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Trial Transcript, Vol. 86, Afternoon Session

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Case # 4993

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IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT

WASHAKIE COUNTY, STATE OF WYOMING

IN RE:)
)
THE GENERAL ADJUDICATION OF)
ALL RIGHTS TO USE WATER IN)
THE BIG HORN RIVER SYSTEM)
AND ALL OTHER SOURCES,)
STATE OF WYOMING.)

FILED _____
8/3 1981
Margaret V. Hampton CLERK
DEPUTY

VOLUME 86

Afternoon Session

Thursday, July 9, 1981

ORIGINAL



1 MR. PERRY: Your Honor, before we pick up with cross-
2 examination --

3 THE SPECIAL MASTER: We'll be in order, please.

4 MR. PERRY: I'd like to raise a separate matter before
5 we pick up with cross-examination.

6 THE SPECIAL MASTER: On the record?

7 MR. PERRY: Yes.

8 THE SPECIAL MASTER: Proceed, please.

9 MR. PERRY: This morning Mr. Merrill handed to me
10 a notice of deposition, that the State wishes to take the
11 deposition starting this Monday of seven Tribal witnesses.
12 Now, the Tribes' position all along has been that any
13 witness of the Tribes who has not already been deposed
14 would be made available and we've, we've continued to
15 hold to that policy. There has been three Tribal
16 witnesses who were deposed yesterday and there are three
17 on this witness list who have not yet been deposed who
18 will, we will make available, those being Mr. Willardson,
19 Mr. Keller and Mr. Risner. As to the other four that
20 they're requesting, they've already been deposed and we
21 feel that with the Tribes' case coming up probably towards
22 the end of next week, I think that this is an unreasonable
23 request and we would ask for a protective order so that
24 they cannot be --

25 THE SPECIAL MASTER: I will concur with you and I'll



1 sign it. It's getting late in the game.

2 MR. MERRILL: Your Honor, will the same type of
3 provisions apply to the depositions that I believe the
4 United States intends to conduct of the State's witnesses
5 in August?

6 THE SPECIAL MASTER: You keep track and remind me if
7 I don't use the same even hand with late requests.

8 MR. ECHOHAWK: Your Honor, may I speak to that?
9 You may notice, I'm not sure whether you received a copy,
10 but the United States has just filed, served upon Wyoming
11 a set of interrogatories and some motions for expedited
12 discovery, and along with that, what we are planning to do
13 is try to get as much information as we can as soon as
14 possible so we can go into depositions. But with the trial
15 schedule that we currently have set now, we're going to
16 resume in September, that leaves us just now until the
17 beginning of September to conduct all of our discovery,
18 and the State of Wyoming has listed a large amount of
19 witnesses, and the United States has generally been with-
20 out discovery up until this point. And I think to make
21 an across the board cutoff of depositions as we approach
22 trial is going to unduly burden the United States' ability
23 to cross-examine --

24 THE SPECIAL MASTER: I would be constrained to
25 disagree with you on that. I recognize there is going to



1 THE SPECIAL MASTER: You need not have them deposed
2 again. You're saying --

3 MR. PERRY: I'm saying they should not be redeposed,
4 that the State had an opportunity recently enough to
5 depose these people with the knowledge --

6 THE SPECIAL MASTER: I sustained your position, Mr.
7 Perry.

8 MR. PERRY: I understand, but I'm saying, Mr.
9 Echohawk -- I also concur in Mr. Echohawk's position
10 as to discovery for the State's witnesses.

11 MR. WHITE: Your Honor, why don't we take care of a
12 motion for expedited discovery when it comes up. We've
13 gotten --

14 THE SPECIAL MASTER: Not now.

15 All right. Let's do that, it will be up shortly, be
16 up next week as a matter of fact.

17 MR. ECHOHAWK: Your Honor, it's not so much I'm
18 arguing a motion for expedited discovery now. I'm
19 addressing the point that you said you were going to apply
20 the same --

21 THE SPECIAL MASTER: Even hand.

22 MR. ECHOHAWK: Because the United States has
23 generally had one round of depositions quite some time ago
24 of the State's experts before they have done any work,
25 before they have conducted any of their studies, and if



1 be burdens and hardships imposed upon all of you, including
2 the State of Wyoming, that must now telescope its case
3 into the remaining time and be its own judge of what days
4 to use for what purposes. You're up against the same
5 thing in your case and so is the State of Wyoming on its
6 witnesses, but this is how it has to be.

7 MR. PERRY: I would join in with Mr. Echohawk, I
8 think there's a different situation here. Tribal witnesses
9 have not been onboard working on this case for low these
10 many years that many of the witnesses for the State and
11 many witnesses for the United States has been. There
12 were some earlier --

13 THE SPECIAL MASTER: You're arguing for your case
14 or against your case?

15 MR. PERRY: I'm arguing for my case, Your Honor.

16 THE SPECIAL MASTER: I was just wondering.

17 MR. PERRY: Your Honor --

18 THE SPECIAL MASTER: Don't you want those Tribal
19 witnesses exempt from being deposed?

20 MR. PERRY: Certainly.

21 THE SPECIAL MASTER: If you want I'll be glad to
22 reverse my order.

23 MR. PERRY: Maybe I misunderstood you.

24 THE SPECIAL MASTER: I'm saying as of the four --

25 MR. PERRY: Four who have already been deposed --



1 you preclude us from deposing them, the United States,
2 we, in effect, would have no discovery. You've seen time
3 and time again that Wyoming is served on up to their 14th
4 set of interrogatories and --

5 THE SPECIAL MASTER: You already have presented to
6 you, you've already been supplied the list of witnesses
7 that the State intends to call, have you not?

8 MR. ECHONAWK: That's an old list. I'm not sure --
9 We've asked for an updated list. I am --

10 MR. MERRILL: Your Honor, I'll hand it to Mr.
11 Echohawk right now.

12 THE SPECIAL MASTER: Now, what do you know.

13 MR. MERRILL: And the original to the Court. Just
14 had them xeroxed over the lunch hour, a list of the
15 witnesses the State intends to call and as to the general
16 nature of their testimony.

17 THE SPECIAL MASTER: All right. I've just been
18 handed --

19 MR. WHITE: I think we ought to give the original
20 to Tom.

21 THE SPECIAL MASTER: You want the originals? Here's
22 the original for Mr. Echohawk, and I'll take a copy,
23 which I think is appropriate.

24 I've been handed a copy then of the eight-page notice
25 to parties and Counsel regarding witnesses that Wyoming



1 intends to call, may call.

2 MR. ECHOHAWK: Your Honor, I'd note for the record
3 there is a list of 61 witnesses on this list.

4 THE SPECIAL MASTER: Yes.

5 MR. WHITE: That doesn't mean we'll call them, it
6 just means we want to have the ability to call them
7 without surprise to the United States.

8 MR. ECHOHAWK: As my point goes, there is quite a
9 bit of discovery left to be conducted in a very short
10 amount of time, and the main witnesses that we are going
11 to be concerned about are people that we've already
12 deposed previously and there's just not that many days
13 left to conduct depositions on approximately half of
14 these people.

15 THE SPECIAL MASTER: I can reduce the 30 people to 15
16 and so can you quite quickly. Certainly you recognize
17 Toedter, Keene, Billstein, Waples --

18 MR. ECHOHAWK: That's why I cut it in half, --

19 THE SPECIAL MASTER: And some of your own people.

20 MR. ECHOHAWK: -- from 60 down to 30.

21 THE SPECIAL MASTER: Employees of the Bureau of
22 Rec, with whom you've worked, Chick Smith of HKM and other
23 HKM associates including Olsen, Opper, Johnson, people
24 from Horizons who took the pictures, the State Engineer.
25 Again, Dornbusch, Vogel, Hawkins and Power, the airline



1 pilot. I see this as not being unreasonably burdensome,
2 for me to hold to my ruling that this case is going to
3 close in December and that no one's going to be unfairly
4 dealt with, even though as I say, all of you are going to
5 be pushed and I recognize that, Tom.

6 MR. ECHOHAWK: My point is, Your Honor, I don't want
7 to be -- Perhaps we could make it clear as to what -- what
8 your ruling means when you spoke to Mr. Merrill and said
9 you're going to apply even handedly across the board. Does
10 that mean we cannot depose anyone that we have previously
11 deposed?

12 THE SPECIAL MASTER: I intend to apply even handedly
13 any ruling that is made for one party as it applies to
14 another, and in this case you have had depositions of two
15 parties and I held that you need not, at this late date,
16 present those witnesses for another deposition.

17 MR. PERRY: During the week which that party's trial
18 is coming up, is that your ruling?

19 THE SPECIAL MASTER: I will do the same if it were
20 to be asked by Wyoming, I would rule the same way.

21 MR. ECHOHAWK: Okay. Is it limited to the week prior
22 to trial or is it limited -- What is the ruling?

23 THE SPECIAL MASTER: It can't of necessity, be limited
24 to the week prior to trial. You got all the month of
25 August to which you can depose some people for deposition.



1 MR. ECHOHAWK: Your Honor,--

2 THE SPECIAL MASTER: But it will be denied if it's
3 brought up a week before trial.

4 MR. ECHOHAWK: We previously deposed Mr. Sommers.
5 Is it my understanding we can depose him up until prior
6 to one week before trial?

7 THE SPECIAL MASTER: Why don't we wait and cross
8 those bridges when we get to them.

9 MR. WHITE: I suggest we do that.

10 THE SPECIAL MASTER: Let's cross each one of these
11 here in the trial as we get to it. You know, that's how
12 I intend to proceed.

13 You have already had such a ruling; you are in a vise,
14 in a tough spot, you know, where I stand, and it is you,
15 Mr. White, not me who will be the judge of the case that
16 the State of Wyoming can conclude and how much time can be
17 given each subject matter because it's in your hands,
18 your control and Mr. Merrill's in the same situation and
19 so are the parties in Worland who are waiting for their
20 week.

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1 MR. WHITE: Before we leave the subject I would like
2 to make it clear, Your Honor, that this spring during the
3 break in the trial the State of Wyoming advised the United
4 States, Ms. Sleater, that it would have its witnesses
5 available for depositions during a two-week period where
6 we had already arranged for a Reporter, had arranged for
7 a room in which the depositions could be taken and at
8 that time we advised her that that was a convenient time
9 for us, a good time to do it and she declined the
10 opportunity. She indicated she would do it later and I
11 think it is fair to advise the Court and Mr. Echohawk that
12 with a few small exceptions, our position will be that we
13 have made our people available. The opportunity has been
14 declined and we, for the most part, don't feel that a
15 month before our case goes on when people are supposedly
16 having an opportunity for vacations and when our work
17 isn't even complete yet, because we will have just heard
18 the rest of the United States and the Tribes' case, isn't
19 an appropriate time to come back now and say we want
20 depositions.

21 MR. ECHOHAWK: Your Honor, may I also address that?
22 Shortly after Mr. White made his conference room available
23 for those depositions he also advised us that his experts
24 would not have reached their final conclusions until later
25 on because they still needed to listen to our experts.



1 It was proved to be totally fruitless to depose them at
2 that time until they conducted their work until they had
3 heard our experts case.

4 MR. WHITE: I would like to say, Your Honor, that to
5 the best of my knowledge, we have not deposed any United
6 States expert who at that time had his final conclusion.

7 THE SPECIAL MASTER: Gentlemen, I marvel at the way
8 we were able to get as far as we have considering the
9 vigor with which each of you have approached your client's
10 case and the strong attitudes you have trying the case.

11 Let's proceed with the evidence today and you know
12 where you are as far as depositions you may need.

13 MR. ECHOHAWK: No, Your Honor, I'm not quite clear
14 because Mr. White's position is that we've had our chance
15 and they've made --

16 THE SPECIAL MASTER: He takes the position he's
17 unhappy to do this during a month when we were scheduled
18 not to be here, there would be some freedom from this.
19 He is complaining, but he is not the Special Master, I am.
20 Now --

21 MR. WHITE: Let's see who they notice up.

22 THE SPECIAL MASTER: Let's cross each bridge when we
23 come to them, Tom, and see what's required and a lot of it
24 depends upon the subject matter. If you're going on a
25 fishing expedition and it is quite obvious you are, but



1 when it is a bona fide basis for knowing what the latest
2 conclusion of a specialist who's already testified, I can
3 recognize that those as redepositions don't have to be
4 anywhere near the size of the first one. You may have a
5 half hour of a man with a particular question and answer
6 and that's all you want.

7 MR. ECHOHAWK: In the first round of depositions, the
8 State of Wyoming was generally just starting out and they
9 were generally telling us this is what we might do and as
10 I think its turned out, they have totally chosen to go
11 different routes than they first discussed the first time,
12 and in fact, a lot of it is going to be a fishing
13 expedition. We are trying to clear that up with a first
14 round of interrogatories to get a feel of what they are
15 doing. But I think it is patently unfair if we are
16 precluded from deposing any of their experts --

17 THE SPECIAL MASTER: No one has made such a ruling,
18 but don't wait until nine days before they are scheduled
19 to go on with their case and then bring up a motion for
20 a deposition.

21 MR. ECHOHAWK: What we are going to do, Your Honor,
22 is shortly we are going to notice up most of the
23 witnesses on this list that we -- of course, we are not
24 going to notice up our own, but generally everybody else
25 on a trailing docket and we are just going to start



1 depositions and we are just going to run them all the
2 way through and we are going to run them all the way
3 through until trial starts.

4 THE SPECIAL MASTER: Well --

5 MR. WHITE: Not all of them are going to be there.

6 THE SPECIAL MASTER: You are in charge of your own
7 case and let's proceed now with --

8 MR. ECHOHAWK: Well, Your Honor, again Mr. White
9 comments that they are not going to be there. I think we
10 ought to have some declaration and some fairness. Our
11 witnesses have been made available, and some have stayed
12 until midnight or past during certain depositions --

13 MR. WHITE: At the request of Counsel for the United
14 States.

15 MR. ECHOHAWK: I think there has to be some fairness
16 and we have to have those people available or the United
17 States is being deprived --

18 THE SPECIAL MASTER: You're talking about a
19 glittering generality. What people? Start your processes,
20 let's get the substance of the continuation of this
21 lawsuit and let's see what you're up -- let's see what your
22 problem is as it arises. I don't intend any big long
23 vacations in the next five weeks or so. I'm here in the
24 event a Special Master's conference is necessary. I
25 haven't set up a precedent here that denies you the right



1 to depose someone, but I have set a precedent that if you
2 wait until one week before someone's case is on to make a
3 redeposition of a witness whom you have already made a
4 prior deposition of, I will sustain an objection to that
5 proceeding.

6 MR. ECHOHAWK: My point is they have such a large
7 number of witnesses listed that they are certainly going
8 to --

9 THE SPECIAL MASTER: I don't buy that. Mr. Echohawk,
10 I've already said I don't buy that. You are not harmed or
11 put in back in any way by knowing that Henry Sostrom,
12 for goodness sake, whose sat in the case from the
13 beginning or Floyd Bishop, are going to be witnesses,
14 that doesn't phase you one iota. You know who they are
15 and what they do certainly.

16 MR. ECHOHAWK: We know what they do, but we don't
17 know what they have done.

18 THE SPECIAL MASTER: Well, you know who the people
19 are who have been working with the Wyoming Research
20 Corporation and if you want to know what they have done,
21 I think you can probably find out with one question and
22 you can find out right now if you wish, which is at least
23 a month before the State's case begins. But, don't wait
24 until September the 19th to want to find out what Mr.
25 Bishop has done or he might not be able to tell you. I



1 might not let you know. I might have a precedent having
2 denied the State of Wyoming the right to get a re-
3 deposition of some of your witnesses. The Tribal members --
4 don't wait until September 19th to go in and find out what
5 Henry Sostrom has been up to in his agricultural research
6 work on the Reservation.

7 MR. ECHOHAWK: My point is, Your Honor, there is only
8 two gentlemen --

9 THE SPECIAL MASTER: My point is, I'm trying to tell
10 you you can proceed to do whatever you've got to do but
11 I don't think your complaint now is valid, Mr. Echohawk.
12 It is a generalization and I'm not -- and I can't abide
13 in it.

14 MR. ECHOHAWK: My point is, our depositions are most
15 likely going to run up until the time trial starts.
16 There's going to be somebody deposed the week before
17 trial --

18 MR. WHITE: We'll be in here squealing, Your Honor,
19 if that happens.

20 MR. ECHOHAWK: That's my point, he's going to squeal.

21 THE SPECIAL MASTER: All right, just like the State
22 knows when there is cutoff on evidentiary hearings, you
23 now know when the cutoff will be on your depositions of
24 these witnesses that the State has and you have the
25 facilities, all of you, and sufficient counsel in depth,



1 all of you, and the assets and resources to conclude this
2 lawsuit without having lost any opportunity to be kept
3 from being taken by surprise. And where we can move ahead
4 to its conclusion -- I have enough that I could ask George
5 Christopulos for a week, frankly, that I want to know
6 about but I have to bide my time and await my questions
7 to see if they don't come out of your case or of your
8 case as we proceed in this matter. But these names don't
9 constitute names that are going to surprise you one iota.
10 Every single one of them is either an agricultural
11 economist or soil drainage -- Ron Hoffman at the
12 Reservation, Tom Stetson, again Joe DiMaggio, Dr.
13 Mesghinna, Dornbusch, Vogel, Hawkins, Roberts, Barnes,
14 that sounds like the roster of the witnesses we've already
15 had.

