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## Trial Transcript, Vol. 41, Afternoon Session

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IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT  
WASHAKIE COUNTY, STATE OF WYOMING

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

FILED \_\_\_\_\_  
5/1 1981  
*Margaret V. Hampton* CLERK  
DEPUTY

VOLUME 41

Afternoon Session

Monday, April 20, 1981

**ORIGINAL**

1 THE SPECIAL MASTER: We're without a witness.  
2 MR. MERRILL: Certainly are. But before I  
3 resume my cross-examination of Mr. Waples, I'd  
4 like to raise another matter that came up this morn-  
5 ing in court, and that was some information that Mr.  
6 Echohawk has served on the United States in partial  
7 response to the State's ninth request for production.  
8 Although some of the material that we requested is  
9 attached to this letter, we've been informed by Mr.  
10 Echohawk that in order to obtain some of the other  
11 materials from the Bureau of Reclamation, it will  
12 be necessary for the State to send one of its ex-  
13 perts or someone else up to Billings, Montana, to  
14 photocopy material, as the State is doing this very  
15 minute, sending an expert to San Francisco.

16 THE SPECIAL MASTER: Is this material in the  
17 Bureau of Reclamation of the HKM office?

18 MR. MERRILL: I'm not sure, Your Honor. I sus-  
19 pect it's available in either office, and I don't  
20 understand why it is that we've got to start sending  
21 people in airplanes all over to try to photocopy --

22 THE SPECIAL MASTER: Where is it, Mr. Echohawk?

23 MR. ECHOHAWK: It's in the Bureau of Reclamation  
24 office in Billings. And the information that Wyoming  
25 has requested is somewhat preliminary. The Bureau of

1 Reclamation is somewhat hesitant because it hasn't  
2 been finalized, but after we talked to them, they  
3 did indicate that they would be willing to let the  
4 people look at it there, and I think that's what  
5 Wyoming's request for production would ask, either  
6 we make copies of it or make it available for inspec-  
7 tion, and that's what we are doing, making it avail-  
8 able for inspection.

9 MR. KROB: Your Honor, the ninth request for  
10 production asks that they either be copies or made  
11 available for copying, not just for inspection.

12 THE SPECIAL MASTER: Insomuch as we had Wyoming  
13 send its special man out to San Francisco, maybe this  
14 is your turn to see if you can't have an official of  
15 either HKM or of the United States cooperate with the  
16 Bureau of Reclamation and get copies of what the State  
17 wants this time.

18 MR. ECHOHAWK: Your Honor, on that, even when  
19 HKM wanted to go look at this information, the Bureau  
20 of Reclamation office would not let it out of the  
21 building, so it's not HKM's material, it's the Re-  
22 clamation's. And, like I said, it took some doing  
23 to get them to do that.

24 THE SPECIAL MASTER: What is it specifically,  
25 Mr. Merrill, what is it specifically that has not



1                   been produced that you are requesting?

2                   MR. MERRILL: There are two specific documents  
3                   which we are interested in, Your Honor. The first  
4                   part, which is called the Muddy Ridge study, As you  
5                   will recall, this came up earlier, it was a Bureau of  
6                   Reclamation restudy of the Muddy Ridge area and this  
7                   time included consideration of sprinkler irrigation  
8                   of that area. And we have the report itself, but  
9                   need the maps and various diagrams that were attached  
10                   as appendices.

11                   The second document is a drainage study produced  
12                   by a gentleman by the name of Kennedy within the  
13                   Bureau of Reclamation, and the answers are suggested  
14                   answers, I suppose, from the solicitor of the Depart-  
15                   ment of Interior to Mr. Echohawk, a copy which I have  
16                   here that says these studies were actually completed,  
17                   although not in the year that we requested.

18                   The only point we are trying to make is that we  
19                   have sent one of our experts out to San Francisco  
20                   today at about an expense of 500 bucks for air fare  
21                   and that much again for his time and to copy perhaps  
22                   a couple hundred papers of 8 1/2 x 11 inch documents.  
23                   That comes out to quite a few dollars a page. I  
24                   think it's unreasonable for the United States to now  
25                   start taking the position that we are free to get

1 information as long as we don't mind sending our  
2 experts all over the globe to do some photocopying,  
3 and I think that's an unreasonable position to take.

4 THE SPECIAL MASTER: Is this information coming  
5 into the record anyway in the course of the future?

6 MR. ECHOHAWK: No, Your Honor. It's preliminary  
7 information. The Bureau of Reclamation has not  
8 finalized it.

9 THE SPECIAL MASTER: How could it be preliminary  
10 information if it's dated on some work they did on  
11 the project quite a few years ago?

12 MR. ECHOHAWK: As I understand it, they have  
13 some kind of ongoing review process or whatever.  
14 It's just what they've informed us.

15 THE SPECIAL MASTER: This is some rather late  
16 information, Mr. Merrill, with some upgrading on the  
17 work on the Muddy Ridge project?

18 MR. MERRILL: I don't know, Your Honor. Our  
19 experts thought that these studies were conducted  
20 in 1977 and 1978, I believe, and the answer states  
21 the studies were not conducted in the years that we  
22 claim, but, say, "There were such studies conducted  
23 in a different year." The response doesn't say par-  
24 ticularly what year or anything else that helps us  
25 locate that information. I think it's simply another

1 attempt on the part of the United States to say,  
2 "Look, if you want it, come and get it at your own  
3 expense." We haven't been that way with respect to  
4 producing documents they've requested.

5 MR. ECHOHAWK: That's what the rules call for.

6 THE SPECIAL MASTER: Mr. Sachse, can you throw  
7 some light on this?

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1 MR. SACHSE: Well, I hope so. It seems  
2 to me that a question that's not being asked needs  
3 to be asked here, and that is whether this is  
4 information that is subject to discovery, because  
5 apparently the Bureau of Reclamation is resisting  
6 making it available on the grounds that it's preliminary  
7 working documents that they don't wish to make  
8 public yet. If that's so, this may be -- it may be  
9 privileged information, internal working documents  
10 that are not subject to discovery. I'm not in a  
11 position to say one way or the other at this moment,  
12 but it seems to me it might be useful first to have  
13 a determination whether this material is subject to  
14 discovery. Then if it is subject to discovery, then  
15 it doesn't matter if the Bureau of Rec is reluctant  
16 or not reluctant to make it available, and the Court  
17 can make an order as to whether it must be made  
18 available.

19 It might be useful to have some argument,  
20 perhaps, not today because apparently no one seems  
21 to have thought of it in these terms, as to whether  
22 this is discovery material or not.

23 THE SPECIAL MASTER: Well, Mr. Echohawk has  
24 indicated yes, they may come and see it.

25 MR. ECHOHAWK: Yes, we have discussed that

1 with the solicitor of the Department of Interior, and  
2 it is public information and not privileged. We are  
3 making it available, it's just the question of the  
4 method we are going to make it available. The rules  
5 and I think Wyoming's request asked if we can either  
6 give them copies, or as Mr. Krob said, make it  
7 available for copying. That's what we have chosen to  
8 do because it's bulky documents. The Reclamation  
9 would rather not go to the trouble and expense of  
10 doing that. We would make it available in Wyoming --  
11 I mean in Billings and let the State go through it.

12 THE SPECIAL MASTER: I'm going to ask you  
13 to provide that, Mr. Echohawk, in imminent fairness  
14 because we went through this a week ago on the San  
15 Francisco exhibits with Mesghinna --

16 MR. ECHOHAWK: I believe this information  
17 is more bulky than that.

18 THE SPECIAL MASTER: I can't help that.  
19 The ball is in the other court now with one court  
20 per stroke, and the ball will be back.

21 MR. ECHOHAWK: Your Honor, as I said before,  
22 we were complying with the request. The request says  
23 that we will specifically make it available.

24 THE SPECIAL MASTER: Well, I got to be fair-  
25 handed about it. I can't just say that if Wyoming

1 wants to look at it they can go up to Billings and have  
2 a look at this and copy it if necessary, if that's  
3 what you want me to do.

4 MR. ECHOHAWK: That's exactly right because,  
5 Your Honor, there may be information in there they  
6 don't want.

7 MR. MERRILL: That's not been a problem yet,  
8 Your Honor.

9 THE SPECIAL MASTER: You prepare an order  
10 like this and I'll sign it and see you get it.

11 MR. ECHOHAWK: Does the 30-day extension  
12 you granted, Your Honor, apply to this information?

13 THE SPECIAL MASTER: The 30-day extension?

14 MR. ECHOHAWK: You recall we requested a  
15 30-day extension in which to respond to Wyoming's  
16 ninth set.

17 THE SPECIAL MASTER: I recall that you did,  
18 yes.

19 MR. MERRILL: Your Honor, I believe that  
20 was granted with the acquiescence of the State of  
21 Wyoming and also with the understanding I made that  
22 those documents would be made available as quickly  
23 as possible.

24 THE SPECIAL MASTER: I don't think the 30-  
25 day rule would apply to that because some of it has

1        been provided before.

2                    MR. ECHOHAWK: The State said we would make  
3 this information available as quickly as we could.  
4 The reason we weren't making this information available  
5 was because it was so burdensome to do so. Wyoming  
6 could go up there and look at this tomorrow and see  
7 if that's what they want and in turn make copies up  
8 there.

9                    THE SPECIAL MASTER: Well, I can appreciate  
10 that. If there is some way to distinguish specifically  
11 what you want from the mass of material that's there,  
12 perhaps you would like to identify with more  
13 particularity what it is you want, Mr. Merrill.

14                   MR. MERRILL: Your Honor, the request for  
15 production identifies the documents with great  
16 particularity. In fact, it's obvious the Bureau of  
17 Reclamation knows what we want because they told us  
18 we didn't get the year quite right, but there was  
19 such a report, so it's clear they know exactly what  
20 we want here, too.

21                   THE SPECIAL MASTER: Don't they have copies  
22 that they can send?

23                   MR. MERRILL: That's all we are saying,  
24 just make a copy and send it in the mail.

25                   THE SPECIAL MASTER: Do they have copies



1 available?

2 MR. ECHOHAWK; I don't think they do, Your  
3 Honor.

4 THE SPECIAL MASTER: Would you find out?

5 MR. ECHOHAWK: As I pointed out, when HKM  
6 made the attempt to get this information, the Bureau  
7 of Rec would not turn it over either.

8 THE SPECIAL MASTER: This is a different  
9 request now from the State, and if it's discovery  
10 material, we will proceed to get it. But I feel I  
11 must put the costs and burden of providing this  
12 material on the United States this time, Tom, in order  
13 to be fair after last week's ruling on the San  
14 Francisco matter.

15 Okay, Mr. Merrill.

16 I sometimes wonder if there is ever going  
17 to be an end to this lawsuit when I see how the  
18 State in all candor pursues the information of every  
19 conceivable type of document at every level in every  
20 way, and I would rather suspect that one of these  
21 weeks it will be the duty of the Master here to look  
22 things over and draw some strong rules as to pulling  
23 together a conclusion of examination of every material  
24 so we can proceed to have a determination on what's  
25 before us, which is especially true with the lands on



1 the Reservation. How much more can there be?

