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File 162
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File # 162

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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)
WYOMING.)

Civil No. 4993

FILED _____
5/20 1981
Margaret W. Hampton CLERK
DEPUTY

VOLUME 55

Friday, May 8, 1981

ORIGINAL

APPEARANCES

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FOR THE STATE
OF WYOMING:

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CLERK TO THE
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FOR THE SHOSHONE
TRIBE:

SONOSKY, CHAMBERS & SACHSE
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Washington, DC 20006
BY: MR. WILLIAM PERRY

1 THE SPECIAL MASTER: May we come to order,
2 please. Mr. Echohawk.

3 MR. KROB: Your Honor, before we begin,
4 the witness today, I believe you have before you a
5 motion to expedite discovery. I just wish to
6 to inform the Court that we've been given
7 assurances by the attorneys of the United
8 States that the materials requested therein,
9 some of which are apparently not now available
10 but are being produced, will be made available
11 to the State as they are produced. And we --
12 therefore, we withdraw our Motion For
13 Expedited Discovery. And we request some
14 indication by Counsel of the United States as
15 to when we might be -- when we might expect
16 to begin receiving those materials.

17 THE SPECIAL MASTER: Mr. Echohawk or Mr.
18 Clear.

19 MR. ECHOHAWK: I was informed yesterday,
20 it appears that a portion of that information
21 requested by Wyoming's -- in Wyoming's request,
22 has been requested previously from another
23 witness, and that's information being generated,
24 and I was told yesterday it should be available
25 by -- around May 11th.

1 THE SPECIAL MASTER: Very fine.

2 MR. ECHOHAWK: And the rest of the
3 information we'll start cranking that out as
4 soon as it's available.

5 THE SPECIAL MASTER: I congratulate both
6 of you in working this out, and I appreciate
7 it.

8 You may proceed, Mr. Echohawk.

9 THE WITNESS: Excuse me, my microphone is
10 not on.

11 (Off-the-record discussion.)

12 DIRECT EXAMINATION (CONTINUED)

13 BY MR. ECHOHAWK:

14 Q Mr. Dornbusch, yesterday, just so we can kind
15 of recap where we were, would you just briefly
16 run through where we left off yesterday.

17 A Okay. Just very briefly, we were talking
18 about crops and crop yields and the fact that
19 once we determined the crop yields and multiplied
20 them by the crop prices, we obtained the gross
21 returns for the highland and the lowland areas
22 as I described yesterday.

23 The next step -- Do you want to move to
24 the next step then in that?

25 dornbusch-direct-echohawk

1 Q Mr. Dornbusch, I direct your attention to
2 what has been marked as United States Exhibit
3 WRIR C-270. Would you please identify that.

4 A Yes. That exhibit shows the next step in the
5 process. Once we've obtained the gross
6 returns for both the highland and the lowland
7 acres, the next step is to subtract out the
8 production costs for each of those crops to
9 determine the net returns for the highland and
10 lowland areas.

11 Q Information for the production costs, determination
12 of the production costs, is that type of
13 information reflected in the United States
14 Exhibit WRIR C-268, which is your report?

15 A Yes. Immediately following Table 2 there are
16 a series of tables for each of the crops in
17 the crop mix and those tables show what you
18 might call the crop budgets or the production
19 development.

20 THE SPECIAL MASTER: What does the 4 percent
21 refer to just after the words "Table 2" on
22 Page 5 mean?

23 THE WITNESS: Okay. That refers to the
24 discount rate used in this analysis.

25 dornbusch-direct-echohawk

1 THE SPECIAL MASTER: To what is the 4
2 percent discount rate applied?

3 THE WITNESS: It's applied to moving
4 the values of returns and costs to a -- to
5 the same point in time so they might be
6 compared. Remember, yesterday I was talking
7 about the time value of money.

8 THE SPECIAL MASTER: Yes.

9 THE WITNESS: And that's the discount rate
10 that's used to move those costs through time
11 so they can be compared.

12 THE SPECIAL MASTER: Very well.

13 Q (By Mr. Echohawk) Mr. Dornbusch, now that we
14 have the annual gross net returns for highland
15 and lowland areas, you've mentioned we have to
16 determine the production cost. How did you
17 go about determining production costs?

18 A Okay. I developed a series of tables which
19 consists of the items that comprise the
20 production, the cost of producing those crops.
21 The tables are in the same format as generally
22 used by Agricultural Extension Service, and
23 specifically here in Wyoming it is precisely
24 the same format that they use.

25 dornbusch-direct-echohawk

1 Q These are how you determined your crop budgets;
2 is that right?

3 A Yes.

4 Q Upon what sort of information are your crop
5 budgets based? Did you ever use any special
6 sources?

7 A Yes. To begin with I referred to the report.
8 produced by Doug Agee who is the farm management
9 specialist that I mentioned yesterday. His
10 study was specifically for the Midvale Irrigation
11 District, and he put together the, the report
12 which, as I said, is based upon his study of
13 that Midvale Irrigation District, and I derived
14 much of my information from his report.

15 Q Did you make any attempt to verify the cost
16 from the -- from Mr. Agee's work?

17 A Yes. I verified both his cost and the operations
18 and the equipment that he uses. For example,
19 on that series of tables that show the crop
20 budgets, in the first column there are a series
21 of operations that are derived from the Agee
22 record, and I verified those with farmers in
23 the region.

24 * * * * *

25 dornbusch-direct-echohawk

1 Q (By Mr. Echohawk) Did you make any adjustments
2 from Mr. Agee's work or did you take them all
3 at face value?

4 A Yes, I made a number of adjustments. Perhaps
5 the easier thing to do would be to deal with
6 those as we go through or just deal with them
7 in general.

8 Q Why don't you just kind of hit generally on
9 what type of adjustments, and we will discuss
10 them more in detail.

11 A Okay. Because I -- well, first of all, in the
12 discussion with Doug Agee we found that he
13 had found some errors, I believe there was one
14 error in particular; that although he had
15 identified the amount of fertilizer that should
16 be applied in running his calculations, he
17 ran a calculation for a lesser amount of
18 fertilizer, and he pointed that out to us, and
19 we checked and certainly his cost was lower
20 and we made the adjustment to correct for
21 that.

22 We also increased the amount of fertilizer
23 used in the malt barley budgets to reflect
24 the increased yields we were projecting for
25 dornbusch-direct-echohawk

1 that crop. We also made some adjustments,
2 for example, we recognized that there were
3 going to be somewhat greater hauling distances
4 for seed and harvested crop in our new project
5 lands as compared to the haul distances that
6 Agee had in the Riverton Project, and we made
7 adjustments there.

8 Q Okay. Mr. Dornbusch, in using Table 2-A as
9 somewhat of a point of reference, could you
10 take us through what goes into your crop
11 budgets, what factors are considered and how
12 you determined the appropriate costs?

13 MR. MERRILL: Your Honor, for purposes
14 of a complete record, I'll renew my continuing
15 objection with reference to the exhibit which
16 is not in evidence.

17 THE SPECIAL MASTER: All right.

18 THE WITNESS: Yes. To begin with, you can
19 see on the left side of the table we specify
20 the operations that comprise the various
21 principal activity, such as growing and the
22 harvesting. Actually, if I may, I think a more
23 complete table might be 2-B because it shows
24 more of the operations. But actually either one

25 dornbusch-direct-echohawk

1 can work. You can see on 2-B there are
2 operations of the preplanting, the operations
3 that occur before the actual planting; the
4 planting; growing; harvesting and post-
5 harvesting operations. Then within each of
6 those main categories there are specific
7 operations. We can deal with 2-A, it really
8 doesn't matter.

9 Q Whichever you prefer.

10 A Sure. I'm just going to deal with it in
11 general now anyway. Then within those categories
12 we have the specific operations, and those I
13 said I derived directly from Doug Agee's
14 budget and I confirmed those through interviews
15 with farmers in the region. Immediately after
16 the operations, you see an identification of
17 the truck or tractor and the implements that's
18 used in each of those operations, and, for
19 example, the first operation you see has --
20 indicates the size of the tractor, and then
21 after the nature of the operation, and so on
22 down through the column.

23 The next column shows the material, if
24 any material is applied, such as fertilizer,
25 dornbusch-direct-echohawk

1 the use of twine in baling operations.
2 Immediately following that column shows the
3 tractor hours or truck miles, if it's a truck
4 in that case, that would be necessary per
5 acre for the operation that -- the particular
6 operation we are dealing with.

7 Q All right. Where were the operations, and the
8 particular implements and materials derived
9 from?

10 A They were derived directly from Doug Agee's
11 report, and also confirmed by the farmer
12 interviews that I conducted. I only made some
13 adjustments, as I said, in the materials to
14 increase the fertilizer for the increased
15 yields, that sort of thing.

16 Q All right. What would be the next item that
17 you considered?

18 A Okay, the tractor hours or the truck miles I
19 took directly from Agee with the exception of
20 the truck miles, as I said, and I normalized
21 those prices. You recall yesterday that I
22 mentioned that we were seeking to not only
23 put our cost and returns at the same point in
24 time to compare them, but recognizing the

25 dornbusch-direct-echohawk

1 fact that prices and costs do fluctuate.
2 To remove those fluctuations and obtain a
3 more representative price for a point in time,
4 we followed the WRC guidelines, what they call
5 normalization, to get those averages for the
6 most representative price. Now, Doug Agee's
7 prices were of 1977, and we adjusted his prices
8 to 1979, normalized prices according to factors
9 that are published by the WRC for those
10 particular costs.

11 Q All right. So you normalized the truck and
12 tractor costs; is that right?

13 A Yes.

14 Q Fixed cost?

15 A Well, I guess -- I'm sorry, I got ahead of my
16 story. I used the tractor hours, the truck
17 miles directly from Agee. I haven't yet gotten
18 to cost, I was a little ahead of myself there.

19 Q All right. In determining -- how did you
20 determine your truck and tractor costs, your
21 fixed costs?

22 A The fixed cost, all right. In reviewing the
23 Agee report we discovered, and in discussing
24 the matter with Agee, we realized that he used

25 dornbusch-direct-echohawk

1 a 320 acre farm as his base for determining
2 the costs. In his report he admits that a
3 larger farm would operate more efficiently, and
4 in discussing the matter with him he agreed,
5 as well. and because our farms are going to
6 be so much larger, I felt that we could obtain
7 much better efficiencies, and therefore, made
8 a search of the literature, and studies that
9 might be available to show me what you might
10 expect if you had a larger farm and if you
11 were able to operate your equipment more
12 efficiently. There is a report that has been
13 prepared by the Bureau of Reclamation in the
14 Hardened Bench in Montana, which does exactly
15 that, it analyzes the same equipment that we
16 are using here to see the hours or miles that
17 that equipment is used in its most efficient
18 form.

