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Trial Transcript, Vol. 71, Morning Session

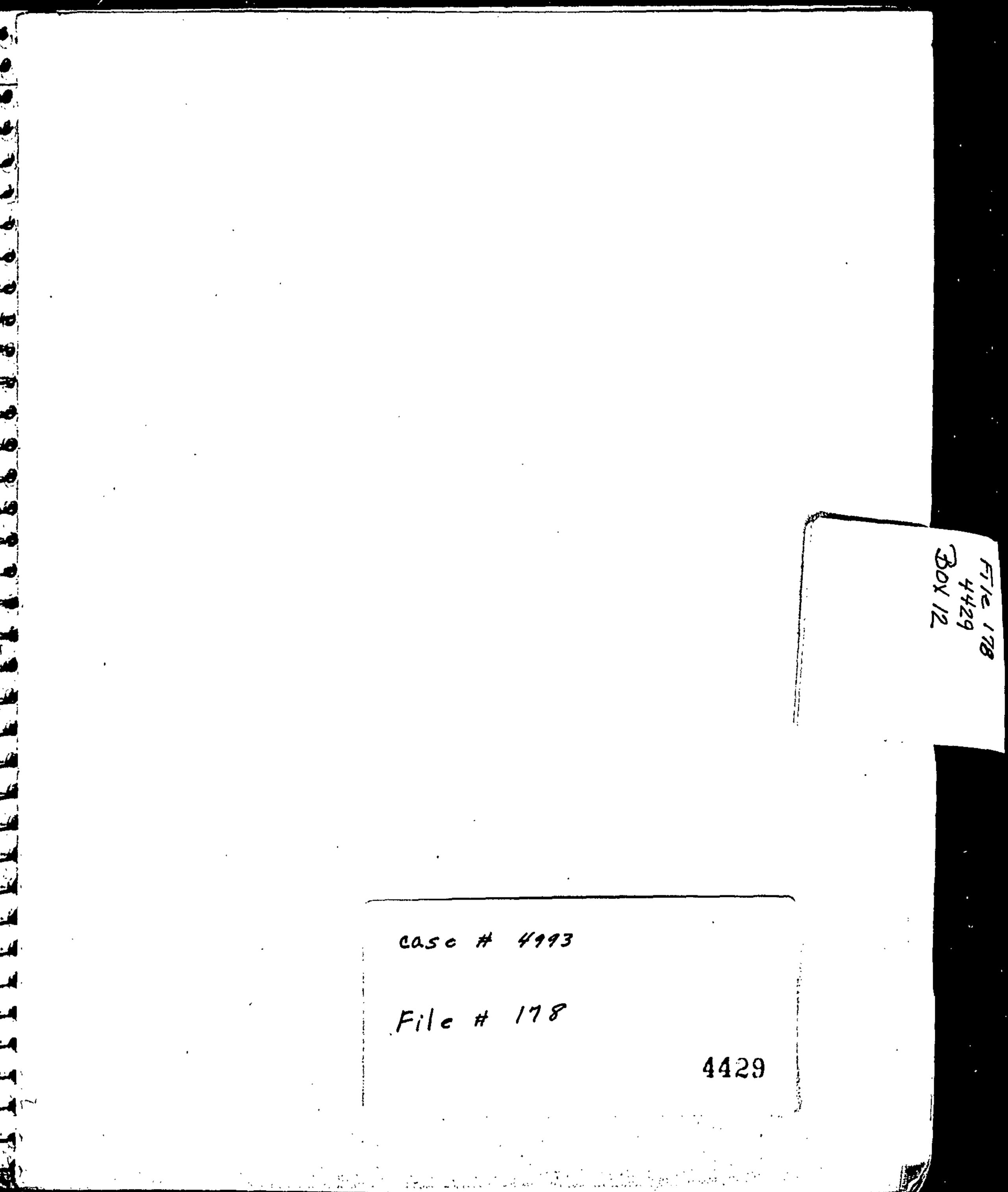
Frontier Reporting Service

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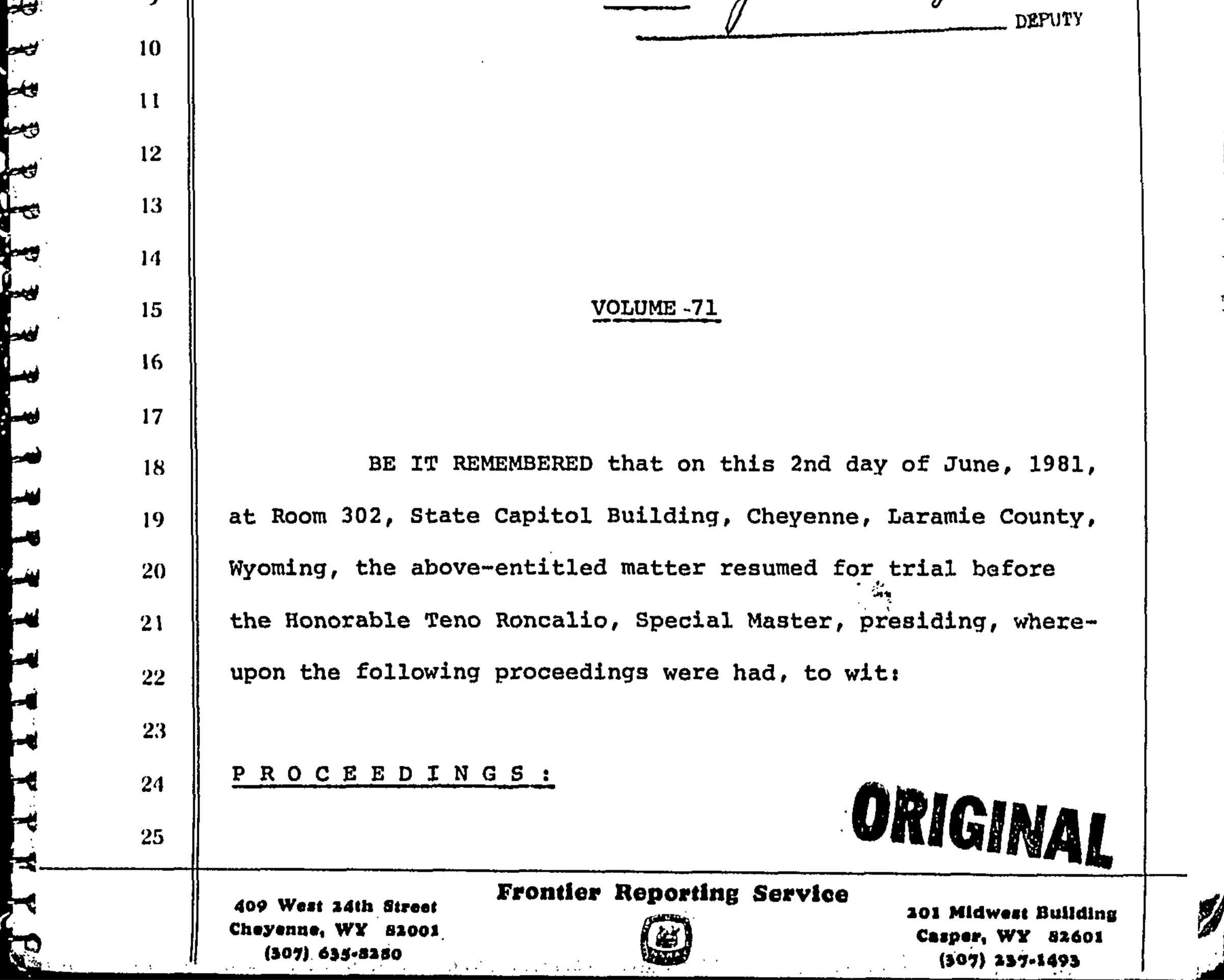


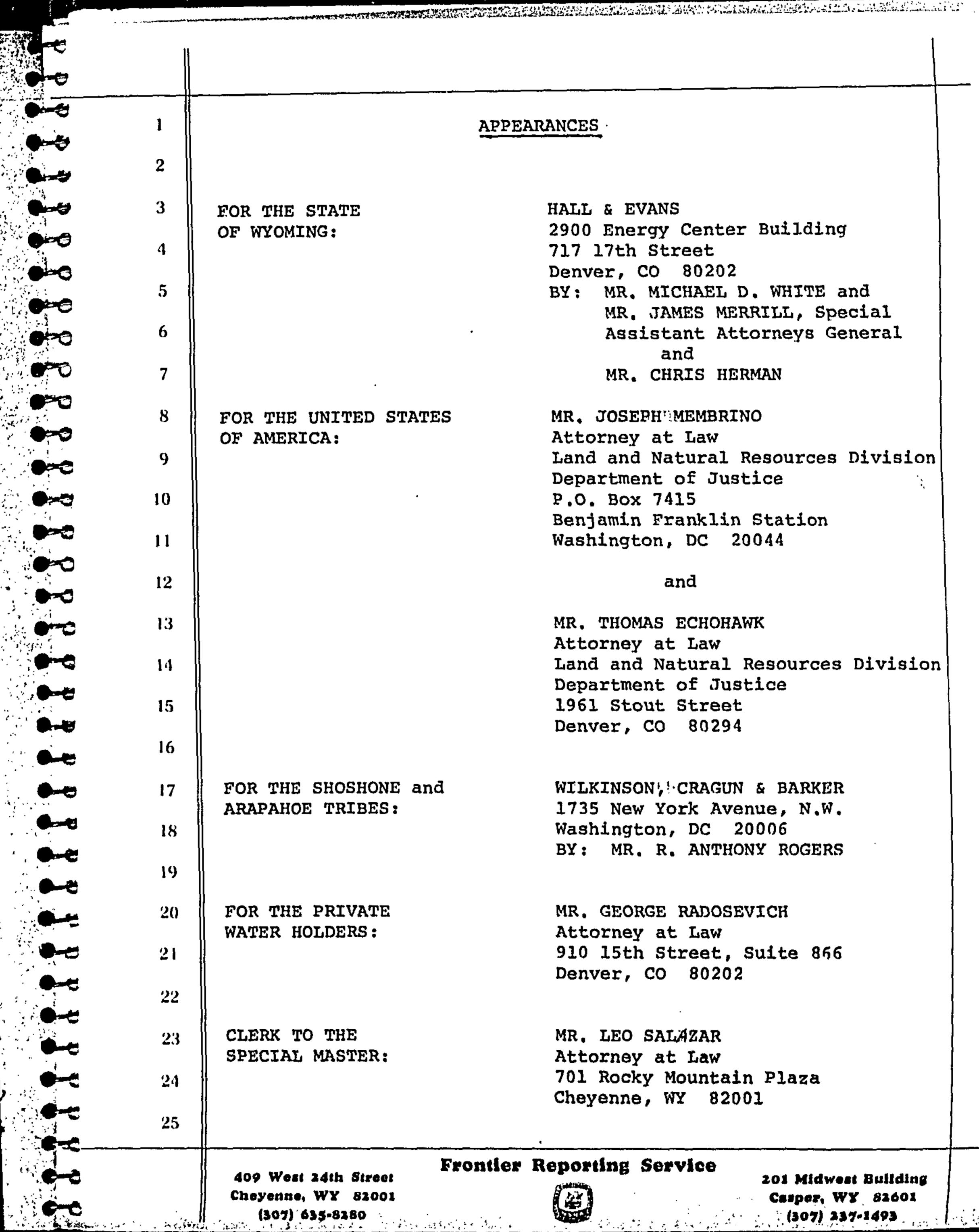
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• •	1	IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT	
# 1	2	WASHAKIE COUNTY, STATE OF WYOMING	
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9	5	THE GENERAL ADJUDICATION OF) RIGHTS TO USE WATER IN THE)	
3 :	6	BIG HORN RIVER SYSTEM AND) Civil No. 4993 ALL OTHER SOURCES, STATE OF)	
3 ,	7	WYOMING,	
₹ ₽.	8	Margares V. Hampton CLERK	
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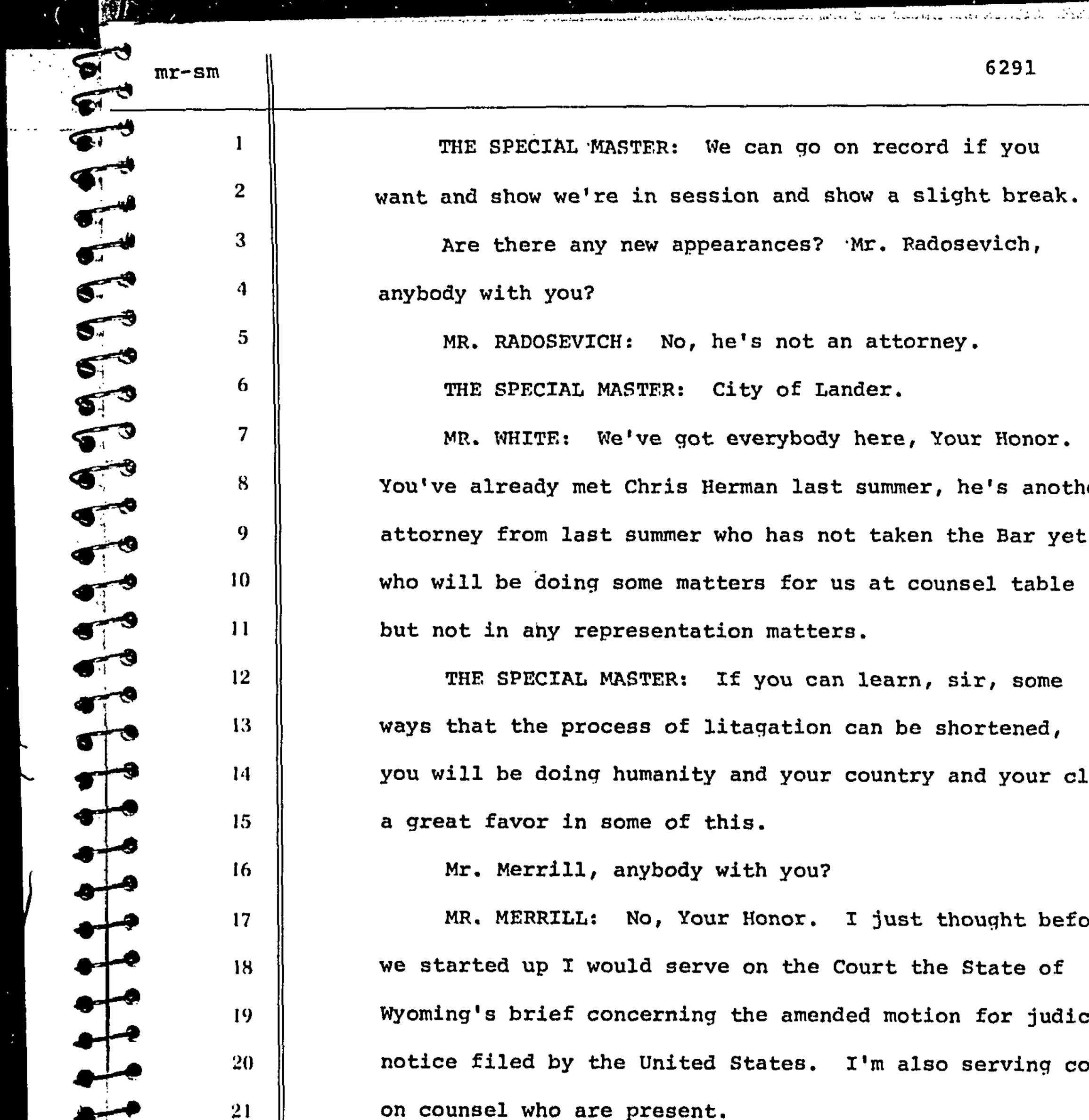
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THE SPECIAL MASTER: We can go on record if you

want and show we're in session and show a slight break.

Are there any new appearances? Mr. Radosevich,

MR. RADOSEVICH: No, he's not an attorney.

THE SPECIAL MASTER: City of Lander.

MR. WHITE: We've got everybody here, Your Honor.

You've already met Chris Herman last summer, he's another

attorney from last summer who has not taken the Bar yet

who will be doing some matters for us at counsel table

but not in any representation matters.

THE SPECIAL MASTER: If you can learn, sir, some

ways that the process of litagation can be shortened,

you will be doing humanity and your country and your clients

a great favor in some of this.

Mr. Merrill, anybody with you?

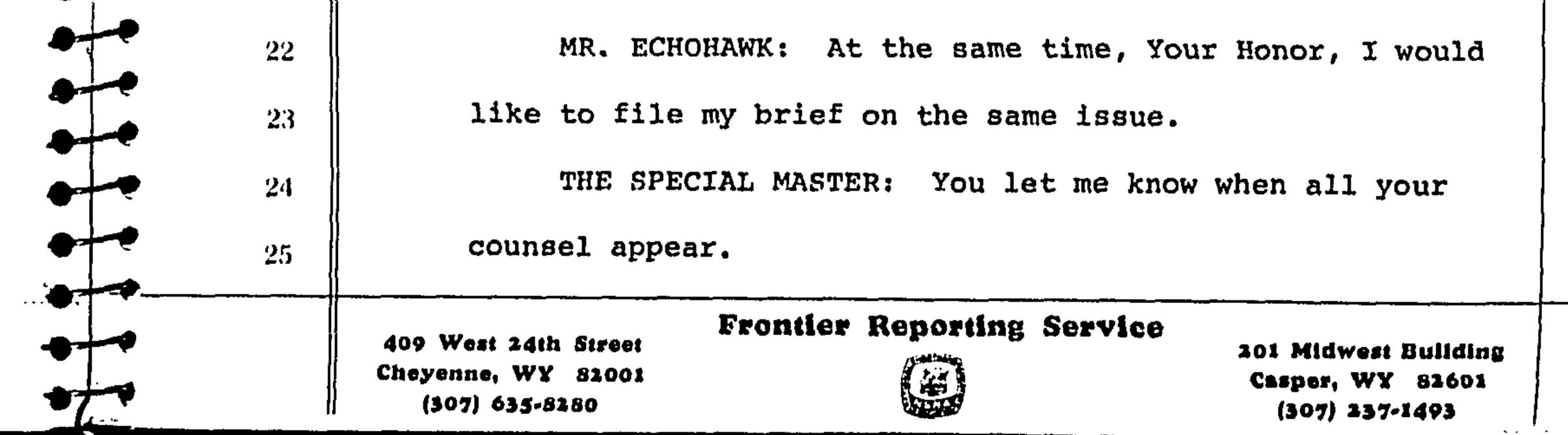
MR. MERRILL: No, Your Honor. I just thought before

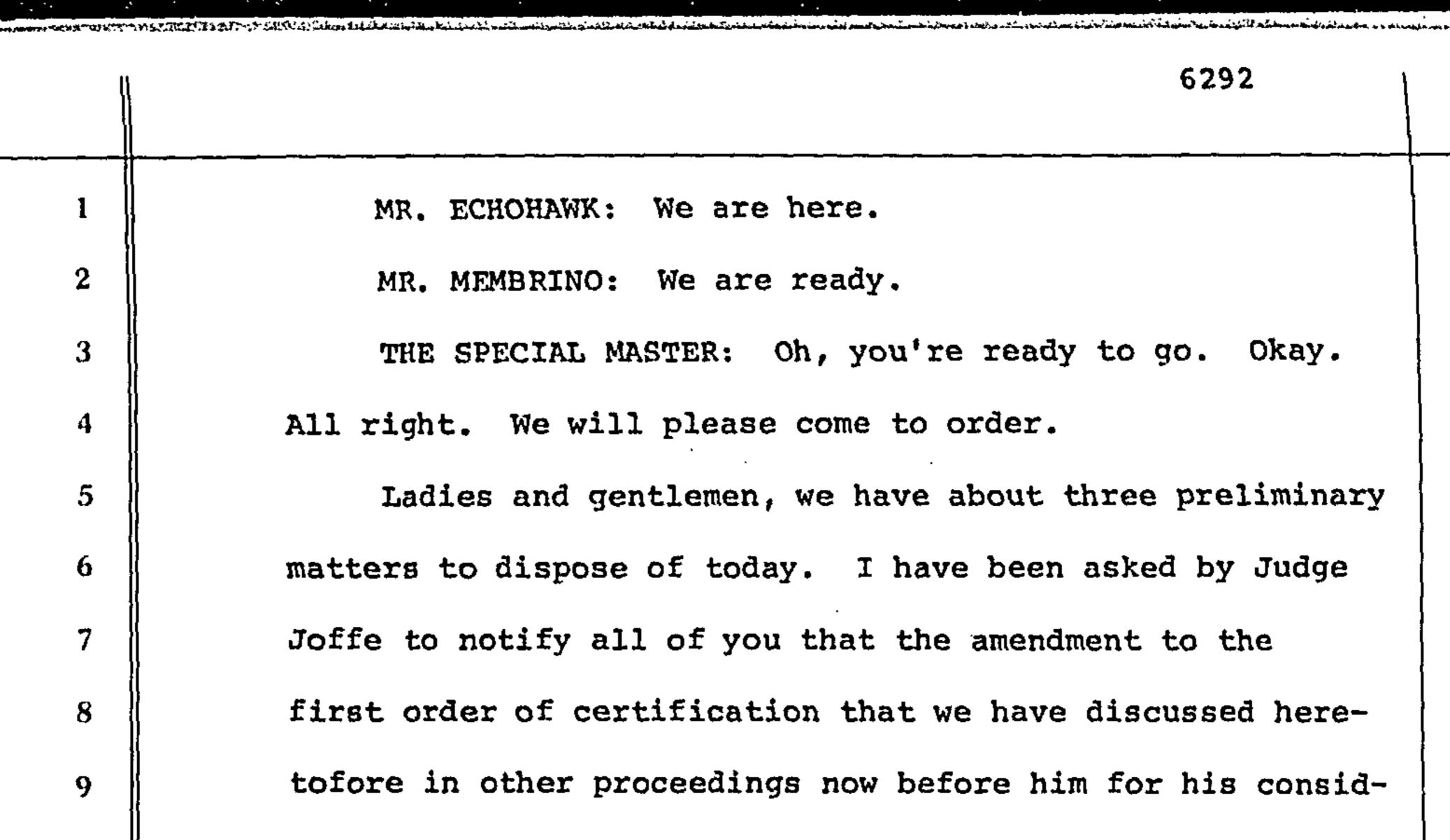
we started up I would serve on the Court the State of

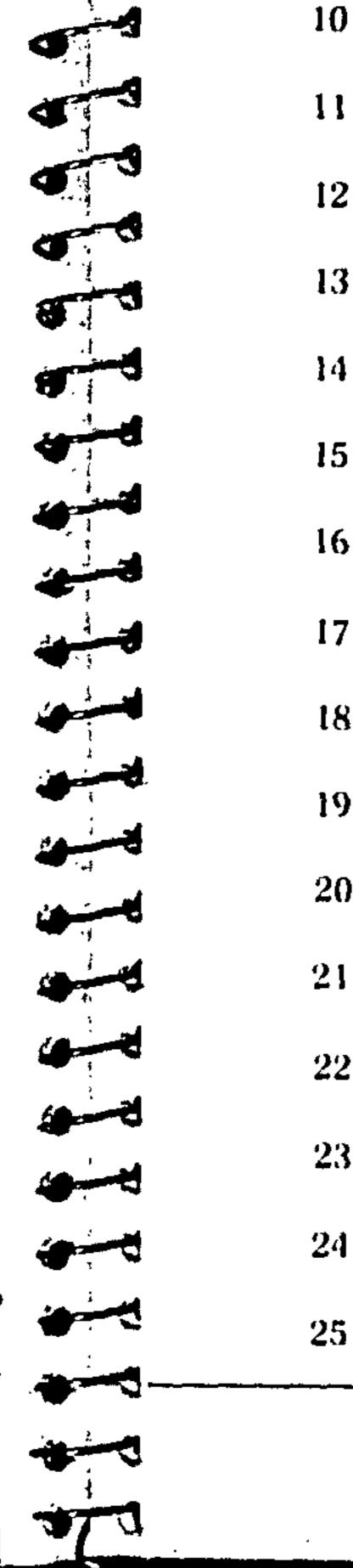
Wyoming's brief concerning the amended motion for judicial

notice filed by the United States. I'm also serving copies

on counsel who are present.







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eration will be signed by him unless he hears, if anyone

has reason why that should not be signed, he wants a respectable time, several weeks, two or three weeks available for whatever party may want to be heard or object to the application that was made to him for removing Paragraph 2 and 3 from the first order of certification and the referral to the Special Master. And for -- in the amendment for ordering that the date for the final report contained in Paragraph 6(d) of that first order of certification be amended to read February 1, 1983 instead of January 1, 1982. So if any of you have cause to raise that with the judge, please feel free to do so and you must

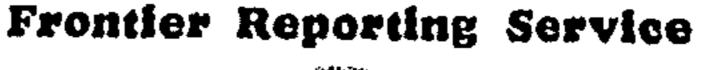
do so in the next several weeks or the order will be signed.

MR. MERRILL: Your Honor, may we obtain a copy of

your motion to Judge Joffe concerning modifying the order

so that we can put it in our files?

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	1	THE SPECIAL MASTER: You have never had a request
	. 2	more quickly complied with. You'will Xerox those and
	3	MR. MERRILL: I will make copies for the other counsel
	4	also.
	5	MR. WHITE: We will return your original.
	6	THE SPECIAL MASTER: Okay. Helll get them for you
3	7	too.
	8	The next item this morning is something that may have
	9	already been disposed of, please advise me if it has been.
	10	During our last weeks of trial we got into an argument over

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During our last weeks of trial we got into an argument over the production of entire books used by the State where the State used "excerpts, excerpts and excerpts from books." You recall that, Mr. Echohawk?

MR. ECHOHAWK: Yes, Your Honor.

THE SPECIAL MASTER: And Mr. Merrill?

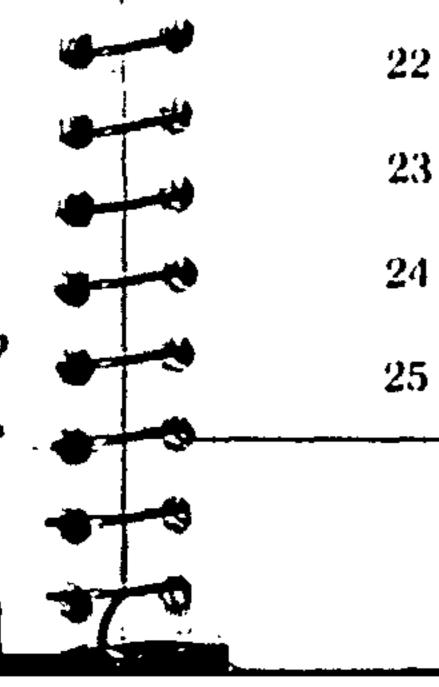
I'd like to think the matter may have been settled out

of: court, but I'm ready to rule on this proposition if

it hasn't been settled out of court.

MR. MERRILL: I'm afraid we haven't been able to reach an agreement.

MR. ECHOHAWK: We haven't reached an agreement, Your



Honor.

THE SPECIAL MASTER: Okay. I believe that Wyoming

Rules of Evidence 106 deals with this matter and it gives

the Court the discretion to determine whether to allow the

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and the second of the

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production, and I would think that the intent favors the position of the United States in this regard, and the rule states as follows: "When a writing or recorded statement or part thereof is introduced by a party, an adverse party may require him at that time to produce any other part or other writing or recorded statement which ought. in fairness to be considered contemporaneously with it." That raises two points, the fairness doctrine and

the second, that is there an entitlement to it to be

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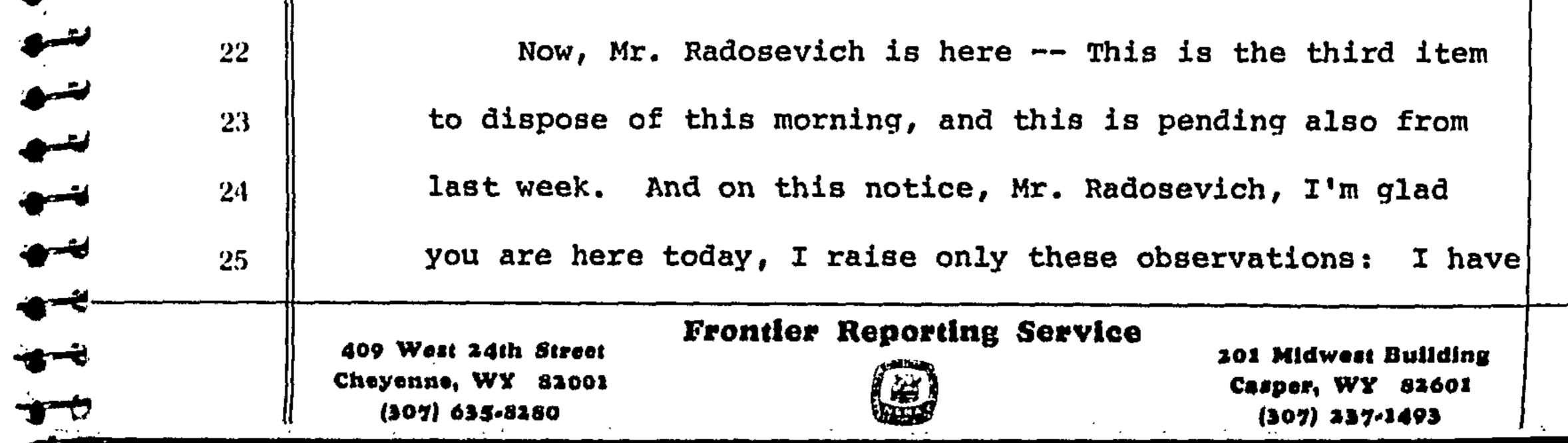
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raised. I can see where taking a sentence out of con-

text from a paragraph which alters its meaning or significance, requires, in fairness, the complete paragraph, but I don't believe a quotation from a handbook of BIA or Bureau of Reclamation on the subject matters with which we've been dealing on a particular page requires introduction of an 800 page book from which it's taken under this doctrine, therein, of course, where we hope to serve. Now, the election of whether to require the production rests with the adverse party, the United States has so requested it, and I think that's how I'll rule on it. Take it accordingly from there, Mr. Echohawk.



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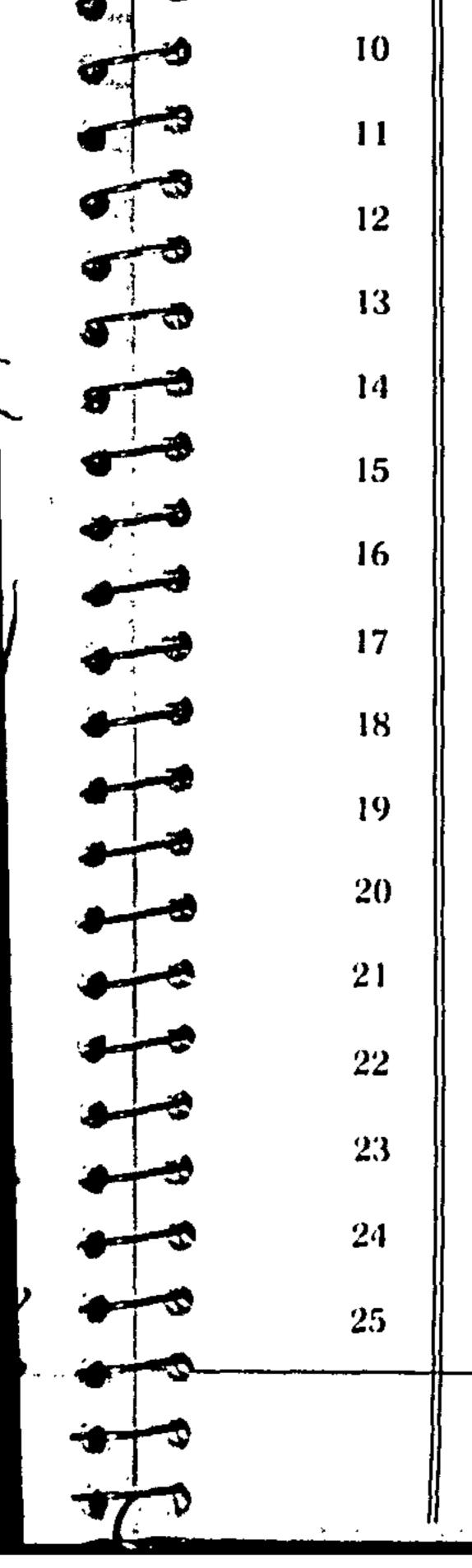
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no objection to signing my name as Special Master to whatever type of announcement the State of Wyoming and the United States and Tribes feels should be made in the Lander-Riverton area for the benefit of the people there. I will do that, but we have, I again ask in all candor that we be quite careful in what we say and avoid, if humanly possible, and avoid if humanly possible of creating a rash of letters again from dozens of people to the Special Master which -- which upsets them. It



doesn't bother me, that's our job, all of us, but it does

bother many, many citizens when they see notice of this kind. One thing that I think we ought to be careful about is before we say that the State is maintaining that all adjudicated water rights of record are in good standing and should not be adversely affected by any claim for the right to use water other than under state law, is that what Wyoming is really ascerting? If it isn't, if you want to put it in a notice, that's your business and sign off State of Wyoming Counsel, but I'm not sure that's what you're maintaining. It would appear to me that what we have to say to people is that because, at

long last and after a hundred and thirty years this nation

and state has decided to quantify and adjudicate these

areas rights to use water in this area. There may very

well be a determination that will have some effect, adverse

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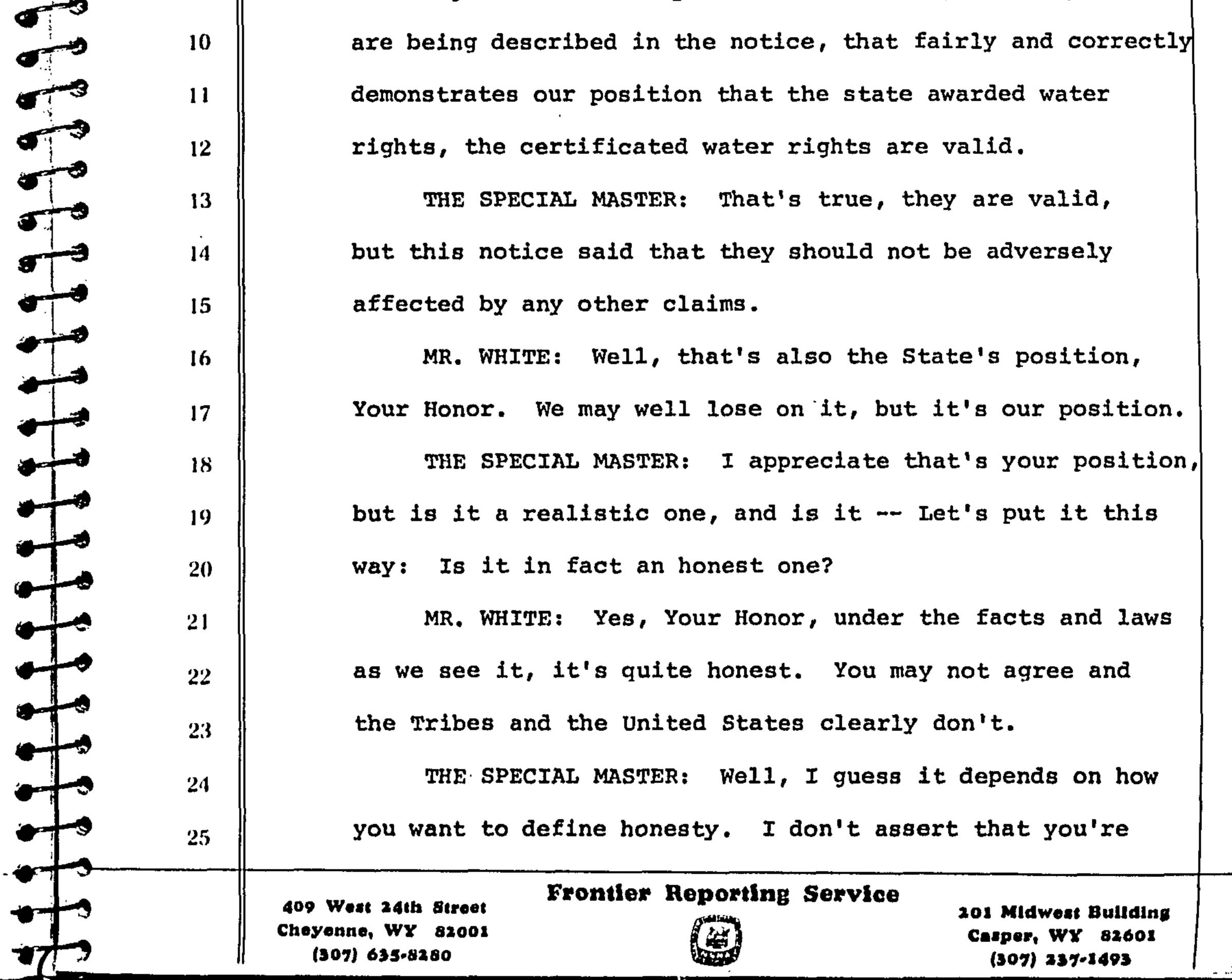
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or otherwise upon existing state water rights. I'd be a little more honest. There may not be much of an effect, but there may be some adverse effect.

