No. 6 and take that one first. And that opinion is essentially Mr. Book used annual amounts, and that's a problem; is that fair?

A. Well, it's not clear to me how the use of annual totals or annual water uses -- without regard to when the use occurred or under what conditions, it's not easy to interpret who could have been impacted by annual use.

If the annual use -- if the water to provide that annual use was all diverted during flood times or during free river times, it wouldn't have any impact on anyone. So providing it as an annual total doesn't explain how it enters into a system of regulation by priority.

Q. Did Mr. Book make any attempt to figure out what amount of water was used in Wyoming after, say, May 18th, 2004, or July 28th, 2006?

A. Not that I'm aware of.

Q. So do his numbers just reflect, for example, with regard to storage, all water that was stored in post-1950 space over the whole year?

A. For the water that was stored, yes.

Q. And for the irrigated lands, what do his numbers reflect?

A. They reflected the seasonal consumptive use from the METRIC program.

Q. So is that all the water throughout the entire irrigation season?

A. Yes.

Q. So it would be fair, you didn't figure out the amount of water applied after those dates either, did you?

A. No, I did not.

Q. How come?

A. I wasn't asked to do that.

Q. So it's my fault. That's fine. It wouldn't be the first thing that's my fault in this case.

Would it affect, however, the amount of calculated depletions if you tried to figure out what happened before and what happened after specific dates?

A. Well, yes. If only a part of that occurred during a time when it could impact a senior water right holder, then that would reduce that from that annual total, that amount.

Q. Okay. And in your experience, is it typical for junior appropriators to go ahead and use water until they are called off by a senior?

A. Subject to water availability.

We need to correct another misconception, and

that is if you're not getting regulated, you've got all the water you could ever possibly ask for. There are physical constraints on water, and particularly in years like, 2001, '2, '4, and '6. So you can't assume that just because someone wasn't regulated off they had access to all the water they could use. That was not the case.

Q. But assuming there was water in the creek at a junior appropriator's headgate, in your experience, are they free to use that water until they are called off by a senior?

A. Yes.

Q. So the call date is kind of important?

A. Yes, it is.

Q. Now, there's a substantial section in your report that talks about, in a narrative way, the regulatory activities that occurred in 2004, '5, and '6; correct?

A. Yes.

Q. And I think we established that you reconstructed that narrative using what, the hydrographers' annual reports and diaries and so forth?

A. Yes.

Q. And I don't want to go through that substantial section in your report in any great detail.

It's a lot of material, but I think it's fairly easy to understand. And if the Special Master has particular questions, he'll ask you.

But I just want to talk about a couple of relatively important things that you found, one of which is -- and you don't have to turn to this page. I'm just telling folks for convenience.

On page 46 of your report, you note that storage in Cross Creek, Big Horn, and Park Reservoir stopped on May 24th, 2004.

Do you remember that?

A. I remember that.

Q. How do you know that?

A. That was in either the hydrographers' annual report or in one of their journals. I don't remember where I got that information.

Q. So you were able to utilize the information created by the hydrographer commissioners to determine when storage ceased in those reservoirs?

A. For that case I could, yes.

Q. What about in 2006? Were you able to determine whether any storage occurred after July 28th, 2006?

A. I don't remember anything specific, but it would be real unusual to be storing water in late July.

Q. I think as an attachment to your report, Mr. Knapp provided you with a summary of when storage ceased in 2006.

Do you remember that?

A. I do.

Q. And do you recall whether or not it says whether there was any storage after July 28th, 2006?

A. I believe it said there wasn't.

Q. Now, on page 45 of your report, you state that there's an amount equal to essentially all the post-1950 storage rights that was in Big Horn, Cross Creek, and Park Reservoir as carryover in 2024.

Do you recall that portion of your report?

A. Yes.

Q. Can you explain to us what importance it has, the fact of carryover in the reservoirs, if we're trying to determine what amount of water was stored in post-1950 or pre-1950 space?

A. Well, it's fairly standard practice and logical, and it was also used in Mr. Book's report the same way, that you assign your carryover storage to your more junior right so that the next runoff season, your senior rights will have the best opportunity to refill.

Q. So both you and Mr. Book agree that carryover

should be assigned to the junior priority first?

A. Yes.

Q. Is that typical in the Tongue River Basin?

A. In my experience, it's typical and logical everywhere.

Q. Now, I want to turn to some particularized critiques of Mr. Book's analysis. And this is basically Section 4 of your report. And the first thing is post-1950 storage and compact reservoirs, all right?

You had a critique of Mr. Book's analysis with regard to those larger compact reservoirs. Can you explain what your criticism was?

A. Yes. My criticism didn't have to do with the method of analysis. It had to do with the fact that it didn't include Kearney Lake Reservoir.

And that's very important in this case because Kearney Lake is in the Piney Creek Basin, which is in the Powder River Basin, and it has a considerable amount of post-'50 storage in it. So -- and the water use is in the Tongue River Basin, either in Prairie Dog primarily or in the Little Goose area. So it has to be considered in that study, its effects, because that post-'50 water at Kearney Lake is actually a positive impact on the Tongue River Basin since the compact was

signed.

Q. So you thought it was important to include return flows from Kearney Lake in the analysis?

A. Yes, I did.

Q. Did Mr. Book consider return flows from the other reservoirs in the Tongue River Basin?

A. Yes, he did.

Q. So is your criticism essentially this one is in there, too, and ought to be considered with the others?

A. That was my conclusion. In his rebuttal, he accepted the argument for the most part. He made some further changes because he adjusted the return flow fraction down -- from Kearney Lake down for a couple of reasons. One was --

MR. WECHSLER: Your Honor, it sounds to me like Mr. Fritz is about to discuss Mr. Book's rebuttal report which, of course, is not in his expert report.

MR. KASTE: Mr. Fritz sat through Mr. Book's testimony. He was designated as a witness to do so and comment on the testimony he heard.

MR. WECHSLER: And, of course, Your Honor, the disclosure rules are very, very clear. Wyoming has had trouble dating back prior to the trial with disclosure, and they're not allowed to have just

brand-new disclosures because Montana hasn't had an opportunity to address those expert opinions.

MR. KASTE: Mr. Book is right there. They have the opportunity to present a rebuttal case.

SPECIAL MASTER: So let me ask, because I've never encountered this before. It's an interesting question. We have a situation here where normally with other witnesses you would actually end up with rebuttal testimony coming in after the regular testimony. Because of the fact that all of the various expert reports came out before the trial actually began, we have a situation where witnesses presented both their direct testimony and their rebuttal testimony initially.

So -- I'm just looking for help here. Is Mr. Book's testimony rebuttal testimony? In which case I think that Mr. Wechsler is absolutely right at this particular stage. Mr. Fritz can't basically do at this stage a surrebuttal to the rebuttal. Or is that like direct testimony? In which case, yes, Mr. Fritz could testify on that, and then Mr. Book gets to have yet another turn at this.

MR. KASTE: Well, the State of Montana chose to present that rebuttal evidence during its case in chief, so it is direct testimony. And I have never

seen a case where our expert couldn't respond to what they heard their expert say on the stand, nor have I seen a case where their expert couldn't then get up and respond to our expert's testimony.

This is completely normal. That's why you have experts sitting in the trial, to listen to the words that the other expert testifies about and to respond to them. And Mr. Fritz was designated specifically to do just that.

MR. WECHSLER: And, Your Honor, my experience is exactly the opposite. In Federal District Court cases, you -- very often, the plaintiff has a rebuttal report because the plaintiff is the one that gets the opportunity to have the last word because it has the burden. And even though that rebuttal report is presented as part of the plaintiff's case, the defendant does not get to get up and just talk about whatever they want.

And there's two reasons for that: One is the rules -- the expert disclosure rules are specifically designed to prevent surprise and to allow an expert to get up on the stand and offer a brand-new opinion. You know that Montana hasn't had the opportunity to understand, analyze, address. Now Your Honor has given us potentially the opportunity to do rebuttal testimony

within a couple of days. But, of course, expert testimony takes a significant amount of time to consider and address.

Mr. Book was on six weeks ago. I can give an example that I think is very relevant in which this type of surprise testimony was not allowed, and that's the Kansas versus Nebraska case, the most recent one. And in that case not only were there expert reports, there were also prefiled testimony that was filed. In that testimony, it had to be both direct and rebuttal.

When the witness got up and presented their case, they presented both their direct and rebuttal. And the Special Master in that case was very, very clear and very, very careful not to allow the defendant state, whether it was the counterclaim or the initial claim, to get up and talk about what was in either the rebuttal report or the rebuttal testimony.

SPECIAL MASTER: Okay. Let me just say what I'm going to do right now. At the moment, I'm not going to permit this line of questioning. I will see whether or not I can consult with one or two other judges on this over the next break. And then if I change my mind at that point, Mr. Fritz will be able to answer these particular questions.

MR. KASTE: How about we do this? And I'll

do a short offer of proof with Mr. Fritz. It's about two or three questions. And you can then consult with the other judges and disregard the testimony if necessary or not. And then we don't have to come back to it.

MR. WECHSLER: So long as it's just an offer of proof, I have no objection to that.

SPECIAL MASTER: Okay. I think that's a great idea. Let's go ahead and do that. Because that way, if for any reason I'm not able to consult over the break, we don't have to worry about it dragging on until early afternoon.

And, again, sorry to have do it this particular way, but I've actually never seen this particular issue arise before.

MR. KASTE: I've got to tell you, I've never seen an issue where an expert watched the testimony of another and wasn't allowed to talk about it. But that's just my experience. Apparently New Mexico and other places are different than God's country such as Wyoming.

SPECIAL MASTER: Let me just ask you: Have you ever seen a situation before where you have both the direct and rebuttal testimony done initially?

MR. KASTE: Absolutely not.

SPECIAL MASTER: So it's a very unusual situation.

MR. KASTE: Rebuttal reports are ridiculous. They should never be allowed. And that's just my personal opinion on the subject.

SPECIAL MASTER: Do you normally represent the defendant?

MR. KASTE: Pardon me?

SPECIAL MASTER: Do you normally represent the defendant?

MR. KASTE: Almost always. Of course, I'm always on the side of truth, light, and goodness. Mr. Brown, of course, used to represent plaintiffs and he has a black heart.

SPECIAL MASTER: Mr. Brown, do you feel different about rebuttal testimony?

MR. BROWN: Not today.

SPECIAL MASTER: Okay. Okay. Mr. Kaste.

BY MR. KASTE:

Q. In any event, in your report you -- actually, the criticism of Mr. Book's analysis initially was that it didn't include Kearney Lake import returns like the other return flows from the other reservoirs; right?

A. That's right.

Q. All right. Now, I think you were going to

testify Mr. Book, in his rebuttal report, agreed with that criticism, and his bottom line numbers actually reflect import return flows from Kearney Lake; right?

A. Right.

Q. And I think you were starting to explain that he changed the numbers from your analysis of Kearney Lake return flows a little bit.

A. Yes.

Q. And I think you were going to tell us, in one or two sentences, in regards to how he changed those numbers.

SPECIAL MASTER: You can go ahead. At this particular stage, this is simply an offer of proof. So I'll decide at a later point in time whether or not what you now say can actually come into evidence.

THE WITNESS: Okay.

SPECIAL MASTER: But from your standpoint, ignore what I just said. Just go ahead and answer his questions.

THE WITNESS: Okay. There are two points on which he disagreed. He increased irrigation efficiencies on the water use from Kearney Lake on the grounds that most of that water was going down Prairie Dog Creek, which had a higher relative percentage of sprinkler irrigation than the Big and Little Goose

Basins where the rest of the storage was.

And the basis for that was he used the amount of sprinkler irrigation presented in the studies to back up the 2002 basin report, which actually was based mostly on 1996 irrigated lands mapping and using current-day evaluation of sprinkler irrigation in the Prairie Dog Basin. And that ignores 12 or 15 years of transfer to sprinkler irrigation in the Little Goose.

And I don't think there's a big difference between the relative amount of sprinkler irrigation in either basin. Much of that change over the last 10 or 15 years has been subsidized by federal programs, and it's been pretty consistent in both areas.

Another thing, in the Prairie Dog Basin, a lot of what you see from the surface is sprinkler irrigation that's been added -- at the time this was done, had been added by coal bed companies. And that's all sprinkler irrigation. So that would buy us just an overall review of how much sprinkler irrigation there is in the Prairie Dog Basin.

One other little point is the assumption that only 80 percent of the water from Kearney Lake went into the Prairie Dog Basin. I think that's possibly true, but very little went on down Piney Creek. What didn't go to Prairie Dog goes in the Meade-Coffeen.

And Piney Creek ditches into Little Goose, so it still gets into the Tongue River Basin.

So I don't think there's a big reason to change irrigation efficiencies just for the return flows from Kearney Lake.

BY MR. KASTE:

Q. So are your numbers right?

A. I think so.

MR. KASTE: All right. That concludes my offer of proof.

SPECIAL MASTER: Thank you.

BY MR. KASTE:

Q. Now I want to talk about the Wagner, Fivemile, and Padlock recovery reservoirs.

And you had a criticism of Mr. Book's analysis with regard to those reservoirs. Can you tell us what that was and why?

A. Yes. A portion of the storage in those reservoirs is pre-Compact, which wasn't deducted from Mr. Book's analysis. It's about 127 acre-feet in the Wagner Reservoir that should be taken out because it's pre-Compact storage.

The two irrigators, the Padlock Ranch uses the storage, and the Sheeley Ranch upstream uses direct flow rights. And when I interviewed Greg Benzel, who

is the farm operator for the Padlock, he said the agreement they worked out over the years, both ranches have 1882 priority direct flow rights, but to avoid conflicts, once the storage season is over and direct flow irrigation starts, the Padlock uses the reservoirs and the upstream rancher uses the direct flow rights. And it avoids conflicts.

Q. So if I understand right, your criticism was that there are some pre-1950 rights in these reservoirs, and Mr. Book counted them as post-1950?

A. Yes.

Q. And you fixed that in your analysis?

A. I did.

Q. All right. And now with regard to the real small reservoirs or the smaller reservoirs, Mr. Book's analysis looked at evaporation from those reservoirs; is that right?

A. Yes.

Q. And he calculated depletions based on evaporation from post-1950 reservoirs that are not compact reservoirs and not Wagner, Fivemile, or Padlock recovery; right?

A. Yes.

Q. And what criticism did you have of that portion of his analysis?

A. Well, for his depletion estimates, he used a net evaporation rate of 21 inches. And my only problem with that is some of these reservoirs have been constructed in stream valleys where they are natural, I guess you'd say. Consumptive use rates were very high.

And in -- we'll be talking about this when we look at some of these other criticisms. But that is a background ET. And that's -- METRIC maps provided by the Montana expert witnesses showed background ET in the areas like these reservoirs were constructed in exceeding 21 inches, sometimes over 30 inches.

And so my conclusion was that for some of those reservoirs in Mr. Book's list that were built in these valley bottoms where, because of shallow water tables, the high background ETs were at least 21 inches, oftentimes more, that construction of a reservoir there didn't make any net change over what was there prior to the reservoir. And so I eliminated some of the reservoirs from his list because of that.

There was one other reservoir, the Fordyce Tepee No. 1, that's up in the mountains at 7200 feet elevation where annual precipitation is in excess of 30 inches, and there's a very short season. And I think that reservoir has very little, if any, net evaporation. So I also took it out of the list.

Q. So if I understand right, building the reservoir, the evaporation would be either consistent or less than the natural ET prior to the reservoir?

A. Yes.

Q. And you say you removed certain reservoirs, for purposes of your analysis, from Mr. Book's list.

A. Yes.

Q. Okay. So you changed the depletion to zero; is that right?

A. Yes.

Q. There are other reservoirs that you didn't take off the list; right?

A. Right.

Q. Now, with regard to the post-1950 irrigated acres, just in general, what were your criticisms of Mr. Book's analysis, recognizing that each parcel may have different concerns?

A. Well, in general, other than what I had mentioned earlier about being an annual total or a seasonal total, the analysis didn't include the source of water, which in many cases was water produced from coal bed instead of surface water, which would impact the compact. Also water from storage that was used at least during part of the season for these lands. So it didn't have any consideration of the source of

irrigation.

Q. And what about -- did you find certain parcels weren't irrigated?

A. I did find certain parcels that had no evidence whatsoever that they were irrigated during those years.

Q. And did you have criticisms regarding the background ET rate that was applied?

A. Yes. I mentioned that briefly with regard to the reservoirs. But when I first got -- well, Mr. Book's original report did not include all the polygons for the irrigated lands, so I couldn't tell exactly where he was getting his irrigated acreage from. That information was provided in his rebuttal report.

At any rate, I don't know if I'm supposed to talk about that again.

Q. Just keep going until someone makes you stop.

A. All right. At any rate, on -- it appears, from as near as now that I can back-calculate that, he used a background ET of about 12 inches for his calculation, where he would subtract the ET from METRIC -- he would subtract the background to get the ET that was provided by irrigation water.

And that 12 inches is a pretty good basinwide

number. But for the reasons we discussed with these reservoirs, there are a lot of these lands that are down in valley bottoms. And I'll have some proof when we go through the individual particles where the background ET is much higher than 12 inches. It's sometimes 18 to 20 inches.

And if you take a total ET of 30 inches and then subtract a 12-inch background versus subtracting an 18-inch background to get the amount of irrigation water applied, you can see it's a big overestimate of irrigation water applied when you use a small background rate. And some of these parcels need to have their background rate adjusted.

Q. Did you adjust the background rate for individual parcels?

A. Well, it's not in my expert report 'cause, like I said, I didn't have that information. I mentioned it in here, that the background rates were high in some of these areas, but I did not have all the information to calculate it.

Q. All right. So we're not going to find a different number generated from this concern you have about a uniform background ET?

A. Right.

Q. Let's go ahead and look at -- well, first,

can you explain just the process that you went through as you looked at each of the individual parcels identified by Mr. Book in his report as being post-1950 irrigated acreage?

You got that from Mr. Book in his original report. What do you with it?

A. Well, from his report, we had the permit numbers that -- for the permits that were claimed to be post-1950 rights impacting the State of Montana.

So the first thing we did was went to the state engineer's office and got the maps that accompanied those applications. And those, generally speaking, were scanned images, JPEG files. And so the first thing we had to do was take the permit boundary and geo reference it onto an aerial photograph so we'd get a good scale map of that and create a shape file of that permit boundary.

That shape file then we could overlay on aerial photographs. We overlaid it on ownership maps to find out who owned the parcels today so we could contact owners.

We also overlaid those boundaries on the seasonal ET maps provided by Montana's expert witnesses in their backup material and then used the zonal statistics feature of GIS to calculate the average or

the total seasonal ET within those parcels for 2004 and 2006, the two years that he had METRIC data for.

Q. So you used Mr. Allen's METRIC data; that's the expert you were talking about?

A. Yes.

Q. And then what did you do with them? You made a picture and -- you made some METRIC pictures and then what?

A. Well, the Attachment 7 in here shows -- for each one of these parcels, it shows a July 2006 aerial photograph. That was used to make a preliminary determination of whether or not the parcel was irrigated.

It's pretty apparent in July, in this part of the world, if lands are being irrigated or not, because everything else is pretty much burned up and dry by July. So that's a good time of year to take an aerial photograph.

So Attachment 7, for each one of these parcels, that parcel boundary was placed on an aerial photograph and also placed on the seasonal METRIC maps. And it shows the area in blue that was outlined as irrigated according to our determination and the average -- or the inches of water that comprised the seasonal ET for that parcel.

Q. All right. Let's look at Attachment 7 to your report. And on the screen -- and whatever is easier for you. I'm going to go in order so you can go to Attachment 7 in your pile of paper or you can look at it on the screen. But we're going to talk about each parcel very briefly, one at a time.

So the very first parcel in Attachment 7 is the early parcel; correct?

A. Yes.

Q. And the very first page of Attachment 7 is the aerial photograph; is that right?

A. That's correct.

Q. Where did you get the aerial photograph from?

A. That's from the NAIP. It's a public domain source of GIS data.

Q. And this -- are all these photographs from July 22nd, 2006? That's the date down on the bottom.

A. Yes.

Q. And so tell us -- and maybe this isn't the best example because there's no blue line, but tell us what we see here in the Verley picture.