16 MR. ECHOHAWK: But there are a large number of them,
17 that have done lots and lots of work since the last time
18 we talked to them. Some we have never even talked to.
19 My point is it is not just going in for a half an hour
20 asking them you tell me what you did and we'll go -- it
21 may take days certainly to depose certain of their
22 witnesses as they've spent days deposing certain of our
23 witnesses.

24 THE SPECIAL MASTER: Tom, you know you have to do what
25 you can to conclude your lawsuit and you have to do what



1 you can to conclude the lawsuit and I'll do my part to
2 bring a determination and report to this matter. What
3 more than that can I give as assurance to you now?

4 MR. ECHOHAWK: My point is I feel that the United
5 States is getting cut far short of discovery compared to
6 what the State of Wyoming had.

7 THE SPECIAL MASTER: And the State of Wyoming feels
8 it is getting cut far short of time to present its case
9 and I just simply can't help that. I'm not going to hear
10 Mr. White come to me on December 6th and say Your Honor,
11 we've just got to have three weeks in January and three
12 weeks in February and three weeks of March because we
13 have this matter and this matter and this matter. I will
14 tell him, I'm sorry, Mr. White, you knew what matters you
15 have. You've seen the case in chief, you have every
16 facet of what the United States has claimed and you had
17 your months to bring it out in your case. The evidence
18 in this case is going to be concluded on December 18th
19 unless somebody dies, unless somebody is maimed, unless
20 God knows what kind of compassion would require delay,
21 but I don't anticipate it on the basis of any more paper
22 work or any more delays because there's going to have to be
23 some depositions taken. If you want me to let a
24 redeposition take place of those witnesses, I'll be glad
25 to reverse my ruling. I just want to be fair to all of you



1 and if you want to take all of the seven members of the
2 Tribal Council and submit them for depositions, you do
3 so. You are the attorney, not me.

4 MR. ECHOHAWK: Well, the position of the United
5 States is that we will join with the State of Wyoming
6 and urge that two rounds of depositions be allowed for
7 everyone. That was the general understanding that we all
8 had.

9 THE SPECIAL MASTER: I'm not going to allow you to
10 take a second round of depositions within the ten days be-
11 fore a man's trial. I just have read the basis for that
12 in a case that I read not two days ago somewhere, and I
13 think it is generally accepted you just don't let
14 depositions in class actions and actions like this. I
15 have to set a precedent of this kind to expedite a
16 conclusion of the matter, otherwise we would go on
17 interminably. And, what I have a suspicion both of you
18 agree or your co-counsel would not have stood up five
19 minutes ago to make the request which began this dialogue.
20 He said, I have just been served with a notice for
21 deposition on seven people. Now, three of them have not
22 been deposed before so I would appreciate that, but the
23 other four have, so he asked me for a protective order
24 and I granted it and here you are, you say but I don't
25 want the same treatment with my people. Pretty soon



1 on these depositions --

2 MR. ECHOHAWK: My point is I did not and I do not
3 join in Mr. Perry's motion.

4 THE SPECIAL MASTER: I can't help that. He made it,
5 Mr. Echohawk.

6 MR. ECHOHAWK: But he is a separate party, Your
7 Honor.

8 THE SPECIAL MASTER: I can appreciate that, but I
9 have to treat all parties alike.

10 MR. PERRY: Perhaps, Your Honor, we could take a
11 couple of minutes to go off the record.

12 THE SPECIAL MASTER: Maybe you can try it at the
13 first break. Let's proceed with the case, Mr. White.

14 CROSS-EXAMINATION (RESUMED)

15 BY MR. WHITE:

16 Q Mr. Billstein, would you please explain to me again, I
17 know you did it at least during direct as to what extent
18 the non-agricultural or non-irrigation claims of the
19 United States were included in your systems study? You
20 had some direct testimony about the industrial and
21 municipal and I wasn't sure if they were included or
22 whether you just checked them on an ad hoc basis or
23 what. Would you just tell me how you put those?

24 A We performed the systems operations study in the Big Wind
25 billstein-cross-white



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Unit, the Little Wind Unit and what we call the fishery area, which included the Popo Agie, Little Wind, Big Horn Reach for agricultural claims only. We then listed the resultant river flows and the nodes that we operated the respective systems under. We then reviewed the respective industrial claims and municipal claims in terms of whether there was additional water available at those nodes above and beyond the agricultural claims, so the summary tables that had been presented before simply show the results of the agricultural claims. Then it is a matter of comparing the additional demands relative to industrial claims over municipal claims against the remaining or resultant river flow as shown in those summary tables.

* * * * *

billstein-cross-white

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1 Q (By Mr. White) And using that approach it wasn't
2 necessary to worry about the return flows from the non-
3 irrigation uses, was it?

4 A A piece of input data that I requested of the experts in
5 that area was first of all what was the --

6 Q Could you hold on just a second, I've got to close the
7 doors.

8 (Off-the-record discussion.)

9 THE SPECIAL MASTER: Speak up a little louder too,
10 if you will, Ron, please.

11 THE WITNESS: I'll begin again. I asked two bits
12 of information from the non-agricultural experts: What
13 was the diversion schedule for the non-agricultural
14 uses and what was the return flow schedule from the non-
15 agricultural uses. I obtained the diversion schedules
16 from them, it was that diversion schedule that I compared
17 against the resultant river flows from the agricultural
18 study to arrive at a conclusion as to whether there was
19 available water in the stream with respect to return flows.
20 They said in consulting the literature that they had
21 researched with respect to those processes, they recommended
22 I input no return flows, and as such, no return flows were
23 built into the analysis. So it would be simply a
24 subtractive action.

25 billstein-cross-white



1 Q (By Mr. White) Thank you. Do you recall whether there
2 was ever an incidence in any of your study areas where
3 there was less water in the stream or river than you
4 assumed would be necessary to be diverted at a particular
5 point? In other words, you may have had a diversion
6 set for 100 acre-feet during the month of July someplace
7 and yet there was only 60 acre-feet flowing during the
8 month of July past that particular node or control point.
9 Did that ever come up, ever happen in your study?

10 A I described in the testimony that there were shortages
11 under the original studies that were undertaken and then
12 we went about the business of describing how one would
13 manage those shortages or alleviate those shortages.

14 Q Now, in that kind of a situation where there's less water
15 available than is scheduled to be diverted or sought to be
16 diverted, does your model operate in such a way that all the
17 water that's present then available is diverted? In other
18 words, use the same hypothetical, sought to divert 100
19 acre-feet, 60 acre-feet was there, did you divert the 60
20 acre-feet?

21 A It would divert the 60 acre-feet, it would ask for the 60
22 acre-feet, find out that that did not meet the diversion
23 requirement and consequently print out in the shortage
24 column that there was in fact a shortage and that there was

25 billstein-cross-white



1 a deficit..

2 Q But with the model simulated diversion of the 60 acre-feet
3 or since there wasn't enough there, would it just let it
4 go downstream?

5 A It would simulate the diversion at 60 acre-feet.

6 THE SPECIAL MASTER: But note it as a shortage?

7 THE WITNESS: That's right.

8 Q (By Mr. White) Do you still have the excerpts from the
9 Statement of Claims in front of you?

10 A Yes.

11 Q On Page 15, about a third of the way down, do you find
12 the caption "Arapahoe Ranch"?

13 A Yes.

14 Q Do you know whether the lands described there for the
15 Arapahoe Ranch were lands which were included or excluded
16 from your systems study? And I think it's fair to say
17 that this is on the reacquired portion of the Arapahoe
18 Ranch.

19 THE SPECIAL MASTER: I was about to say, perhaps you
20 and Mr. Echohawk could make some agreement on this and
21 shorten your line of questioning on this.

22 MR. WHITE: I imagine Tom is almost at as much a loss
23 as I am.

24 MR. ECHOHAWK: That's not quite so.

25 billstein-cross-white



1 MR. WHITE: That's not quite so. Almost but not
2 quite.

3 THE WITNESS: I don't recall, Counselor, whether that
4 2,512 acres extended both north and south of Owl Creek
5 at the time this Statement of Claims was put into
6 evidence.

7 Q (By Mr. White) Do you know if any of the land which was
8 acquired on the dates, the acquisition dates set forth
9 immediately below the caption "Arapahoe Ranch" was
10 included in your study?

11 A Yes.

12 Q Okay. Which of those acquisition dates are applicable
13 to lands included in your study?

14 (Brief pause.)

15 A I don't appear to have the information with me that would
16 distinguish which of the lands south of Owl Creek or
17 Mainstem of Owl Creek were reacquired in either 1941 versus
18 1946.

19 Q But in either event, you used an 1868 priority assumption
20 for those lands, is that correct, even though they were
21 acquired in '41, in '46 or '48?

22 A As I testified to previously, anything south of the South
23 Fork of Owl Creek or south of the Mainstem of Owl Creek
24 was analyzed under an 1868 priority.

25 billstein-cross-white



1 Q Okay.

2 THE SPECIAL MASTER: Let me ask a question. Does
3 that roughly conform to the original boundaries that were
4 stipulated to from the Reservation?

5 MR. WHITE: No. There is some differences, Your
6 Honor. There is some areas south of Owl Creek which fall
7 outside of the original stipulated boundaries.

8 THE SPECIAL MASTER: Okay, thank you, Mr. White.

9 Q (By Mr. White) Ron, on Page 15, on below the 2,512 acres
10 in the Statement of Claims, there is an indication that
11 the irrigation needs of those acres are satisfied by
12 State recognized water rights and they were acquired with
13 the land. Do you find that?

14 A Yes.

15 Q Did your systems operation study make any determination
16 as to the water availability under the conditions which
17 you assumed for the water rights that are set out to
18 serve that land on the bottom of Page 15 and the top of
19 Page 16?

20 A As I previously testified to, that area north of the
21 Mainstem of Owl Creek plus, I believe, some minor tracts
22 north of the South Fork of Owl Creek were not a party to
23 the systems operations study; that we would propose to have
24 those rights reviewed as under the adjudicated water rights
25 of the State of Wyoming and the water supply associated

billstein-cross-white



1 and water duties associated with those rights would be
2 confirmed on that basis.

3 Q So is it true then that you did not make a determination
4 that water availability for the State recognized rights,
5 which are asserted to satisfy the reacquired lands and
6 irrigation requirements?

7 A Could you read that back?

8 (Thereupon the following
9 (question was read back as
10 (follows: "Q So is it true
11 (then that you did not make a
12 (determination that water
13 (availability for the State
14 (recognized rights, which are
15 (asserted to satisfy the re-
16 (acquired lands and irrigation
17 (requirements?"

14 THE SPECIAL MASTER: Which are asserted?

15 MR. WHITE: Asserted. The Statement of Claims
16 irrigation needs of this portion of the Owl Creek Drainage
17 are satisfied by the State recognized water rights
18 acquired by the land, and I was asking the witness whether
19 or not his systems study addressed the question of water
20 availability for those State water rights. And if it was
21 ambiguous or confusing, I apologize to the Court and the
22 witness.

23 THE WITNESS: I believe this list of permits, Your
24 Honor, includes both lands north and south of Owl Creek.

25 billstein-cross-white



1 So, getting back, without getting into an individual
2 analysis of each separate permit, what I'm saying is that
3 the lands south of South Fork of Owl Creek and the Mainstem
4 of Owl Creek were analyzed under 1868 priority date with
5 the water duties as established by the agricultural
6 engineer.

7 Those lands, which constitute some portion of this
8 list that lie north of the Mainstem of Owl Creek were not
9 part of the systems study and were reviewed as being
10 adjudicated rights of the State of Wyoming and the
11 respective water duties and priorities were to be assigned
12 by someone else.

13 Q (By Mr. White) Mr. Billstein, I'd like you to assume for
14 the purposes of this question only that the lands re-
15 acquired in 1941 or 1948 are given water rights having a
16 priority of 1941 or 1948. Are you able to state, based
17 on your systems study or your analysis which you've
18 made, whether or not given those priority dates those
19 lands would have adequate water availability?
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billstein-cross-white



1 MR. ECHOHAWK: Objection, Your Honor. No foundation.

2 THE SPECIAL MASTER: May I hear the question, please?

3 (Whereupon the question was read
4 (back by the reporter as follows:
5 ("Q: Mr. Billstein, I would like
6 (you to assume for the purposes
7 (of this question only that the
8 (lands reacquired in 1941 or 1948
9 (are given water rights having a
10 (priority of 1941 or 1948; are
11 (you able to state, based on your
12 (systems study or your analysis
13 (which you have made, whether or
14 (not given those priority dates
15 (those lands would have adequate
16 (water availability?"

17 THE SPECIAL MASTER: He may answer if he's able to.

18 A. I have not operated the system on other than 1868 priority
19 for the lands specified as being a part of that unit.

20 THE SPECIAL MASTER: Off the record, please.

21 (Off-the-record discussion.

22 THE SPECIAL MASTER: All right, back on the record,
23 please.

24 MR. WHITE: Your Honor, we might want to put that
25 on the record because if it wasn't clear in person, it
will never be clear in writing.

26 THE SPECIAL MASTER: Let's do that.

27 Mr. Billstein, are we talking about the Arapahoe
28 Ranch and, Mr. White?

29 MR. WHITE: Yes.

30 billstein - cross - white



1 THE SPECIAL MASTER: The answers were "yes" from
2 both of you?

3 THE WITNESS: Yes, it includes all the purchases
4 relative to the Arapahoe Ranch, which would be the Padlock
5 purchase, the Merrill and the Curtis purchase.

6 THE SPECIAL MASTER: Okay. Thank you.

7 Q (By Mr. White) Turning to the next page, which is Page
8 16, although it was unnumbered, the last page of the
9 portion I gave you that has the carry-over list of per-
10 mits at the top. About the middle of the page or three-
11 eighths of the way down there is a heading "Appropriative
12 Rights", do you find that?

13 A. Yes, I see it.

14 Q. Is it true that you made no determination as to water
15 availability for the appropriative rights which are
16 claimed on that page?

17 A. I'm not familiar with this Statement of Claims, counselor,
18 well enough so that I know exactly what rights you're talk-
19 ing about.

20 Q. Okay. Thank you.

21 Mr. Billstein, I hand you what has been previously
22 admitted on cross-examination of Mr. Stetson as HS-12 and
23 direct your attention to the upper right-hand portion of
24 the form which is used repetitively in HS-12 where the

25 billstein - cross - white



1 question: "Water short" is asked and "yes" or "no" is
2 circled. And I tell you that Mr. Stetson testified that
3 whether "yes" or "no" is circled depended on some input
4 which you made.

5 A. Okay.

6 Q. And I direct your attention to, if I can find one that
7 says it is water short in here -- Well, let's talk about
8 Field 16-6X where it says it is water short. How did you
9 arrive at that determination?

10 A. Well, as I spoke during my previous testimony there were
11 particular sites that were selected on the respective
12 watersheds, in this case Crow Creek, and water budgets
13 were developed specifically to those sites. The water
14 supply for those water budgets was developed by Mr.
15 Keene. It could have either been a B.1 site, possibly an
16 A.3 site. The irrigation demands were furnished by
17 Stetson Engineers. I simply had the task of bringing
18 the two sets of numbers together and submitting that
19 data back to the agricultural engineer and economist for
20 their assessment.

21 Q. Were the two sets of numbers which you brought together
22 the same sets of numbers that were presented to the
23 Court during testimony or by way of exhibits or did you
24 use a different set of natural flow values, for example,

25 billstein - cross - white



1 than Mr. Keene provided to the Court?

2 A. The sites that were selected were analyzed by Mr. Keene
3 in terms of water supply.

4 Q. Are all of the water short areas in HS-12 located in what
5 you have described as the minor tributaries?

6 A. Yes.

7 Q. And in each case you felt that the water shortages could
8 be handled by more careful water management and increase
9 in efficiency, is that correct?

10 A. No.

11 Q. No?

12 In what cases was that not correct?

13 A. I simply was charged with taking a look at the relation-
14 ship between water supply and water duty and developed a
15 water budget on that basis as it became obvious that there
16 was not going to be full service water supply based on
17 the water duty specified by the agricultural engineer
18 that resulted in my designation of that drainage as
19 water short. The budget was then sent to the agricultural
20 engineer and the agricultural economist to review the
21 area as to whether they felt it was practical to develop
22 new lands or bring back idle lands with a water supply-
23 water duty relationship as I defined.

24 Q. Well, I must have misunderstood your testimony during

25 billstein - cross - white



1 either direct or Mr. Donnell's cross-examination because
2 I thought that you indicated in water short areas or
3 periods of water shortness improved management techniques
4 could help solve the problems caused by deficiency in
5 supply.

6 A. That was relevant to the Big Wind Study, the Little Wind
7 Study, the Popo Agie-Little Wind-Big Wind-Big Horn Study,
8 as well as the Owl Creek area.