Yes, Mr. White.

MR. WHITE: Your Honor, I think the notice that Mr.

Radosevich prepared and which has been reviewed, the other notice, Your Honor, by the Attorney General fairly sets out the adversarial position of the State of Wyoming.



We recognize that we may not be successful, but if positions

commiting a dishonest act, but I doubt very much if it's telling the truth, the whole truth and nothing but the truth. MR. WHITE: Well, --THE SPECIAL MASTER: You can't hardly say in good

conscience that a water user in Water Division Number 3,

your certificated water rights, most of which are practical-

ly now confirmed, adjudicated certificated rights will not

get adversely affected by those proceedings.

and the second sec	10	MR. WHITE: What we are trying to say there, Your
	11	Honor, it may not be very artfully done, is that the State
	12	of Wyoming's position is that they should not be adversely
	13	affected by these proceedings. There's nothing the State
	14	will do intentionally that will adversely affect them.
	15	In fact, we will take the position that they're not to
المتشخصين المتشخصين	16	be adversely affected.
المتسيني ا	17	THE SPECIAL MASTER: Does an announcement that the
	18	State hopes that your rights shall not be adversely affected
التسبيق. التسبيق	19	and we are defending them to the fullest amount of the
المنتسبين ا	20	law's ability for us to defend your water rights against
	21	any incursion under the Federal Reserve Doctrine?
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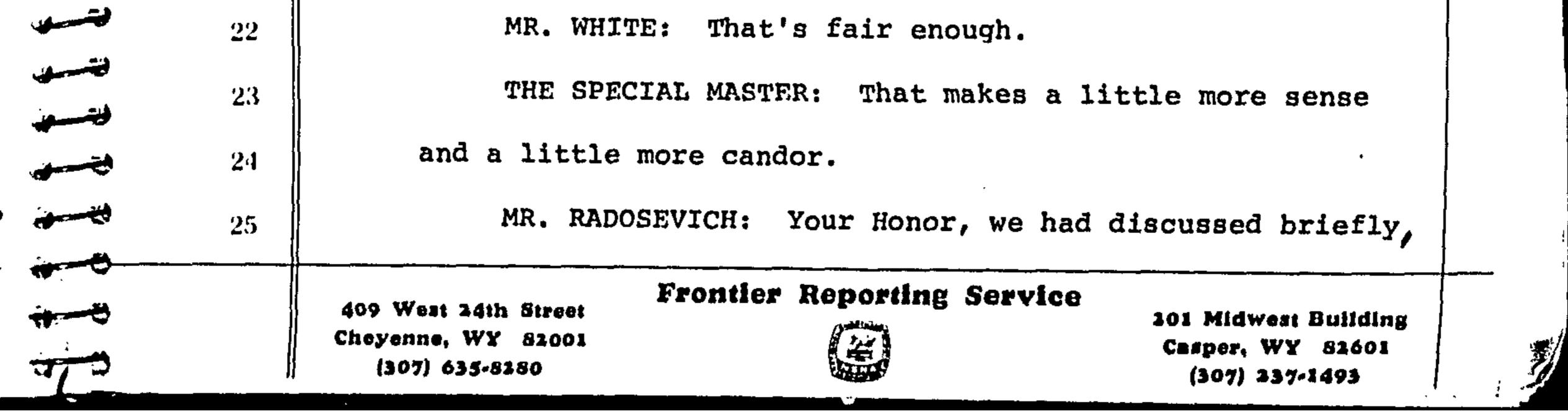
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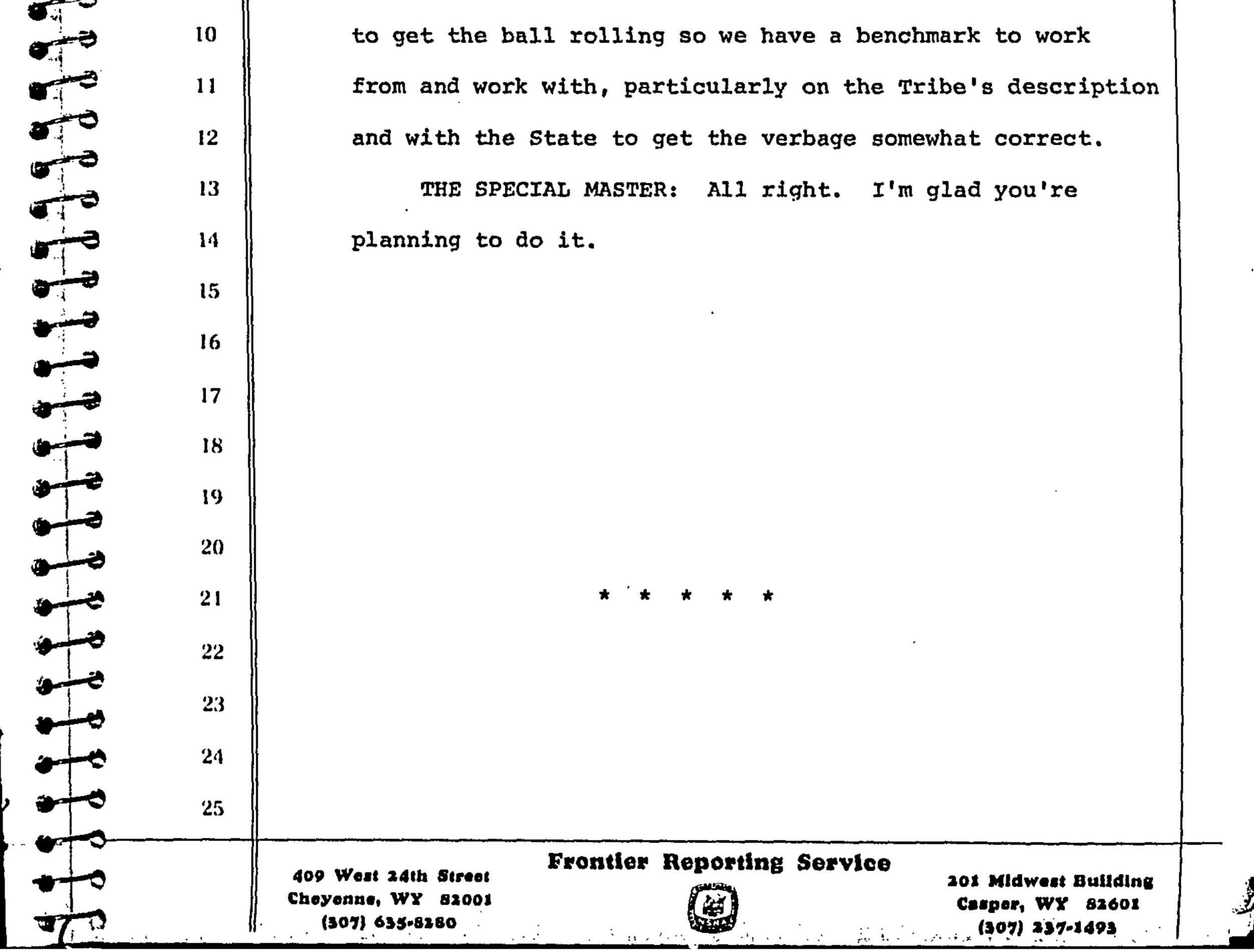
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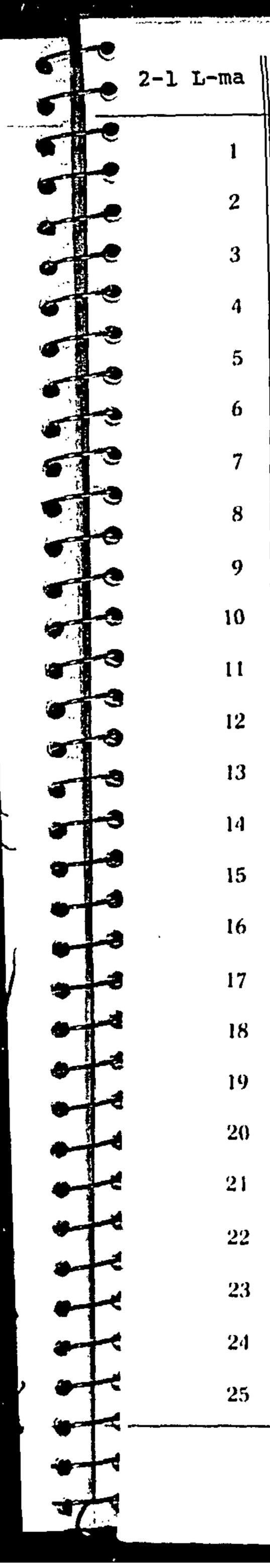
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we will get together at the start of the lunchbreak and work out, if there's any other modification of the language so that it meets with the approval in terms of description. THE SPECIAL MASTER: All right. MR. RADOSEVICH: Counsel for the Tribes and U.S. government may still have an issue with respect to whether the notice should even be published, but I think that part we can argue. Whether or not we want to decide on the

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verbage because primarily I set this out so we can start





THE SPECIAL MASTER: There is another assertion that individual allotment holders on trust lands, Indian and non-Indian holders of lands and fee simple, are not individually included in the representation made by the State Government or the Tribes. I don't have the right to say that, but if the State of Wyoming goes down and U.S. counsel wants to say that, I guess that's your concern.

MR. RADOSEVICH: Your Honor, this was my impres-

sion in discussing this with Ms. Sleater previously

and also counsel for the Tribes that they do not represent individuals per se. The Federal Government represents the federal interests in the trust lands. And not to say what you'll be stating later, but I think we should inform the individual water users that they as individuals are not represented; that they have the right to that; their interests as individuals are not being represented.

THE SPECIAL MASTER: Well, this is perhaps where I have my most serious question about a notice. When you say to an individual holder of a water right, "You

are not represented," you do two things. In my opinion, he is represented. Every holder of a Wyoming water

right is very competently represented in these proceed-

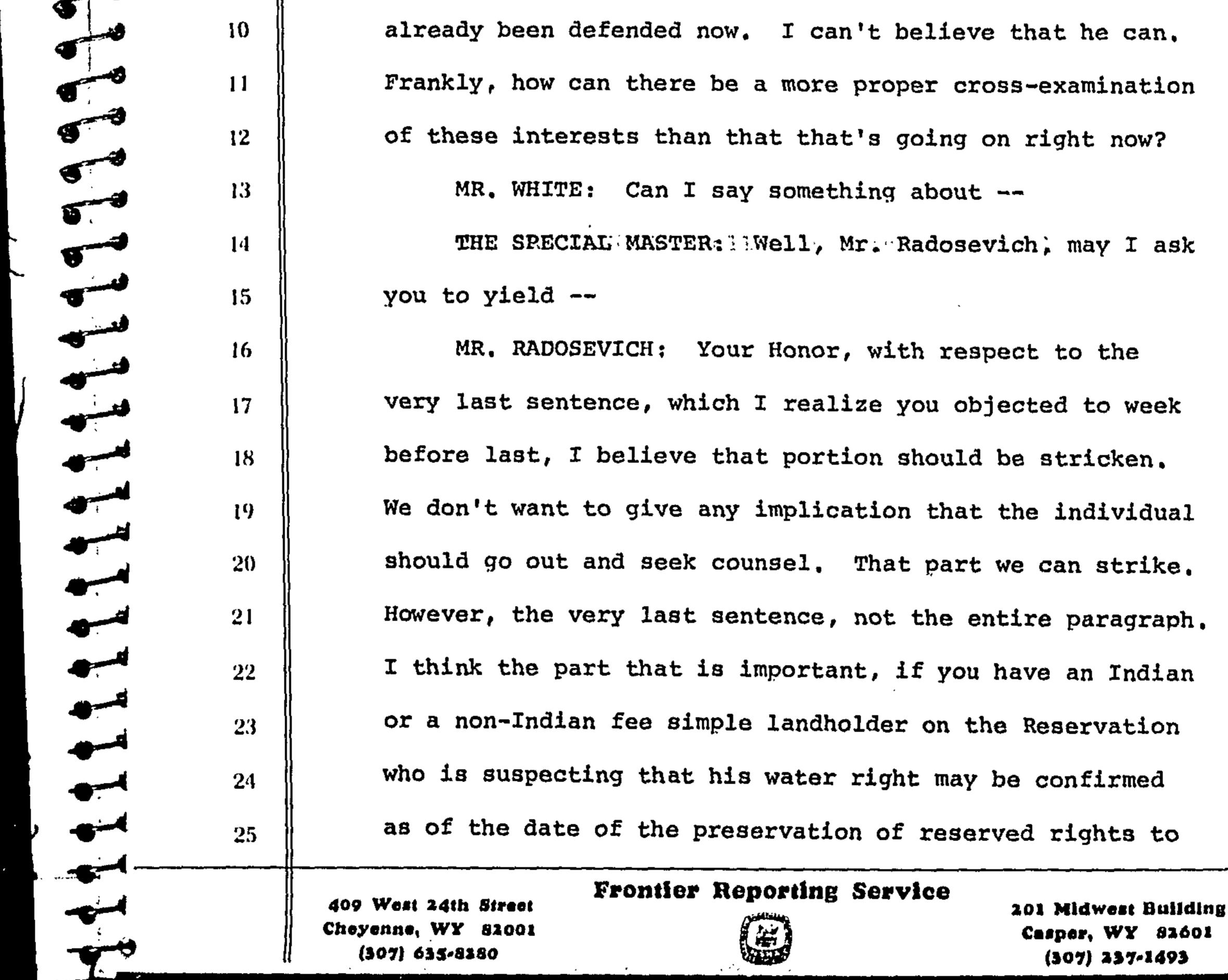
ings, and to say that he is not is really not a candid

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and reflective -- truthfully reflective statement. Two, when you say the water rights now, after we've been at this for nearly two years, since it's been filed, that you better find a lawyer, you're going to send a lot of them looking for lawyers. And we get up another fury of letters, oh, we're spending a fortune for lawyers that we shouldn't have to be. And, you know, we've been through that once. Does a water right holder have a duty to go find a lawyer to better defend him than he's



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already been defended now. I can't believe that he can,

THE SPECIAL MASTER: Nell, Mr. Radosevich, may I ask

very last sentence, which I realize you objected to week before last, I believe that portion should be stricken. We don't want to give any implication that the individual should go out and seek counsel. That part we can strike.

the Tribe, and it is not then the fact it is a 1906 or whatever and later the reserved rights claims are adjudicated by the Court, he may be completely taken out of priority in the enclave of the Reservation itself. So I think that there is a misimpression among a lot of the people I've spoken with that because their land is within the enclosure of the Indian Reservation, even though it is held in fee simple, that if the reserved right establishes the date of the water right,

that is going to be the date of their water right, and this is a legal question which hasn't been resolved yet. This is the part I think that will cause perhaps more conflict. THE SPECIAL MASTER: This is the part that is in issue, yes. MR, RADOSEVICH: There is the real issue and if, in fact, they should be asserting that their lands -- I believe it was pointed out to me that there was something like 1800 acres, irrigated, Indian and non-Indian fee simple land. If, in fact, those lands are going to retain the date of the certificated water right by the

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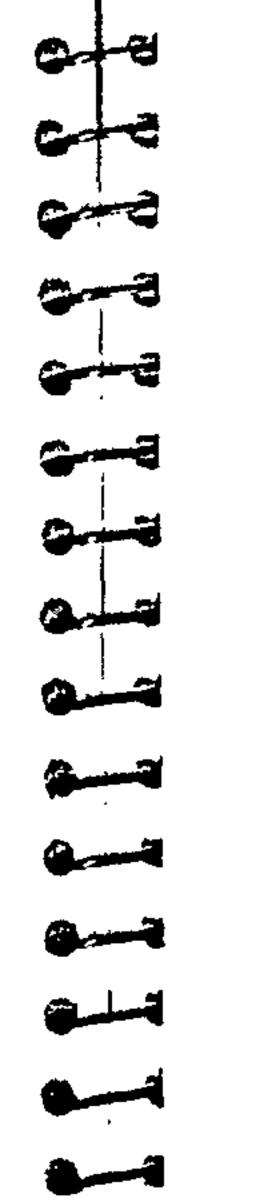
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	25	terms of thei	r location,	
-	24	just as much	jeopardized as the City of I	Lander is in
میشد. افت میلاد افت میلاد	23	and the other	claims are given the 1868 d	late, they are
and and a second se	22	State of Wyom	ing and all of the lands sur	crounding them

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, ,	1	THE SPECIAL MASTER: All right. I wish you good :
	2	luck in your conference, and let me know what your results
	3	are tomorrow or the next day. And I wish you would use
	4	the benefit of the record on my observations on the first
	5	part of this regarding that announcement. Then if you
	6	concur, that is fine.
	7	MR, WHITE: I concur with your observations. And
	8	if we can take some liberty with the punctuation, Your
	9	Honor, I'll go ahead and stick it in.



THE SPECIAL MASTER: Okay, Clarify it as best you

can.

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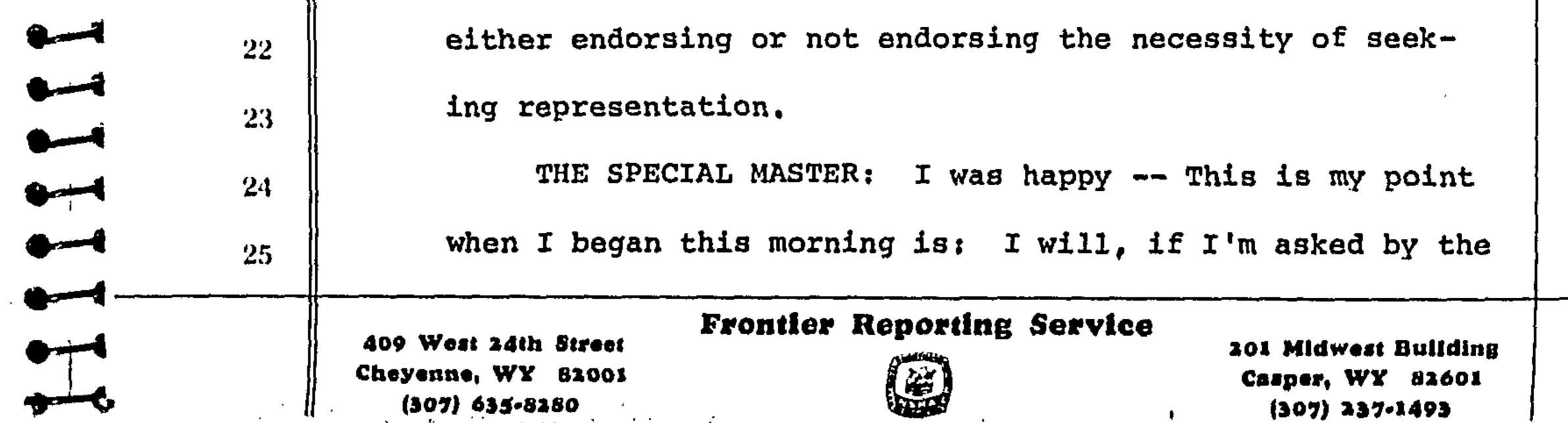
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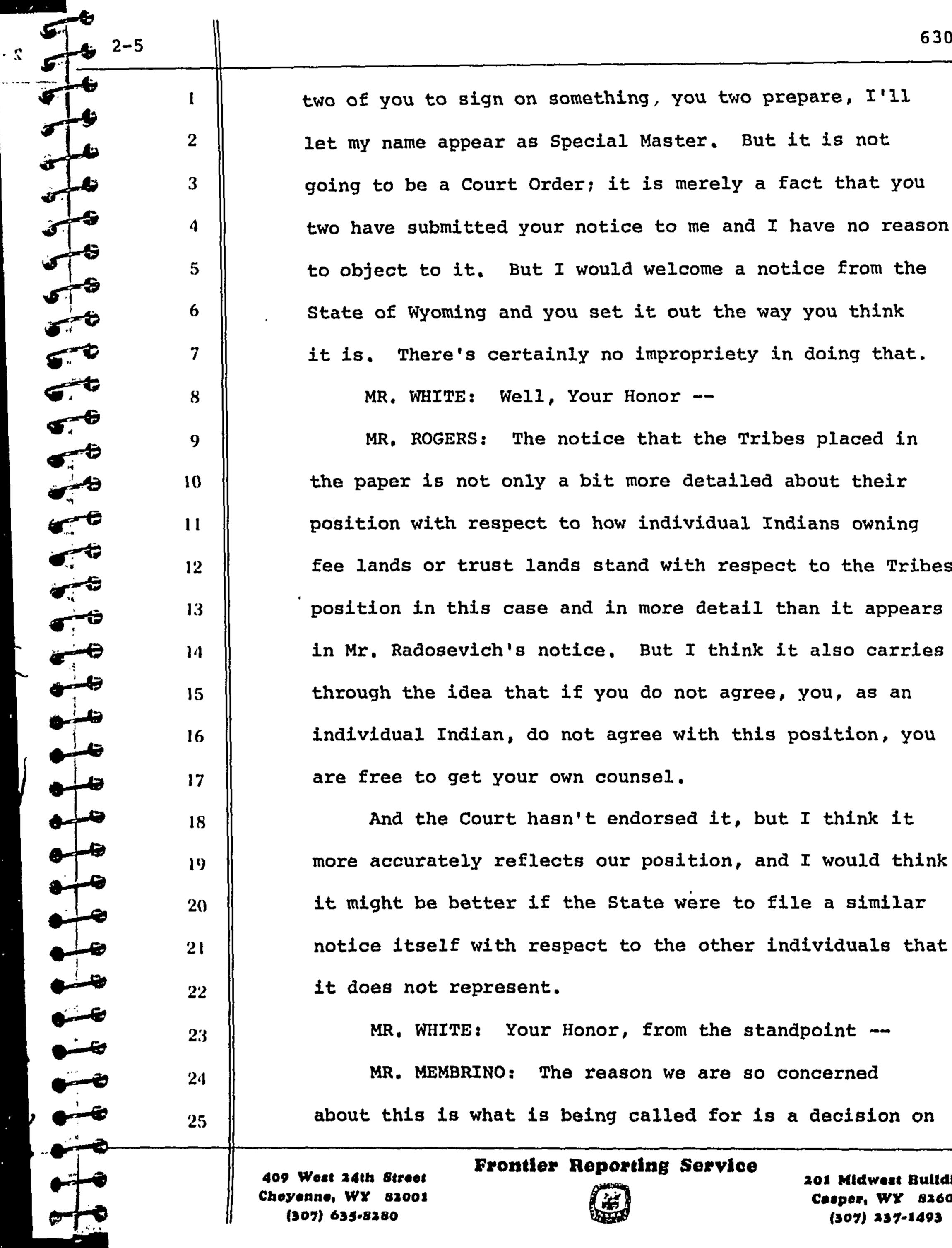
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MR. ROGERS: Your Honor, while we are here and be-

fore we depart, it has occurred to me, perhaps I furnished to you as a piece of information and other counsel here, I don't know if I got every other counsel a notice that the two tribes have placed in the <u>Riverton Ranger</u> in October of last year. What I'm wondering is, if it is not appropriate, rather than having the Master place a notice in the paper, for the State to do something similar to what the Tribes have done with their own language. That way the Court is not placed in the position of



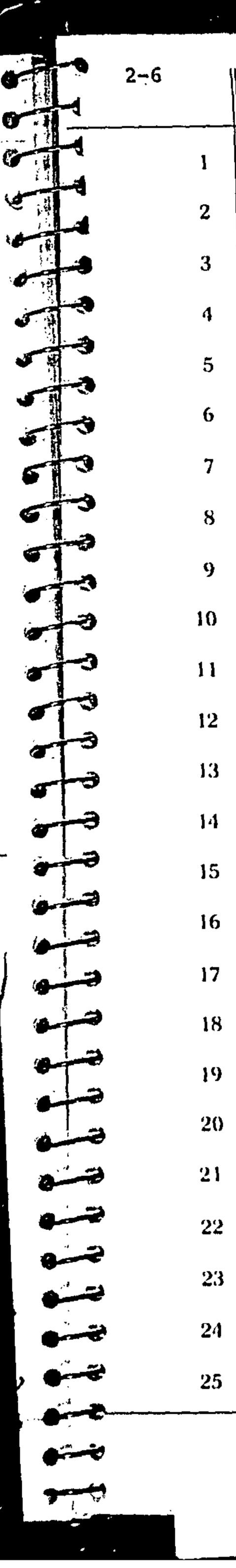


position with respect to how individual Indians owning fee lands or trust lands stand with respect to the Tribes' position in this case and in more detail than it appears in Mr. Radosevich's notice. But I think it also carries through the idea that if you do not agree, you, as an individual Indian, do not agree with this position, you And the Court hasn't endorsed it, but I think it

notice itself with respect to the other individuals that

about this is what is being called for is a decision on

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some ultimate decisions of law by the Master. It is one thing for the State to present its view of the case and publish a notice about that, and it might be another thing for us to do that. But for the Court to decide some issue of law regarding the nature of someone's entitlement in Wyoming before any evidence is heard, before a lot of legal issues are briefed and detailed, I think it is simply premature.

THE SPECIAL MASTER: Well, we're certainly not doing

that in this notice,

MR. MEMBRINO: I think we are.

THE SPECIAL MASTER: In what instance and specifically where?

MR. MEMBRINO: Well, when this Court offers to sign as it is proposed that the Court sign the Order, including the paragraph at the bottom of Page 2 about what the State's maintaining --

THE SPECIAL MASTER: This here?

MR. MEMBRINO: No, no. It is the one up above that.

THE SPECIAL MASTER: You want it stricken: "The

State of Wyoming does not represent -- "

MR. MEMBRINO: That's right.

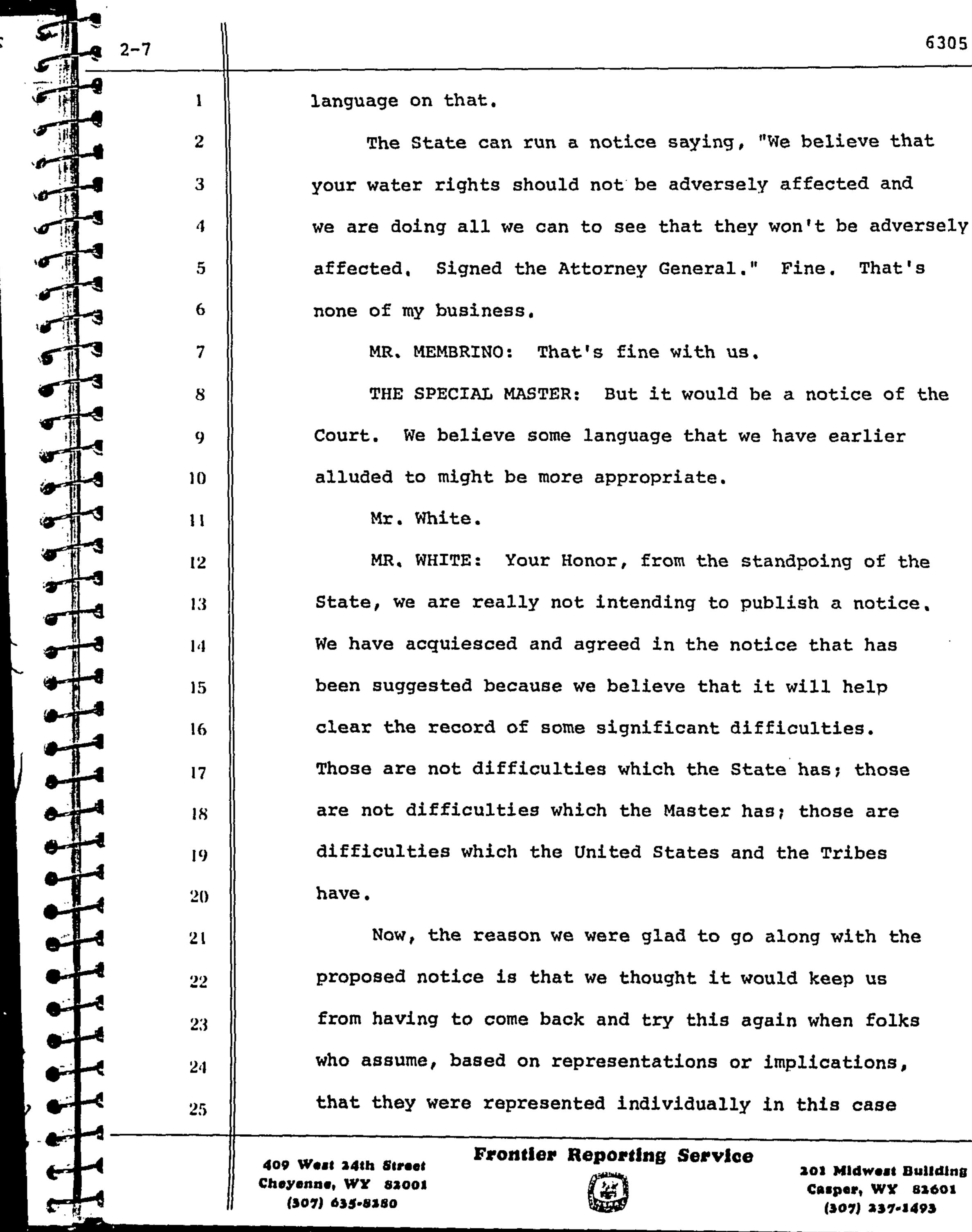
THE SPECIAL MASTER: I just got through reading to

Mr. White from that sentence and we made up new language

that is now in the record. You see, we made up some new

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MR. WHITE: Your Honor, from the standpoing of the State, we are really not intending to publish a notice. We have acquiesced and agreed in the notice that has been suggested because we believe that it will help clear the record of some significant difficulties. Those are not difficulties which the State has; those are not difficulties which the Master has; those are difficulties which the United States and the Tribes

Now, the reason we were glad to go along with the

proposed notice is that we thought it would keep us

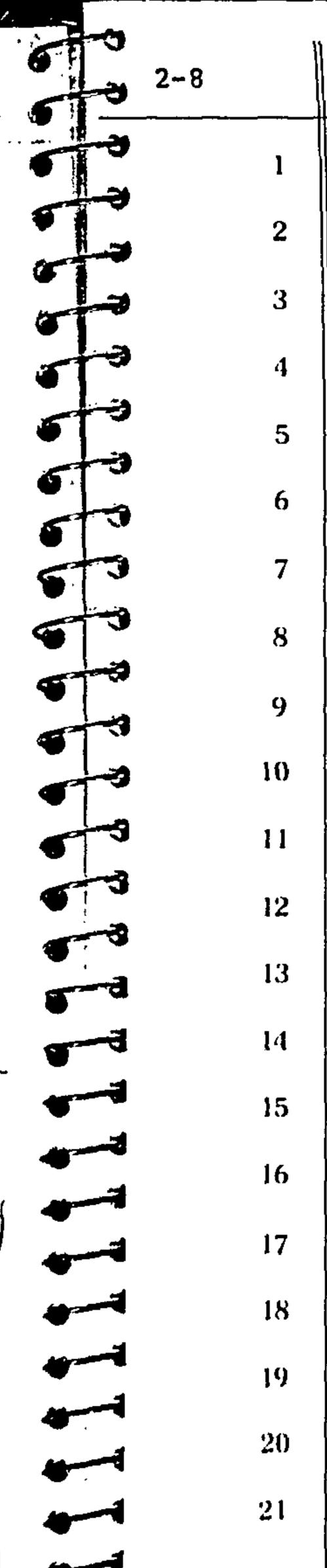
from having to come back and try this again when folks

who assume, based on representations or implications,

that they were represented individually in this case

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came back in and said, "Look, we weren't." In fact, the same pleadings, the evidence, doesn't even match the pleadings in the case. We've got a bona fide complaint and our only reason for going along with this and agreeing to it, we thought it was a good idea, but it is not something we are going to push. If it keeps us from coming back and trying this again, if the Tribes and the United States feel comfortable with the situation as it is, the State isn't going to go off on its own and publish

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some sort of notice that will help them in some regard,

So we are agreeable to going along with any reasonable

notice that any party may suggest and the Court will ap-

prove, but we are not going to take it on ourselves to

cure problems for adverse parties.