A. Well, it would be a good example because it's a case where we both agreed this area is not irrigated.

The first thing you notice on this map is that it's apparent what land is irrigated versus what

land is not. In the southern part of that photograph, there's a circle. Obviously, from a center pivot irrigation system, that shows what well-irrigated land looked like on July 22nd, 2006, compared to this parcel.

Q. So is the parcel outlined in black the parcel identified in Mr. Book's original report as being irrigated?

A. That -- I think so. Again, I didn't have these parcels from his original report. This area outlined in black is the place of use, POU, from the permit for that particular permit.

Q. And based on the aerial photography, was this particular parcel irrigated?

A. No, it was not irrigated. If you look at the next page, the -- this is the 2004 seasonal METRIC map. You can see that the area is pretty much indistinguishable. There's nothing on there that indicates irrigation.

The area is in the range that would indicate total ET for that season was somewhere between 13.4 and 20 inches. So that's a background rate for that area, but it does not indicate irrigation.

You can see, again, in the southern part where that pivot was, the purple color showing that

that area was seeing the seasonal METRIC ET of over 30 inches.

Q. So in this particular picture, the METRIC results are easy to interpret what is and isn't irrigated?

A. Yes.

Q. Is that always the case? I mean, does METRIC tell you on its own whether something is or isn't irrigated?

A. No. METRIC just tells you the total, in this case, seasonal evaporation on that parcel. It doesn't talk about the source of the water.

Q. So is there some analytical exercise you have to undertake when looking at the METRIC to ascertain whether or not a particular parcel is irrigated or not?

A. Yes. That was, again, what I talked about earlier. You subtract the background rate from the value you get out of METRIC, and that's an estimate of the amount of water of the consumptive use that was supplied by irrigation water.

Q. And then do you have to look at other things in order to determine whether or not it's irrigated as well?

A. Well, in this particular case, it was pretty obvious, and both sides agreed, there was no

irrigation. But in others, it's a good starting point, then, to go talk to the hydrographers and see what their knowledge was of the area and also the landowners to see what their irrigation practice was during the years in question.

Q. All right. Let's look at the next page in Attachment 7. It's also related to the Verley parcel.

And that page is the 2006 METRIC results; is that right?

A. Yes, it is. In that case, it's showing a background value for pretty much the entire parcel or for the entire parcel. And much of the background in that year was between 0 and 11. A little bit, as you get closer to the river, it is between 12 and 18 inches.

Q. Okay. So for 2004 and 2006, do you have an opinion whether this parcel was irrigated during either of those seasons?

A. My opinion is it was not.

Q. All right. And we're going to kind of go through these, now that we understand that all the rest of them are going to have this same basic organization, right, an aerial photograph followed by the 2004 and 2006 METRIC for that parcel; right?

A. We followed this same procedure for each of

the parcels or permits identified in Mr. Book's report, yes.

Q. All right. So we can go through them relatively quickly, I hope.

What I have on the board -- what I have on the poster board here is just a copy of Figure 1 from Mr. Book's rebuttal report, 'Cause it identifies the location of a number of these irrigation rights.

SPECIAL MASTER: If you just tilted it more this way, then maybe counsel can see it and I'll still be able to see it. And it might be too tilted. Kind of a happy medium.

Can you see it from there?

THE WITNESS: I know what it says.

BY MR. KASTE:

Q. And I tell you, I picked this one because it has names and not necessarily permit numbers, which are confusing to me. I can understand sort of names.

And so this isn't going to represent necessarily all of the parcels that you talk about in Attachment 7, but they are sort of ones that remain in Mr. Book's rebuttal report so we get a sense of where they are located on the Tongue River; correct?

A. Okay.

Q. So let's look at the next parcel. And that's

the Barbula; right? Am I saying that right?

A. Barbula.

Q. Barbula. All right. And what are we looking at on the aerial photo for Barbula, and what did you conclude about this parcel?

A. The black outline shows the boundary of the POU as obtained from the state engineer's office. The photo shows pretty clear delineation between obviously irrigated lands and lands that either are not irrigated or very sparsely irrigated.

There are 2 acres -- there are two parcels outlined in blue in there that are clearly irrigated. Both those lands have very early day water rights from Youngs Creek. They are the No. 1 and No. 2 priority rights on Youngs Creek. Youngs Creek is a lit bit of an unusual plains area stream here in that it does have some small perennial flow.

I know that for a fact because we reclaimed a mine property upstream on Little Youngs Creek that has a reclaimed alluvial valley floor on it with a small perennial flow.

In my report, I concluded that the rest of that parcel did not appear irrigated.

Q. So for the Barbula parcel, in your opinion, should the amount of irrigation be reduced to 0?

A. Yes, on the grounds that the two areas I identified as being irrigated have early day water rights, pre-'50 water rights.

Q. So I'm going to cross this one off.

SPECIAL MASTER: Can I ask along the way just quick clarifying questions so it will speed up my questions later? It probably would make more sense.

MR. KASTE: Absolutely.

SPECIAL MASTER: Could you indicate on the aerial photo that you have right now where Youngs Creek is?

THE WITNESS: Yes. Do I just draw on the screen?

SPECIAL MASTER: You can draw on it with your finger, yeah. Okay. It's that waterway. Okay. Thank you.

MR. KASTE: He got to draw on the screen. He was hoping he'd get to draw on the screen.

SPECIAL MASTER: Actually, I think he did the best of any witness so far.

BY MR. KASTE:

Q. And when we talk about the number that Mr. Book ascribed to various parcels -- and some of which in your analysis really you think they ought to be 0 -- what number are we talking? Are we talking

about a volume of water, a flow rate? What is that number that's sort of at issue?

A. I'm not sure I understand your question.

Q. Well, that's probably 'cause it's a terrible question.

The numbers we're talking about are revised net ET; is that right?

A. That's right.

Q. All right. And that's a number reported in acre-feet; correct?

A. Yes.

Q. So when you and I talk about changing a particular number based on your investigation from Mr. Book's report, we're talking about changing the revised net ET in acre-feet; correct?

A. For the season, yes.

Q. For the season, okay.

And to be fair, for purposes of your analysis, did you take issue with or alter in any way the methodology that Mr. Book utilized to determine revised net ET?

A. Not with the methodology, no.

Q. All right. And we're going to talk about the various things that he did find that you did think result in a change. But ultimately, you used

essentially the same method to reach that number; right?

A. Right.

Q. All right. So in your opinion, Barbula doesn't belong on this list of post-1950 depletions; right?

A. Right.

Q. All right. And I don't think it's necessary for each of these to go through the METRIC results that follow the aerial photography. But if you want to see one in particular, let me know. And if the one for METRIC is important for your analysis, please let me know.

So what I want to do is flip to the next aerial photograph, which is identified as the Stroup and Johnson parcel; right?

A. Yes.

Q. And that one is located near the state line near the mouth -- on the main stem of the Tongue?

A. Yes.

Q. And what are we looking at here, and what did you conclude about these parcels?

A. There are two main areas here. The one -- the large area to the right is the Johnson permit. Concluded that there's no evidence of irrigation on

that parcel.

The other -- there's two parcels there, one area outlined in blue that does clearly show evidence of irrigation in July of 2006. It's about 3.6 acres. The source of that irrigation is a little spring called Ash Springs. I agreed that that was irrigated under a first right, and that stayed in the study.

Q. Did you find that the amount of irrigated acreage was the same as Mr. Book or less?

A. I think it was a little less than what he had shown. Again, I didn't have his parcels in his verdict, so I couldn't make a direct comparison.

Q. So if we look at the area outlined in blue, that's the area that you determined received some irrigation in 2006?

A. Yes.

Q. And the water right parcel itself is outlined in black?

A. Yes.

Q. So one of the parcels you changed to 0; is that right?

A. The Johnson -- the big one on the right, yes.

Q. And then for the Stroup, did you change the revised net ET to reflect the difference in acreage?

A. I don't remember exactly. It seems like it

was close enough that I didn't make that change. Could have reduced it a little.

Q. So we're going to cross off most of Stroup, and we'll see it when we get to the table how little is left.

Let's go ahead and look at the next parcel, the DeLapp parcels. And we heard from Ms. Ankney about these parcels.

What did you conclude about the DeLapp parcels?

A. Well, once again, the black line outlines the POU for the post-'50 water right. The part in the lower left of the picture is clearly not irrigated.

In the northern part, on that northern pivot, that area was irrigated at the time with a center pivot system. However, you'll notice with the red hatching, that area was irrigated strictly with water produced from the coal bed during those years, 2004 and 2006.

Because of that, and it wasn't using water from the Tongue River, I took the irrigated acreage to 0 in the modification of Mr. Book's table.

Q. So this would be an example of the source of the water making a difference; right?

A. Yes.

Q. All right. So for the DeLapp parcel, you

took that one to 0?

A. Yes.

Q. Cross that one off.

Let's look at the next parcel, the Tongue River School District. What are we looking at here, and what did you conclude about that parcel?

A. This is a football practice field next to the school that is irrigated, was irrigated at the time of this photo in July 2006. The acreage is outlined in blue. It's 8 acres.

There's a couple things, I think, that are significant to talk about with respect to this parcel.

If you can look at the next page, this is a good example where the background is obviously much higher than the basinwide average of 12 inches. The irrigated parcel is still outlined here in blue, but the area to the north and west, which is along the flood plain of the Tongue, River has METRIC ET values over 30 inches, yet there's no irrigation taking place on that area. So that's a good example of and area where, say, a reservoir constructed there would have had no net increase in consumptive use.

And the other significant factor about this parcel is that, although at this time it was irrigated under a post-'50 water right out of the South Side

Ditch, since 2010 it's been irrigated under a pre-Compact water right that was donated by the rancher to the west there. So it's no longer a post-'50 water right.

Q. So did the school district have to go through a change-of-use process in order to move a pre-'50 right to those lands?

A. Yes. It -- actually, my firm did the change of use. This rancher was making some other changes in his water rights, and he asked us also to make that change for the school district so they would have a pre-'50 water right.

Q. So for this particular parcel for 2004 and 2006, did you conclude that it had been irrigated at some point during those seasons?

A. Yes, I did.

Q. All right. But it ain't going to happen again; right?

A. Not under a post-'50 permit.

Q. All right. Now, this is a question I have, and maybe it's one the Special Master has. I just think it's weird. This is a football field and not an agricultural field where they are growing hay.

Is the amount of water that's applied to Kentucky Blue Grass different than the amount of water

applied to an alfalfa field?

A. Probably not. Most of these consumptive-use studies will show the improved pasture or grass/hay mix pasture irrigated will use about the same amount of water as a lawn.

Q. I think that's fascinating, and I don't understand how it could be 'cause I don't water my lawn that much, or at least I don't think I do.

Let's look at the next parcel. And this is the White parcel, and that's located on the South Side Ditch; is that right?

A. Yes, it is.

Q. So it's on the main stem of the Tongue between Dayton and Ranchester?

A. Yes.

Q. All right. What are we looking at here, and what did you conclude about this parcel?

A. What Mr. White -- and, again, the black areas are the post-'50 permit POU. The blue areas are the post-'50 POU that we determined to be irrigated.

In 2003, Mr. White installed these center pivot systems and began irrigating some of these lands, some of which are situated above the South Side Ditch. So he filed for a permit to include those as a post-'50 permit above the South Side Ditch, and that's what's

shown as being irrigated here.

Q. So what did you conclude about these particular parcels with regard to Mr. Book's analysis and the number he came to?

A. Well, we agreed that the areas irrigated, there are some minor differences because two different people geo referencing maybe sometimes a crudely drawn permit map. And also I missed about 3 acres when I did. I assumed that everything was irrigated outside this post-'50 POU was a pre-'50 permit. And there's actually about 3 acres over in here that I missed that I added to my total, so bringing the total to about 70 acres of irrigation.

There's one other thing we might mention about this permit. What Mr. Book did in his report was he took the 2004 and the 2006 water use from METRIC, which those are the only years you have METRIC, and took the average and, in the absence of any other information, used that average for 2001 and 2002. Because in his table he provided the water use for all four of those years.

In this case, that would overestimate the water use because this system didn't exist until 2003. So you would add in 0 for 2001 and 2002 for this parcel.

Q. So Mr. Book used averages of '04 and '06, what he concluded about '04 and '06, and applied that to 2001 and 2002?

A. Yes.

Q. And without doing this kind of particularized analysis for either of those two years?

A. Yes.

Q. Is that likely to give you the right answer?

A. Well, these lands above the ditch weren't irrigated until 2003 when those pivots went in.

Q. So can I ask, is it likely to give you the right answer? I got no?

A. No.

Q. There you go. If I lob up a softball, you got to hit it.

So Mr. Book concluded, with regard to the White parcels identified on this map, that the amount of revised net ET was 82 acre-feet.

And you changed that to 70, did you say?

A. 70 acres.

Q. 70 acres of irrigated land?

A. Yes.

Q. And that had an effect on the revised ET?

A. Yes.

Q. So there was a reduction from his number in

your analysis?

A. Yes.

Q. So White is still on the board but a little bit smaller number; correct?

A. Right. I should also add one other concept here. In this particular parcel, Mr. White took a different approach in his practice. He took a post-'50 water right to cover lands that would be irrigated when he made the move from flood irrigation to sprinkler irrigation.

The more common practice and the one we've used in our practice would be to redescribe his pre-'50 rights to fit the new configuration of the sprinkler system.

And I haven't done that study. But had this been done here, in most cases when you redescribe the lands, there's no net change in consumptive use when you change from -- when you change the method of irrigation. If you redescribe the lands, take some of the other lands out of production and put the pre-'50 right on the new lands.

Q. So Mr. White did a bad job on his paperwork?

A. Well, he did it different.

Q. He could fix that if he wanted to; right?

A. Yes.

Q. And then these lands would be irrigated on pre-1950 rights that are already existing?

A. Yes.

Q. Let's look at the next parcel, which is Perkins.

Now, Mr. Perkins, that parcel isn't on Figure 1 from Mr. Book's rebuttal report 'cause it's -- as he testified, that's one he ultimately took off. But what did you conclude about the Perkins parcel?

A. Concluded it's not irrigated.

Q. And that's pretty obvious from the picture?

A. Yes.

Q. Let's look at the next one, and that's the Buyok and Long parcels.

What are we looking at in this picture, and what did you conclude about these parcels?

A. This is another good example of how you need to consider background ET when calculating the amount of ET that comes from irrigation water. The two parcels on the right are the Long parcels, and we both agree that those parcels were not irrigated during the years in question. That's based on this evidence, the METRIC evidence, the photographic evidence, and also conversations with the person who takes care of that property for the landowner.

Q. So those parcels you're talking about are to the eastern two parcels?

A. Yes.

Q. Okay. Those were not irrigated?

A. Not irrigated.

Q. All right. Go ahead and keep going.

A. The other two parcels -- I'm not talking about the one way on the left side. That's a different area. But these are the Buyok parcels.

Both sides agreed that this was irrigated. We're very close on the amount of acreage that's irrigated. We're very close to the amount of ET on those irrigated parcels from the METRIC. Where we differ would be in the amount of that ET that's comprised of irrigation water.

If you go back to the Long parcel, and if you look at the next page -- next two pages -- no, go the other direction. There.

Q. The 2004 METRIC?

A. 2004 METRIC and the next page, 2006 METRIC. Both of those show evidence of no irrigation. They are basically background. But if you do the zonal statistics on that, you'll see that the background in those areas, because of its situation on the Tongue River floodplain, is about between 18 and 20 inches for

the two years in question. And if you use that background and subtract from the evaporation on the Buyok parcels, you reduce the amount of irrigation water flood by about 50 percent.

Q. Okay. Now, the numbers in your report don't reflect that 50 percent reduction?

A. I did not make that change for that report.

Q. First of all, you took off the Long parcel and made it 0; is that correct?

A. I did.

Q. And for the Buyok parcel, you reduced the revised net ET a little bit. Can you say why you did that?

A. I think the reason was I didn't have his exact parcel, so I used the numbers that we came up with in this report.

Q. So it's a difference in acreage that's reflected in your analysis?

A. Well, when you get a different acreage, then I'd get a different ET, too, because I put that polygon over the METRIC maps.

Q. And we'll look at those specific numbers when we look at the chart.

The Buyok parcel is located about halfway between Ranchester and the state line on the main stem?

A. Yes.

Q. And you took the Long one off and Buyok is a little bit reduced; right?

A. Yes.

Q. I have three that are still on the list.

SPECIAL MASTER: Mr. Kaste, why don't we take the second morning break right now, and we'll come back at ten after the hour.

MR. KASTE: Okay.

(Recess taken 10:59 to 11:12 a.m., December 2, 2013)

SPECIAL MASTER: Okay. Everyone can be seated.

So before we continue with the direct examination, I just wanted to let counsel for both sides know that I was able to consult with several judges quickly, and they confirmed for me my original ruling, which is not to permit the response to Mr. Book's rebuttal testimony on the questions of the return flow.

And to make it quite clear, this is a little bit of an unusual proceeding because of the fact that the rebuttal testimony by Montana was presented at the same time as their direct expert testimony. I think it made sense in that particular context because, as we

know, Mr. Book actually -- for example, actually changed some of his opinions based on what Wyoming's experts were prepared to testify. And rather than having him testify twice, it made sense to condense that down.

But the key issue here is what was actually revealed as the specific elements of testimony in the expert reports themselves. And so this would effectively be surrebuttal and, therefore, I'll not permit it.

MR. KASTE: Very good.

SPECIAL MASTER: Thank you.

MR. KASTE: Nonsense, but very good. I've never been in a case in my entire life where there have been no rebuttal reports. But we took them out of order, and we get to stick to that.

SPECIAL MASTER: Okay. If you want to sort of -- I think we'll remember exactly where we were on the map, but if you want to remind us where the Xs and the small circles are, that would be fine.

MR. KASTE: I can do that as a wrap-up at the end.

SPECIAL MASTER: Okay.

MR. KASTE: All I'm doing is crossing off the parcels that Mr. Fritz has identified ought to be 0 and

circling the parcels that remain, which he did not determine to be 0, to see what's really left in issue.

SPECIAL MASTER: Are you putting smaller circles where he reduces things?

MR. KASTE: Pardon me?

SPECIAL MASTER: Are you putting smaller circles where he reduces things?

MR. KASTE: No. I'm just leaving them on there. And we'll look at Table 11A and 11B later to get the specific number that ultimately Mr. Fritz concluded.

SPECIAL MASTER: Okay.

BY MR. KASTE:

Q. So the next parcel on your list was the Wilson parcel, and it's not on Figure 1 of Mr. Book's rebuttal report.

What did you conclude about the Wilson parcel?

A. Concluded it's not irrigated, wasn't irrigated at the time of this.

Q. Pretty obvious from the aerial photograph?

A. Yes.

Q. Let's look at the next one. And that's the Town of Dayton.

What did you -- what is this parcel, and what

did you conclude about it?

A. This is a little ballpark within the Town of Dayton adjacent to the Tongue River. The blue area does show evidence of irrigation, and both sides agreed to that.

Q. Did you use a different number of acres than Mr. Book?

A. I think it was close enough within rounding that I didn't change the acreage.

Q. If I told you that you reduced it from 5 to 3, would you agree with that?

A. I misspoke there. Yes.

Q. And that's fair. We're not dealing with an enormous variation in some of these parcels; right?

A. That's right. If you look at the METRIC map, I didn't back out any higher background ET. If you look at the METRIC maps, next two pages, you can see, because it's on the river valley, that it's in an area of very high background ET also.

Q. But, again, that specific revision to adjust for specific crackdown, including individual locations, you didn't do that?

A. I did not.

Q. Let's look at the next parcel, and that's the Addleman parcel.

What did you conclude about that parcel?

A. I concluded, based on this photograph and the METRIC figures, that most of the area was not irrigated. However, it looked like, from evidence that I had at the time, the little area, 3.8 acres on the east side of the property, showed some evidence of irrigation.