19 We based our analysis of fixed costs on
20 the estimates of the most efficient use of
21 that equipment, and the rationale being that
22 our farms are so large and the potential is
23 there for using the equipment so efficiently
24 I felt in some cooperative arrangement, whether

25 dornbusch-direct-echohawk

1 it's owned by the Tribe or a co-op is set up,
2 that a pool arrangement of the equipment
3 would be entirely feasible and practical and
4 could be used to farm those fields, and that's
5 the basis for using the most efficient hours
6 and miles determined by the Bureau of Reclamation.

7 Q Okay. You mentioned earlier you got a bit
8 ahead of yourself as far as normalization.
9 Is this where normalized prices come in, or do
10 they come in later?

11 A Yes. In the process of computing the fixed
12 costs, we determined an hourly fixed cost which
13 is based upon the initial price of the equip-
14 ment and a complete analysis of the fact that
15 you have to purchase the equipment at the
16 beginning of the project, each piece of
17 equipment will have a unique life and a salvage
18 value, then you must repurchase the equipment
19 at the end of its life, and so on, for a
20 period of, in this case and as recommended by
21 the WRC, a 100-year-project life.

22 So what you do is you assume your project
23 is going to continue on into the future. One
24 hundred years is elected because for the purposes

25 dornbusch-direct-echohawk

1 of this kind of analysis it is virtually
2 indefinite, that any costs you carry beyond
3 100 years are insignificant when you bring
4 them back to present value. So I have
5 developed an analysis of purchasing and re-
6 placing all of the pieces of equipment
7 throughout the 100-year life, determining what
8 costs are, normalizing those costs, adding in
9 the appropriate insurance costs, determining
10 the annual fixed cost, then the hourly fixed
11 cost, and the way you do that is from your
12 annual fixed cost using the efficiency rates
13 determined in the Bureau of Reclamation study.
14 you determine an hourly fixed cost, and that's
15 what I used. I simply then take the hourly
16 fixed cost for each piece of machinery and
17 multiply it by the hours required for that
18 piece of equipment in each operation. In the
19 case of a truck, it's on the basis of miles
20 instead of hours, and we used the fixed cost
21 per miles times the miles used in that operation
22 to determine our fixed costs.

23 * * * * *

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25 dornbusch-direct-echohawk

1 Q. (By Mr. Echohawk) What do you do after these fixed
2 costs are determined?

3 A. By the way, that's the fixed costs for both the truck
4 or tractor and the implements. The analysis is iden-
5 tical to both.

6 The next step is to determine the variable costs,
7 and for these we used --

8 Q. Excuse me, let me interrupt you. What do you mean
9 by "variable costs"?

10 A. Okay. A fixed cost is the cost like the purchase of
11 a piece of equipment that must be incurred whether
12 you farm one acre with that piece of equipment or
13 whether you try to farm 500 acres with that piece of
14 equipment. No matter what, you must purchase a whole
15 tractor, it's a fixed cost.

16 A variable cost, however, varies directly with
17 the amount of use, the hours of use or the miles of
18 use. You have lubrication charges, repair and main-
19 tenance charges, and the more you use the equipment,
20 the more you will incur those charges, and those
21 costs vary directly with the hours or the miles of
22 use.

23 So you simply separate those costs because you
24 analyze them differently, and Doug Agee prepared an

25 dornbusch - direct - echohawk

1 analysis of the variable costs, the hourly and per
2 mile costs for the equipment that we were using, and
3 I used his directly and again diverted from his '77
4 prices to normalized 1979 prices.

5 Q Was there a need to normalize the variable costs?

6 A Yes, and we did that.

7 Q All right. Okay, what is the next step?

8 A Okay, the next step is to analyze the cost for what
9 we call materials and custom. As you can see, in
10 the third column there are materials involved like
11 seed, fertilizer, and each of these have a cost, and
12 we did the same thing as we did with the variable
13 costs, we used Doug Agee's costs and normalized
14 them.

15 Here's the place where we had to make the cor-
16 rection in the fertilizer and made the adjustment
17 there. Some operations are custom operations.

18 Q What do you mean by "custom operations"?

19 A It doesn't make sense in all cases for farmers to
20 buy a piece of equipment because they only use it a
21 very little bit; that there are contractors avail-
22 able in the region who have that equipment, will do
23 that operation on what they call a custom basis. It
24 is somewhat more expensive and there are possibilities,

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1 perhaps, for later on acquiring those specialized
2 pieces of equipment. But, for our analysis, we
3 chose to pay what might be slightly higher costs
4 and hire those services out.

5 Q Okay. What would be the next step after your nor-
6 malization of the materials and custom costs?

7 A Then we -- Yes?

8 Then we determined the labor costs.

9 Q And how do you do that?

10 A Again, we used the manhours directly from Doug
11 Agee's budgets, and we applied the normalized cost
12 per hour to that hourly rate and then we made an
13 adjustment to account for the opportunity cost of
14 that labor.

15 Q Okay. We had a brief discussion earlier yesterday
16 about opportunity costs. Could you once again ex-
17 plain to us what do you mean by opportunity cost?

18 A Yes. This is one of the key principles that is used
19 in an economic analysis like this one and like the
20 ones that I've done, and they're used by the World
21 Bank on development projects and recommended by the
22 Water Resources Council.

23 The principle is this: If you are using a
24 resource, you should cost that resource at its next

25 dornbusch - direct - echohawk

1 best use, and that's considered the opportunity cost.

2 In a situation where you have, let's say, a
3 piece of land and it's a desert land, it has no
4 water supply, it has nothing that it can be used
5 for, there's no resource value for that land. The
6 opportunity cost for that land is zero.

7 It's not the case here, I'm just citing it as
8 an example. There is no alternative value to that
9 land.

10 Another example might be if, say, you had a
11 secretary in your office and for some reason for a
12 number of weeks now you've had no work for that
13 secretary despite the fact that you've had to pay
14 her a salary regularly. You had no work for her,
15 she's been doing nothing, and now you get a big
16 piece of work, you can either give that work to that
17 secretary or you can go out and hire a new one.
18 Well, clearly you're not going to hire a new one,
19 you're going to give that work to that secretary.
20 There's no added cost. And the analogy, I think,
21 illustrates the point that the opportunity cost for
22 giving that work to the secretary who's been doing
23 nothing this time is zero. You don't incur any
24 additional costs for doing that.

25 dornbusch - direct - echohawk

1 And that's the principle that we would follow
2 here. In this case --

3 THE SPECIAL MASTER: Where specifically is
4 "here"?

5 THE WITNESS: In labor.

6 In multiplying the manhours times the labor
7 cost, the next step I did was to determine how much
8 of the labor cost I expect to draw from the unemployed
9 Indians on the Reservation. There is a very large
10 unemployed population of available work force on
11 the Reservation, and I determined that the supply of
12 labor is far in excess of the requirement for labor;
13 that the skills and availability of this work force
14 is satisfactory for the labor that is available in
15 these new projects. And, in fact, probably would
16 not have the opportunity to work without the develop-
17 ment of these projects. And, as a result, I deter-
18 mined that 80 percent of the labor force could be
19 drawn from that pool of labor, that pool of unemployed
20 labor.

21 In fact, it's possible that 100 percent could
22 be drawn, the supply of labor is far in excess of
23 the demand, and it possibly could be 100 percent.

24 I made a judgment that 80 percent would be

25 dornbusch - direct - echohawk

1 drawn from that labor force, and, therefore, once I
2 multiplied my manhours times the full labor cost,
3 the hourly labor cost, I then multiplied by .2 to
4 determine only the proportion that would be drawn
5 from previously employed labor, not the unemployed
6 labor, and, therefore, I have costed my labor at its
7 opportunity cost, only that cost which displaces the
8 use of otherwise employed resources, in this case,
9 labor.

10 Q (By Mr. Echohawk) Where did you get your information
11 on the high unemployment rate on the Indian Reserva-
12 tion?

13 A The Wind River Reservation, as most reservations, I
14 think all reservations, maintains statistics on un-
15 employed workers on the reservation, and I obtained
16 my information directly from the people in the BIA
17 who compiled those statistics and questioned them
18 as to the composition of that work force, as well
19 as interviewing other people who are knowledgeable
20 in other similar situations where Indians have been
21 employed in agricultural development projects, as
22 well as people on the Reservation who have experience
23 with -- historic experience with the Indians who have
24 grown up and lived on the Reservation.

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1 Q In forming your analysis, did you check the long-
2 term unemployment on the Reservation or is this just
3 a situation that existed in, say, 1979?

4 A It's actually been rather stable for about the past
5 ten years. I didn't go back any further, but for
6 the past ten years the unemployed rate has been on
7 the order of 40 to 50 percent. It's currently about
8 45 percent.

9 Q All right. So we've considered the operations as
10 the truck and tractor implements, the materials, the
11 truck/tractor miles, fixed and variable costs for
12 each materials and custom labor.

13 What you do after you determine all of those
14 costs in your crop budgets?

15 A Once I totaled those costs, I then added a number
16 of other costs which I'll describe now. For example,
17 there's some general costs that aren't specifically
18 attributed to specific operations that we call
19 general overhead. The way that should be read at
20 the bottom of the table, it should be read general
21 overhead. And within general overhead, there's two
22 items, one called miscellaneous and the next one's
23 called interest.

24 Miscellaneous has been taken as 5 percent of
25 dornbusch - direct - echohawk

1 the above totals. In other words, all of those
2 totals I then apply a 5 percent additional cost and
3 I apply it at the full cost of labor. This is fol-
4 lowing Doug Agee's and a number of the other agri-
5 cultural analyses that I've seen. It's really to
6 cover things like the various overhead expenses,
7 employment benefits, insurance, that sort of thing.
8 And 5 percent is generally used. Since the 5 per-
9 cent is applied to the fully costed values, I did
10 that as well.

11 The next item called interest, in this case,
12 is a movement in time. In other words, some of
13 these costs are incurred by others. For example,
14 you receive the proceeds of harvest at harvest time,
15 but you have production costs that occur earlier.
16 Because time has a value, time value of money, I
17 moved my costs that are incurred earlier, in this
18 case, the harvest time. All my costs are moved to
19 the harvest time and, therefore, are normalized
20 costs as of the same, all at the same time.