THE SPECIAL MASTER: Mr. White, your comments open

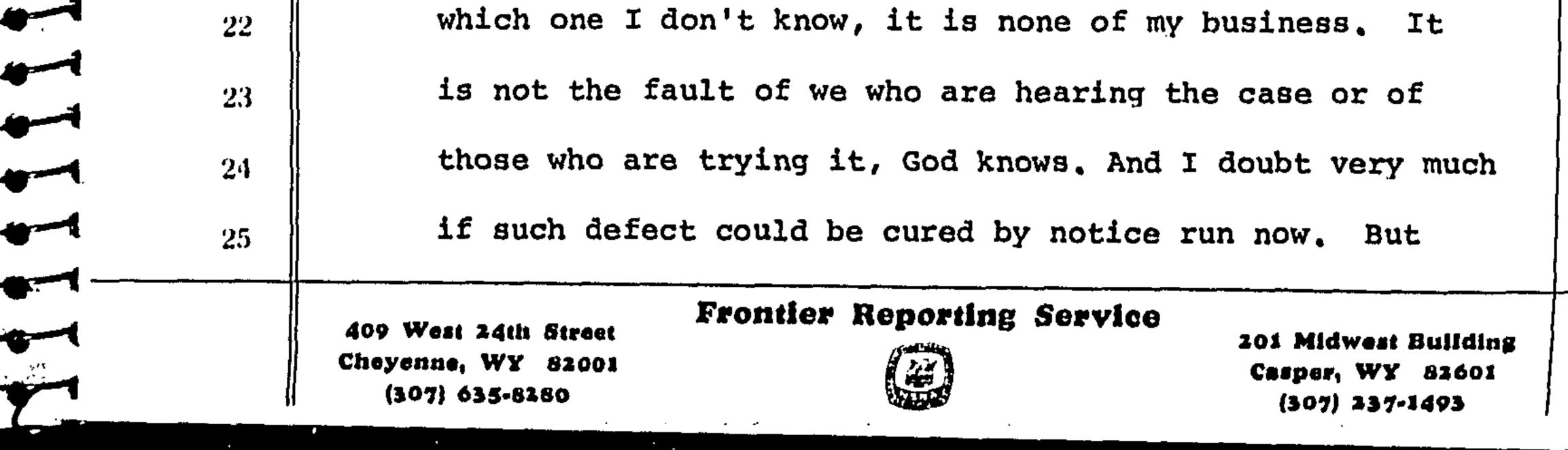
a whole new world of observations, and I'm going to have to make some:

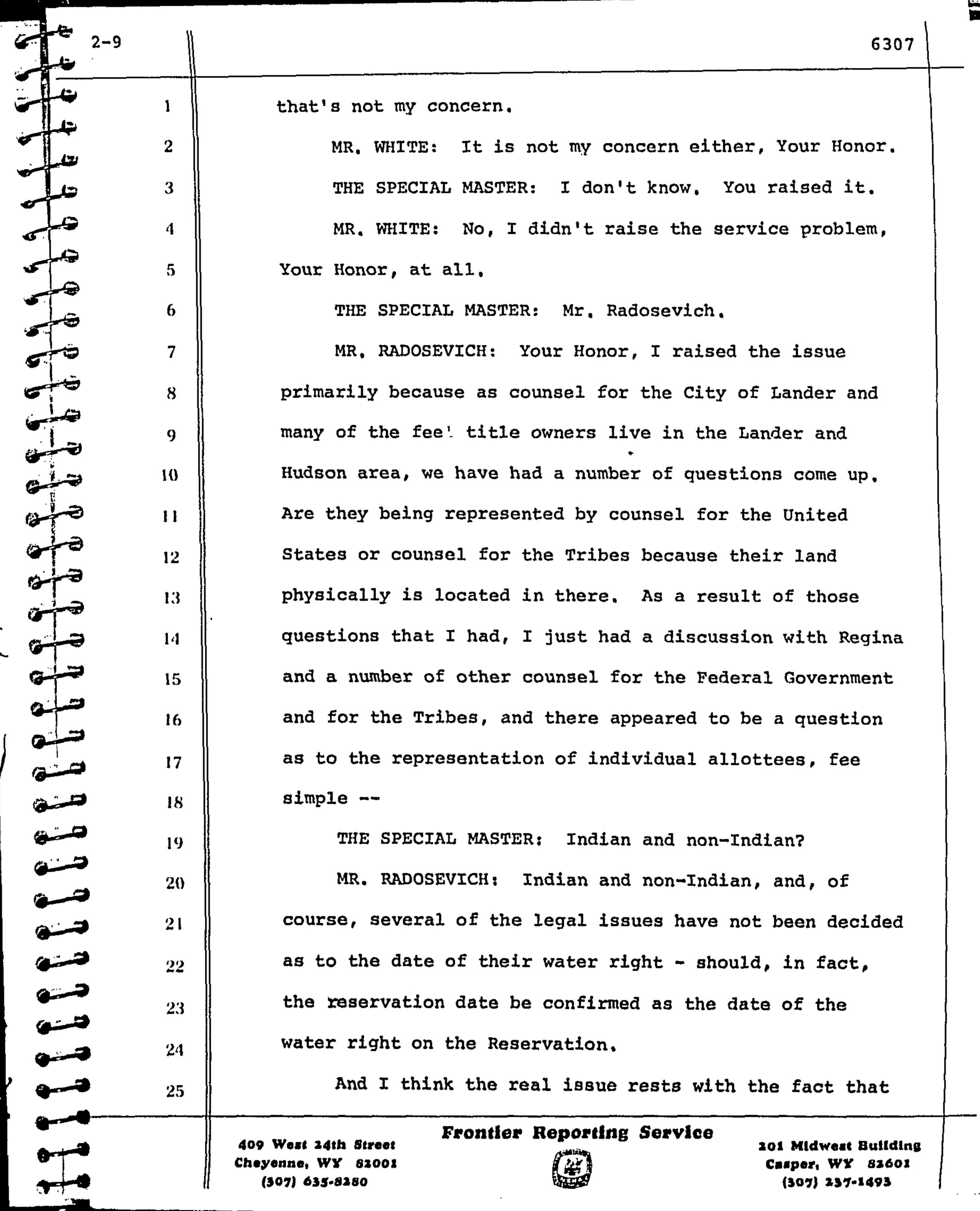
One, if the failure of service in this lawsuit so

renders it vulnerable to a retrial for failure of service

upon water holders in Wyoming, that is the fault of the

Legislature of this State or of its Attorney General,





those people -- certainly we can't decide that issue at this point in time, but they certainly ought to be apprised of the fact that they are under a misimpression because they think their land is physically located there,that they have their interests represented by either the United States or the counsel for the Tribes if, in fact, they are not having their interests represented. And my discussions indicate that, in fact, individual

fee simple landholders are not being represented.

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THE SPECIAL MASTER: Let me inject an inquiry right

there. The individual fee simple landholder who may have

taken his land and is now a non-Indian from an Indian you

feel is the man who may be ending up thinking he's going

to inherit that Indian reserved doctrine water right and

he ends up with a 1909 --

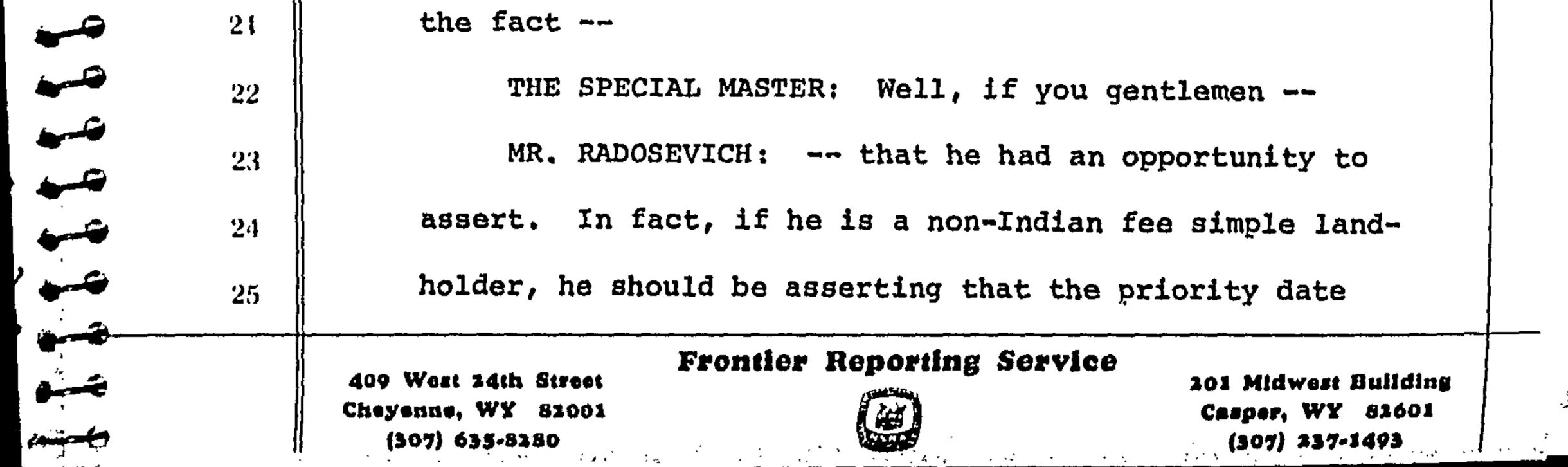
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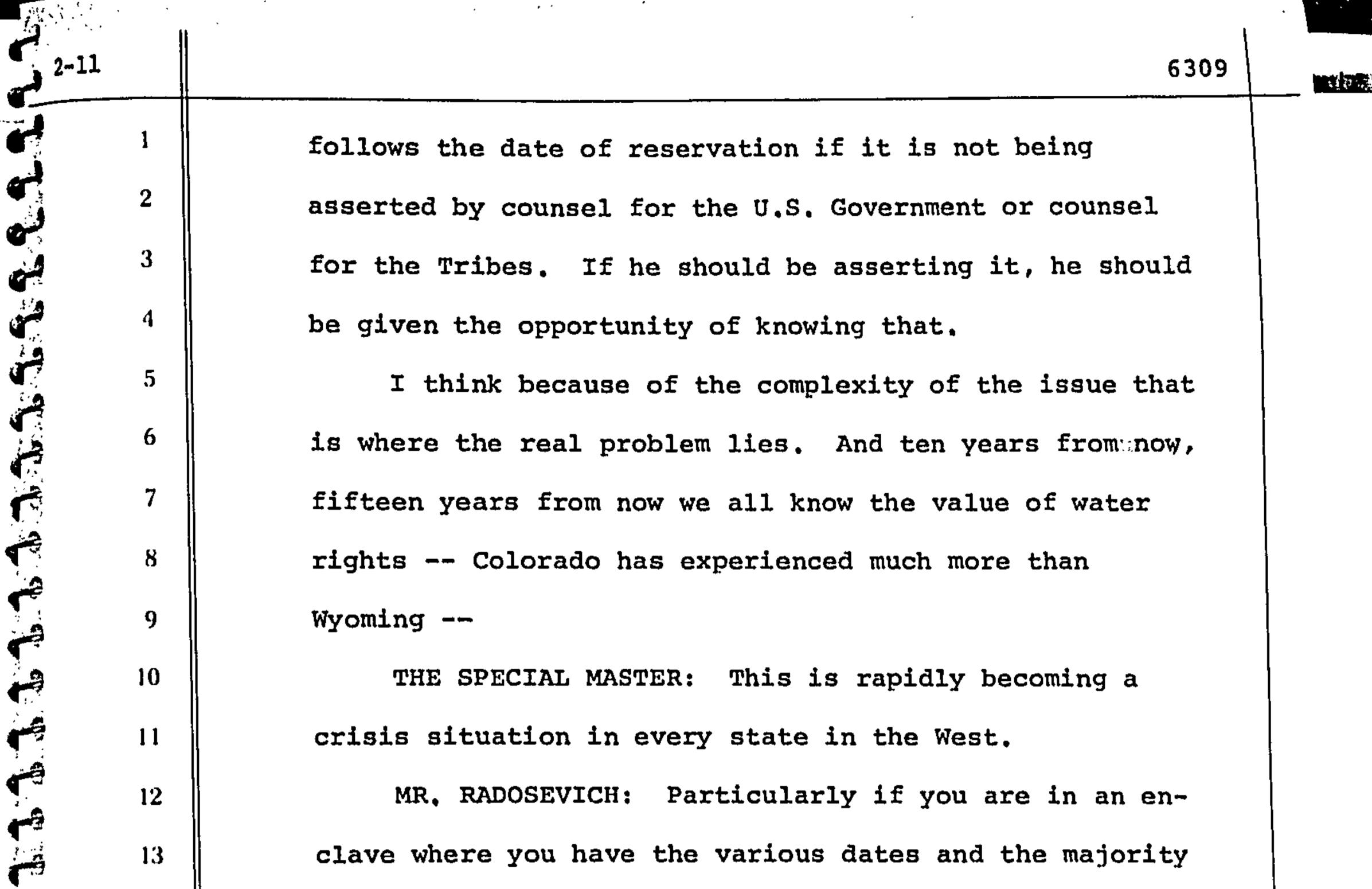
MR. RADOSEVICH: Instead of an 1868.

THE SPECIAL MASTER: And you feel that he, therefore,

feels that the Tribes let him down on his title or that . we have let him down?

MR. RADOSEVICH: Yes. My feeling is that not knowing



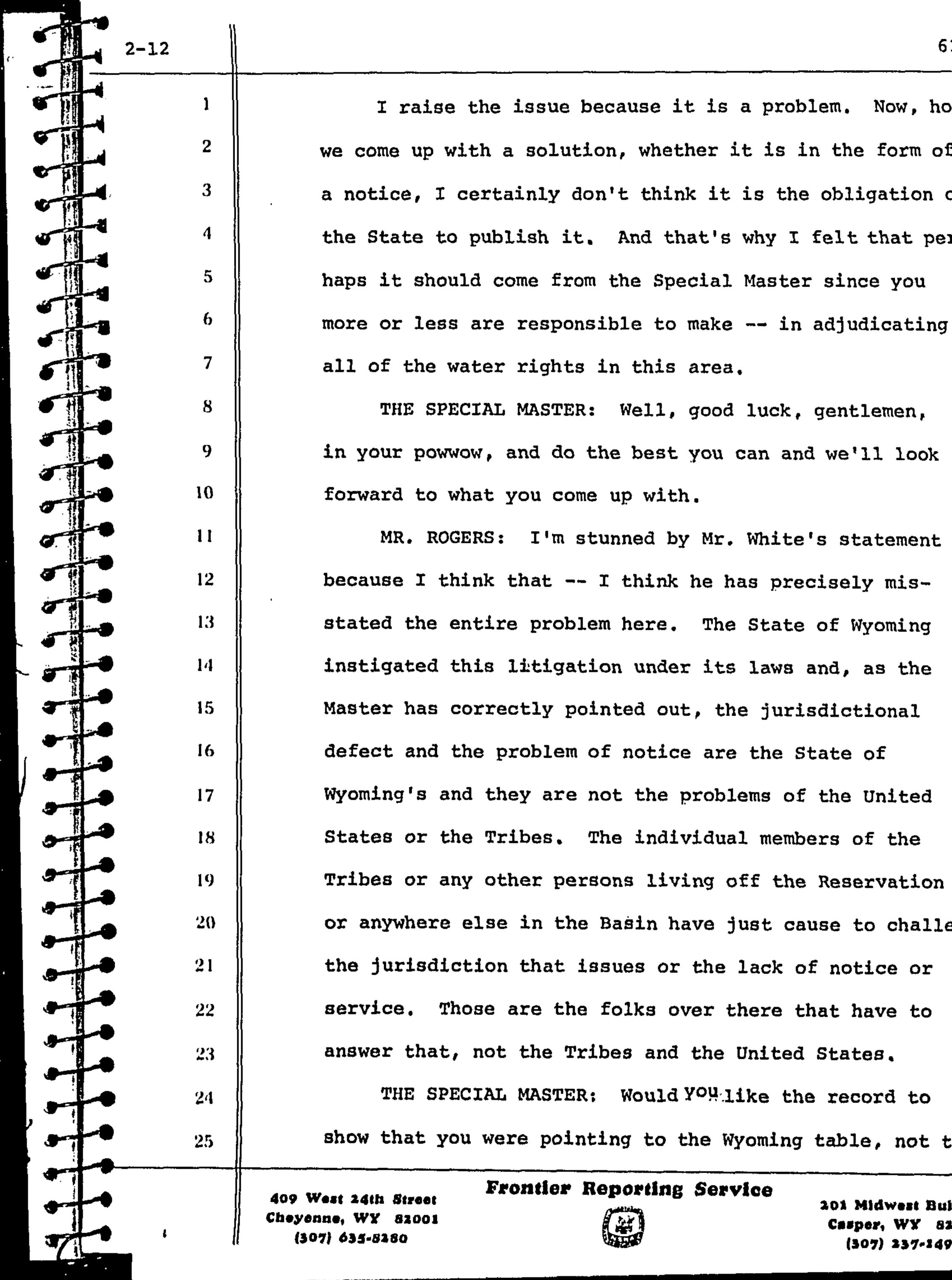


10	THE SPECIAL MASTER: This is rapidly becoming a
11	crisis situation in every state in the West.
12	MR, RADOSEVICH: Particularly if you are in an en-
13	clave where you have the various dates and the majority
14	water rights are held far senior to yours and you had it
15	at one point in time, asserting your priority date should
16	be the same as the rest of the Reservation. I think it
17	is our responsibility as attorneys to the public, not
18	necessarily looking at this suit and who we are represent-
19	ing, but I think we ought to let the public know that
20	their rights are not being covered at this point in
21	time. I don't know exactly how we might solve this

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25	out what it is.	
24	notice or however - we've got good mind	ls here to figure
23	the importance to the landholders. Whet	her it is done by
22	issue. I think it is a very crucial is	sue in terms of



I raise the issue because it is a problem. Now, how

we come up with a solution, whether it is in the form of

a notice, I certainly don't think it is the obligation of

the State to publish it. And that's why I felt that per-

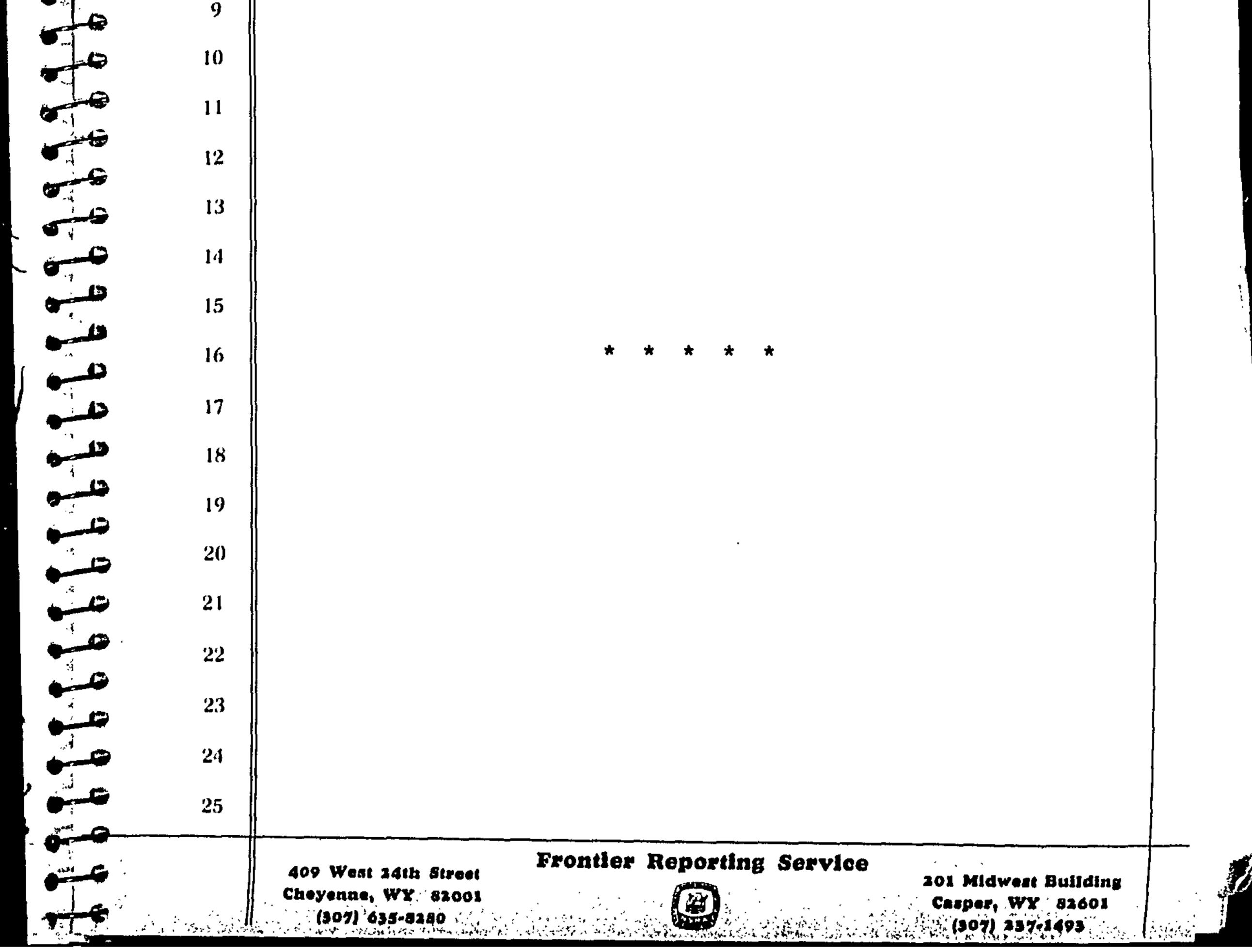
haps it should come from the Special Master since you

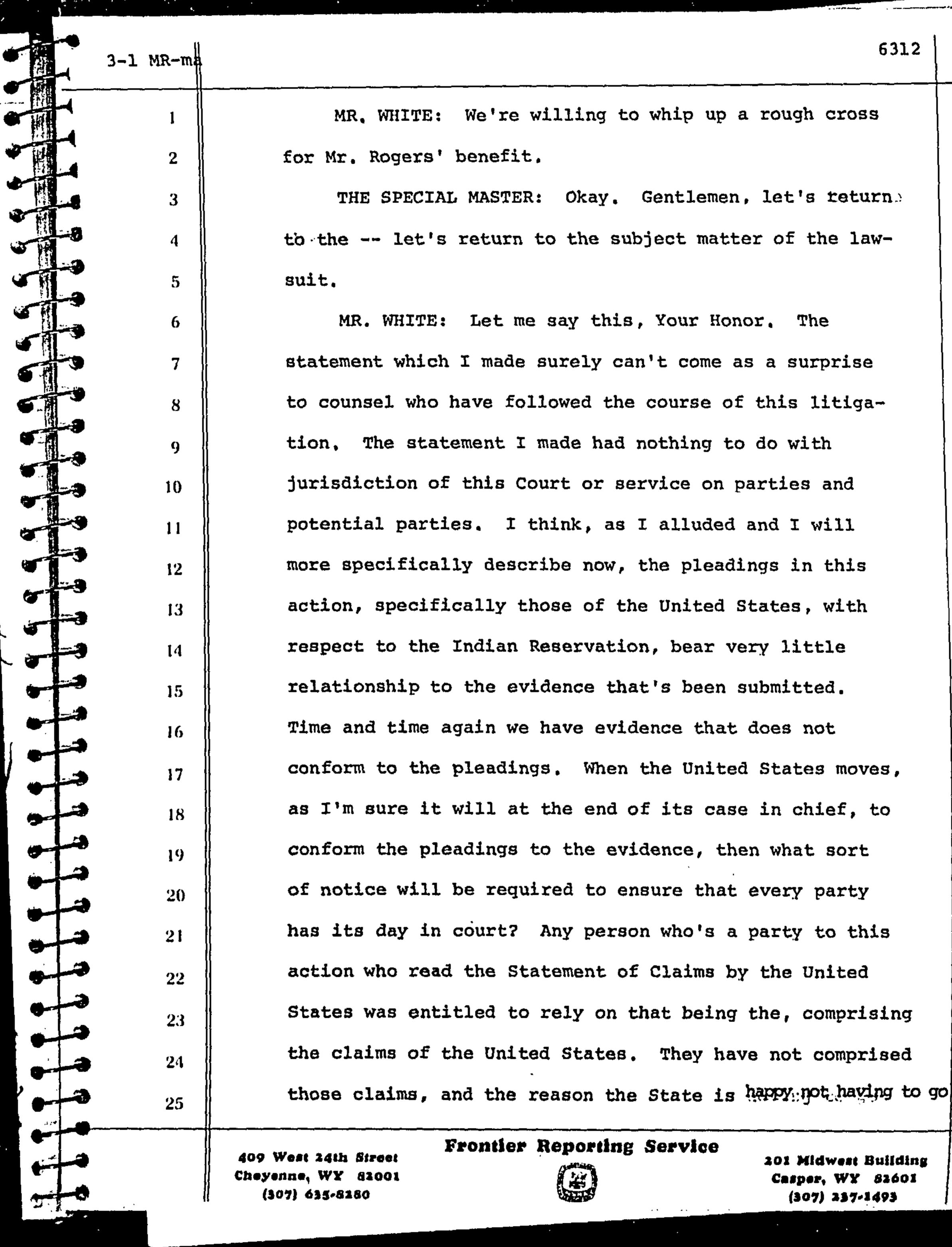
in your powwow, and do the best you can and we'll look

MR. ROGERS: I'm stunned by Mr. White's statement because I think that -- I think he has precisely misstated the entire problem here. The State of Wyoming instigated this litigation under its laws and, as the Master has correctly pointed out, the jurisdictional defect and the problem of notice are the State of Wyoming's and they are not the problems of the United States or the Tribes. The individual members of the Tribes or any other persons living off the Reservation or anywhere else in the Basin have just cause to challenge

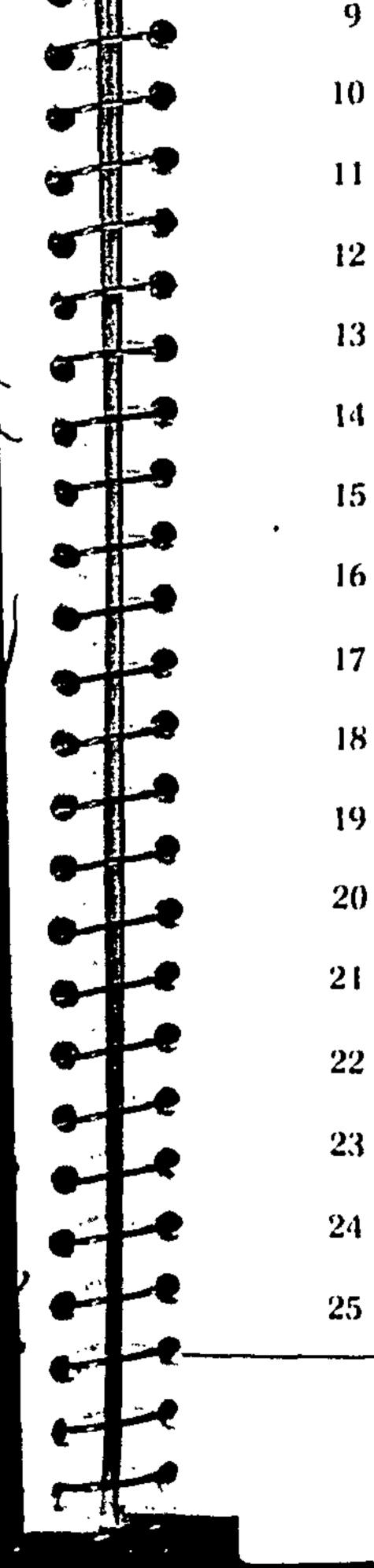
service. Those are the folks over there that have to answer that, not the Tribes and the United States. THE SPECIAL MASTER: Would You like the record to show that you were pointing to the Wyoming table, not to 201 Midwest Building Casper, WY 82601 (307) 237-1493

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		me?
	2	MR. ROGERS: Yes. Yes, Your Honor.
	3	THE SPECIAL MASTER: I would be grateful if the
Lo	4	record will show that.
	5 6	MR, ROGERS: It is the greatest Pontius Pilot state- ment I've ever heard in my life.
	7	
	8	





along with the proposed notice is that, if accomplished, that notice may well have the effect of finding those parties which have not participated in this action, with respect to the Order that the Court may issue, actually confirming the pleadings to the evidence. There is no notice of any sort given by the United States, and it's their Statement of Claims, that the evidence they're submitting is outside or in contradiction to or not in compliance with their Statement of Claims.



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The reason the State is agreeable to Mr. Radosevich's notice is that we believe that that notice may well quash the kind -- or prevent the kind of later injection into this case of the lack of notice asserted by parties who were not on notice as to the actual evidence that was going to be submitted by the United States. Therefore, it's not the State's problem. We've got no problem with jurisdiction. It's not something you need to rule on. If the

Tribes and the United States are comfortable with that situation, then they're comfortable with it. We'll let it lie.

MR. MEMBRINO: Your Honor, I can't agree with what Mr.

White said. The nature of this case is a general adjudica-

tion. Everyone has been given notice that if they claim a

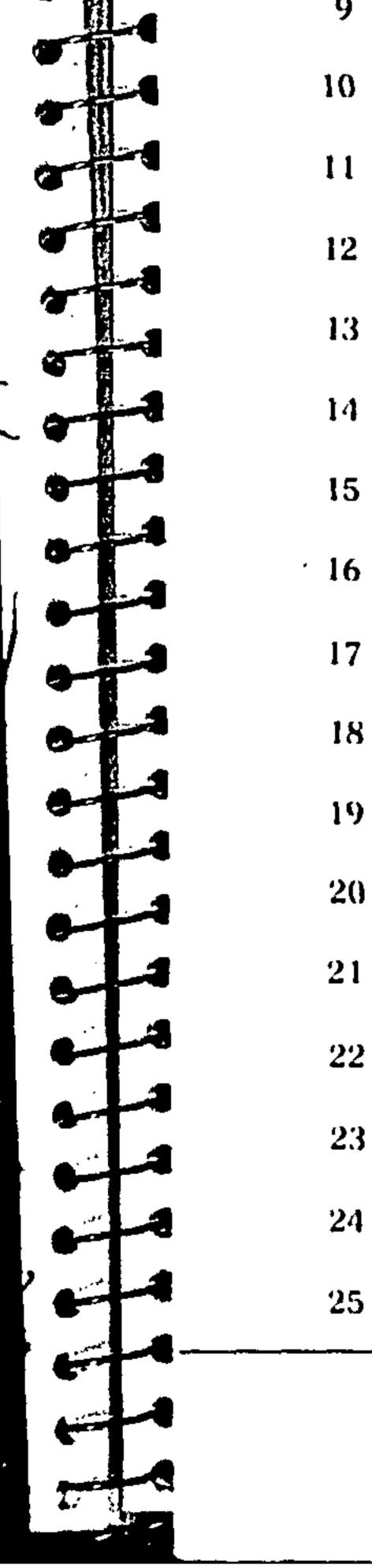
water right in this Water Division 3, they have to submit

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*	it. They cannot They cannot assume that someone else
	is going to take up the battle in their behalf. Now, the
	United States is in a very complicated presention of its
	evidence, and that's the nature of this case. And we are
	entitled to conform our pleadings to the evidence at the
	end of trial. And, in the meantime, everyone who is noti-
	fied of this case is permitted to sit in on this case and,
	in fact, should if their water rights are in jeopardy and
	they also have to submit their own claims. So it's just,



it makes no sense to me how Mr. White can say what he's saying, 'Everybody's rights are at stake, this is not the United States versus Wyoming, it's a general adjudiction. Everyone has to put forth his or her claim to water. MR. WHITE: Your Honor --MR. ROGERS: May I say something first? MR. WHITE: I say what I say based on substantial experience in the western United States. Mr. Membrino may hope that's the law with respect to general adjudications, but it simply is not in general adjudications. The pleadings are allowed to be conformed to the evidence only if the evidence discloses that the pleadings over-

state the claim, not that they understate the claim or

involved another aspect of a water right which was not

included in a claim, and it's only reasonable because the

general adjudication process came up in the western United

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States as a substitute for large quiet title actions.

The law applied to general adjudications is in most part,

not entirely, the law that carried over from quiet title

and in the quiet title action, if I sought to quiet title

to the NW 1/4 of the NW 1/4 and the pleadings and publica-

tions all went to the NW to the NW, especially the plead-

ings, and my evidence went to the SW to the SW, then

you've got substantial and due process problems. And,

of course, that's the problem, the precise problem, we're

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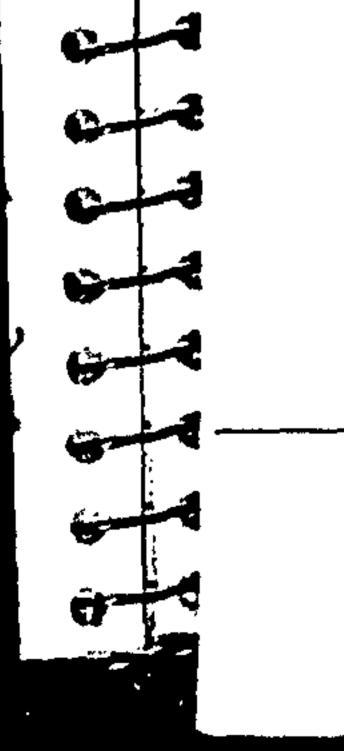
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trying to deal with. It's not the State's problem, it's

the United States' problem and Tribes' problem. They can do with it what they want.