Again, it's a high background area and would be a minimum number. But they did -- I did think it looked like it might -- you can even see shadows of a sprinkler out there, it looks like, on 2006, some circle. So I concluded it was sporadically irrigated.

Q. Sporadically irrigated. And you reduced the size of the irrigated portion of the parcel to reflect the area enclosed in blue?

A. Yes.

Q. So Addleman is on the list.

Mr. Brown pointed out something on the break. You correct me if there's any confusion.

When you talk about "background ET," how are you using that word or that phrase?

A. My understanding of METRIC is it measures total water consumption. And if there is no irrigation in an area, the background would equal that total.

My understanding of background is whatever --

it's basically the difference between what METRIC measures and what is applied as irrigation water. Or actually what's applied as irrigation water is the difference between what METRIC measures and what would be there without irrigation.

Q. So when you talk about background ET, does it include both precipitation and subirrigation?

A. Yes.

Q. And so then the difference between those other sources and the amount of irrigation water get you to the total ET reflected in METRIC?

A. Yes.

Q. All right. Let's go to the next parcel, the McTiernan parcels.

And can you tell us what we're looking at there and what you concluded about those?

To orient everybody, the McTiernan parcels are actually farther upstream and on Smith Creek; right?

A. That's right. And if you read Section 3 of this report, you'll find several references to Smith Creek. It's almost always the first stream in the basin to go on regulation. It's a very small stream. It's the only one I'm familiar with that when they regulate they measure the flows in gallons per minute

rather than cubic feet per second.

Because it is on regulation early, I have no doubt that the Owen Ditch was the primary source for most of these that was regulated off. So I don't think any of these were irrigated other than a small piece around the house, which is, according to the water commissioner, when they irrigate that they release 50 gallons per minute from the Bear Claw Reservoir into Smith Creek to make up for that yard irrigation.

Q. So did you change the number in Mr. Book's report for all these parcels to 0?

A. Yes.

Q. Let's look at the next one, the Taylor property. That's not on Figure 1.

What did you conclude about the Taylor property?

A. Not irrigated.

Q. And another one of these great pictures where there's not really much dispute; right?

A. Right.

Q. Let's look at the next one, the Lomax property. Not irrigated?

A. That's my conclusion, not irrigated.

Q. And I don't believe that's on Figure 1 either.

Let's look at Vannoy. I don't believe that's on Figure 1 either.

What did you conclude about the Vannoy parcel?

A. Concluded it's not irrigated. The source of supply is a very small tributary called Riverside Mine Draw, which I don't think was running at all during 2004 and '6. And I concluded it's not irrigated.

Q. All right. Let's look at the next one, the Cossitt property.

Am I saying that right?

A. Yes.

Q. What did you conclude here?

A. I concluded there are 4 acres of irrigation in that parcel.

Q. And that particular parcel is located near the Town of Ranchester?

A. Yes.

Q. That would be No. 6.

Let's look at the next one. I don't know how to say that word.

A. Schreibeis.

Q. Schreibeis. What did you conclude about those parcels?

A. Not irrigated.

Q. Let's go to the next one, Koltiska.

Now, the Koltiska parcel is located on Wildcat Creek; correct?

A. Yes.

Q. And that flows into Prairie Dog Creek?

A. Yes.

Q. And the one we're looking at currently on the screen is the larger of the two parcels identified on Figure 1; is that right?

A. Yes.

Q. The big one's identified as Koltiska/KN Pump, and then the smaller parcel located upstream on Wildcat Creek is identified just as Koltiska; right?

A. Yes.

Q. So what did you conclude about this Koltiska parcel or parcels? There's quite a few of them.

A. I concluded there's a small amount of irrigation in 2006 that was mapped in blue on this aerial photograph. After talking with the landowner, he said that was irrigated with CBM water in 2006. So I took the acreage for this table to 0 for that parcel.

Q. Do you have Attachment 6 in your hand?

A. Yes.

Q. And Attachment 6 is your revised Tables 11A and 11B from Mr. Book's report; right?

A. Oh.
Q. What I'm going to direct you to is the footnote related to the Koltiska pump, which indicates that that source of water was different from CBM; right?
A. It says here Kearney Lake Reservoir.
Q. If there had been CBM, would that be in red hashes on your map?
A. It should be, yes.
Q. So explain, again, having refreshed your memory, what you concluded about these particular parcels.
A. Concluded it was irrigated in 2006 from Kearney Lake Reservoir water.
Q. How did you reach that conclusion?
A. That was from discussions with the owner. And also, the annual hydrographers' reports talk about who called for storage, or by name, from the respective reservoirs.
Q. To your knowledge, does Wildcat Creek run year-round?
A. No. Wildcat Creek is a plains area stream with a small drainage area and has no perennial flow.
Q. So where does the water come from that gets into Wildcat Creek?

A. There could be some water brought into there from Piney Creek via the Piney Creek diversion and Kearney Lake Reservoir water.

Q. So the water that comes into Wildcat Creek comes from, ultimately, the Powder River?

A. Yes.

Q. So what did you do with regard to these Koltiska parcels? Did you change them to 0?

A. For 2004, 0, and I think we have -- no, I changed it to 0 because of the alternate source of supply, yes.

Q. Okay. Go to the next one. This one is called Koltiska KN Pump. So you and Mr. Book have a labeling disagreement here. His Figure 1 and your pictures are different with regard to labeling the KN Pump.

Is this the Koltiska KN Pump parcel?

A. I believe it is.

Q. All right. What did you conclude about this particular parcel?

A. Concluded that there is some irrigation within the post-'50 parcel. But it's Kearney Lake Reservoir water.

Q. All right. And did you change that one to 0?

A. Yes.

Q. Okay. Let's look at the next one, Pilch.

Can you tell us what we're looking at here and what you concluded about the Pilch parcels?

A. Yes. The post-'50 parcels are outlined in black. The area within those post-'50 particles that are irrigated are outlined in blue. And if you'll notice, all the area within those post-'50 parcels that's outlined in blue is also crosshatched with red, indicating that during those years it was irrigated with coal bed water. That was verified during my conversations with the landowner as well.

Q. All right. And so what did you conclude with regard to the number that's appropriate for the Pilch parcel?

A. I assumed that number was 0.

Q. All right. Pilch is also on Prairie Dog Creek; right?

A. Yes.

Q. Let's look at the next one, Rose parcels. What are we looking at here, and what did you conclude about those?

A. I concluded there were irrigated lands. Those are shown in blue within the post-'50 irrigated lands. I discussed this with the Petersons, Mrs. Peterson, who is the landowner. And also looked

at the records. And they have access to Kearney Lake water, and so because of that source, I took this one to 0.

Q. All right. Let's look at the next one, Trembath parcel.

What are we looking at here, and what did you conclude about this parcel?

A. I concluded from the photographic evidence that there are about 14, I think it says, acres of irrigated land within the post-'50 parcel.

Q. Trembath stays on the list?

A. Yes.

Q. But with a slight modification to the number of acres?

A. Right.

Q. All right. I think that might be the last one.

All right. So those particular parcels that we've talked about, were those all the ones that Mr. Book identified as receiving -- or irrigating under post-1950 rights in 2004 and 2006?

A. Yes.

Q. We have, in Attachment 6 to your report, the changes that you discuss reflected in a modification to Mr. Book's Table 11A and 11B; correct?

A. Yes.

Q. Can you tell us what these tables from your report show, and what you ultimately conclude about the revised net ET at issue as compared to Mr. Book?

A. Yes. This table is taken from the Book report. And the shaded areas are the changes that I made following the logic of the discussion we just described.

And so, for example, for irrigated acreage from the Tongue River, reduced what he had as 248 acres down to 99 and the revised net ET from -- from 222 acre-feet in '04 to 94 acre-feet in '04 and from 339 acre-feet in '06 to 180 acre-feet in '06. That's on the main stem of the Tongue.

Q. So that's in the first block of data on this exhibit where it says "Tongue River." And then we're looking down at the row that says "Total main stem." Those are where you got those numbers?

A. Yes.

Q. All right. And then what did you conclude about the tributaries in Prairie Dog Creek?

A. On the Tongue River tributaries, the total was changed from 379 to 107 acres revised irrigated area. And the total consumptive use was changed. It was -- did I say 139 to 8? -- and the revised

consumptive use to 8 acre-feet in 2004 and 9 acre-feet in 2006.

Q. And that's, again, on the row marked "Total tributaries"?

A. Yes.

Q. All right. And then you have a line for Wolf Creek. And we didn't look at that parcel, did we?

A. No, we didn't.

Q. What's that about?

A. That was a parcel that had been incorrectly included. That's actually a pre-1900 water right that shouldn't have been in this table.

Q. All right. Let's look at the Prairie Dog Creek again. Is that under the row just identified here as "Total"?

A. No. Prairie Dog Creek is over on the next table in Table 11B.

Q. Right. I already turned my page.

A. Oh, sorry.

Okay. Here, because most lands on Prairie Dog Creek identified in here were irrigated with other sources, the total went from 362 acres to 16. And the net ET in acre-feet went from 16 -- or from 368 in 2004 to 16 and from 489 acre-feet in '06 to 13.

Q. All right. And now, I assume these numbers

are going to make their way into a revised Table 12; correct?

A. Yes.

Q. And that could be found at Attachment 1 to your report; correct?

A. Yes.

Q. Did you find it?

A. Yes.

Q. And it's my fault for giving you a loose copy of your report. It makes it hard to keep track of everything.

Can you walk us through the information conveyed in Table 12? Just start at the top and work your way down and tell us what revisions you're making and why.

A. Okay. Again, this table was taken directly from the Book report, and the revisions that I made are shown by shading.

The first block of data at the top of the table is labeled "Compact Reservoirs." And it showed that the net impact at the state line, according to the Book report, averaged 804 acre-feet for the four years in question. And by adding Kearney Lake effects -- that was the change made to that group of data -- it reduced it to 229 acre-feet per year for those four

years.

Q. Now, this calculation to determine the net effect at the state line, did you just use Mr. Book's methodology to calculate that net effect?

A. Yes, I did.

Q. All right. And so we see, is the last column under "compact reservoirs" the effects of including the import returns from Kearney Lake?

A. Yes.

Q. And that ultimately reduces depletions at the state line?

A. Yes, it does.

Q. All right. Let's talk, then, about the next block of data.

A. The next one is the Wagner, Fivemile, and Padlock Recovery Reservoirs. The change I made there was just to take out the 127 acre-feet of pre-Compact storage in Wagner Reservoir. That's why the post-'50 column is adjusted.

Then using his methodology, I revised the return flow because of the reduced amount of post-'50 storage and also the net effect at the state line. Those are the columns that are shaded in that table, my revisions.

Q. All right. And the next block related to

reservoir evaporation?

A. This is the post-1950 reservoir evaporation for reservoirs not discussed above. And, again, I reduced the number of reservoirs and the water surface area due to the reasons we talked about above, that some of these reservoirs were constructed in high background areas or in the mountains. And my revisions are shown, again, in the shaded columns on that table.

Q. And we didn't take the time to go through this in any detail. But the specific revisions that you made to these post-1950 reservoirs with regard to evaporation, if the Special Master is interested, he can find that table in your report in the attachments; right?

A. Yes, it's in the report.

Q. I think it's Attachment 5. Is that right?

A. Yes.

Q. All right. That's one of those things I didn't think it was necessary to go into too much detail on.

Let's look at the next block with regard to post-1950 irrigated acreage. What is your table showing there?

A. That is showing the adjustments that we made to the parcels that we just went through. Again, my

changes to Book's original table are shown by shading.

And those are taken -- there's a reduction in depletion, and then that's carried down, using his methodology, to what the depletion effect would be down at the state line in the most right-hand column.

Q. All right. And so if my labeling went right on Figure 1, I had six parcels that remained on your list that weren't zeroed out. You can look at Table 11A and 11B and make sure.

A. Yep, I think that's right.

Q. Six?

A. Six.

Q. You did some work figuring out the pre- and post-'50 rights and how many there were. Give us a sense of how many water rights in total there are on the Tongue River system.

A. Well, there's -- in the Tongue River Basin Wyoming, there's about between 60- and 70,000 irrigated acres. The consumptive use of water, according to the basin plan on that area, is about -- depending on whether it's a wet, dry, or normal year, is about 60- to 70,000 acre-feet per year.

Q. So in -- of that -- of those acres, there are water rights in number like in what? Hundreds? Thousands?

A. Acres of water rights?
Q. No, just water rights in general. Just that one piece of paper that says you've got a water right.
A. Okay. I'm sorry. I didn't understand your question.
Q. Well, we've got six water rights or six parcels that have water rights on them identified here. And I just want to give the Special Master a sense of, are there thousands of water rights on the Tongue River system?
A. Yes, thousands.
Q. Okay. But we're down to six; right?
A. Right.
Q. Now, let's talk about the final block of information in Table 12. What have we got there?
A. The final block is a summary of all the preceding blocks in terms of depletions in the four years in question, 2001, '2, '4, and '6. The average in the original report was about 3970 -- or I'm sorry. About -- my average is about 1398. In the Book original report, it was about 2800 acre-feet per year.
Q. So the last portion of that table accumulates all those numbers and gives you total depletions in exactly the same way Mr. Book did it; correct?
A. Yes.

Q. And did you pick 2001, 2002, 2004, and 2006 simply because they were in Mr. Book's report?

A. Yes.

Q. All right. And so the average depletions, is it fair to say, using essentially Mr. Book's methodology with your additional information, you have calculated at 1398 acre-feet?

A. Yes.

Q. Can you give us a sense, with regard to the size of these depletions, how that compares to the amount of water that was bypassed by the Tongue River Reservoir in the winter months during these years?

A. I think it states that, someplace in this report, the bypass during those years was about 50,000 acre-feet per year compared to between 1300 and 2800 acre-feet per year, depending on whose estimate we use here.

Q. I think it says that on page 63 of your report.

A. Thank you.

Q. So that's what, in percentage terms? Say 2000 acre-feet is a percentage of 50,000?

A. Would be less than 4 percent.

Q. Now, on page 4 of your report, you say that "Wyoming water rights with priority dates after

January 1, 1950" -- in parentheses it then says "(the effective date of the compact)" -- have little potential to impact water uses in the state of Montana and were not a significant cause of any water shortages seen by Montana in 2004 and 2006."

Did I state that opinion correctly?

A. Yes.

Q. Can you explain why you have that opinion?

A. Well, again, it's pretty much wrapped up in that table. These impacts, even before adjustment, are a very small part of the water use in either state or both states or of the total amount of water available.

I think the Tongue River at the state line runs an average of somewhere around 300,000 acre-feet per year, and we're talking here about annual totals of between 1300 and 2800 acre-feet per year.

Q. So in the grand scheme of things, no matter which set of numbers you use, it doesn't really matter?

A. That's my opinion.

MR. KASTE: Thank you. I have no further questions.

SPECIAL MASTER: Thank you, Mr. Kaste.

Mr. Wechsler, it's a quarter to 12:00. I'm perfectly happy for you to start now and we can take sort of a normal lunch break, or we can take an early

lunch break. It's your choice.

MR. WECHSLER: I guess it's easier to get in the flow and continue, so I would prefer taking the break now. That way we can get in that direction.

SPECIAL MASTER: Okay. Why don't we do that, then. Let's take a break now. It's quarter to 12:00. So we'll return at quarter to 1:00 this afternoon.

(Recess taken 11:45 to 12:48 p.m., December 2, 2013)

SPECIAL MASTER: Okay. Everyone can have a seat.

Come on up and resume your testimony.

Okay. Mr. Wechsler.

MR. WECHSLER: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. WECHSLER:

Q. Good afternoon, Mr. Fritz.

A. Good afternoon.

Q. A couple of questions about your background.

Many experts in this case have testified in original jurisdiction proceedings. Have you ever testified in an original jurisdictional proceeding?

A. I'm not sure what that is.

Q. It's a Supreme Court proceeding between two states.

A. No.
Q. And I noticed you were touching your ear. If you're having any trouble hearing, just let me know. I want to make sure you understand and we're talking about the same thing.
A. I just had an inch.
Q. Fair enough.
Do you still have your report with you?
A. Yes, I do.
Q. Could you turn, please, to page 5?
Do you have that before you?
A. Yes.
Q. I'm focused on the fourth paragraph there beginning "Primary data sources."
Do you see that?
A. Yes.
Q. And here it indicates that the report focuses on the Tongue River Basin. And I think you testified to that as well; is that right?
A. Yes.
Q. Could you turn, please, to page 90?
Do you have that?
A. I do.
Q. These are your reference materials that you relied on, correct, this whole list starting on page

89?

A. Yes.

Q. And here in particular you have -- you had personal communication with a number of individuals; right?

A. Yes.

Q. You also live in the Tongue River Basin; correct?

A. Yes.

Q. I believe on Wolf Creek.

A. Yes.

Q. Did you know any of these people personally before you -- before this case?

A. Yes.

Q. Which ones?

A. Bill White, Pat Boyd, Carmine LoGuidice, and Bill Knapp.

Q. Some of the individuals on this list have testified in this proceeding. Were you here for the testimony of any of these individuals?

A. No.

Q. You contacted each one about the case; is that right?

A. If they're listed here, yes.

Q. And, in general, you had a short conversation

with them; is that right?

A. Yes. Some of these I had several conversations.

Q. Which ones of those did you have several conversations?

A. Bill Knapp, Carmine LoGuidice, Greg Benzel, Pat Boyd, Bill White.

Q. So those four. The other ones you just had a single conversation with; correct?

A. I think I had more than one conversation with Joe Pilch also.

Q. And then the others just a single conversation?

A. Well, a couple of them I witnessed their deposition. Would that be a conversation?

Q. I think you've listed the deposition transcripts on the -- in the next page that you relied on; correct?

A. Yes.

Q. And that's on page 91. So my question is -- and in your deposition, you mentioned that many of these people you had only a 15-minute conversation with; correct?

A. I don't know about the duration, but it wasn't a long one, yes.

Q. You talked about -- with Mr. Kaste about the METRIC system.

In any of the cases where you have testified as an expert, did those cases involve METRIC?

A. No.

Q. When was the first time you started to work with METRIC?

A. On this case.

Q. You mentioned in your testimony when Mr. Kaste was asking questions that you focused on the drought of the early 2000s; right?

A. Yes.

Q. When you talk about regulation in Section 3 of your report, you only talked about regulation in 2004, 2005, and 2006; correct?

A. The description of the regulation activities described activities during those three years, yes.

Q. And not 2001 or 2002?

A. No. I did look at the annual hydrographer reports for all those other years. And some of the issues brought up, like the use of storage in Kearney Lake, other years were used. But for the irrigation, I only looked at those three years.

Q. And that information is contained in Section 3 of your report; right?

A. Yes.
Q. You talk about the activities of the water commissioners.
Now, you're not a water commissioner; correct?
A. I am not.
Q. And you've never been a water commissioner?
A. No.
Q. You did not do any regulation on the Tongue River in Wyoming?
A. No.
Q. You're aware that the water commissioners that you interviewed testified in this case; correct?
A. I'm aware that they did.
Q. I want to talk a little bit about key flow rates and then when regulation occurred, and then I want to walk through your report. And there's some things on various pages that I'd like to discuss with you.
And so first, you talk about key flow rates in your report; correct?
A. Yes.
Q. Now, in this case, there's also been some discussion of trigger points.
Are you aware of that?

A. I've heard the term used.
Q. What's the distinction?
A. I'm not sure what a trigger point is. When I talk about key flow rates, I'm talking about flow rates at certain key gauges that the hydrographers generally use to alert them when the onset of regulation is likely, when the flows drop below those levels.
Q. Now, you have a fair amount of discussion in your report about key flow rates. And I do want to look at those, even though my own commentary is -- in many ways, I think that's a remedy issue. But if you'd turn, please, to page 13.
A. Okay.
Q. And here the top paragraph, starting with the word "After years of experience," that's where you're discussing these key flow rates; right?
A. Yes.
Q. So there's flow rates on each of the streams that are used to note when there's a need for regulation; right?
A. Yes.
Q. And you indicate in the next sentence that there's gauges on those streams; right?
A. Yes.
Q. And then it's assumed that all active water

rights are being satisfied if it's above a certain level at that gauge; right?