2 MR. MERRILL: Well, Your Honor, as it turns  
3 out, there is quite a bit of information already  
4 existing, as the various witnesses have told you,  
5 concerning the land classification on the Reservation.  
6 I would simply point out the two documents addressed  
7 in this request reflect the results of work that the  
8 Bureau of Reclamation has done itself in classifying  
9 lands on the Wind River Indian Reservation, not any  
10 other piece of land. These are classification studies  
11 of the same lands that have been completed before,  
12 and we believe it's only appropriate to bring that  
13 information before the Court, which is impossible for  
14 us to do if we don't get a copy of it first.

15 THE SPECIAL MASTER: Well, you heard my  
16 suggestion to you to help you get it.

17 MR. MERRILL: I appreciate that, Your Honor.

18 CROSS-EXAMINATION (CONTINUED)

19 BY MR. MERRILL:

20 Q Mr. Waples, would you please open your report  
21 to page 3 -- excuse me, For the record, that's  
22 Exhibit C-226.

23 Would you please explain to the Court how  
24 you derived the definition of Class 4 lands as

25 waples-cross-merrill

1 they apply to the historic study program?

2 A All of the classes are relative classes --  
3 excuse me -- relative classes of quality, if  
4 you will. The Class 4 is simply the least  
5 suitable type of land that was deemed to be  
6 arable under this study.

7 Q As part of that definition, how did you select  
8 the words, "Marginal quality for irrigation"?

9 MR. ECHORAWK: Objection, Your Honor, We  
10 have covered this ground before, the derivation  
11 of the various land classes, with Mr. Kersich.  
12 Again, this is merely repetitious and a waste  
13 of time.

14 THE SPECIAL MASTER: Well, it may be unless  
15 there is some difference between what Mr. Kersich  
16 used as a divide for Class 4 lands as distinguished  
17 from what Mr. Waples may have used. He can ask  
18 one or two questions in that regard. If he gets  
19 redundant, well, I'll sustain the objection later  
20 if it's made later.

21 THE WITNESS: Would you repeat the question,  
22 please?

23 Q (By Mr. Merrill) Yes. Would you please describe  
24 for the Court how you selected -- you, whoever in  
25 waples-cross-merrill

1 your firm derived these definitions -- selected  
2 the words "Marginal quality for irrigation" to  
3 describe Class 4 lands?

4 A These lands are of generally low quality for  
5 irrigation for some reason, whether it be depth  
6 to barrier, whether it be slope, whatever. There  
7 are some significant problems with these lands  
8 which reduces their capability to be irrigated  
9 to a lower level than is true in Class 1, 2 or  
10 3. They're generally suitable only for pasture  
11 and that type of use.

12 Q To what extent did you rely on previous studies  
13 or standards of the Bureau of Reclamation in  
14 developing your definition of Class 4 lands?

15 A Well, the 1961 study had no Class 4 lands.  
16 However, the Bureau of Reclamation does recognize  
17 a Class 4 for special use, whether it be pasture  
18 or other special crop.

19 Q Did you take into account the Bureau of  
20 Reclamation's criteria for establishing Class 4  
21 lands in developing your definition?

22 A To a certain extent.

23 Q I hand you what has been marked for identification  
24 as Exhibit WRIR SW-2, which is a copy of the 1953,

25 waples-cross-merrill

1 Bureau of Reclamation standards, and ask you if  
2 you are familiar with those.

3 A Yes, I am.

4 MR. ECHOHAWK: For the record, Mr. Merrill,  
5 are these the same as SK-4?

6 MR. MERRILL: They may very well be. I  
7 suspect they are, Your Honor, but I cannot say  
8 not having personally compared the two documents  
9 with one another. I could find out and let the  
10 Court and Mr. Echohawk know.

11 THE SPECIAL MASTER: Mr. Salazar, what is  
12 the heading you have on SK-4?

13 (Off-the-record discussion.)  
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waples-cross-merrill



1 THE SPECIAL MASTER: Did you answer that it is  
2 the same or did you say you didn't know?

3 MR. MERRILL: Your Honor, Mr. Echohawk asked  
4 me not to put the witness on the spot, and I told  
5 him I wasn't sure. It may well be the same document,  
6 I just don't know.

7 Q (By Mr. Merrill) Would you please turn to Page 2.5.1  
8 of that report that is headed with the description of  
9 land classes? I direct your attention to the descrip-  
10 tion of Class 4 lands which begins about half a dozen  
11 lines up from the bottom of that page. Would you  
12 please read the first sentence of that definition?

13 A Yes, I will. Class 4 Limited Arable or Special Use.  
14 "Lands are included in this class only after special  
15 economic and engineering studies are shown then to  
16 be arable."

17 Q Did you make any special economic or engineering  
18 studies with respect to the lands that you classi-  
19 fied as Class 4 arable?

20 A The whole premise of the classes under the HKM  
21 system is that of grading the land by various  
22 qualities, if you will. The class -- HKM's Class  
23 4 is merely the least suitable land, for whatever  
24 reason, that is deemed suitable for irrigation.

25 waples - cross - merrill



1 Q My question was: Did you make --

2 THE SPECIAL MASTER: He answered it, Mr.  
3 Merrill.

4 Q (By Mr. Merrill) I hand you what's been marked  
5 for identification as Exhibit WRIR SW-30, and ask  
6 if you recognize those?

7 A Yes, I do.

8 Q What are they?

9 A Pardon me?

10 Q What are they?

11 A It's titled "Water and Power Instructions, Series  
12 110 Planning", and it's Part 115, Land Resources  
13 Investigations.

14 MR. ECHOHAWK: Mr. Merrill, again, I'd inquire,  
15 are these the same as SK-5?

16 MR. MERRILL: I believe so in this case, Your  
17 Honor.

18 THE SPECIAL MASTER: Let me ask a question of  
19 counsel. Is it because we are so -- so satiated  
20 and immersed in money that we proceed to make Xerox  
21 copies of exhibits 50 and 60 pages long and offer  
22 them as exhibits when we already have the identical  
23 thing in evidence?

24 MR. MERRILL: No, Your Honor, I apologize for  
25 wapes - cross - merrill

1 offering what appears to be duplicate copies. The  
2 -- I developed the cross-examination of this witness  
3 independently from that that was done for Mr. Kersich  
4 earlier. Given enough time, I would have gone back  
5 and brought out the proper exhibits from Mr. Kersich's  
6 cross-examination. However, we just weren't on top of  
7 the ball enough to be able to do that. I apologize  
8 for burdening the Court's file --

9 THE SPECIAL MASTER: There's no need to apologize,  
10 gentlemen, and no need for burdening the Court. The  
11 Court asked for this role and, as such, will be bur-  
12 dened for having done so. But I do think the time  
13 has come when some observations, and I hope they will  
14 be judicious and judicial observations regarding costs  
15 and time consumed in this litigation, and my observa-  
16 tion was that if we try to use something that's in  
17 evidence for our purposes and ask for it, the exhibit  
18 will be ready and available to all counsel. Leo  
19 Salazar, as you know, distributed the first 17 pages  
20 of our index to exhibits. We hope to have them where  
21 we are holding our hearings and avoid duplication and  
22 do something about the time and costs that are fast  
23 becoming a national -- are fast becoming a state  
24 matter of prime concern to virtually everybody in  
25 Wyoming, as is the expense and time of this lawsuit.

1 MR. SACHSE: Your Honor.

2 THE SPECIAL MASTER: Yes.

3 MR. SACHSE: On this same point, I'd like to  
4 object to further cross examination on the -- on  
5 the fact that HKM land classifications leave the  
6 engineering and economic consideration to be done  
7 by other witnesses. It seems to me one of the  
8 things abundantly clear here, has been talked  
9 about at great lengths, is that the land classifi-  
10 cation done by HKM is one step in a three-step pro-  
11 cedure to determine irrigability. The second step  
12 being engineering studies, the third step being  
13 economic studies. The State has brought forcefully  
14 to everyone's attention that the Bureau of Reclama-  
15 tion's system puts all of that into the land classi-  
16 fication.

17 Now, it seems to me by now this ought to be a  
18 dead horse and we can beat it for hours throughout  
19 this whole trial, but there's nothing to be gained  
20 by having one HKM witness after another to repeat  
21 over and over that the system used here is the  
22 three-tier system in which the Stetson Engineering  
23 did the engineering and Dornbusch & Company did the  
24 economics rather than having all three done as part  
25 of the land classification.

1 THE SPECIAL MASTER: Well, we appreciate your  
2 observation. I want to try to be eminently fair in  
3 this and I don't want to impose on Mr. Merrill some  
4 burdens that may have been the result of some of his  
5 colleague's work in past cross-examination. So I'm  
6 going to be careful of that, too, and allow you to  
7 continue cross-examination as you are. And I think  
8 you appreciate our concern. So -- But I appreciate  
9 the comments on it, and I hope that we can move  
10 ahead and attack on cross-examination those elements  
11 of offered evidence of the movant parties that may  
12 be in error or that may be questionable or that may  
13 be improper or that is subject to credibility, look,  
14 and once that is through, move on to something else.  
15 I think we'll move along pretty well.

16 Go ahead, Mr. Merrill.

17 MR. MERRILL: Thank you, Your Honor. Just for  
18 the Court's information, I fully expect to conclude  
19 my cross-examination of Mr. Waples this afternoon  
20 or early next morning.

21 THE SPECIAL MASTER: If the Court would just  
22 abstain from further observations. I promise, no  
23 more philosophical observations. Okay, what page  
24 on this one?

25 MR. MERRILL: 115.4.2B, Your Honor. I don't



1 know who developed the numbering system.

2 MR. ECHOHAWK: .2B?

3 MR. MERRILL: Yes. Beginning at the top of  
4 the page, use of irrigability land classification  
5 surveyed.

6 THE SPECIAL MASTER: Did you say 115.4.2D?

7 MR. MERRILL: B, Your Honor, as in boy.

8 THE SPECIAL MASTER: Thank you.

9 MR. ECHOHAWK: Is this it?

10 MR. MERRILL: Yes.

11 Q (By Mr. Merrill) I direct your attention to sub-  
12 part B(1) called "Land Class and Determinations".  
13 Isn't it true that with respect to the Bureau of  
14 Reclamation studies, fourth classes of land are  
15 used only in special circumstances where there are  
16 lands of a very limited productivity?

17 MR. ECHOHAWK: Objection, Your Honor. Could  
18 we have a continuing objection to this line of  
19 questioning? As Mr. Sachse pointed out, Mr. Merrill's  
20 again asking questions based on economics and what  
21 the Bureau of Reclamation does. We've said time  
22 and time again we did not do a Bureau of Reclamation  
23 study. Again, this is a total waste of time.

24 MR. MERRILL: Your Honor --

25 waples - cross - merrill



1 THE SPECIAL MASTER: You may have a continuing  
2 objection, and the objection is overruled. Go ahead.

3 MR. MERRILL: Thank you, Your Honor.

4 Q (By Mr. Merrill) Do you want me to reask the ques-  
5 tion, Ross?

6 A Please.

7 Q Isn't it true that in the Bureau of Reclamation  
8 studies, fourth classes of lands are used only in  
9 special requests where lands with very limited pro-  
10 ductivity are under consideration?

11 A No, that isn't quite true. Class 4 lands may in-  
12 clude lands of very high productivity under special  
13 type circumstances, such as orchards, that type  
14 thing.

15 Q Are there any such lands including orchards or  
16 other special value crops under consideration on  
17 the Wind River Indian Reservation?