21 Q All right. What's next after?

22 A I then take a subtotal of those costs and then I
23 have two more costs. The first one is management,
24 and in this case I used a higher rate than is

25 dornbusch - direct - echohawk

1 generally used by agricultural extension service
2 people. I believe Doug Agee uses 5 percent, WRC,
3 Water Resources Council, uses 10 percent. I chose
4 to use 10 percent, one, because the WRC calls for
5 that, and, second, to further substantiate the fact
6 that I am assuming progressive farming techniques,
7 and to conform with the fact that I think we can
8 obtain good yields and use progressive farming tech-
9 niques, I have used the higher management costs, and
10 that 10 percent is of the subtotals, the fully costed
11 subtotals before I adjusted for the opportunity cost
12 of labor.

13 I then made an adjustment in the management costs
14 recognizing that we can expect some of the management
15 to come also from the unemployed Indians on the Reser-
16 vation.

17 Q You expect that to come all at once?

18 A No, no. I recognize that there is training involved
19 in producing skilled managers, and through my dis-
20 cussions with people who had been experienced in
21 other reservations in developing managers of this
22 type and development projects of this type, I de-
23 veloped a curve which essentially assumes that the
24 first year you will have only 10 percent of your

25 dornbusch - direct - echohawk

1 managers coming from the unemployed, and that each
2 year you would be able to increase that percentage
3 by training more and more, bringing more of the un-
4 employed Indians into the management force, and
5 each year you would increase that amount by 10 per-
6 cent until at the end of 10 years you would have all
7 of your managers from the unemployed.

8 Then to determine the specific percentage to
9 use, I used the same kind of discounting techniques,
10 bringing it back to the present in order to deter-
11 mine the percentage of management that would come
12 from the unemployed Indians.

13 It's essentially then calculates the opportunity
14 cost of management.

15 Q Okay. You've been mentioning various times of bring-
16 ing something back to a certain point in time and
17 discounting. Is that what they call -- What's the
18 term for that?

19 A That's the discounting of future values to a present
20 value. It recognizes that a future value is some-
21 thing less than the present value. And using the
22 appropriate discount rate brings back that present
23 -- that future cost to a present cost, so you can
24 compare your costs and revenues on an equivalent

25 dornbusch - direct - echohawk

1 basis at one point in time.

2 Q All right. What's the next item after management
3 that you considered?

4 A The next item is to add in the cost for land and
5 improvements. The improvements refer to a machine
6 shop and shed, and I determined the cost on the same
7 basis that Doug Agee used for his machine shop and
8 shed. Again, performing the normalization technique
9 that I described earlier, and then added the cost of
10 land.

11 Q What cost did you use for land?

12 A Okay. Again, the same principle must be used in
13 determining the cost of land as for your other
14 costs, and the notion being you use the opportunity
15 cost of land, that you must ask what is the next
16 best use of that land. In this case, the next best
17 use of that land is as dry grazing land. Dry graz-
18 ing land value can be determined from the amount that
19 it produces in terms of animal unit months, and we
20 determined our cost according to the amount of
21 animal unit months feed that that dry grazing land
22 would produce, and that's the opportunity cost we
23 used.

24

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* * * * *

1 Q (By Mr. Echohawk) Okay. Have we now covered
2 all items which you described as your pro-
3 duction cost on Exhibit C-270?

4 A Yes, we have.

5 Q Once you have your production costs in reference
6 to C-270, once you have your production costs
7 what do you do with them?

8 A Looking back at Table 2, I then note the
9 production costs for each of the crops, and
10 then subtract those production costs for each
11 crop from the respective gross returns for
12 highland and lowland.

13 THE SPECIAL MASTER: Have you done that
14 on a page, on a table or plate?

15 THE WITNESS: Table 2.

16 Q (By Mr. Echohawk) What page would that be in
17 in Exhibit C-268?

18 THE SPECIAL MASTER: Five.

19 THE WITNESS: Five.

20 THE SPECIAL MASTER: What column shows
21 the --

22 THE WITNESS: Production costs?

23 THE SPECIAL MASTER: Yes.

24 THE WITNESS: If you look under production
25 dornbusch-direct-echohawk

1 costs, for example, for alfalfa, you see the
2 same number hopefully that is shown on the
3 crop budget table in 2-A.

4 THE SPECIAL MASTER: You subtract that
5 from the other two figures and come up with
6 the next returns for the two?

7 THE WITNESS: Precisely.

8 Q (By Mr. Echohawk) And that leads us to the
9 ending point on Exhibit C-270; is that right?

10 A Yes, that's right.

11 Q Okay. After you determined your -- or subtracted
12 production costs from your gross returns and
13 get your net return, what is the next step in
14 your analysis?

15 A Okay, the next step in the analysis is
16 illustrated on the next chart.

17 Q Would that be WRIR C-271.

18 A It is.

19 Q Would you describe for us what is shown on
20 there briefly?

21 A Yes. Once I have calculated the net returns
22 for both highland and lowland acres, I then
23 determine the percent crop distribution for
24 the highland and the lowland areas; that is

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1 the amount of each crop which we will grow in
 2 the highland and lowland areas. Then by
 3 simply averaging the net returns by those
 4 proportions, they determine a weighted average
 5 of the net returns. In other words, looking
 6 at the mix of crops, each of those crops has
 7 a net return, and then according to its
 8 relative proportion in the total mix, we
 9 determine an overall weighted average for the
 10 highland and the lowland areas.

11 Q Would a reference point for this discussion
 12 be Table 3 in Exhibit 268?

13 A Yes. Yes, Table 3 shows for each of the crops
 14 in the lowland and highland regions the
 15 percent distribution, or rather the percentage
 16 that each crop comprises in the distribution.

17 Q How did you determine the percent distribution
 18 for each of the crops?

19 A Okay. As you can see from the table, the
 20 crop mix is based primarily on alfalfa. I
 21 think I discussed yesterday the fact that this
 22 is the primary crop in our mix, it has the
 23 highest yields, it is the animal food for
 24 the principal agricultural production activity

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1 in the region, and it comprises 67 percent
2 in growing the highland and the lowland mix.
3 That represents four years out of the six-year
4 rotation.

5 That alfalfa crop is nursed by a malt
6 barley crop. The reason for that, I believe
7 Dr. Woldezion described briefly in his
8 testimony, that it's a fragile crop, and to
9 protect it in its first year of growth it's
10 planted with an accompanying crop, a planting
11 crop, it's also called a nursing crop, in
12 this case malt barley. And the percentage for
13 malt barley, 16 percent in growing the
14 highland and the lowland regions represents
15 one full year of production.

16 Okay, in the sixth year we have a difference
17 in the highland and the lowland areas. To
18 begin with, let's take the highland, it's
19 simpler. The sixth year we rotate off the
20 alfalfa and put in entirely malting barley.
21 It's the same crop as the nurse crop, and that
22 shows in the highland area 17 percent. It
23 only differs because of rounding. It's
24 intended to represent one-sixth of the crop

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1 rotation. In the lowland areas where it's
2 possible to grow corn, we have included
3 corn both in silage and in grain in the
4 crop mix, and you see a mix of corn silage,
5 corn grain and malting barley. That totals
6 to 17 percent, representing the sixth year.

7 Q Once you have the percent distribution of
8 each of the crops that you have chosen, what
9 is the next step of your analysis?

10 A By weighting the necessary returns for highland
11 and lowland areas for each crop by their
12 respective weighting or percentage, you obtain
13 the weighted average net returns for the
14 highland and lowland acres.

15 Q Is that also reflected on Exhibit C-271?

16 A Yes. It's shown in the exhibit and on the
17 table.

18 Q All right.

19 A Simply by multiplying, for example, in the
20 lowland areas .05 times the net return for
21 malting barley, the same way down through the
22 crops, you obtain the weighted average.

23 MR. ECHOHAWK: Before we go on to the next
24 step, we have been going about 45 minutes.

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Could we break?

THE SPECIAL MASTER: Take a break? All right. We will take a ten-minute break.

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1 THE SPECIAL MASTER: We'll come back to order,
2 please. Okay, Mr. Echohawk.

3 Q (By Mr. Echohawk) Mr. Dornbusch, I believe we left
4 off, we had just completed our discussion and arrived
5 at the weighted average net returns. What's the
6 next step in your analysis?

7 A The next step, I think, can be illustrated by the
8 next chart.

9 Q Would you identify for us what has been marked
10 as United States Exhibit WRIR C-272.

11 A Yes. That chart selects the portion of the over-
12 all flow diagram in Exhibit 267, which focuses
13 specifically on the next set of steps which are
14 also illustrated in table 4.

15 And what it shows, what we're doing is we're
16 taking the weighted average of the net returns
17 for the highland and lowland areas from the
18 previous table and then we determine what the
19 percentage of high land and low land acres is
20 for each respective project area. Averaging
21 according to those percentages, we obtained
22 the net returns by project area and then we sub-
23 tract out the on-farm irrigation costs.

24 If you noticed in the crop budgets, there
25 dornbusch-direct-echohawk

1 were no costs allocated for irrigation operation.
2 Here is where we consider those irrigation opera-
3 tions. We subtract them from the net returns
4 and obtain the net benefits by project area.

5 Q All right. Where did you get the percent of
6 the acres in the 'highland' and the lowland areas?

7 A That came directly from Dr. Mesghinna with Stetson
8 Engineers.

9 THE SPECIAL MASTER: What are your figures
10 in the column "present value", of your table 4;
11 last column?

12 THE WITNESS: Okay. So far we've been
13 operating completely on annual costs, and these
14 are an expression of the stream of future costs
15 on an annual basis. The last two columns represents
16 a conversion from annual costs to a total present
17 value, and what I've done is I've expressed the
18 entire, all of the benefits.

19 THE SPECIAL MASTER: In what unit is that 3633?

20 THE WITNESS: Dollars.

21 THE SPECIAL MASTER: Per acre?

22 THE WITNESS: Per acre.

23 THE SPECIAL MASTER: Is this a relative figure
24 or is that an accepted standard in computations of
25 dornbusch-direct-echohawk

1 this kind? I don't understand what that --

2 THE WITNESS: What that number of dollars
3 means?

4 THE SPECIAL MASTER: What the purpose is
5 for establishing the present value along those
6 guidelines.

7 THE WITNESS: We are going to compare the
8 present value of the benefits in the very next
9 table to the present value of the cost to
10 determine our ratio.

11 THE SPECIAL MASTER: Thank you.

12 Q (By Mr. Echohawk) Once again, Mr. Dornbusch,
13 just for point of clarification we should go over
14 it again, the principle of present value and
15 why you've chosen the present value of certain
16 items.