9 Q. But not the minor tributaries?

10 A. The minor tributaries, my input was to develop water
11 supply versus water duty budgets. It became obvious
12 that there were going to be water shortages at certain
13 times of the year. These shortages are not unique to
14 the areas; they are the type of shortages that these
15 people have encountered basically forever on these
16 tributaries, but this type of shortage which is what we
17 would call a tolerable shortage, and to analyze that type
18 of thing, you have to have an economic analysis. And,
19 as I recall, that resulted in Dornbusch & Company
20 developing special farm budgets for this type of water
21 supply-water duty relationship.

22 Q. In your systems analysis what diversions did you use for
23 the water short areas on the minor tributaries, the ideal
24 diversion that was developed by the agricultural engineer

25 billstein - cross - white



1 or the amount of water that was available in the stream?

2 A. First of all, I didn't do a systems study on the minor
3 tributaries.

4 Q. Well, how did you deal with the water short situation
5 there then without either, if not a computer systems
6 model study, a professional noggin study, if you will?

7 A. Okay, what we did was a water budget, and a water budget
8 was based on the water supply figures supplied by Mr.
9 Keene and using the ideal demand figures as supplied by
10 the agricultural consultant, in this case Mr. Stetson
11 and/or Mr. Mesghinna.

12 Q. In order to make a determination of the water availability
13 with a water budget, wouldn't it be necessary to develop
14 such a budget for each point of diversion rather than the
15 stream system as a whole?

16 A. We were looking for representative conclusions. We picked
17 a sufficient number of points that we felt that we had a
18 perspective on the flow relationships in the minor tri-
19 butaries and the information was transmitted on for the
20 appropriate economic analysis relative to whether it is
21 reasonable to bring on new lands under this type of
22 irrigation practice.

23 Q. Do you did not have a water budget for each point of
24 diversion, only elected points, is that correct?

25 billstein - cross - white



1 A. That's correct.

2 Q. Isn't it true that you're unable to state with certainty
3 that for all diversions on the minor tributaries there is
4 an adequate water supply?

5 A. Now, how do you define adequate water supply?

6 Q. Water supply adequate to meet the duty which was set forth
7 in your Exhibit C-306.

8 A. My analysis again was not to make a conclusion as to
9 whether there was water supply available for the entire
10 ideal demand. It was to get a perspective of whether
11 there was additional water available in certain times of
12 the year and whether that available water could be utilized
13 during those times of the year to bring on additional lands,
14 such as the Type VII and Type VIII lands.

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1 Q (By Mr. White) Isn't it true, Mr. Billstein, that your
2 systems operation study excluded, excluded the claims
3 made in this action by the Indian tribes on their own
4 behalf?

5 A That's correct.

6 Q Have you analyzed any portion of those Indian tribal claims,
7 claims made on their own behalf with respect to the same
8 sort of analysis that you've made of the United States'
9 claims in the systems operation study?

10 MR. ECHOHAWK: Objection, Your Honor, it's beyond
11 the scope of direct.

12 THE SPECIAL MASTER: Beyond the scope of direct you
13 say?

14 MR. ECHOHAWK: Yes, Your Honor. Mr. Billstein's
15 testimony dealt with only the claims of the United States.

16 THE SPECIAL MASTER: Mr. White, how do I surmount
17 those insurmountable difficulties?

18 MR. WHITE: Very easily, Your Honor. I've got to
19 provide you a stepladder.

20 THE SPECIAL MASTER: I'm afraid I've got to sustain
21 them, there was clearly nothing touched on direct that
22 dealt with those Indian claims.

23 MR. WHITE: The purpose of asking the question, Your
24 Honor, is how can one set of claims asserted by one party
25 billstein - cross - white



1 be fairly and completely and reliably analyzed without
2 analyzing the claims of the Tribes as well, which seek the
3 same priority date and are in the same area? What you are
4 left with here is a conclusion that applies only to the
5 United States' claims and has no applicability whatsoever.

6 THE SPECIAL MASTER: Applicability, that's right, and
7 he answered the question very directly. He's working for
8 the United States.

9 MR. WHITE: Okay. Thank you, Your Honor.

10 THE SPECIAL MASTER: Isn't that about the answer?

11 THE WITNESS: Exactly.

12 Q (By Mr. White) Why did you not include in your study
13 claims, seeking the same priority date for other lands
14 within the Wind River Indian Reservation asserted by the
15 Tribes?

16 MR. ECHOHAWK: Objection.

17 THE SPECIAL MASTER: I'll sustain it again. I'd like
18 to ask a question, having objected yours, I'm going to ask
19 one like it.

20 In the interim time between our last meeting and this,
21 gentlemen, did any of you try to have sessions, Mr. Clear,
22 maybe you will be able to answer this, Mr. White, Mr. Merrill
23 seeking to resolve -- I don't mean you two. You two gentle-
24 men at the counsel table for the United States and for the
25 billstein - cross - white



1 Tribes, did you have any session seeking to resolve the
2 discrepancies between the United States' claims in behalf
3 of the Indians as guardians and the Tribal claims them-
4 selves?

5 MR. CLEAR: No, Your Honor, we haven't.

6 MR. ECHOHAWK: No, Your Honor.

7 THE SPECIAL MASTER: I hope I get a better response
8 for my request than I got on that one.

9 Okay, thank you, Mr. White. I didn't mean to inter-
10 rupt you, but I knew there were those discrepancies that
11 we talked about.

12 Do you, Mr. Echohawk, plan to file an amended --
13 Do you, Mr. Perry, plan to file an amended statement of
14 claims for the Tribes?

15 MR. PERRY: Yes.

16 THE SPECIAL MASTER: Between now and pretty soon?

17 MR. PERRY: Yes, Your Honor.

18 THE SPECIAL MASTER: I'm sorry I opened it up.

19 MR. WHITE: I'll have Mr. Merrill talk, I know what
20 he's going to say.

21 THE SPECIAL MASTER: But there will be no need to
22 depose any witnesses who have not already been notified,
23 there will be no need --

24 MR. WHITE: Let me respond to that. I know what
25 he's going to say.



1 THE SPECIAL MASTER: We're getting silly now, I'm
2 sorry. But I'm glad to hear that you are making that
3 filing.

4 MR. WHITE: Well, I'd like to ask what filing it is
5 because all of the discovery and analysis made by the
6 State of Wyoming with respect to the --

7 THE SPECIAL MASTER: Claims.

8 MR. WHITE: -- Tribes' claims have been based on the
9 claim that's been filed with this court for over, about
10 a year now, a little more than a year.

11 THE SPECIAL MASTER: But, Mr. White, if the amendment
12 is in diminution thereof, you're happier for it, and so
13 am I and so is everybody else. I suspect that's the
14 direction it's going to go in.

15 MR. WHITE: Clearly it's within the outer boundaries
16 of the pleadings and is a reduction of the claims made --

17 THE SPECIAL MASTER: I believe so, I think so.

18 MR. PERRY: It will be a refinement, and I don't ex-
19 pect there will be --

20 THE SPECIAL MASTER: Hassles.

21 MR. WHITE: Could I ask whether there'll be any claims
22 asserted which were not within the original claims as made
23 last year?

24 MR. PERRY: I don't think the details are fully worked
25 out yet.



1 MR. WHITE: We'll cross that bridge when we come to
2 it.

3 THE SPECIAL MASTER: That's right, one of those
4 bridges we've got to cross down the road.

5 MR. WHITE: On that note, Your Honor, I'd like to
6 take a short break and get a couple exhibits.

7 THE SPECIAL MASTER: Let's do that, a five to ten
8 minute break.

9 MR. WHITE: I don't even need that long.

10 (Thereupon a 15 minute recess
11 was taken.)

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1 THE SPECIAL MASTER: All right, fine. Come to
2 order, please.

3 Q (By Mr. White) Mr. Billstein, do you know the total amount
4 of water diverted for -- or the total amount of diversion
5 requirement in acre-feet per year which was included
6 within your systems study for all purposes?

7 A. I can break it out by Big Wind, Little Wind, and I believe
8 I've got a study table on the Popo Agie.

9 Q. Can you also do it for the minor tributaries as well?

10 A. That would have to come -- I didn't operate those. I
11 would just have to go to, you know, the Stetson-Dornbusch
12 acres and their diversion figures and cumulatively add
13 those up.

14 Q. Maybe we can save some time. Would the lands which are
15 marked as future development lands on Exhibit 305, the
16 gray lands, would the total diversion requirement in-
17 cluded within your model be the totals shown in Dr.
18 Mesghinna's report?

19 A. That's right.

20 Q. For the adjudicated lands, Mr. Stetson's?

21 A. Mr. Stetson, I believe there was some very minor acreage
22 changes that Mr. Dornbusch came in behind Mr. Stetson and
23 slightly modified the acres, but if you applied, you know,
24 picked up those changes and applied the same water duty,

25 billstein - cross - white



1 yes.

2 Q The unadjudicated lands in use, again Mr. Stetson?

3 A With the same input from Mr. Dornbusch.

4 Q The Type --

5 THE SPECIAL MASTER: VII.

6 Q -- VIIs, that would be again Mr. Stetson?

7 A That's right.

8 Q And the Type VIIIs would be Dr. Mesghinna?

9 A That's correct.

10 Q And if you added up all their amounts, that would be the
11 total diversion requirements that your system modeled as
12 being satisfied?

13 A My system, again, I only modeled, counselor, the Big Wind
14 System, the Little Wind Unit and the Popo Agie-Little Wind-
15 Big Horn System, as well as I reviewed the Owl Creek area.
16 So with respect to the minor tributaries, again I didn't
17 model those.

18 Q But those were concluded within your conclusions, your
19 professional opinions, is that correct, all of those
20 would be included within your professional opinions?

21 A I gave professional opinions on water availability for
22 the Big Wind, Little Wind, Popo Agie, Big Wind-Big Horn
23 and Owl Creek Systems. With respect to the minor tribu-
24 taries, I established some water budgets and the decisions

25 billstein - cross - white



1 to bring more lands on on the basis of those water budgets
2 were done by others.

3 THE SPECIAL MASTER: Aren't we talking about oranges
4 and apples both? You're talking about diversion require-
5 ments and then you mention Big Wind, Little Wind and so
6 on, and what we're really more interested in was the
7 acreage, the water requirements for a given type of lands
8 -- I don't want to use the word "type", but, for example,
9 the future irrigation projects Dr. Mesghinna talked about
10 the adjudicated lands, the unadjudicated, project lands
11 and matters of this kind. When you speak of minor tribu-
12 taries, it confuses me a little bit, Mr. White.

13 MR. WHITE: I was trying to use that in the same sense
14 the witness had used it, Your Honor, to essentially pick
15 up everything else that's not in one of these designated
16 study areas.

17 Q (By Mr. White) Ron, is that confusing to you when I call
18 those the minor tributaries?

19 A. No.

20 THE SPECIAL MASTER: Okay, I'll get onboard.

21 Q (By Mr. White) Now, I wanted to be careful. I'm going to
22 put some words in your mouth and you make sure I don't put
23 the wrong words there with respect to the minor tributaries.

24 A. Okay.

25 billstein - cross - white



1 Q And by that I mean the lands to be served by water outside
2 of your major study areas. Did you --

3 THE SPECIAL MASTER: Mr. White, what lands are there
4 that are served by minor tributaries, they are not Dry
5 Pasup, not Crow --

6 MR. WHITE: Up in this area, Your Honor (indicating).

7 THE SPECIAL MASTER: Well, those are not minor tri-
8 butaries, I wouldn't think. Crow is a very well recognized
9 adjudicated land --

10 MR. WHITE: Maybe I can back up.

11 THE SPECIAL MASTER: About 15 miles long --

12 Q (By Mr. White) Ron, would you please describe for the
13 benefit of the record, because we apparently haven't made
14 it clear, what lands shown on Exhibit 305 are included
15 within the areas that you and I have been calling minor
16 tributaries?

17 A. It would be the lands in the Mud Creek area, the tributaries
18 to the South Fork of the Owl Creek, which would be Goat
19 Creek, Kearney Creek, Bear Creek, Red Creek. We got into
20 the Cottonwood Creek watershed, the Muddy Creek watershed,
21 the Dry Pasup Creek watershed.

22 THE SPECIAL MASTER: And the Crow?

23 THE WITNESS: And the Crow Creek watershed as well as
24 the Sage Creek watershed.

25 billstein - cross - white



1 MR. WHITE: Just south of Big Horn Flats there?

2 THE WITNESS: That's right.

3 THE SPECIAL MASTER: Okay. We're glad to have that
4 clarified.

5 THE WITNESS: As well as Big Horn Draw.

6 Q. (By Mr. White) With respect to the minor tributaries that
7 you have just described, you have indicated that you
8 didn't do a model examination, but instead, did a water
9 budget analysis, is that correct?

10 A. That's correct.

11 Q. Now, from that water budget analysis were you able to con-
12 clude that there was adequate water available during the
13 study period to observe the ideal diversions, the target
14 diversions, if you will, established by the agricultural
15 engineer for those lands?

16 A. No.

17 Q. Okay.

18 A. What I did establish was the relationship between the
19 water supply and the water duty which showed when there
20 were, in fact, water shortages, which we have discussed
21 before, that there are later season shortages, and these
22 people have built their farming and agricultural enter-
23 prise around that. The ideal was to analyze whether new
24 lands could be brought on under the same type of basis

25 billstein - cross - white



1 and economically was it reasonable to do so, and that was
2 the purpose of the minor tributary study.

3 Q Ron, do you --

4 THE SPECIAL MASTER: Do you --

5 MR. WHITE: I'm sorry, Your Honor.

6 THE SPECIAL MASTER: I'm sorry. Go ahead.

7 Q (By Mr. White) Ron, do you know the number of acres
8 within what we have called the minor tributaries that are
9 served by water to be diverted out of the minor tributaries?

10 A. I've got tables in some of my backup material somewhere
11 that would list the number of acres, but they do, in fact,
12 reflect the claims that have been submitted by Mr. Stetson,
13 Mesghinna and/or Dornbusch. So those particular lands are,
14 in fact, the ones that we're talking about. One could go
15 to those particular tables and summarize the acreage.

16 Q So if we went to the Stetson tables and looked for Muddy
17 Creek, that would tell us the number of acres which were
18 included in your analysis for Muddy Creek as one of the
19 minor tributaries, is that correct?

20 THE SPECIAL MASTER: Acres of what? Acres of new --

21 MR. WHITE: Acres of land.

22 THE SPECIAL MASTER: Acres of new irrigation?

23 MR. WHITE: Either one.

24 THE SPECIAL MASTER: I've been living with this

25 billstein - cross - white



1 lawsuit for better than a year now and, to my knowledge,
2 I know nothing in the record that tells me there was ever
3 anything ever planned additional for future irrigation
4 along the Crow or Dry Pasup or Muddy Creek or Bargee Creek
5 or Shotgun Creek or Sheep Creek, gentlemen. So you're
6 throwing a whole new thing to me now.

7 MR. WHITE: Perhaps the witness can explain it now.

8 THE SPECIAL MASTER: And Dr. Mesghinna mentioned no
9 new acreage again there. He had five projects and that's
10 all he had.

11 MR. ECHOHAWK: You recall Dr. Mesghinna testified
12 regarding the -- excuse me, I believe it was Mr. Stetson,
13 regarding the unadjudicated Type VII lands that were inter-
14 spersed that --

15 THE SPECIAL MASTER: Yes, we have seen some of those
16 lands. We landed and saw some of those.

17 MR. ECHOHAWK: Right. On C-305 those are delineated
18 as orange areas up here.

19 THE SPECIAL MASTER: That's right. They are minute
20 is what we're talking about now.

21 MR. ECHOHAWK: That's correct.

22 MR. WHITE: We're talking both, Your Honor, we're
23 talking about three types of land.

24 THE SPECIAL MASTER: All right. Let me -- Let the
25 record show that the orange lands that we're talking



1 about now constitute something less than what, 200 acres,
2 in the entire Reservation?

3 MR. WHITE: I don't know, Your Honor.

4 THE SPECIAL MASTER: I'm talking only on the tributary
5 streams.

6 MR. WHITE: On the minor tributaries.

7 THE SPECIAL MASTER: On the minor tributaries, yeah.

8 MR. ECHOHAWK: They are very small, Your Honor. You
9 recall the definition for Type VII as it was idle lands.

10 THE SPECIAL MASTER: Yes.

11 MR. ECHOHAWK: And we had put it in historic basis.

12 THE SPECIAL MASTER: Yes, some of it has been idle
13 for a long, long time.

14 MR. ECHOHAWK: But it has to be brought back on,
15 that's correct.

16 THE WITNESS: I think the confusion where counselor
17 pointed out he used the word "future". What he meant to
18 say was idle lands being brought back.

19 THE SPECIAL MASTER: Yeah, future throws me into a
20 whole new world of digging canals and systems, diversion
21 systems, canals, on-farm systems. And when you mention
22 "future", I'm thinking in terms of new systems.

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1 MR. WHITE: I meant to talk about the --

2 THE SPECIAL MASTER: Idle lands?

3 MR. WHITE: -- idle lands that Mr. Stetson talked
4 about. You remember he had red lines where they were
5 going to build new ditches and stuff like that.