18 A No, there are not.

19 Q Would you please turn to the following page, which  
20 is 2B-1, and consider the first paragraph on that  
21 page?

22 (Brief pause.)

23 Q Did you take into account the criteria described  
24 in that paragraph in determining to adopt in part

25 waples - cross - merrill

1 the Bureau of Reclamation land classification stan-  
2 dards for your work?

3 A. In 115.4.2B-1?

4 Q. Yes.

5 A. The land classification standards that formed a  
6 basis for the HKM standards were not the general  
7 set of land classification standards that's being  
8 discussed here. They were site specific standards  
9 that were used in the Riverton area.

10 Q. Okay. Would you please move down to Page 2, Class  
11 4, Limited Arable, which I believe is subparagraph  
12 (d) on the same page.

13 I take it from your previous answers that HKM  
14 has not conducted any special economic or engineer-  
15 ing studies with respect to the Class 4 lands; is  
16 that correct?

17 MR. ECHOHAWK: Objection, Your Honor, asked and  
18 answered.

19 THE SPECIAL MASTER: Is that correct?

20 THE WITNESS: Yes. The engineering and economic  
21 studies were done by the ag engineer and the economist.

22 Q. (By Mr. Merrill) Isn't it true that HKM itself has  
23 made previous land classification studies of lands  
24 on the Wind River Indian Reservation?

25 waples - cross - merrill

1 A. Could I ask you to -- The question is did HKM do --

2 Q. Yes, isn't it true that HKM has made previous land  
3 classification studies of the Reservation?

4 A. The only land classification that I have any knowledge  
5 of on the Reservation was that done in 1978 by HKM.

6 Q. That wasn't intended to be a trick question at all.

7 I hand you what's been marked for identification  
8 as Exhibit WRIR SW-1.

9 THE SPECIAL MASTER: That's also in evidence.

10 MR. MERRILL: I believe that it is, Your Honor.  
11 With the Court's indulgence, I will review our re-  
12 cords, particularly your notation with respect to  
13 the documents which have been admitted into evidence;  
14 and if it turns out these are duplicative of documents  
15 in evidence, I will make an appropriate motion to with-  
16 draw these exhibits as being duplicative.

17 MR. ECHOHAWK: Your Honor, I would object to any  
18 further questioning on this Phase II report in that,  
19 one, it's already in evidence, the document speaks  
20 for itself.

21 THE SPECIAL MASTER: Whether it's in evidence  
22 or not is really of no great moment, and whether this  
23 witness knows that a completion report was made in  
24 1968 on the Wind River Irrigation Project, which I

25 waples - cross - merrill

1 presume is what he's going to ask, is of no great  
2 moment. He said, to the best of his knowledge, the  
3 first work he did on it or first work he knows began  
4 in 1970 --

5 THE WITNESS: Eight.

6 THE SPECIAL MASTER: 1978. So of what conse-  
7 quence is it that they did something in 1968? You  
8 can't impeach him by that.

9 MR. MERRILL: Your Honor, I don't intend to  
10 impeach the witness.

11 THE SPECIAL MASTER: Then why is it offered?

12 MR. MERRILL: Your Honor, I intend to use SW-1  
13 to show that HKM did do land classification work.

14 THE SPECIAL MASTER: What's the difference if  
15 they did or did not as to his evidence in this case?

16 MR. MERRILL: In the earlier study, Your Honor,  
17 they used standards which are quite a bit different  
18 than those being used now.

19 MR. ECHOHAWK: Your Honor, I would also point  
20 out in regard to my objection that the document  
21 speaks for itself and that it shows that HKM did  
22 not do that land classification work, it was done  
23 by the Bureau of Indian Affairs and was merely in-  
24 corporated into this, which is merely a resource  
25 inventory.



1 THE SPECIAL MASTER: All right, proceed with  
2 your question, Mr. Merrill, and let's find out who  
3 did the work in 1968.

4 Q (By Mr. Merrill) Ross, would you please identify  
5 Exhibit SW-1?

6 A Yes, it's titled -- it's pages from what's titled  
7 "A Preliminary Draft Inventory of Water Resources,  
8 Wind River Indian Reservation, Wyoming, Phase II,  
9 Needs and Uses".

10 Q Was that document among those which you considered  
11 as part of your background work before undertaking  
12 the land classification program you've described?

13 A Yes, it was.

14 Q Isn't it true that the definition of Class 4 lands  
15 on Page V.7 of that document differs from the defi-  
16 nition of Class 4 lands on Page 3 of your report?

17 MR. ECHOHAWK: Objection, Your Honor, it's ir-  
18 relevant.

19 THE SPECIAL MASTER: I would say it calls for  
20 a subjective conclusion anyway. It may be different  
21 in some people's language, it may be identical to  
22 others in that the words may have different connota-  
23 tions, denotations, but I think the essential guts  
24 of all this is that they're technically logical and

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1 scientific totals, result in the lands that are com-  
2 parable and can fit either definition of two Class 4s.  
3 I would not sustain the objection, but -- I mean, I  
4 won't sustain the objection, but that's my observa-  
5 tion of the further line of questioning.

6 MR. ECHOHAWK: I would also add to my objection,  
7 Your Honor, this line of questioning was covered with  
8 Mr. Kersich in recognition to his land classification  
9 work and is merely repetitious.

10 MR. MERRILL: Your Honor, Mr. Kersich did not  
11 testify concerning the arability of any of the lands  
12 that Mr. Waples is testifying to.

13 THE SPECIAL MASTER: That's true.

14 MR. MERRILL: Your Honor, there has been a very  
15 careful attempt to make a distinction between the two  
16 different areas of the land.

17 THE SPECIAL MASTER: All right, let's hear what  
18 Mr. Waples has to say about the two definitions of  
19 Class 4 lands, and the other one is referred to --

20 MR. MERRILL: Page 3 of Mr. Waple's report, Your  
21 Honor, which is C-226.

22 THE SPECIAL MASTER: All right.

23 \* \* \* \* \*

24

25

1 THE WITNESS: Okay. The definition that  
2 was given to the phase 2 was that provided  
3 by the Bureau of Indian Affairs. The two  
4 definitions were put together for different  
5 purposes. The one that I'm concerned with,  
6 the one that concerns the lands to which I'm  
7 testifying is the one in the report that I  
8 prepared.

9 Q (By Mr. Merrill) In developing your class  
10 definitions, did you consider the Class 4  
11 definition in the phase 2 report?

12 A As you can see from the definition in the phase  
13 2 report, part of the definition states Class 4  
14 lands are limited to meadow or pasture uses.  
15 Now, that is very similar to what the definition  
16 in my report is.

17 Q In developing the definition in your report, why  
18 did you decide to delete any mention of whether  
19 the lands are capable of meeting the water  
20 charges?

21 A Because here again, as I've tried to bring out,  
22 the classes are merely various grades of arability  
23 within the land. The economics, most of the  
24 economics and the engineering is done at a

25 waples-cross-merrill:

1 different time.

2 Q Is that true also of the BIA study that's  
3 reflected in the phase 2 report?

4 MR. ECHOHAWK: Objection, Your Honor, calls  
5 for speculation.

6 THE SPECIAL MASTER: I'm going to sustain  
7 that objection.

8 Q (By Mr. Merrill) Ross, I believe you testified  
9 this morning that HKM dug approximately 371  
10 holes, is that correct, as part of the historic  
11 lands program? This does not count holes  
12 associated with the future lands program.

13 A That's correct.

14 Q Can you tell me how many of those holes were dug  
15 in the lands under consideration within the  
16 project areas?

17 A Yes, I believe I can. One moment. About 224.

18 Q And how many in the nonproject areas?

19 A About 147.

20 Q I direct your attention to page 10 of your  
21 report to the paragraph given at the very  
22 bottom of the page, the first sentence that begins,  
23 "In federal or major private projects . . ."

24 Are we talking about the same holes here, the 371?

25 wapes-cross-merrill

1 Does that describe the same holes discussed in  
2 the top paragraph -- excuse me, the first  
3 sentence of the bottom paragraph of page 2?

4 A Yes, it does.

5 Q Isn't it true that as a result of your study  
6 you classified as arable approximately 250  
7 parcels of land totalling 5,971 acres that have  
8 no holes whatsoever?

9 A I've never counted the parcels, I don't know.

10 Q Is it true that you classified as arable  
11 approximately 120 additional parcels totalling  
12 4,680 acres when those parcels have no holes  
13 to six feet or at least four feet deep for  
14 Class 4 lands?

15 MR. ECHOHAWK: Can I have the question read  
16 back?

17 THE SPECIAL MASTER: We have been down this  
18 road before, but I'll let him answer.

19 MR. ECHOHAWK: Could I have the question  
20 read back, please?

21 (Whereupon, the Reporter  
22 (read back, "Q Is it true  
23 (that you classified as  
24 (arable approximately 120  
25 (additional parcels totalling  
(4,680 acres when those  
(parcels have no holes to six

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1 (feet or at least four feet  
2 (deep for Class 4 lands?"

3 THE WITNESS: First, could I ask a  
4 clarification of whether you are talking about  
5 project -- major project lands or the nonproject?

6 Q The question combined both in the number of  
7 parcels in the acreage.

8 A Okay. There again, I cannot answer as to how  
9 many parcels don't have holes, how many acres.  
10 We have discussed at various times between Mr.  
11 Kersich and myself at some length that a hole  
12 is not required in every parcel; that there is  
13 oftentimes other information available to the  
14 classifier, and further, in the major projects  
15 the drainage engineer has made an evaluation  
16 as to the depth of those lands which supplement  
17 the land classification study.

18 Q What other types of information did you rely  
19 upon where there were no holes?

20 A Primarily such things as cut banks, road cuts.  
21 In a given drainage if the classifier is as  
22 familiar with the drainage as he should be, if  
23 he knows the alluvial lands in which he's working,  
24 if he knows from experience in the area and from

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1           augering other holes that those lands are deep,  
2           he can make a reasonable estimation about the  
3           depth of those lands. A lot of this type work  
4           is based on judgment, it's based on a knowledge  
5           of the area, it's based on observation in the  
6           area, general observations. That's what these  
7           people are paid to do.

8           Q    When you examined cut banks or road cuts to  
9           supplement your information, did you make logs  
10          of those cuts?

11          A    Sometimes. I would point out that the Bureau  
12          of Reclamation manual, I don't know the exhibit  
13          number, it's WRIR C-4, I don't know, the  
14          classification manual points out that road cuts  
15          in stream cut banks and such should be utilized  
16          wherever possible.

17          Q    Doesn't that same document also state that  
18          whatever such sources of information are used,  
19          they should be logged as any hole would be?

20          A    It may.

21          Q    You said that you made logs of some of the cut  
22          banks and road cuts. How did you determine which  
23          cuts you were to log?

24          A    There again, to make a generalization, it's very

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1 d difficult to say. The classifier uses what he  
2 has available. If the cuts that are in the area  
3 in which he was working are in similar types  
4 soils, similar types formations, those are the  
5 ones the classifier uses. Now, I will say  
6 perhaps to clarify this business a little bit  
7 more, most -- at least large portions of the  
8 lands that we are dealing with here -- are  
9 alluvial bottom lands. These lands certainly  
10 are not exclusively, but are typically deep  
11 soils, or at least deep enough to be arable from  
12 the standpoint of this type of study.