17 A We're, in this case, we have a stream of annual
18 benefits and we're taking that stream and con-
19 verting it to an equivalent expression. It means
20 the same thing, but instead of expressing the
21 benefits in terms of an annual return each year
22 for a hundred years, we're expressing that in
23 an equivalent number of dollars that are the
24 present value at time zero, at our first point in

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1 time. That stream of annual benefits is equiv-
2 alent to a present value, and that's simply
3 what we are doing, we're converting that
4 stream to one number.

5 THE SPECIAL MASTER: Is this supposed to be,
6 Mr. Echohawk or Mr. Dornbusch, a figure that is
7 put into this case in the eventuality there would
8 be a declaration of taking or a taking of this
9 area of North Crowheart, say? You could con-
10 clude from this that it's present value is \$3,633
11 per irrigated acre?

12 Don't look at each other. If neither one
13 of you want to answer that, I'll accept that.

14 THE WITNESS: Actually I was looking at Mr.
15 Merrill; his eyes were big as saucers.

16 THE SPECIAL MASTER: I'm looking, way, way
17 beyond the lawsuit, and maybe I have no business
18 asking this, so let's forget I asked the question
19 now. Perhaps it can be addressed later in the
20 litigation.

21 Q (By Mr. Echohawk) All right. I believe where
22 you left off, you had obtained the percentage
23 of highland and lowland area in each project
24 from Dr. Mesghinna. What did you do after you
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1 obtained that?

2 A Again, I used a weighting technique similar to the
3 one I described before in order to now weight the
4 highland and lowland returns to average annual
5 net return for each project area. That's shown
6 on the third column for each project area.

7 Q All right. And what do you do once you obtain
8 that figure?

9 A Okay. We now subtract out the annual on-farm
10 irrigation O and M costs, O and M referring to
11 operations and maintenance, actually there's
12 operations, maintenance and repair in there.

13 Q Where did you get the cost for annual on-farm
14 O and M?

15 A Dr. Mesqhinna gave us information regarding the
16 number of irrigation applications that would be
17 required in each project area.

18 He also gave us information on the number
19 of acres that we could expect to irrigate for
20 each application and the time of labor required
21 to farm the operation. And by simply performing
22 multiplications and calculations, we determined
23 what the cost would be for each acre for operating
24 the irrigation system. We also obtained form Dr.

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1 Mesghinna, directly, the repair and maintenance
2 costs per acre for each of the project areas,
3 and adding the two together we obtained -- Excuse
4 me, in the calculation of the labor to perform
5 the operation, we did the same thing as we did
6 in the crop budgets, we determined what the oppor-
7 tunity costs for that labor would be. I used the
8 same principle as before, and we added the repair
9 and maintenance and labor costs together.

10 Q All right. What did -- What was the next step?

11 A The next step was to add the miscellaneous over-
12 head in the same way that we did on the crop
13 budgets for the irrigation operation. There
14 will also be associated overhead costs. We used
15 the same factors as before, the five per cent.

16 We also moved those costs in time since
17 they'll be occurring throughout the growing
18 season. We moved those costs to the harvest
19 point. And we also added a management cost using
20 the same principle as before, the ten percent
21 originally, and then using the opportunity cost
22 to calculate the management cost.

23 And that then gave us the total for the on-
24 farm irrigation O and M cost.

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1 A And I neglected to mention that we did
2 this separately for hand move and side roll
3 sprinkler systems. Dr. Mesghinna gave us separate
4 costs for the two types of irrigation systems.

5 THE SPECIAL MASTER: What particular table
6 in your exhibit 268 does that material show to
7 which you just now testified?

8 THE WITNESS: The only thing that I show in
9 this exhibit is the sum total. I do not show the
10 calculations that go behind this.

11 THE SPECIAL MASTER: I see. So the materials
12 you just testified to would fit in somewhere with
13 the annual on-farm irrigation O and M costs on
14 page 12?

15 THE WITNESS: Yes, since we did the calculations
16 separate for the side roll and hand move, the very
17 next step was to determine the weighted average
18 and Dr. Mesghinna told us the portion of side roll
19 and hand moved sprinklers that will be in each
20 project area, and taking the weighted average for
21 those costs we determined then the numbers you
22 see in table 4, which is a weighted average of
23 the annual on-farm irrigation costs for both side
24 roll and hand move, according to their respective
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1 Q (By Mr. Echohawk) Is there anything else that
2 goes into the annual on-farm irrigation O and M
3 costs?

4 A No, I believe I have covered it.

5 Q What do you do with that annual on-farm O and
6 M cost?

7 A That is subtracted from the annual average net
8 return to obtain the next to last column,
9 which is the annual project area net benefit
10 per acre.

11 Q Again, then you determined the present value?

12 A That's right. I took the annual stream -- the
13 stream of annual benefits and converted that
14 to an equivalent present value.

15 THE SPECIAL MASTER: Would you go through
16 one more time the formula you used in arriving
17 at present value?

18 THE WITNESS: I'm sorry?

19 THE SPECIAL MASTER: Can you give me that
20 formula that you used one more time -- you
21 took the annual project area net benefits
22 per acre and projected it over the life
23 of the project.

24 THE WITNESS: Correct.

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1 THE SPECIAL MASTER: Then what did you do
2 with that? Give us -- you obtained a present
3 value by a formula doing what?

4 THE WITNESS: Okay, the formula essentially
5 does the following. If I were to say to you
6 I'm going to give you a choice, I'm going to
7 give you \$100 today --

8 THE SPECIAL MASTER: You went through this
9 yesterday, I remember that.

10 THE WITNESS: Okay.

11 THE SPECIAL MASTER: But is there a formula
12 that you put in the computer to arrive at
13 this?

14 THE WITNESS: There is. I don't recall
15 the formula offhand, but essentially it takes
16 a rate of return and converts a stream of
17 annual payments. It's just like a mortgage,
18 the same calculation that you use to produce
19 a mortgage. If you take out a \$50,000 mortgage --

20 THE SPECIAL MASTER: Present value, yes.

21 THE WITNESS: To give you the annual
22 stream you are going to pay for the 30 years --

23 THE SPECIAL MASTER: It can be based on
24 so many factors: Anticipating rates in the

25 dornbusch-direct-echohawk

1 future, whether a variable is adjusted in
2 another form, whether you are taking in the
3 natural cycle of years of lesser water and
4 higher yields, all these things have an affect
5 on that, and I wonder how you arrived at it.

6 I'll just quick do Mr. Merrill's work now.
7 Let's go -- go ahead and ask your questions.
8 No, it's not your work, it's my work, too.

9 THE WITNESS: I'm pretty sure we are going
10 to cover all those questions.

11 MR. ECHOHAWK: We are getting close to that.

12 Q (By Mr. Echohawk) Mr. Dornbusch, after we
13 have arrived at present value of the project
14 area net benefits per acre, what is the next
15 step in your analysis?

16 A Okay, the next step I think you can illustrate
17 in the next table -- the next exhibit, excuse
18 me.

19 Q Would you please identify for us what has been
20 marked as United States Exhibit WRIR C-273?

21 A Yes. It shows the portion of the flow diagram
22 that's illustrated entirely on Exhibit 267,
23 and it shows how we now complete the analysis
24 by taking the net benefits by project area,

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1 which I just mentioned, dividing them by the
 2 irrigation system costs present value, to
 3 obtain the benefit cost ratio for each project
 4 area, which then is what you might call the
 5 bottom line, it shows you the feasibility of
 6 each project area.

7 Q Where did you get the system, irrigation system
 8 cost?

9 A From Dr. Mesghinna. I obtained his calculation
 10 of the cost per acre in 1979 dollars of the
 11 separate components which would make up the
 12 installation costs of the entire system.

13 Q All right. And what components would those
 14 be?

15 A Those components included the following: "The
 16 on-farm systems, which are the actual sprinkler
 17 systems; the pipe network; the pumps and pumping
 18 plants and the canals and related structures --
 19 and excuse me, also the drainage, the cost for
 20 drainage.

21 THE SPECIAL MASTER: Ms. Reporter, would
 22 you be kind enough to read that answer back to
 23 me, please?

24 (Whereupon, the Reporter
 25 dornbusch-direct-echohawk (read back, "A Those
 (components included the
 following, The on-farm

1 (systems, which are the
2 (actual sprinkler systems;
3 (the pipe network; the
4 (pumps and pumping plants
5 (and the canals and related
6 (structures -- and excuse
7 (me, also the drainage,
8 (the cost for drainage."

9 Q (By Mr. Echohawk) Mr. Dornbusch, I show you
10 what has been entered into evidence as United
11 States Exhibit WRIR C-245, which is the report
12 from Dr. Mesghinna entitled "Conceptual
13 Irrigation Development Plan and Irrigation
14 Water Requirements, Wind River Reservation,
15 Wyoming." In that exhibit I direct your
16 attention to Page 42, Table 24. I notice on
17 the left-hand column under "Description" it
18 mentioned on-farm systems and so forth. Are
19 those the same components that you just
20 described?

21 A They are.

22 Q And are the costs reflected for each of those
23 components the same that you considered in your
24 analysis?

25 A They are, uh-huh.

Q Okay. What did you do with those costs provided
you by Dr. Mesghinna?

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1 A All right. To make things clear, you can see
2 in that table there are other costs. In my
3 discussion I'm going to cover all of them,
4 but I think to keep things simple I'll deal
5 with one section first, and that section will
6 consist of the pipe network, the pumps and
7 pumping plant, the canals and the related
8 structures in the drainage.

9 THE SPECIAL MASTER: For which unit?

10 THE WITNESS: Pardon?

11 THE SPECIAL MASTER: For North Crowheart?

12 THE WITNESS: I'm just dealing conceptually
13 for all the areas. I'm going to describe what
14 I did with those costs.

15 THE SPECIAL MASTER: All right.

16 THE WITNESS: The reason I'm breaking out
17 those four is that those four are the bases
18 for determining the engineering and contingencies
19 costs. I did not use Dr. Mesghinna's costs
20 directly. I'll explain why.

21 I'm going to have a series of operations
22 for adjusting those costs. The first one, for
23 example, is the normalization. I took his 1979
24 costs and converted them to 1979 normalized costs

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1 using the appropriate factors. There are
2 other --

3 THE SPECIAL MASTER: What do you do,
4 crank in an inflation factor? What else?

5 THE WITNESS: Now, in order to convert
6 from a 1979 cost to a normalized cost, you
7 multiply by a factor which takes -- accounts
8 for that smoothing operation I talked about
9 before. It's the same principle of the
10 normalizing of the returns to crops, the cost
11 for production. It accounts for the fact
12 that if you want to buy an on-farm system in
13 1979, that it may be higher or lower than what
14 is the truly representative price.