MR. ROGERS: Your Honor, this is a very interesting discussion about amendments of pleadings and whatnot, but the relevant pleadings that raises the problems with respect to any notice and what people are aware of in terms of what interest they need to have represented were not instituted initially by the filing of claim by the United States or the Tribes. They were invoked initially by the filing of the complaint in this case in 1977 by the State of Wyoming, which was, that's where the service of process

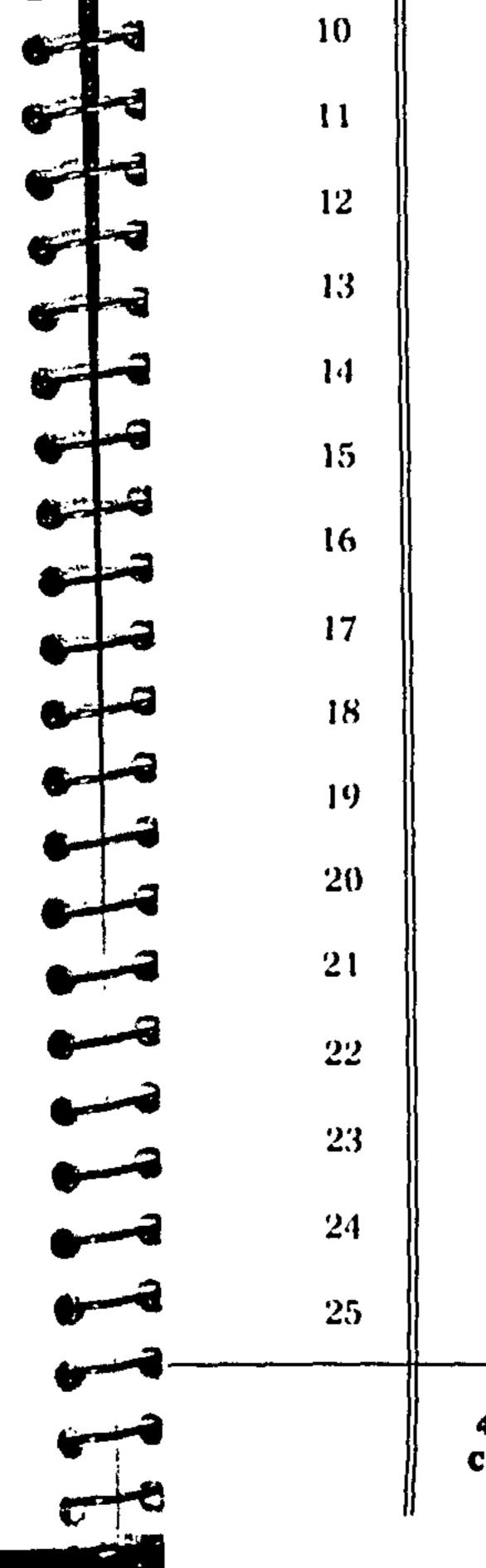


comes in by mail on whatever it is, 25,000, 26,000 interests in the State of Wyoming. And I think that is, that is where you go back to examine exactly what jurisdictional and what notice problems **Frontier Reporting Service** 409 West 24th Street

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have been created by this, and that is, again, as I say, not a problem with theTribes or the United States. MR. WHITE: Well, I suspect from the discussion, Your Honor, it's not a problem that's going to be decided by this Court. On the other hand, I want it to be absolutely clear, the concerns of the State of Wyoming, that they've been brought to the attention, especially to counsel of the United States and the Tribes. The position and the argument will come up again on appeal, I'm quite sure, if



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there is an appeal in this case, and there may well be an

appeal in this case. And I just want the record to be

absolutely clear that we view this as a problem of evidence

outside thepleadings. It's a problem that's dealt with the

law applicable to general adjudications in the western United States, We are comfortable with that law as being

very supportive of our position. And whether it's the

State's problem or the United States' problem or the

Tribes' problem is something that I suppose an appellate

court, one of these days, will have to decide.

At any rate, the State of Wyoming's position, I

believe, is clear for the record as well as those of the

Tribes and the United States,

THE SPECIAL MASTER: Okay, gentlemen. Mr. Merrill,

are you ready to proceed?

MR. RADOSEVICH: Your Honor, may I say one thing?

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THE SPECIAL MASTER: Yes.	
MR, RADOSEVICH: Partly what we're talking about is	
very academic in terms of what the legal right and legal	
response of the parties is. I think what we really should	
be concerned about are the individual water users. They	
are the ones that are going to actually suffer in the	
future if we've made an error by not giving a proper	

notice earlier.

THE SPECIAL MASTER: If we would have given them a

proper notice earlier, what could they have done in this
case that hasn't already been done to guard their interests?
 MR. RADOSEVICH: For example - THE SPECIAL MASTER: Except have a few more lawyers
 in the courtroom.
 MR. RADOSEVICH: That should probably excite the
 Court.
 THE SPECIAL MASTER: How could the cross-examinations
 have been any more competent than they've been?
 MR. RADOSEVICH: At this stage, Your Honor, perhaps
 not, but we're talking about from this stage forward.
 THE SPECIAL MASTER: I understand,

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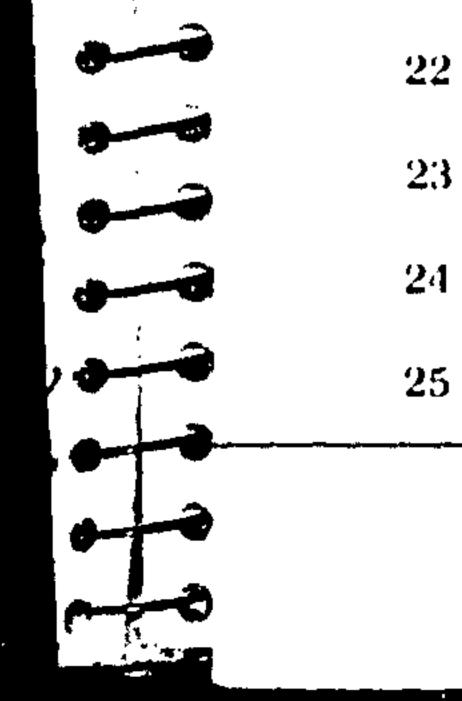
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MR. RADOSEVICH: If, in fact, the individual water

rights holders, whether they be fee simple, non-Indian,

Indian owners, wwish to assert that their date should be

earlier, then that is where the real crucial part is for

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	them,	
2	THE SPECIAL MASTER: Okay.	
3	MR. RADOSEVICH: I think that is where we have to	
4	get	
5	THE SPECIAL MASTER: Okay. You gentlemen do your	
6	work, and we'll see what you come up with.	
	Mr. Mërrill.	
8	MR. MERRILL: Your Honor, I simply want to return to	
9	you your original copy of the amendment to the first	
		1 them. 2 THE SPECIAL MASTER: Okay. 3 MR. RADOSEVICH: I think that is where we have to 4 get 5 THE SPECIAL MASTER: Okay. You gentlemen do your 6 work, and we'll see what you come up with. 7 Mr. Merrill. 8 MR. MERRILL: Your Honor, I simply want to return to



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order of certification and supply copies to counsel of

the United States and Tribes.

THE SPECIAL MASTER: I think it's my duty to inquire

from time to time about the hope for settlement, at least that's what the federal judges tell me in their textbooks. Is there any -- Has there been any settlement discussion, gentlemen?

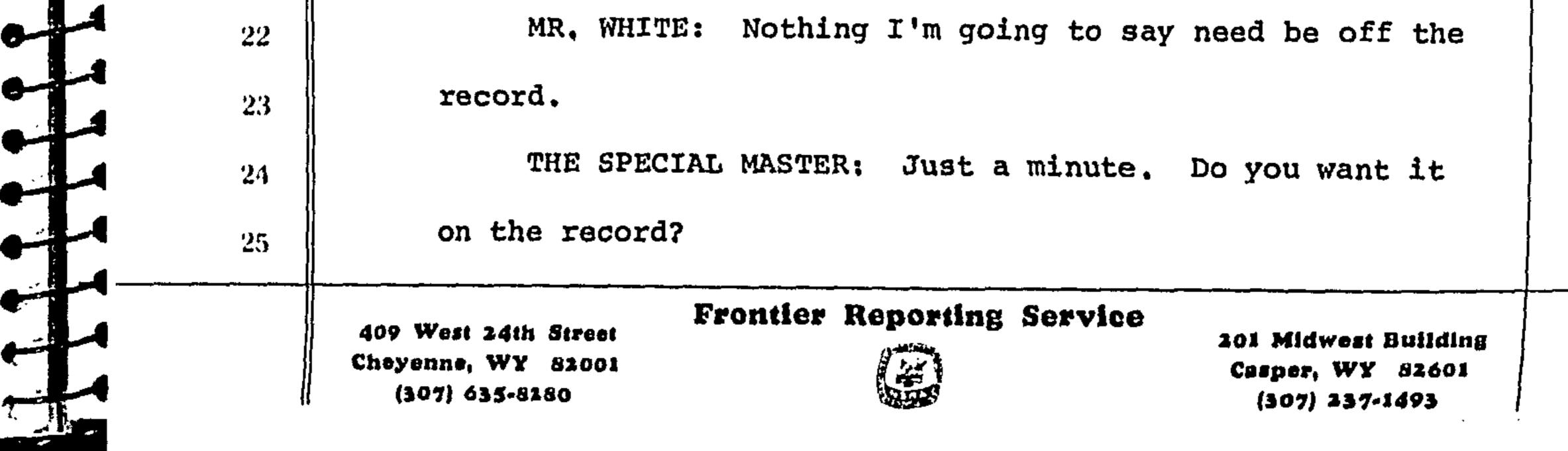
MR. WHITE: Yes, there has. I don't think it would

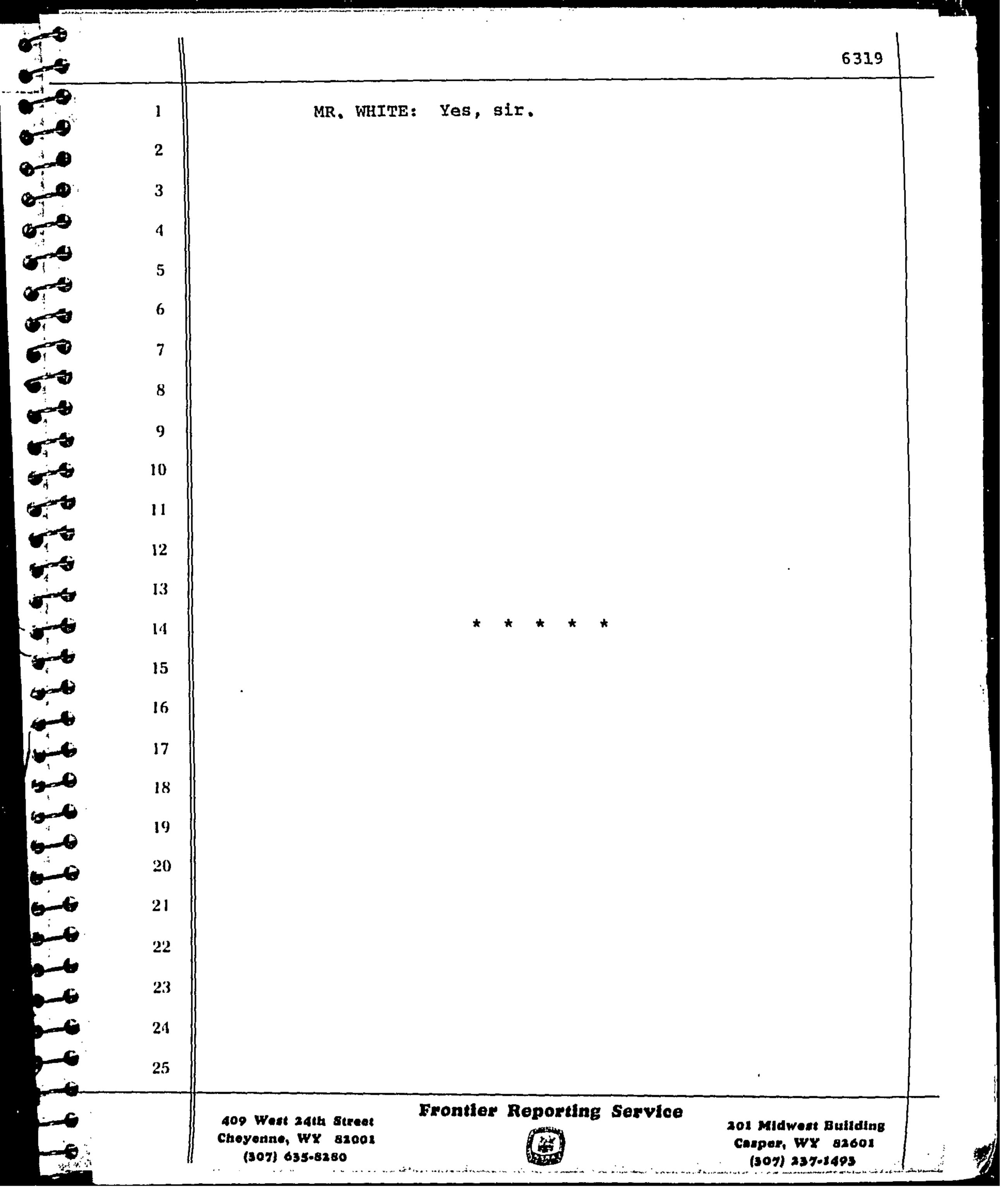
be appropriate to discuss it --

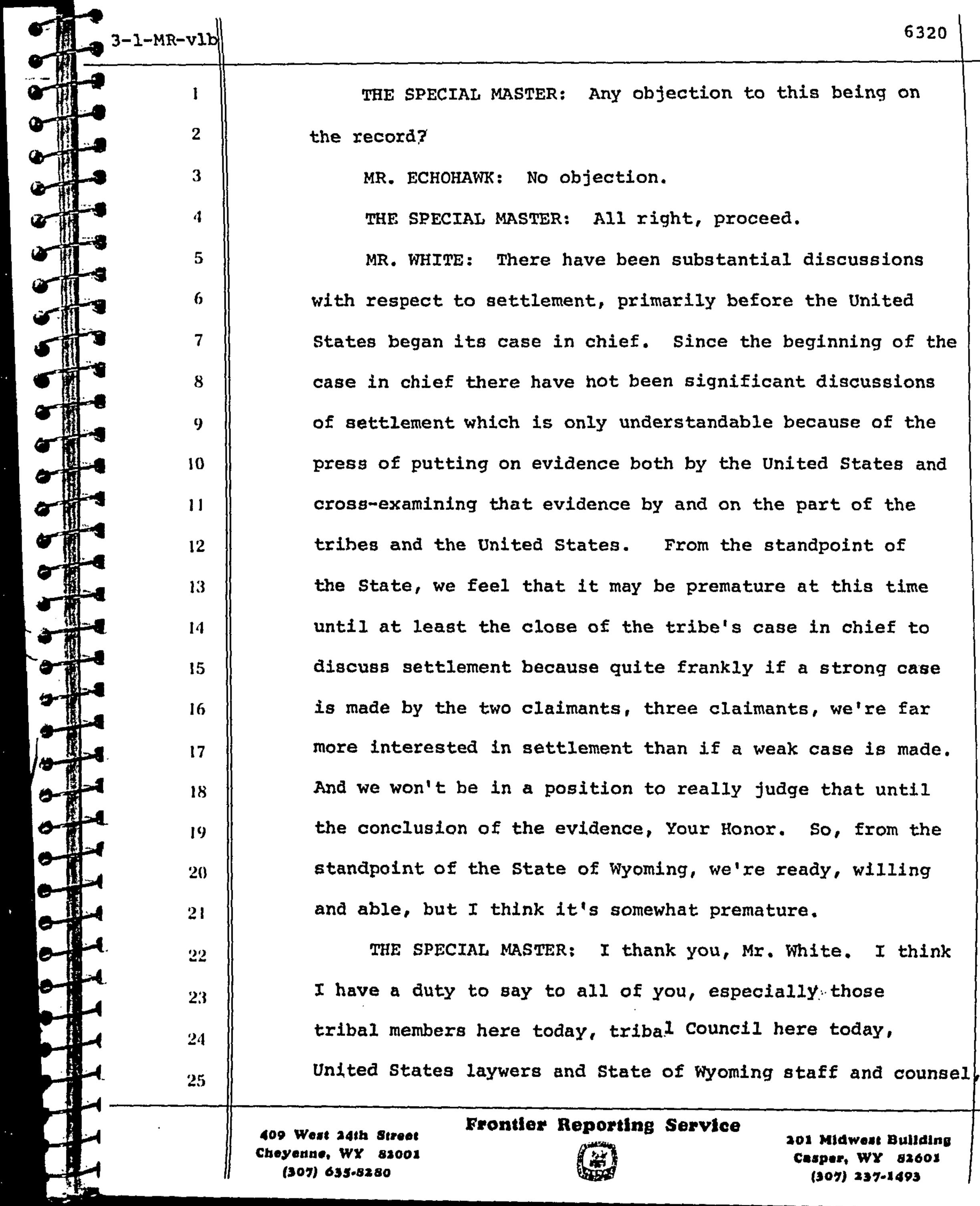
MR. ROGERS: Especially on the record.

THE SPECIAL MASTER: Do you want to go off the

record?







that if any of you feel that the fact that there has been a change in administration in the last few months and a new Secretary of Interior lessens the possibility of cooperation from the Secretary of Interior with me or with you parties, you are in error. My relationships with the encumbant Secretary of Interior is just as friendly as with the last one. They stem back to the fact that I was in Washington with him for a number of years, on a committee overseeing outdoor recreation activity in the

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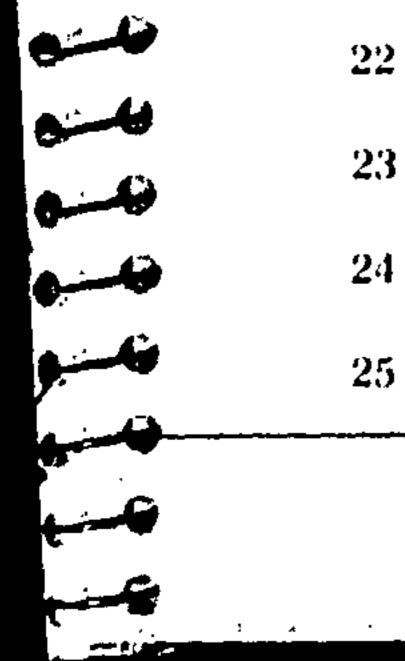
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Rocky Mountain West week after week. I was able to be of some friendly assistance to him on matters of the Federal Power Commission legislation, and we enjoy a mutual respectful position although God knows we differ on matters of clear cutting in Wyoming and a few other things. But I would submit that I am willing and ready and able to make entree or approachment discussion for you all regarding settlement insofar as it would require funds by the United States for the construction of additional dams for additional water storage in the springs, of spring runoff, which I think is the most promising hope for settlement that there is for this lawsuit, frankly.



Okay. Mr. Merrill.

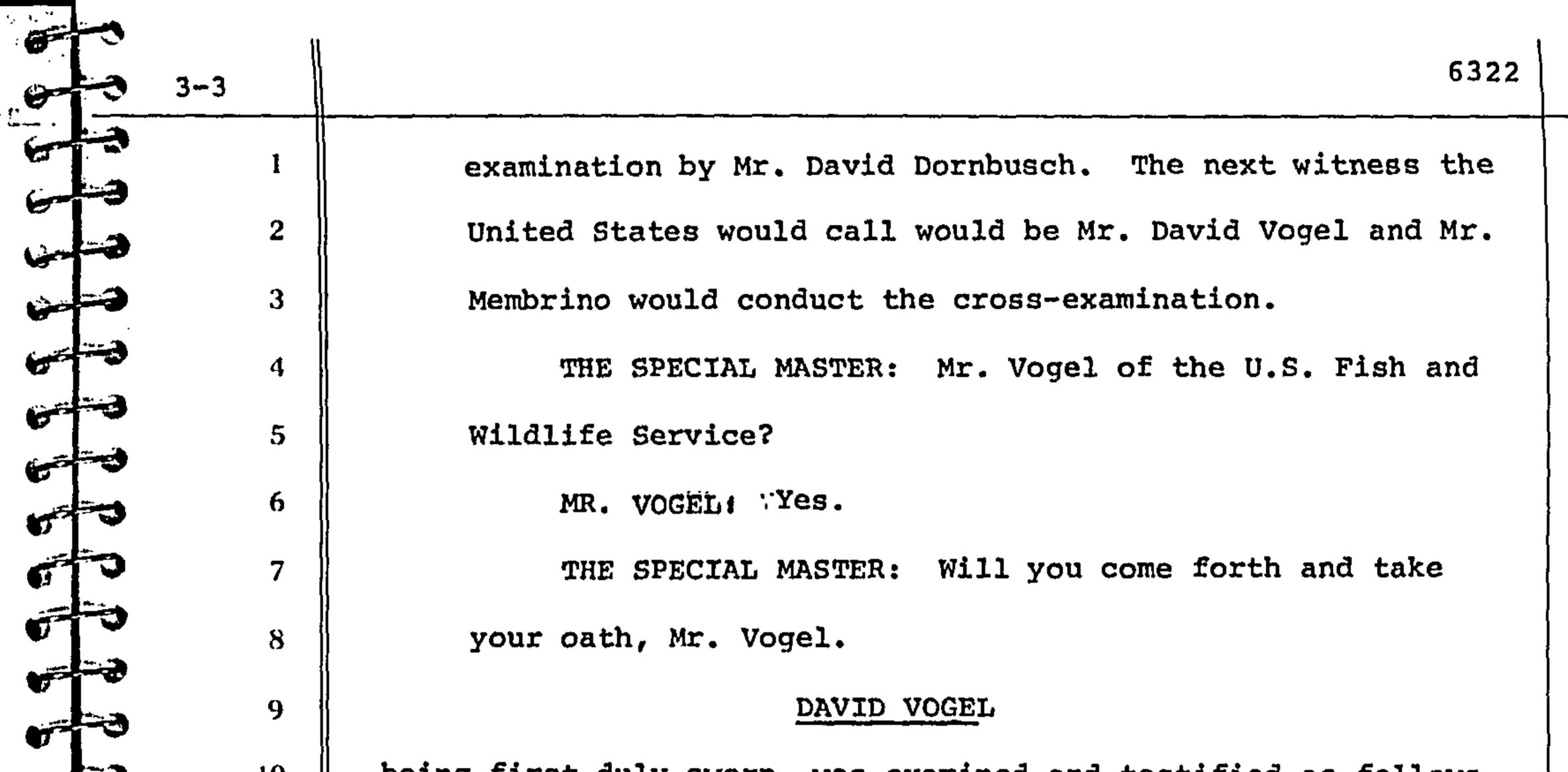
MR. MERRILL: That's all I have, Your HOnor.

MR. ECHOHAWK: Your Honor, the United States in reading

the transcript finds no need to have any redirect

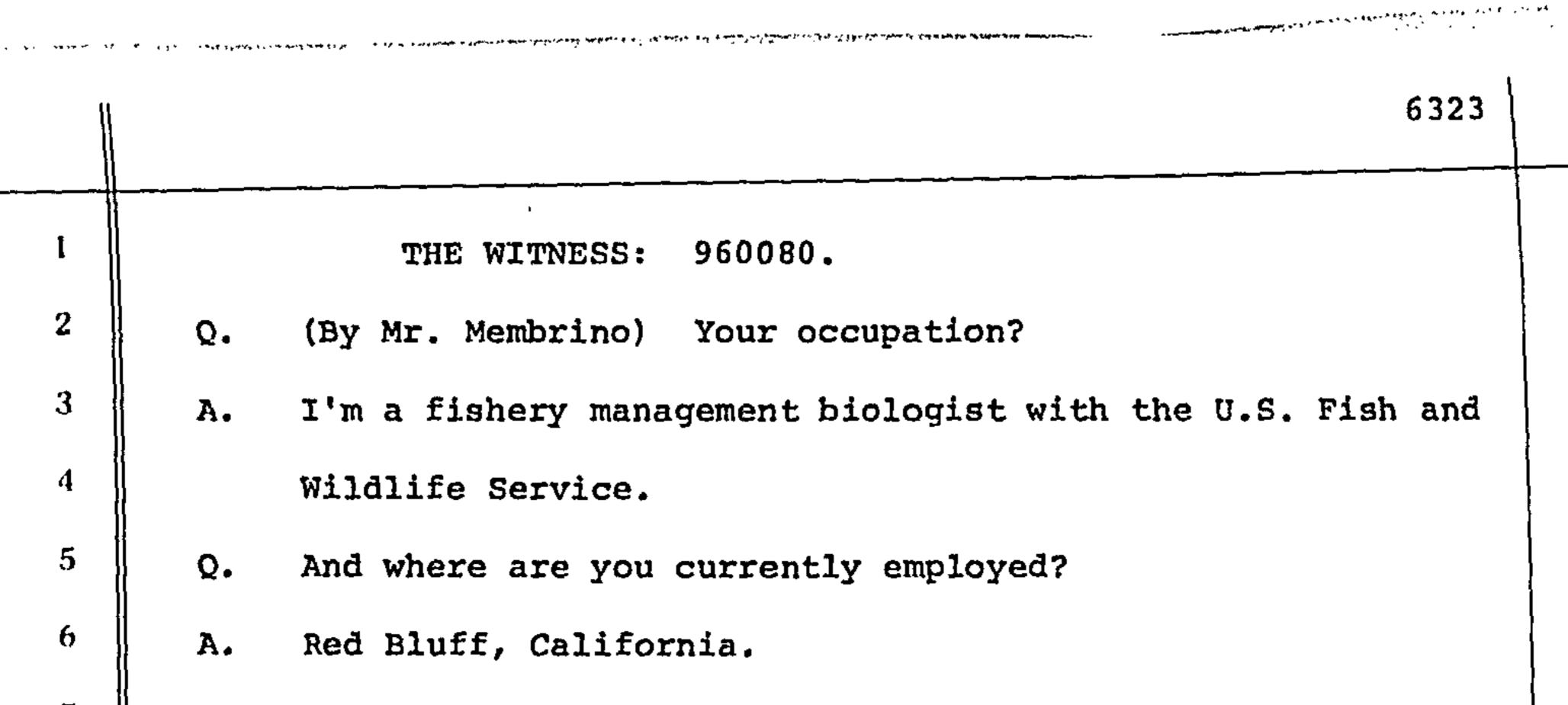
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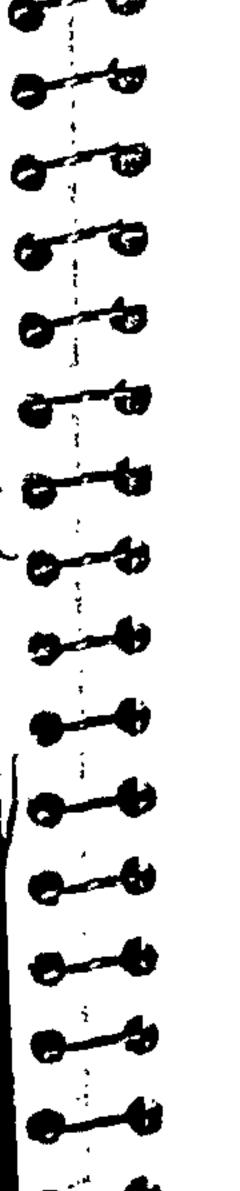


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	25	Vogel-direct-membrino	
	24	THE SPECIAL MASTER: Zip?	
	23	THE WITNESS: Red Bluffs, two	o words, California.
	22	THE SPECIAL MASTER: What ci	ty, please?
0,	21	THE WITNESS: Givens, G-i-v-e-n-s.	
	20	THE SPECIAL MASTER: 727 Gib	bons?
	9 19	THE WITNESS: A-1-1-e-n.	
0	18	THE SPECIAL MASTER: Is that	A-l-a-n7
0	17	Red Bluff, California.	
	16	A. David Allen Vogel. My address i	s 727 Givens Road,
	15	record, please.	
	3 14	Q. Mr. Vogel, will you state your na	me and address for the
	• 13	BY MR. MEMBRINO:	
	3 12	DIRECT EXAMINATION	
	• 11	to-wit:	
	• 10	being first duly sworn, was examined and testified as follows,	



- Would you describe for the Court your educational background Q. including your undergraduate and graduate work.
- I have a bachelor of science degree in biology, specializing Α.



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in equatic science from Bowling Green State University. I received that degree in 1974.

I also have a master of science idegree in natural

resources, specialized in fishery management and research,

from the University of Michigan. I received that degree

in 1979.

- In your undergraduate work at Bowling Green, did you have a Q. minor?
- Yes, I did, it was chemistry. Α.
- Since graduation, have you engaged in any seminars, work Q.

shops or other post-graduate education related to your work?

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	409 West 24th Street Cheyenne, WX 82001 (307) 635-8280 (307) 237-1493
 25	Vogel-direct-membrino
24	Fish and Wildlife Service in Fort Collins, Colorado, dealing
23	work shops sponsored by instream flow group of the U.S.
22	Civil Service Commission in Seattle. I've taken two
21	A. Yes, I have. I've taken a statistics class through the

3-5	6324
1	with the use and applications of their instream flow and
2	incremental methodology. I've also taken some
(3	THE SPECIAL MASTER: Instream flow group what?
4 •	THE WITNESS: Incremental methodology.
5 •	I've also attended a symposium in the management of
6	wild trout. That was in Yellowstone, it was taught in
7	Yellowstone Park in 1979.
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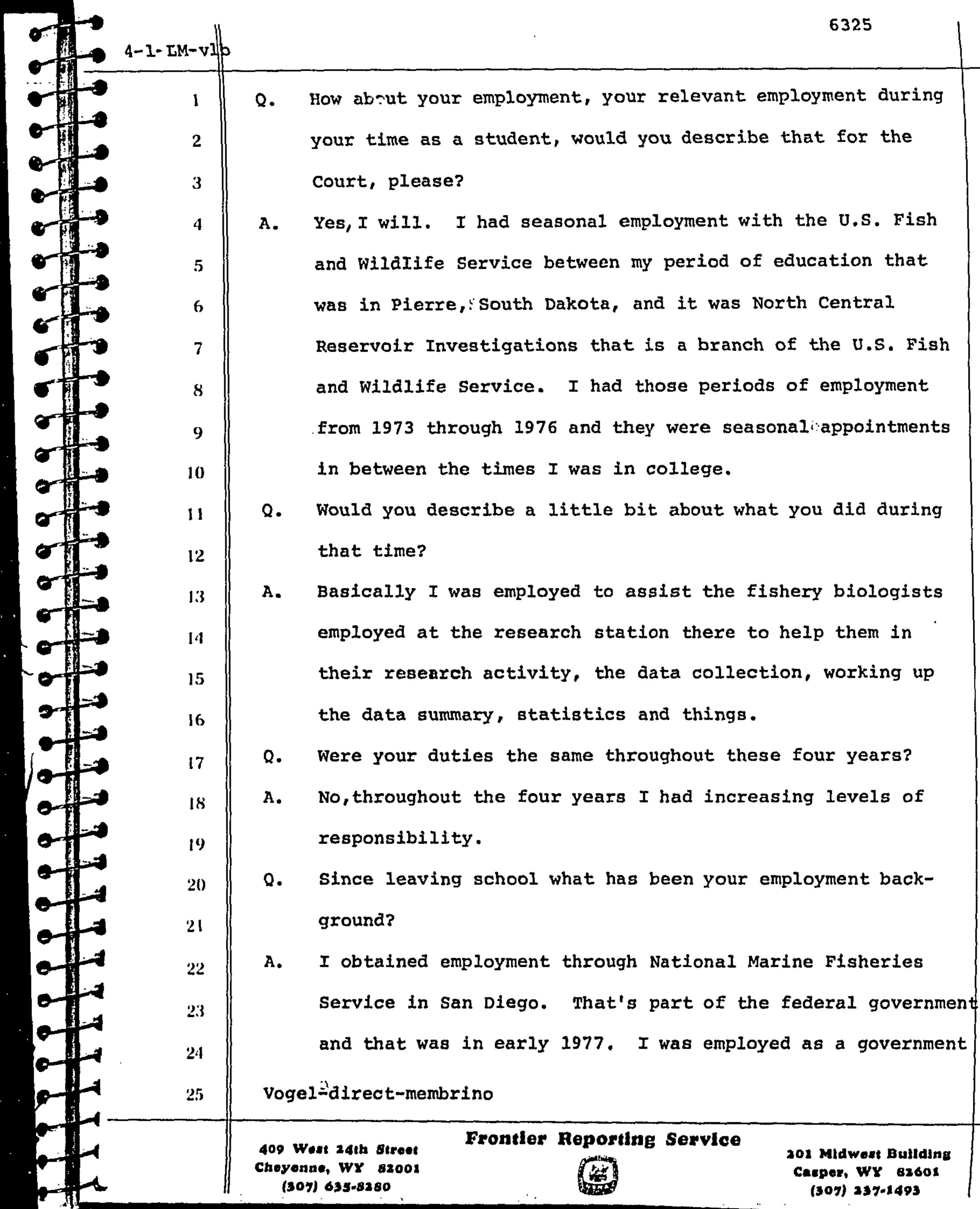
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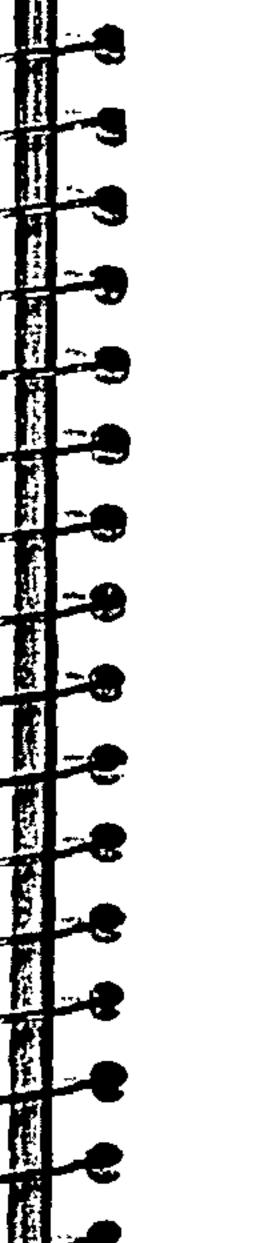
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	25	Vogel-direct-memb	orino		
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		observer to serve aboard commercial tuna vessels to watch
2		their operations during their high seas fishing operations
3		for yellow/finatuna.
4	Q.	You were the only government employee on board?
5	Α.	That's correct.
6	Q.	What were some of your responsibilities?
7	A.	Basically I had three responsibilities. One was to collect
8		information dealing with the life history of marine
9		mammals and the marine mammals such as whales or porposes
10		I record in daily logs. Another responsibility dealt with

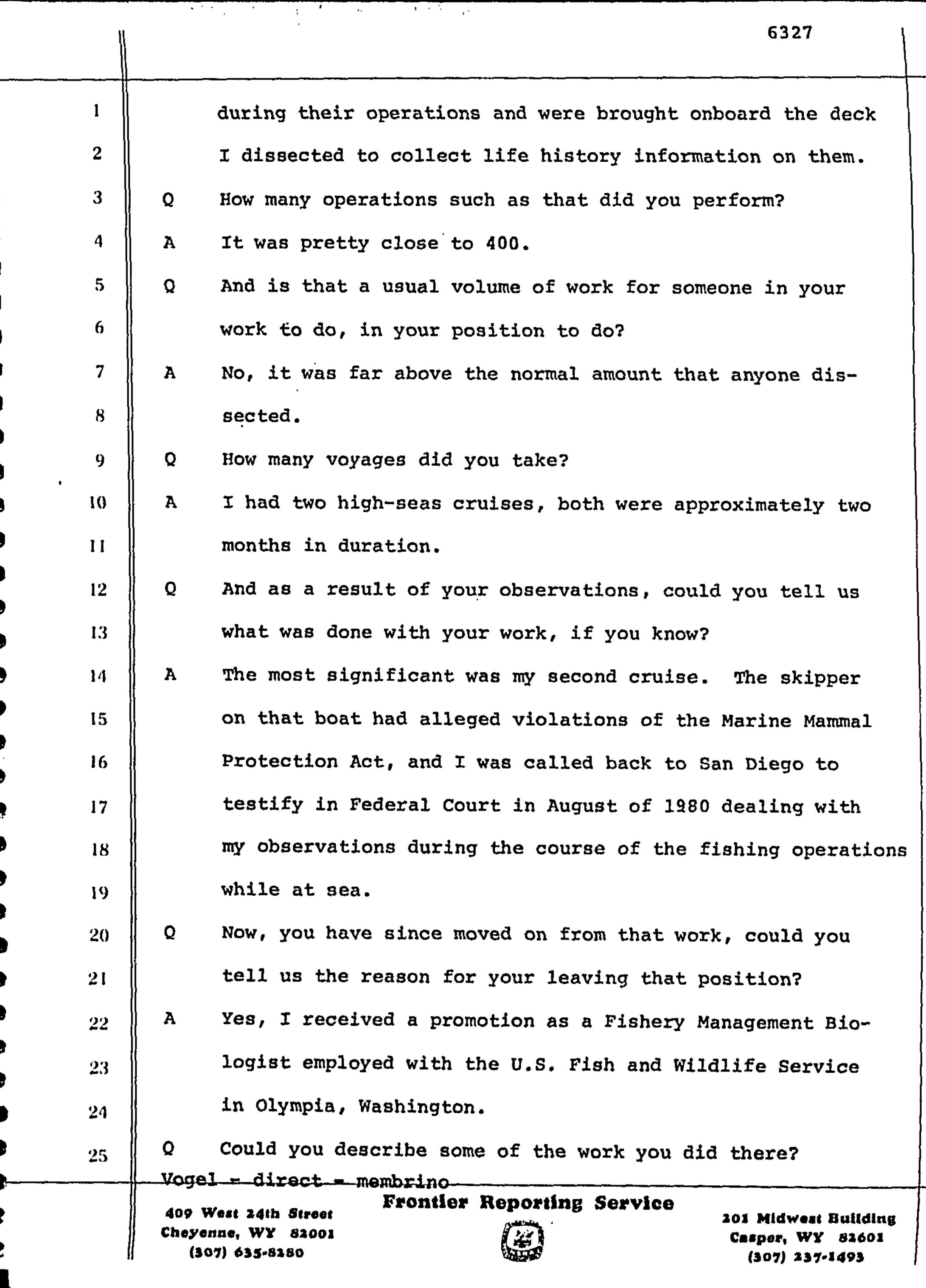


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		I record in daily logs. Another responsibility dealt with
		recording data concerning the actual fishing operations,
		the actual techniques, timings, equipment used during the
ļ		fishing operations. My third responsibility was to
		observe compliance of the fishermen dealing with the
ł		regulations of the Marine Mammal Protection Act.
ļ	Q.	What did those regulations concern?
	Α.	Basically they were designed to eventually reduce the
		mortality of marine mammals in the course of fishing
		operations on yellow fin tuna.
	Q.	Did you do any biological investigation of the marine
		mammals while you were involved in that observation?