13 Q So would it be fair to say where you had a road  
14 cut down an alluvial bottom land, you could  
15 assume there wasn't a drainage problem and no  
16 need to log such a cut?

17 A If the classifier had a number of other holes  
18 in the area and was interested in classifying  
19 another small piece, a small piece in a chain of  
20 fields along a stream, if he ran into a road  
21 cut or a stream bank cut, whatever, he may not  
22 have logged that because he could make an accurate  
23 classification of that parcel without a log.

24 Q Approximately how many logs did you make of cut banks  
25 waples-cross-merrill

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or road cuts or other sources than holes?

A I don't know. There were many more observed than there were logged.

\* \* \* \* \*

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1 Q (By Mr. Merrill) Did you use any other sources  
2 other than cut banks and road cuts to supplement  
3 your hole log information?

4 A As I've stated for one thing the general know-  
5 ledge of the drainage or the lands that the  
6 classifier's working in plays a significant role  
7 in this process.

8 Q I'd like to ask you some questions now about the  
9 aerial photography that you used as part of  
10 your study, just so I don't switch gears without  
11 letting you know.

12 Would you please describe the extent to  
13 which your study for the project and nonproject  
14 lands relied on aerial photography?

15 A Aerial photography was used to provide a base  
16 for the mapping that was done in the field.

17 Q Did you use it in any other way?

18 A Yes. Acreages were planimetered from the  
19 photographs.

20 Q Whose aerial photography did you use for your  
21 study?

22 A It was the same, the same aerial photography  
23 that Mr. Billstein testified to.

24 Q Okay.

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1 THE SPECIAL MASTER: Are we using the  
2 terms hydrographs interchangeably with aerial  
3 photographs, that we've been using for quite  
4 awhile?

5 THE WITNESS: They were a set of hydrographic --  
6 what we call hydrographic photographs as opposed  
7 to the soils photogrpahs which are here.

8 THE SPECIAL MASTER: I see.

9 THE WITNESS: If I may, these photographs  
10 are the same -- the hydrographic photos and the  
11 soils copies are merely prints of the same  
12 negative.

13 Q (By Mr. Merrill) Isn't it true that a major  
14 danger in using aerial photography for land  
15 classification concerns variations in scale  
16 both within a particular photograph and between  
17 aerial photographs depicting adjacent lands?

18 A The advantages of using aerial photographs far  
19 outweigh the disadvantages that one may find  
20 in scale.

21 Q Is maintaining a uniform scale within one  
22 aerial photograph a common problem when using  
23 that photograph in land classification work?

24 THE SPECIAL MASTER: I think we could take  
25 waples-cross-merrill

1 judicial notice if you shoot it high enough  
2 you're going to get some awful angles.

3 THE WITNESS: The photos were corrected.

4 Q (By Mr. Merrill) Ross, I direct your attention  
5 to what's already identified and marked as  
6 SW-2.

7 THE SPECIAL MASTER: Is what, Mr. Merrill?

8 MR. MERRILL: SW-2, Your Honor, the 1953  
9 Bureau standards, page 2.8.4C.

10 THE SPECIAL MASTER: 2.8. what?

11 MR. MERRILL: Four C, Your Honor.

12 Q (By Mr. Merrill) Do you note about a third  
13 of the way through that paragraph, the sentence  
14 beginning "There are objectionable features of  
15 aerial photographs"?

16 A Yes, sir, I do.

17 Q Would you please describe for the Court what  
18 steps you or your firm took to insure that there  
19 were no variations scale within an individual  
20 aerial photograph?

21 MR. ECHOHAWK: Objection, Your Honor, this  
22 ground has been covered with Mr. Billstein's  
23 testimony as to the accuracy and the scale  
24 rectification and sectionizing process to insure

25 waples-cross-merrill

1 the accuracy of the photo. Again, it's a  
2 waste of time.

3 THE SPECIAL MASTER: It's difficult for me  
4 to avoid sustaining the objection, Mr. Merrill.  
5 I know you weren't here during many of those  
6 days, but we did go into great detail on some  
7 of this regarding rectification, correction,  
8 and if they were the identical hydrographic  
9 photographs that we used, then this is duplicative.  
10 As I say, you weren't here so you wouldn't know  
11 that, but there was quite an extensive cross-  
12 examination on those, so I'll sustain it.

13 MR. MERRILL: Your Honor, may I ask if the  
14 Court would have an objection to incorporating  
15 by reference the cross-examination of Mr. Billstein  
16 on those points and making it applicable to  
17 whatever reliance Mr. Waples placed on the same  
18 photograph?

19 THE SPECIAL MASTER: I shouldn't think you  
20 would have.

21 MR. ECHOHAWK: The record speaks for itself,  
22 Your Honor. We're talking about generally the  
23 same aerial photographs.

24 THE SPECIAL MASTER: Mr. Merrill would like  
25 waples-cross-merrill



1 a notation made that what was given in answer  
2 to his questions shall be applicable here also  
3 in the record, and I'm sure that --

4 MR. ECHOHAWK: I think the record is  
5 sufficient. Mr. Waples said these are the same  
6 photographs that Mr. Billstein mentioned.

7 THE SPECIAL MASTER: I shall make a  
8 notation that can be noticed and save repeating  
9 it again in the record.

10 MR. MERRILL: Thank you, Your Honor. Your  
11 Honor, my cross-examination is proceeding more  
12 quickly than I had anticipated, largely because  
13 I'm told to move along.

14 THE SPECIAL MASTER: I don't want to be  
15 rushing you unreasonably.

16 MR. MERRILL: Not at all, and I don't mean  
17 to imply that. I'm wondering if I could take  
18 a ten minute break.

19 THE SPECIAL MASTER: Sure, let's take a ten  
20 to 15 minute break and we'll go to 4:30 and wind  
21 up for the day.

22 MR. MERRILL: Thank you.

23 (Thereupon a 10 minute  
24 recess was taken.)

25 \* \* \* \* \*

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1 THE SPECIAL MASTER: All right, Mr.  
2 Merrill.

3 MR. MERRILL: Thank you, Your Honor.

4 CROSS-EXAMINATION (CONTINUED)

5 BY MR. MERRILL:

6 Q Mr. Waples, what is a soils survey?

7 A A soils survey is principally a cataloguing  
8 of soil bodies called soils series.

9 Q What does a soils scientist mean when he  
10 talks about a soils series?

11 A A soils series is a body of soil with similar  
12 characteristics in theory from one place in  
13 the country to somewhere else. As long as you  
14 have a soil that has similar types characteristics,  
15 it can be classified through the system of soils  
16 taxonomy. You have, say, a mainville that  
17 in theory does not vary very much whether it  
18 lies in Montana or whether it lies in Kansas,  
19 say.

20 Q Is a soils survey similar to a land classification  
21 program?

22 A Not exactly, no, it isn't. A soils survey is a  
23 cataloguing of types of soil. The land  
24 classification -- a land classification program

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1 deals mainly with phases of the soil, As a  
2 given soils series it usually has different  
3 phases, whether it's different depth phases,  
4 whether saline phases, stoniness phases, whatever.  
5 The land classification starts with a soils  
6 series, say, if there is one available, and goes  
7 from there to make a finer delineation of the  
8 properties that are important to that  
9 classification.

10 Q How would a soils survey fit into a land  
11 classification program?

12 MR. ECHOHAWK: Objection, Your Honor. This  
13 is beyond the scope of direct. There was no  
14 mention of soils series or soils surveys.

15 MR. MERRILL: Your Honor, I intend to tie  
16 it to the direct testimony after laying a  
17 foundation of what the information in a soils  
18 survey is, finding out from the witness whether  
19 this type of information might have been useful  
20 in this study, and if so, whether it was used as  
21 a part of this study.

22 THE SPECIAL MASTER: I'll permit you to  
23 answer.

24 THE WITNESS: Okay. The -- would you repeat

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1 the question once more, please?

2 Q (By Mr. Merrill) Yes. My question is  
3 basically how does a soils survey fit into a  
4 land classification program?

5 A Where there is a soils survey available, it  
6 provides a basis for the land classifier to  
7 start with. It allows him to provide an initial  
8 screening to see where the most likely spots  
9 are to look for arable soils. It does not at  
10 all provide a final determination because, as  
11 I said before, any given series can have --  
12 has a gradation of depth, has a gradation of  
13 many, many parameters that are important to land  
14 classification. The land classifier will map  
15 a cross-series. He's interested in, say, the  
16 deep phase of three or four different series;  
17 he's interested in the saline phase of several  
18 different series. The series themselves do not  
19 matter in large respect. It provides more  
20 information to the classifier if it's available  
21 certainly.

22 Q Is soils survey and soils series information  
23 available for the lands you classified on the  
24 Wind River Indian Reservation?

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1 A Not the lands that were classified. There is  
2 a survey for the river -- excuse me -- the  
3 withdrawal area, a Soil Conservation Service  
4 survey. And there is a soils and range survey  
5 on the lands that were classified. This is a  
6 low grade soils survey.

7 Q Whose soils survey are we talking about?

8 A On the lands that we classified, the only soils  
9 information that we used was that that went  
10 into this Bureau of Indian Affairs soils and  
11 range inventory, which is, as I said, a very  
12 low intensity soils survey.

13 Q Did you consider that information in establishing  
14 your land classifications standards?

15 A Not really, except as base information.

16 Q How do you mean "As base information"? I don't  
17 understand.

18 A The soil and range inventory provided a certain  
19 amount of information, mapping information as to  
20 soil depth, soil slope, this type of thing, but  
21 it was very limited. The intensity was very  
22 low. It provided a starting place rather than  
23 a finishing place, if you will.

24 Q Okay. Did you rely on it only as background

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1 information prior to -- or in the early phase  
2 of your study, or did you rely on it for any  
3 substantive information used to classify land?

4 A It was -- in the lands that I classified, it  
5 was only for a background type information.

6 Q Would you please turn your report, Exhibit C-226,  
7 to page 41, part of the glossary? Is it your  
8 intent that the definition of irrigable lands  
9 incorporate by reference the definition of  
10 arable lands provided earlier in the glossary?

11 A Would you restate that question, please?

12 Q Yes. In the definition of irrigable lands you  
13 talked about arable lands, and I'm wondering  
14 if the meaning of arable lands as used in the  
15 definition are the ones set forth in the previous  
16 page of the glossary? It's not a trick question,  
17 I'm asking you to tie together, if it's  
18 appropriate to do so, the various terms irrigable  
19 and arable.

20 A Yes. The arable is the same word.

21 THE SPECIAL MASTER: Well, then, you put the  
22 test of economic feasibility onto some land  
23 and set things as benefit cost ratio before  
24 you completed the arability studies and before you

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1 begin the irrigability studies?

2 THE WITNESS: The irrigability studies  
3 entail whether it is feasible to irrigate these  
4 arable lands.

5 THE SPECIAL MASTER: Well, I thought you  
6 answered his question otherwise. Okay.

7 Q (By Mr. Merrill) I notice the definition for  
8 arable lands uses the term "Sustained irrigation."  
9 Would you please turn to page 44 and tell me if  
10 your definition of that term is meant to be  
11 incorporated into the definition of arable land.

12 A Yes.

13 Q As you use "relatively high yield of crops" to  
14 define sustained irrigation, what do you mean?

15 A This is not a precise definition. The yields,  
16 of course, are somewhat dependent upon the  
17 quality of the land. What we have is a minimum  
18 yield that we are trying to maintain. What we  
19 are saying is that the lands will not deteriorate  
20 under sustained irrigation essentially.