15 THE SPECIAL MASTER: Do you have that
16 formula that you applied?

17 THE WITNESS: Okay. Now, the way to
18 determine the normalizing factors is the
19 following: The WRC applies an analysis to
20 historic prices through time, and what they
21 seek to do is develop a formula which will take
22 four years of prices to predict the fifth.
23 In other words, they perform an analysis over
24 a long period of time to the actual prices.

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1 The technique is a multiple regression analysis
2 technique, it's essentially a statistical
3 approach for determining what the smooth curve
4 is thorough historic prices. And what the
5 objective, is, to develop a set of weightings
6 for four years which will accurately predict
7 the fifth-year price. Then if you take those
8 four-years weightings and apply them to a
9 history of four years, it will give you what
10 should be the normalized price in the fifth
11 year. So it seeks to use a history of prices
12 in order to predict the normalized price in
13 the fifth year. Okay?

14 THE SPECIAL MASTER: I think so.

15 THE WITNESS: Okay. Within that technique
16 they recognize the principle that the later
17 years are more representative than the earlier
18 years, and what they seek to do is to come up
19 with a set of weights, which is the formula,
20 which predict the fifth-year price on the basis
21 of the earlier four years.

22 Now, the WRC makes a fundamental mistake
23 in that they ask you to normalize returns, but
24 not costs. When there is no inflation, that's

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1 not a bad thing to do necessarily, assuming
2 the costs do not have these fluctuations that
3 you have to worry about. If costs are
4 relatively stable and current costs are
5 representative, then there is no need to
6 really normalize. But when you have inflation,
7 the normalization process has the effect of
8 taking your returns and -- because you are
9 weighting by earlier years -- of moving that
10 normalized price back in time effectively by
11 about a year. Now, if you used normalized
12 returns and you use that price that is
13 effectively a year old and you compare it with
14 costs that are current costs that have the
15 inflation of that year, in effect you are
16 using costs that are inflated by a year that
17 you are not using for prices, and the effect
18 is to overstate your costs relative to your
19 prices.

20 Now, we identified this problem. It is
21 actually one that has only become a problem
22 recently because of inflation, and we contacted
23 the WRC and we pointed this out to them, and
24 their staff has acknowledged to us that we

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1 have identified a key problem and they are
2 now in the process of considering a change
3 in their principles and standards to make
4 their costs consistent, the process for
5 computing their costs consistent with the
6 process for computing their returns.

7 So because the WRC did not publish a
8 normalized factor, which would have made it
9 very simply like if they would have just
10 published a number like they did for our
11 other costs, we could have multiplied by '79
12 and converted. We went back and went through
13 the same process WRC had gone through for
14 normalizing their prices and presumably would
15 do for costs, and used what they call this
16 regression-lag technique and entered history,
17 I believe it was 50 years of costs, and
18 determined the weightings, the formula for
19 those four years to predict the fifth, and
20 using those weightings determined the normalizing
21 factor to be applied just as the WRC presumably
22 would have done.

23 So we determined on our own what the
24 normalizing factor should be for each separate
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1 system, applied that factor to convert Dr.
 2 Mesghinna's '79 prices to normalize seventy-
 3 nine.

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1 THE SPECIAL MASTER: Well, if Dr. Mesghinna's
2 prices on North Crowheart would have been taken as
3 1837 total investment --

4 THE WITNESS: Yes.

5 THE SPECIAL MASTER: -- plus the -- Well, can
6 you take the recurring costs, O & M, energy and
7 demand -- I guess you can't.

8 THE WITNESS: This is the way we did it. We
9 focused specifically on each of the items of cost
10 structures, the on-farm system, the pipe network
11 and the pump and pumping plants. You see, each one
12 of those have different normalizing factors.

13 THE SPECIAL MASTER: You adjusted those each
14 individually?

15 THE WITNESS: Each one individually.

16 THE SPECIAL MASTER: And the total, instead of
17 1837, you came to 2474, is that right, for North
18 Crowheart?

19 THE WITNESS: That's right.

20 THE SPECIAL MASTER: And if you would use any
21 figure less than 2474, your benefit-cost ratio
22 would have been larger than 1 to 1.7, it would have
23 been 1 to 1.8; is that correct?

24 THE WITNESS: If I understand you, if you used
25 a lower estimate cost, the ratio would have been

1 higher?

2 THE SPECIAL MASTER: Yes.

3 THE WITNESS: That's correct, that's right.

4 If I had used 1837 and then an annualized --

5 THE SPECIAL MASTER: 36, you would have almost
6 the 1 to 1.7 to 1 to 1.8?

7 THE WITNESS: Well, I would have to annualize
8 his annual returns, so I would have to add something
9 to that 1837. Yes, sir, if the cost came out lower,
10 the benefit-cost ratio would have come out higher.

11 THE SPECIAL MASTER: Okay.

12 Q (By Mr. Echohawk) Mr. Dornbush, you took the costs
13 for, presented in Table 24 of Exhibit 245, and nor-
14 malized those to 1979 prices; is that right?

15 A That's right.

16 Q So it's not really the figures as shown in these
17 tables that actually are going to be compared to
18 your benefits, it's some derivation of those figures?

19 A That's right.

20 Q Normalization of those figures?

21 A Well, first, normalization and then some other steps.

22 Q What do you do after you normalize those?

23 A After I normalized, I also had to recognize that
24 each of these systems, like the farm equipment, had

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1 a life, and that they would not be developed, and you
2 incur the cost only the first time, first year, but
3 they'd have to be replaced according to their life.
4 And I obtained from Dr. Mesghinna the expected life
5 of each of those separate components of the system,
6 and then made a calculation to determine what the
7 present value would be of building and then replac-
8 ing each of those systems for a 100-year period.

9 Q Okay. So we're attempting to bring all the costs
10 back to present value to compare to the present
11 value of your returns?

12 A That's where we're headed.

13 Q Okay. Once you determine the present value of the
14 pipe network, the pumps, the pumping plants, canals
15 and related structures and the drainage, were any
16 adjustments made to those present values?

17 A Yes. Those four components are the ones upon which
18 the 25 percent engineering and contingencies are
19 calculated. And here you can see, if I used the
20 25 percent, first, I'd have to make the same kinds
21 of conversions all the way down the line, and it
22 was just as simple to leave engineering and contin-
23 gencies aside for the time being, make the calcula-
24 tions for those four components and then take the

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1 engineering and contingencies, so I normalized those
2 four components, I considered the expected life,
3 determined their present value, and then I took the
4 25 percent.

5 Q Were any adjustments made to the four items; the
6 pipes, the pumps, the canals and the drainage for --
7 Was there an adjustment for an opportunity cost?

8 A Yes. Within the development of each of these sys-
9 tems, within the construction of these systems
10 there is a component for labor. And I considered
11 the fact that many of the laborers who would work
12 on a construction project could be drawn from the
13 unemployed labor force on the Reservation.

14 However, I did not assume the same rate that
15 could be drawn for skilled and unskilled. I made a
16 distinction, I used the same estimate for the un-
17 skilled labor, but recognizing that the unemployed
18 Indians may not have all the skills required for
19 construction and there would not be time for a train-
20 ing program if you're going to construct it now over
21 the next few years, that a lower proportion could
22 be drawn from the unemployed labor force. And,
23 therefore, in calculating the opportunity cost for
24 labor, I made separate considerations for the skilled

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1 and unskilled in order to adjust those additional
2 costs.

3 THE SPECIAL MASTER: Are those adjustments --
4 Well, strike that. No question.

5 Q (By Mr. Echohawk) Okay. All right, I think we left
6 off, after you determined the present value for the
7 pipes, pumps, canals and drains, you applied the
8 contingency factor; is that right?

9 A That's right.

10 Q Where did you get this contingency factor?

11 A Tom Stetson was the one who estimated that 25 per-
12 cent of those four system components, the pipe net-
13 works, pump and pumping plant, canals and structures
14 and drainages, 25 percent of those costs would com-
15 prise the engineering contingencies.

16 Q Is Tom Stetson associated with Dr. Mesghinna?

17 A Yes, he is.

18 Q And how so?

19 A Tom Stetson, I believe his title is the President
20 of Stetson Engineers.

21 Q All right. Is the engineering contingencies shown
22 also on Table 4 of Exhibit C-245?

23 A Yes.

24 Q All right. After you apply 25 percent contingency,

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1 what did you do next?

2 A. Okay. Now, just to keep track of where we are, I
3 have normalized in present value and made an adjust-
4 ment for opportunity cost of labor for those four
5 components and then calculated the engineering and
6 contingencies. The on-farm system, I normalized
7 and took a present value, I made no adjustment for
8 opportunity cost of labor.

9 So I have now made my calculations of all of
10 the cost components that are shown in the first
11 portion of Dr. Mesghinna's table, Table 24, Page
12 245, of Exhibit 245.

13 However, those components just comprise the
14 total investment of the system which he designed.
15 There are additional costs to be considered.

16 Q What would those costs be?

17 A. Okay, there are two more costs. They are fencing
18 and land preparation, and then an additional ad-
19 justment to move these costs in time, recognizing
20 that they'll, the construction period will occur
21 over a period of time, same way I moved costs be-
22 fore.

23 Q Okay. The fencing and land preparation costs, are
24 they sometimes referred to as -- Do they have

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1 another name?

2 A. I don't think so.

3 Q. The fencing and land preparation, do those have --

4 THE SPECIAL MASTER: Leveling.

5 THE WITNESS: Fencing is fencing.

6 Q. (By Mr.: Echohawk) Are they sometimes called installa-
7 tion costs?

8 A. Not the fencing.

9 Q. Okay, my fault.

10 Okay. How would you determine the fencing
11 cost?

12 A. Okay. I see where you're at. The fencing has an
13 installation cost, there's a cost for installing
14 the fence.

15 Q. Okay.

16 A. I determined what the cost per mile would be for
17 installing the fence.

18 Q. How did you determine the cost per mile?

19 A. I obtain information locally from the BIA people
20 familiar with the cost of fencing in that area, and
21 I also corroborated their numbers with information
22 from Agricultural Extension documents.

23 Q. Okay. What did you do once you arrived at the cost
24 per mile for fences?

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1 A Okay. I made an adjustment again for the opportu-
2 nity cost of labor, recognizing that much of the
3 labor for installing those fences again could be
4 drawn from the unemployed people on the Reservation.

5 I then recognize that fences do not have an expected
6 life and I calculated what the present value would be
7 for the fence per mile, recognizing that it would be
8 installed and replaced for the project life.