A. Yes.

Q. And that's a key flow rate?

A. Yes.

Q. Then you go on, you indicate here that "As the spring runoff passes its peak and streamflows begin their typically steep declines, the hydrographers watch the flow rates at these key locations and can accurately predict when it becomes necessary to begin regulation"; right?

A. Yes.

Q. And then they notify the junior appropriators that it's time to curtail their diversions or call for storage; right?

A. They notify them, yeah, that they're likely to be regulated if they don't take some activity.

Q. And here in your report you say that the water commissioners also curtail diversions; right?

A. They do. Not because of a flow rate but because of a call for regulation.

Q. Well, you indicate down below just a little bit further, "This type of regulation, which is not necessarily triggered by a formal request for regulation, is commonly practiced."

And that's your understanding; right?

A. Yeah. I tried to clear up in my direct that when I said "formal request," it's -- I was referring to a formal written request.

Q. And did you discuss with any of the water commissioners what they sometimes call "proactive regulation"?

A. I don't remember that term, but I did talk to them about what initiates regulation at certain times, yes.

Q. And, of course, those individuals would have the best idea of what they actually did; right?

A. Oh, yes.

Q. I want to hand you a document that discusses key flow rates, and this has been previously labeled as Exhibit M509.

Mr. Fritz, have you seen Exhibit M509 before?

A. I haven't seen the exhibit, but these are my notes from interviews with hydrographers, copies of them.

Q. And these are all your handwriting?

A. Yes.

MR. WECHSLER: Your Honor, at this point I'd move the admission of Exhibit M509.

MR. KASTE: No objection.

SPECIAL MASTER: Exhibit M509 is admitted.

(Exhibit M509 admitted.)

BY MR. WECHSLER:

Q. If you look, Mr. Fritz, on the first page, this is an interview -- note from an interview with Mr. Schroeder; right?

A. Yes.

Q. And then here, your note indicates -- about midway down, it starts with "When Piney," and then it says abbreviation, "CR" --

Do you see that?

A. Yes.

Q. Is that Piney Creek?

A. Yes.

Q. -- "at Kearney hits 32 CFS, in regulation."

Do you see that?

A. That's the key flow rate at that gauge for regulation, that's true.

Q. Turning two pages in, there's a page labeled at the top "Bill Knapp interview, February 16th, 2012."

Do you see that?

A. I'm sorry. What page?

Q. At the top it indicates "Bill Knapp interview," and it's labeled at the bottom WY043775.

A. Okay.

Q. No. 3 there indicates -- again, your note was "State will initiate regulation without a formal call for regulation"; right?

A. Yes.

Q. And that's what Mr. Knapp told you; right?

A. Yes. Again, I'm taking notes during a conversation. That referred to without a written formal call for regulation.

Q. Do you generally take good notes?

A. Depends on how fast someone is talking.

Q. Did you consider the interview you were having with Mr. Knapp to be important?

A. Oh, yes.

Q. Let's look at what you consider some of the key flow rates starting at page 22. And I think you spoke about this one with Mr. Kaste.

This is the key flow rate on Wolf Creek. And my understanding is that's 20 CFS; right?

A. Yes.

Q. And so when the gauge is at that level, typically the rights below Wolf Creek are fully satisfied; right?

A. When it's above that level.

Q. That's what I intended to say.

A. Yes.

Q. Let me show you -- I think it's helpful to look at where these gauges are, and so let me show you what's been marked as Exhibit M438.

This is already in evidence, Mr. Fritz. And have you seen this before?

A. I've seen these schematic diagrams. I assume these are the ones I've seen before.

Q. So I'm trying to get a feel for how these key flow rates work. So for each one of these creeks, I'd like to take a look at where the gauge is. So if you'd turn to page -- it says 10 at the bottom, of M438. And it also has the Bates No. WY060799.

At the top, it says "Wolf Creek." You see that?

A. Not yet. Which creek are we talking about?

Q. Wolf Creek.

A. Okay.

Q. And my understanding is the gauge that you're referring to is right under the heading "Wolf," or the box that says "Wolf" and above the N on the compass for north. And it says "Gauging station at Wolf, Wyoming.

Is that the station we're looking at?

A. Yes.

Q. You talked about return flows with Mr. Kaste. It also looks like there's a creek coming in on Wolf

Creek, right, Claussen Creek?

A. Yes.

Q. Turn, please, in your report, W2, to page 32.

Do you have that before you?

A. I do.

Q. And here I just want to note this is another discussion about the key flow rate without a formal request for regulation being filed; right?

A. Yes.

Q. Turn to page 33, please.

And here at the bottom of page 33 you indicate that on the main stem of the Tongue, the key flow rate for regulation is 40 CFS.

Do you see that?

A. Yes.

Q. Now, that's an interesting one to me because there hasn't been much regulation of the main stem of the Tongue; right?

A. That's right.

Q. And so how did you come up with the number 40 CFS?

A. That's a number that was given to me by the hydrographer for District 5.

Q. Who gave you that number?

A. Pat Boyd.

Q. Let's look at the schematic, if you would, please. That's M438. And here I'm looking at the very next page, page 11. It comes after Wolf Creek.

A. Okay.

Q. At the top, just below the high line "Ditch," is what's labeled "Tongue River near Dayton gauge."

Do you see that?

A. Yes.

Q. Is that the gauge you're referring to?

A. Yes.

Q. And then again, there's a number of creeks that come in on the Tongue River, right, below the gauge?

A. There are tributaries down there, little Tongue, Smith Creek. Are those what you're talking about?

Q. Those are some of the ones. And also Columbus Creek and Fivemile Creek.

Do you see that?

A. Yes.

Q. Page 44 of your report, please.

A. Okay.

Q. In the middle, towards the bottom of the page, it indicates that the key flow rate of Big Goose Creek is 65 CFS; right?

A. Yes.
Q. Looking at the schematic, let's take a look at where that is. That's on page 8. At the top it says "Big Goose Creek."
A. Okay.
Q. And then at the very top it says "Big Goose Creek above the PK Ditch gauge."
Is that the gauge you're referring to?
A. Yes.
Q. On the very next page, page 45, it indicates that the key flow rate for Little Goose is 80 CFS; right?
A. Yes.
Q. And if you turn to page 6, I think this is shown at the very top there, "Little Goose Creek near Big Horn gauge."
Do you see that?
A. Yes.
Q. You also talk about the Colorado Colony Ditch. And there's also a key flow rate there; right?
A. Yes.
Q. And that gauge is shown here "Little Goose Creek above the Colorado Colony gauge"; right?
A. Yes. Below the Colorado Colony gauge.
Q. Thank you. That gauge was put in relatively

recently; right?

A. I don't know when that was put in.

Q. And, finally, on page 56, you talk about the key flow rate at Piney Creek; right?

A. Yes.

Q. And we saw a note to that effect as well.

I'd like to talk now about some of the regulation or the lack of regulation that occurred in Wyoming.

Now, you talked with Mr. Kaste about when written calls were made by Montana. Do you recall that?

A. Are you talking about the two letters that were written?

Q. I am.

A. In '04 and '06? Yes.

Q. Do you know the date of the '04 call letter?

A. I think it was May 18th.

Q. Let's look at page 34.

Now, Mr. Boyd was here, and he testified that he did not do any regulation on the Tongue River in 2004. And you wouldn't disagree with Mr. Boyd, would you?

A. No. I wouldn't have any reason to disagree unless I saw something different in his diaries or

something.

Q. And even if there was something different in his diary, Mr. Boyd would be the best person to interpret his diary, wouldn't he?

A. Yes.

Q. Here on page 34 you talk about when the flow rate of 40 CFS occurred on the Tongue River in 2004; right?

A. Yes.

Q. Here's something that puzzled me. The third sentence of the paragraph that starts "Figure 3-7" -- do you see that?

A. Yes.

Q. -- the third sentence indicates, "On August 8th, 2004, the flow at the station dropped to 40 CFS and remained below that level through August 17th"; right? Is that right?

A. Yes.

Q. And then you indicate that the flows increased above 40 CFS shortly after that.

Now, what puzzles me is if it was below 40 until August 17th, further down in the paragraph, you indicate that the main stem of the Tongue actually went on regulation on August 18th, 2004.

Do you see that?

A. Yes.

Q. And that's actually right after you indicate it came above that 40 CFS number; right?

A. Yes.

Q. Turn, please, to page 45. We were discussing the call letter of May 18th. And here on page 45 you talk about the Big Horn Reservoir at the bottom of the page.

Do you see that?

A. Yes.

Q. And now, orders for water didn't come from Big Horn Reservoir until June 21st; right?

A. That's what this says.

Q. So up until June 21st, the Big Horn Reservoir could have been storing; right?

A. Well, I'm not sure about that. There's a difference between whether they're still storing and whether they're not storing but releasing what flows come in or releasing from storage. So I'm not sure you can say all three things are the same. There's a difference between those three situations.

Q. The State of Wyoming does not operate Big Horn Reservoir; right?

A. They don't operate it, no.

Q. Do you know who the operator of Big Horn

Reservoir is?

A. No, I don't.

Q. And you didn't speak to that individual?

A. No.

Q. So you don't know if they actually operated it in that way to keep flows passing through until June 21st?

A. I don't know that, no.

Q. Likewise, on page 46, here you indicate that Park Reservoir, the first time water was released from Park Reservoir was July 16th.

Do you see that?

A. Yes.

Q. Again, the State of Wyoming doesn't operate Park Reservoir?

A. They don't.

Q. Do you know who operates it?

A. No.

Q. And you didn't speak to that individual about the operations in 2004 either?

A. No.

Q. Looking down on page 46, there -- and we were talking about regulation that occurred or water use that occurred after the May 18th letter from Wyoming. Beginning with the paragraph "In 2004, the flow in Big

Goose Creek."

Do you see that?

A. Yes.

Q. Here you're talking about water use in Big Goose; right?

A. I'm sorry. What was your question?

Q. This paragraph you're discussing water use in Big Goose Creek?

A. Yes.

Q. At the bottom you indicate that there was briefly some regulation around May 10th; right?

A. Yes.

Q. And then that regulation was soon lifted; right? Is that right?

A. Just a second. I'm trying to read what this says.

Q. Please, take your time. I wasn't sure if you understood my question.

A. Began on May 10th, and it said it was soon lifted.

Q. So that regulation was soon lifted; right?

A. Yes.

Q. So there wasn't any further regulation on Big Goose Creek until July 21st of 2004; right?

A. That's what I understand.

Q. Finally, if you turn to page 57, here we're looking at Kearney Lake. And on 57, you can see that Kearney Lake spilled on July 1st; right?

A. Yes.

Q. And so up until that time, it was filling?

A. Yes.

Q. All right. So those are the two initial topics I wanted to talk to you about. And now I want to walk through parts of your report and talk about some issues that I noticed.

Now, you use -- well, looking at page 4 of your report, you used Wolf Creek as an example of the regulatory process; right?

A. Yes.

Q. Would you agree with me that the regulation on each tributary is unique?

A. It has -- each tributary has unique aspects, yes.

Q. Including the particular rights?

A. Including what?

Q. The particular rights that are on each tributary.

A. Yes.

Q. And the availability of water?

A. Yes.

Q. You spoke with Mr. Kaste about how the location of a calling right is important. And that can be different on each tributary; correct?

A. Yes.

Q. So -- and if there's regulation on Wolf Creek, it doesn't necessarily mean there was regulation on another tributary in the Tongue River Basin; right?

A. Right.

Q. For example, we know that there was no regulation on Columbus Creek. Were you aware of that?

A. I was.

Q. And there's never been any regulation on the lower part of the main stem of the Tongue.

A. I think that's right.

Q. Turn, please, to page 7.

Do you recall you went, at length with Mr. Kaste, through the summary of opinions; right?

A. Yes.

Q. Looking at opinion No. 2 there, the last sentence indicates that it -- the regulation in Wyoming "makes it highly unlikely for a senior appropriator to be injured by any junior appropriators."

Do you see that?

A. Yes.

Q. Are you aware of any rights in Wyoming ever

being regulated for the benefit of Montana or a Montana water user?

A. No.

Q. Again -- well, looking down at the opinion No. 4, here you're talking about "diversions are generally restricted to appropriations, with priorities dating from the early 1900s and earlier"; right?

A. Yes.

Q. Now, that restriction only occurs to the place where the calling right is on the tributary; right?

A. Yes.

Q. And so below that calling right, there might be no regulation?

A. Are you talking about a specific stream or just in general?

Q. Just in general.

A. There's -- yeah, there's generally no regulation unless there's a call for it by a specific water right holder. Yes.

Q. Regulation occurs, so the calling right. And then once that's done, that's all the water commissioners do; right?

A. Yes.

Q. So it's important to look at the location of

the calling right. Would you agree?

A. It's important to look at the result of the regulatory activity, if that satisfies the call right or not. That's what's important.

Q. In fact, if you look at page 19 of your report, I think you say almost the identical thing. Page 19 of -- first full paragraph beginning "On the Tongue River."

Do you have that before you?

A. Yes.

Q. Second sentence, "The relative locations of the most senior rights on a stream can figure prominently in how the stream is regulated in order to account for use of return flows."

Do you see that?

A. Yes.

Q. So it's important to look at where the senior rights are and where the calling rights are; right?

A. Yes.

Q. Looking at opinion No. 6 there. With Mr. Kaste you discussed that if the river was in a free river system, it wouldn't impact any water rights; right?

A. It wouldn't impact...

Q. Any water rights in Wyoming.

A. If it's in a free river system?
Q. Correct.
A. No.
Q. Everyone in Wyoming is getting as much water as they need; right?
A. Yes.
Q. In 2001, 2002, 2004, or 2006, do you know if the Tongue River Reservoir filled?
A. I know, from what I read here, that it didn't.
Q. And typically, the Tongue River Reservoir fills in the spring; right?
A. Spring and early summer, yes.
Q. Do you know if the direct flow rights in Montana were satisfied in any of those months?
A. I don't.
Q. Turn to page 10, please.
The third paragraph begins "Irrigation water rights." Do you see that?
A. Yes.
Q. And you spoke with Mr. Kaste about the 1 to 70 and then the 2 to 70 regulation; right?
A. Yes.
Q. Now, before any of that starts, there's a free river; right?

A. Before there's any regulation?
Q. Correct.
A. Yes.
Q. And that free river condition lasts until there is regulation; right?
A. Yes.
Q. When there is no regulation, the Wyoming water users can take as much water as they need; correct?
A. Well, up to practical constraints, like ditch capacity or pump capacity or however they run their diversions.
Q. And you talked about that with Mr. Kaste.
Now, the capacity of ditches, that's shown in the basin plan of 2002; right?
A. For some ditches.
Q. Such as the Interstate Ditch?
A. I think that is in there.
Q. And it's there for other ditches as well; correct?
A. Yes.
Q. Many of those ditches have more than a single capacity; right? In other words, they can take more than just 1 CFS per 70.
A. I guess it depends on what reach of what

ditch you're talking about. I'd have to know a little bit more than that. But at the initial diversion, it's possible that they can divert more than their 1 to 70 capacity.

Q. You talk on this same page, page 10, about the measuring devices. You're aware that there were no measuring devices on the main stem of the Tongue before 2006?

MR. KASTE: I object. That misstates the evidence. I don't think that there's been evidence that there's no measuring devices. I think there were some diversions without. And I think there's a distinct difference between all and some.

SPECIAL MASTER: I think at this stage it's probably easy just to restate the question in a way that doesn't raise Mr. Kaste's objection.

MR. WECHSLER: I'm happy to. My intent actually was to ask about his knowledge of measuring devices.

BY MR. WECHSLER:

Q. Are you aware of any measuring devices on the main stem of the Tongue prior to 2007?

A. Are you talking about on the main stem of the Tongue or on diversions from the main stem of the Tongue.

Q. I mean to be asking about diversions from the main stem of the Tongue.
A. The one I know of that was in place prior to that is on the High Line Ditch. That's been there for a long time.
Q. Is that the only one you know of?
A. It's the only one that I know of that was there before 2007.
Q. Turning to page 12, this is a copy of something that's called a "Request for Regulation"; right?
A. Yes.
Q. Would it surprise you to know this is the first time in this case we've seen a written Request for Regulation?
A. Yes.
Q. Are you aware that regulation in Wyoming often starts because of a verbal communication?
A. I am.
Q. And we talked about proactive regulation; right?
A. I'm not sure what that means.
Q. Mr. Schroeder and Mr. LoGuidice didn't discuss that with you?
A. Proactive regulation?

Q. Yes. That was a term that, I believe, they used.

A. I haven't been using that term, no.

Q. Turn, please, to page 14. I'm sorry.

There's a series of bullet points on page 14; right?

A. Yes.

Q. I'm focused first on the second of the bullet points. And there it indicates that, with the exception of the main stem, all streams in the basin typically go in regulation after the spring runoff; right?

A. Yes.

Q. And, again, we talked about there has been very little regulation on the main stem; correct?

A. Main stem of the Tongue?

Q. Yes.

A. Yes.

Q. Then you continue, "Regulation is less intense on the main stem of Big Goose Creek."

Do you see that?

A. Yes.

Q. What do you mean by that?

A. Well, if you look at the level of regulatory activities described in Section 3, probably the best

example of the intensity regulation is on Little Goose Creek. It's -- other than maybe Smith Creek that we talked about earlier, it's the most intensely regulated, takes the most time by the hydrographers running up and down the ditch making adjustments.

They calculate -- as the summer goes on, they are calculating how much water at a diversion is shrunk storage and how much is creek water. You'll see references to that throughout their hydrographer diaries. And I just meant by the level of activity it takes to regulate it, it's less intense on Big Goose than it is on Little Goose.

Q. Do you still have Exhibit M509 before you? It was the handwritten notes.

A. Yes.

Q. If you turn in your notes with Mr. Knapp, and I'm looking at the second page of your notes with Mr. Knapp. At the bottom it's labeled WY043776.

A. Okay.

Q. Mr. Knapp is the one who typically regulates Big Goose Creek; right?

A. No.

Q. Mr. Knapp is one of the water commissioners who regulates Big Goose; correct?

A. He is.

Q. And the other one is Mr. Boyd?
A. Yes.
Q. And Mr. Knapp has been there longer than Mr. Boyd; correct?
A. Yes.
Q. Do you know if Mr. Knapp is senior to Mr. Boyd?
A. He is.
Q. Look at No. 14, please. Here it indicates, "To say that Big Goose doesn't yet" -- doesn't get regulated, not strictly correct. State often informally tells them to get some reservoir water into the ditch."

Do you see that?
A. Yes.
Q. Do you believe that to be correct?
A. Do I believe this note is correct?
Q. Yes.
A. I don't know that they tell them to get some reservoir -- they tell them when they might want to order reservoir water.

When they regulate, when they order water, it takes some time. They have to put in a request. They only release water on certain days. So they start having a conversation with them to think ahead how much

they want to order. So that's what this note refers to, is they are having a conversation with them to tell them to start thinking about getting some storage water into that ditch.

Q. So because of the conversation, it's not strictly correct to say that Big Goose doesn't get regulated?

A. Right.

Q. Turn, please, to Exhibit M438 again, which is the schematic. And I'm looking at the schematic showing Big Goose Creek.

A. Okay.

Q. Do you know which of the rights on this schematic is typically the calling right on Big Goose Creek?

A. Didn't we just say Held and Robinson and Hardee often drive the regulation on Big Goose Creek? It says that on the notes with Mr. Knapp, No. 13.

Q. So you're looking down at the N.B. Held -- oh, I see. N.B. Held Ditch, which is below the Flume Ditch and below the Trembath Ditch.