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1 THE SPECIAL MASTER: Let me ask a question about  
2 that, please. Would you make a difference or a dis-  
3 tinction in Class 4 lands as to their ability to sus-  
4 tain irrigation because they have a lot of limitations  
5 that was noted in all definitions heretofore.

6 THE WITNESS: Yes. These lands, if you look at  
7 relative yields of, say, sugar beets versus pasture,  
8 of course, they're not high yields. But if we look  
9 at just pasture lands, these lands will maintain --  
10 will maintain pasture over a long period of time.

11 Q (By Mr. Merrill) A long period of time without  
12 deterioration, isn't that correct, according to  
13 your definition?

14 A Yes.

15 Q In classifying the 12,000 or so acres of land that  
16 you determined to be arable, how did you determine  
17 that each of those lands will produce a relatively  
18 high yield crop over a long period of time without  
19 deterioration?

20 A That's what the standards are meant to accomplish.  
21 If they meet the standards, they will sustain irri-  
22 gation.

23 Q In using the words "long period of time" in defin-  
24 ing sustained irrigation, do you have a particular

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1 time-frame in mind?

2 A. The idea is that the lands will not deteriorate if  
3 they are correctly managed.

4 Q. Over any period of time?

5 A. Over a foreseeable length of time.

6 Q. I'm almost afraid to ask you to attach a year figure  
7 to that. Can you do that?

8 A. No, sir.

9 Q. Without deterioration, it means that the land capa-  
10 bility to support and continue producing a relatively  
11 high yield crop will not be diminished?

12 A. Yes. It doesn't mean -- it does not mean that such  
13 things as drainage may not be required on some lands.  
14 It also does not mean that if the lands are abused,  
15 not well-managed, that they will remain a high, pro-  
16 duce a high level of productivity.

17 Q. On Table 8, Page 39 of your report, you classified  
18 approximately 49 acres of land -- of nonproject  
19 lands, excuse me, as arable Classes 1 through 4; is  
20 that correct?

21 A. Nonproject lands were 4917 acres, that's correct.

22 Q. In classifying those lands as arable, there was no  
23 requirement that those lands contained good free  
24 working soil, was there?

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1 A. That's correct.

2 Q. And these lands may include lands that are too  
3 cobbly or too shallow or are covered with gravel  
4 to allow leveling; isn't that correct?

5 A. That's correct. Now, the semantics are somewhat  
6 misleading when we talk about relatively high  
7 yields. Relatively high yield in Montana would be  
8 very low -- good, high yield in Montana would be  
9 very low in Arizona with the difference in growing  
10 season. We have to compare things in such a way  
11 that the relatively high yield means something.

12 For pasture lands we're talking about -- we're  
13 talking about maintaining a yield that obviously  
14 would not be possible without irrigation. The  
15 semantics here can lead to a good deal of misinforma-  
16 tion, a good deal of misunderstanding.

17 Q. According to the nonproject standards set forth in  
18 Table 5, the 4917 nonproject acres that you classi-  
19 fied as arable, are not limited by any surface --  
20 or a subsurface drainage requirement, excuse me,  
21 isn't that correct?

22 THE SPECIAL MASTER: Are not limited by any  
23 surface or subsurface --

24 MR. MERRILL: Drainage requirements, Your Honor.

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1 THE WITNESS: What it says is that these require-  
2 ments are the responsibility of the operator. There  
3 again, under mismanagement, under poor management,  
4 lands, any lands, can deteriorate. We're not saying  
5 these lands will not deteriorate no matter what you  
6 do to them, we are saying that certain reasonableness  
7 has to be considered here.

8 Q (By Mr. Merrill) Isn't it true that lands can also  
9 deteriorate with the best management in the world?

10 A It's true that some lands can deteriorate under the  
11 best management, yes.

12 Q With respect to the nonproject lands that you classi-  
13 fied as arable, the drainage responsibility is left  
14 to the individual farmer; isn't that right?

15 A Yes.

16 Q That being the case, how did you make any determina-  
17 tion that the drainage problems, if there were any  
18 problems associated with nonproject lands, could  
19 even be solved by the individual farmer?

20 A Okay. That is a relatively simple determination.  
21 The other factors that are in the land classifica-  
22 tion standards had to be met, the depth to barrier and  
23 such. We looked at the texture, we looked at the  
24 chemical characteristics of the soils. If we had

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1 heavy clays, these lands were not arable. If we  
2 had a very sodic condition, these lands would not  
3 be arable.

4 These lands were looked at quite carefully,  
5 as a major difference between allowing the drainage  
6 requirement to be that of the farmer as opposed to  
7 that of the project was the fact that the lands are  
8 generally small outside the areas. And if they were  
9 otherwise arable and were determined to be arable --  
10 excuse me, drainable in the field, they were con-  
11 sidered to be arable.

12 Now, this is because we are not talking about  
13 large blocks of land that affect each other. When  
14 you irrigate large, we're talking, you know, sections,  
15 the general water table tends to rise, and this has  
16 to be taken care of by project drainage. Now, when  
17 we're talking 20, 30, 50-acre pieces, the drainage  
18 can be very well controlled by the operator on that  
19 land. If he sees he's putting on too much water, he  
20 can take care of the problem.

21 In a project type circumstance, the individual  
22 farmer has much less control over the drainage situa-  
23 tion, which is why the project takes care of project  
24 drainage in that type of situation.

25 waples - cross - merrill



1 Q Is that also the case with the nonproject lands  
2 that you classified?

3 A I thought we were discussing nonproject lands.

4 Q Perhaps we were; I may have misspoken myself.

5 Isn't it true that on the nonproject lands  
6 standards there were no requirements whatsoever  
7 for surface and subsurface drainage?

8 A That's true, but that isn't the whole story.  
9 There are requirements for depth to barrier. There  
10 are still requirements for texture. There's still  
11 requirements for the chemical composition, the  
12 amount of salinity and sodicity in the land. We're  
13 not just throwing things totally away and saying  
14 that we're not looking at drainage at all, because  
15 there are certain things inherent in looking at  
16 lands from an arability standpoint that were con-  
17 sidered.

18 Q In establishing the land classification standards  
19 and the definitions of the four classes of arable  
20 land, did you have in mind any particular level or  
21 quality of management over the farming of those  
22 lands?

23 MR. ECHOHAWK: Could I have the question read  
24 back, please?

25 waples - cross - merrill

1 (Thereupon the last question  
2 (was read back as follows:  
3 ("Q: In establishing the land  
4 (classification standards and  
5 (the definitions of the four  
6 (classes of arable land, did  
7 (you have in mind any particular  
8 (level or quality of management  
9 (over the farming of those lands?"

6 THE WITNESS: Management was considered to the  
7 extent that obviously bad management can ruin even  
8 the best lands. We don't assume superlative manage-  
9 ment, we don't assume the worst possible management.  
10 We assume some reasonable level of management.

11 Q (By Mr. Merrill) Would average management character-  
12 ize that level accurately?

13 A Yes, I suppose it would.

14 Now, here again, the arability, once the  
15 arability determination is made, very specific  
16 agricultural and economic studies are made on these  
17 properties. Now, the agricultural engineering  
18 design will have quite a lot to do with how the  
19 land is managed. So it becomes more a function of  
20 the design and the economics than the actual ara-  
21 bility determination of the land.

22 Q On Page 44 of your report, I noticed that your  
23 definition of sodicity includes the statement that  
24 a sodic soil has a SAR greater than 15. Yet, I

25 waples - cross - merrill

1 noticed that your land classification standards  
2 allow sodicity to return as high as 20. Are you  
3 saying --

4 THE SPECIAL MASTER: As high as 20?

5 MR. MERRILL: I believe that is correct, Your  
6 Honor. I would ask the witness or anyone else to  
7 correct me if that's not the case.

8 THE SPECIAL MASTER: I didn't hear you. That  
9 was the only part I inquired about.

10 MR. SACHSE: Can you try to speak a little  
11 louder? I'm having a hard time hearing you.

12 MR. MERRILL: Yes, I will. Let me get a drink  
13 of water. Perhaps that will help.

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1 THE SPECIAL MASTER: Where do we find  
2 that tolerance?

3 THE WITNESS: Sir, on page 5 under alkalinity  
4 of soil, Class 3.

5 THE SPECIAL MASTER: Yeah. Under alkaline  
6 drainage conditions?

7 THE WITNESS: Yes.

8 THE SPECIAL MASTER: We went through that,  
9 too.

10 Q (By Mr. Merrill) Ross, isn't it true that under  
11 the standards on table 1, Alkalinity of Soil,  
12 Class 3, the SAR can be as high as 20 under  
13 optimum drainage conditions?

14 A That's correct.

15 Q Are you saying, then, with optimum drainage you  
16 can irrigate sodic soils?

17 A Yes. Now, there is perhaps more to it than that  
18 also. Optimum drainage conditions implies  
19 coarse-textured soils. These soils have a  
20 much better chance of being reclaimed than a  
21 heavy clay soil with a high amount of sodium..  
22 You can replace the sodium and leach it out by  
23 using sulphuric acid or gypsum or whatever. So  
24 it is possible to in fact successfully irrigate

25 waples-cross-merrill



1 sodic soils if the physical conditions are such  
2 that the lands can be reclaimed and drained.

3 Q If you have to add something like sulphuric  
4 acid to soils, is that what is known among soils  
5 scientists as an amendment?

6 A Yes, sir.

7 Q In classifying those lands, does your land  
8 classification make note when a particular soil  
9 amendment will be required in great quantities?

10 A The information concerning sodicity and salinity  
11 is provided to the agricultural engineer on --  
12 in the logs on a hole-by-hole basis. The  
13 determination as to whether amendants need to  
14 be applied or not and whether amendments can  
15 economically be applied falls to the agricultural  
16 engineer and the economist. You can reclaim  
17 just about any soil just as you can farm any  
18 soil if you are willing to put in the money,  
19 essentially, and the effort, but there is a  
20 breaking point where things become feasible or  
21 not.

22 Q In what form do you send information onto the  
23 project engineer and the project economist  
24 concerning special matters such as unusual amounts

25 waples-cross-merrill

1 of soil amendments?

2 A The information is provided in general with  
3 the logs, the soil chemical data is there. If  
4 there are any special cases where we know it  
5 will be a concern, we certainly inform the  
6 ag engineer about that.

7 Q I believe you have stated during your direct and  
8 perhaps your cross-examination testimony that  
9 one of the rationales for using a different  
10 set of standards with respect to nonproject lands  
11 is that they are not aggregated in large chunks  
12 of land like the project areas such as the future  
13 lands or within the historic lands? Is that a  
14 fair characterization so far?

15 A The historic lands are not large blocks of land  
16 usually, yes, at this point.

17 Q Isn't it true that some of the so called non-  
18 project lands lie in close proximity to either  
19 the lands within the Federal Irrigational Projects  
20 or lie close to those lands proposed for future  
21 development to Mr. Kersich's testimony?

22 A That's correct.

23 Q In those cases did you apply the nonproject  
24 standards to those lands in determining their

25 waples-cross-merrill

1 arability?