9 I think --

10 THE SPECIAL MASTER: How many times would it be
11 replaced in the project life?

12 THE WITNESS: Expected life for a fence is 25
13 years, so it would be replaced --

14 THE SPECIAL MASTER: Replaced four times in the
15 life of the project?

16 THE WITNESS: Well -- Yeah, that's right.

17 Q (By Mr. Echohawk) All right. Once you determine the
18 price of the fence, fencing costs, any other costs
19 considered?

20 A Well, then the way I computed the amount of fence
21 required for each of the project areas, I had one
22 of my staff consult with one of the staff of Stetson
23 Engineers and together they determined where the
24 fences would be required. We recognized the

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1 additional fences, we recognized canals are already
2 fenced. Dr. Mesghinna has included within his cost
3 of the canals, cost of fencing and, therefore, we
4 did not duplicate the fences that are already pro-
5 vided by the canals.

6 We determined where the additional fences would
7 be necessary, and together they sketched on a map of
8 the project areas where the additional fences would
9 be, then measured the fence miles in each project
10 area. And from the fence cost per mile and the miles
11 of fence for each project, we determined the total
12 cost of fence for the present value of fence for
13 each project area.

14 Then dividing by the number of acres in each
15 project area, we determined the cost per acre of
16 fence.

17 Q All right. What's the next consideration after you
18 did the fencing cost?

19 A Okay. The next consideration is the land prepara-
20 tion. This recognizes the fact that those acres
21 are not really ready for farming and that there's
22 a considerable amount of effort that has to be made
23 before they'll be ready for farming, and we con-
24 sider those costs as well.

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1 Q What sort of things would you have to do to the land?

2 A You must clear the brush, you must break up the soil,
3 there's a small amount of leveling that has to be
4 performed. I think, as Dr. Mesghinna talked about
5 earlier, there's also some additional fertilizer
6 that would be necessary in some of the areas; some
7 cobbles, some stones that need to be removed, and
8 these include costs for all of those.

9 Q How did you estimate the cost for the brush clearing
10 or the other such items?

11 A I discussed this, these costs, with the Bureau of
12 Reclamation, who have made similar calculations in
13 areas near and on the reservation, and obtained ad-
14 vice as to the amount of costs which they thought
15 would be appropriate for at least a portion of that
16 preparation.

17 With them, I discussed things as brush clearing,
18 soil breakup, leveling and those factors.

19 I then interviewed a number of people who ad-
20 vised me on the amount of fertilizer that might be
21 required over and above what I had already included
22 in any budgets which would raise the fertilization
23 level of the soil in the early years, and determined
24 the cost of the extra fertilizer required.

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1 Q Who were those people that you discussed that with?

2 A I discussed that with Stan Wilson, who's with the
3 Farmers Exchange in Riverton, and with Hugh Huff,
4 a soils expert with the Agricultural Extension Ser-
5 vice, Wyoming.

6 THE SPECIAL MASTER: University of Wyoming?

7 THE WITNESS: University of Wyoming, yes, with
8 Agricultural Extension.

9 Q (By Mr. Echohawk) I also believe you mentioned some
10 rock removal. Where did you get the cost estimates
11 for those?

12 A Rock removal was a problem. We couldn't find any
13 custom operators in the area. That would have been
14 a simple way to do it, just hire that service out.
15 So we had to determine the cost of acquiring equip-
16 ment and operating that equipment, and that's pre-
17 cisely what we did.

18 THE SPECIAL MASTER: What kind of equipment?

19 THE WITNESS: Rock removal equipment.

20 THE SPECIAL MASTER: Sounds like going around
21 in a circle.

22 MR. ECHOHAWK: I believe they're called rock
23 pickers.

24 THE SPECIAL MASTER: I won't ask any more.

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1 THE WITNESS: Yes, they are rock pickers,
 2 exactly.

3 Q (By Mr. Echohawk) All right. What sort of cost
 4 considerations are there in acquiring that equip-
 5 ment?

6 A We performed the same kind of analysis as we did
 7 for the fixed -- for the equipment in the farm bud-
 8 gets. We recognized fixed and variable costs. We
 9 recognized the number of acres that had this rock
 10 problem and the time involved in removing the rocks
 11 and ran our cost estimates the same way we did for
 12 the fixed and variable costs for farm implements
 13 and equipment.

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1 Q (By Mr. Echohawk) All right. Are these all
2 the additional costs you determined over and
3 above Dr. Mesghinna's?

4 A They are. That's right, and then we made the
5 estimate of how much additional costs would
6 be required for moving those costs in time
7 to what we call times zero, the beginning of
8 the project.

9 Q And how did you do that?

10 A I consulted with Tom Stetson of Stetson
11 Engineers, and he advised me as to what the
12 schedule, expected schedule could be for the
13 construction of the various components of the
14 system for the project areas. And I developed
15 a schedule which shows the construction program,
16 then I recognized that because these costs
17 are spread out in time, that there will be a
18 cost incurred, just the time value of money,
19 in moving those costs to times zero. It's
20 the same idea as the financing of your
21 construction project, if you borrowed money
22 while you were developing a construction
23 project. The principle is the same in moving
24 them in time to times zero.

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1 So we did that, and we estimated the
2 cost for discounting those to times zero.

3 Q After you discounted this to what you call
4 times zero, what did you do next?

5 A Next we focused on the operation costs, which
6 are shown in Dr. Mesghinna's Exhibit 245,
7 Page 42, the O and M costs, the energy costs
8 and the demand costs.

9 Q What did you do with those?

10 A The first thing we did was to normalize them
11 and determine the 1979 normalized price.

12 Q Okay. What did you do after you normalized
13 them to 1979?

14 A We recognized the fact that the operation,
15 maintenance and repair have a labor component,
16 again, some of which could be drawn from the
17 unemployed labor force on the Reservation,
18 and therefore recognized the opportunity cost
19 of that labor and made an adjustment for Dr.
20 Mesghinna's OM and R costs.

21 THE SPECIAL MASTER: By reducing it?

22 THE WITNESS: By reducing it, yes.

23 Q (By Mr. Echohawk) What did you do next?

24 A The energy and power, there was no other
25 dornbusch-direct-echohawk

1 adjustment besides the normalization, and for
2 each of those we then discounted the future
3 stream -- those are annual costs -- the future
4 stream of those annual costs to a net present
5 value and, therefore, we now have the net
6 present value of all costs, the installation
7 costs and the operation costs, the annual
8 operation costs in the future.

9 THE SPECIAL MASTER: But there was no
10 calculation you made that would take care
11 of the contingencies of the inevitable increased
12 energy costs over the decade, was there,
13 assuming they are going to be inevitable?

14 THE WITNESS: We considered that, and I'll
15 explain that. Perhaps I can just with a
16 sentence close up this conclusion and get to
17 that question.

18 We then added them up, determined the net
19 present value of the costs, divided the net
20 benefits by those costs -- or I should say
21 those costs as shown in my Table 5, made the
22 division that I just referred to, the net
23 return by the system costs, to get the ratios.

24 THE SPECIAL MASTER: Yes.

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1 THE WITNESS: Okay. Now, inflation.

2 THE SPECIAL MASTER: Not so much inflation,
3 but increase in rates.

4 THE WITNESS: Increase in rates.

5 THE SPECIAL MASTER: Brought on by
6 inflation.

7 THE WITNESS: There are really two things
8 that will increase energy costs, one is the
9 inflation, just the value of the dollar, and
10 we have that problem with all costs. We also
11 have the problem of the fact that different
12 resources may become more or less scarce in
13 the future, and the more scarce resources --
14 the cost of those resources will be reflected
15 in increasing costs. Okay, the first problem
16 is that is -- it's very unclear how those costs
17 will increase over the future because of
18 scarcity. We consulted with a publication, I'm
19 trying to -- I don't recall the title, but
20 within that publication we found projections
21 made by the U.S. Department of Energy for the
22 increases over and above inflation that might
23 be expected for energy. Based upon their
24 projections, we determined that the increase

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1 would be negligible, and we chose not to
2 inflate energy costs any higher or lower
3 than any of the other costs.

4 Now, I realize, as I'm sure everybody
5 does, that in the near term this looks like
6 this may differ from what we are experiencing.
7 The problem we are facing is that we have a
8 long-term project for 100 years, that is one
9 thing; the second thing is that in order to
10 anticipate what the supply of energy resources
11 will be, it's necessary to get into a whole
12 analysis of supply of the particular energy
13 resources that will be used to generate energy
14 in that locale. I believe coal is considered
15 to be the primary resource for that region,
16 so we did focus on coal, but we also had to
17 recognize the fact that at some point in the
18 future we may be coming up with alternative
19 energy resources that may or may not be
20 competitive with the existing energy resources.

21 In short, it's a formidable problem, it's
22 not an easy problem. I don't say that there
23 is a magic answer to it. But we also have the
24 situation that the demand for food is going to

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1 be increasing, and we only have a fixed supply
2 of land. Okay, you also have the problem here
3 of trying to compare the demand and supply of
4 food resources and what is going to happen to
5 the increase in cost of that scarce resource.
6 And you really are faced with the same kind of
7 problem, how do you recognize what foods will
8 be consumed, what technologies will be used,
9 and you really have a very difficult problem,
10 and I don't -- I'm not going to minimize it.
11 I think it is formidable.

12 This then goes to the type of method
13 which is expected of an economist to use in
14 performing an analysis of this type. There
15 are really two methods which are acceptable,
16 and it focuses directly on the question of
17 inflation. Okay, the first method would seek
18 to recognize inflation into the future. It
19 would seek to recognize that our costs are
20 going to inflate in the future and our returns
21 are going to inflate into the future. Now,
22 recognizing that is a difficult problem, there
23 is also a method, an equivalent method, which
24 says that you do not recognize that either costs
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1 or returns will inflate into the future, and
2 as long as you do it for one and you do it,
3 for the other -- you are all right as long as
4 you don't increase, inflate your returns and
5 hold your costs constant, you treat them at
6 a fixed period of time and assume that they
7 are going to be constant into the future.

8 It essentially says look, I don't know
9 what inflation is going to be. But recognizing
10 it is going to occur for both of them, it is
11 proper to account for both of them the same
12 way. Recognizing some may go up more than
13 others, let's avoid the problem and assume
14 constant costs into the future.