A. Yes.

Q. Would it surprise you if the water commissioner said that it was the Alliance Ditch?

A. That drives regulation?

Q. On Big Goose Creek.
A. That would be a surprise. There are several ditches senior to the Alliance Ditch.
Q. Now, whether it's the Held Ditch or the Alliance Ditch, the water rights below there are not being regulated; right?
A. Well, I think that's right on Big Goose Creek. There is no one down below the N.B. Held that could call them off.
Q. Looking at the map on page 15 of your Exhibit W2, do you see that?
A. Yes.
Q. There's no gauge below Dayton in the state of Wyoming on the Tongue River, is there?
A. No.
Q. Turn, please, to page 19.
A. Yes.
Q. In the paragraph that begins "Figure 3-2," it indicates that the -- there may be multiple appropriators diverting from the same ditch; right?
A. Yes.
Q. Those appropriators might have more than one priority date?
A. Yes.
Q. In Wyoming, the water commissioners do not

regulate down ditch; right?

A. I think that's generally true.

Q. Turn, please, to page 26.

A. Okay.

Q. I'm looking at the top couple of sentences there. The paragraph begins, "There are 41 water rights."

Do you see that?

A. Yes.

Q. In the next sentence you're talking about supplemental supplies. And could you please describe how a supplemental supply works.

A. Yes. A supplemental supply is a water right to use water on lands that have an original supply from another source. And the way it's used is the total water applied from both sources has to be less than 1 CFS per 70 acres. That's a general description of it.

Q. In other words, if you're not getting enough water from your original source, you can also get a supply to fulfill your full water rights from a second source?

A. If it's available.

Q. And oftentimes a water right holder will seek a supplemental supply if its original source is from, say, a small tributary; is that right?

A. Just -- it has to be from a different source than the original supply.

Q. So take -- for example, Ash Creek is relatively small; right?

A. Yes.

Q. And so if someone has a water right on Ash Creek but they're not getting enough water to satisfy their acreage on Ash Creek, they can then take some of that water from, say, the Tongue River; right?

A. They can apply for a supplemental supply from the Tongue, yes.

Q. And that would be a supplemental supply right?

A. Yes.

Q. Turn, please, to page 33.

A. Okay.

Q. Actually, I'm sorry. I left that page too quickly. I did want to note on page 27 a Table 3-7 here. And -- are you --

A. Right. Page 27?

Q. Yes.

A. Yes.

Q. And this is a listing of the post-'50 direct flow rights in District 5; right?

A. Yes.

Q. Some of those are supplemental supplies?
A. Yes.
Q. On the regulation that occurs on Big Goose Creek, would you defer to Mr. Boyd and Mr. Knapp as to what they actually do?
A. I don't know what you mean, "defer."
Q. Well --
A. What would I defer to?
Q. I asked you earlier about which of the rights on Big Goose Creek would be -- is typically the calling right, and I think you said the N.B. Held; right?
A. That's what these notes indicate from my discussion with Mr. Knapp.
Q. So if Mr. Knapp and Mr. Boyd testified to something else, you wouldn't disagree with them, would you?
A. I'd have to know why they said something different in a different place. I'd have to know more what caused that.
Q. Might confuse you why you heard them say one thing on your telephone conversation and they said something different in court?
A. I might have misunderstood them or written it down wrong, sure. I'd have to question why there's two different conflicting ideas.

Q. Turn, please, to page 43.
A. Okay.
Q. Here you have Table 3-10, which is a list of reservoirs that are routinely monitored.
Do you see that?
A. Yes.
Q. The Wagner Reservoir doesn't show up on that list; right?
A. No.
Q. Nor does the Fivemile or the Windy Draw?
A. Right.
Q. And that's because those reservoirs are not routinely monitored; correct?
A. They are not routinely monitored by the state engineer, that's right.
Q. Page 46 of your report, please.
A. Okay.
Q. In the paragraph that begins "Review of the hydrographer's journals" -- do you see that?
A. Yes.
Q. -- the second sentence reads, "When these mountain reservoirs are unable to fill, the storage is allocated among shareholders in proportion to their ownership."
Do you see that?

A. Yes.
Q. What does that mean?
A. They divide whatever the capacity is that they filled to, divided by the number of shares, and that's what each shareholder is allotted for that year.
Q. Turn, please, to page 52.
A. Okay.
Q. Now, between pages 52 and 56, you have a discussion of Prairie Dog Creek and Upper Piney Creek; correct?
A. Yes.
Q. So what I'd like to -- we've had several witnesses testifying about that very area, and I want to see if your understanding is consistent.
And so my understanding, based on their testimony, is that irrigation begins in May. Is that your understanding? And I mean on Prairie Dog Creek.
A. Well, I think that's kind of a generalization, but it's probably the typical month when they begin irrigation.
Q. Lasts until roughly September, typically?
A. Yes.
Q. At the beginning of the season, water is available from Prairie Dog Creek and some of the other tributaries to Prairie Dog. Is that your

understanding?

A. It's -- I don't know that. It's possible during early runoff periods.

Q. So if people testified in this proceeding that that happens, you wouldn't disagree with them?

A. No.

Q. Typically, sometime in July, Prairie Dog switches from direct flow to stored water.

Are you aware of that?

A. You talking about the imports from Piney Creek into Prairie Dog?

Q. I'm talking about stored water from Kearney Reservoir or one of the other storage facilities.

A. First they import direct flow from Piney Creek until that goes on regulation. Then they start bringing storage water over.

Q. That typically happens sometime in July?

A. Yes.

Q. The decision is essentially made by the board of the Prairie Dog Ditch Company?

A. I have never been involved in that decision-making process. I assume that's correct, but I don't know that.

Q. John Koltiska was the head of the Prairie Dog Ditch Company at the time you wrote this report;

correct?

A. Yes.

Q. But you didn't talk to him about reservoir operations; right?

A. I observed his deposition, but I didn't have another conversation outside of that.

Q. You understand that, once the water gets into Prairie Dog Creek, Prairie Dog Creek is essentially treated like a ditch?

A. I think that's probably a good description.

Q. There's no regulation from Wyoming water commissioners; correct?

A. Not that I know of, that's correct.

Q. There's no measurement devices on the diversions?

A. There are -- at the top of -- at the drainage divide, they measure it.

Q. That's where the water goes into Prairie Dog Creek; right?

A. Yes.

Q. There's no measurement devices on diversions on Prairie Dog Creek; right?

A. Not that I know of.

Q. And do you know if they trace the water, the stored water, to any particular owners?

A. I don't know how they do that.

Q. On page 55 of your report, in the second full paragraph starting with the words "There are some very" -- do you see that?

A. Yes.

Q. You have the sentence that, "However, because Prairie Dog Creek has no point-ton headwaters, it has little natural flow and would probably be an intermittent stream without imported water from the Piney Creek drainage."

Do you see that?

A. Yes.

Q. L, do you see that?

A. Yes, I do.

Q. You didn't do any independent analysis to determine whether or not Prairie Dog Creek would be an intermittent stream, did you?

A. No.

Q. And you're not aware of any records which indicate that it would have been an intermittent stream; right?

A. The only thing I'm aware of is verbal descriptions from people familiar with it, that above where the imported water comes in, that the creek is often dry or nearly so, less than a CFS.

Q. And we've had some testimony about that very issue in this case, so we can rely on that.

On this same page, you indicate, the next sentence, that "Water rights from the Prairie Dog Creek are seldom regulated."

Do you see that?

A. Where are you now?

Q. Same paragraph, next sentence. "The water rights from Prairie Dog Creek are seldom regulated."

A. Yes.

Q. Are you aware of a single example where water rights was regulated on Prairie Dog Creek?

A. No.

Q. Are you aware of any records of water use in Prairie Dog Creek?

A. No.

Q. Are you aware of any records indicating a call for reservoir water?

A. No, I'm not aware of that.

Q. On page 57 --

A. Okay.

Q. -- under the heading "Under the Hydrographer's Direct Supervision."

Do you see that? It's not a heading. It's the first part of a paragraph.

A. Yes.

Q. You go on to talk about a decision that was made with the concurrence of the users on Prairie Dog Creek.

Do you see that?

A. Yes.

Q. Other places in your report I noticed you had a citation. There's no citation for that statement; right?

A. There isn't.

Q. And we talked about the fact that you didn't talk to John Koltiska about reservoir operations.

How about Mr. Tom Koltiska?

A. I did not talk to Tom about it either.

Q. And John Koltiska didn't discuss that in his deposition, did he?

A. I don't recall that he did.

Q. You're not aware of any records indicating that the water users of Prairie Dog Creek agreed to not make a call on Piney Creek, are you?

A. Any written records?

Q. Correct.

A. I think this was taken from the hydrographers' annual report, but I don't know if you'd call that a written record or not. That's all I'm

aware of.

Q. This would be 2004?

A. I think so.

Q. Mr. Fritz, I've just handed you what's been marked as Exhibit J61.

I believe that's a hydrographers' annual report for the year 2004; is that right?

A. Yes.

Q. Kearney Reservoir is addressed at pages 8 through 10. And I didn't see in here anywhere that indicated -- that supported the statement that you're making on page 57 of your report.

Am I missing something?

A. I don't know. I'm going to need a minute to look through this.

Q. Be my guest.

A. I can't find that sentence in here either.

Q. Are you ready to move on?

A. Well, I hate to quit before I find that, but I guess I am.

Q. Could you turn back, please, to page 55?

A. Yes.

Q. In the second full paragraph, it starts with the words "The water users."

Do you see that paragraph?

A. Yes.
Q. The next sentence, "About 80 percent of Kearney Lake Reservoir water goes to the Prairie Dog drainage."
A. Yes.
Q. Is that your understanding?
A. That was at that time. I talked to Carmine later and got a different understanding, Carmine LoGuidice. I think it's more than 80 percent when you include the Little Goose drainage. His estimate was about 5 percent goes down Piney Creek.
Q. Let's look at your notes from your conversation with Mr. LoGuidice, which is Exhibit M506.
Mr. Fritz, do you recognize this document?
A. Yes.
Q. These are notes that you took of conversations you had with water commissioners; is that right?
A. Among other things, yes.
Q. And those other things, there's a USGS printout labeled WY043717; is that right?
A. Yes.
Q. And that has some handwriting on it. Is that your handwriting?
A. Yes.

Q. Is that a printout that you made as part of this case?

A. Yes, it is.

Q. And all of these materials were provided to Montana as part of the backup of your expert report; correct?

A. Looks like it.

MR. WECHSLER: Your Honor, I'd move the admission of Exhibit M506.

MR. KASTE: No objection.

SPECIAL MASTER: Exhibit M506 is admitted.

(Exhibit M506 admitted.)

BY MR. WECHSLER:

Q. Mr. Fritz, if you'd turn to the second page of this document, Exhibit M506.

Here's a note at the top is labeled "Meeting/Site Tour with Carmine." Do you see that?

A. Yes.

Q. That's Carmine LoGuidice?

A. It is.

Q. Now, if you look towards the bottom there, it indicates "Kearney Lake." Do you see that?

A. Yes.

Q. And there it indicates approximately 80 percent to Prairie Dog and approximately 20 percent

other ditches down Piney.

Do you see that?

A. Yes.

Q. And that was notes from a discussion that you had with Mr. LoGuidice?

A. Yes, it was.

Q. And you understand that the water that goes down the remaining ditches and Piney Creek, that's not in the Powder River Basin, is it?

A. No.

Q. I'm sorry. It's not in the Tongue River Basin?

A. Right.

Q. Just to be clear, that water gets used in the Powder River Basin; correct?

A. If it goes all down Piney Creek? It does, yes.

Q. You understand that there are shareholders in Kearney Reservoir that take water in Piney Creek?

A. I don't know that.

Q. You don't know whether or not there are shareholders from Piney Creek?

A. No, I don't.

Q. That's not something you investigated?

A. No.

Q. Turn, please, to page 62.
A. Okay.
Q. At the very bottom of page 62, you indicate that "Such calculations were apparently necessitated by the fact that diversions in Montana" -- skipping over to 63 -- "have not historically been measured."
Do you see that?
A. Yes.
Q. You weren't here for the testimony of the water commissioners in Montana; correct?
A. I was not.
Q. Next sentence indicates that "Key flow rates necessary to provide a full supply are unknown, unlike the Tongue River" -- and I think that should say -- "its major tributaries in Wyoming, as described earlier in this report"; right?
A. Yes.
Q. In preparing your report, you didn't interview Mr. Bunny Hayes, did you?
A. No.
Q. Did you interview Kevin Smith?
A. No.
Q. How about Gordon Aycock?
A. No, I didn't.
Q. How about Roger Muggli?

A. No.
Q. So when you're saying this statement -- you don't know whether any of those individuals have the necessary experience to know what the key flow rates at the Tongue River Reservoir is for Montana diversions?
A. No. I just based this comment on the review of the Book report, in which case they calculated a diversion rate -- or a flow rate at the state line that was necessary. It was a calculated flow rate rather than one that had been calibrated, so to speak, like they have in Wyoming at those key locations.
Q. Those individuals that I mentioned, they might have knowledge about what the experience shows as the key flow rate?
A. They might.
Q. Page 64. Here you have two numbered paragraphs in the middle of the page.
Do you see that?
A. Yes.
Q. And the first one you're talking about the T & Y diversion; right?
A. I mention it in that No. 1, yes.
Q. But you didn't do an analysis of the T & Y ditch or diversion, did you?
A. No, I did not.

Q. You weren't here for Mr. Muggli's testimony; right?
A. No.
Q. You didn't consider his deposition?
A. I did not read his deposition.
Q. The same can be said for Mr. Hayes, Mr. Smith, Mr. Aycock?
A. Yes.
Q. Turning to page 65. And here is where you start talking about post-'50 storage, your analysis of Mr. Book's discussion of post-'50 storage; right?
A. Yes.
Q. I understood you to say, when you were discussing the issue with Mr. Kaste, that you did not take issue with Mr. Book's method of analysis; right?
A. Right.
Q. And that includes the way that he dealt with priorities?
A. Yes.
Q. And also the way that he dealt with return flows?
A. I didn't take issue with it, no.
Q. You thought the way he did that was reasonable?
A. I didn't really even make a judgment about

that. What I did was rather than change the method of analysis, which would have raised another whole host of questions, I used his method of analysis and just inserted the effects of Kearney Lake.

Q. You used his method of analysis without determining whether it was a reasonable method of analysis?

A. Well, it was reasonable. It's based on estimates, return flow patterns, and that type of thing. But, yeah, it was reasonable.

Q. Now, Mr. Book did not analyze return flows on Prairie Dog Creek; correct?

A. Um.

Q. In his original report.

A. He did not -- right.

Q. He -- in his original report, he didn't make any determination as to whether the method that he used elsewhere was reasonable for Prairie Dog Creek; right?

A. I don't remember, in that part of his report, him talking about Prairie Dog Creek.

Q. For the purposes of your return flows analysis, you assumed that all of the water released from Kearney Reservoir went into Prairie Dog Creek; right?

A. Into the Tongue River Basin, yes.

Q. But we discussed earlier that some of that water actually goes into Piney Creek; right?
A. It may, yes. I don't know that for a fact.
Q. And you didn't take that into account as part of your analysis?
A. I did not.
Q. Next you assumed that 90 percent of the water in Prairie Dog Creek was delivered; correct?
A. No. What I assumed -- I'm not sure.
Q. Did you assume a 10 percent shrink?
A. Yes. The same shrink that was used in his spreadsheet, yes, I did that.
Q. Do you still have Exhibit M509 before you?
At the front it says, "Interview with Dave Schroeder, 3/14/12."
A. Yes.
Q. Turning to the second page of that document labeled at the bottom WY043774. Do you have that?
A. Yes.
Q. These are notes from a conversation you had with Mr. Schroeder?
A. Yes.
Q. And he is the -- one of the water commissioners responsible for the Prairie Dog Creek?
A. Yes, he is.

Q. If you look right in the middle of the page, it indicates that "Kearney almost."

Do you see that? Do you see that statement?

A. Yes.

Q. "Kearney almost all goes to Prairie Dog. Lower end of Prairie Dog gets 25 percent shrink."

Do you see that?

A. Yes, I do.

Q. But you didn't use 25 percent shrink as part of your return flows analysis?

A. No. No, I did not.

Q. Some of the factors that might impact a higher shrink include hot weather and dry weather; is that right?

A. Well, what that shrink is is how much of the water that they call to be released they are actually entitled to divert.

So if the shrink goes up, they are assuming that either the consumptive use is higher or, for one reason or another, it's not getting to that headgate. So it doesn't mean water isn't kicked into that basin at that upper diversion.

Q. But it might mean that that water never gets to the users; right?

A. What it means is, if a user down there asks

for an acre-foot of water, they're going to turn loose 1.25 acre-feet of the water of the reservoir to get it to him.

Q. And if it's hot, there might be evaporation; correct?

A. Then they might releases 1.35 acre-feet of water.

Q. Go ahead, please.

A. I'm sorry.

Q. If it's dry, that water may find its way into the ground beneath the watercourse; right?

A. I'd have to ask them why they apply shrinks in this situation since it's not measured anywhere.

Q. When you did your analysis, did you include only winter return flows?

A. Again, I used the same return flow pattern that was used in the Book report. And it's a 30, 20, 15. I can't remember the exact sequence. But some of those return flows do appear in the wintertime.

Q. If there are return flows that show up in the summer in Prairie Dog Creek, those might be available for appropriation; right?

A. They -- well, available for use maybe, yes.

Q. And if they are used in Wyoming, it might never find its way down to Montana; correct?

A. If they got used in Wyoming, that's right.
Q. You didn't account for sprinklers. You talked about that with Mr. Kaste; right?
A. Yes.
Q. Turn, please, to page 66.
Here is your discussion about Wagner and Fivemile; right?
A. Yes.
Q. In general, you agreed that this was a -- these were post-'50 reservoirs; right?
A. Yes.
Q. But you took issue with a 55 pre-'50 storage in Wagner; right?
A. Yes.
Q. And also a 60 foot -- 62 acre-foot portion in Wagner that's available to Sheeley; right?
A. I don't know if it's available to Sheeley.
Q. Do you know who owns that 62 acre-feet?
A. It's appropriated in the Wagner. It's been moved into the Wagner Reservoir, and it's my understanding that it's used by Padlock Ranch.
Q. And if -- do you understand that Padlock Ranch uses all the available water in the Wagner Reservoir?
A. That's my understanding.

Q. On the bottom of page 66, continuing to page 67, there's a sentence that reads, "All the lands receive water as available from the Wagner, Fivemile, and Wastewater Recovery Reservoirs, both to supplement lands with direct flow water rights and to irrigate lands without direct flow rights."

Do you see that?

A. Yes.

Q. Do you understand that the Padlock Ranch does not get any of the direct flow during irrigation season?

A. That's my understanding. That was an agreement that the ranchers worked out.

Q. And so the Sheeley Ranch uses the direct flow; correct?

A. That's my understanding.

Q. And the Padlock Ranch uses only the reservoir water that it stored in the winter. Is that your understanding?

A. It's my understanding, unless there might be direct flow water in excess of what Sheeley is taking, but I think that happens very seldom.

Q. Page 67, and continuing to 68, you suggest that the ET in the Padlock area might be overestimated; right?

A. Yes.
Q. And that's because there's not enough reservoir water to satisfy all that ET?
A. Yes.
Q. If there was another source of water, say rain, in the early part of the season, that could explain that ET reading; right?
A. It couldn't explain getting it up to the levels that were shown on that figure, no.
Q. Were you aware that, in one of the documents you reviewed, Mr. Benzel talks about there being extensive rain in 2006? Are you aware of that rain?
A. I think I remember reading that. Was that -- if that was in that farm report.
Q. Page 69.
A. Okay.
Q. Here we see a discussion of the Windy Draw Reservoir.
Are you familiar with the Windy Draw Reservoir?
A. Somewhat.
Q. And it was built in 1961; right?
A. Yes.
Q. Has a capacity of 533 acre-feet?
A. That's the permitted capacity, yes.

Q. If we could put up on the view screen page 15 of Exhibit W2, which is your Figure 3-1. I'm hoping you can show us generally where the Windy Draw Reservoir is located.

Mr. Fritz, could you please use the teleprompter -- maybe that's the wrong word -- the screen and show us where the Windy Draw Reservoir is. I don't think it's listed here. I'm just hoping you can give us a general location.