2 A Yes. There was a very good reason for that.  
3 The project lands -- excuse me -- the future  
4 lands that Mr. Kersich testified to in the  
5 case where we have nonproject lands in close  
6 proximity to future lands will be -- the  
7 assumption was that they would be served from  
8 different sources. We are talking about -- we  
9 are still talking about in the nonproject lands  
10 small fields that would be served from an  
11 individual ditch, whatever, whereas the large  
12 projects will be served from project type  
13 facilities. So there is a distinction there,  
14 even if they are in close proximity to each other.

15 Q My question goes more to the appropriate drainage  
16 requirements to use with respect to nonproject  
17 lands but are in very close proximity of either  
18 existing project lands or lands which are  
19 proposed to be developed as part of Mr. Kersich's  
20 future base.

21 A Well, if I could, I would just as soon let Mr.  
22 Toedter answer that question when he testifies.  
23 He's much more qualified to do so than I.

24 Q In cases where the nonproject lands are in close  
25 waples-cross-merrill

1 proximity to project lands, as a land  
2 classifier do you feel it's appropriate to  
3 make the surface and subsurface drainage  
4 requirements continue to be the responsibility  
5 of the individual farmer?

6 MR. ECHOHAWK: Objection, Your Honor.  
7 This line of questioning is vague. He talks  
8 about close proximity, perhaps if we had an  
9 example of a specific parcel we could deal with  
10 it in that way. He's talking in the abstract,  
11 and we can't tell if close proximity means 20  
12 feet or three miles.

13 THE SPECIAL MASTER: Let's take the example  
14 of the few acres on C-207 directly in front of  
15 your nose about a foot and a half. The north  
16 boundary is -- no, a little bit closer. There  
17 you are. The north boundary is the boundary of  
18 the Federal Irrigation Project; the south  
19 boundary is the boundary of an existing in-use  
20 irrigation, you testified this morning. Now,  
21 how do you answer Mr. --

22 THE WITNESS: Well, in this case --

23 THE SPECIAL MASTER: -- Merrill's question?

24 THE WITNESS: These are major project lands,  
25 waples-cross-merrill



1 so they are subject to drainage considerations.

2 THE SPECIAL MASTER: Are there isolated  
3 parcels where that would not be true that lie  
4 outside of the --

5 THE WITNESS: Yes, there are.

6 THE SPECIAL MASTER: I think that met your  
7 objections, Mr. Echohawk.

8 Q (By Mr. Merrill) In such cases how did you  
9 determine that it is appropriate to leave the  
10 drainage requirements to the work of the  
11 individual farmer?

12 A Well, I would still be much more comfortable  
13 if we could look at a specific example. Every-  
14 thing is handled with this type of work on a  
15 case by case basis. It is impossible for me  
16 to make a generalization without -- about the  
17 matter really.

18 Q You testified on direct examination that the  
19 project drainage standards were based on the  
20 fact that you are going to have large tracts  
21 contiguous and adjacent tracts of land irrigated  
22 at one time; is that right?

23 A The major project standards are based on the  
24 fact that we have major projects in evidence,  
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and we are, as it were, filling the gaps within  
that project. But the lands do affect one  
another, hence there is a drainage requirement  
for those lands.

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waples-cross-merrill

1 Q (By Mr. Merrill) My question then is with respect  
2 to nonproject lands which are also in a close proximi-  
3 mity to project lands, just as project lands are in  
4 close proximity to one another, why is it appropriate  
5 not to include a drainage requirement for those non-  
6 project lands?

7 MR. ECHOHAWK: Same objection, Your Honor. He's  
8 speaking of close proximity. Perhaps if Mr. Merrill  
9 has a particular parcel in mind, we could look at  
10 that and deal with it on a site specific --

11 THE SPECIAL MASTER: Can you identify it more,  
12 with more particularity, Mr. Merrill?

13 MR. MERRILL: Your Honor, I don't have a parti-  
14 cular tract in mind. Given a short break, I could  
15 certainly find one and bring it to the attention of  
16 the witness. Perhaps I'll leave this line of ques-  
17 tioning and come back to it.

18 THE SPECIAL MASTER: All right, if you will.

19 Q (By Mr. Merrill) In determining the arability of  
20 nonproject lands, that is those which you say can  
21 be served out of an existing ditch, did you make  
22 any analysis whether those existing facilities are  
23 sufficiently large to serve the lands they're serving  
24 now and in addition to serving the new lands?

25 waples - cross - merrill

1 MR. ECHOHAWK: Objection, Your Honor, this is  
2 beyond the scope of direct. There was no mention  
3 of water availability.

4 THE SPECIAL MASTER: Objection is sustained --  
5 Objection overruled, he may answer.

6 THE WITNESS: I made no evaluation; that was a  
7 concern of the agricultural engineer.

8 THE SPECIAL MASTER: Your concern ended with  
9 the boundaries of water -- boundaries of parcels  
10 of land?

11 THE WITNESS: Whether the land was -- in fact,  
12 was arable or not.

13 THE SPECIAL MASTER: Okay.

14 Q (By Mr. Merrill) Ross, I hand you what's been  
15 marked for identification as Exhibit WRIR SW-5,  
16 it's duplicative, already in evidence, I must con-  
17 fess to the Court. It's a portion of the United  
18 States' Statement of Claims in this action, and  
19 more specifically Pages 1 through 3 and also Page  
20 15.

21 THE SPECIAL MASTER: I didn't hear your latter  
22 remarks, Mr. Merrill.

23 MR. MERRILL: I'm sorry, Your Honor. It is  
24 Pages 1 through 3 of the United States' Statement

25 waples - cross - merrill



1 of Claims and also Page 15.

2 Q (By Mr. Merrill) With respect to the lands you  
3 have testified are arable, can you state how many  
4 acres of those lands are within the Wind River  
5 Drainage Basin?

6 A As opposed to --

7 Q -- any of the other basins listed on Pages 2, 3 and  
8 15.

9 A I believe one of the exhibits that Mr. Salazar has  
10 breaks down acreage by drainage, 23 or --

11 MR. SACHSE: 224-A.

12 Q (By Mr. Merrill) Do you want me to rerun the question,  
13 Ross?

14 A Please.

15 Q Okay. Do you know how many of the acres you've  
16 testified are arable would be served out of the  
17 Wind River drainage under the figure historic at  
18 the bottom of Page 1?

19 THE SPECIAL MASTER: Nonproject and major  
20 irrigation or just the nonproject?

21 MR. MERRILL: Nonproject and project that this  
22 witness has testified to, Your Honor. That would  
23 be the FIPs and the Midvale and LeClair.

24 MR. ECHOHAWK: Your Honor, I object to Mr.

25 waples - cross - merrill

1 Merrill's question. He asked whether Mr. Waples  
2 knew how many acres would be served out of the Wind  
3 River. Mr. Waples did not testify to any such mat-  
4 ter; it's beyond the scope of direct.

5 THE SPECIAL MASTER: Not quite. I think he  
6 can answer if he's able to. He may answer if he's  
7 able to.

8 THE WITNESS: The arable lands that lie on the  
9 tributary drainages of the Wind River are 1,038 acres.  
10 I don't have on this table the acreage for the Wind  
11 River -- excuse me, for the arable lands that lie  
12 within the major projects that lie along the Wind  
13 River.

14 Q (By Mr. Merrill) Can you state how many of the  
15 acres of arable -- excuse me, of land you classify  
16 as arable lie within the Dinwoody Creek drainage or  
17 can be served from the Dinwoody Creek drainage?

18 A Well, the -- on Exhibit 224-A, the -- the number of  
19 arable trust acres in Dinwoody Creek that were classi-  
20 fied as arable in this program were 27 acres.

21 Q Would the remainder of the figures on Exhibit C-224-A  
22 accurately reflect your answers with respect to the  
23 remainder of the drainages for which historic irriga-  
24 tion is claimed in Exhibit SW-5?

25 waples - cross - merrill

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MR. ECHOHAWK: Could I have the question read back, please?

THE SPECIAL MASTER: I think he asked if the figures on WRIR 224-A accurately reflect the historic arable acreage on historic arable lands of nonproject lands totaled by land class. Is that right, Mr. Merrill?

MR. MERRILL: Yes, Your Honor, it is.

MR. ECHOHAWK: I thought the question made reference to SW-5 somewhere; is that right?

MR. MERRILL: Yes, the Statement of Claims.

THE WITNESS: In the first place, there is some confusion between arable lands in the Dinwoody Creek drainage and lands that are served historically by Dinwoody Creek. The lands, the 27 acres on -- in Dinwoody Creek in C-224-A do not include all of the lands in the Upper Wind Unit of the Wind River Irrigation Project. So there are many more lands served by Dinwoody than are reflected in this table. But to the larger question, I did not prepare SW-5, and it bears -- Well, I can't testify as to the contents of it.

THE SPECIAL MASTER: Gentlemen, it's -- we're on the half hour, would you like a ten-minute break?

MR. MERRILL: That would be fine with me.

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THE SPECIAL MASTER: All right, we'll stand in recess for ten minutes.

(Whereupon a recess was taken.)

\* \* \* \* \*



1 THE SPECIAL MASTER: I'll convene this  
2 right now if we are ready to go. Are we?

3 MR. MERRILL: We are ready to go, Your  
4 Honor.

5 MR. ECHOHAWK: All right.

6 THE SPECIAL MASTER: Will we please come  
7 to order?

8 MR. MERRILL: Your Honor, before I resume  
9 my cross-examination, during one of the breaks  
10 Mr. Echohawk and I were discussing the order of  
11 the succeeding witnesses the United States  
12 intends to call in its case in chief, and Tom  
13 indicated that the order will not be as set  
14 forth in a letter that he sent to us a couple  
15 of weeks ago before this trial commenced, and I  
16 thought he might want to make some statement  
17 while we are on the record.

18 MR. ECHOHAWK: I have to confess that I was  
19 just pulling Mr. Merrill's leg. We are following  
20 the list as indicated in the letter. The next  
21 witness is Mr. Toedter, and the following witness  
22 is Mr. Mesghinna.

23 THE SPECIAL MASTER: Well, that puts you on  
24 the line and keeps you honest. Is that the  
25 purpose of the colloquy?

1 MR. MERRILL: I just wanted to clear that  
2 up, Your Honor.

3 THE SPECIAL MASTER: I would like to make  
4 another reference to HW-5, and I noticed that  
5 a claim is made in footnote 5 of the acreage  
6 and acre-feet of virtually everything from Crow  
7 Creek down to Crooked Creek, Crooked Trout, in-  
8 cluding some pretty big acreages like Muddy  
9 Creek and Dry Creek, that the historic water  
10 requirements consume the direct flow hydrologic  
11 potential of the perspective creeks, and at this  
12 time is made for the noted water requirement  
13 or all the direct flow of the creek, whichever  
14 controls. I want to hear some evidence -- I  
15 want to hear some arguments that nothing in the  
16 law permits any adjudicated river to close up  
17 that stream and dry it up to fulfill claims upon  
18 that stream, regardless who makes the claims,  
19 Indians, nonIndians, anyone else.