15 Now, so you have two basic methods,
16 Within each of those methods you recall we
17 are talking about discounting this future
18 stream of benefits and costs back to the
19 present. If you use the first method that I
20 described that inflates costs of returns into
21 the future, the proper discount rate should
22 be one that also has inflation because if I'm
23 going to loan you money and you are going to
24 be paying me back with inflated dollars, dollars

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1 that have less value, I'm going to want more
2 dollars back over and above what I expect on
3 the return of my investment because if I know
4 that you are going to pay back the loan in
5 ten years and the value of those dollars is
6 going to be ten percent less, I want ten percent
7 more dollars to account for the difference.

8 THE SPECIAL MASTER: What if I don't want
9 to give them to you, give them at the rate
10 the market determines on that factor?

11 THE WITNESS: If I have to go to court to
12 sue you --

13 THE SPECIAL MASTER: No, I'm trying to
14 determine how -- how in the real world are
15 these rates determined when you talk about a
16 discount rate over ten years? They are
17 determined by the market, by the negotiations
18 free men engage in while ready, willing and
19 able to engage with each other.

20 THE WITNESS: That's right. That's right,
21 and now, that's what I was getting to. If
22 I'm going to loan you money and you are going
23 to pay me back at some point in the future,
24 we are going to negotiate a rate, and the first

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1 thing I'm going to do is I'm going to want
2 a return on my money because it has a value
3 to me. There is going to be a proportion of
4 that interest I will want anyway, no matter
5 what inflation is. Over and above that I
6 have to account for the fact you are going to
7 pay me back in cheaper dollars in the future,
8 so I add an additional portion for the future.
9 Now, I also look at you and I assess the
10 risk, how risky it is --

11 THE SPECIAL MASTER: That took care of that
12 discussion. Well, this is a little afield
13 when the -- not too much, though. In this
14 matter there is no market, open market comparison
15 we can use to change into a benefit cost
16 ratio. There are other socioeconomic
17 historic governmental factors, equitable factors
18 that we raise in this case touching that, but
19 this becomes such an uncertain science.

20 THE WITNESS: That's right. It is uncertain
21 what the future inflation is going to be,
22 that's right. And what I'm getting to is
23 because of that uncertainty it's just as proper
24 to go to the second method where we are not

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1 anticipating inflation for returns and costs,
2 and if you do that, then the proper discount
3 rate to use is one that also has inflation
4 removed. So you can see that if you now had
5 a crystal ball and could anticipate inflation
6 into the future for returns and costs and you
7 put that inflation into your returns, into
8 your costs and into the discount rate, you
9 would make a benefit cost analysis that would
10 be a correct one. Now, if you don't have a
11 crystal ball and you did not inflate your
12 returns and your costs into the future, then
13 the proper rate to use was one that was net
14 of inflation, and the two would yield the
15 same results, one with inflation, one without
16 inflation.

17 Now, the WRC and the World Bank and all
18 the rest of the financial institutions that
19 I'm familiar with who do these kinds of
20 economic analyses recommend that you use
21 return and costs which do not include inflation.
22 The proper rate, therefore, to use is also
23 one that does not have inflation.

24 Our next problem: Historically we have
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1 only here -- at least in the United States --
2 experienced high rates of inflation relatively
3 recently. In the early '60s we had very
4 low inflation, and at that time the discount
5 rate which was used, for example, in analyzing
6 development projects like this in the United
7 States was one that was net of inflation, there
8 wasn't inflation. The long term, average long-
9 term cost of borrowing by Uncle Sam was a rate
10 that was down in the range of about three
11 percent. In the later years, in the middle
12 and later '60s and in the '70s, we experienced
13 growing inflation. The long-term rate started
14 to grow with that inflation. The problem came
15 in that the recommended rate to use was not
16 kept at that rate which was net of inflation.
17 They allowed the discount rate to increase.

18 Now, there may be a number of reasons for
19 this. I could speculate on some of them, but
20 the net effect has been to call for a method
21 which uses benefits and costs which do not have
22 inflation, but a rate which has some amount of
23 inflation, not the full amount, but some amount
24 of inflation. So actually where we stand today
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1 is a discount rate which is either one way or
 2 the other, it's not fully inflated and not
 3 fully net of inflation. It's not the proper
 4 rate to use when you use benefits and costs
 5 which are net of inflation. That comes to the
 6 end of my story.

7 Therefore, I performed some research to
 8 determine what that rate is, the proper rate
 9 to use, which is net of inflation, and the
 10 answer is the answer to your question earlier,
 11 is the four percent, and that's the rate which
 12 I determined to be the proper rate to use in
 13 these circumstances, and that's the rate I have
 14 used to discount the future stream of benefits,
 15 the future stream of costs, the time movement
 16 of all of my costs to times zero.

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1 MR. MERRILL: Your Honor, I apologize for
2 interrupting Mr. Dornbusch --

3 THE SPECIAL MASTER: I would commend you
4 now for not having interrupted for most of the
5 morning.

6 MR. MERRILL: I'm going to get even now,
7 Your Honor.

8 THE SPECIAL MASTER: I imagine you will when
9 you cross examine. Go ahead.

10 MR. MERRILL: I move to strike the answer
11 concerning the real rate of interest. I think
12 that it's clearly, in light of facts of life
13 that everyone in the courtroom knows today that
14 to use a four percent discount rate to evaluate
15 a project of this type is so absurd as to be
16 unreasonable and therefore not probative evi-
17 dence, and move that comment about four percent
18 be stricken.

19 THE SPECIAL MASTER: You needn't respond.
20 I will, as a matter of trying to keep an even
21 hand and recognizing what you say may be true,
22 and I'll give you a chance to prove it, but for
23 the purpose of striking evidence, I will not do
24 so.

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1 MR. ECHOHAWK: That's my point exactly. We
2 can't take Mr. Merrill's opinion for what he
3 thinks it is. We're dealing with expert testimony.
4 If he wants to present his own testimony through
5 his experts, that time will come.

6 THE SPECIAL MASTER: Gentlemen, this subject
7 matter is so complex in the great central banks
8 of the nation, it's so complex in the annals of
9 government and the Treasury Department that I
10 think of nothing that I find is more challenging,
11 more vacillating and more difficult than what
12 we're talking about right now, and I keep thinking
13 to the end of it all, for what purpose are we
14 trying to achieve this? Are we trying to hold
15 down inflation, spurts of economy because of
16 unemployment, help some hospitals that need
17 some payrolls like in Denver, where they have
18 laid off 323 people this morning in Denver Gen-
19 eral Hospital? What is the end purpose of it all?
20 And if you're going to the World Bank you need
21 some figures that will justify a loan, even at
22 a minimum rate because, you know, one hundred
23 percent of the dollars are being spent in your
24 nation where the money needs to be spent. So

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1 these factors, in this case, some equity has to
2 be done if there are water rights in existence,
3 but the water rights cannot be willy-nilly
4 granted if the use of it is to be wasteful and
5 improper. So that's the challenging, baffling
6 thing, things that are my headache, not yours.

7 Go ahead, Mr. Echohawk, unless you want to
8 take a break.

9 MR. ECHOHAWK: I think it would be, maybe
10 a short break, and then we can --

11 THE SPECIAL MASTER: All right, off the
12 record.

13 (Thereupon a ten minute recess
14 was taken.)

15 THE SPECIAL MASTER: All right. Could we
16 please come to order, please.

17 Mr. Echohawk.

18 Q (By Mr. Echohawk) Mr. Dornbusch, before we launched
19 into the discussion on the discount rate, we were
20 just getting close to finishing up the discussion
21 on table 5. I think we had arrived at the pre-
22 sent value of the system costs, and I think it
23 was just a matter of comparison. Would you briefly
24 sum that up as to how that all happened.

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1 A All right. Once we calculated the present value
2 of the system cost for each project area, we
3 then divided the net returns, present value of
4 the net returns for each project area by the
5 present value of the system cost to determine
6 the benefit cost ratio, which expresses the
7 feasibility, and as you can see, that concludes
8 our analysis and demonstrates feasibility.

9 Q For each of the projects, to the five projects,
10 could you give us what the benefit cost ratio
11 is for each project?

12 A Yes. For North Crowheart --

13 MR. MERRILL: Your Honor, objection; the
14 witness is testifying right out of the exhibit.

15 MR. ECHOHAWK: Your Honor, he could go to
16 his notes and say the same thing.

17 THE SPECIAL MASTER: You may do what, Mr.
18 Echohawk?

19 MR. ECHOHAWK: He could read it off this
20 page or read it off any other page.

21 THE SPECIAL MASTER: I'll overrule the
22 objection, since I've overruled the other ob-
23 jections anyway.

24 THE WITNESS: For North Crowheart, the

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1 benefit cost ratio is 1.47. For the South Crow-
2 heart, the benefit cost ratio is 1.29. For
3 Big Horn Flats, the benefit cost ratio is 1.07.
4 That's 1.07. For Riverton east, the benefit
5 cost ratio is 1.25, and for Arapahoe the benefit
6 cost ratio is 1.53.

7 MR. MERRILL: Your Honor, I think the record
8 ought to reflect that the benefit cost ratios
9 just testified to by Mr. Dornbusch are assuming
10 a discount of four percent.

11 MR. ECHOHAWK: Your Honor, we don't have to
12 have Mr. Merrill's narrations of what's going
13 on through the United States' direct case.

14 MR. MERRILL: Your Honor, I simply wanted
15 to point out that in the absence of a discount
16 rate, a cost ratio is an ambiguous term, and
17 the record ought to reflect what particular dis-
18 count rate is assumed when these figures are
19 read into the record.

20 MR. ECHOHAWK: We've had testimony on that.

21 THE SPECIAL MASTER: It's in now; go ahead,
22 Mr. Echohawk.

23 Q (By Mr. Echohawk) Mr. Dornbusch, as a result of
24 your economic feasibility analysis of the five
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1 projects that you just listed, in your professional
2 opinion, are the five projects listed economically
3 feasible?

4 A Yes, in my opinion all five projects are economically
5 feasible.

6 Q Mr. Dornbusch, I ask you to turn to, go to Exhibit
7 C-268, just briefly run through your results.
8 Your professional opinions in regards to Table
9 1 for the crop yields and prices and gross
10 returns, reflected upon Table 1, page four in
11 Exhibit C-268?

12 THE SPECIAL MASTER: Are you repeating every-
13 thing that's already in the record?

14 MR. ECHOHAWK: I'm saying is his professional
15 opinion reflected on this particular table for
16 these particular items listed.

17 THE WITNESS: Yes, my professional opinion
18 for each of the items noted in the table, the
19 crop yields, prices per unit and annual gross
20 returns are reflected in that table.

21 Q (By Mr. Echohawk) Similar answers of your
22 professional opinions for the appropriate items
23 that are reflected on each table, 2 through
24 5; also reflected in Exhibit 268?

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1 A Yes.