A. It would be about right in here. Right next to the interstate, between Sheridan and Ranchester.

Q. Are you aware of the fields -- let me first ask, the Windy Draw Reservoir is used for irrigation; correct?

A. Yes.

Q. And it's used every year?

A. I don't know that.

Q. Do you know if it's used by Padlock Ranch?

A. It's my understanding that recently the Padlock Ranch is leasing parts of what used to be the Wrench Ranch, which is down there, and they're using it on those lands.

Q. You say the Wrench Ranch. I've heard the term Rice Ranch. Is that the same place?

A. Same.

Q. And Padlock doesn't use that every year; right?

A. I don't know that.

Q. Mr. Benzel was here, and he testified that Windy Draw was used for irrigation every year but not necessarily by Padlock. He also talked about your paragraph at the top of page 69.

And at the end of that paragraph, you're talking about the source of water for Windy Draw Reservoir; right?

A. Yes.

Q. And would it surprise you to learn that Mr. Benzel testified he didn't know what the source for the Windy Draw Reservoir was?

A. I guess, yes, I would be surprised.

Q. The first fill for Windy Draw Reservoir occurs in the early spring; right?

A. It's on a dry daily discharge, so only to the extent that flows exist in that drainage.

Q. So if there's flows in that drainage from the spring runoff, it fills the Windy Draw; correct?

A. Yes.

Q. And, as necessary, it might be refilled, you indicate, with water from Park Reservoir; right?

A. To the extent that they have storage in Park

Reservoir, yes.

Q. When you say "they," who do you mean?

A. Whoever is moving the water into Windy Draw. I guess if Padlock is using it at that time it would be them.

Q. Are you aware that Padlock has these rights in Park Reservoir?

A. I don't know who owns the rights or what the agreements are for the use of that water.

Q. Other than Mr. Benzel, you didn't speak to any other irrigator who uses the Windy Draw Reservoir; right?

A. No. Most of my information about that, again, came from Pat Boyd, who talked about moving storage water from Park Reservoir down Soldier Creek to Windy Draw Reservoir.

Q. We don't have any documents that indicate that happens; right?

A. In the hydrographer journals, there's a reference or two to when they sort of shepherd that water down Soldier Creek, that they're watching that storage go and not letting other people divert it.

That's in one of the hydrographer journals from one of those years, but I couldn't tell you exactly where.

Q. That's the only reference you're aware of?
A. Yes.
Q. You're not aware of any permit to store water from Park Reservoir in Windy Draw; correct?
A. I don't know of any permit for that, or permits, that would be required for that.
Q. Turn, please, to page 71.
A. Okay.
Q. So this is the section of your report where you're talking about the post-'50 irrigated acreage. We've already talked about the storage and some of the smaller reservoirs, and you spent a fair amount of time with Mr. Kaste talking about this irrigated acreage. So I'll cover some of the same rights but certainly not all of them.

The first thing I want to ask you here is page 71, No. 8, you reference a map from Storm Cat Energy; right?
A. Yes.
Q. Now, you got that map from Dave Schroeder; correct?
A. I saw a copy of it in Dave Schroeder's office. I actually got the shape file from Storm Cat Energy.
Q. You don't know who made the map; is that

right?

A. I did at one time. His name is on the map. I can't remember it now.

Q. At the time you did your report, you didn't know who made the map; is that right?

A. I don't remember.

Q. You didn't talk to the person who made the map before you did your report; correct?

A. I talked to some people from Storm Cat Energy but not to the CAD person who actually made the map, no.

Q. And the map wasn't actually made by Storm Cat Energy; right?

A. Well, there's a contractor relationship there that I'm not real sure of. I got the information through Storm Cat Energy.

Q. The map that we're discussing, it indicates where CBM water was used; correct?

A. Yes.

Q. By it doesn't indicate when?

A. No.

Q. Turn, please, to page 73. This was one of the rights you discussed with Mr. Kaste, the Barbula right.

SPECIAL MASTER: Mr. Wechsler, I'm just

thinking this might be a good time for a break before you go into the individual properties, if that would be okay with you.

MR. WECHSLER: It is.

SPECIAL MASTER: Great. Let's take a ten-minute break. And we'll come back about 22, 23 after the hour.

(Recess taken 2:13 to 2:25 p.m., December 2, 2013)

SPECIAL MASTER: Okay. Everyone can be seated.

Mr. Fritz, you can retake the stand.

THE WITNESS: Thank you.

BY MR. KASTE:

Q. Mr. Fritz, before the break, we started discussing the Barbula right. But I do want to take one step back and talk one last time about Big Goose Creek, so if you could please find Exhibit M506.

A. Which one is M506?

Q. At the top it says "Site Tour, 6/26/12."

A. Okay.

Q. Do you have that?

A. Yes.

Q. We were talking about the N.B. Held right and the Alliance Ditch. And if you look at the bottom of

the very first page of M506, there you have a note about the Alliance Ditch. And it indicates that the "Alliance Ditch usually" -- what does that say?

A. "Dries up."

Q. -- "dries up Big Goose" -- actually, could you read that note, please.

A. You can't read that?

Q. Doing my best.

A. "Alliance Ditch usually dries up Big Goose. Return flows pick up so much. Return flows take care of senior rights."

Q. Does that refresh your recollection about the way Big Goose Creek operates?

A. I guess, yes. I remember writing this. My recollection was -- the question you had asked was were the calling rights -- the most senior rights were on Big Goose Creek.

Q. Did you consider the Alliance Ditch to be one of the calling rights?

A. No.

Q. And, again, if Mr. Boyd and Mr. Knapp said otherwise, would we follow their direction?

A. Well, there's not a conflict between a ditch drying up the creek and another right being the calling right.

Q. I understand that. But if Mr. Knapp and Mr. Boyd and Mr. Whitaker, for that matter, said that the Alliance Ditch was the calling right, would you disagree with them?

A. I'd have to understand why they would say that since it's not the most senior right on the stream.

Q. They are the ones who actually regulate Big Goose; correct?

A. Yes.

Q. And you've never regulated Big Goose?

A. I have not.

Q. Turning back, please, to the Barbula right on page 73.

A. Yes.

Q. My understanding is you zeroed out this right because you concluded that the area received water from Youngs Creek; correct?

A. The areas that I could see were obviously irrigated within that permit boundary, received their original supplies under Territorial rights from Youngs Creek, yes.

Q. You didn't speak to the irrigator, correct?

A. Not on that parcel.

Q. Youngs Creek is a small creek; correct?

A. It's small.
Q. And they have a supplemental supply from the Tongue River; right?
A. Who does?
Q. The irrigators using this right.
A. Yes.
Q. One of the reasons to get a supplemental supply is because there's not always sufficient water in your original source; right?
A. That would be one reason.
Q. You understand that 2001, 2002, 2004, and 2006 were dry years; correct?
A. Yes.
Q. In fact, somewhere in your report I think you say they were some of the driest years on record; right?
A. I think I said in my report that the gauge on the Tongue River near Dayton, the annual flows in those four years were the lowest four years ever recorded.
Q. Do you know what year the supplemental supply right for the Barbula right is?
A. What year it is?
Q. What's the year on the water right.
A. Oh, I'd have to look it up. It's a post-'50, but I don't remember what year.

Q. We have -- we can always look at the tables provided by you and Mr. Book to find that.

Turning now to the Delapp right. Now, there's no records of the CBM use that you're indicating there; correct?

A. I don't know that there are any records. I've worked for a lot of coal bed companies, and I'm sure there's records someplace, but I don't have any.

Q. Have you ever seen an agreement between Ms. Ankney and the CBM company?

A. No, I haven't.

Q. You indicated in your direct testimony and in your report that this property received water in 2004 and 2006; correct?

A. Yes.

Q. But not in 2001 and 2002; correct?

A. I said it didn't receive coal bed water in those years.

Q. But it did receive water in 2001 and 2002; correct?

A. I don't know that. It may have.

Q. And if it did, then there would need to be a correction to your report, right, because you didn't account for that use in '01 and '02?

A. I did not make an -- there was no ET figure

for that. The METRIC figures weren't done for 2001 and '2, so I don't know.

Q. If Ms. Ankney testified that she irrigated that property with Tongue River water, you wouldn't disagree with her, correct?

A. I wouldn't disagree with that, but I would say, if so, it was irrigated very differently. Because those pivots weren't put in until 2004, and the configuration of the irrigated lands was changed when the pivot went in. That old ditch went about halfway through that pivot. So it had been quite a bit less acreage irrigated before 2004.

Q. In fact, you show the contours of the water right in your Attachment 7; correct?

A. I don't know what you mean by "contours of the water right."

Q. Well, let's take a look at the Delapp aerial photograph, which is on a page that's Bates No. WY043202.

A. What page again?

Q. At the bottom right-hand corner of the photograph, it's labeled WY043202. And the -- it's an aerial photograph that you've superimposed some lines on, and it indicates "Delapp."

A. Okay.

Q. You show the contours of the post-'50 water right on that aerial photograph; correct?

A. I show a boundary of the place of use for that water right. That's the black line.

Q. And if Ms. Ankney testified that she irrigated that area, you'd have no reason to disagree with her; correct?

A. I'd have to hear her say that. Because I think she irrigated within that area, but it wasn't that area because that pivot wasn't there before 2004.

Q. How about if you read a transcript where she said that? Would that be enough for you?

A. Well, that would be different from what she told me, but I'd have to see it.

Q. Well, it seems like there's a number of things in here that are different from what people told you.

Would you agree with that?

A. Sounds like it.

Q. Now, your analysis does not account for any use by Ms. Ankney in 2001 and 2002; correct?

A. Correct.

Q. Turn, please, to page 76. This is the White right that I'm interested in discussing.

A. Okay.

Q. You spoke with Mr. White; correct?
A. Yes.
Q. And he confirmed that he was irrigating these lands in 2004 and 2006?
A. Yes.
Q. Now, I heard you say, when you were speaking with Mr. Kaste, that these rights became active in 2003. Was that your testimony?
A. Yes.
Q. Looking at page 76, I don't see where it indicates that; is that right?
A. That's right.
Q. Do you know the priority date on the White right?
A. I'd have to look it up. It's sometime in 2002, as I recall.
Q. Why don't we take a look at Exhibit M5. And I'll ask that it be put up on the screen here so that we don't have to dig it out of the large exhibit.
And I'm going to turn to Appendix G, and I believe it's on page 323 of that document.
A. What document?
Q. It should be showing up here. Actually, I'm sorry. It's page 322.
SPECIAL MASTER: Mr. Wechsler, does the

witness have a copy or does he need a copy?

MR. WECHSLER: Well, I can give him a copy, and I can look at the screen.

BY MR. WECHSLER:

Q. Mr. Fritz, I've handed you now what's been marked Exhibit M5. And we're looking at page 322. At the very bottom of that -- and, first of all, are you familiar with this appendix? It's from Mr. Book's original report.

A. I am.

Q. And these are -- it's labeled at the top "Post-1950 Irrigation Water Rights on the Tongue River"; right?

A. Yes.

Q. At the bottom here I believe is the right we're discussing.

On the very last right of the table, it indicates Bill White. Do you see that?

A. Yes.

Q. And what's the priority date?

A. 3/13/2000.

Q. So the priority date is in the year 2000?

A. Yes. What I was talking about was the statement of completion and the statement of beneficial use, and those are in 2003.

Q. Again, you didn't indicate that in your report; correct?

A. That was an oversight. I should have.

Q. And you didn't indicate that in your deposition?

A. No.

Q. We don't have any documents that indicate that before us today, do we?

A. I don't know. It was in the backup material that I submitted, the water rights, the printouts from the E permits. So I don't know if you have it or not, but it was given to you.

Q. Unfortunately, I don't have that here today.

MR. KASTE: I object to that statement, "I don't have it here today." He got it.

MR. WECHSLER: I don't have it here today. Thank you.

SPECIAL MASTER: Thank you.

BY MR. WECHSLER:

Q. If you would turn, please, Mr. Fritz, to the aerial photography indicating the White right in your exhibit, Exhibit W2, which is labeled WY043208.

And, Mr. Fritz, you talked about some additional acreage that you had left off your map; right?

A. Yes.
Q. I'm actually interested in talking about another portion.
Now, there was a portion of this right that you didn't originally include as irrigated; correct?
A. I'm not sure what you're referring to.
Q. Well, when you originally evaluated this right and you looked at the ET and the aerial photography, there was a portion that you did not include as irrigated that ultimately you changed to irrigated after you talked to Mr. White; correct?
A. Oh, yes, there was.
Q. Can you indicate which portion that is on the screen?
A. It's this piece right here.
Q. And so if we move to the next diagram, which is the METRIC, and let's look at 2006. This is on WY043210. It's the next one. And this is the METRIC from 2006.
So in looking at that parcel, it's indicated as a -- is it 9.9?
A. Yes, 9.9 acres.
Q. Looking at that 9.9 of the METRIC, you originally said, well, that's not irrigated; correct?
A. My initial examination of the aerial

photograph and the METRIC indicated to me it was not irrigated. Bill White corrected me on that.

Q. Turns out it was irrigated?

A. Yes.

Q. Before I move on to the next right, I did want to clean up one point on the Delapp right, which was the one with CBM that you spoke with Ms. Ankney about.

Do you recall that?

A. Yes.

Q. And Ms. Ankney is no longer using CBM water on that right; correct?

A. I think that is my understanding. I couldn't testify to that myself, but that's my understanding.

Q. In general, CBM production is slowing down?

A. Yes.

Q. And so there's less water available for these folks with post-1950 rights?

A. There's less CBM water available for anything, yes.

Q. With -- looking back at the White right, I think you indicated -- and you spoke about the school right as well, that there were pre-1950 rights that were being transferred to that location; is that right?

A. Yes.

Q. And when that transfer occurs in Wyoming, there's no consumptive use analysis; right?

A. Normally, when it's just a change in place of use, like for irrigation without a change of use, they don't require a consumptive-use analysis.

Q. Turn, please, to page 79. And I'm looking actually at the Addleman right which begins on page 78 to 79.

And it was interesting to me because, if you look at page 79 in the first full paragraph here, that begins "This limited."

Do you have that before you?

A. I have page 78.

Q. And it's actually a paragraph on page 79.

A. Okay.

Q. The paragraph begins "This limited irrigation."

A. Yes.

Q. And there's a sentence here that indicates -- now, you spoke with Mr. Fisher; right?

A. I did.

Q. There's a sentence here that says, "Mr. Fisher confirmed that the eastern portion of the property is irrigated much more than the western portion. Price of diesel fuel is part of the reason

for the sporadic irrigation."

Do you see that?

A. Yes.

Q. Did you understand Mr. Fisher to be saying that there was some irrigation on the western portion of his property?

A. No, not in these years.

Q. And so what did you mean when you said "is irrigated much more than the western portion"? You actually meant zero?

A. Yeah. Yes.

Q. At the bottom of page 79 is the McTiernan right.

Do you see that?

A. Yes.

Q. You didn't speak with anyone from the McTiernan family; correct?

A. No.

Q. Or anyone that runs this operation?

A. No.

Q. In discussing the permit 7267, which is the first one there, you say that there was no water from Owens Ditch in July; right?

A. Yes.

Q. They could have received water earlier in the

year; correct?

A. It's possible.

Q. And that would have been true for all the years we're discussing, 2001, '2, '4, and '6?

A. What could have been true? That it could receive some water sometimes?

Q. It would have received water before being regulated.

A. It's possible.

Q. Likely; is that fair?

A. I don't know that.

Q. If it's a free river, there's nothing to stop them from taking the water; correct?

A. If you saw Smith Creek, you'd have to wonder what a free river is on that place. There's lots of water rights and not much water, but there could be constraints at any time on how much you could divert.

Q. If the water is available, they divert it?

A. Yes.

Q. Looking at the permit 32200D, which is one of the McTiernan rights listed on page 80.

Now, here you indicate that the area was irrigated during the years in question; right?

A. Yes, it does indicate irrigation.

Q. And you found that out by talking with -- was

that Mr. Boyd?

A. Well, it indicates irrigation on the METRIC figure. The aerial photograph seems to indicate irrigation.

Q. You also indicate, in your narrative on page 80, "The area was irrigated during the years in question according to the hydrographer in District 5."

A. Yes.

Q. And that's Mr. Boyd?

A. That's Mr. Boyd.

Q. But you removed this from the list from Table 11A because the acreage received water from Bear Claw Love No. 1 Reservoir; right?

A. Yes.

Q. What's the priority date on Bear Claw Love No. 1 Reservoir?

A. It's a post-'50.

Q. Turning to the Lomax right on page 81. This is a spreader system; correct?

A. It is.

Q. There's no way to regulate or curtail a spreader system; right?

A. I'm sorry. What was the question?

Q. There's no way to regulate or curtail a spreader system?

A. Not that I know of.
Q. Is there water in Earley Creek?
A. You'd have to put a time scale to that. There is sometimes when it rains.
Q. Early in the year?
A. If there's precipitation.
Q. Throughout the year if there's precipitation?
A. Yes.
Q. If that's not captured by this spreader, does it make it to the Tongue River?
A. It should, yes, if nothing catches it.
Q. And there's no record of this diversion; correct?
A. No.
Q. Turning to page 84, this is the Koltiska right.

Now, when you discussed this right with Mr. Kaste, he took you to an attachment that indicated this was from reservoir water. And I wondered if, when you look at page 84, this really talks about CBM water. And if you wanted to clarify which of those it came from, that would be helpful.

A. That's why I think I was confused when I was trying to answer that question.

My recollection was it's CBM water. I have a

footnote wrong in that table. That should indicate it was CBM water.

Q. You just put the asterisk by the wrong --

A. Yes.

Q. So this right actually had to do with CBM water?

A. Yes.

Q. And it looks like, in fact, you spoke with Mr. Koltiska; correct?

A. I did.

Q. The CBM development, there was some irrigation prior to CBM on these properties; correct?

A. I don't know. There was a water right, but I couldn't testify as to how much irrigation there was.

Q. The CBM didn't go on until 2006; correct?

A. That's what I got from Mr. Koltiska.

Q. You indicate here that the -- in the bottom paragraph of page 84, there's a second sentence, "The following information was provided by Gary Koltiska."

You see that?

A. Yes.

Q. Next sentence: "Prior to CBM development, small portions of this property were occasionally irrigated using tailwater from the No. 9 Ditch from Prairie Dog Creek."

You see that?
A. I do.
Q. So it was irrigated prior to 2006; right?
A. That statement was taken from him. If you read the previous paragraph, it doesn't look like it was irrigated in 2004 from the METRIC evidence. So that's the reason for saying it must have been sporadic. Probably just based on occasional availability of flows.
Q. You don't know about 2001 and 2002; right?
A. No, I don't.
Q. Mr. Koltiska indicated that it had been irrigated in the past. Is that right?
A. Is that a question?
Q. Yes.
A. He -- I don't remember getting a statement from him like that.
Q. Well, you do indicate that this information was provided by Mr. Koltiska, that small portions were occasionally irrigated; right?
A. Yes.
Q. So it had been irrigated in the past?
A. Some parts of it. I don't know which parts.
Q. You just don't know what years?
A. Don't know which parts what year, right.

Q. It is a post-'50 right; correct?
A. It is.
Q. Turning to page 85, there's a Koltiska KN Pump.
A. Yes.
Q. Now, we agreed that the typical irrigation season starts in May; correct?
A. Typical.
Q. Other witnesses have testified that there is water in Cat Creek at the beginning of the year.
Do you agree?
A. I don't think you could say that in every year, no.
Q. In some years there is, correct?
A. Yes.
Q. And if that water was available, it would have been available for irrigators; correct?
A. Yes.
Q. Including Daniel Koltiska?
A. Yes.
Q. The reason you zeroed this out is you indicated that there was access to Kearney Lake water; right?
A. Yes.
Q. Typically that water gets started sometime in

July; correct?

A. Yeah, typically.

Q. At the bottom of page 85 is the Pilch right. You're familiar with this right?

A. Yes.

Q. And I think you said you spoke with Mr. Pilch more than once; right?

A. Yes.

Q. Are you aware that there are areas in -- that he irrigated that are not listed as irrigated in your Attachment 7?

We can look at it if it would be helpful.