6 THE SPECIAL MASTER: Right.

7 Q (By Mr. White) So, I would like to make my question
8 address that, if I can state the question. So I can
9 understand it, are the adjudicated lands, the unadjudicated
10 land in use and unadjudicated lands Type VII, and then ask
11 you with respect to those three categories of lands, if by
12 referring to tables which Mr. Stetson testified about on
13 cross-examination, as may have been modified by Mr.
14 Dornbusch's testimony, whether you could go to Muddy
15 Creek, for example, and add up the three acreage values
16 on those three tables that came in with Mr. Stetson there,
17 HMK tables and find the number of acres that are included
18 in your budget analysis for Muddy Creek.

19 A That's basically correct. The sites that were analyzed
20 by -- as part of the water short analysis, did take into
21 account all the major streams. There may have been an
22 isolated tract here or there as part of another minor
23 tributary, but essentially, yes.

24 Q And we've got with respect to the Master's question,
25 billstein-cross-white



1 we've got the lands which are unadjudicated in use that
2 are the blue ones; these are the lands that you testified
3 about that in your opinion they were used during 1980,
4 approximately?

5 A Approximately.

6 Q And then we got the orange lands, which Mr. Stetson
7 testified about, which are the idle lands, lands he said
8 which were once in production but are not presently in
9 production; is that correct?

10 A That's right.

11 Q Then we have blue lands which are the lands for which the
12 State's issued certificates and about which we've had the
13 big fight?

14 THE SPECIAL MASTER: Light blue.

15 MR. WHITE: Light blue, I'm sorry.

16 THE WITNESS: That's correct.

17 THE SPECIAL MASTER: Which may or may not --

18 MR. WHITE: Which may or may not be presently
19 irrigated.

20 THE WITNESS: That's correct.

21 Q (By Mr. White) In order to decide how much acreage is
22 included within your minor tributary classification, you
23 simply correlate the stream names associated with all the
24 land that's colored outside of your Big Wind Study

25 billstein-cross-white



1 boundary and Little Wind Study boundary, associate those
2 with the names on the three Stetson tabulations, come up
3 with a total and you got the total number of acres
4 involved in your budget analysis, is that correct?

5 A No.

6 Q Okay. Tell me, tell me where I'm missing the boat there.

7 A If we exclude everything that is included in the Big
8 Wind Study area, which also includes --

9 THE SPECIAL MASTER: Why don't you turn around, if
10 you can, Mr. Billstein, so I can hear you and so can the
11 Reporter a little better.

12 MR. WHITE: Let me get out of the way, hold on just
13 a second.

14 Thank you.

15 A Which is essentially everything within the red study
16 boundary, plus a small amount of acreage that is
17 delineated along the Mainstem of the Big Horn River System,
18 which is served under the LeClair and Riverton Valley
19 area and is a small portion under the Midvale, this
20 particular study line, unit line could have been extended
21 out here and then wrapped around to include those small
22 parcels that are part of the LeClair-Riverton and Midvale
23 that aren't within the study boundaries.

24 The reason that the boundaries were not brought out
25 billstein-cross-white



1 to those was for clarity as well as the return flows
2 from these lands returned to the Big Horn River System.

3 Further, one could go back to the adjudicated lands,
4 the tract descriptions and you could go to the LeClair-
5 Riverton, Riverton Valley area as well as the Midvale
6 area and be able to establish that these lands are in fact
7 served from the Big Wind System and that's described in
8 the control point descriptions and the schematics, so
9 that's one area that is totally covered by the Big Wind
10 System operation study.

11 Then we have the Little Wind area, there are no
12 exceptions to that.

13 Then we have the Popo Agie, Little Wind, Big Horn
14 Study Reach, which includes all the claims on the North
15 Fork of the Popo Agie, the Mainstem of the Popo Agie, as
16 well as the Arapahoe Unit, extends into the claims on the
17 Riverton East area, two locations as well as some private
18 irrigation on the Big Horn River System.

19 These lands were all included in the fishery
20 operational study and the acreages correspondingly
21 included. So we exclude all that area.

22 Then we exclude that portion on the Owl Creek
23 Watershed that is along the Mainstem or the South Fork
24 of Owl Creek. In other words, those lands which are in
25 billstein-cross-white



1 fact served from South Fork or Mainstem of Owl Creek.
2 Again, my original 100 plus exhibits that I think was
3 reduced down later to 80 exhibits does have the water
4 supply source coded for those, that's the fourth area.
5 And this also includes Mr. Mesghinna's 200 acres of
6 future lands which he presented in his Type VIII lands
7 report.

8 The rest of the lands would be included in the minor
9 tributaries and one would simply go to the previous
10 submitted tables of Mr. Stetson, Mr. Mesghinna and as
11 modified by Mr. Dornbusch and be able to get those acreage
12 figures.

13 Q Which Mesghinna lands would be minor tributaries? I'm
14 not sure.

15 A No, there should not be any Mesghinna lands.

16 THE SPECIAL MASTER: You had one, you said one little
17 Type VIII up by the Owl Creek Ranch.

18 THE WITNESS: This we included. He served that from
19 South Fork of Owl Creek, Your Honor, therefore, it was
20 included in the Owl Creek Study.

21 Q (By Mr. White) Ron, why don't we come back to that.
22 I've asked for the Stetson tables to come in, and maybe
23 you can indicate for the record which of those Stetson
24 tables are included in the minor tributaries, and we'll

25 billstein-cross-white



1 A That's correct.

2 Q Would you please explain in general how you developed
3 the values shown on Exhibit SB-1.

4 A That's a table that came out of a report from Stetson
5 Engineers. This is a submittal to me from the Stetson
6 Engineers directly.

7 Q Do you know whether or not the values shown on table --
8 oh, excuse me, on the table which is SB-1, were values
9 which were submitted to the Court?

10 A That should be a xerox of Page 31 of Mr. Mesghinna's
11 report to the Court.

12 Q Okay.

13 (Brief pause.)

14 MR. WHITE: For the purposes of the record, Your
15 Honor, I believe all counsel will stipulate that SB-1
16 is in fact Page 31 out of the United States' Exhibit
17 WRIR C-245, and I suppose Counsel wouldn't insist on my
18 offering this exhibit.

19 THE SPECIAL MASTER: Very well.

20 MR. WHITE: Off the record.

21 (Off-the-record discussion.)

22 Q (By Mr. White) Mr. Billstein, I direct your attention
23 to what has been marked for identification as Wyoming's
24 Exhibit WRIR SB-3-A and 3-B and ask you whether they

25 billstein-cross-white



1 contain respectively Pages 1 and 2 and Pages 6 and 7 from
2 the exhibit which has previously been submitted as
3 Hanover 3?

4 A SB-3-A is Pages 1 and 2, and SB-3-B would be Pages 6, 7
5 and 8.

6 Q Okay. I'd like to ask you of the meaning of some of the
7 abbreviations which appear on the pages contained within
8 SB-3-A and SB-3-B.

9 A All right.

10 Q Let's go first to SB-3-A, about two-thirds of the way
11 down the page is control point or CP No. 3. Do you find
12 that?

13 A Yes, I do.

14 Q Could you explain what NF shoot means?

15 A That's North Fork Shoot.

16 Q And what is the North Fork Shoot?

17 A North Fork Shoot is a physical facility that moves water
18 from the North Fork of the Little Wind River to the South
19 Fork of the Little Wind River.

20 Q Okay. On the next line, what does NDMST stand for?

21 A That's identification of the next downstream station
22 from Node 3.

23 Q Okay. And MDIZ?

24 A That's a code where the computer asks is there a diversion
25 billstein-cross-white



1 here or not and when you reply Code 1, there is a
2 diversion.

3 Q What would be the other codes, what would 2 be?
4 A I believe it's zero.

5 Q And MERS?
6 A Is there a reservoir release involved. In this case a
7 zero code means no.

8 Q MPWR?
9 A Power, do you have a power release schedule. No.

10 Q NTSRV?
11 A Are these particular nodes served from reservoir release
12 schedules. No, in this particular case.

13 Q IPRM?
14 A That's what you call a print suppression code. What it
15 means is do you want it to print out in detail all of the
16 job cards or do you want it to print out just a summary
17 set of cards. In this case we asked that it be printed
18 out.

19 Q NFLW.
20 A The number of local flows at that control point.

21 Q What's the number?
22 THE SPECIAL MASTER: Number of local flows?

23 Q (By Mr. White) What's that mean, Ron?
24 A Local flows in an incremental flow that's coming into a
25 billstein-cross-white



1 node, how many points are there that contribute flows to
2 a node. In this particular case at Control Point No. 3
3 we just have one local flow coming in here so it says one.

4 Now, if this was a downstream station, say in the
5 Big Horn System and we had a lot of flow --

6 THE SPECIAL MASTER: I see.

7 A We would list that there would be four, five, something
8 of that nature.

9 Q So local flow --

10 THE SPECIAL MASTER: Tributary.

11 Q (By Mr. White) If you have two minors on the mainstem,
12 one would be a tributary coming in?

13 A That would be a good example.

14 THE SPECIAL MASTER: Juncture and confluence and so
15 forth?

16 THE WITNESS: Exactly.

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1 Q (By Mr. White) It is the number of sources of water,
2 is that right?

3 A Yeah, it would identify the number of local input sources
4 we are dealing with here.

5 Q Did you include within that return flow input?

6 A This particular designation, counsellor, is just an
7 identifier as to the number of local flows, and local
8 flows are not return flows.

9 Q All right. QDV?

10 A In this case, it is -- if in fact there is a diversion,
11 a minus one specifies that this is a -- is in fact a
12 diversion. In other words, anytime you have a diversion,
13 you have a DV card. You have to have a DV card.

14 Q What would the minus one indicate?

15 A Let's see, I believe that means that -- I'll cross-
16 reference that.

17 Okay. A minus one means that there's going to be
18 variable diversions, and you would have a plus one, if
19 you were going to have a constant diversion all the
20 way.

21 Q QMN?

22 A That would be a specified minimum flow, if you wanted
23 to put a minimum flow in a reach of stream, then you
24 would put say, ten cfs under a QMN card.

25 billstein-cross-white



1 Q So you could have stuck the fish flows in there?

2 A Under this, yes, that's possible.

3 Q But you didn't because your assumption was the agricultural
4 diversions came ahead of fish flows, is that correct?

5 A My primary purpose was to operate the agricultural
6 claim, and I felt that I could evaluate fishery flows
7 adequately by looking at the summary tables of the
8 results.

9 Q What does QM2 mean?

10 A Those are minimum desired flows, and the difference
11 between the minimum flow and the desired flow has to
12 do with really a storage release, whether you can
13 access a certain part of the reservoir, a buffer zone.
14 In this case, we had no reservoir so I specified no
15 desired flows.

16 Q KMXX?

17 A That is the maximum permissible flow, and I put a six
18 digit figure in there so that I wouldn't get caught
19 with more flow in a stream than I had set the limits on.

20 Q Was that value in acre-feet?

21 A That's in cfs.

22 Q Cfs?

23 Skip a line down: KQ and RTIO, would you explain
24 what those are?

25 billstein-cross-white



- 1 A. Okay. KQ refers to the local flow of the previous
2 station, and that's station KQ -- no, that's local
3 flow.
- 4 Q. That's one cfs?
- 5 A. No, the ratio is it asks you whether you want to
6 apply a different ratio than the actual inflow itself
7 to this particular node. What happens is that in a
8 lot of cases where you're dealing with river basins
9 that are literally hundreds of miles long, to simplify
10 the need for developing a lot of additional local flows,
11 you -- they simply apply a ratio to an upstream flow
12 at a particular node and in this case, we didn't have
13 to do that. We felt we had all the local flow infor-
14 mation that we needed, so we had a constant ratio of
15 1.00. In other words, you used that local flow exactly
16 as input into the program.
- 17 Q. Did you use a ratio of one throughout your study?
- 18 A. Yes.
- 19 Q. And then, the diversion, I assume that indicates that
20 you had diversions only during the five months of May
21 through September, is that correct?
- 22 A. That's right.
- 23 Q. And are the values there in cfs or acre-feet?
- 24 A. Those are in acre-feet.
- 25 billstein-cross-white



1 Q On the second page of SB-3A, could you explain what's
2 meant by Level 4, Level 3, Level 2 and Level 1, in STOR
3 in the first and second columns at the top of the page?

4 A Yes. As I spoke to under direct testimony, in the HEC-3
5 program, you have the opportunity to use four storage
6 levels in your storage facilities. One would be a
7 minimum storage, one would be like a buffer zone, one
8 would be a top of a conservation pool, and one would be
9 the top of the flood or storage area. So the numbers
10 placed in those four levels correspond in acre-feet to
11 the acre-foot of storage relative to those levels.

12 Q I'm sorry, I'm not sure which level was Level 4.

13 A That would be maximum flood control.

14 Q And Level 3?

15 A That would be top of conservation pool.

16 Q Level 2?

17 A Like a buffer zone where you would have only certain
18 releases that goes out. In this case, I waived the
19 buffer zone and used that as the same elevation as the
20 minimum storage or dead storage.

21 Q Which is Level 1?

22 A That's correct.

23 Q Then, STOR, S-T-O-R?

24 A Well, STOR, AREA, Q CAP, and ELEVATION are all a sequence.

25 billstein-cross-white



1 Q Okay. Tell me about them.

2 A They happen to deal with storage capacity that one uses,
3 in this case, to size the spillway or delineate the spill-
4 way system. What we have is, let's go to the bottom of
5 the set of four, ELEVATION. We delineate the elevation
6 of zero storage, then we walk it up to an elevation that
7 corresponds with 50 acre-feet of storage. If you go to
8 the first column, counsellor, then 6290 elevation corres-
9 ponds to the 300 acre-feet of storage, 6300 to the 1550
10 acre-foot of storage, then on up to elevation 6337 which
11 approximates the crest elevation, and that would be the
12 storage which is designated as 11,900 which would be in
13 evidence at the time of maximum spill.

14 Q Now, you were talking about the capacity of Washakie
15 Reservoir previously as being approximately 8,000 acre-
16 feet.

17 A When I was talking, I was talking about active capacity,
18 counsellor.

19 Q Okay.

20 A Which would refer to top of conservation pool at Level 3.
21 You see Number 7923 there. Then you also have an area
22 corresponding to the respective storage numbers as well
23 as the elevations. So what you have effectively desig-
24 nated there is an area capacity curve.

25 billstein-cross-white



1 Q. Okay. So that's the surface area in acres --

2 A. Corresponding to --

3 Q. -- at elevation --

4 A. The respective elevation which has this amount of
5 capacity in storage.

6 Q. Tell me again what Q CAP means.

7 A. Q CAP refers to the spillway discharge. In one case,
8 it is the spillway discharge, and in another case,
9 when you get into the flood zone -- I'm sorry, when
10 you get below the flood zone, it corresponds to the
11 outlet works capacity.

12 Q. Does that mean that at Level 3, 7923 acre-feet, you
13 would have 1480 spillway discharge; is that what that
14 chart would mean?

15 A. No, that means that at that particular head elevation,
16 you could discharge through the outlet works 1480 cfs
17 or downstream releases.

18 Q. And ELEV way up at the top, right where the reservoir
19 data --

20 A. Yes.

21 Q. Is that initial storage in acre-feet that you assumed?

22 A. That's right.

23 Q. And at what month?

24 A. That would be October, in this particular case.

25 billstein-cross-white



1 Q And the CVAP, C-V-A-P?

2 A That's a co-efficient relating to evaporation that
3 you would have. I think I spoke to the fact that we
4 used the Morton pan evaporation rates and converted
5 those to lake evaporation, then we converted them to
6 Fort Washakie and utilized a factor of .9 to do that,
7 so that .9 refers to that conversion.

8 Q The QLQG?

9 A That is a seepage factor in cfs, an estimate seepage
10 through the reservoir.

11 Q How did you develop that?

12 A One of our geologists, geotechnical engineers, reviewed
13 the materials and plans we had of the facility and gave
14 me that estimate.

15 Q Who was that?

16 A Dan Nebel.

17 Q I'm sorry, I didn't get the last name.

18 A His last name is spelled N-e-b-e-l.

19 Q Do you know how he made that determination?

20 A Yes. He looked at the physical features. The face of
21 of the dam consists of 6600 feet of moraine, assumed
22 40 feet average depth of materials below water surface.
23 He selected a hydraulic gradient of .03 foot per foot.

24 * * * * *

25 billstein-cross-white



1 Q (By Mr. White) Are his findings and analysis reflected
2 in some memorandum or report submitted to you?

3 A Yes.

4 Q Could I see that, please?

5 (Witness complied.)

6 (Brief pause.)

7 Q Ron, I hand you what's been informally marked as Wyoming's
8 WRIR SC-2 and ask you if that is the memorandum to which
9 you just referred?

10 A That's correct.

11 Q Okay. How did you select two when you assumed a range of
12 .4 to 4 cfs?

13 A I just selected a middle number, the relative magnitude
14 was minor, it seemed reasonable to me.

15 Q Looking at Hanover 3, it appears that the first five pages
16 is simply a listing of input data; is that right, input
17 station data?