	409 West 24th StreetFrontier Reporting Service201 Midwest BuildingCheyenne, WY 82001Casper, WY 82601(307) 635-8280(307) 237-1493
25	Vogel-direct-membrino
24	the same thing as a dolphin, any porpoise that they killed
23	Q. Any porpoise incidently when I say porpoise this is
22	A. Yes, I did.

9)



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My main duties were assigned to studying the population A dynamics of Salmon in the Puget Sound area and the rivers 2 of western Washington. 3 Did you have any supervisory responsibilities there? Q 4 Yes, I did. I had crews that would assist me in the 5 Α field that were biological technicians or biological 6 aides, young adult conservation corps employees or employees through the CETA program. 8 And how long were you at that job? Q 9 It was approximately one year; it would be approximately 10

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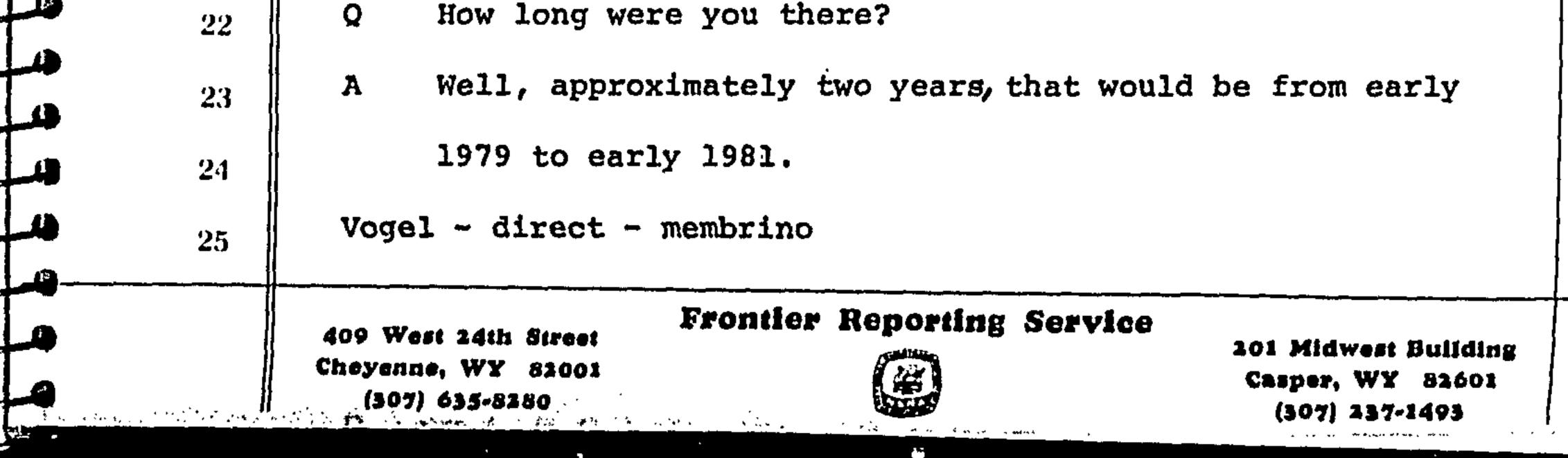
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- A it was approximately one year; it would be approximately from early 1978 to early 1979.
- Q What did you do after that by way of employment?
- A I obtained a promotion again through the U.S. Fish and Wildlife Service as a Fishery Management Biologist in

Lander, Wyoming.

- Q And could you describe some of your responsibilities there?
- A My main duties dealt with providing technical assistance in the field of Fishery Management to the Shoshoni and Arapahoe Indian Tribes on the Wind River Indian Reservation.



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()	1	Q Wer	e you given any responsibilities while at Lander in-
()	2	vol	lving this case?
0	3	A Yes	s, probably about three-fourths of my duties were
₿ }	4	ass	signed to working developing instream flow recommenda-
19 10	5	tic	ons for selected rivers and streams on the reservation.
19	6	Q Mr.	. Vogel, I will show you what has been marked for identi-
1)	7	fic	cation as United States Exhibit WRIR C-279 and ask you
() ()	8	to	identify that, please.
17 13	9	A Th	is is a copy of my resumé.
6	10	Q Doe	es the resumé fairly reflect your academic and profession
13	11	al	qualifications and experience?
	12	A Yes	s, I believe it does.
	13		MR. MEMBRINO: Your Honor, at this time we would move
	14	in	to evidence Exhibit, United States Exhibit WRIR 279 and
	15	of	fer the qualifications of David Vogel as an expert in
	16	Fi	shery Management Biology and move that he be permitted.
	17	to	testify as an expert in this case.
-2	18		THE SPECIAL MASTER: Let me have a few minutes to
	19	re	ead it and then Mr. White may have some voir dire or
	20	Mr	. Radosevich.
	21		MR. WHITE: Joe, what was the offer, Fisheries Man-
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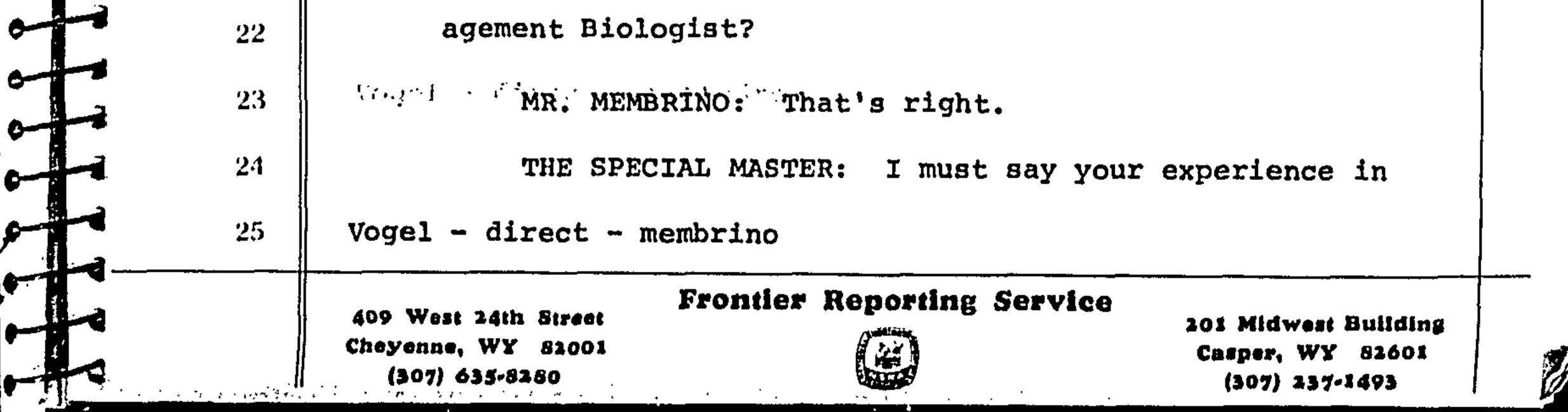
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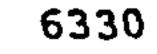
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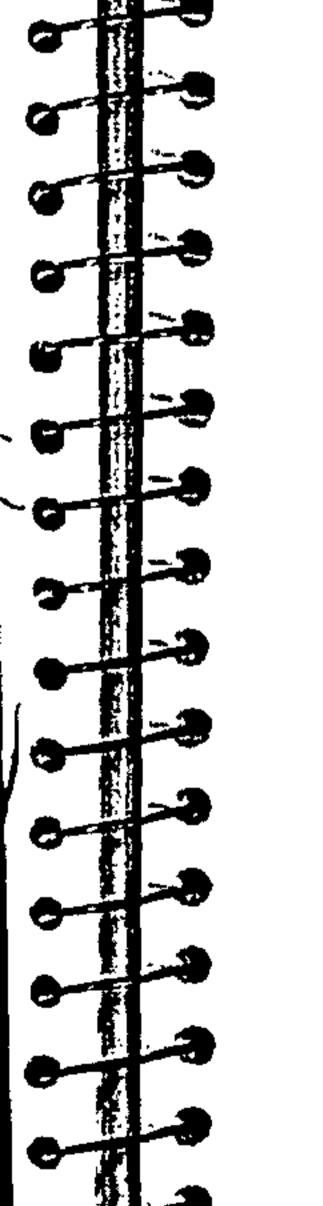
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dissecting on that second cruise in the high seas reminds me of Mr. Darwin's early days on the Beagle. I'm reading his book now in similar type of work. Mr. White, Counsel at your table? MR. WHITE: I believe Mr. Radosevich on behalf of the private parties, Your Honor. MR. RADOSEVICH: Yes, Your Honor. I have just a few questions. <u>VOIR DIRE EXAMINATION</u>



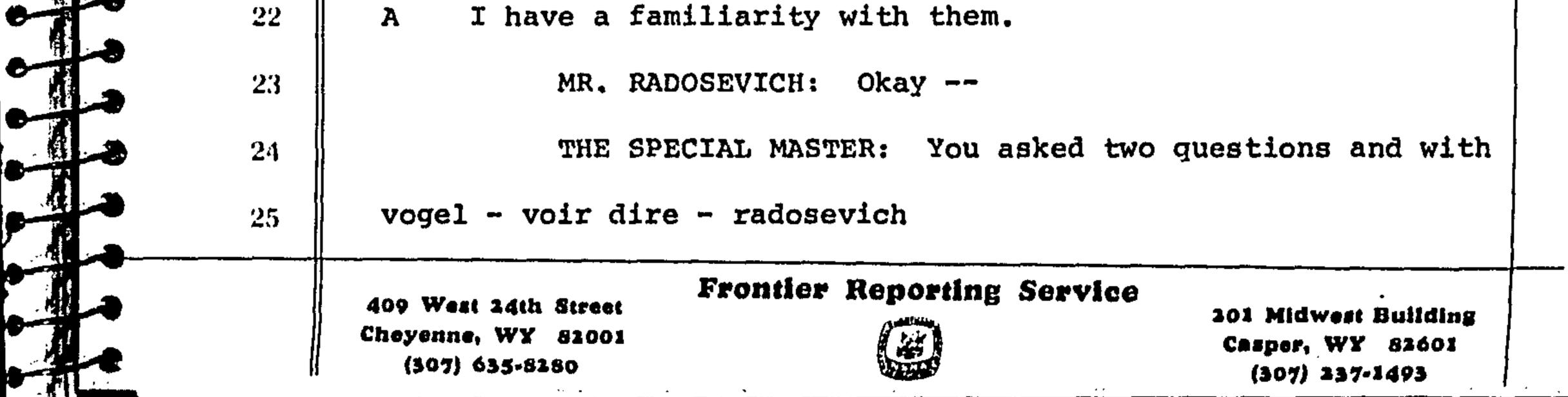
BY MR. RADOSEVICH:

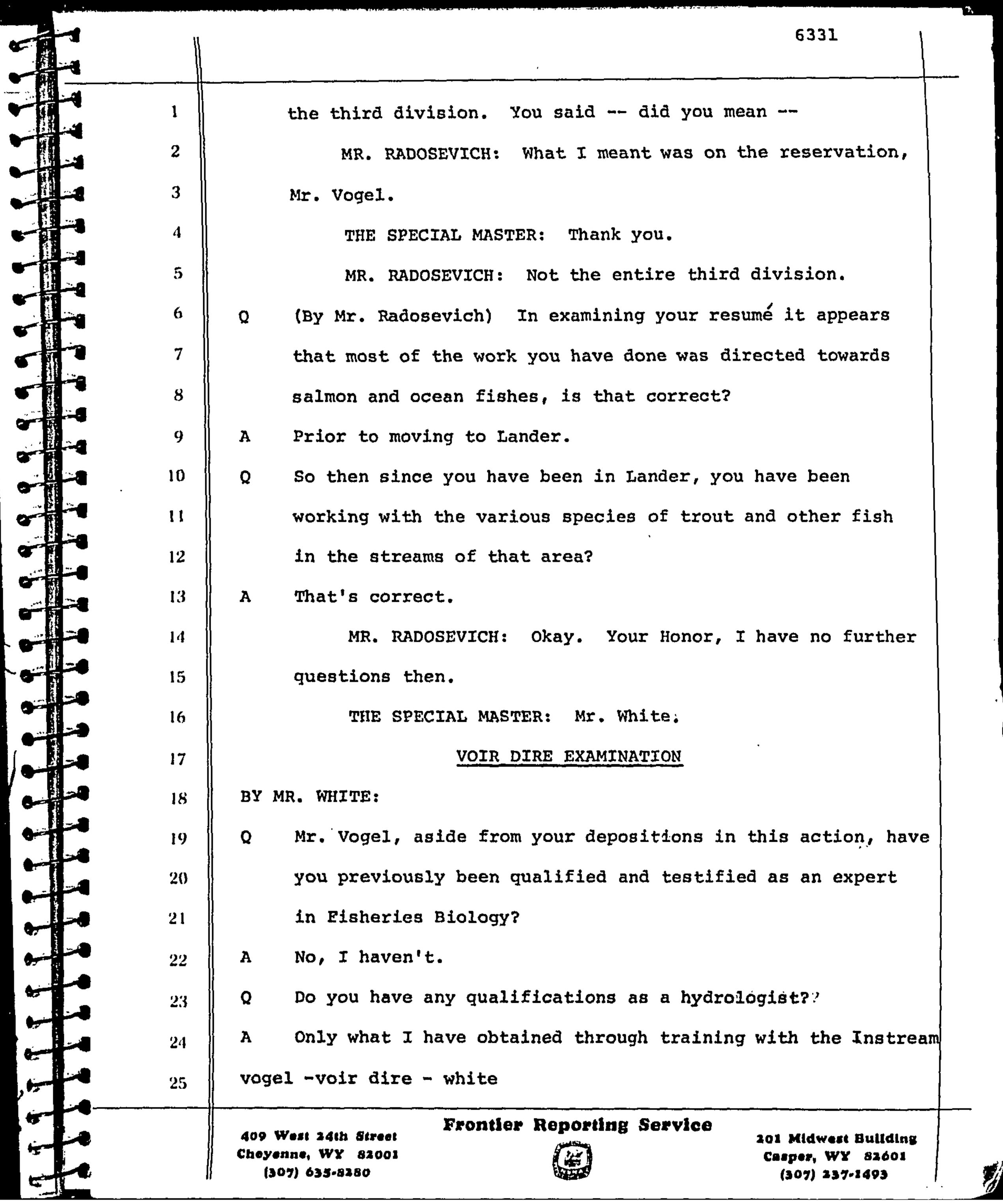
Q Mr. Vogel, you stated you have been employed as a

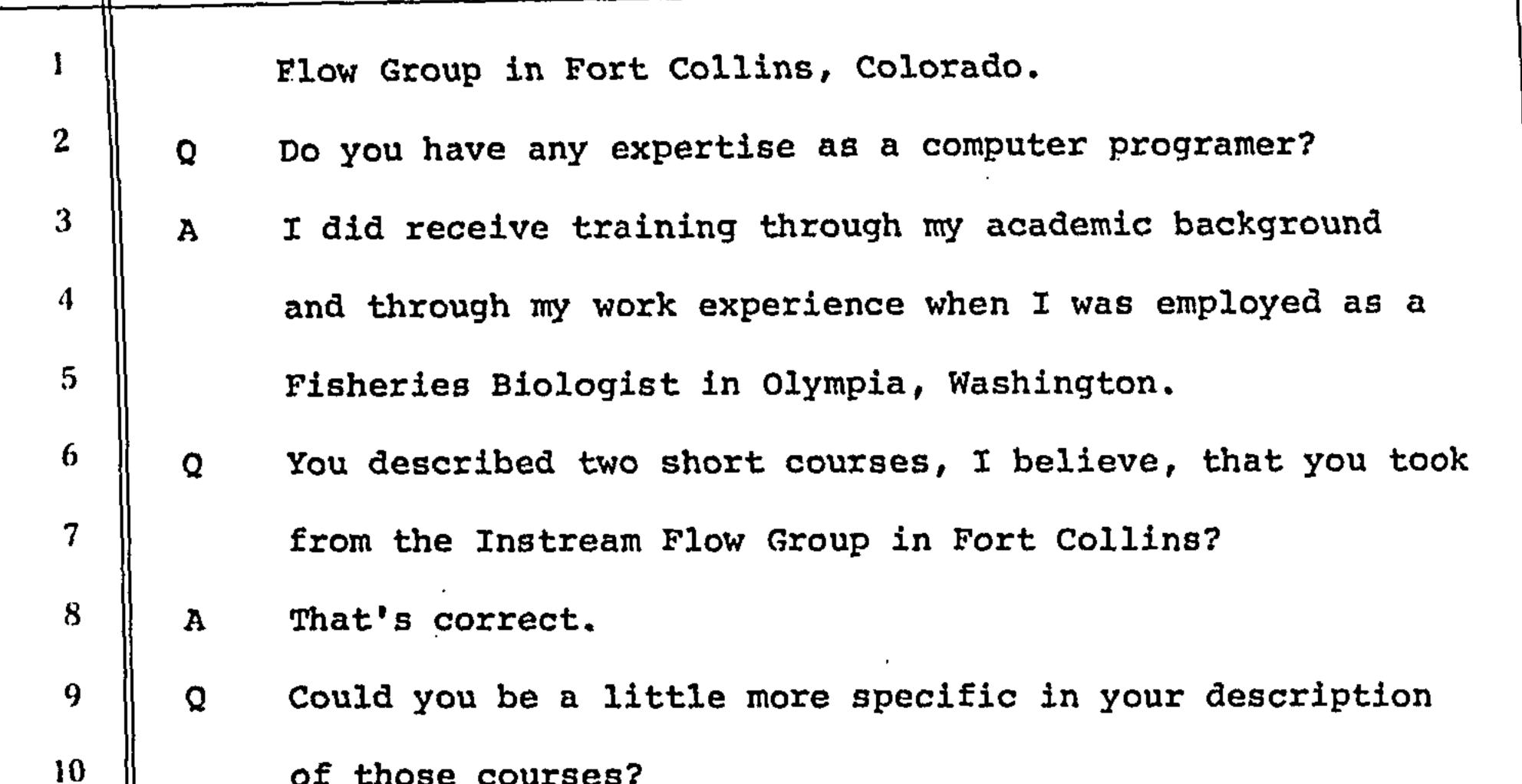
Fisheries Management Biologist in Lander, Wyoming?

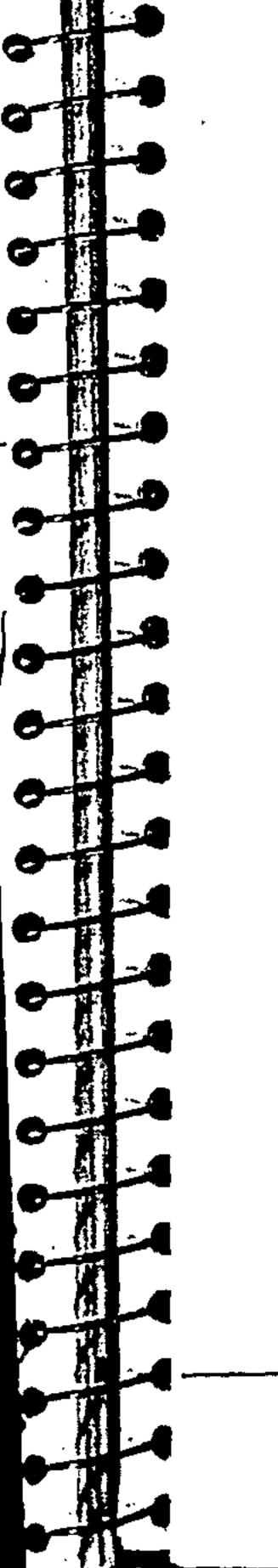
- A That's correct.
- Q Is that since 1979 when you left Washington?
- A Right.
 - Q Okay, then are you intimately familiar with the stream system that runs through the reservation, the drainage
 - system of the third division?
 - A Of the third division? What is that?
 - Q Yes, the streams that run through the reservation, the

Popo Agée, the Wind, the other rivers.









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of those courses?

The first course I took was called a Computer Transfer A Workshop that was designed to teach users how to apply the use of the computer programs developed by the IFG for the particular situation. It told all the basic requirements and how to run the programs. The second course I took was a field techniques class that told exactly how you applied the methodology in the field, how you collect your data. Isn't it true, Mr. Vogel, that prior to your assignment Q

in Lander you never had quantified instream flows for fisheries purposes?

I personally had not. Α

And isn't it true that the only quantification of those Q

flows which you have made are those which is the subject

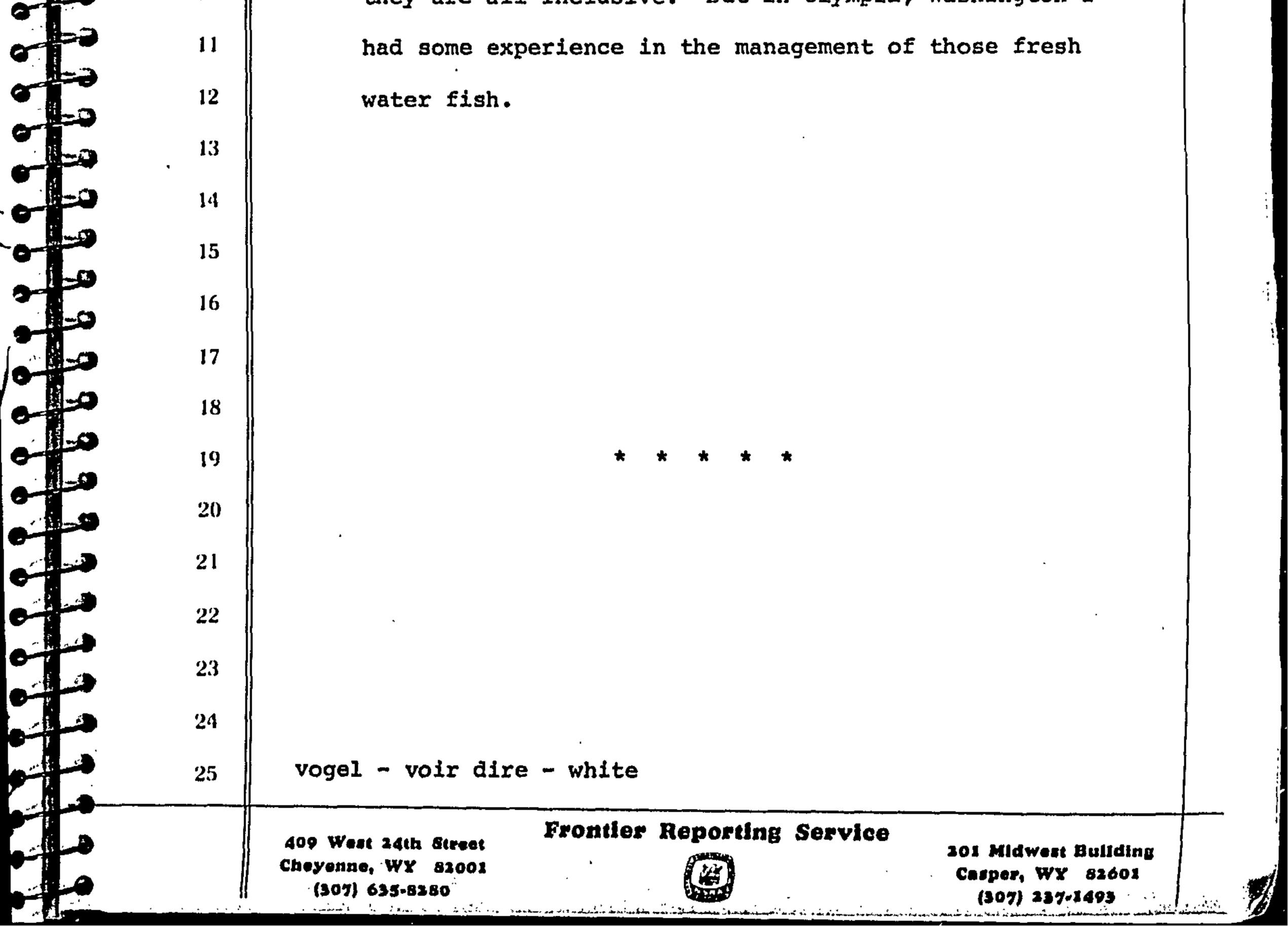
vogel - voir direc- white

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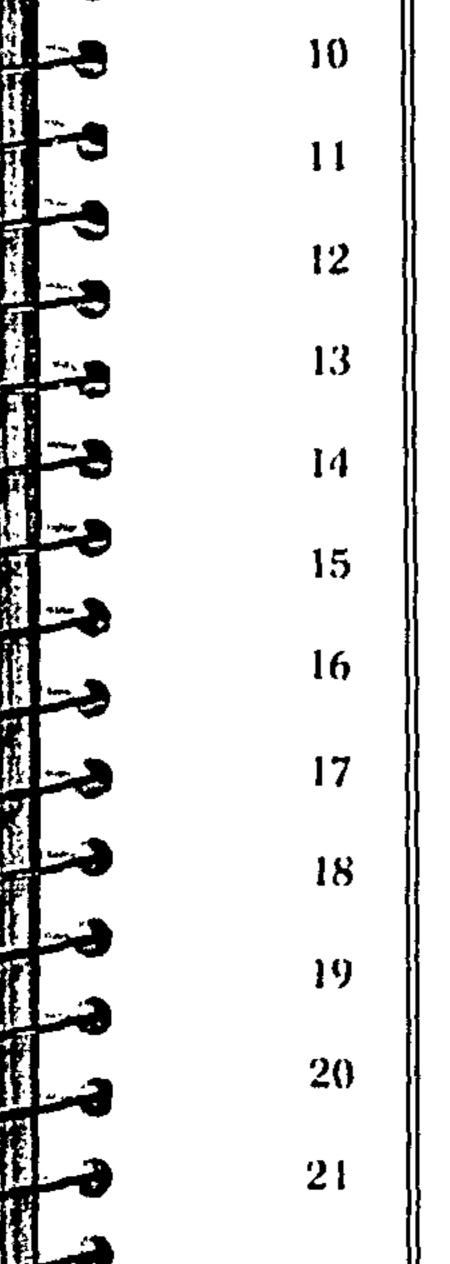


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			matter of this litagation?
	2	A	That's correct.
	3	Q	Aside from your two years in Lander, what experience did
	4		you have with the fish species which exist on the Wind
			You nave wrent die right opeored whiten ewron on one wand
-	5		River Indian Reservation?
-	6	A	I had some experience on a minor scale working in fresh
	7		water or salmonoids when I say salmonoids that is
	Ť Íl		Marer Or sarmonords Anten r sal sarmonords cuar ro
	8		all inclusive of the species dealing with the species;
	9		it deals with salmon; it includes fresh water trout;
	10		they are all inclusive. But in Olympia, Washington I



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MR. WHITE: Your Honor, the State would have no
objection to the acceptance of this witness or this
witness as an expert in the area of fisheries biology. We
would object to his acceptance as an expert in any other
field including that of hydrology or that of computer
programmer or the person applying computer programs; which
he has not developed. Insofar as his observations or his
testimony that come from personal observations and
conclusions reached on those observations as a fisheries

۵۰۰ به ۲۰۹۵ ۲۰۱۵ و ۲۰۰۵ تا و در ۲۵ همنده ا**ب طبقور با مقامه بار آمد با منتخ ارد. او میشر**و دارد که مرد بار در ارد ا



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biologist, we have no objection. Once it goes beyond that
into the area of hydrology and the application of computer
science we will have an objection, and since he was not
offered for those purposes, we reserve that objection until
that time.
MR. MEMBRINO: Your Honor, Mr. Vogel was offered as
an expert in the field of fishery management biology .
As he testified, it included the use of computer work, it
included, of course, biology as well.
THE SPECIAL MASTER: Biology; or did you say hydrology?
MR. MEMBRINO: Biology. We're not offering him as
a hydrologist, but he has, since he's dealing with fish,



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of course, had to apply information received from

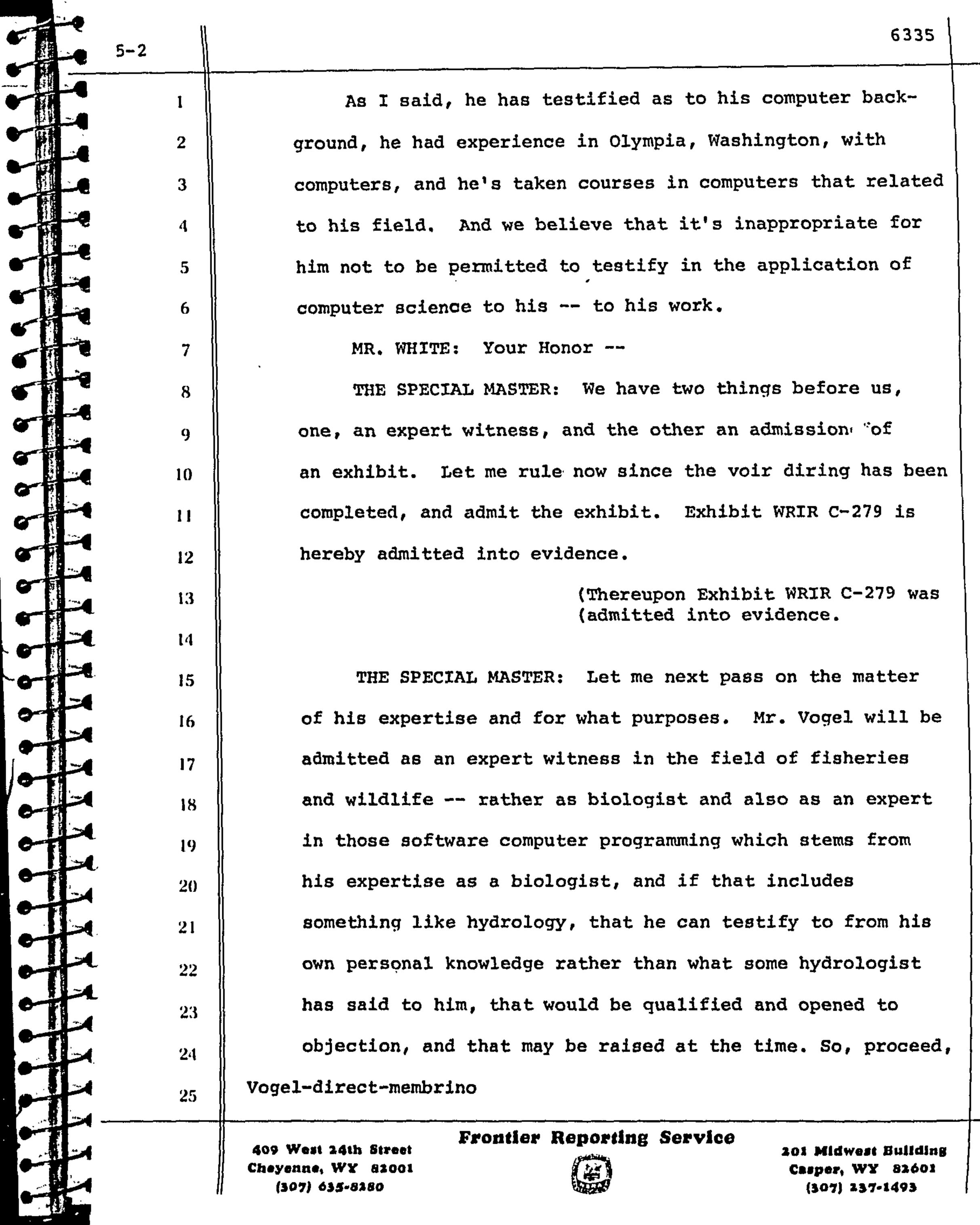
hydrologists, and that's what someone in his field, we

believe, is certainly entitled and required to do.