A. That would be helpful.

Q. It's one of the last rights in Attachment 7, one of the last pages, labeled at the bottom WY043250.

A. Okay.

Q. On this aerial photograph, the areas that you included as being irrigated are outlined in blue; correct?

A. The areas that I indicated within post-'50 permit boundaries that are irrigated are outlined in blue.

Q. The other areas, the nonirrigated portions of the post-'50 right, are outlined in black; correct?

A. Yes.

Q. And the areas that you believe were supplied by CBM water are shown with the red hashing; right?
A. Yes.
Q. Are you aware of any lands, outside of that red hashing but within the post-1950 right, that were irrigated by Mr. Pilch in 2004 and 2006?
A. I'm not aware of any. And the evidence on the METRIC maps don't seem to indicate any. So, no, I'm not aware.
Q. Are you aware that Mr. Pilch testified in this proceeding?
A. I am aware of that.
Q. You were not present for that testimony?
A. No.
Q. Even on the map that you're providing -- well, first let me say, Mr. Pilch would be the best source of information as to what he irrigated in '04 and '06; correct?
A. Well, I'd have to say that I'd have to look at all the -- if I had to make a decision on that, I'd have to look at all the evidence.
Q. You wouldn't believe Mr. Pilch even if he told you "I irrigated that"?
A. It wouldn't be a matter of believing him. He might have a misunderstanding of what question he was

asked. I don't know. I don't know what the situation was.

Q. You don't know what happened in '04 and '06?

A. I do not.

Q. Might be helpful to ask someone who was there; right?

A. I did.

Q. And, of course, he wasn't under oath when he spoke with you, was he?

A. No. Neither of us were.

Q. He was under oath when he testified here, so maybe we'll go by that.

Now, even on your report, you're indicating that in '04 and '06 those lands were irrigated by CBM water; correct?

A. The hatched lands on this map, yes.

Q. You don't have any information about '01 and '02; right?

A. No.

Q. And if Mr. Pilch indicated that he irrigated those lands in '01 and '02, would you believe him?

A. Well, I think he told me the CBM water was being used in '01 and '02. So, yes, I would believe him.

Q. Now, if he testified here under oath that

that CBM water didn't come in until '03 and '04, what would you say to that?

A. I would say that's different from what he told me, but I couldn't adjudicate the truth on that one.

Q. You read his deposition?

A. No.

Q. Finally, we have the Rose right, which is on page 87. Well, 86, spilling over into 87.

A. Okay.

Q. This one you zeroed out much like the Koltiska KN Pump because of the availability of reservoir water; correct?

A. Yes.

Q. So the same discussion we had regarding that one would apply here; correct?

A. Same discussion?

Q. About the availability of reservoir water.

A. That's the reason for zeroing it out, you mean?

Q. And the availability of Kearney Lake Reservoir, all of those types of concepts apply; correct?

A. Yes.

Q. Now, at the end of the day, you're not

indicating that Wyoming's impact from post-1950 use is zero; right?

A. No.

Q. In fact, I think you think it's 1300 acre-feet per year, or something like that, on average?

A. Yes.

MR. WECHSLER: Your Honor, may I have a moment?

SPECIAL MASTER: Yes, you may.

MR. WECHSLER: Nothing further, Your Honor.

SPECIAL MASTER: Okay. Thank you, Mr. Wechsler.

EXAMINATION

BY SPECIAL MASTER:

Q. So, Mr. Fritz, I actually have fewer questions than I originally thought I was going to have for you because one of the nice things about waiting until counsel for both sides ask their questions is that frequently the various questions that I've had to begin with have been answered.

But I still do have some questions. Most of them are just an effort on my part to make sure that I understand everything that is in your report and, to the degree, if something is a little bit confusing to me, to permit me to clarify it.

So let me start out -- a lot of my points are going to be relatively small. Let me start out on page 12 of your report. And I'll try to key everything in to your report.

So on page 12, this is the Request for Regulation form. And, as Mr. Wechsler pointed out, this is the first time we've actually seen one of these, so you're the first person I've actually been able to ask any question about it.

I noticed that the third sentence says, "If you do not have an approved headgate and measuring device presently installed, your request for regulation will be subject to review by the hydrographer commissioner or water commissioner and/or division superintendent."

So -- and if you don't know the answer to this, say so. But I'm curious. I understand the part about if you don't have an approved headgate and measuring device, but I don't understand what the other portion of it means.

A. I can give you my understanding of it. It means if -- your call won't be honored under certain conditions.

Q. Okay. So it doesn't mean that it will never be honored under those conditions but that the

hydrographer commissioner or water commissioner, the division superintendent, will think about it?

A. Yes.

Q. Okay. And then turning to page 16 -- and this is a question I could have asked earlier, but it just never occurred to me.

At the very bottom of the page it says, "At 1 CFS per 70 acres, the 49.45 CFS of Territorial rights could irrigate 3460 acres."

So my question here is, under Wyoming law, I've assumed that water rights also attach to certain acreage. Is that correct?

A. Yes.

Q. So if you have Territorial rights to a certain amount of cubic feet per second, does it automatically mean that you're going to have the acreage to apply to that at a rate of 70 acres for every 1 CFS?

A. It means that at one point in time, they thought they could irrigate that much acreage. Territorial rights, by definition, predate the state and the state permit system, so a lot of your Territorial rights are what they call blanket appropriations. And they might be 360 acres inside of 500 acres or 800 acres, so they don't have a real good

location specific to them. But it still should be 1 CFS per the number of irrigated acres that they could irrigate.

Q. And then at a certain point in time the state began to more clearly define what the exact property was to switch the water rights attached?

A. Yes.

Q. And do you know when that was?

A. Well, it's about when it became a state because then the state permit was set up. And then people had to supply a map with their permit application rather than just send in the blanket appropriation and say here's what we had.

Q. Okay. Then if you turn to page 18.

A. Okay.

Q. So I have a number of smaller questions here.

So I noticed, for example, that on some of the pre-Compact water rights, where you've indicated that they don't divert or it's been abandoned, that there are no numbers in the CFS, which struck me as reasonable, since presumably they no longer have any water rights. But in other cases, like the McCuistion, No. 57, No. 66, the enlarged Wagner, I notice even though they're abandoned and they don't divert, that you put numbers in there.

Is that just a mistake?

A. Where I had information like that -- some of this came from the schematics that we were looking at from the hydrographer commissioner, and where I had information like that, I transferred it to this table.

Q. Okay. And, then, so just to follow up on that, it doesn't mean that they actually still necessarily have a right to that amount of water or that they're diverting that amount of water; it's just if you had a number, you inserted it?

A. Yes.

Q. Okay. And then I noticed that on page 18, it's the continuation of the sentence from before, but it says there that "...roughly, 9600 acres of land are actually irrigated along the main stem of the Tongue River equal to about 70 percent of their pre-Compact rights."

So what's happened to the other 30 percent of the pre-Compact rights?

A. My understanding is the water uses have actually grown to fit the availability of water. They are probably -- for one reason or another, those lands have gone out of production or there wasn't enough water for them or they were filed and weren't really put to use.

There could be a number of reasons. But this is typical everywhere you go in the state. There are many more water rights than there are actual irrigated lands.

Q. So some of those other rights might actually -- if they came up, could be found to have been abandoned, for example?

A. Yes.

Q. Okay. And then if you could turn to page 26, I have some questions here. So this is just trying to get the numbers straight.

So you say at the top of the page that there are 41 water rights listed in the table, 30 of which are for original supply. And then down in the bottom paragraph you talk about the post-1950 original supply water rights in Table 3-7, that 11 list the source as the main stem of the Tongue. And then you say 6 of these rights or the -- well, let me sort of step down. 6 of these rights are enlargements of ditches found in Table 3-2.

So is that 6 of the post-1950 original supply rights or is that 6 of the 11 that list their source as the main stem?

A. 6 of the 11 that list their source as the main stem.

Q. Okay. And then you say 4 of the water rights are on Smith Creek. So that's separate from the 11; right?

A. Yes.

Q. Okay. And then you have, on page 28 --

A. Wait a second. I need to read these more carefully before I --

Q. That's fine. I'm not trying to trick you. I'm actually just trying to figure out the numbers. 'Cause if I include the 6 on top of the 11, I get --

A. I'm sorry. I misspoke. That's 6 of the total of 30 are enlargements of ditches listed in Table 3-2.

Q. So here's my question: If I take the 11 and the 6 and the 4 and then I add the 13 that's at the top of page 28, I end up with 34 rights. And, ultimately, it may not be that important, but I was --

A. Maybe I better count what's in the table. I got 41 total in Table 3-7.

Q. Tell you what. Rather than taking a lot of time right now, if you want to take a look at that during the break, if you can clarify that, that's great. And if the numbers don't quite balance, like I say, it's probably not going to be -- but I started making a table for myself, and when I did that, I ended

up --

A. I will clear that up.

Q. And I'm just going to make sure I understand how to actually understand your history.

So if you turn to page 31, just as an example, you have at the bottom that "The flow in Wolf Creek did not rise above 20 CFS until May 4, explaining why regulation was necessary in April."

And then you go on to say, "On July 3 the flow dropped back below 20 CFS, where it remained for the rest of the season. Thus, in 2004, there were only two months of unregulated diversions."

So basically, as I understand the history here, whenever you have a key flow rate of, in this particular case, like 20 CFS for Wolf Creek, during the periods of time when the flow is above that amount, unless there's some other evidence in the record, then one would not expect that particular stretch of waterway to be regulated. But whenever it drops below that, you would expect it would go into regulation. Is that correct?

A. Yes. Generally speaking, that's true.

Q. So here, for example, because it rose above 20 CFS on May 4th and then did not drop back down until July 3rd, that's why you say there's that two-month

period, May 4 to July 3, when diversions were unregulated?

A. Yes.

Q. Actually, let me just go back to page 26 for a moment. This is where I was discussing those numbers with you a moment ago.

When you refer to original supply water rights, and in this particular case you're referring to post-1950 original supply water rights, you're referring to those post-1950 water rights that are not classified as supplemental?

A. Yes.

Q. Okay. And Mr. Wechsler asked you earlier -- on page 27, he noted that a number of the rights -- or he asked you earlier how to define "supplemental." I noticed on Table 3-7 that a number of these rights are listed as supplemental, and I also noticed that none of those have an actual amount attached to them.

So is that just because you didn't list them, or do supplemental rights not have a particular amount attached to them?

A. They don't have an amount. What they are is they supplement your diversion from a different source up to the original 1 to 70. So if you've got 1 to 70 appropriated from your original supply, you can

supplement that by whatever you're short on your original supply.

Q. Okay. And so, for example, if I were to take a look at the second of the lines here, which is -- on Table 3-7, which is permit No. 5767E for the Enlarged Interstate Ditch, and that's listed as supplemental, in order to determine how much water could potentially be involved there, I would then go to the original appropriation for the Interstate Ditch?

A. Well, you'd have to go to it on a particular day or a particular point in time and see what they're actually getting from their original supply before you would know how much they were entitled to from their supplemental supply.

Q. Understood. But that's not in your report anywhere?

A. No.

Q. So if I wanted to figure out what the maximum was, how would I figure that out without knowing what it is on any particular day?

A. I think that's the reason these aren't listed in this study. I don't think there's a way to know without a realtime look at what's going on on that particular piece of ground.

Q. Okay. But to the degree that there are these

supplemental post-1950 rights, they actually increase the amount of post-1950 water that, at least in theory, could impact Montana; is that correct?

A. Yeah. If you assume that the original supply is out of water and the supplemental supply is fully there, which I don't think you can make an assumption of that in every case, but under that hypothetical situation, then there would be more water use from the source of the supplemental supply.

Q. And why do people ask for supplemental rights?

A. It's typically a situational thing, in my experience. I'm sure there are lots of different reasons for doing it.

In some cases, the supplemental supply is actually a more reliable source than the original supply. Why they started with the original supply would have to be another study in itself.

Q. Okay. But I think you've helped me now understand why, you know, neither you nor Mr. Book actually spend much time talking about numbers for supplemental water rights, is that it's difficult to go to any particular location and figure out what the amount of a supplemental right use might be in a particular year.

A. Yes. It's very difficult to generalize about one. You got to look at that right on the ground at a particular time.

Q. Okay. And then turning to page 34, then, this keys into what I was just talking about.

The -- when you have in the third paragraph there "Table 3-7 shows there are 4.69 CFS of post-Compact diversion rights on the main stem of the Tongue River," that's actually 4. -- is that 4.69 CFS of original --

A. Yes.

Q. -- post-Compact? Okay.

And in the next paragraph you say, "Spot discharge measurements were only made at one headgate."

And I just want to make sure I understand. When you say a "spot discharge measurement," is that basically measuring how much water is diverted from the river through that headgate?

A. Yes.

Q. Okay.

A. I use the term "spot discharge measurements" to differentiate in the hydrographer report some of the diversions that actually have recording gauges on them. And they will keep a continuous record during the season, and spot measurements are made on the days when

the hydrographer goes there and actually takes a reading. That's the difference between the two.

Q. Okay. That's helpful. I also wasn't sure -- the term "discharge," I normally think of somebody who is putting something back into a river rather than pulling it out, so it was terminology I wanted to make sure I was familiar with.

During 2004, then, that was the only -- was that the only -- that was the only measurement of the headgate on the main stem that you're aware of?

A. Yes.

Q. Okay.

A. Other than, as I said, the recording gauge on the High Line Ditch.

Q. All right. And then this might have to do with the geography that you were talking about, in part, with Mr. Wechsler. But I was also confused. On page 38 you're talking about the 2006 year, and you say in the first full paragraph, under the recap of the water year, "The Tongue River near Dayton peaked on May 23rd, and by August 24, the flows had receded to below 40 CFS, the level below which regulation is required on the main stem."

But then in the first full paragraph on page 39, you say, "On July 24 the Tongue River was regulated

for the O.Z. & K. Ditch.

So it wasn't clear to me, if it wasn't below 40, why there's any regulation.

A. That's, again, an illustration. And this isn't well stated in this report. Those are just indicator flows that the hydrographers have learned from experiences when regulation is likely. It doesn't mean anybody is going to call for regulation at that point in time.

It doesn't mean that there's any automatic regulation at that point in time. It's just when they have come to expect it. So it could occur before or after that depending on whatever is going on at any particular headgate.

Q. Okay. And I'm sorry. In addition to the spot discharge for the South Side Ditch, you said that there was also measurement of a diversion gauge for which water right?

A. The High Line Ditch.

Q. Okay.

A. It's high up on the Tongue River. It has a recording gauge.

Q. Okay. Thank you. I was just trying to compare my notes.

So I was also confused on pages 47 and 48.

So here we're talking about the Little Goose. And you note here that, in the bottom paragraph on page 47, "...the hydrographers have learned that a flow rate of 14 CFS going past the Colorado Colony Ditch headgate is sufficient to satisfy downstream rights." And then on the Figure 3-10 on page 48, you have a key flow rate for regulation being 80 CFS.

And it wasn't clear to me where the 80 CFS came from, and I might have missed something on an earlier page.

A. Okay. The 80 CFS is at the upstream gauge on Little Goose Creek. That's a different gauge from the one below the Colorado Colony Ditch.

Q. Okay. And so you have the two different ones. And even if it's not stated elsewhere, the key flow rate for regulation of the Little Goose is 80 CFS?

A. That's their key flow rate there, yes.

Q. Okay. Let me ask you one other question, and then I'll need to take that 3:30 break I mentioned. We'll have like 20 minutes. And then I'll come back, and I'll just have a few other questions.

But there was the paragraph on page 57 that you were talking to Mr. Wechsler about earlier. And I've -- just need it explained to me. This is the paragraph on page 57 that begins, "Under the

hydrographers' direct supervision, the caretaker was instructed in late May, when he was able to access the lake, to set the outlet gates to maintain a level flow rate below the dam which equaled the lowest flow during the day."

So what I didn't understand was what it means to maintain a level flow rate below the dam which equals the lowest flow.

A. There's a lot of concepts in there, and I see why it's confusing. What they were trying to do is set gates so the reservoir isn't either releasing storage or gaining storage.

They are trying to set it -- now, remember these are pretty remote locations. So they're trying to set it so, during the day, there's no change in storage. They're releasing direct flow up to whatever occurs.

Well, they have -- and it's particularly noticeable during the snowmelt season. There's a diurnal fluctuation to the runoff because it melts a lot faster in the daytime and then slows down at night. So rather than having to be up there constantly, they were trying to find a flow rate they could set the outlet gate at to make sure they weren't storing and not releasing storage on average through the day.

Q. So I think I understand now. So.

Basically what this is saying is you set the outlet gate to maintain a level flow rate out of the reservoir which equals the lowest flow of water during the day into the reservoir?

A. Yes.

Q. And that's why you then say, in the next sentence, that it "allowed the reservoir to store during the high-flow period of the day"?

A. Yes.

Q. Okay. Actually, since we have a moment more --

A. I could have worded that a little better. Sorry about that.

Q. No. This is -- as I say, my goal is just to make sure I totally understand all parts of your testimony.

So on page 63, you say, in the middle of the page, "Over the course of one year, the 2808 acre-feet converts to a steady flow rate of 3.9 CFS, which is equal to the diversion rate that can be appropriated to irrigate about 270 acres in Wyoming," which is the 1 CFS per 70 acres.

And I hadn't actually stopped to calculate this before, but when I then calculated how many

acre-feet per acre that is, that is, by my calculation, about 10.4 acre-feet for every acre irrigated.

So is that the amount of water generally used to irrigate an acre of land in Wyoming?

A. No. This is a flow rate through the year. They only actually divert about three or four months a year to these lands. So the diversion rate is related to acres, but the volume is not related to acres.

Q. Okay. So then this would be -- this 2808 acre-feet would actually irrigate more than 270 acres in Wyoming?

A. It would -- if you could distribute it evenly, it could put a foot of water on 2800 acres. And that's about -- according to the basin plan, you know, it was about equivalent to how much water they actually use, about 1 foot.

Q. Okay. And so why is it -- explain to me again, then, why is it that, if you're receiving the CFS of rights, what you're saying is you're not using that CFS throughout the year?

A. No. It's just a May-to-September diversion typically.

Q. Right. So if you take just the May-to-September portion of it, then -- and convert that to the acre-feet, then that would be a better

calculation of how many acre-feet per acre is actually being used? Or is it just impossible to make those calculations?

A. Well, that's what I say, putting these so-called impacts to volume doesn't tell you very much. You've got to consider all these other aspects of how that constitutes an impact.

Q. Okay. So just -- so all this is saying is that if you were to -- if you use the -- your maximum CFS and no one else could use that, then all you'd be able to irrigate is 270 acres?

A. Yes.

SPECIAL MASTER: Okay. Why don't we break for 20 minutes right now. And then I have a couple more questions. And then Mr. Wechsler can ask -- actually, Mr. Wechsler on cross and Mr. Kaste for redirect. So, as I say, it will probably be about a 20-minute break.

(Recess taken 3:31 to 3:59 p.m., December 2, 2013)

SPECIAL MASTER: Okay. So I'm going to try and finish up here in about 10 or 15 minutes.

BY SPECIAL MASTER:

Q. So if you turn to page 65. And this is your discussion of the post-1950 storage, compact

reservoirs.

The first thing -- I should probably take a look back, but is all of Kearney Lake, is all of that post-1950?

A. No.

Q. Is all of it that's brought over post-1950?

A. No.

Q. Then why is it that -- if the -- so I understood your argument here as to why you're looking at this is that this is water that has come over from the Powder River and wouldn't be there as return flow if it were not for the -- in this particular case, for the importation of the Powder River water. Is that correct?

A. The study that we did on the import only included the post-'50 part of Kearney Lake because the pre-'50 part was assumed to have been the base case that was there. So we just looked at the post-'50 part of Kearney Lake Reservoir that's been imported for this study.

Q. So the reason why you're just looking at post-1950 in this particular case and not looking at the return flow from everything that's being imported is because of the assumption that, to the degree you have pre-1950 water that's being imported over, that

actually was also true at the time of the compact?