2 Q Is it your professional opinion, Mr. Dornbusch,
3 that four percent is the appropriate discount
4 rate to use in making this analysis?

5 A Yes, it is. I should clarify that. In my
6 professional opinion, the correct rate is in
7 the range of two to four percent, and it's
8 probably not over four percent. Any rate in
9 that range would also show the projects to be
10 feasible and therefore, applying the four per-
11 cent rate also shows the projects to be feasible
12 and is an appropriate rate to use.

13 Q Okay. Is the four percent rate which you testi-
14 fied to as being net of inflation, the appropriate
15 rate to use when you're costs and benefits are
16 net of inflation?

17 A Yes. No higher than the four percent is the
18 correct rate to use, and therefore, four percent
19 is a conservative rate, and I feel is the correct
20 rate to use.

21 MR. ECHOHAWK: Your Honor, could I have one
22 moment, please?

23 (Brief pause.)

24 MR. ECHOHAWK: Your Honor, at this time I

25 dornbusch-direct-echohawk

1 would offer into evidence Exhibit C-266, which
2 is the resume of Mr. Dornbusch; Exhibit C-267,
3 which is the overall chart entitled "Economic
4 Feasibility Analysis Process, Irrigated Agricul-
5 ture, Wind River Reservation, Wyoming"; Exhibit
6 C-268, which is the report entitled "Economic
7 Feasibility of Irrigated Agriculture Development";
8 Exhibit C-269, which is the chart, "Irrigated
9 Agriculture Tables Content; Table Two"; Exhibit
10 C-271, which is a chart, "Irrigated Agriculture
11 Tables Content, Table Three"; Exhibit C-272,
12 which is the chart entitled, "Irrigated Agri-
13 culture Tables Content, Table Four"; Exhibit
14 C-273, which is the chart, "Irrigated Agri-
15 culture Table Content, Table Five". I'd like
16 to offer those into evidence.

17 THE SPECIAL MASTER: Do you wish to voir
18 dire, Mr. Merrill?

19 MR. MERRILL: May I first inquire as to the
20 purpose of the offer of each of these exhibits?

21 MR. ECHOHAWK: To show the results of Mr.
22 Dornbusch's economic feasibility analysis.

23 THE SPECIAL MASTER: For the truth of their
24 contents.

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1 MR. ECHOHAWK: Yes. Well, this represents
 2 what -- The charts show -- to illustrate for
 3 illustrative purposes, to show the method he
 4 used, and the report as a breakdown of --
 5 shows results of his feasibility analysis.

6 MR. MERRILL: Your Honor, the State of
 7 Wyoming has no objection to the admission into
 8 evidence of Exhibit C-266, which is Mr.
 9 Dornbusch's resume.

10 We also have no objection to the admission
 11 of Exhibit C-267, which is the overall process
 12 chart and as long as it is admitted for only
 13 illustrative purposes, to show the overall
 14 stages of Mr. Dornbusch's analysis. Likewise,
 15 we would have no objection to the admission
 16 into evidence of Exhibit C-269 through 273,
 17 which is simply partial derivatives of that
 18 same chart for the same illustrative purposes.

19 I object to the admission of Exhibit C-268,
 20 first on the ten-day rule. This exhibit was
 21 supplied to the State of Wyoming in its present
 22 form Monday of this week, therefore, we've had
 23 it four days. I discussed this matter infor-
 24 mally with counsel for the United States and Tribes

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1 off the record yesterday. I'm willing to weigh
 2 the objection if counsel for the United States
 3 and Tribes will stipulate to the Court's entering
 4 an order now revising the ten-day rule to a five-
 5 day rule.

6 THE SPECIAL MASTER: I apologize to both
 7 of you gentlemen. I've got that order drafted,
 8 it's in our office and I haven't signed it this
 9 week. I would have it to you Monday, it will be
 10 present next Monday morning, next week sometime,
 11 so I appreciate your waiving the objection to
 12 it for that reason.

13 MR. MERRILL: I will do so if counsel for
 14 the United States will stipulate to your entry
 15 of the five-day order.

16 THE SPECIAL MASTER: I'm going to order it.

17 MR. ECHOHAWK: That's fine.

18 MR. PERRY: We agree to that anyway.

19 THE SPECIAL MASTER: Thank you.

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dornbusch-direct-echohawk

1 MR. MERRILL: Your Honor, I also have eviden-
2 tiary objections to Exhibit C-268, as I'm sure you
3 are aware, which is Mr. Dornbusch's report. I see
4 no way to properly voir dire the exhibit without
5 lightly overstepping the bounds into cross-
6 examination since the report and his work are all
7 so thoroughly integrated. Let me simply object at
8 this time to the admission of that document into
9 evidence on foundation grounds, and I will point
10 out my objections to the Court during cross-
11 examination. And anticipating now that you will
12 go ahead and admit the exhibit, I will make an
13 appropriate Motion to Strike.

14 THE SPECIAL MASTER: All right, I would admit
15 all of the -- I beg your pardon -- all of the exhi-
16 bits referred to by Mr. Echohawk just now and iden-
17 tified and offered for admission into evidence be
18 and the same are hereby admitted into evidence.

19 Do you have enough information for identifica-
20 tion for your report?

21 MR. SALAZAR: Yes, I do.

22 THE SPECIAL MASTER: Okay, go ahead, Mr. Echo-
23 hawk.

24 I think we ought to call C-268 the Dornbusch
25 report, Economic Feasibility and B-C Ratio, something

1 like that.

2 MR. ECHOHAWK: All exhibits are admitted then?

3 THE SPECIAL MASTER: That is correct.

4 MR. ECHOHAWK: As I understand, for all practical
5 purposes, we are operating under the five-day
6 rule?

7 THE SPECIAL MASTER: For all practical purposes,
8 we are. It is ready to be signed and should have
9 been signed, it's in my office. That does not in-
10 clude motion time, unless you want it to include
11 motion time.

12 MR. MERRILL: I think we ought to stick with
13 the ten-day rule for motions, Your Honor, unless
14 all counsel waive it as to particular motions.

15 MR. ECHOHAWK: I think so.

16 THE SPECIAL MASTER: Ten days it is.

17 MR. ECHOHAWK: Your Honor, at this time that
18 concludes my direct examination of Mr. Dornbusch.

19 THE SPECIAL MASTER: Mr. Merrill, would you
20 wish to -- Does anyone else have further cross-
21 examination at this time?

22 MR. PERRY: Your Honor, the Tribes will have
23 some cross-examination. I wonder if we might begin
24 that on Monday morning?

25 MR. MERRILL: That would be fine, Your Honor.

1 The proceedings have been normally the Tribes cross-
2 examine before we do, and that would be fine.

3 Before we go off the record, I would like to
4 point out for counsel and on the record that Wyo-
5 ming's cross-examination of Mr. Dornbusch may be
6 extremely short, and I want counsel for the United
7 States to be advised of that fact so we don't have
8 a problem concerning availability of subsequent
9 witnesses.

10 THE SPECIAL MASTER: Do you feel you may be
11 within a half of a day on this gentleman?

12 MR. MERRILL: Your Honor, it could be much
13 shorter than that.

14 THE SPECIAL MASTER: I hope, Mr. Echohawk, you
15 might have Mr. Stetson here Monday afternoon, Tues-
16 day morning at the latest.

17 Very good. Thank you for your thoughtfulness.

18 MR. CLEAR: Your Honor, we have one more thing.
19 Mr. Stetson is scheduled to be here Monday.

20 THE SPECIAL MASTER: That's fine.

21 MR. CLEAR: But I have not had a chance to
22 talk to him. So we would be prepared just to put
23 him on the stand Tuesday.

24 MR. ECHOHAWK: That would be the safest thing.

25 THE SPECIAL MASTER: Let's see.

1 MR. CLEAR: Your Honor, one more point. I
2 think, as you recall, Mr. White retained a copy of
3 computer programs because he was going to use -- he
4 said he was going to use them in cross-examination
5 of Dr. Mesghinna, and since his examination is now
6 over, I would ask counsel for the State to return
7 that copy to the Court.

8 THE SPECIAL MASTER: Why don't you ask him
9 about it Monday morning?

10 MR. KROB: Your Honor, I can anticipate his
11 answer in that his response to the Court on the
12 record was that he would retain it for preparation
13 of his case in cross-examination, and he has assured
14 the Court already that a file copy will be revealed
15 to no one and he is using it only for the preparation
16 of his case. The impression that the record gives,
17 Mr. White was operating under the impression he
18 would be allowed to retain that one file copy.

19 MR. CLEAR: I thought the order said return
20 all copies, Your Honor, and I don't see how he can
21 use it in preparation of his case unless he gives
22 it to his expert.

23 THE SPECIAL MASTER: Let's talk about that when
24 he is here on Monday, and we can discuss that with
25 him.

1 MR. ECHOHAWK: Is he going to be here Monday?

2 MR. MERRILL: I'm not sure he will.

3 Since the Court has ordered that Dr. Mesghinna
4 is under the continuing jurisdiction of the court
5 and we have a right to call Dr. Mesghinna in our
6 case in chief, I think it's only proper that we be
7 allowed to retain this one copy subject to the pro-
8 mises we already made to the Court. So if we decide
9 to call Dr. Mesghinna and ask him further questions
10 about the program, we are allowed to prepare for
11 that.

12 THE SPECIAL MASTER: That sounds reasonable to
13 me. It is the last copy and he is not Xeroxing it
14 and handing it around.

15 MR. CLEAR: I realize that. But if it is in
16 the file a few years from now and somebody pulls it
17 out -- I'm not accusing him of anything.

18 THE SPECIAL MASTER: Gentlemen, we stand ad-
19 journed until Monday morning at 9:15 at Room 302,
20 the Capitol Building up the street one block.

21 (Whereupon the proceedings were
22 recessed at 11:45 a.m.

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U.S. WRIR C-266, C-267- C-268-
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REPORTERS' CERTIFICATE

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State of Wyoming)
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County of Laramie)

We, Merissa Racine and Mary Nelson, Registered Professional Reporters and Notaries Public, in and for the First Judicial District, State of Wyoming, hereby certify that we did at the time, date and place, as set forth, report the proceedings had before the Honorable Teno Roncalio, Special Master Presiding, in stenotype; that the foregoing pages, numbered 4968-5057, inclusive, constitute a true, correct and complete transcript of our stenographic notes as reduced to typewritten form under our direction.

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

Dated this 8th day of May, 1981.

Merissa Racine
MERISSA RACINE
Registered Professional
Reporter

Mary Nelson
MARY NELSON
Registered Professional
Reporter