18 A That's right. It basically goes into a duplication of the
19 input data such as we've discussed.

20 Q And then beginning on page 6, start your number crunching
21 year by year; is that correct?

22 A That's right. We input the inflow data, stream inflows
23 and then begin the operation.

24 Q Okay. And could you show me just one example, where does
25 billstein - cross - white



- 1 the 2478 for October, 1946 for station 1 come from?
- 2 Where on the annual input data for 1946 at the top of
- 3 page 6 of Hanover 3, which is also the first page of SB-3B?
- 4 A Okay. That particular streamflow component would be re-
- 5 flective of Mr. Keene's estimate for the month of October,
- 6 1946 at the Little Wind River near Fort Washakie station.
- 7 Q All the values for 1, 6, 8, 16 and 23 there come directly
- 8 out of Mr. Keene's --
- 9 A That's right.
- 10 Q -- work?
- 11 A That's right.
- 12 Q And the source of the values for evaporation?
- 13 A Those evaporative numbers were developed under a separate
- 14 study, again, using the Morton information and then con-
- 15 verted over to Fort Washakie.
- 16 Q Who conducted that separate study?
- 17 A One of my staff engineers, Gary Elwell.
- 18 Q Would you spell his last name, please?
- 19 A E-l-w-e-l-l.
- 20 Q Did he work, do this study based on instructions which
- 21 you gave him?
- 22 A Basically I told him to obtain the Morton station --
- 23 THE SPECIAL MASTER: Just answer yes or no.
- 24 A Yes.
- 25 billstein - cross - white



1 Q (By Mr. White) What instructions did you give him?

2 A Told him to obtain the most representative pan-evaporation
3 information that we had in the basin. That turned out to
4 be the Morton station near Pilot Butte.

5 Then we -- Then I asked him to compare it against
6 the Missouri River framework map which are lines of equal
7 lake evaporation, and we came up with a percentage of the
8 relative transfer percentage to Morton location versus
9 the Fort Washakie location and by that relative transfer
10 percentage to the Morton results.

11 We selected a pan-evaporation coefficient that was
12 representative of the area.

13 Q What were the units for the values of evaporation?

14 A Inches.

15 Q Inches per month?

16 A That's right.

17 Q On Exhibit SP-3B, which is still page 6 of Hanover 3,
18 for station number 3.

19 A Yes.

20 Q Beginning with the entry right below the year 1946, could
21 you quickly describe what's meant by the abbreviations which
22 appear in the first column such as l-o-c-f-l-w, u-n-r-a-g,
23 inflow, what they mean and generally where they come from?

24 A L-o-c-f-l-w refers to local flow. Local flow is based on the
25 billstein - cross - white



1 upstream station number 1, which is based on the inflows
2 identified at station number 1.

3 Q And u-n-r-a-g?

4 A Unregulated is basically the same as local flows, but it
5 does accumulate more than one local flow at a downstream
6 point. In this case we were in the upstream portion of
7 the study unit and it does in fact reflect the local
8 flow that was in evidence at point 1.

9 Q How does that vary from the inflow?

10 A Inflow in this case is one and the same, but inflow would
11 also reflect releases from storage reservoirs. Unregulated
12 flow and the local flow delineations do not catalog or
13 accumulate flows from inflows in the reservoirs, they only
14 account for flows below reservoirs. So the difference,
15 once you get into an operational system below a reservoir,
16 is that inflow would reflect the releases from the reservoir
17 where the unregulated flow would not reflect a release from
18 the reservoir or the inflow into that reservoir.

19 Q Required diversion?

20 A That would be diversions established for control point 3
21 in cfs, for the respective months of May through and in-
22 cluding September.

23 Q Did the agricultural engineers establish those values or
24 did you?

25 billstein - cross - white



- 1 A The water duties were given to us for the respective land
2 tracts. We summarized those water duties into accumulative
3 diversion requirements for the respective nodes.
- 4 Q Then diversions, how does that vary from required diversion?
- 5 A What that means is the required diversion is in fact met,
6 so it actually shows what was in fact diverted.
- 7 Q If you have a minus value for diversions, would that be
8 short, fall in the amount of water available? I know there
9 are none there.
- 10 A If you have a minus in the diversion column, counselor,
11 that would reflect return flows to a node.
- 12 Q Okay. I notice that the next abbreviation appears to be
13 shortage.
- 14 A That's right.
- 15 Q There are two shortages, one four lines from the bottom
16 and one at the bottom.
- 17 A That's right.
- 18 Q What are each of those, how do they differ?
- 19 A This shortage refers to the shortage relative to the
20 ability to meet the required diversion. The bottom short-
21 age refers to the ability to meet the desired flow after
22 the required diversion is met.
- 23 Q But you haven't used desired flow?
- 24 A I haven't used desired flows.
- 25 billstein - cross - white



1

THE SPECIAL MASTER: Mr. White, unless you're just about through with this witness, I suggest a break or are you pretty close?

2

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MR. WHITE: Within 15 minutes, Your Honor.

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THE SPECIAL MASTER: Why don't we take a short break, that being the case.

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(Thereupon a five minute recess was taken.)

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1 THE SPECIAL MASTER: Okay, shall we begin, gentlemen?

2 MR. PERRY: Your Honor, maybe first we should clear
3 up a matter with the depositions.

4 THE SPECIAL MASTER: All right.

5 MR. PERRY: I would like to withdraw my motion for
6 protective order. After considering the lengthy list of
7 witnesses that the State has produced, I feel that the
8 United States and the Tribes should be afforded the full
9 opportunity to depose witnesses.

10 THE SPECIAL MASTER: Very well.

11 MR. PERRY: Whenever, and I have reached an agreement
12 with Mr. Merrill as to the basis upon which we will allow
13 our witnesses to be redeposed as well.

14 THE SPECIAL MASTER: Very well. I thank you both
15 for working that out and I appreciate it.

16 MR. WHITE: May I have a moment?

17 (Brief pause.)

18 Q (By Mr. White) Let's get back to the fascinating subject
19 of computer abbreviations. Would you whip back to the
20 second page of SB-3A again, please, Ron? Up at the top
21 there is an abbreviation I-s-r-c-h?

22 A Yes.

23 Q What does that mean?

24 A That means can I operate my spillway above the top of the
25 billstein - cross - white



1 flood control pool that I have specified in this case, the
2 top of the flood control pool was 10,500 by indicating zero.
3 I said that I would like to be able to operate above that
4 flood control space which by indicating zero the program
5 allowed me to do that.

6 Q Well, the top of the flood control base would indicate that
7 you're at level 4 then, is that right?

8 A That's right. The concept is whether you stop with your
9 spillway assessments at the top of flood control or do
10 you get into the free-board area, and I chose to get into
11 the free-board area.

12 Q Let's go back to SB-3B again, the second page.

13 A All right.

14 Q I assume that local flow, unregulated flow and inflow
15 there mean the same thing as you've described before, is
16 that correct?

17 A Yes, that local flow is basically the natural flow above
18 a control point unaffected by diversions and return flow
19 unregulated refers to the natural flow above a control
20 point unaffected by reservoirs and inflow reflects the
21 actual operation of reservoirs as well as diversions and
22 return flows.

23 Q Okay, then beginning with e-o-p-s-t-r through shortage in
24 the middle of the page, could you describe briefly what
25 billstein - cross - white



1 those abbreviations stand for?

2 A Yes. E-o-p-s-t-r is the end of period storage.

3 Q Is what?

4 THE SPECIAL MASTER: What kind of period storage?

5 THE WITNESS: End of period. So that this particular
6 case you chose a year where we started the whole system
7 study at a full pool so at the end of October, we were
8 still at the top of the conservation pool of 7923.

9 Q How did you determine that in 1976 there were 7923 acre-
10 feet in Washakie reservoir?

11 A In 1946?

12 Q Yeah, '46, I'm sorry.

13 A I chose that as a convenient starting point for the study.

14 Q Do you know whether there were actually 7923 acre-feet in
15 that reservoir in October, 1976?

16 A It really wasn't that important to me, it just allowed me
17 to have a beginning point on my operation study. Again
18 you recall, counselor, that I said we were dealing with
19 a very small reservoir that fills every year; so it would
20 in fact fill anyway. It was just a point of initiation
21 of study.

22 Q Uh-huh. E-o-p-e-l?

23 A E-o-p-e-l refers to the elevation at the end of period
24 storage. And in this case the elevation at storage

25 billstein - cross - white



1 capacity 7923 is 6325 feet mean sea level.

2 Q And the evaporation is that e-v-a-p-o, is that evaporation?

3 A That's right. And the 62 in this case is acre-feet.

4 Q How did you derive the average of 735 acre-feet when none
5 of the values for any month even approached that?

6 A Let's see.

7 THE SPECIAL MASTER: By adding them up.

8 MR. WHITE: I'm sorry, Your Honor.

9 THE SPECIAL MASTER: By adding them up I would almost
10 bet you.

11 MR. WHITE: They should have been divided by 12.

12 THE SPECIAL MASTER: Exactly what happened.

13 A I'm trying to recall whether evaporation is a special
14 situation where it does show the cumulative evaporation
15 in the average column. It's my recollection that that's
16 what happens but I'm not sure.

17 Q (By Mr. White) Do you know of any other rows for which
18 the average really means the accumulative total?

19 A No.

20 Q In determining an average for any of the other values,
21 where you had a month with a zero was that zero averaged
22 in or averaged out?

23 A It would have been averaged in.

24 The next item shown is case and it has a -- going
25 billstein - cross - white



1 vertically or from top to bottom, we have just completed
 2 end of period storage, end of period elevation, evaporation.
 3 Now we are into case and you see a 603 in the October column.

4 Q Level?

5 A Okay. The case refers to the fact that the last two digits
 6 or the 03 digits refers to the fact that it is spilling
 7 and that the first digit refers to control point that
 8 governs in this case. And we are at control point 6 which
 9 is Washakie Reservoir which means that the spill is taking
 10 place at Washakie Reservoir. The level refers to the
 11 point that we are at the top of level 3 which is the top
 12 of the conservation pool which is 7923 acre-feet and that
 13 spilling is occurring because we have filled to the top
 14 of the conservation pool. As we go down to August, for
 15 example, under case you will see 1901. That means that
 16 control -- at control point 19 you would have a controlling
 17 criteria, and the 01 refers to the irrigation requirement
 18 at control point 19. So in this case it is saying that
 19 at control point 19 because of the irrigation water re-
 20 quirements we have drawn the reservoir down to the dead
 21 storage elevation which is 1.00.

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 25 billstein - cross - white



1 Q (By Mr. White) Anything else before we get to CSZREL?

2 A I believe that should explain the whole range of numbers
3 that you see above and including that level. The CSZREL
4 refers to conservation pull of relief and that in fact is
5 the releases from the conservation pool during that
6 particular month.

7 Q Again, how was the -- Nevermind, strike that, please.

8 Those in c.f.s.?

9 A Yes. River flow refers to RIZFLW, and that refers to the
10 release or the flow leaving the reservoir. Desired flow
11 in this particular case refers to the seepage losses of
12 two c.f.s. and there is no shortage on desired flows.

13 Q I notice that you have reservoir evaporation values
14 year around. Does that assume that the reservoirs stayed
15 free of ice in the winter time?

16 A I think those evaporation rates are very minor during the
17 winter months. I believe I've based those on the pan
18 evaporation numbers that I had at Morton and correlated
19 those with the Boysen Lake evaporation rates and
20 established that for the minor amount of evaporation
21 that takes place I would go ahead and use those percentages.

22 (Brief pause.)

23 Q Ron, it appears that the last six pages or so of Hanover 3
24 represents some sort of summary.

25 billstein-cross-white



1 A That's correct.

2 Q Could you explain for the benefit of the record how those
3 six pages work, what they represent, how they should be
4 interpreted?

5 A Yes.

6 Q Do you mind if I look over your shoulder since --

7 A Not at all.

8 Q -- we have only one extra copy?

9 A Basically they summarized the long term averages of the
10 operation for the period of 1946 through 1979 for all 12
11 months, so it's on a yearly basis for 1946 through 1979,
12 and it just shows what the average local flow is for that
13 entire period of record on an annual basis or divided by
14 the 12 months. The same with the unregulated flow, what
15 the inflow is, what the required diversion was, the actual
16 diversion that was in fact served, if there was any
17 shortages, what the average shortage was, what the remaining
18 river flow was, if there was a desired flow and if there
19 was a shortage to that desired flow.

20 You go through all the nodes identified in this
21 systems study giving the same results. That takes us all
22 the way to the second to the last page.

23 Diversion shortage index is something site specific
24 to this program and it's not something that I use and
25 billstein-cross-white



1 it's not something that I used and interpreted in any
2 way. It's an equation that HEC-3 developed to try to get
3 a handle on a range of varients in shortages.

4 They came in with a fairly complicated shortage
5 index equation where they took a 100 over the number of
6 years operated and then summarized it from year one through
7 year end and took a square of the annual shortage over the
8 annual requirement. And as I say, it was a very detailed
9 equation and the output I didn't feel was very meaningful
10 for me so, quite frankly, Counsel, I didn't use this same
11 information.

12 It's shown on Page 405 on Exhibit 3 and Page 505
13 of Exhibit 3 of the HEC-3 manual. If you wanted to or
14 your experts wanted to access and analyze it.

15 Q Now, below the shortage index entries there again is a
16 summary of diversions and shortages. It would indicate
17 that -- Let me ask you if this is the correct interpretation.
18 For Station 19, which is located in the Little Wind Study
19 area on 305, it would indicate that on nine occasions
20 there were shortages or is that nine years there were
21 shortages?

22 A Nine occasions.

23 Q Maximum shortage was 143 c.f.s. or acre-feet?

24 A C.f.s.

25 billstein-cross-white



1 Q Okay.

2 A Because we had no desired flows or minimum flows power
3 shortages or at site -- or system power shortages or at
4 site power shortages, that's why you see no figures in
5 Columns 2, 3, 4 and 5 of that summary table.

6 Q And in the earlier column we talked about, there are not
7 zero entries which I think I understand, but there are
8 dashes. What's the difference between a dash and zero?

9 A A dash refers to a location, where we had either storage
10 reservoirs or they were like return flow nodes, there were
11 no diversions taking place at those, so therefore, there
12 was no -- there is a diversion shortage analysis, so
13 there is no need to analyze those which had no diversion.

14 THE SPECIAL MASTER: What does the zero mean, zero
15 diversion or means no --

16 THE WITNESS: It means there was no shortage at all
17 at that diversion point.

18 And the last two columns show the frequency of
19 storage in the conservation pool by month for the
20 respective reservoirs.

21 So, for example, in June to simplify things, it
22 showed that at the end of June we always filled Washakie
23 Reservoir for all 34 years of record, whereas in July it
24 was still full, 24 of the 34 years, but at times was

25 billstein-cross-white



1 completely drawn down to a zero to one percentile in a
2 very critical or low flow year.

3 The same type of information is available at
4 Location 22, which is Ray Lake.

5 Q (By Mr. White) That would mean for Washakie Reservoir
6 you had only one year of what?

7 A When it was full at the end of August.

8 Q Okay. Now, is that full in terms of conservation pool?

9 A Yes.

10 Q Okay. Do all the descriptions which you've so patiently
11 shared with us on these abbreviations, apply to all three
12 of the printouts, Hanover 1, 2 and 3?

13 A They should be consistent in all three.

14 Q Are there any types of displays in the other exhibits
15 which you've not described as we wandered through
16 Exhibit 3 or types of abbreviations?

17 A Well, Counselor, you would not have the reservoir print-
18 outs in the Big Wind or the Popo Agie Fishery Study Units
19 because there is no reservoirs.

20 Q I meant to ask the question, is there anything in the
21 other ones that we haven't covered in this one?

22 A No.

23 Q Okay. Let's get back to the minor tributaries.

24 I'm going to hand you what have been marked as
25 billstein-cross-white



1 HS-3, which is Mr. Stetson's tables on adjudicated lands;
2 HS-4, which is his table on Type VII irrigable lands,
3 presently idle lands, and HS-5, which is his table on
4 unadjudicated trust lands, and ask you if you could go
5 through any one of those three exhibits, simply explain
6 which ones of the drainages shown, I guess beginning on
7 Page 2, the nonproject lands, are included within the minor
8 tributary study area, it was a portion of your operation
9 study.

10 A Crow Creek was a portion of the minor tributaries water
11 budget study. There were 2,927 acres as defined by
12 Stetson Exhibit HS-3.

13 THE SPECIAL MASTER: Of what kind of land?

14 THE WITNESS: These were adjudicated lands.

15 THE SPECIAL MASTER: Twenty-nine hundred some acres
16 of adjudicated lands.

17 Q (By Mr. White) Why don't you go ahead and put a check
18 with the black pen there.

19 When you say Crow Creek and the adjudicated lands,
20 we could also assume that the acreages in the other two
21 exhibits, HS-4 and 5 for Crow Creek were also picked up
22 within your --

23 THE SPECIAL MASTER: Study?

24 Q (By Mr. White) -- minor tributary study area; is that
25 billstein-cross-white



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correct?