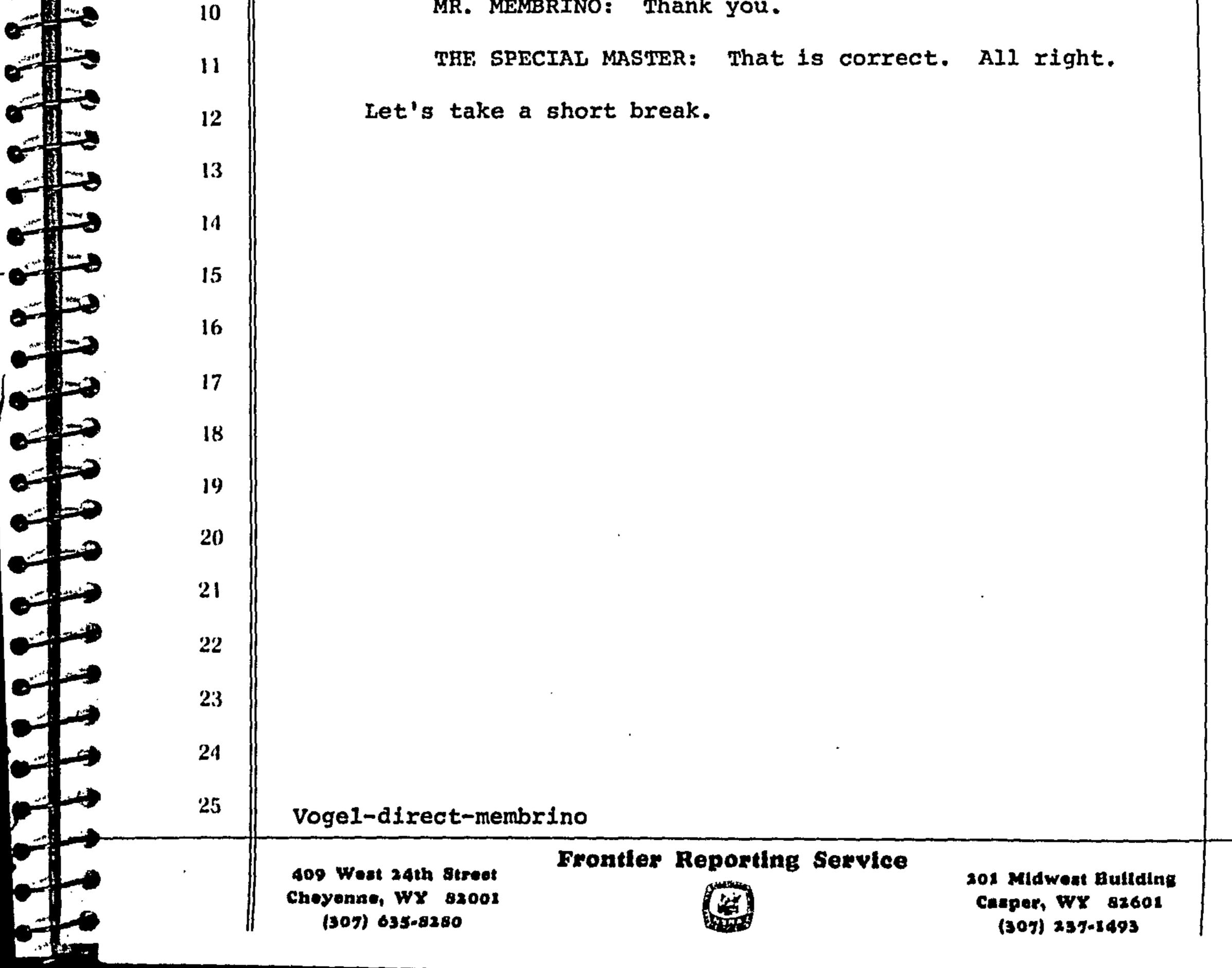
Vogel-direct-membrino

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	1	Mr. Membrino.	
	2	Your Honor	
	3	THE SPECIAL MASTER: We've been at it for almost an	
	4	hour, do you want to take a ten-minute break?	
	5	MR. MEMBRINO: Just one point before we do break,	
	6	Your Honor.	
	7	Does your ruling encompass Mr. Vogel as an expert in	
	8	fishery management biology?	
	9	THE SPECIAL MASTER: That is correct.	
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MR. MEMBRINO: Thank you.

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6-1	L-1 ∥	6337
; ;	1	THE SPECIAL MASTER: Shall we come to order, please.
) -	2	(By Mr. Membrino) Mr. Vogel, you testified that you have
	3	been assigned to assist the United States in the preparation
)	4	of its claims in this case. Would you tell the Court what
) }	5	your assignment was?
•	6	It was basically to develop instream flow recommendations for
	7	fish resources in selected rivers and streams on the Wind
	8	River Indian Reservation.
)	9	Did you prepare a report reflecting your findings and
	10	conclusions?

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or under your direct supervision?

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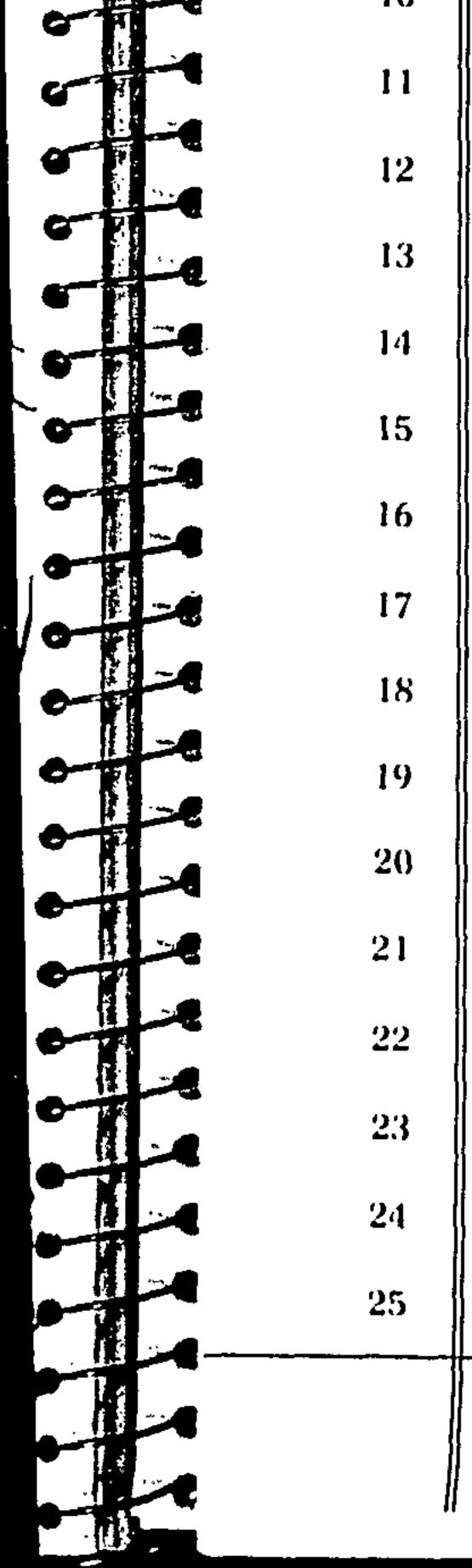
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10		CONCLUSIONSI
11	A.	Yes, I did.
12	Q.	I show you what has been marked for identification as
13		United States Exhibit WRIR-C-280 and ask you to identify
14		that, please.
15	Λ.	This is a report summarizing the findings of my instream
16		flow study on the reservation.
17	Q	Was this prepared by you or under your direct supervision
18	A.	Yes. Yes, it was.
19	Q	Do you know whether the development of instream flow
20		recommendations is considered to be within the expertise
21		of fisheries biologists?
	F	

-#	409 West 24th Street Frontier Reporting Service	ing
	vogel - direct - membrino	
	the services of the Cooperative Instream Flow Service Gro	up?
	Q In preparing your recommendations, did you make any use c	of
	A. Yes, it certainly is.	

6-2	6338
1	A. Yes, I did.
2	MR. WHITE: Your Honor, at this time I would interpose
3	an objection to the line of questioning. There is absolutely
- 2 4	no evidence before the Court that instream flows facilitate
5	or keep from being defeated or in otherwise, in any other
- 6	way, complies with the intent of Congress in establishing
7	this particular reservation. We know that the United
8	States, as part of the record of this case and previous
<u>م</u> ند منابع	litigation shortly after the turn of the century, or around
<u>10</u>	1912, as I recall, took the position that the purposes of



the reservation were for irrigation and stock water, and those were the purposes that went with any asserted reserved right. Now we find evidence going beyond those areas, going to an area of instream flows. And there has been absolutely no showing that instream flows constitute one of the purposes for which water may have been reserved for the benefit of the Wind River Indian Reservation. And as a result, we would object to the continuation of this questioning for the lack of foundation and would move to strike that testimony concerning instream flows which has already gone into the record similarly on the basis of

lack of foundation, i. e., no evidence that Congress

intended to reserve water for the purposes of instream flows,

THE SPECIAL MASTER: The Motion to Strike will be

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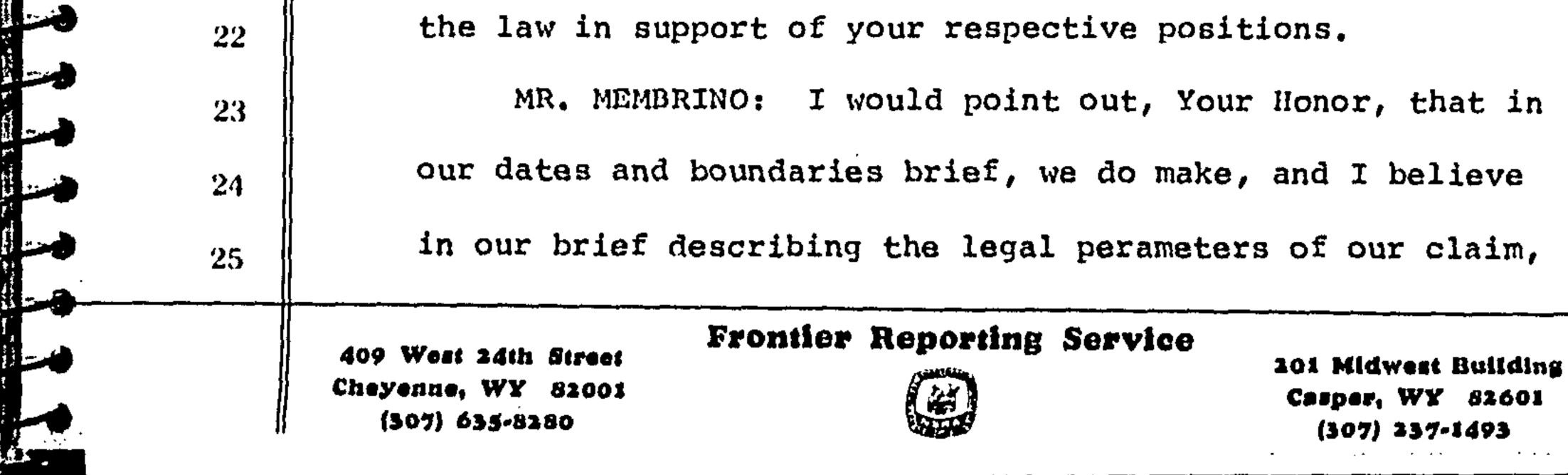
	6-3	6 _, 33
-4	1	taken under advisement. On the evidence that is already
	2	in the record regarding instream flows, the Motion to
	3	terminate the evidence of this witness on the same basis
	4	shall be taken under advisement, also pending the evidence
	5	that may be in this case upon its conclusion regarding the
	6	purposes for which the reserved doctrine was intended by
	7	Congress.
	8	MR. MEMBRINO: Thank you, Your Honor.
	9	I think it is important to note that there has been
	10	evidence submitted in the case about the creation of a

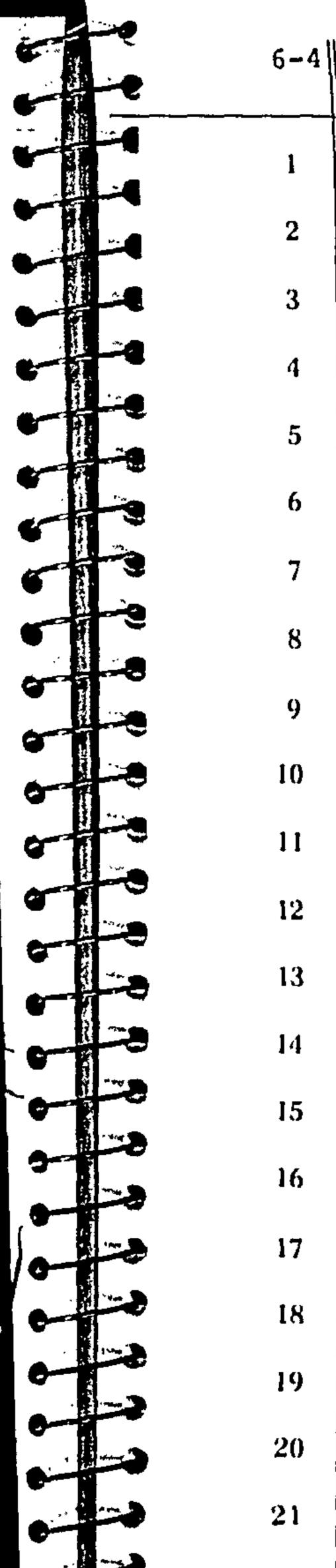
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n of a reservation, and there is evidence, documentary evidence in the record of Chief Washakie's concern in his selection of the reservation and specifically, as I recall, he mentioned fishing, hunting and particularly remarked about the waters of the Wind River Valley that are so important to him in that regard. THE SPECIAL MASTER: I might say now, gentlemen, I would welcome, in fact, I could probably call for modest briefs on the question of the reservation doctrine applying to instream flows for fisheries. And you may not so much cite that as you can the evidence already in the record and

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we cite authority, court and judicial precedent for the proposition that instream flows are within the reserved rights doctrine. MR. WHITE: Your Honor, we appreciate the opportunity to submit a brief, and we will do so, perhaps at the end of this week or early next week.

THE SPECIAL MASTER: Well, submit it at the same time, gentlemen. If you need more time than that, please let me know.

MR. WHITE: Why don't we fix Monday then as the date?

MR. MEMBRINO: We'll need a little more time.

THE SPECIAL MASTER: We're not working next week in

the case. We're working, but not in the case. Why don't

we make it two weeks from now?

MR. WHITE: That's fine, Your Honor.

THE SPECIAL MASTER: And I appreciate that there is

some material in those briefs. You might cite me to those --

I don't mean to impose duplicate or redundant duties on

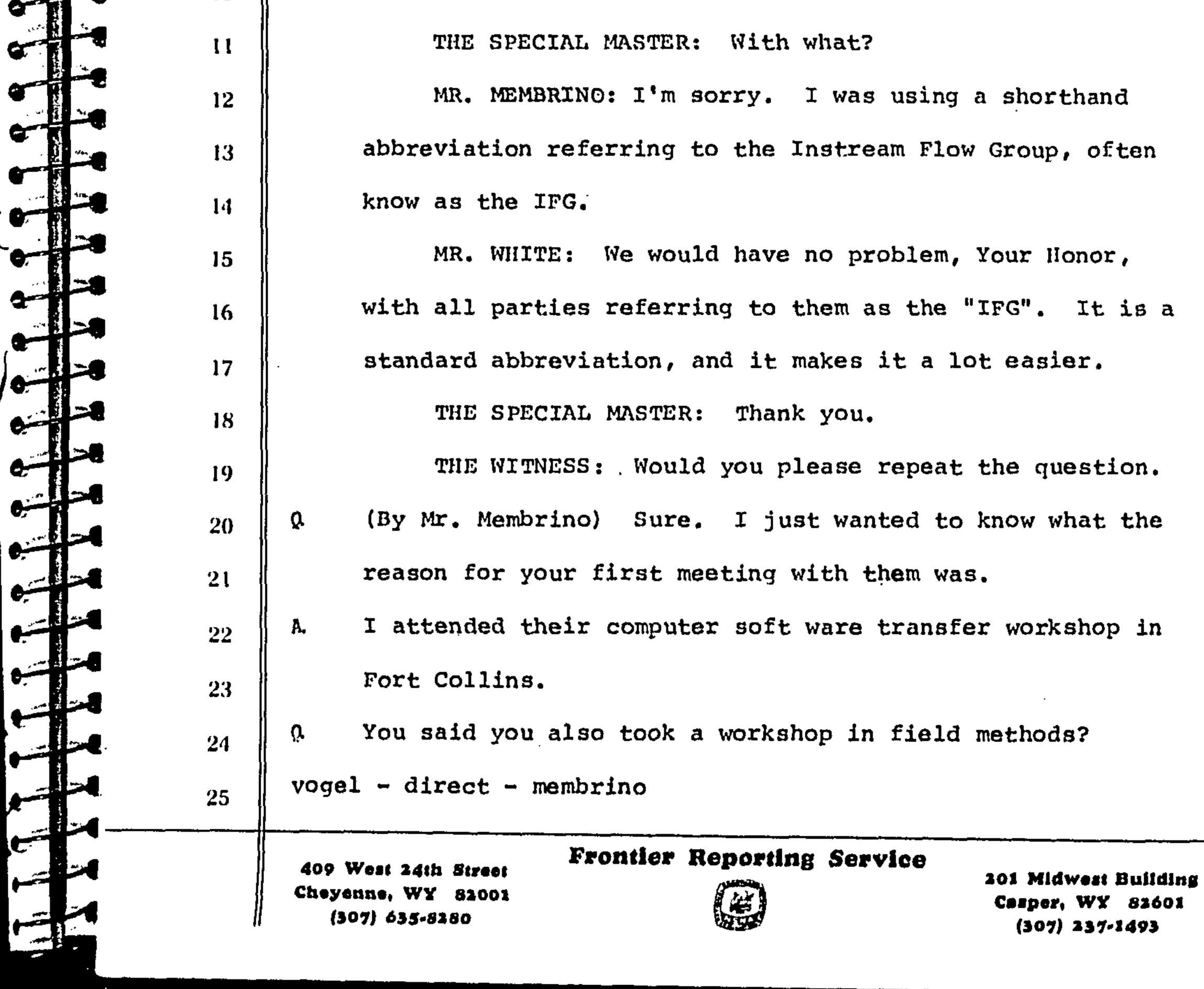
you, so cite the other materials in the briefs that we now have.

MR. MEMBRINO: Thank you, Your Honor.

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25	vogel - direct - membrino
24	A As I said earlier, they are an agency off-shoot of the U.S.
23	what you know of the Cooperative Instream Flow Group?
22	0. (By Mr. Membrino) Would you, Mr. Vogel, describe briefly

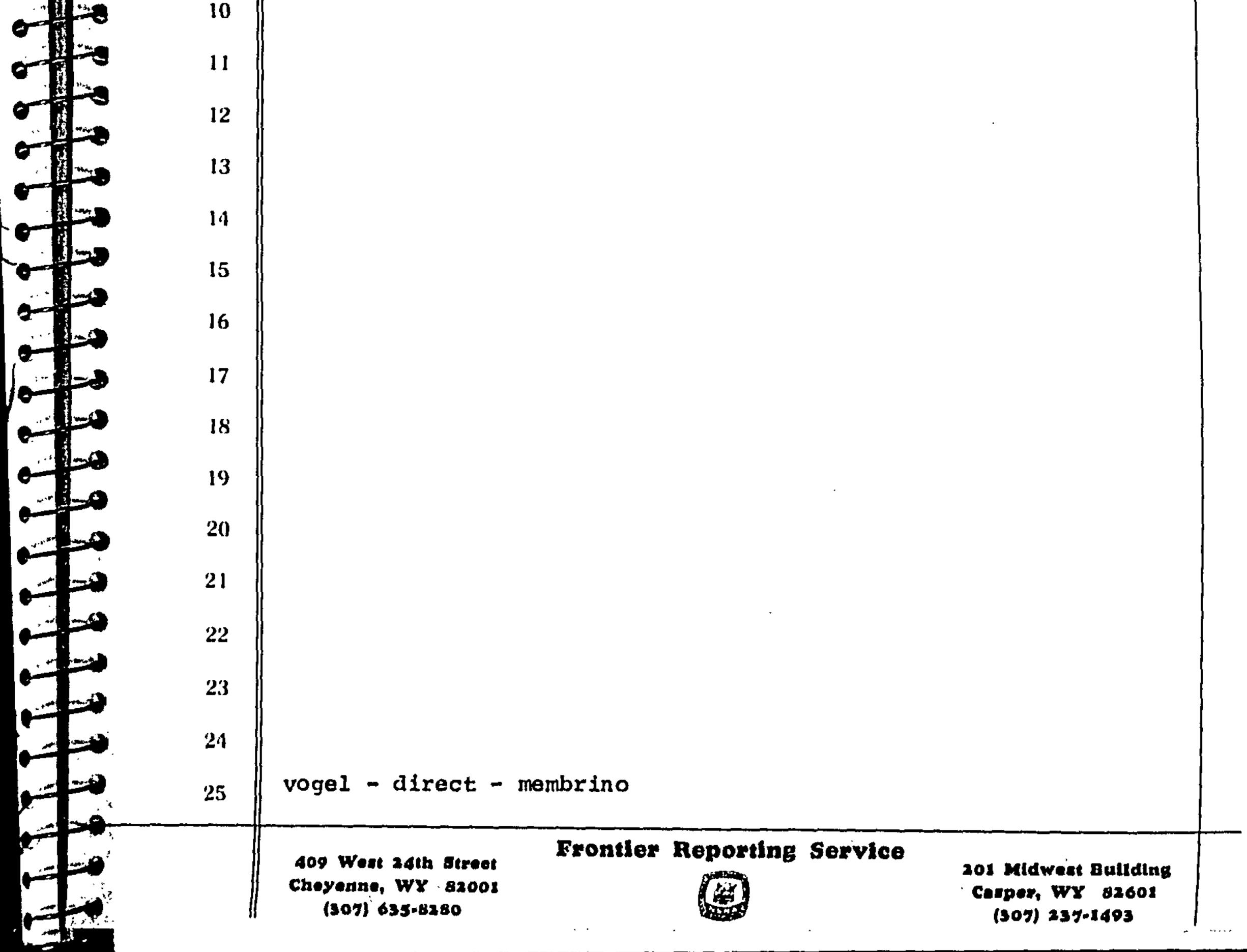
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6-5	6341
1	Fish and Wildlife Service. As I understand it, they were
2	formed around 1976, whose main purpose was to improve the
 3	state of the art methodology in determining instream flows.
 4	Q. Have you worked with that group?
5	A. Yes, I have.
6	Q Approximately how long have you associated with them?
7	A. My first exposure was in March of 1979, and I've had contact
 8	with them ever since then.
9	Q What was the reason for that first meeting with the IFG?
10	A. The first



			many particular to the second s
	6-6		6342
	1	A That's correct.	
	2	Q. Having taken those two courses, did you become -	have you
	3	become aware of other methods for calculating in	istream flow
	4	requirements?	
	5	A. Yes, I have.	
-9	6	Q Could you describe some of them briefly?	
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	9	* * * *	
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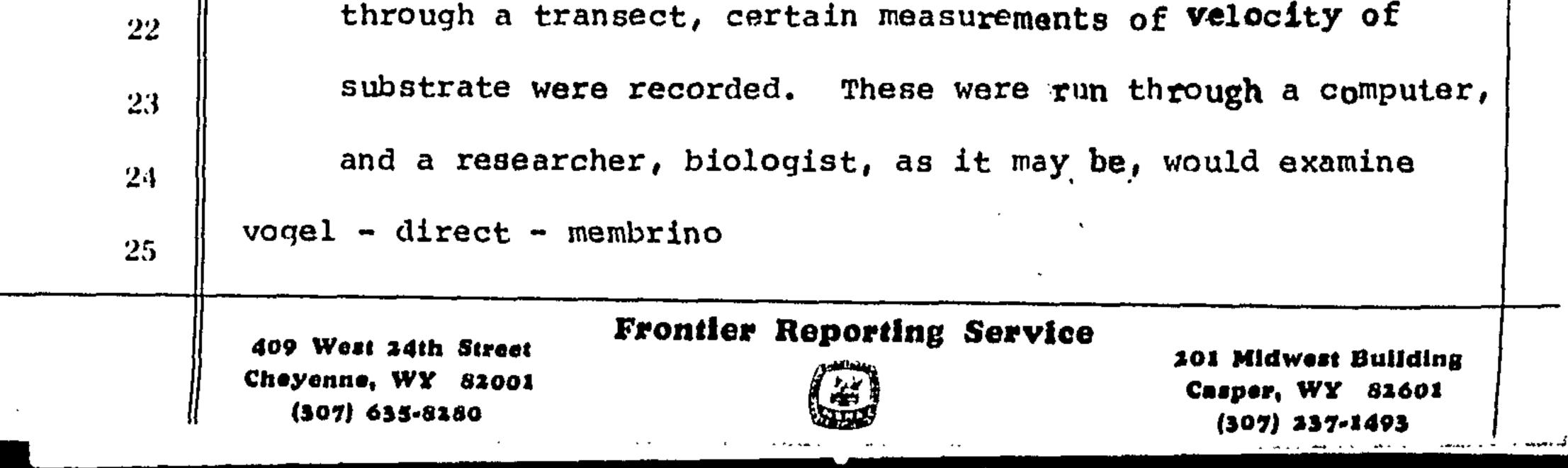
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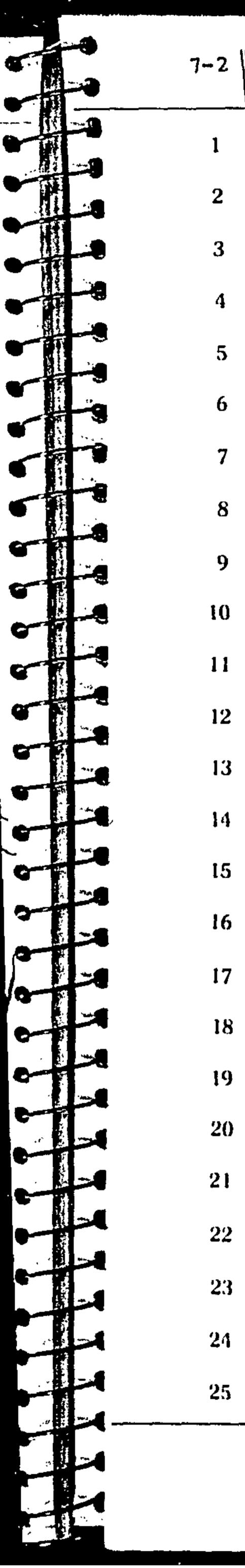


7-1 MR-1	6343
1	Q (By Mr. Membrino) Could you describe the method for us.
2	A. There is actually numerous methods. To determine an instream
3	flow method today, the variety is quite diverse. One of the
4	more simplistic methods is to take the mean annual flow in
5	a stream, and simply take a certain percentage of that mean
6	annual flow. That was developed by Don Tennant from the U.S.
7	Fish and Wildlife Service, who is currently employed with
8	the Fish and Wildlife in Billings, Montana. He studied
9	many streams throughout the western states and came up with
10	final recommendations as far as what the proper percentage

of instream flow should be according to what the base is on an annual basis. For example, sixty to a hundred percent of mean annual flow, he determined to be optimum conditions for fish habitat. A percentage of thirty percent was considered to be adaquate or good conditions. A flow of ten percent was supposed to be a bare minimum, absolute **low** flow for fishery resources.

There's other methods that deal with computers, the application of computer programs. One of the more common older versions was the use of a transect through a riffle of a stream. There was certain cross sections to be made





the computer output and try to determine what the optimum

level of flow to inundate a certain portion of habitat --

excuse me, a certain portion of substrate. When I say

"substrate", by that I mean the streambed material. And he

would make his recommendations upon that.

There is other methods that deal with instream flow,

but they don't necessarily quantify an exact amount. They're

more or less quantifying what might be present at a given

flow if you had gone out and examined and measured. An

example of this would be the HQI Method developed by

Alan Binns of the Wyoming Game and Fish Department. In this

method, I'm not too familiar with it, but I know it basically

involves going out and measuring a multitude of physical and

biological perameters and doing a correlation with that,

with a standing crop of fish in the stream.

There is other methods such as the one that's used in

Billings, Montana, Ecological Services Division, where they

use the water surface profile. That program, as I understand,

was originally developed for the use below dams, I think it

was developed by the U. S. Bureau of Reclamation. It's simply

a taking of measurements at one flow, one specific discharge

at multiple transects, and then they go in and look at the

output from each transect at various extrapolated or inter-

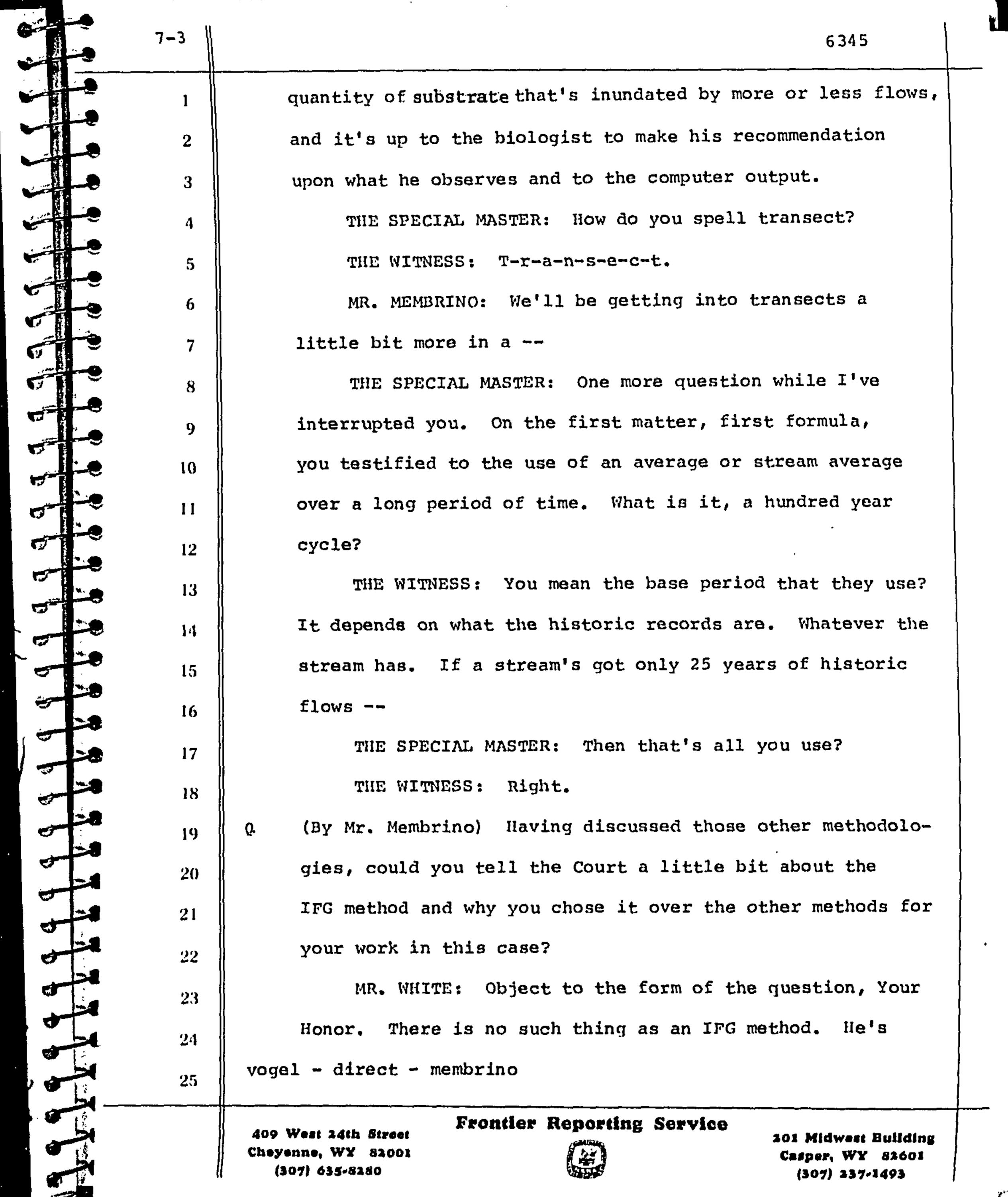
polated flows, and a biologist makes a judgment on the

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6346 referring to an incremental method, and that would be appropriate, but there are several methods that could be called "IFG". THE SPECIAL MASTER: Do you want to clarify it? (By Mr. Membrino) Sure. Would you describe the incremental method and identify why you chose it. Yes. I believe that the IFG incremental methodology has advantages over the previous methods I mentioned, in that

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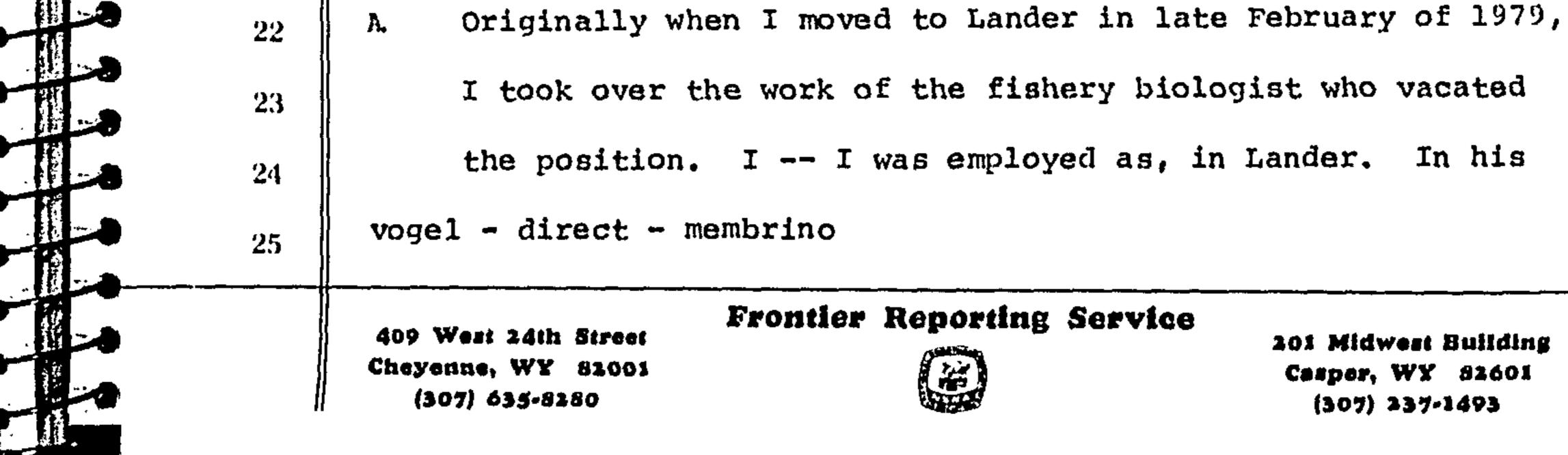
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it quantifies fish habitat. It gives the biologist an

indication of what an incremental increase or decrease of

10 (1	indication of what an incremental increase of decrease of
11		flow would have on a it would have on a fish habitat.
12,		In other words, you can actually determine that a certain
13		percentage of increase of flow might have a certain per-
14		centage of increase in fish habitat; likewise, for a decrease.
15	Q	Does the method tell you how much fish will be there?
16	Λ.	No, it doesn't. It's not intended to be an eco-system
17		model or to model biomath. It's simply intended to model
18		fish habitat.
19	Q	Did you consult with anyone about selecting this method?
20	A.	Yes, I did.
21	Q	Would you tell us who those persons were.