20 MR. MERRILL: You will certainly hear about  
21 it from us, Your Honor.

22 THE SPECIAL MASTER: Any law that would  
23 permit a judge to do that is an outrageous law,  
24 and any man who would do that is an ass. I feel  
25 those things quite deeply. I think there are

1 certain limitations upon all human endeavor  
2 where stronger laws govern, and I don't feel  
3 anyone has a right to dry up a stream, and I  
4 feel that very, very deeply. Maybe you would  
5 like to direct some of your thoughts on the  
6 maximum allowed and still permitting a stream  
7 to exist or the feeding of a live stream on  
8 the alluvium upon which everyone depends,  
9 Indian and nonIndian, something of this kind.  
10 I'm beginning to think this is more and more  
11 a necessity in this lawsuit for everybody's  
12 protection, particularly the life of the wells  
13 upon which Indians and nonIndians rely throughout  
14 the entire Reservation, whether it's on the  
15 open area or the closed area. If those shallow  
16 wells in particular depend on a live stream of  
17 this subsistence, then what limitations should  
18 be placed upon those who will take water from  
19 the live stream in order to assure that the  
20 alluvium of the Wind River continues alive to  
21 fulfill its needs for the wells and for all of  
22 those depending upon it. Those are just some  
23 thoughts that have been going through my mind  
24 that I wanted to throw out. Go ahead, Mr. Merrill.

25 MR. MERRILL: Thank you, Your Honor.

1 Q (By Mr. Merrill) Mr. Waples, did you testify  
2 in your direct testimony that you actually  
3 personally conducted some of the land classi-  
4 fications in the field?

5 A That's correct.

6 Q Would you please turn to table 1, first page,  
7 which occurs -- appears, excuse me, on page 5  
8 of your report, Exhibit C-226?

9 A Uh-huh.

10 Q My questions for the next few address what kinds  
11 of decisions and judgments you made in the field  
12 as a part of classifying land and how you  
13 applied the standards and definitions set forth  
14 in table 1 and also in table 5. The first  
15 question goes to alkalinity of soil, and I asked  
16 you last week concerning the differences between  
17 optimum drainage and adequate drainage and so  
18 forth. We have been all over that, and I don't  
19 intend to go over that ground again. My question  
20 is: When looking at a piece of land, how would  
21 you decide whether in fact optimum drainage  
22 existed . assuming you are out in the field looking  
23 at a piece of land trying to make that determination  
24 in your mind to see which of these classes, if any,  
25 waples-cross-merrill.



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a tract of land will satisfy?

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waples-cross-merrill

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1 A Okay. There are certain boundaries on both the  
2 upper and lower ends. If the land is composed of  
3 heavy clay soils, if the vegetaion indicates that  
4 there is a very poor drainage, if it's a large  
5 clay flat with no obvious draws or other natural  
6 drains, this type of thing would be relative to  
7 say had other than optimum drainage conditions.

8 At the other end, if the land is, say, pre-  
9 dominately loamy sands or sands, the drainage will  
10 probably -- or gravels, cobbles, the land will pro-  
11 bably have good drainage. Now, within -- within  
12 these two boundaries, one makes the determination  
13 mainly based on -- Well, several things, the tex-  
14 tures within the soil, any evidence of poor drain-  
15 age, grain of soils, mottling of soils, the vegeta-  
16 tion again. These things all work together and a  
17 judgment is made as to the drainability of that  
18 land.

19 Now, the drainage engineer, of course, looks  
20 at this also and makes the determination, which is  
21 made in collaboration (sic) of the information pro-  
22 vided by the land classifier.

23 Q I notice that under Class 3 the requirement for  
24 alkalinity of soil, you say that below 12 inches

25 waples - cross - merrill

1 SAR may be as high as 20 under optimum drainage con-  
2 ditions. Is that saying that 20 was the highest that  
3 SAR could be and still meet that particular classifi-  
4 cation?

5 A. No, that isn't, it's not what it means. What it  
6 means is that the SAR under equilibrium will not  
7 increase above 20. Now, there are cases, if we had  
8 a sandy soil, say, that had a high SAR because of  
9 capillary action, upward movement through the soil  
10 by water, if we had a high SAR, but we determined  
11 that land could be, number one, be drained, and,  
12 number two, be reclaimed through amendments, this  
13 land might have been determined to be arable. There  
14 again, it's a rather site specific type judgment.

15 Q. How high can the SAR be in a tract of arable land?

16 THE SPECIAL MASTER: In what?

17 MR. MERRILL: I'm sorry, Your Honor, I forgot  
18 to speak up.

19 THE SPECIAL MASTER: How high can the SAR be --

20 MR. MERRILL: Be in arable land, according to  
21 these standards.

22 THE WITNESS: There again, as I say, this is  
23 not necessarily the SAR that is there under the  
24 natural conditions. We could have a quite high SAR,

25 waples - cross - merrill

1 very much higher than a 20 if -- if, as I stated  
2 before, the lands are drainable, if they're leach-  
3 able, if the gypsum requirement is not such that  
4 it is totally beyond reason to reclaim these lands.

5 Q (By Mr. Merrill) Do you have any idea of what the  
6 highest SAR you encountered on the Reservation was?

7 A The highest, I believe, was in excess of 100, but  
8 that -- this type of thing generally would not re-  
9 main arable.

10 Q I direct your attention for a moment to Exhibit C-203,  
11 which is up on the easel, and particularly to the  
12 Tract 24-1X and 24-17X, which tracts extend over the  
13 boundaries of the Federal Irrigation Projects. Which  
14 set of land classification standards did you use in  
15 determining that those lands were arable?

16 A Well, in this case, these tracts were in excess of  
17 6 feet deep. They were not cobbly, they were not  
18 stony. So the differences between the classification  
19 standards were not exceedingly important.

20 Now, we have -- we're not affected by -- what  
21 one can see, we don't have large tracts of land, I  
22 know for a fact that we do not have large blocks of  
23 land that would affect these -- this, for the Court,  
24 is this slope is up this way (indicating), So if

25 waples - cross - merrill



1 there were lands above these, they could affect  
2 these lands, say. We have none of that. We have  
3 no lands here that would affect these lands (indicat-  
4 ing). And so for purposes of this classification,  
5 it was somewhat moot, a moot question.

6 The lands could have been classified under  
7 either set of standards with very little effect one  
8 way or the other.

9 Q Do you know for a fact which set of standards you  
10 used in classifying those two tracts as arable?

11 A Yes. The nonproject standards were used even though  
12 -- this -- It doesn't make a great deal of sense if  
13 we don't have large blocks of land that would affect  
14 these lobes that go into the Federal Irrigation Pro-  
15 jects, to make an artificial delineation there.

16 Q I'm curious about the label and convention on these  
17 exhibits. Do the words "FIP boundary" always occur  
18 on the FIP side of the boundary, or is that not  
19 necessarily so?

20 A I do not know.

21 Q On this particular exhibit you're saying the FIP is  
22 south of the northernmost of the two dotted lines,  
23 it's between these two?

24 A That's correct.

25 waples - cross - merrill

1 Q So these two tracts of land, 24-17X and 24-1X, are  
 2 largely nonproject lands with small excursions into  
 3 the FIPs?

4 A That's correct. May I get the aerial photos as we  
 5 go on?

6 Q You bet, go ahead.

7 A For clarification.

8 THE SPECIAL MASTER: Off the record.

9 (Off-the-record discussion.

10 MR. MERRILL: I'm sorry, Ross, I took C-203  
 11 down. Let me put it back up and if you have any  
 12 additional comments to make after looking at your  
 13 photo, why don't you go ahead?

14 A No, I looked at the photo previously.

15 Q (By Mr. Merrill) Okay, let me ask you the same  
 16 general question with respect to the classification  
 17 of Tract 24-9X on Exhibit C-204. Did you use the  
 18 project or the nonproject standards in classifying  
 19 that tract?

20 A One moment.

21 (Brief pause.

22 A That tract was classified with nonproject. Again,  
 23 we have a small lobe that extends into the Federal  
 24 Irrigation Projects. It should be noted that the

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1 Wind River -- excuse me, the Little Wind River runs  
2 through here effectively isolating the -- effectively  
3 isolating this tract from the other project lands.  
4 So it is essentially --

5 MR. CLEAR: If you could identify the tract,  
6 so when we go back and read the record, instead of  
7 saying this tract --

8 THE WITNESS: Pardon me. Tract 24-9X is essen-  
9 tially an isolated tract of land, that because of its  
10 location is not affected by lands in the Federal Ir-  
11 rigation Project.

12 Q (By Mr. Merrill) On tracts of land that is extended  
13 across the boundaries between nonproject areas and  
14 project areas, how did you determine in each case  
15 which standards to apply?

16 A The -- As -- Here again, it's on a case-by-case  
17 basis. If the major portion of the land lay outside  
18 of the project, if as in this case was isolated by  
19 some physical feature such as a river effectively  
20 isolating it from the lands from the Federal Project,  
21 it was probably, like I say, on a case-by-case  
22 basis, probably classified with the nonproject  
23 standards. It depends on whether -- it depends on  
24 how the lands lay.

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1 Q In discussing SAR a moment ago, you said that on  
2 certain occasions these lands had SAR exceeding  
3 100; is that correct?

4 A Yes.

5 Q But that generally such lands would not be classified  
6 as arable?

7 A That's right.

8 Q I direct your attention to what's been admitted into  
9 evidence as U.S. Exhibit C-208. Isn't it true that  
10 that map identifies a parcel of 311.9 acres classi-  
11 fied as 6 gravity, 4 sprinkler?

12 A Yes, that's correct.

13 Just one moment.

14 MR. ECHOHAWK: Could we have a parcel number on  
15 that?

16 MR. MERRILL: Yes, I'm sorry, 7-19X.

17 MR. ECHOHAWK: Thank you.

18 (Brief pause.

19 Q (By Mr. Merrill) You got your photo?

20 A Yes, sir.

21 Q Okay. Is it true that on Exhibit C-208 you classified  
22 a 312, roughly, acre tract of land as 6 gravity, 4  
23 sprinkler?

24 A Yes. Now, this was a case such as I was discussing

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1 earlier where the lands are subjected to capillary  
 2 movement of water due to the high water table. It  
 3 was -- The textures are light, they're not clays.  
 4 It was determined that the lands were drainable and  
 5 that they were, in fact, reclaimable, even though  
 6 the sodicity is quite high.

7 Q I hand you what's been marked for identification as  
 8 Exhibit SW-7 and ask if you can identify that?

9 A Yes. That's -- It's titled, "Record of Chemical  
 10 Analysis of Soil". It's the HKM laboratory form  
 11 for chemical analysis.

12 Q Does SW-7, and particularly the rightmost column  
 13 that's filled in, titled "SAR" accurately reflect  
 14 the results on Lines 3 and 5 of two determinations  
 15 SAR made for lands within Tract 7-19X?

16 A Yes, it does.

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1 Q (By Mr. Merrill) You are saying that even  
2 though that tract of land has a measured SAR  
3 of 22.4 and SAR 42.5, it's still irrigable --  
4 excuse me, -- arable?

5 A Not in its present state. However, it was  
6 deemed to be reclaimable. This land was  
7 looked at by HKM quite intensively. We  
8 originally classified the land as Class 6,  
9 but due to the fact that the -- as I say, the  
10 textures are light, I believe, I don't have  
11 the results with me, but I believe that a  
12 gypsum requirement was run on this, on this land  
13 which indicated that the gypsum requirement was  
14 quite low, was certainly within reason. So  
15 because of those factors: Number 1, the  
16 drainability; Number 2, the leachability,,  
17 essentially the ability for this land to be  
18 amended as it were brought the lands back into  
19 arability status.