A That's right. The only modification to that, Counselor,
is if Mr. Dornbusch came in and made a modification to
Type VII's.

Q Okay.

* * * * *

billstein-cross-white

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1 Q (By Mr. White) Okay.

2 A This is average. Annual diversion was 5.31.

3 Q You don't need to go through that if you don't want to.

4 All I'm really interested in is having you identify those
5 drainages which were part --

6 THE SPECIAL MASTER: Crow Creek was the first.

7 Q -- part of your minor tributaries.

8 A Okay. Dry Pasup Creek, Sage Creek, Crooked Creek, Spring
9 Creek, Big Horn Draw, Mill Creek, Cottonwood Creek, Muddy
10 Creek, Fivemile Creek --

11 THE SPECIAL MASTER: They were pretty much then on
12 the perimeter of the other areas, weren't they?

13 THE WITNESS: Yes, Your Honor.

14 Mud Creek --

15 Q (By Mr. White) Ron, are you going ahead on Exhibit HS-4
16 and 5 and also checking those drainages which were part
17 of your minor tributaries insofar as not all of those
18 appear in HS-3?

19 A That's right, because not all of the drainages are covered
20 in the adjudicated lands. It is best to go through HS-4
21 and HS-5.

22 Q Okay.

23 (Brief pause.)

24 A Okay.

25 billstein - cross - white



1 Q Have you got her?

2 So on HS-3, 4 and 5 you have by the check of a black
3 pen indicated those drainages which are included within
4 your minor tributaries, is that correct?

5 A That's right. In South Fork Owl Creek I put the designa-
6 tion "part" because Goat Creek, Carney Creek and Bear
7 Creek were included in Mr. Stetson's totals for South
8 Fork Owl Creek. So when I put "part", what I want to
9 point out is the fact that he summarized those in the
10 South Fork Owl Creek totals.

11 Q So what portion of the 64 acres in Exhibit HS-4 were in-
12 cluded in your minor tributaries study?

13 And also, the 84 acres on HS-5?

14 A I have 35 acres on Bear Creek; those acres show up on
15 Photo No. H-4-17. This particular listing that I have in
16 front of me, counsel, it wasn't important to me that I
17 knew what column they came out of in terms of whether it
18 was a Type VII or whether it was an in-use acre. There-
19 fore, one would have to go back to those respective --
20 those photos, take a look at the tract numbers and find
21 out whether it was, in fact, a VII or an in-use. What I
22 have here is simply a cumulative acre.

23 Q What was the value?

24 A Thirty-five acres.

25 billstein - cross - white



1 Q So 35 of the 148 acres, the 64 and 84 --

2 A Well, that's just for Bear Creek now, counselor.

3 Q Oh, that's just for Bear Creek, okay.

4 A Kearney Creek, 57.9.

5 That reflects the acreages that I had for those
6 drainages.

7 Q So you add those two up and that is the total of 148 acres
8 included within your minor tributaries?

9 A The 142 acres (sic) that you're referring to as the total
10 acreage that I was shown on South Fork of Owl Creek --

11 Q Sixty-four and 84, HS-4 and 5.

12 A I better take a look at those again.

13 Q You better check my addition, Ron.

14 A I think what we're missing here is the fact that there is
15 acreage included in that total on the Main Stem of the
16 South Fork of the Owl Creek which correspondingly has to
17 be taken into account, so these aren't all minor tributaries.

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1 MR. WHITE: Your Honor, while the witness is looking
2 for that information, maybe I could save a little time and
3 simply offer for illustrative purposes only SB-2, 3-A and
4 3-B.

5 MR. ECHOHAWK: No objection.

6 THE SPECIAL MASTER: All right, it will be received.

7 (Whereupon Exhibits SB-2,
8 (3-A and 3-B were received
(into evidence.

9 THE SPECIAL MASTER: Does this pretty much conclude
10 this witness?

11 MR. WHITE: That's it, Your Honor.

12 THE SPECIAL MASTER: All right. Mr. --

13 MR. WHITE: Well, Your Honor, he's still looking for
14 the answer to that last question. As soon as he has the
15 answer, why I'm done.

16 THE SPECIAL MASTER: All right. I would be glad to
17 try to provide all the time we need by saying he may take
18 some time off the stand and determine them in the morning
19 and put on your next witness.

20 MR. ECHOHAWK: I think there's a possibility that we
21 may finish everything today; is that right?

22 MR. WHITE: Possibility.

23 THE SPECIAL MASTER: Which witness will be here to
24 begin the case next Thursday?

25 MR. CLEAR: We have Mr. Vogel coming back and having



1 a little testimony on the fisheries and I guess the Tribes
2 will go ahead.

3 MR. PERRY: Mr. Harris will be our witness.

4 THE SPECIAL MASTER: And will you be here next week?

5 MR. PERRY: Yes, I think all the Tribes Counsel will
6 be here, Mr. Sachse, Mr. Rogers.

7 THE SPECIAL MASTER: I see.

8 MR. ECHOHAWK: There is one additional witness that
9 the United States may call.

10 THE SPECIAL MASTER: I see Mr. Merrill's ears perk
11 up.

12 MR. WHITE: It's going to be me.

13 THE SPECIAL MASTER: Subponea you.

14 MR. ECHOHAWK: The United States is planning on
15 putting in certified copies of various title documents
16 to show ownership on the Reservation, the title plots,
17 and there is some other documents called, I think land
18 status indexes or title indexes, something along that line.
19 And what we've proposed to do is bring the person in from
20 the Bureau of Indian Affairs in Billings who keeps those
21 records in order to explain how that title index is used.

22 THE SPECIAL MASTER: Qualify them.

23 MR. ECHOHAWK: I think they can go in on their own,
24 they are certified copies, but I think it will be helpful
25 for everyone to have the workings of that title index



1 because it's somewhat complex.

2 THE SPECIAL MASTER: All right.

3 MR. ECHOHAWK: If we have any objections, maybe we
4 could take care of that now. We planned on taking maybe
5 ten, fifteen minutes just for explanation.

6 THE SPECIAL MASTER: Is she the keeper of these
7 documents?

8 MR. ECHOHAWK: Yes.

9 MR. WHITE: It's sort of surprising to get a witness
10 at this stage that hasn't been endorsed, Your Honor.

11 THE SPECIAL MASTER: Well, she's a ministerial clerk
12 of --

13 MR. ECHOHAWK: I think the documents could go in on
14 their own, as just certified copies.

15 MR. WHITE: Maybe that might be the quickest way to
16 do it.

17 THE SPECIAL MASTER: Well, if you two agree with it,
18 I'll agree that's the best way to do it.

19 MR. ECHOHAWK: All I'm saying --

20 THE SPECIAL MASTER: How long did you wait and hold
21 the documents before you show it to them?

22 MR. WHITE: We haven't seen them yet.

23 MR. ECHOHAWK: I'll show most of them tomorrow and
24 the rest on Monday.

25 MR. WHITE: That will be a switch.



1 MR. ECHCHAWK: The only thing I propose is that the
2 title index, what it shows is all title transactions
3 that have happened to each parcel on the Reservation since
4 the creation of the Reservation.

5 THE SPECIAL MASTER: Allottees as well as nonIndian
6 assignees?

7 MR. ECHOHAWK: Yes, everything within the boundaries.

8 THE SPECIAL MASTER: I expect you may have it.

9 MR. ECHOHAWK: They may have it, I don't know.

10 MR. WHITE: We're looking forward to it.

11 MR. ECHOHAWK: It would be helpful to everyone to see
12 how that particular document works, and I don't know if we
13 have any objections or not.

14 MR. WHITE: There will be an objection to Mr. Vogel
15 being recalled because the Tribes ordered, a request to
16 the Tribes by the Court that there would not be multiple
17 recalling of witnesses to testify about the same subject
18 matter. We've had the same witnesses appear to testify
19 about different matters, but this appears to be on the
20 same subject matter which Mr. Vogel has already testified
21 and we will object to that at that time.

22 THE SPECIAL MASTER: It's one of the bridges down the
23 road we will have to cross.

24 Mr. Merrill, you have something in mind?

25 MR. MERRILL: Your Honor, I was only going to reserve



1 any comments as to whether we can stipulate to the
2 admissibility of the documents until we see them. However,
3 we may have other objections at that time as well.

4 THE SPECIAL MASTER: Do you want to take that, try to
5 finish it up now and not have to worry about it tomorrow?

6 THE WITNESS: It still may take me a couple minutes.

7 THE SPECIAL MASTER: All right, we'll be glad to wait
8 five or ten minutes more.

9 MR. WHITE: Why don't we go ahead with Mr. Toedter
10 since he's the next guy up.

11 MR. CLEAR: I thought we were objecting last week to
12 this break in testimony.

13 MR. WHITE: It's a ministerial thing.

14 THE SPECIAL MASTER: All right, follow on. In fact,
15 he can supply it for the Court with a copy to all of you.
16 It's a total figure he's looking for of acreage.

17 MR. WHITE: Yes, sir.

18 THE SPECIAL MASTER: Includes 62 and 68 plus one other
19 factor.

20 MR. WHITE: I wasn't quite sure how it worked and
21 that's what he was doing, trying to explain it to me.

22 THE SPECIAL MASTER: How long is Mr. Toedter's
23 testimony?

24 MR. CLEAR: Very short, Your Honor.

25 THE SPECIAL MASTER: Well, why don't we put him on.



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THE SPECIAL MASTER: All right. May we come to order, please.

Mr. Toedter, you are the same witness who testified before, correct?

THE WITNESS: Yes, I am.

THE SPECIAL MASTER: And all right, Mr. Clear.

ROBERT TOEDTER

was recalled as a witness by the United States, and having been previously duly sworn, testified further as follows, to wit:

(FURTHER) DIRECT EXAMINATION

BY MR. CLEAR:

Q Mr. Toedter, you were in the Courtroom this morning when Mr. Billstein stated you performed return flow analysis to assist him in his systems operations study?

A Yes, that's right.

Q Was his testimony correct, that you did perform such a study?

A Yes.

Q Can you describe for us what you did and what your return flow study consisted of?

A It actually consisted of three things. What I attempted -- What I attempted to do was, first of all, I had the volume of return flow at nodes that were points of interest

toedter-direct-clear



1 throughout the reservation. Secondly, I attempted to
2 identify the temporal distribution on a monthly basis
3 of these return flows, and thirdly, I worked with Mr.
4 Billstein to outline the boundaries of these areas in
5 which the return flow came back into a particular node.

6 Q Now, when we're talking about return flows, are we
7 talking about return flows from the irrigation from
8 the irrigation of the trust lands claimed by the United
9 States and bounded in the red boundaries on the systems
10 operation map?

11 A Yes.

12 THE SPECIAL MASTER: Green.

13 THE WITNESS: Yes, that's correct. Both the red
14 and the green boundary up here on Exhibit WRIR C-305.

15 Q (By Mr. Clear) Well, tell us what you did in conjunction
16 with identifying the total volume of return flows.

17 A Okay. What I did is structured a simple equation which
18 Mr. Billstein and his staff members could use. That
19 equation was structured to determine what the total
20 volume of return flow would be on an annual basis. That
21 equation is return flow is equivalent is to the total
22 diversion, minus the overall efficiency, and that's
23 the overall efficiency provided by the agricultural
24 engineer times the diversion, minus the non-beneficial

25 toedter-direct-clear



1 use, or it's also been referred to as irrecoverable
2 loss.

3 Q You said the overall efficiency was the overall efficiencies
4 provided by the agricultural engineer?

5 A. Yes.

6 Q Were the diversions -- Was that provided by the agricultural
7 engineer also?

8 A. Yes.

9 Q How was the equation dealing with non-beneficial use
10 determined?

11 A. Okay. That was determined on the basis of a simple
12 little equation too that non-beneficial use is equivalent
13 to two-tenths of the diversion.

14 Q How -- Did you develop this two-tenths figure?

15 A. Yes, I developed it. It was based on the literature.
16 I spent considerable time doing literature search. I
17 have testified to this previously in my depletion analysis,
18 and the sources that I used was the Yellowstone River
19 Basin Water Salvage Report, a study on the Big Sandy
20 River, the Farson Project here in Wyoming that was
21 completed by the Soil Conservation Service.

22 THE SPECIAL MASTER: What year was that completed?

23 THE WITNESS: That's fairly recent. November of
24 1980.

25 toedter-direct-clear



1 And the third component that I looked at was the
2 Whiting Report which is a USBR Report performed in the
3 fifties.

4 Q (By Mr. Clear) Was the 20 percent of diversion the
5 same figure you used to determine non-beneficial use
6 for depletions in your depletion testimony?

7 A Okay. No, it was not. I discussed that a little bit
8 during my testimony on depletions, and I would just
9 casually mention that again, is that in the Yellowstone
10 Water Salvage Report, they used about six percent in
11 that analysis, and early on in my work and our depletion
12 work was carried out early on, I used that six percent.
13 Upon further research and what-not, I found that probably
14 20 percent was a big -- or better figure.

15 THE SPECIAL MASTER: We're talking now about percent
16 of what?

17 THE WITNESS: Of diversion.

18 THE SPECIAL MASTER: Being irrecoverable loss?

19 THE WITNESS: Yes, irrecoverable loss.

20 THE SPECIAL MASTER: Irrecoverable loss, all right.

21 THE WITNESS: Or it's non-beneficial use, you know,
22 stuff that's phreatophytic type use.

23 THE SPECIAL MASTER: Thank you.

24 THE WITNESS: Now, as I pointed out earlier, in
25 toedter-direct-clear



1 that depletion study, you know, we did sensitivity
2 analysis on that, and the impact to Mr. Keene's
3 natural flow was only affected to the one or two
4 percent level by this adjustment, so that's the
5 reason why we didn't go back through and redo the
6 whole thing. I think though, however, since you're
7 talking about a major block of water use in this
8 systems operation study, you do have to carry that
9 out at the 20 percent level.

10 Q Okay. Did you, aside from developing this formula
11 and did you do anything else to develop the total
12 volume of return flows?

13 A No, I did not.

14 Q Okay. The next step you said you did was you developed
15 a monthly distribution return flow, could you describe
16 how you did that?

17 A Yes. I reviewed the return flow on the Midvale Unit,
18 Muddy Creek and Fivemile Creek, combined those totals
19 since they are USGS gauged records from 1961 through
20 1968, added them and determined the weighted average
21 for that time frame on a monthly basis. Then after
22 having that information, there was some information
23 out in the literature. One was a BIA study on project
24 ditches from 1941 through 1948, and the other one was

25 toedter-direct-clear



1 a study on the Shoshone Project by the Bureau of
2 Reclamation, and that had been done a long time ago.
3 The work was absolutely performed in 1918, and it's
4 carried through the literature up through into the
5 fifties, and what I found was, by generally comparing
6 the three, they compared quite closely together. One
7 of the things that I looked for was to have a higher
8 level in the later portion of the irrigation season
9 and the return flow level to be at its minimum level
10 just prior to start, and all these different things
11 that I look at had that sort of a pattern. I ended
12 up concluding that the Midvale stuff that I had derived
13 was good data, so that's what we used for the systems
14 operation study.

15 * * * * *



1 Q (By Mr. Clear) How was the monthly distribution of return
2 flows expressed? Was it a figure of how much acre-feet of
3 water came back in a particular month.

4 A. Yes. It was like 6.9.

5 Q Was that in acre-feet or was it in percentages?

6 A. Actually, it would be a percentage is the way it's ex-
7 pressed.

8 Q And --

9 THE SPECIAL MASTER: Percent of total diversion?

10 Q (By Mr. Clear) Percent of what?

11 THE SPECIAL MASTER: Percent of total diversion?

12 THE WITNESS: No. It's a percent of a volume of
13 return flows. First off, you have to take your percentage
14 of diversion to arrive at the volume of return flow. Then
15 you take this factor and you multiply it times that product
16 to come out with your monthly.

17 Q (By Mr. Clear) So it's a monthly percentage of the return
18 flows would come back in a particular month?

19 A. That's correct.

20 Q Finally, you said you assisted in identifying the areas
21 that could be identified as contributing return flows to
22 a particular node. Can you explain what you did with
23 that?

24 A. Yes. Mr. Billstein and his systems operation study had

25 toedter - direct - clear



1 certain areas that he was interested in determining the
2 return flows for. So, initially he targeted these points.
3 Then I went through the areas with him on a site by site
4 basis and evaluated the boundaries to see, if, in fact, the
5 return flows from these areas would come in to that point.

6 Now, the materials that I used in order to do this
7 were 7 1/2 minute quad sheets which are put out by the
8 USGS and are available throughout that whole Basin; Dr.
9 Mesghinna's drainage layout maps --

10 Q How did you utilize the quad sheets, how were they helpful?

11 A They were helpful from a standpoint of ground contour lines.
12 You can establish, you know, the general water movement
13 where groundwater divides and that sort of thing, where
14 natural drainages come in.