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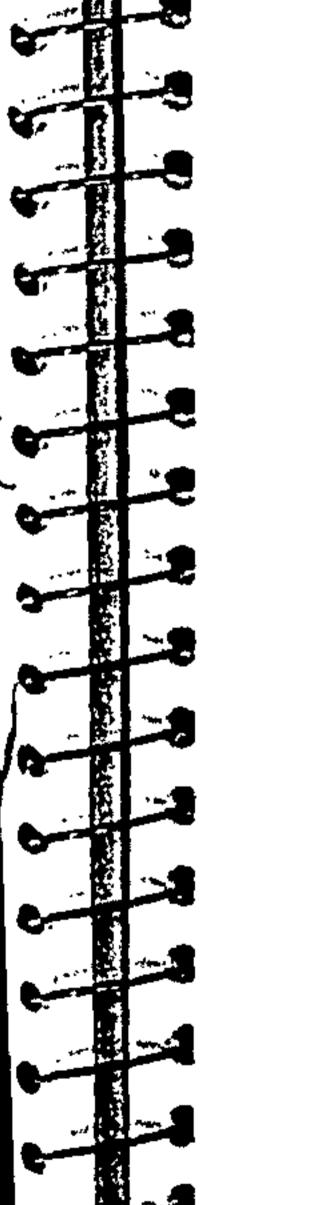
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opinion, he thought IFG incremental methodology was the state of the art for determining stream flows for fisheries. I picked up in his footsteps, and I talked with various people. I talked with my boss. He's the Project Leader of Lander Fish and Wildlife Office, and his name is Dick Baldes. In his opinion, he thought it was the state of the art and the best thing to use in this water rights adjudication. I contacted the staff of the Instream Flow Group in Fort Collins, and they basically gave me their opinions about

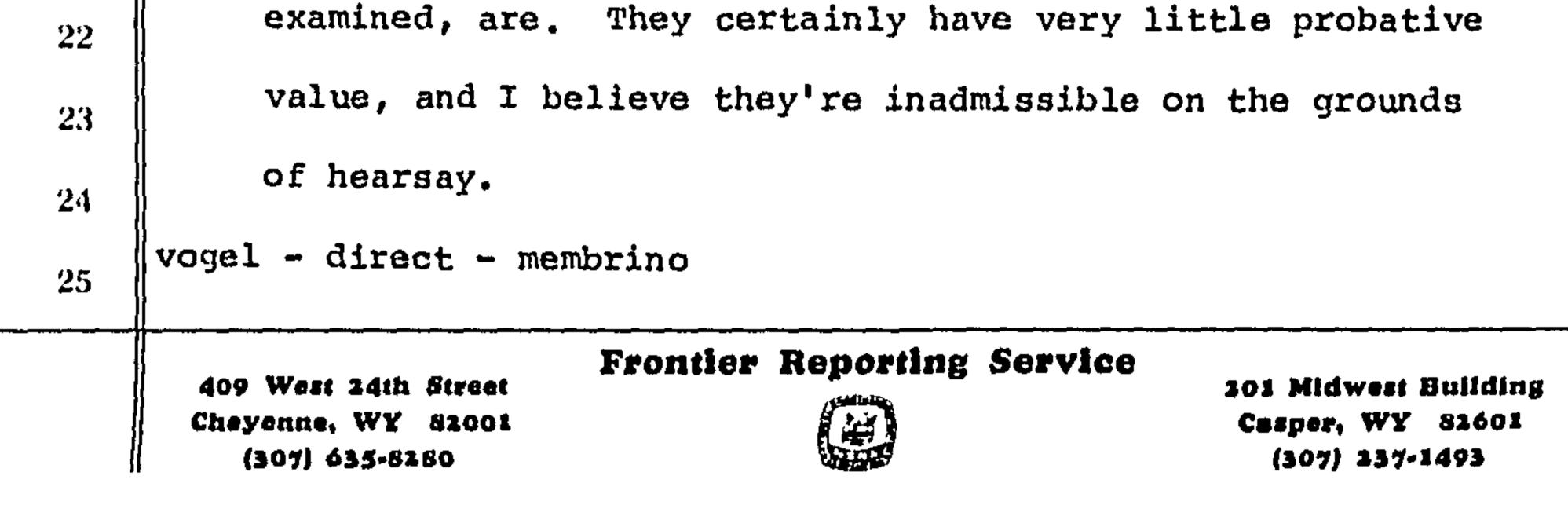
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the various methodologies and why this one would be appropriate to use in this adjudication.

I also was familiar with the work of Phil Wampler, a Fishery Biologist, who I worked with out at Olympia, Washington, who was using the IFG incremental methodology for establishing instream flows on the Siskomish River in western Washington, and in his opinion, he believed that it was the best methodology to date for establishing instream flows for fisheries.

MR. WHITE: Your Honor, I move to strike the last answer, based on hearsay. I'm not sure what probative value other people's opinion, who are not here to be cross-



THE SPECIAL MASTER: Well, we'll admit them for

whatever probative value they have, although I'd like the

name of the witness that he talked with, gave his title,

of your predecessor. What is his name?

THE WITNESS: His name is Rich Reisenbichler.

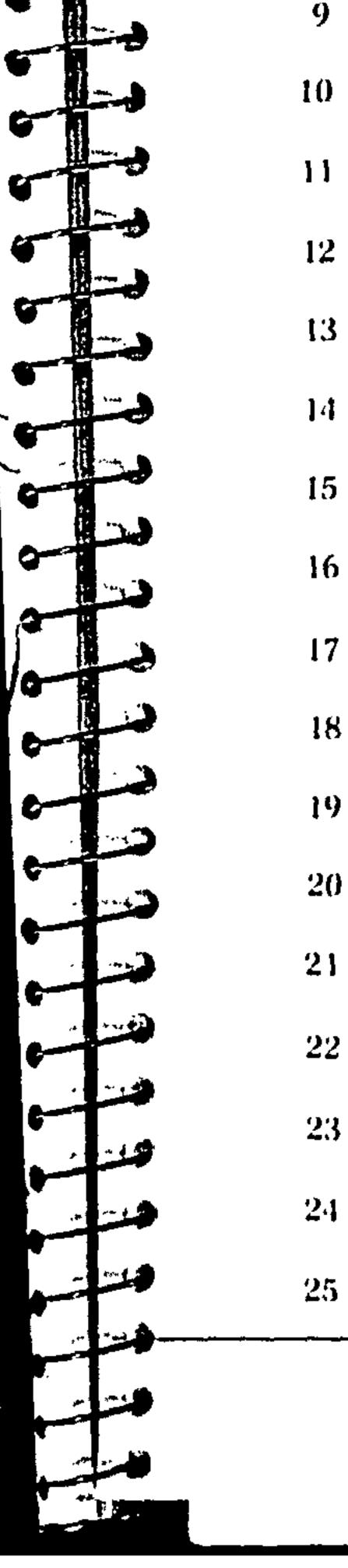
THE SPECIAL MASTER: R-e-i-s-e-n- --

THE WITNESS: -- b-i-c-h-l-e-r.

MR. MEMBRINO: Your Honor, we're showing through

this questioning that some extensive research was done in

determining just what the best approach would be to go



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about determining instream flows.

MR. WHITE: Well, then I'll ---

MR. MEMBRINO: I think it's evidence of his diligence that this evidence presents.

MR. WHITE: I will add another ground for my objection then, or my Motion to Strike, Your Honor, because there's no evidence that the witness sought to obtain information or opinions, if those are proper, from persons outside the Instream Group or the U.S. Fish and Wildlife Service. All the persons he's named are employees of the Fish and Wildlife Service. And this happens to be their favorite method.

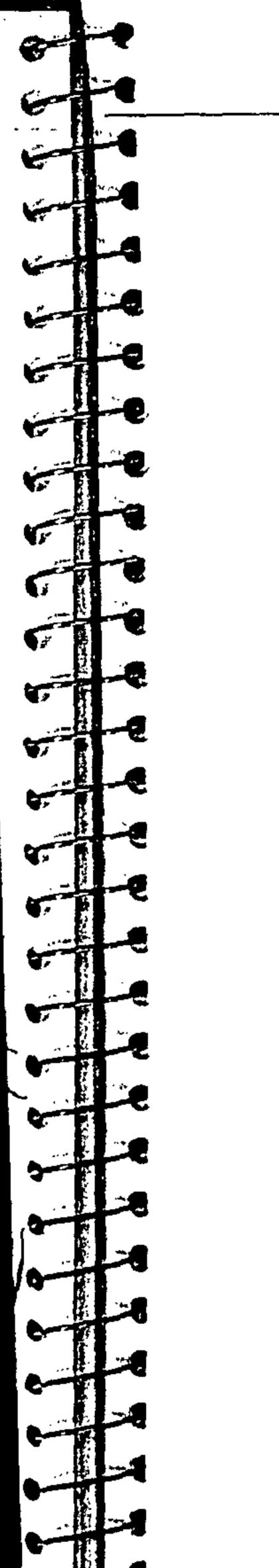
Persons outside the Fish and Wildlife Service may or may not

agree with that, and if we're trying to show general accep-

tance in the community, they community is much larger than

the Fish and Wildlife Service, so I would move to strike on

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the grounds that if the purpose of the questioning is as stated by Mr. Membrino, the answer is unresponsive and incomplete.

MR. MEMBRINO: Your Honor, --

THE SPECIAL MASTER: Proceed with your questioning. I

know that if there's a void or shortcoming in having picked

this IFG incremental system, it would be brought out on

cross-examination.

MR. MEMBRINO: That's right, Your Honor. It goes to the credibility not whether it should be stricken.

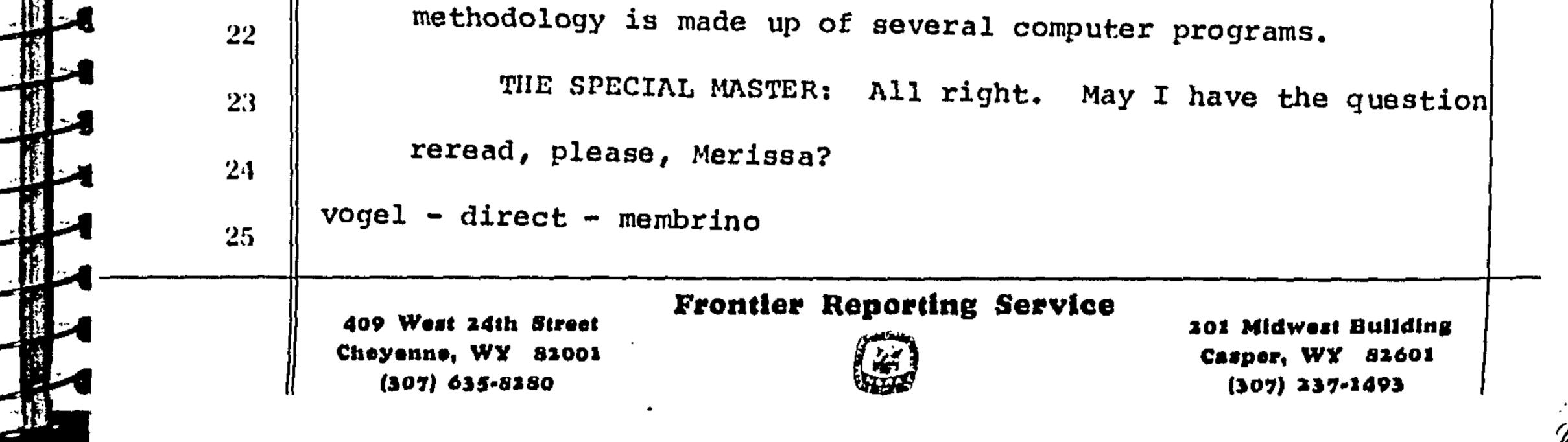
THE SPECIAL MASTER: Go ahead.

(By Mr. Membrino) Since you began your work with the incremental method, have there been any changes or additions to the program that you are familiar with? Yes. MR. WHITE: Objection. What program of the incremental method is he talking about? Incremental method has

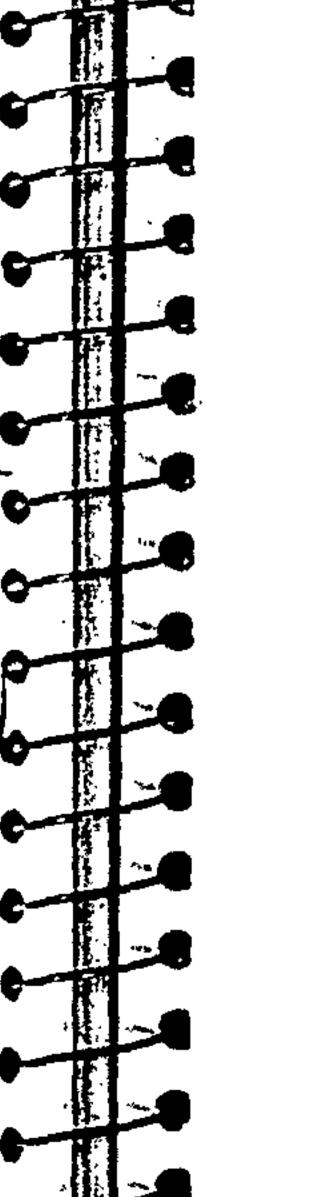
at least five programs that I'm aware of, and I think --

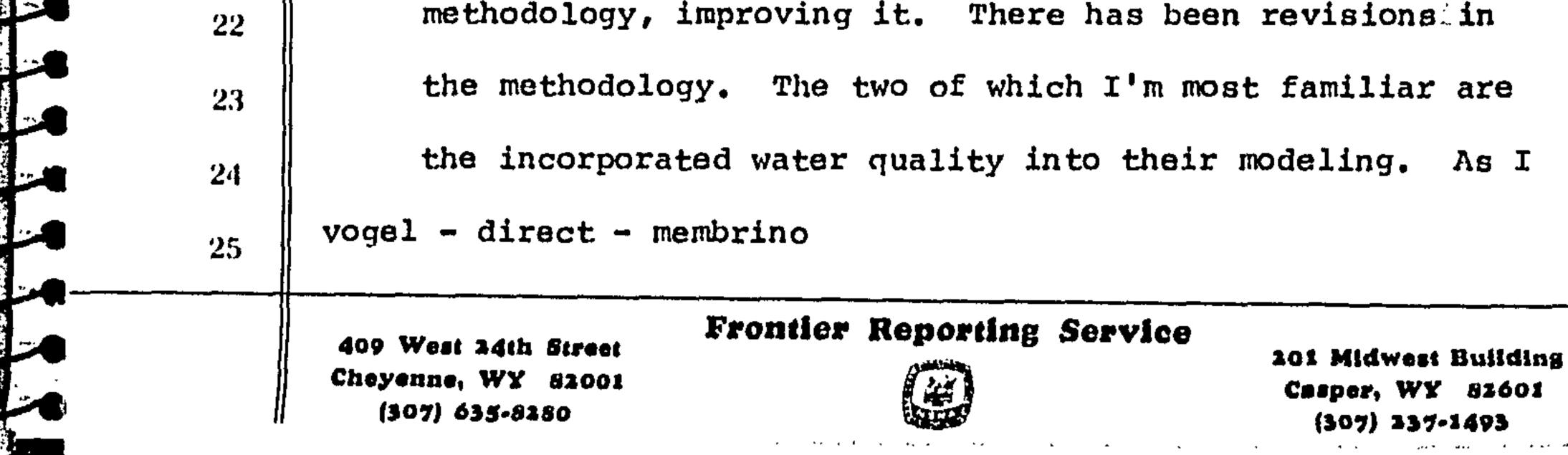
MR. MEMBRINO: I will stick with the incremental methodology, Your Honor.

MR. WHITE: I object to that. The incremental



6350 (Thereupon, the following question) (was read back as follows: "Q (Since you began your work with 2 (the incremental method, have (there been any changes or addi-3 (tions to the program that you are (familiar with? 4 MR. WHITE: Your Honor, I'd like to state that I can 5 think of the following, off the top of my head, IFG-2, 6 IFG-4, Habtat, P. F. Simm. I think there are several --7 MR. MEMBRINO: Not to have a continuing --8 THE SPECIAL MASTER: Let him finish. 9 MR. WHITE: There's several different programs. A11 10 I'm asking is for Mr. Membrino to ask the witness about 11 a specific program. There is no general program for the 12 incremental methodology. There's several specific programs, 13 some are used, and some are not at the same time. 14 THE SPECIAL MASTER: I think the witness can answer the 15 question, and I think the question's an appropriate one, 16 and I overrule the objection. Do you remember the question? 17 THE WITNESS: Yes. 18 THE SPECIAL MASTER: Proceed with an answer. 19 THE WITNESS: The IFG Incremental Method is an 20 evolving methodology. They're constantly updating the $\mathbf{21}$





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Q.

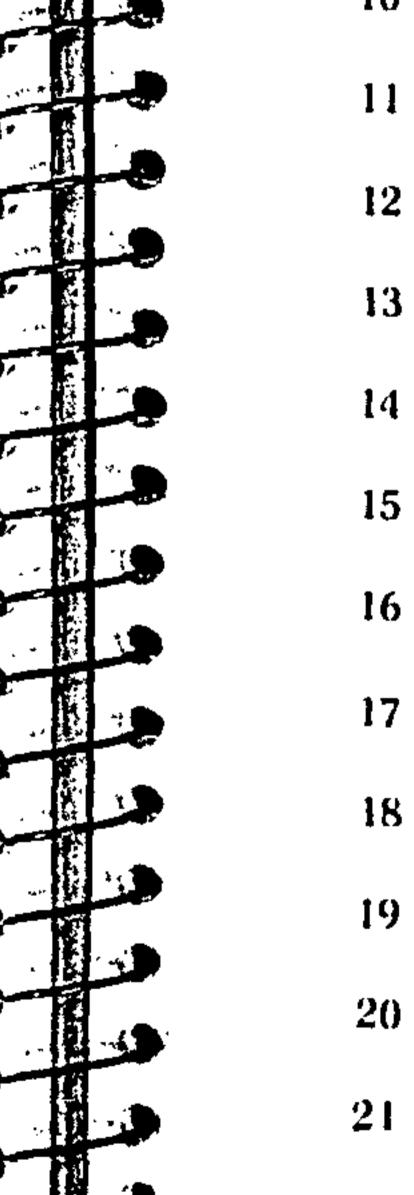
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understand it, they're also incorporating cover as a variable. By "cover", I mean material within it, actually within the stream that would serve as cover for protection for fish or material over the banks of a stream such as brush that may serve as a protection for fish. At the time I did my study, these variables had not been a portion of the methodology, but they are being developed now. I believe they're operational. (By Mr. Membrino) Have you attempted --

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THE SPECIAL MASTER: At the time you did the work



that went into C-280, their work had not been completed,

is that what you just said?

THE WITNESS: That's right.

THE SPECIAL MASTER: Go ahead.

(By Mr. Membrino) Have you made any evaluation of what

effect those additions might have had on your conclusions?

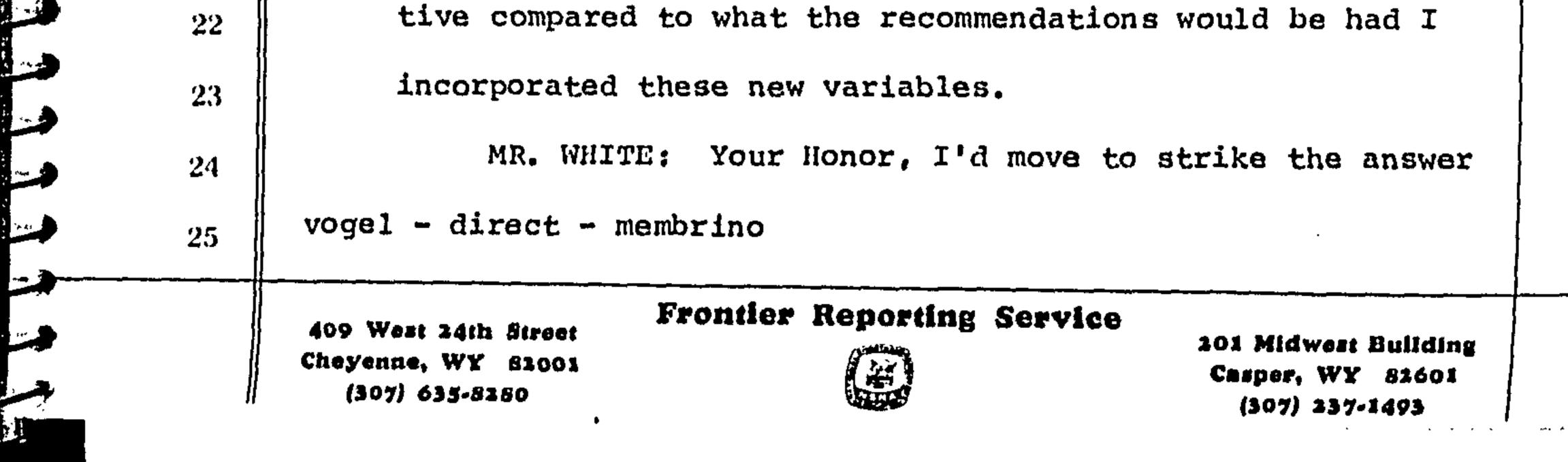
Yes. Generally, I believe if we had incorporated these

variables into the methodology back in 1979, 1980, we

probably would have ended up with higher flow recommendations

which I have presented in the report. I basically believe

that the figures that I have in my report would be conserva-



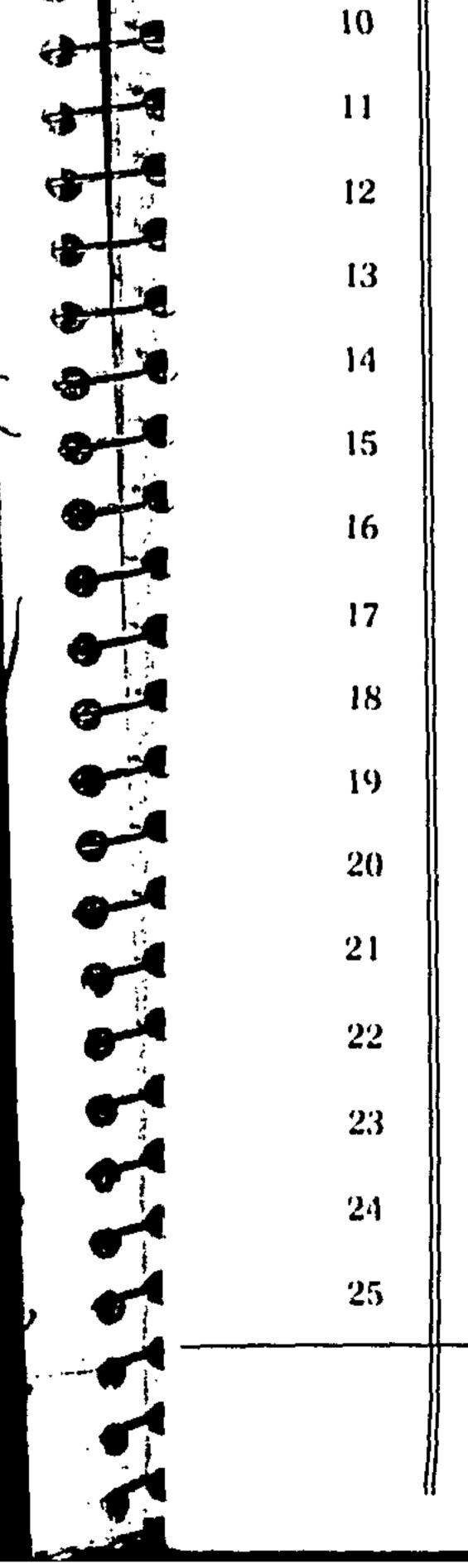
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on the basis of foundation. How does he know these things, how did he derive these beliefs? Has he actually run these new variables as part of the program and data which he used to come up with greater stream flows? I'd move to strike for lack of foundation; there is absolutely no foundation. THE SPECIAL MASTER: That may be a good --

MR. MEMBRINO: Your Honor, --

THE SPECIAL MASTER: Just a minute. I may not sustain

the Motion to Strike, but I see in it the basis for a little



more evidence to show what the scientific data on which conclusions he's made that more water is required if you're going to have brush along the side for cover or something that facilitates a better wildlife or fish habitat? In what way does that require more water? Isn't there an argument that it could require less water if it holds the water longer in the stream? Some more evidence is required. MR. MEMBRINO: I think the witness would like to address himself to that, Your Nonor. THE SPECIAL MASTER: Okay.

THE WITNESS: It's my belief that most of these

recommendations we have, I have made for the reservation,

are at a point, I'm familiar enough with the streams, I've

been out to the sites numerous times. For cover to be a

good variable, for it to be effectively used by the fish

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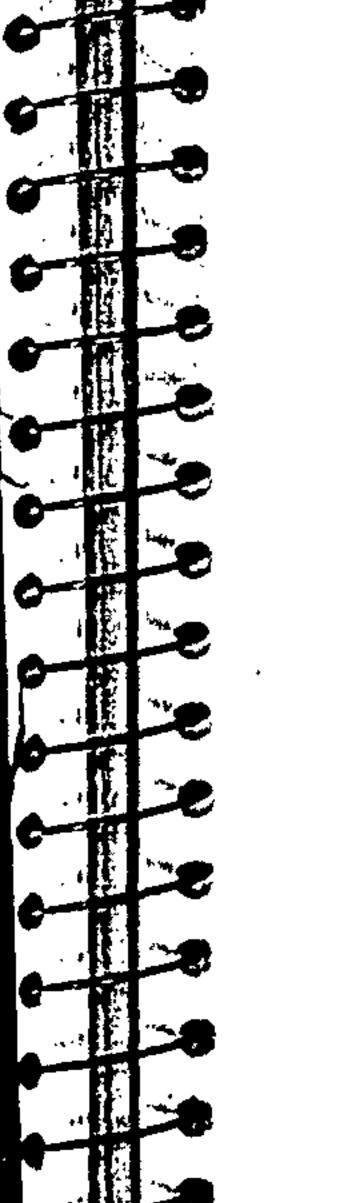
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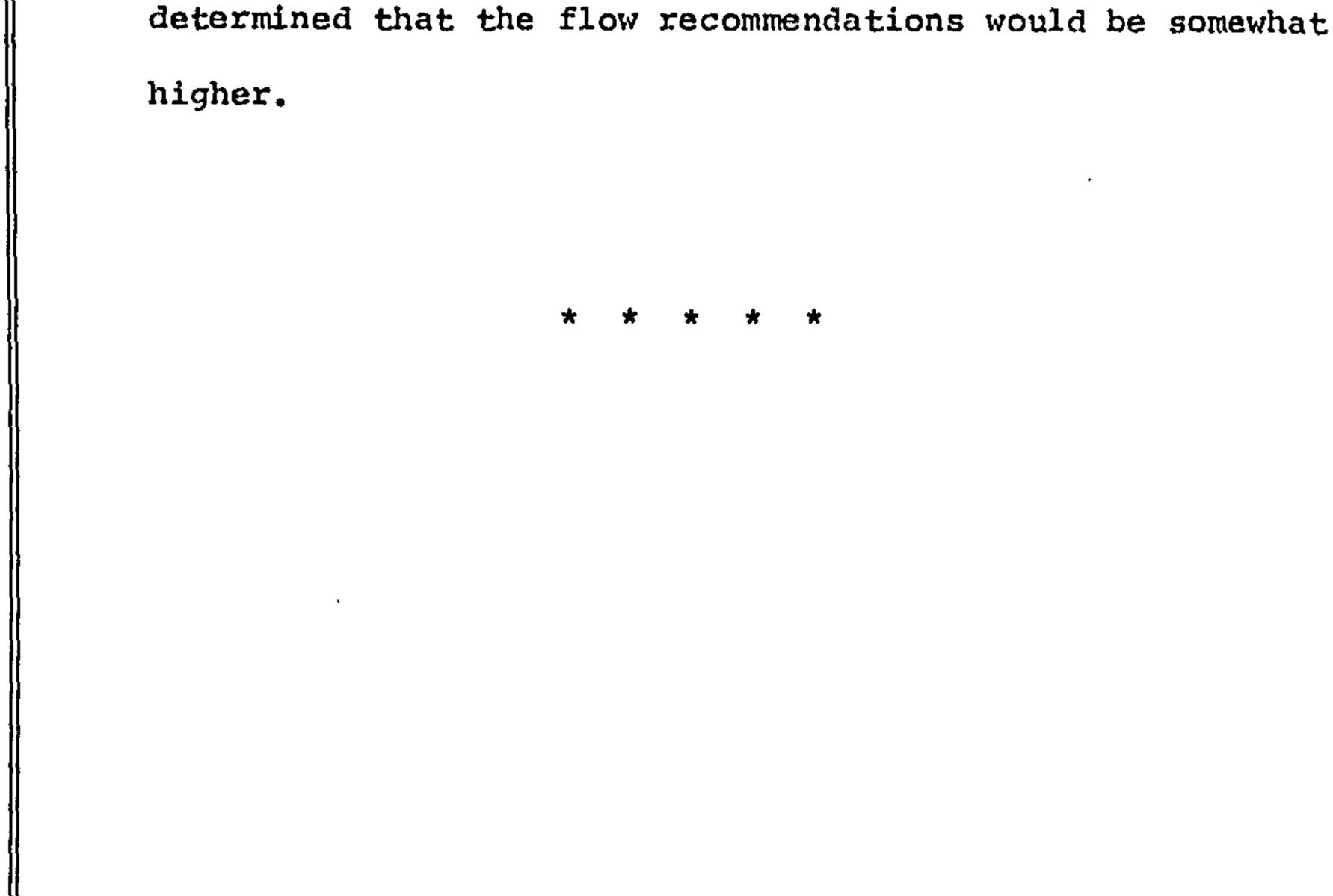
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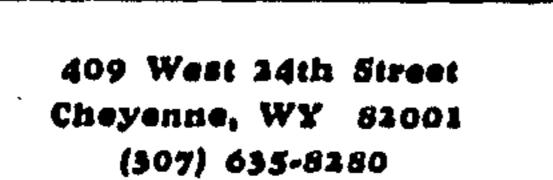
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species, the stream, the water level in the stream has to be raised to a point where it would touch one bank or the other or possibly both. Oftentimes they weren't in our flow recommendations.

I might add too that Ken Bovee, who is an employee of the IFG in Fort Collins, did some preliminary work with one of my study sites to actually evaluate whether the cover would actually increase the flows or not, and he actually ran some of the data through the computer, and he





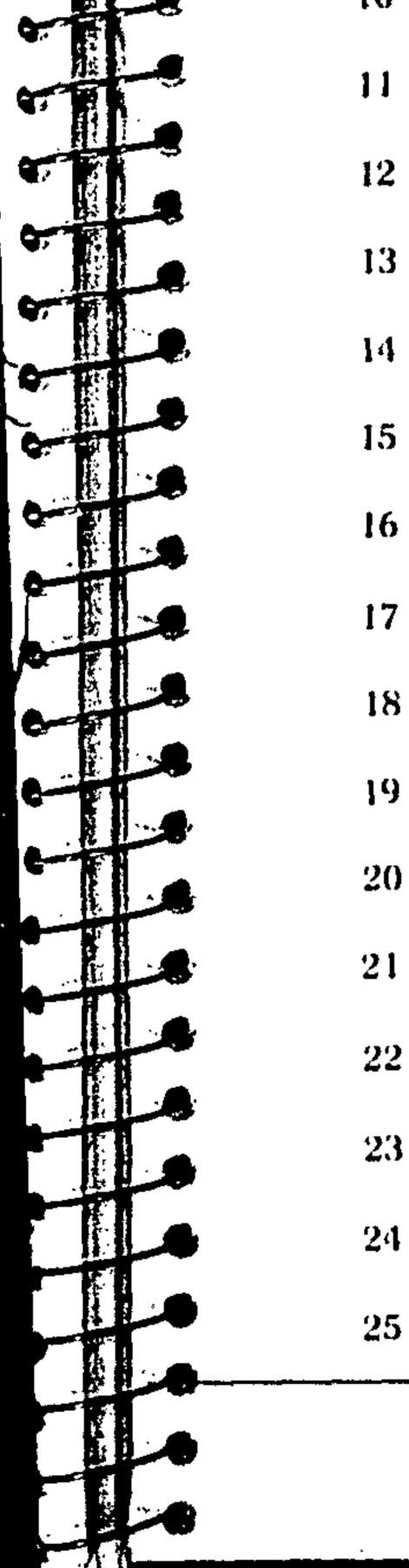


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8-1 Lma ∥	: 6354
1	MR. WHITE: I would move to strike the answer based on
2	the most rampant type of hearsay. What Mr. Bovee did or did
3.	not do fis not an appropriate subject of this witness'
4	testimony. If the United States wants to call Mr.Bovee,
5	I know him, he is a very capable witness or would be a
6	very capable witness and we could cross-examine him with
7	respect to the facts, data and statistical assumptions
8	which he used in that computer run. That would be one
9	thing. But simply to refer to an opinion for which there
10	is no, absolutely no foundation, I think it is improper,



Your Honor, and we would move to strike on two grounds, hearsay and no foundation.