20 THE SPECIAL MASTER: Well, in that case  
21 they're still classified as Class 6, gravity?

22 THE WITNESS: Yes, they are.

23 Q (By Mr. Merrill) Ross, I hand you what has been  
24 marked for identification as Exhibit WRIR SW-8.

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1 Would you please identify that?

2 A That is a log -- excuse me -- the log form that  
3 was done for Hole 15 on aerial photo 19-256,  
4 which corresponds to Exhibit C-208.

5 Q Would you please read the entry under the most  
6 right-hand column entitled "Remarks"?

7 A Yes, I will. It says, "Very poor area, shallow  
8 soils to gravels, scattered areas with gravel  
9 and cobble exposed would -- I believe -- present  
10 leveling for irrigation by gravity. Alkalinity  
11 salt covered surface over most of area." Now,  
12 that is precisely what we are talking about.  
13 There is no reason to expect that this land isn't  
14 reclaimable. As I say, we ran a gypsum requirement  
15 on it, and in any case, it was just brought back  
16 to a Class 4. It will produce pasture, it has  
17 in the past, and that is the basis on which it  
18 was classified.

19 THE SPECIAL MASTER: So you took it from its  
20 Class 6 designation on Exhibit 208 and reclassified  
21 it as a Class 4 in your total report, in C-226?

22 THE WITNESS: It's still Class 6 for  
23 gravity.

24 THE SPECIAL MASTER: But you have included  
25 waples-cross-merrill

1 it in your figures?

2 THE WITNESS: As Class 4 sprinkler.

3 THE SPECIAL MASTER: Class 4, sprinkler?

4 THE WITNESS: That's correct.

5 Q Did you include it in your figures -- see,  
6 your table on page 39 doesn't distinguish  
7 between sprinkler and gravity, it merely says  
8 you have a total of 3,384 acres as Class 4, and  
9 that includes what we are talking about now.

10 THE WITNESS: Next?

11 Q (By Mr. Merrill) Ross, I hand you what has  
12 been marked for identification as U.S. Exhibit  
13 WRIR SW-9, and ask you if you can identify that?

14 A That's a report on chemical analysis of soils  
15 again?.

16 Q Does that relate to the tract 7-19X that we  
17 have been discussing?

18 A Parts of it do.

19 Q Okay. Would the second line filled out on  
20 that exhibit that begins with lab no. W1493,  
21 sample no. INF6 pertain to the tract that we  
22 have been talking about?

23 A Yes, it would.

24 Q Isn't it true that the results of the chemical  
25 waples-cross-merrill



1 analysis of that sample showed an SAR of 184.9?  
2 A Yes, sir, it does. Now, I would like to point  
3 out, though, there is an infiltration test  
4 adjacent to that hole, if I can find it. I  
5 believe it will shed more light than just the --  
6 just the SAR alone. Okay, that land in fact,  
7 the MA on it was a loam, which would not preclude --  
8 would not preclude reclamation, and I would also like  
9 to say that what we are talking about here is  
10 one hole in a corner of this field. It is  
11 obviously a bad hole. It in no way is necessarily  
12 indicative of the entire parcel as we could see  
13 from the other hole in the body of that --

14 THE SPECIAL MASTER: But Mr. Waples, isn't  
15 it true that any given hole drilled in a given  
16 parcel, if it comes up with a specific exact  
17 material that may be very, very satisfactory  
18 toward a conclusion doesn't prove that in the  
19 rest of the parcel the same thing is true?

20 THE WITNESS: That's correct.

21 THE SPECIAL MASTER: That's a two-way  
22 street that has two-way traffic on it, doesn't  
23 it?

24 MR. MERRILL: Couldn't have said it better  
25 waples-cross-merrill

1 myself, Your Honor.

2 THE WITNESS: However, the classifier in  
3 the field makes a judgment as to which hole is  
4 more indicitive of that piece of ground.

5 THE SPECIAL MASTER: Precisely. And our  
6 job is to review a judgment?

7 THE WITNESS: That's correct.

8 Q (By Mr. Merrill) So HKM performed three different  
9 tests of the SAR for this particular tract 7-19X;  
10 is that correct?

11 A I only see two offhand. Wait a minute -- pardon  
12 me.

13 Q You might want to look back --

14 A Yes, there are three, I believe there are three.

15 Q Okay. So you did three checks of SAR within  
16 that tract, right?

17 A Yes, Now, I don't see the SAR that was done for  
18 a Hole 15 --

19 Q Take a look at SW-7B, the fifth line down, and  
20 see if that's the right one.

21 A SW-7 -- one moment. Okay, here we go.

22 Q Is it all there?

23 A Yes, sir.

24 Q Okay.

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1 A Okay, yes. The SAR was 42.5 for that hole,  
2 which is certainly not unreasonable.

3 Q So out of the three SAR studies done from holes  
4 within that tract, one of them is just a little  
5 bit over your standards, another one is two  
6 times it, and a third one is nine times it, is  
7 that right, nine times the maximum SAR permitted  
8 under a literal reading of your standards?

9 A No. No, sir, that's not correct. The literal  
10 reading of the standards said this amount of  
11 sodicity is what will be permitted under  
12 equilibrium. Now, this means the sodicity  
13 under equilibrium is indicative of several things,  
14 is a function of several things: No. 1, the  
15 drainage; No. 2, the water quality; No. 3, the  
16 salts in the soil. Now, these lands are quite  
17 gravelly, they have good permeabilities, they  
18 are not clays. The drainage engineer says they  
19 can be drained, the gypsum requirement was not  
20 such that we totally dismissed it out of hand.  
21 These things all come together to allow us to  
22 form an opinion that says this land in fact may  
23 be considered arable if the conditions that would  
24 be required to make it arable are met, which are

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1 drainage and the amendments.

2 THE SPECIAL MASTER: So you feel if there  
3 is an exceptionally good cause and you think  
4 there's exceptionally good cause, then you  
5 proceed to defend the fact you can take an  
6 SAR of 187.9 and still show having some beneficial  
7 use?

8 THE WITNESS: That's correct.

9 THE SPECIAL MASTER: That's what you have  
10 maintained here?

11 THE WITNESS: That's correct.

12 Q (By Mr. Merrill) So it's your opinion this  
13 land in arable notwithstanding the three tests  
14 of SAR and notwithstanding you or your field  
15 classifier's observations that it is a very  
16 poor area; is that correct?

17 A It is very poor from a -- well, let's look at  
18 it again here. A very poor area, shallow soil  
19 to gravel, scattered areas with gravel and cobble.  
20 This in fact does make it a very poor land for  
21 gravity irrigation, hence the Class 6 classification.  
22 The sprinkler type irrigation in fact allows us  
23 to irrigate tracts of land because they cannot  
24 be leveled because they're gravelly, whatever, that

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1 ordinarily could not be -- or could not be very  
2 well irrigated with gravity methods. Now, we  
3 are saying this is Class 4 land. We are saying  
4 that some -- that pasture can be grown on this  
5 land by sprinkler means provided it is drained  
6 and the amendments are applied.

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1 Q (By Mr. Merrill) Also notwithstanding the facts  
2 that salts cover the surface of most of the area?  
3 A This, sir, is a function of the capillary movement  
4 of the water in the soils. What we have is a high  
5 water table. The water -- excuse me, the water  
6 moves up through the soil, leaves any salt that it  
7 has on the surface. Now, this is the project of  
8 many, many years, and what we are saying is that  
9 due in large part to the gravelly nature of the lands,  
10 the fact that we can drain this land and when we drain  
11 it, we can leach it, we can replace the sodium with  
12 calcium, or if we use -- excuse me, if we use sul-  
13 furic acid, we do two things: we get rid of the  
14 sodium and we get rid of the carbonate iron, and we  
15 can make this land arable.

16 THE SPECIAL MASTER: Mr. Waples, I appreciate  
17 the professionalism of your testimony, but I can't  
18 help running through my mind the actual experience  
19 that the United States of America and the Bureau of  
20 Reclamation has had in a half a dozen Wyoming areas  
21 that required constant appropriation of more funds,  
22 constant extension of payback provisions because of  
23 poor crops. Nearly nine times out of ten it was due  
24 to the alkali condition and faulty drainage that

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1 results. Isn't it really bad policy to include land  
2 of this kind, that is so marginal, in any kind for  
3 sprinkler, let alone gravity? I know you're not  
4 including it for gravity, but --

5 THE WITNESS: Sure.

6 THE SPECIAL MASTER: You're saying for sprinkler  
7 it can be done. In light of the experience in this  
8 state of the Alcova project, time after, San Joaquin  
9 Valley, some portions of Hart Mountain -- very few --  
10 isn't it our best bet not to do this?

11 THE WITNESS: What you say is certainly true.  
12 However, what we are looking at -- excuse me, if  
13 this land was a clay, I would have dismissed it  
14 totally out of hand, just out of hand, it would have  
15 been no longer considered. However, if it meets  
16 arability determinations, we have no choice --

17 THE SPECIAL MASTER: -- but to include it.

18 THE WITNESS: But to include it, that's cor-  
19 rect.

20 THE SPECIAL MASTER: All right.

21 Q (By Mr. Merrill) Ross, you state with respect to  
22 this tract that this had been in production at one  
23 time, is that correct, or was irrigated?

24 A Well, it meets the definition of our -- that we have  
25 waples - cross - Merrill

1 given, the historic lands definition.

2 Q Are you saying it was irrigated at some time?

3 MR. ECHOHAWK: The question has been answered.

4 THE SPECIAL MASTER: Asked and answered. He  
5 didn't know, I don't think. It meets his standards,  
6 so he included it. Do you know if it was ever ir-  
7 rigated?

8 THE WITNESS: Parts of it have had water on it.

9 THE SPECIAL MASTER: Do you know how it was ap-  
10 plied?

11 THE WITNESS: Pardon me?

12 THE SPECIAL MASTER: How was that water applied?

13 THE WITNESS: It was applied with gravity  
14 methods.

15 THE SPECIAL MASTER: Well, we certainly know  
16 why they cut it out.

17 This being the time you want to leave, I res-  
18 pect your request that we break until tomorrow at  
19 10:30 -- tomorrow at 9:15.

20 MR. MERRILL: That's fine, Your Honor.

21 THE SPECIAL MASTER: All right. We stand in  
22 recess until tomorrow morning at 9:15.

23  
24 (Thereupon the proceedings were  
(recessed at 4:15 p.m.

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REPORTERS' CERTIFICATE

1  
2 State of Wyoming )  
3 County of Laramie )

4 We, Merissa Racine and Mary Nelson, Registered  
5 Professional Reporters and Notaries Public in and for  
6 the First Judicial District, State of Wyoming, hereby  
7 certify that we did at the time, date and place, as set  
8 forth, report the proceedings had before the Honorable  
9 Teno Roncalio, Special Master Presiding, in stenotype;  
10 that the foregoing pages, numbered 3477-3613 inclusive,  
11 constitute a true, correct and complete transcript of  
12 our stenographic notes as reduced to typewritten form  
13 under our direction.

14 We further certify that we are not agents,  
15 attorneys or counsel to any of the parties hereto, nor  
16 are we interested in the outcome thereof.

17 Dated this 20th day of April, 1981.

18  
19 *Merissa Racine*

MERISSA RACINE

20 Registered Professional  
21 Reporter

22 *Mary Nelson*

MARY NELSON

23 Registered Professional  
24 Reporter