15 Q What else did you utilize?

16 A As I mentioned previously, I used Dr. Mesghinna's drainage
17 layout maps, some isobath maps that were used, MVBI Study,
18 Part I, '81, and that was done kind of as a joint effort
19 between reclamation and BIA people. They actually had
20 the --

21 Q What is an isobath?

22 A An isobath is merely a map that shows the depth from the
23 ground surface to the water table. On this map it also
24 showed groundwater contour lines, which are drawn in

25 toedter - direct - clear



1 precisely the same manner that topographic lines are. And
2 we used those where they were available, in order to es-
3 tablish groundwater divides.

4 Another source that I relied on was, had considerable
5 discussion with BIA operational project personnel, namely
6 Louie Twichel and Don Crook, and those guys give us some
7 fill, particularly in the Little Wind Basin, of the ground-
8 water and also surface water movement in to see like the
9 Coolidge Canal, for instance, or Mill Creek, what have
10 you, in order to help express the areas that return.

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MR. WHITE: Your Honor, I would move to strike that portion of the last answer in which the witness referred to what other people told him without either an indication that it's reasonable for someone in his area of work to rely on what somebody else told him, or they were qualified to form an opinion with respect to those --

THE SPECIAL MASTER: Normally, I would sustain that objection, but if I don't this time, it's only because its on redirect, he's summarizing --

MR. WHITE: He's on direct, Your Honor.

MR. CLEAR: He's on direct.

THE SPECIAL MASTER: He's on direct, but he's on subject -- He's on a subject matter that, in my opinion, that doesn't do harm by leaving it in the record for whatever it's worth, the references to the two parties.

THE WITNESS: I'd like to point out one other thing for the record, is I didn't use that information just blindly either; as I used these other sources in order to verify what was given me.

THE SPECIAL MASTER: Okay.

Q (By Mr. Clear) Any other sources that you used?

A Yes. I used USGS Wind River Ground Water Study also
toedter-direct-clear



1 in my analysis.

2 Q Did you convey your results of your return flow analysis
3 to Mr. Billstein?

4 A Yes, I did.

5 Q Mr. Toedter, are you aware that you've been listed
6 as a witness for the State of Wyoming?

7 A Yes.

8 Q In the area of depletions and drainage?

9 A Yes.

10 Q When you are called by the State to testify as in depletion
11 and drainage, is your testimony going to be the same
12 testimony that you gave when you were called by the
13 United States as a witness?

14 MR. WHITE: I object, Your Honor, calls for
15 remarkable speculation.

16 THE SPECIAL MASTER: This is a very interesting
17 question. I never heard it before. I'm a little bit --
18 He's already answered it.

19 MR. WHITE: I'll move to strike it, Your Honor.
20 It calls for speculation. He doesn't even know the
21 questions he's going to be asked.

22 MR. CLEAR: Well, they listed him as their expert
23 witness, it's the same as if I asked him in a deposition
24 what would his testimony be.

25 toedter-direct-clear



1 THE SPECIAL MASTER: I think I'll sustain the
2 objection. Naturally, he's going to testify under
3 oath for them as he has under oath now, and that's
4 a pretty big umbrella. We'll see where it covers
5 him or where it does not.

6 Let me ask a question. Are you going to have
7 some cross-examination?

8 MR. WHITE: I am, Your Honor. I can't imagine
9 they're done, but if they're done --

10 THE SPECIAL MASTER: Are we done?

11 MR. CLEAR: I'm done.

12 THE SPECIAL MASTER: Let me ask, before you
13 begin, Mr. White. I followed your, Mr. Toedter, your
14 very casually described, simple, little formula and
15 structured this simple equation, but my problem is
16 when I see that you can come to a return flow figure
17 by taking the total diversion, minus the overall efficiency,
18 times a diversion, less the irrecoverable loss, you can't
19 then divide that by twelve and find a mean monthly flow,
20 but that isn't what you meant?

21 THE WITNESS: No.

22 THE SPECIAL MASTER: Then to get to monthly flow,
23 do you find that you have a direct bearing to high
24 volume months like August, of heavy irrigation to low
25 toedter-direct-clear



1 volume as far as the non-beneficial use factor, or is
2 there a higher percentage of non-beneficial use on
3 a month like August than there is on a month like April?

4 THE WITNESS: Okay, you're right. Now, I didn't
5 structure my analysis that way. What I did is by con-
6 sidering the non-beneficial use, first what I'm trying
7 to arrive at is the total volume of return flow, okay,
8 that will be available.

9 THE SPECIAL MASTER: Per season?

10 THE WITNESS: Yeah, on an annual basis actually,
11 for a redistribution on a monthly basis. So I take out
12 the non-beneficial use to begin with, and also the
13 beneficial use is what you get when you take the overall
14 efficiency and multiply it times diversion.

15 So everything else I should get back as return
16 flow. Then I have to redistribute that according to
17 this temporal distribution, which is on a monthly basis.
18 That's where, if I take the volume that I arrive at,
19 then take a monthly redistribution percentage times
20 that volume, then I'll arrive at the return flow for
21 that month.

22 Now, the total volume is going to vary from area
23 to area. In other words, as a return flow --

24 THE SPECIAL MASTER: Oh, yeah, we follow that.

25 That was pretty well got into this morning.



1 Okay, Mr. White.

2 Thank you for your few minutes.

3 MR. WHITE: Your Honor, before starting my
4 cross, I would move to strike the testimony of Mr.
5 Toedter, the testimony that's just been given, not
6 the previous testimony, for lack of probative value,
7 and the reason there's a lack of probative value and
8 relevancy, is there's actually no connection between
9 what Mr. Toedter did and what Mr. Billstein did in
10 terms of Mr. Toedter indicating what numbers he gave
11 Mr. Billstein so that you can see whether or not
12 Mr. Billstein used those numbers.

13 What Mr. Toedter did is, say he gave his work
14 to Mr. Billstein, but there's no way to know that
15 Mr. Billstein used his work.

16 MR. CLEAR: Mr. Billstein testified he used the
17 work.

18 MR. WHITE: For example, there's a monthly distribu-
19 tion of return flows which we went over with Mr. Billstein,
20 you remember, in October, 6.9 percent, and so forth.

21 There's no evidence that the values which Mr.
22 Billstein used for November --

23 THE SPECIAL MASTER: Came from Mr. Toedter?

24 MR. WHITE: -- were all the ones because Mr. Toedter
25 hasn't even said it.



1 THE SPECIAL MASTER: But the first question
2 that somebody asked Mr. Billstein today, I think,
3 dealt with that, Mr. White.

4 MR. CLEAR: Your Honor, if you will recall too,
5 I asked, I believe it was Mr. Keene, whether he gave
6 certain information to Mr. Vogel, and Mr. White objected
7 on the grounds that there was no showing that Mr. Vogel
8 used it. So I'm caught in a bind, if we say did you use
9 X's figures, he said you got to -- He wants it both ways.

10 THE SPECIAL MASTER: He wants to get you coming
11 and going.

12 MR. CLEAR: That's right.

13 MR. WHITE: No, I want to keep it straight level,
14 and straight level is what facts did you give to Mr.
15 Billstein. There's been absolutely no facts that he
16 gave to Mr. Billstein. He's described some return flow
17 areas, we don't know what those areas are. We have no
18 idea whether Mr. Billstein used them. He alluded to
19 some return flow notes, and there's no connection between
20 the return flows used by Mr. Billstein and this witness
21 because this witness wasn't asked what those were. He
22 said he developed monthly distribution of return flow,
23 but he hasn't been asked what those distributions are
24 so they can be matched up with Mr. Billstein.

25 He was asked what percentage of return flow percentages



1 he used, and he said 20 percent, which is what Mr.
2 Billstein said, but then when it was described how
3 that 20 percent was applied, it was a different operation
4 than what Mr. Billstein testified to. That's --

5 THE SPECIAL MASTER: Not so much a departure
6 that it would visciate all of his testimony. For that
7 reason, I'll overrule the objection, Mr. White.

8 MR. WHITE: Okay.

9 THE SPECIAL MASTER: You have a point, but not
10 enough to destroy his whole evidence.

11 MR. WHITE: Thank you, Your Honor.

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1 MR. WHITE: Maybe we can go until about five before
2 we take a break, Your Honor? We can get some things which
3 are --

4 THE SPECIAL MASTER: All right, if we can wind her
5 up today we won't have to work tomorrow.

6 MR. WHITE: Well, I doubt if we can but I can try.

7 Q (By Mr. White) What were the return flow areas which you
8 identified?

9 A Okay, I --

10 Q Can you take a pencil and mark those areas on Exhibit 305?

11 A I'm going to have to use one other source.

12 MR. WHITE: Let me see if I can get you something
13 that will show up, Bob.

14 THE WITNESS: Okay, have you got a felt pen?

15 (Off-the-record discussion.)

16 Q (By Mr. White) Bob, handing you a green felt tip pen I
17 would ask you if you would please delineate on Exhibit 305
18 in green the return flow areas which you established for
19 the Big Wind Study area.

20 THE SPECIAL MASTER: How do you propose he does
21 this with that pencil, Mr. White?

22 MR. WHITE: I just propose he just draw it on, Your
23 Honor, I don't have any idea what they are. If the
24 United States doesn't object, why I suppose --

25 toedter-cross-white



1 THE SPECIAL MASTER: It does violence to the exhibit.
2 Can't he tell us where this area took place by identifying
3 either the township and range or by giving us an operations
4 study node number or by defining the particular area as to
5 the area?

6 MR. WHITE: What I expect he's going to end up with
7 Your Honor, is sort of a large loop. They aren't going to
8 run down section lines, they are going to go along
9 hydrographic divides and it's going to be impossible for
10 him to describe them orally.

11 THE SPECIAL MASTER: Will it be on the minor
12 tributaries?

13 MR. CLEAR: Your Honor --

14 THE SPECIAL MASTER: Just a minute. Will it be on
15 the minor tributaries?

16 MR. WHITE: No, it would start with the major areas
17 because I don't believe he did return flow analyses for
18 the minor tributaries.

19 THE SPECIAL MASTER: Well, let's ask him.

20 MR. WHITE: Okay.

21 THE SPECIAL MASTER: Let me ask him: Mr. Toedter,
22 did you do return flow studies for the minor tributaries?

23 THE WITNESS: No, I did not.

24 THE SPECIAL MASTER: Crow Creek and others like that?

25 toedter-cross-white



1 THE WITNESS: No.

2 THE SPECIAL MASTER: All right, we have that answered
3 let's eliminate some more. Did you do return flow studies
4 on some of the isolated tracts of Indian land north of the
5 town of Riverton to the northeast of the Lefthand Unit?

6 THE WITNESS: No.

7 THE SPECIAL MASTER: Okay, then I would say that you
8 probably did your return flow units on the Big Wind Study
9 boundary as it exists and on the Coolidge Unit and Ray
10 Unit and the Subagency and those units?

11 THE WITNESS: Okay, my return flow analysis was
12 within the boundary outlined here in red called the Big
13 Wind Study.

14 MR. WHITE: That's on C-305.

15 THE WITNESS: Yes, on C-305.

16 And also the area outlined in green again on the
17 Exhibit 305 called the Little Wind Study Boundary.

18 THE SPECIAL MASTER: Okay, thank you, Mr. Toedter.
19 I wanted to save getting it marked up to badly.

20 MR. WHITE: Well, I'm going to ask him the same
21 question.

22 MR. CLEAR: We do have that return flow map that we
23 offered earlier.

24 MR. WHITE: It wasn't offered as part of his direct,

25 toedter-cross-white



1 that's the problem.

2 MR. CLEAR: Yes, it was. It was offered as part of
3 his direct.

4 THE SPECIAL MASTER: I think it was in evidence --

5 MR. CLEAR: No, it is not in evidence.

6 MR. WHITE: It is not in evidence.

7 MR. CLEAR: We had the five-day rule, Your Honor.

8 MR. WHITE: And it wasn't offered during his direct
9 testimony to which I am cross-examining now. I have no
10 way to get to it.

11 THE SPECIAL MASTER: Go ahead, Mr. White.

12 MR. WHITE: If the United States would like to
13 reopen the direct to get that map in, there would be no
14 need to mark on the exhibit, but we are entitled to know
15 where his return flow areas are, Your Honor.

16 THE SPECIAL MASTER: Well --

17 MR. WHITE: There must be some problem with it or we
18 would have seen it during the direct.

19 MR. CLEAR: We'll bring it out, Your Honor. The only
20 reason -- the reason we offered it the first time we had
21 not -- Mr. Billstein had not been on and testified as to
22 what the loads were and what the study system was and the
23 systems operation was, and we thought it would be in aid
24 of Mr. Toedter's testimony at that time.

25 toedter-cross-white



1 MR. WHITE: Why don't I sit down, Your Honor, and give
2 them a chance to reopen direct and put that on and save
3 everybody a lot of trouble?

4 THE SPECIAL MASTER: I expect it would if -- we have
5 worked with it before, we've had it identified even though
6 it wasn't offered into evidence.

7 MR. CLEAR: It was identified, Your Honor.

8 THE SPECIAL MASTER: It was identified, it was not
9 offered.

10 MR. CLEAR: I suppose we've got to get it.

11 THE SPECIAL MASTER: What will it take to get that,
12 five or ten minutes?

13 MR. WHITE: It is just down the hall, isn't it?
14 I think it is Exhibit 294.

15 THE SPECIAL MASTER: We'll stay in session while you're
16 gone, Leo, to save time.

17 (Brief pause.)

18 THE SPECIAL MASTER: Thank you, Leo.

19 All right, Mr. White, there we are -- or go ahead,
20 Mr. Clear.

21 (FURTHER) DIRECT EXAMINATION

22 BY MR. CLEAR:

23 Q Mr. Toedter, we have placed on the easel U.S. Exhibit
24 WRIR C-294, are you familiar with that?

25 toedter-direct-clear



1 A Yes, I am.

2 Q And will you describe what it is?

3 A Yes, it's a map that shows the groundwater return flow
4 areas that I provided to Mr. Billstein for his use in
5 the systems operation study. We worked together actually
6 jointly, in the development of this map. He had certain
7 points of interest in which return flow was important to
8 him in terms of the operation.

9 Q Are those points of interest shown on that in the overall
10 study?

11 A Yes, they are. They are identified by these nodes.

12 Q The large colored dots?

13 A Yeah, the large colored dots and they are at the same
14 color as what the upstream area which has acreage
15 contributing to return flow above that.

16 Q Was that map prepared under your direction and control?

17 A Yes.

18 MR. CLEAR: Your Honor, we offer that into evidence.
19 United States Exhibit WRIR C-294 for illustrative
20 purposes showing the location of the return flow nodes in
21 the areas which contribute to return flows which can be
22 accounted for at the particular node.

23 THE SPECIAL MASTER: Since you were in the middle of
24 your cross, I assume you would have no voir dire?

25 todeter-direct-clear



1 MR. WHITE: I would like to voir dire.

2 THE SPECIAL MASTER: You are on cross-examination.

3 MR. WHITE: Well, I allowed the United States -- or
4 said the United States could reopen direct.

5 THE SPECIAL MASTER: All right, all right.

6 MR. WHITE: I can, if you would like to reserve
7 ruling until I'm done with cross we can just incorporate
8 voir dire as part of cross.

9 THE SPECIAL MASTER: That's what I meant.

10 MR. WHITE: You are quite right and I apologize.

11 THE SPECIAL MASTER: All right.

12 CROSS-EXAMINATION (RESUMED)

13 BY MR. WHITE:

14 Q Let's talk about 294.

15 A Okay.

16 Q Isn't it true that you did no return flow analysis for
17 the Arapahoe Unit?

18 A Yes, that's correct.

19 Q Also for the Riverton East?

20 A Yes.

21 Q How about for the Subagency?

22 A Yes, and the reason why is the return flow wasn't real
23 consequential to Mr. Billstein's operational study in
24 terms of water availability.

25 toedter-cross-white



1 Q Well, might it not have been consequential from your
2 standpoint with respect to your expertise?

3 A No, because I only provided my data for his benefit.

4 Q I see. What instructions did he give you when he asked
5 you to develop these return flow areas for these particular
6 nodes?

7 A Well, what we were principally interested in was finding
8 points of interest which are shown by the nodes where
9 return flow could be reutilized within his systems
10 operations study.

11 Q Is that the reason why you did no return flow analysis
12 for the Owl Creek area or for the minor tributaries?

13 A The reason why we didn't do any analysis for those other
14 tributaries was my return flow analysis was utilized in
15 systems operation study and -- well, that's it.

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toedter-cross-white



1 Q (By Mr. White) I'm curious, how did you establish
2 the boundaries in green that provide, the land that
3 provided a return flow at Node 3?

4 A. What we did was we utilized both this map and a larger
5 scale map that showed all the lands that were included
6 within the United States' claim between point eleven
7 and point three, and considered them.

8 Q But based on Exhibit C-294, there's only one, there
9 are only two small parcels of claimed land, and those
10 are both in the eastern one-quarter of that return flow
11 area.

12 A. Okay. Well, that's all we considered for that area.

13 Q Why did the return flow area go all the way up to
14 eleven then?

15 A. Because we just took in the total area. It doesn't
16 make any difference, you know, whether you just confine
17 your line down to the area itself that the land lies
18 within. You take it upstream.