A. Yes, so it's not an impact.

Q. And that water has been imported since before 1950?

A. Yes.

Q. So one of the questions that will come up from a legal perspective is how to actually treat such return flow under the compact. And I'm not going to ask you to give any opinion as to whether or not that return flow from post-1950 water that is imported over into the Tongue River area should be credited, in a sense, towards Wyoming's account, but I'd like your help just a little bit in thinking this through at the moment.

So are you aware of any situations in Wyoming that you've ever worked in where you have somebody who is importing water and using it on their lands, and then a senior water right holder downstream was not receiving enough water in order to meet their full water right, makes a call on that water user regarding post-1950 water that they are using at that particular point in time, and asks that that post-1950 water be regulated?

A. I'm not aware of any situation where that's come up. Post-'50 is kind of a unique thing to this

compact.

Q. Actually, let me clarify that, because I realize I started out with one hypothetical and then I ended up with a different one.

What I'm trying to do is get away from the compact situation and think about this as if it were a situation purely as a matter of Wyoming water. And so what I'm imagining is you have a junior upstream water user and a senior downstream water user. The upstream junior water user imports some water over, uses it on their land. And there's return flow from that water that goes into the river in this particular watershed.

In spite of the fact that the return flow is in the river, there comes a time in the year when that downstream senior appropriator is not getting as much water as he or she is entitled to and calls up the local water commissioner and says, "I want you to regulate that post-1950 water that's being diverted from the river upstream from me by that person who also" -- "by the way, also happens to be importing some water."

Have you ever run into that type of a situation?

A. No, I have not.

Q. Then if we turn to page 71 of your testimony,

Mr. Wechsler asked you earlier about the information that you got from Storm Cat Energy, and I just have a couple of additional questions.

The first thing is that it says here that what you received was a shape file.

Could you explain what a shape file is?

A. Yes. A shape file is a digital file that, when incorporated into the correct software, will draw these boundaries on the map. Those boundaries that are geo referenced have geographic information associated with them.

Q. So it's basically a data file that can be used to superimpose over a GIS map of a particular area where particular boundaries are?

A. Yes.

Q. Okay. And did you -- when Storm Cat Energy gave you this shape file, what did they say that the shape file was of?

A. I had seen a hard copy of the map in the division office in Sheridan that showed lands that had been irrigated with CBM. And when I saw that on their wall in there, I said, "That could be useful for this project that I'm working on. I'd like to have a copy of it."

And Dave said he couldn't give me one; it

wasn't his property. But he put me in touch with the Storm Cat people who -- they're working for a firm that has acquired a lot of the older CBM properties in the area. And they have compiled information from a lot of different CBM operators. J.M. Huber was -- there are several companies that operated it. And they've been acquired and put together into this project.

So I asked them if I could have that shape file so that I could create these red hashed patterns and overlay it on our mapped irrigated lands and see which ones coincided with irrigated lands.

Q. So this was a file that showed lands that had utilized CBM water at some point in time?

A. Yes.

Q. And were you told what period of time the file covered?

A. We weren't given all that information, no. What we -- and I should say that we didn't just use it. We supplemented that. I circulated that map around our office. We have several engineers who have provided a variety of services for coal bed operators. And they added areas that they were familiar with, that they also knew were irrigated with coal bed water.

Q. So when you say here in paragraph 8 that "Other areas known to have been irrigated with CBM

water were also added to this figure," is that a reference to passing it around your office for additional information?

A. It is. It's a reference. But the only realtime information I got was when they coincided with one of the post-'50 properties in the Montana expert report, then I talked to the owner of that land. And that's when I got my time scale of when this was being used on those lands.

For other properties that weren't part of this study, it didn't really matter.

Q. So that's helpful.

So the map, then, which is Figure 4-1, which is on the next page, that is basically a map that you had that you then superimposed the data from the shape file as it was modified by additional information you got from people in your office; is that correct?

A. That's right. Actually, the base for this map came from the Montana expert report. It was their map of irrigated lands, and then we used that and superimposed this information.

Q. Okay. Thanks. And I also just want to get a better sense of how you determined areas that were actually irrigated.

So I'm just taking one of the first places

where you mention -- this is, I don't believe, one of the permits for which you and Mr. Book have any disagreement at this point. But this is the Johnson and Stroup permits that are discussed at pages 74 to 75.

And at the top of page 75, you note that "Table 11-A was revised to reflect the actual irrigated area of 3.6 acres rather than the 5 acres used in the Book report."

And so, again, I'm just trying to understand your particular process. So if we look at the Stroup and Johnson maps, and they start at Wyoming 43199 at the back of your report.

A. Yes.

Q. So I notice the area that you have outlined in blue. So when you would first do your first run at what was the areas irrigated, you would take a look -- would you take a look at the 2006 map and then draw a boundary around what appeared to you to be irrigated?

A. That was our first shot, was this 2006 color photo.

Q. So you would do it based on the aerial photographs. And then after that, you would then take additional information into account?

A. Yes. We superimposed the same shapes on the

METRIC for '04 and '06 to see if the METRIC data would support that delineation of irrigated lands.

And then also talked to hydrographer commissioners about their knowledge of the area, and the owners.

Q. Okay. That's what I thought. But, again, I just wanted to make sure I understood the exact process that you used.

And then on page 79, that's -- the top paragraph is one that Mr. Wechsler asked you about earlier. It's the one that Mr. Wechsler asked you about, the sentence that "Mr. Fisher confirmed the eastern portion of the property" -- sorry, the eastern portion. I think that might have come out as Easter portion -- "the eastern portion of the property is irrigated much more than the western portion. Price of diesel fuel is part of the reason for the sporadic irrigation."

And then you say, "Mr. Fisher stated that the western part of his property may not have been irrigated at all in 2004 and 2006."

And do I understand your testimony now is that that sentence should read, "Mr. Fisher stated the western part of his property was not irrigated"?

A. That's my understanding from everything, he

did not irrigate there.

There is, I think, a natural tendency to not be absolute with anything. For one reason, there's a section of the Wyoming law that says if you don't use a water right for five years when water is available, it's subject to abandonment. And you wouldn't want too strong a statement, you know, to be attributed to grounds for abandonment. So I'm naturally careful about saying that absolutely was not irrigated at any point in time.

Q. So did he tell you it was not and you modified it, or did he tell you maybe not and you think he was trying to be cautious?

A. He actually said he couldn't remember for sure, but he may not have irrigated at all in those two years. That's what he told me.

Q. Okay. And dates are important, as you know. So if you turn to page 84, you'll see in the bottom paragraph, about halfway through, it says, "CBM development in the area began in about 2006." So -- and this appears to be based on information from Gary Koltiska.

Do you know whether or not he said "about 2006," or he said "2006" and you changed it to "about 2006"?

A. He was a little vague there. We have two points in time. We have the '04 METRIC, in which case it was not irrigated, and '06 METRIC, in which case it was.

So whether it was in 2006 or prior to 2006, I don't know. And he wasn't really definite.

Q. Okay. I would find it to be difficult to be definite about something that happened seven years ago also. So I'm actually impressed sometimes on how good some people's memories can be.

Then if you look on page 86. I think this is the last question I had specifically in the report.

There's -- in the second paragraph, you note, "The red hatching on the 2006 aerial photo for the Pilch permits in Attachment 7 indicates lands that were being irrigated with CBM water in the 2004, 2006 time frame."

So that is, again, from the Storm Cat file; is that correct?

A. Yes.

Q. And let me just look through my notes from earlier today. There was, I guess, one other thing I wasn't clear about when you were talking earlier.

I believe, when you were talking about people who would switch from flood irrigation to sprinkler

irrigation, that sometimes they redefined the land that would be serviced by their water right. I remember that you were talking about that subject.

A. Yes.

Q. And could you explain what it is that you have to do in order to do that?

A. Yes. Well, it depends on what the situation is that you start with. Remember, I said some of these old Territorial rights are blanket permits. So they have never had a real good description of where the 600 acres is within the 800 acres of the blanket permit.

In that case, we go in and redescribe their irrigated lands so that there's an actual map with a place of use showing the new locations. If they had a permit map before, then you prepare a map showing what the existing situation is on the ground, where the irrigated acres are, and where they are going to be after we put this pivot in.

And you actually move irrigated lands -- a lot of people put their best and oldest water rights under their best irrigation system, in this case the pivots. And that's what most people do when they switch from flood to pivot.

In the White case, he actually filed for a

new permit for the lands that weren't previously covered by permit but that the pivots were going to hit.

Q. So when he filed for a new permit, that new permit would then have today's priority date?

A. Yes, parts of it would, the new parts.

Q. And to the degree that -- and feel free to break this up by type of water right.

But if you are taking the area, changing it now that you're going to be sprinkling in a different area than you necessarily flooded, does that require a change proceeding?

A. It requires a change of place of use. But it's -- since it's not a change of use, it doesn't require normally a consumptive-use study.

Like if you were changing it to municipal or industrial or that type of use, then you have to actually go in and quantify how much water is being consumed before, and that's all you have to transfer.

SPECIAL MASTER: Okay. Thank you.

Mr. Wechsler?

MR. WECHSLER: Couple questions.

THE WITNESS: If I could just --

SPECIAL MASTER: Yes.

THE WITNESS: Your other question, the -- I

wish I had a better answer.

SPECIAL MASTER: That's fine. On those earlier numbers?

THE WITNESS: They won't all total 41 that's in that table. It's a summary, but it isn't an all-inclusive summary. So that's why they don't add up to -- some of the water rights that are enlargements are also original supply. And each one of those different categories does not add up to the total number water rights in that table.

SPECIAL MASTER: Okay. I appreciate that. I like tidiness on my table, so when the numbers weren't adding up, I was trying to figure it out. So I appreciate that.

Mr. Wechsler.

MR. WECHSLER: Thank you, Your Honor.

RECROSS-EXAMINATION

BY MR. WECHSLER:

Q. Mr. Fritz, I have questions about four different issues that the Special Master asked you about. And the first, the Special Master asked you about the High Line Ditch and the measurement device on that ditch.

Do you recall that line of questions?

A. Yes.

Q. Do you have Exhibit M438, which is the schematic, still before you?
A. Yes.
Q. Second-to-last page of that document has the Tongue River.
A. Yes.
Q. And I'm a visual person, I guess. I like to see where things are located.
The High Line Ditch is at the very top there of the Tongue River; correct?
A. Yes, it is.
Q. You also were asked about the O.Z. & K. And there was regulation of the O.Z. & K. in 2006; correct?
A. Yes.
Q. And that was the only time that the O.Z. & K. was regulated; correct?
A. I think that's the only time, yes.
Q. And we see the O.Z. & K. there just below the Town of Dayton?
A. Yes.
Q. Below the Tongue River, below the O.Z. & K., there was no regulation; correct?
A. I think that's correct.
Q. Do you have your report still before you?
A. Yes.

Q. If you turn to page 27. And this is one of the tables we've looked at today, and we've talked about the supplemental right.

There's another indicator here that we see on more than one of these tables, and that is "Does not divert."

Do you see that? It's the --

A. I do.

Q. Looks like the Long Ditch No. 1 on this particular table does not divert?

A. Yes.

Q. And that's information that you got from the schematics; correct?

A. Either the schematics or from conversations with Pat Boyd.

Q. Now, that's different than an abandoned right; correct?

A. Yes.

Q. So these ones that are indicated as "does not divert," it's not abandoned; right?

A. Right.

Q. And so it could be possible for it to be used; is that correct?

A. Yeah. That wouldn't be for me to decide, but as far as can I tell, yes.

Q. Turn, please, to page 72. This is the map of the water rights that indicate CBM use that you modified from the Storm Cat Energy map; correct?

A. It has that information on this map, yes.

Q. Along with additional information you testified to; right?

A. Yes.

Q. My understanding is the Koltiska right does not show up on this map as irrigated by CBM water. Is that correct?

A. That's correct.

Q. Finally, the Special Master asked you about the Pilch right. Could you turn to page 86?

And this had to do with Mr. Pilch's water right, that part was irrigated in '04-'06 with CBM, was your testimony.

On page 86 you also indicate that Mr. Pilch also had Lake DeSmet exchange water; correct?

A. Yes.

Q. He did not have exchange water in 2001; correct?

A. I'm not sure about that. I think that's an old thing when I talked to him about it, but I think it was. But I can't tell you for sure right now.

Q. How about 2002? Do you recall?

A. I think he had it then.
Q. Now, if it were -- if he were taking exchange water, that would be shown under the Lake DeSmet portion of the hydrographer report; correct?
Let's take a look. Do you still have the 2004 hydrographer report there?
A. Yes. Yes, it would be shown in that.
Q. So if you look with me, please, at the 2004 hydrographers' annual report, which is Exhibit J61. And I'm looking at page 11 at the beginning of the Lake DeSmet and Healy Reservoirs section; right?
Do you see that?
A. Yes.
Q. And if you turn to page 12, at the top there it says "Exchange water."
Do you see that? I'm looking on page 12.
A. Yes.
Q. And it indicates "Pilch, Prairie Dog," and it shows that he owns 50 acre-feet, and he used 50 acre-feet; correct?
A. Yes.
Q. Let's look at the 2002 version. And I'm going to show it on the screen. And I'm also going to hand you a hard copy. And I'm going to be looking at pages 11 and 12 which, again, is Lake DeSmet and Healy

Reservoirs.

So do you have page 12 before you, Mr. Fritz?

A. Yes, I do.

Q. And here, this is the Lake DeSmet notation again; correct?

A. Yes.

Q. And here under the exchange water, it doesn't list Mr. Pilch; right?

A. No, it doesn't.

Q. And we can go back and confirm in 2001 as well.

Do you recall seeing a notation for Pilch having exchange water in 2001?

A. I don't remember right now.

I remember Mr. Pilch telling me that that was about the time they were installing -- they had wheel rolls that the CBM company had put in, and in the 2001-'2 time frame, they had quite a bit of construction going on on his property putting in these other systems, the combination of pivots and wheel rolls about in that time frame. He was a little vague with the time frame.

So it could be that it wasn't used in those years. I'd have to look at the hydrographer reports.

Q. Incidentally, while we're looking at page 12

of the 2002 hydrographers' report, I'm curious about if you have any information about a couple notations. You've seen this happen in Montana as well.

But, for example, if you look at this B list right, they have 875 acre-feet of water, stored water, and they actually use the thousand acre-feet.

Do you see that?

A. On page 12?

Q. It's under --

A. Oh, yes. Boxelder Creek.

Q. Yes. Any idea how that happens?

A. The Lake DeSmet people do sell water, have contracts to sell water, so it could have been a purchase. I don't know. But there are other people that do buy water.

MR. WECHSLER: Thank you very much. No further questions, Your Honor.

SPECIAL MASTER: Thank you, Mr. Wechsler.

Mr. Kaste.

REDIRECT EXAMINATION

BY MR. KASTE:

Q. Do you remember a minute ago talking with Mr. Wechsler about page 72 of your report that has a map of CBM irrigated areas?

A. Yes.

Q. And he pointed out to you that the Koltiska property is not identified as receiving CBM on that map; right?

A. Right.

Q. Can you explain why that's the case?

A. It was not on the Storm Cat map. None of my engineers added it. And I don't think I knew about it until I talked to Gary Koltiska, and I just neglected to put it on there.

Q. Are there other CBM companies that irrigate lands in this basin?

A. Well, there have been, yes. It was quite a project at one time, the CBM development.

Q. Do you know, is the Storm Cat map the comprehensive be-all/end-all map of all CBM irrigation in the Tongue River Basin?

A. It's not an absolute source of everything, no.

Q. Now, you talked a little bit about the process of redescribing rights and at times changing either the place of use or the type of use.

Do you remember that discussion?

A. Yes.

Q. When you go through that process -- and that happens at the state engineer's office; right, and

ultimately at the Board of Control?

A. Yes.

Q. When you go through that process, does the applicant have to show that the water they propose to change use or place they have actually been using historically?

A. Yes.

Q. We're not just making up new water and slapping it down with a fancy old permit; right?

A. Yes. The only thing they can change is historic use.

Q. All right. Now, Mr. Wechsler asked you a number of questions about regulation ends at the calling right. That's probably a good way to describe it. And downstream of that right, regulation might not be occurring.

Do you remember those questions?

A. I do.

Q. All right. And the implication, I think, was on Big Goose and Little Goose, by god, there must be some post-1950 rights below the calling right that are getting some water.

Is that a fair assessment of the import of those questions?

A. I guess so, yes. I'm not sure.

Q. All right. Did Mr. Book pick out any particular parcels in the Big Goose or Little Goose drainages and say there's some post-'50 use that's hurting Montana?

A. No.

Q. You looked at every singe parcel he identified, didn't you?

A. Yes.

Q. And they are all on the main stem of the Tongue or on the Prairie Dog Creek; right?

A. Or minor tributaries, Ash Spring or something like that, yes.

Q. And Smith Creek I think --

A. Smith Creek.

Q. If Mr. Book had identified parcels on Big Goose and Little Goose, would you have looked at those and ascertained whether or not there were post-'50 rights getting water?

A. We would have.

Q. Didn't need to, did you?

A. Nope.

MR. KASTE: I have no further questions.

SPECIAL MASTER: Okay. Thank you.

So, Mr. Fritz, you're free to stand down now. And I appreciate your testimony very much.

THE WITNESS: Thank you.

MR. KASTE: That's about two hours behind where I hoped we'd be. And I suggest we start Mr. Hinckley's testimony in the morning.

SPECIAL MASTER: I think that would be fine. Two hours is actually pretty tight by the standards we live by in this particular case, so I'm not too disturbed. But I would suggest we start again at 8:30 in the morning in order to try to make sure that we finish up Mr. Hinckley tomorrow.

And that means as soon as he's finished, I'll be interested in whether or not Montana is planning on having any type of rebuttal testimony. And you should be prepared to put that on if you are.

MR. DRAPER: We'll be looking at that tonight, Your Honor.

SPECIAL MASTER: Okay. Appreciate that. Because, again, I do not want to have to come back here, if at all possible. And I have a feeling probably everyone feels the same way. And we're doing pretty well on timing.

MR. KASTE: Yeah. And I don't want to come back either. And I think my position with regard to rebuttal is it better be a fact witness because, as we learned from your ruling today, the rebuttal testimony

has already occurred. And our guys are staying within the content of their report, so it's a factual matter maybe.

But from an expert perspective, I'm going to have a serious objection to rebuttal testimony.

SPECIAL MASTER: Yeah. I certainly believe strongly that rebuttal testimony at this point needs to be limited to any new pieces of evidence that came up in this particular phase of the case. And so certainly, to the degree it's rebuttal of an expert who has testified for Wyoming at this particular stage, that should have been in the rebuttal testimony.

MR. DRAPER: Well, Your Honor, we certainly reserve the right to present rebuttal testimony, and I would not accede to anything that the opposing counsel is trying to preset here. But we'll be looking at the entire trial and seeing whether anything fits within the appropriate scope of rebuttal testimony.

SPECIAL MASTER: Okay.

MR. DRAPER: Including tomorrow's testimony.

SPECIAL MASTER: Okay. So with that, then, we will adjourn until 8:30 a.m. tomorrow morning.

MR. DRAPER: Thank you.

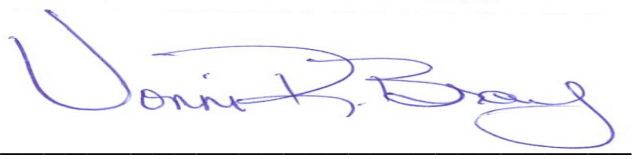
(Trial Proceedings recessed at 4:34 p.m., December 2, 2013.)

REPORTER'S CERTIFICATE

I, Vonni R. Bray, a Certified Realtime Reporter, certify that the foregoing transcript, consisting of 245, is a true and correct record of the proceedings given at the time and place hereinbefore mentioned; that the proceedings were reported by me in machine shorthand and thereafter reduced to typewriting using computer-assisted transcription.

I further certify that I am not attorney for, nor employed by, nor related to any of the parties or attorneys to this action, nor financially interested in this action.

IN WITNESS WHEREOF, I have set my hand at Laurel, Montana, this 13th day of February, 2013.



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