19 Q Now, had you not been provided with the nodes that Mr.
20 Billstein wanted the information for as to return flows,
21 the sources and the temporal distribution, would you have
22 selected those same nodes as being representative of what
23 actually happens in terms of return flow in that river
24 system, or what would actually happen if these claims

25 toedter-cross-white



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are granted?

A. Well, actually you could -- you have to set some ground rules here for definition. We could define number of nodes within the project, however, for simplification of accounting on this project, so then you get very, very massive, very complex. We limit it to as few points as what we could utilize and yet have information provided us that was the sum value.

Q I'd like to direct your attention to the green area which you have indicated return, provides return flow at Node 36 and ask you if it isn't true that that green area comprises maybe 20 river miles, I should say comprises 20 river miles.

A. Okay, yeah.

Q. Is that about right?

A. That looks like it.

Q Isn't it true in real life the return flows from these parcels along the river are going to come in at a whole variety of points well above Node 36?

A. Oh, sure, but I don't see any problem with that because the return flow all occurs above your point of interest, which is the 36.

Q How do you know that those return flows which, in reality, get into the river above 36 aren't diverted out again

toedter-cross-white



1 before they get to 36?

2 A. Well, they may be, but -- and this is actually out of
3 my area of study on this project, but that water that
4 might be diverted here isn't consequential to any point
5 within that section. It may be important to a downstream
6 point.

7 Q. Well, isn't it true that you got another 20-mile stretch
8 of stream, roughly 20 miles in the orange area that pro-
9 vides the return flow for Node 39?

10 A. Sure.

11 Q. And isn't it also true that in real life there are return
12 flows all along that stretch of river within the orange?

13 A. But I would assume that Mr. Billstein found that there
14 was plenty of water available to serve all those lands.

15 THE SPECIAL MASTER: I don't see that these questions
16 or the answers add one iota of probative value to this
17 lawsuit, gentlemen. The witness has taken ten minutes
18 to discuss his, his mode of systems operation study of
19 return flows, and you're questioning his map on that, and
20 I see nothing that's adding one iota of probative value of
21 what we're doing, whether every foot of the return flows
22 comes back down to where his node circle is or whether it
23 goes to a stream prior to that is really irrelevant as
24 far as his testimony is concerned.

25 toedter-cross-white



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MR. WHITE: But that's the assumption Mr. Billstein did his work on, Your Honor.

THE SPECIAL MASTER: Mr. Billstein's the man to ask about that, and not Mr. Toedter.

MR. ECHOHAWK: Your Honor, I might also point out that Mr. Billstein's testimony earlier today said it really didn't matter if he didn't take any return flows into consideration, we would still have water available.

THE SPECIAL MASTER: I'm not sure that was his conclusion of it all, but I appreciate the observation.

MR. WHITE: Let me inquire a little bit.

THE SPECIAL MASTER: Go ahead, Mr. White.

Q (By Mr. White) Can you tell me, for example, in August of 1946, how much return flow did you project as being available at Node 34 in the area surrounded in blue?

* * * * *



1 A Okay. Actually that was outside of the scope of my work.
2 As I outlined in direct, I provided an equation in which
3 Mr. Billstein and other staff members at HKM could
4 calculate the total volume within the context of the
5 HKM HEC-3 program. They could spread this out on a
6 temporal distribution and it would be contained within
7 the context of the HEC-3 computer handouts.

8 Q Do you know how many acres of irrigated land there are
9 projected to be within the blue return flow area that
10 culminates at Node 34?

11 MR. CLEAR: Objection, Your Honor, irrelevant.

12 THE SPECIAL MASTER: Irrelevant?

13 MR. WHITE: Maybe I ought to renew my motion to
14 strike the testimony.

15 THE SPECIAL MASTER: I don't think it's irrelevant,
16 he may answer if he knows.

17 THE WITNESS: Well, I don't --

18 THE SPECIAL MASTER: If you don't know, just say so.

19 THE WITNESS: I don't have any information with me.

20 THE SPECIAL MASTER: That's fine.

21 Q (By Mr. White) Why don't you go ahead and sit down, Bob.

22 I'm going to hand you a blank piece of paper which
23 I'm going to mark RFT for return flow Toedter-1, and I
24 would like you to please, if you would, to draw or to write
25 toedter-cross-white



1 on that blank piece of paper the return flow formula
2 which you orally gave for the record.

3 A Okay.

4 Q Because I wasn't sure what was multiplied by what, whether
5 the multiplication took --

6 THE SPECIAL MASTER: It's in the record, and the
7 record is the best proof of what he said, but go ahead.
8 You have a right to cross-examine along that aspect.

9 A Okay. The equation which I gave is the return flow which
10 on this sheet of paper I'll call "RF", is equivalent to
11 diversion, which I'll just abbreviate "DIV", minus the
12 overall efficiency, and I'll just call that "over EFF",
13 times the diversion, "DIV" again, minus the non-beneficial
14 use.

15 Q (By Mr. White) Okay. From what source did you instruct
16 Mr. Billstein and his group to obtain the values for
17 diversions?

18 MR. CLEAR: Objection, Your Honor. He's testified
19 he didn't instruct Mr. Billstein to acquire values, he
20 didn't testify to that.

21 MR. WHITE: Your Honor, he gave him a formula to use.

22 THE SPECIAL MASTER: I'll sustain the objection.

23 Q (By Mr. White) From what source in the formula, which
24 you developed, would the values for diversions come?

25 toedter-cross-white



1 A Okay. Those are the same diversions values that Mr.
2 Billstein used at his nodes for diversion.

3 Q So --

4 A Within the context of the study on Exhibit 305.

5 Q And this HEC-3 printout, then you would simply go to the
6 values if you want to know the diversion values for
7 Node 34, you would go to, to Control Point 34, get those
8 diversion values and those would be the values you used
9 in the formula?

10 A No. You cannot because that's the return flow node.

11 Q Okay. Well, let's say you got a diversion, which one
12 would be a diversion, would 30 be a diversion, Bob?

13 THE SPECIAL MASTER: Why don't we have a look at it,
14 it's right under that one.

15 Q (By Mr. White) Here's 34, and you said that is not a
16 diversion node.

17 A I don't think --

18 Q How about 32, is that a diversion node?

19 A Yes, 32 would be a diversion node.

20 Q Okay. Now, for the Diversion Node 32, where do you get --

21 MR. CLEAR: Your Honor, he's testifying as to the
22 stuff Mr. Billstein prepared and --

23 THE SPECIAL MASTER: Let the question be asked and
24 see if we'll object to it or not.

25 toedter-cross-white



1 Q (By Mr. White) With respect to the diversion of, like
2 Diversion Node 32 or Control Point 32, where would you
3 get the value for diversions that appears in the formula
4 which you gave Mr. Billstein?

5 MR. CLEAR: Your Honor --

6 A Okay. Well, I can answer this, but actually, you know,
7 I didn't do this portion of the work. What I did is I
8 structured a technique of analysis here that Mr. Billstein
9 and his group, to go on ahead and use and they took it
10 from there.

11 THE SPECIAL MASTER: That's his answer.

12 MR. WHITE: Well, Your Honor, I think, I would like
13 to continue this line of inquiry because if Mr. Toedter
14 is unable to -- Excuse me, if Mr. Toedter indicates that
15 the values for the diversions which are contained in his
16 formula that he developed, came from one place and it
17 should turn out --

18 THE SPECIAL MASTER: He doesn't have to tell you
19 where it came from, he didn't use the formula, he
20 supplied the formulas for others to get to their figures.

21 MR. WHITE: Let me the question --

22 THE SPECIAL MASTER: So he didn't have to come up
23 with his diversion sources.

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25 toedter-cross-white



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Q (By Mr. White) When developing the formula from what source did you intend that the values for the diversion portion of that formula would be derived?

A Well the values for diversion should consist of the diversion for all those lands to be supplied with water or diversion above each one of these return flow nodes.

Q So within this blue area it culminates in node 34?

A Right.

Q You would total the -- all of the diversions required for the lands included within that, is that correct?

A Right. That's correct.

Q And that's the value that would go into your formula for diversions?

A Right.

Q Now, what do you mean by overall efficiency as part of your formula?

A Okay. Now, overall efficiency would be defined as the same overall efficiency that Dr. Mesghinna and Mr. Stetson used previously in their testimony.

Q And the nonbeneficial use factor in your formula would be simply .2 times diversions?

A That's correct.

Q Okay. Thank you.

Mr. Toedter, with respect to any of your return flow
toedter - direct -



1 areas, is that the right term for these colored areas,
2 return flow areas?

3 A I think for lack of a better word.

4 Q Okay. Did you take into consideration or was it part of
5 your work to take into consideration where return flows
6 from lands that are either presently under irrigation
7 or proposed to be under irrigation did not go back to
8 the river but were instead intercepted by another ditch
9 or canal?

10 A Well, we tried to consider all factors in terms of where
11 the return flow came back into the river system.

12 Q How did you deal with Dinwoody Canal return flow going
13 back into the Wind River Canal?

14 A Well, again, that's getting back to the same sort of
15 thing that you were asking me intermediate points of
16 diversion. You know, it's the same concept of analysis
17 and frankly, it just wasn't important to us.

18 Q Did you mean to say that this map Exhibit C-294 dealt
19 with groundwater return flow only?

20 THE SPECIAL MASTER: No, that's not --

21 A No.

22 THE SPECIAL MASTER: No, that's not a fair question,
23 Mr. White.

24 Q (By Mr. White) What does it deal with?

25 toedter - cross - white



- 1 A Both surface and ground water.
- 2 Q Okay. As part of your depletion analysis as opposed to
- 3 your return flow analysis, isn't it true that you developed
- 4 a temporal distribution by percentages of return flows
- 5 by month?
- 6 A For the depletion analysis?
- 7 Q Yes.
- 8 A Yes.
- 9 Q Okay. And you developed the same sort of temporal distri-
- 10 bution percentages by month for your return flow analysis,
- 11 isn't that correct?
- 12 A Yes.
- 13 Q And isn't it true that they were different?
- 14 A Yes. The reason being it is just groundwater was considered
- 15 in the depletion analysis and we considered both in this
- 16 analysis, both surface and ground water.
- 17 Q Why did you consider only groundwater in the depletion
- 18 analysis which was part of the virgin flow analysis, and
- 19 then consider both groundwater and surface water as part
- 20 of the systems operation return flow analysis?
- 21 A Okay. It was just merely the way the programs were organ-
- 22 ized for ease of operations sake, it was easier to operate
- 23 the HEG-3 from the standpoint of considering both at the
- 24 same time.
- 25 toedter - cross - white



1 Q How have you attempted to verify that the temporal distri-
2 bution percentages month by month percentages which you
3 developed are applicable for all of the return flow areas
4 shown on Exhibit 294?

5 A Well, that gets back to your water duties.

6 Q Gets back to your water -- I'm sorry?

7 A To your water duties.

8 THE SPECIAL MASTER: Duties.

9 MR. WHITE: Thank you, thank you.

10 THE WITNESS: That have been established by the
11 agricultural engineer and they become a very important
12 part of this total volume metric equation analysis for
13 return flow. As your efficiency is varied from unit to
14 unit, we varied the overall efficiency within the context
15 of that equation. So in case it worked both ways, if your
16 efficiencies were better, your subsequent -- you know,
17 your diversions would be accounted for differently, your
18 beneficial use is -- a portion of that would be accounted
19 for appropriately taking the overall efficiency that we
20 were given times that diversion and then subtracting the
21 nonbeneficial use.

22 Q Well, what I meant to ask about was the temporal distribu-
23 tion. In other words 6.9 percent in October.

24 A Yes.

25 toedter - cross - white



1 Q You applied that in the green study area that culminates
2 in node 17 just as you applied it in the blue study area
3 or return flow area that culminates in node 11, isn't that
4 correct?

5 A Yes.

6 Q What variation, if any, did you attempt to insure that
7 6.9 percent for October was appropriate for both of those
8 return flow areas separated by some 50 miles or so?

9 A Okay. Well, when one looks at this whole thing you have
10 to look at it from the standpoint of the way the water is
11 diverted out on the land. First of all, you consider con-
12 sumptive use requirements assuming that they are in basic-
13 ally the same climatic zones. You would have about the
14 same basic consumptive use for each area and you consider
15 your efficiency. If they are approximately the same for
16 each area, it would carry through logically that your
17 temporal distribution of your return flow would be about
18 the same.

19 Q Well, you had the same temporal distribution for return
20 flow --

21 THE SPECIAL MASTER: Now, you're getting argumenta-
22 tive with him. He gave you an answer, Mr. White, and
23 there's no use of belaboring it to death. He gave you
24 the answer.

25 toedter - cross - white



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It is ten minutes after five and we are not completed.
Are we to finish with this witness fairly soon or do we
go into tomorrow?

MR. WHITE: I would guess about another hour.

THE SPECIAL MASTER: You guessed a half an hour --
first you guessed 15 minutes at 3:00 and then you guessed
about a half an hour at 4:00 and now you're guessing how
much, another hour?

MR. WHITE: I don't recall a half hour, Your Honor.

THE SPECIAL MASTER: Let's do it tomorrow. Let's
adjourn until 9:15 tomorrow morning and continue then.

MR. WHITE: Okay.

* * * * *



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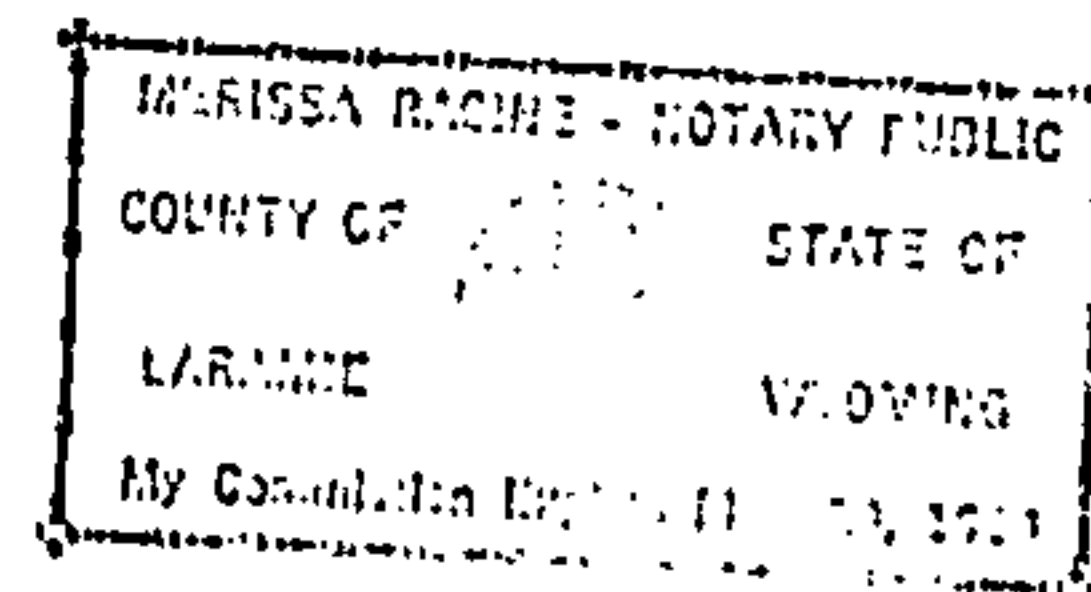
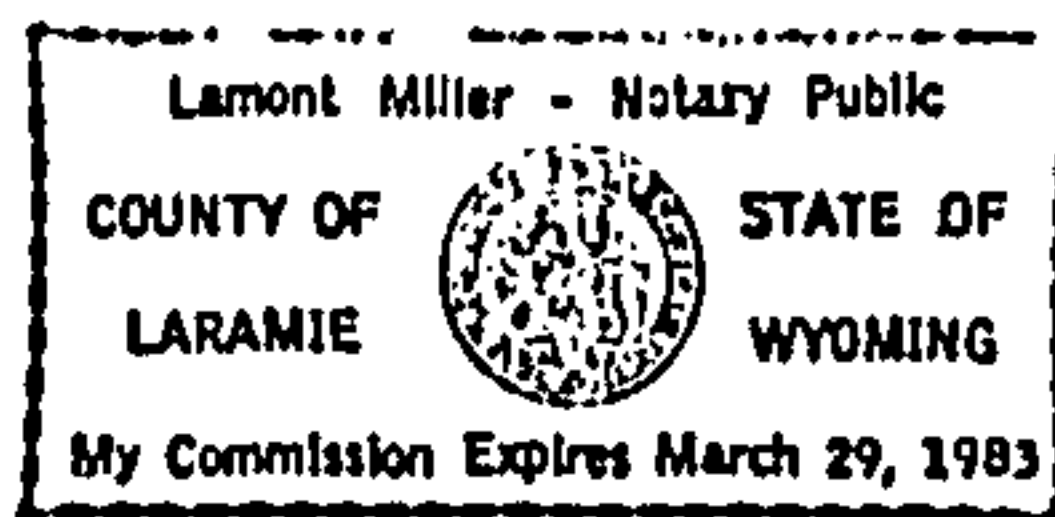
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14 We further certify that we are not agents, attorneys
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