THE SPECIAL MASTER: The Motion to Strike is overruled on the basis that he said he invited him up to one of his study areas, that he had been working on on the Reservation and work was done on the REservation under his supervision and invitation and, therefore, it stands. MR. WHITE: Your Honor, Mr. Bovee was never on the Reservation. I think you might want to have that answer read back because I think just certain --

THE SPECIAL MASTER: Well, I'll ask the witness:

Didn't you say you invited him up to work on your model

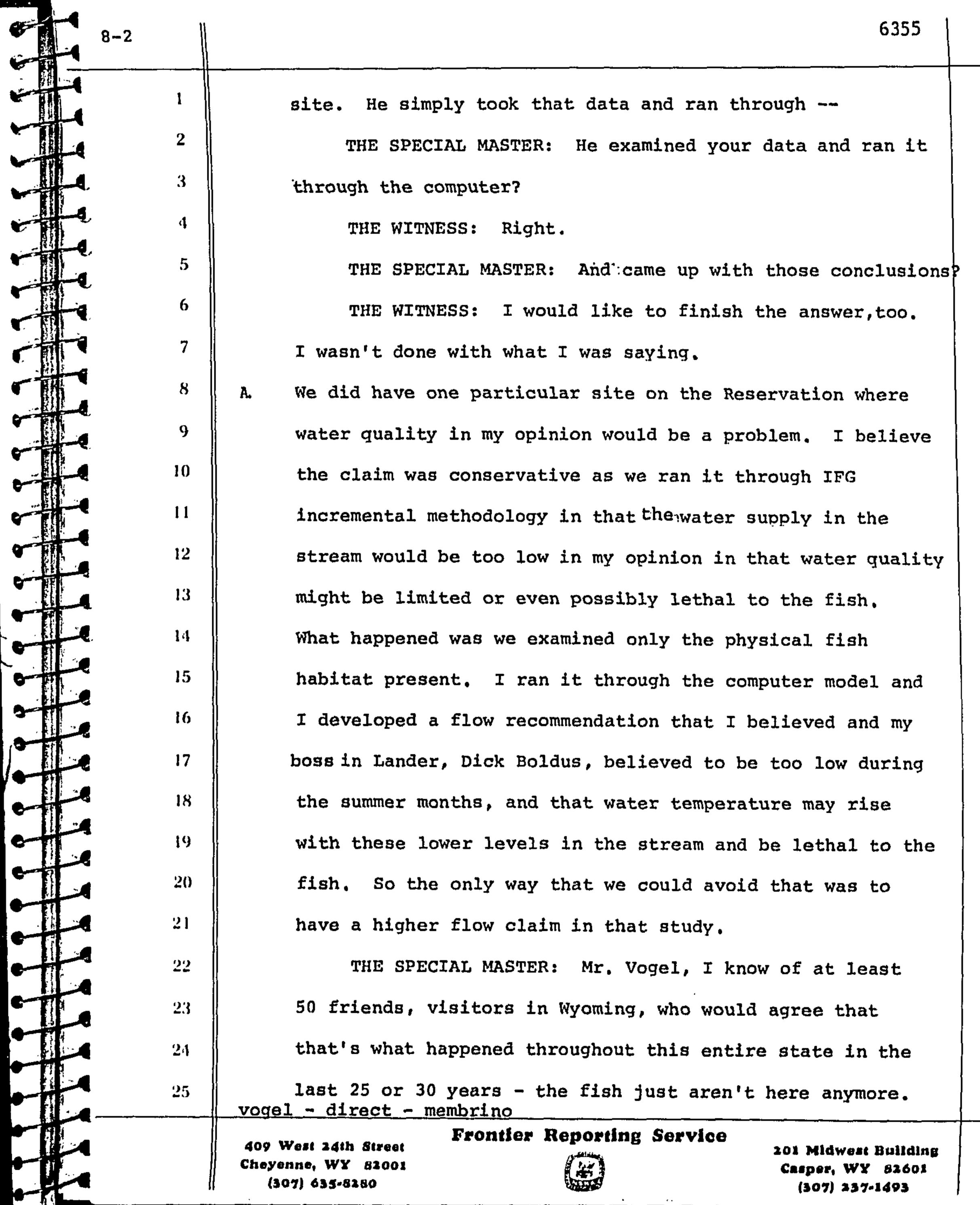
or was it on your site?

THE WITNESS: No, it wasn't on the site. It was the

results of the data that we collected at one particular

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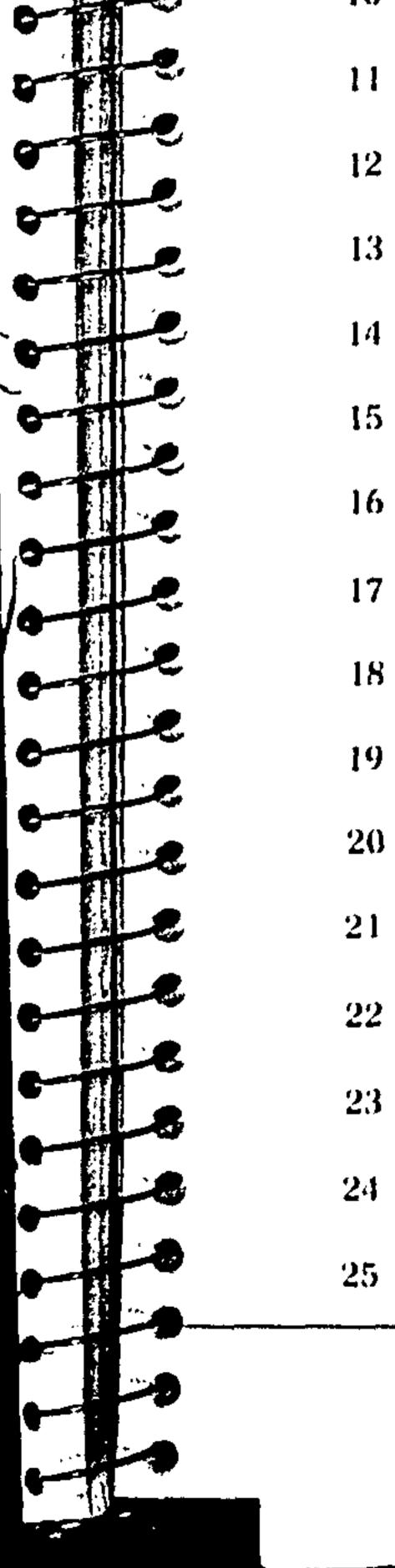
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They have been overfished, they are underpropagated or the streams are lower or the fishing isn't what it used to be. Have you heard that sort of an observation? THE WITNESS: Yes, I have. THE SPECIAL MASTER: So if it's occurred on the Reservation as it has in the rest of the West, it is part of an order -- it is a part of an unfortunate area-wide result of our times, is it not; the abuses that have caused it?

THE WITNESS: I should clarify that a little. When



I referred to a flow recommendation being lower, this is

simply referring to the computer modeling since historically the flows are higher than that in that particular system.

And we are trying to run it through the computer model and

establish a recommendation that we feel would be adequate

for the fish. However, when the computer model told me

indirectly that we should have lower flows there based on

only the physical habitat, we did not incorporate the

water quality model, incorporate things such as temperature

into it. So if we would, in other words, if we would go

to that stream and reduce the flows below what they

naturally occur at the moment, I believe that the tempera-

ture would be lethal to the fish.

THE SPECIAL MASTER: I am confused as to why water

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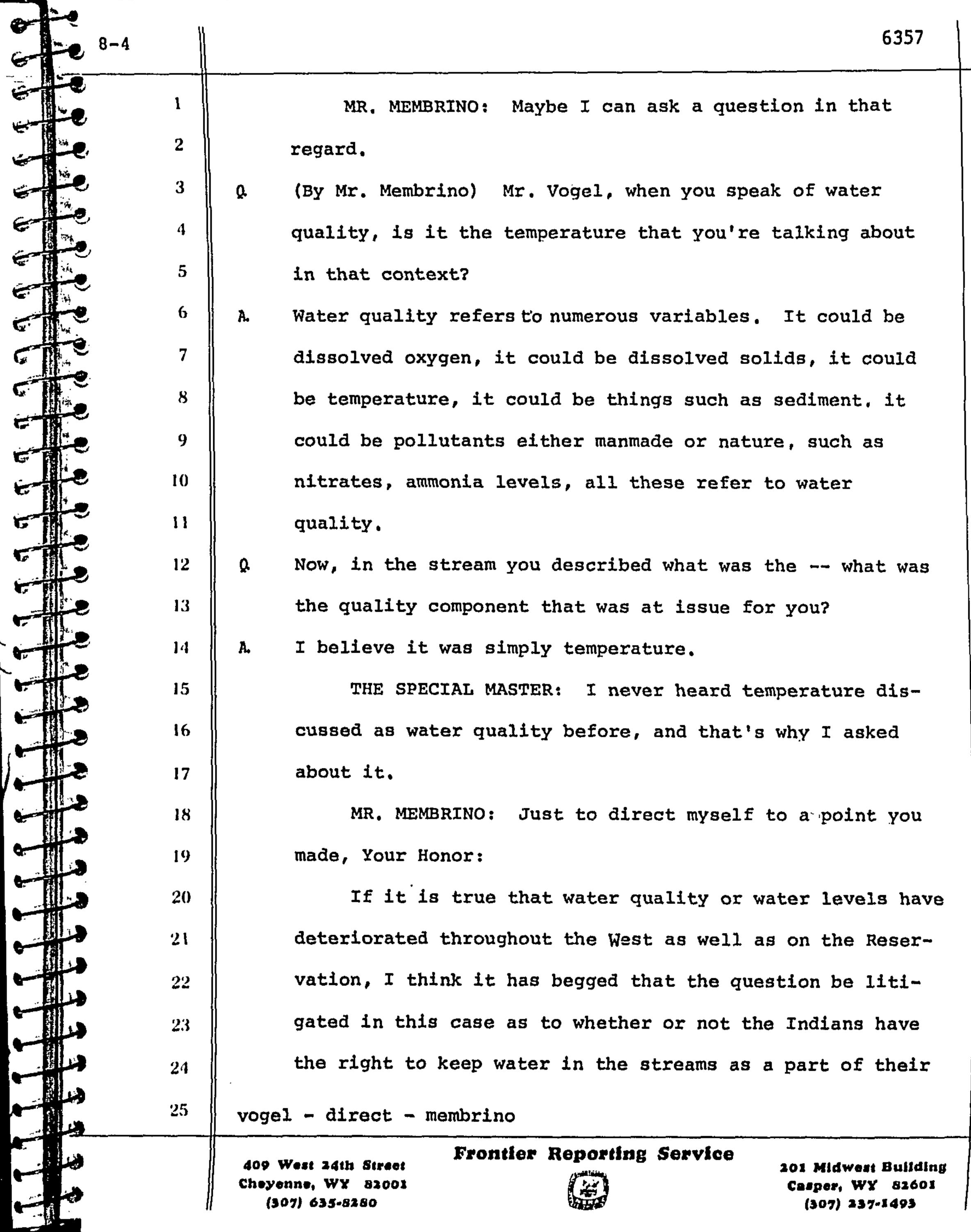
quality has a result with regard to water temperature --

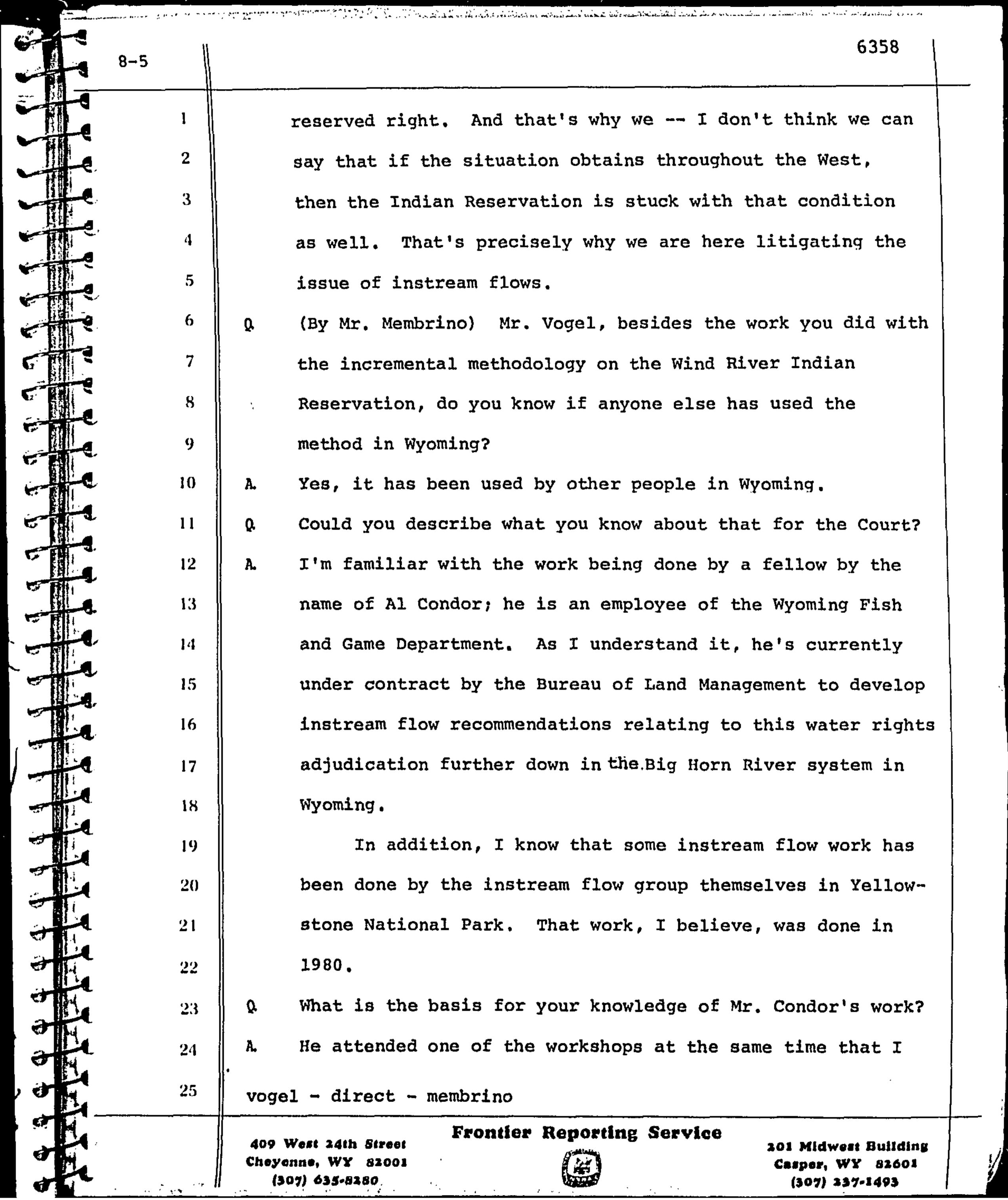
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attended it. He's made several visits to me in Lander asking me questions about the application and use of IFG incremental methodology.

Thank you. Doyousknow if the methodology, the incremental Q. methodology has been used elsewhere outside of Wyoming?

Yes. I stated previously I was aware of the work by a **A.**

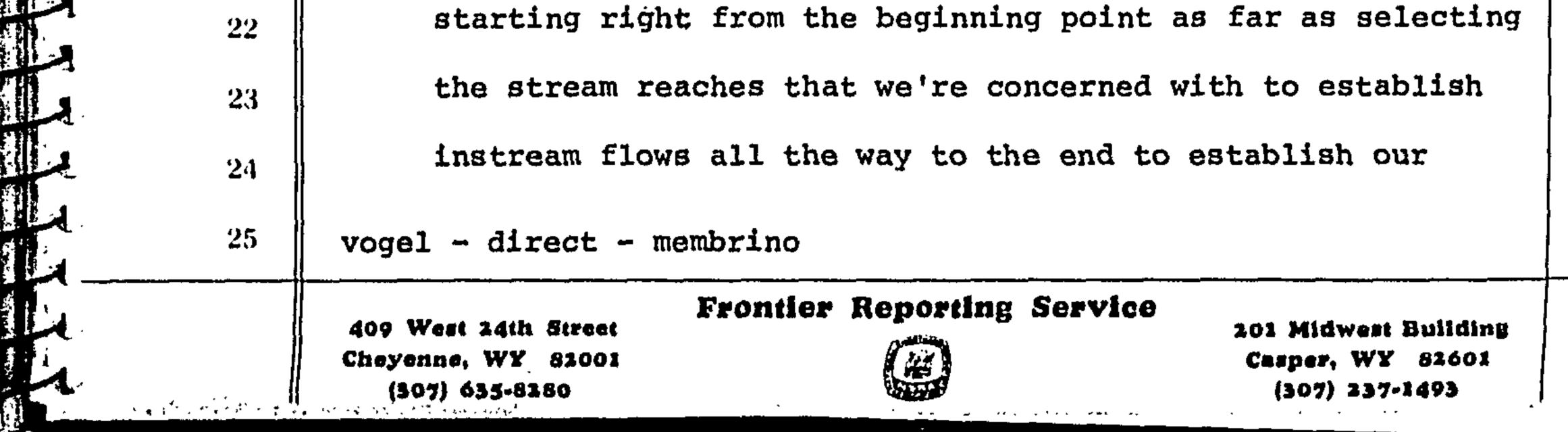
fishery biologist in Olympia, Washington, who was establish-

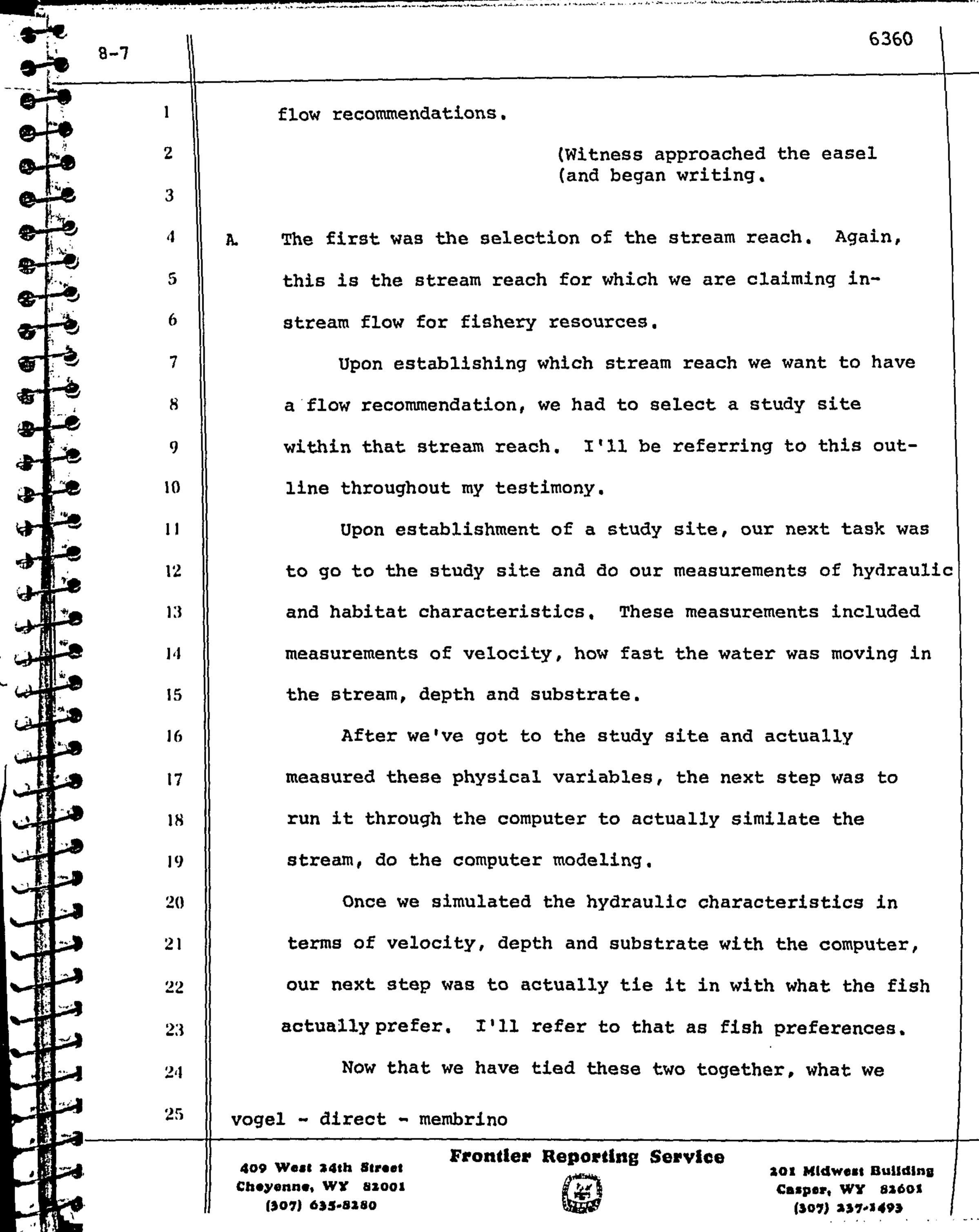
ing instream flow recommendations for the Snohomish River

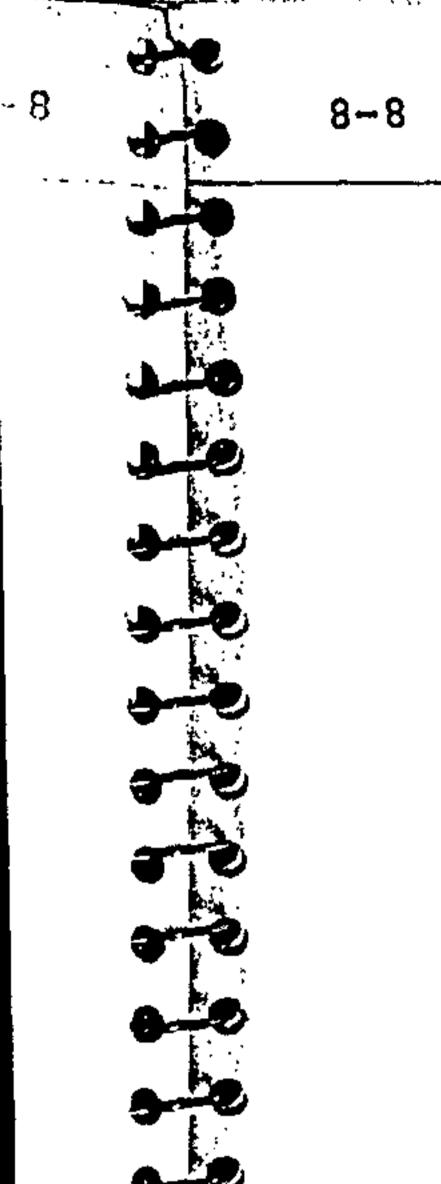
in Washington. I'm also familiar with the work done by

Ecological Services Division of the U.S. Fish and Wildlife

- Service in the Trinity River in northern California. This work, incidentally, was reviewed by the Secretary of Interior, Cecil Andrus, and he adopted their recommendations for stream flows.
- Having heard your testimony about why you selected the Q. IFG method for your work in this case, I would now like you to turn to an outline of how you went about gathering the data and making your recommendations for instream flows using this methodology. What I'll do is I'll simply give you a broad overview of **A.**
 - what my work entailed on the Wind River Indian Reservation







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know can be simulated in the stream to what the fish actually prefer, we can actually predict what the habitat may be in the stream. The instream flow group refers to the output, the computer output, as weighted usable area that I'll be referring to periodically throughout my testimony.

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We are using that basically interchangeably with

fish habitat. Having established what we know of the

habitat and how habitat characteristics may change with

different flow regimes, I was able to make the final flow

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recommendations for those stream reaches. This is the final result.

13QWith that outline in mind, Mr. Vogel, I direct your14attention to what's been marked for identification as

United States Exhibit WRIR C-281 and ask you to identify

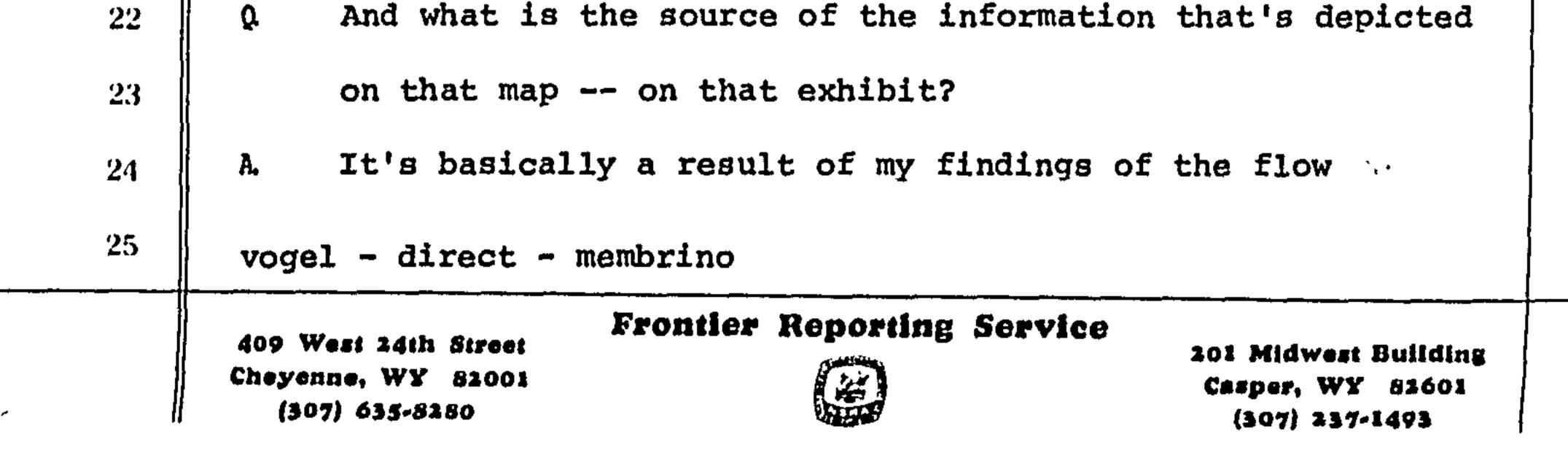
that, please, for the Court.

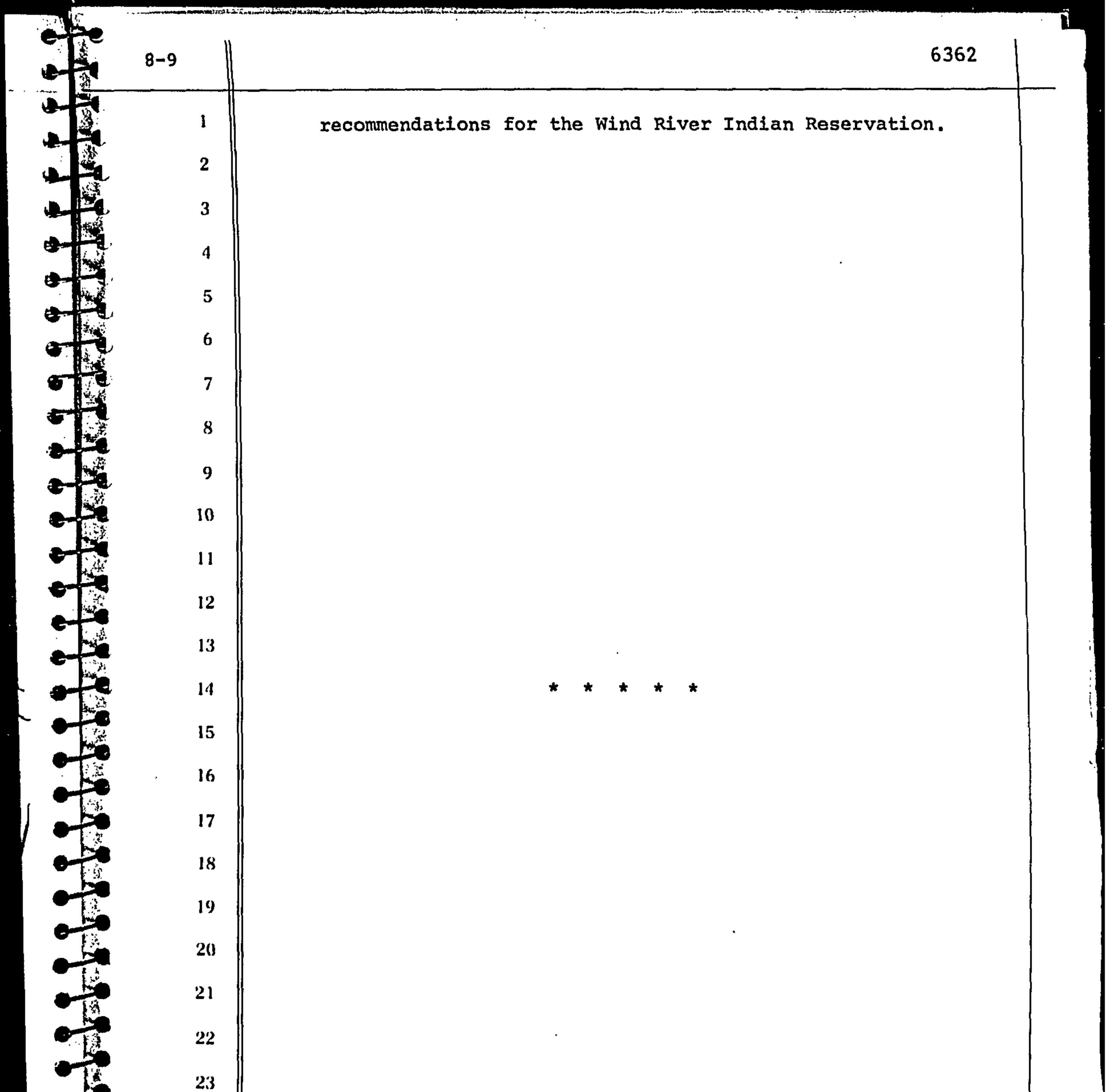
A. This is a map showing the instream flow claims for the

fisheries on the Wind River Indian Reservation.

19 Q Was this exhibit prepared by you or under your direct
20 supervision?

21 || A. It was prepared under my supervision.





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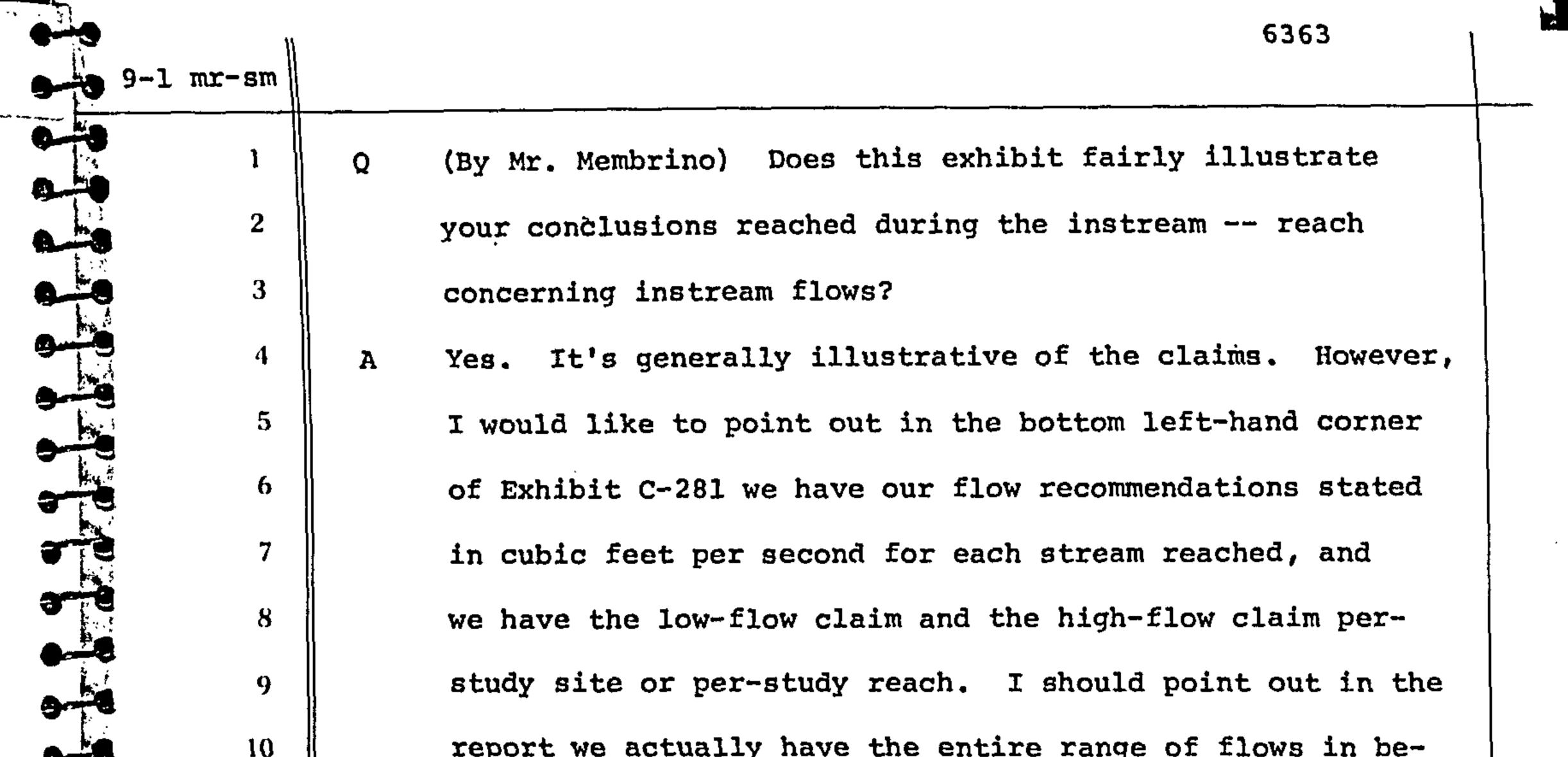
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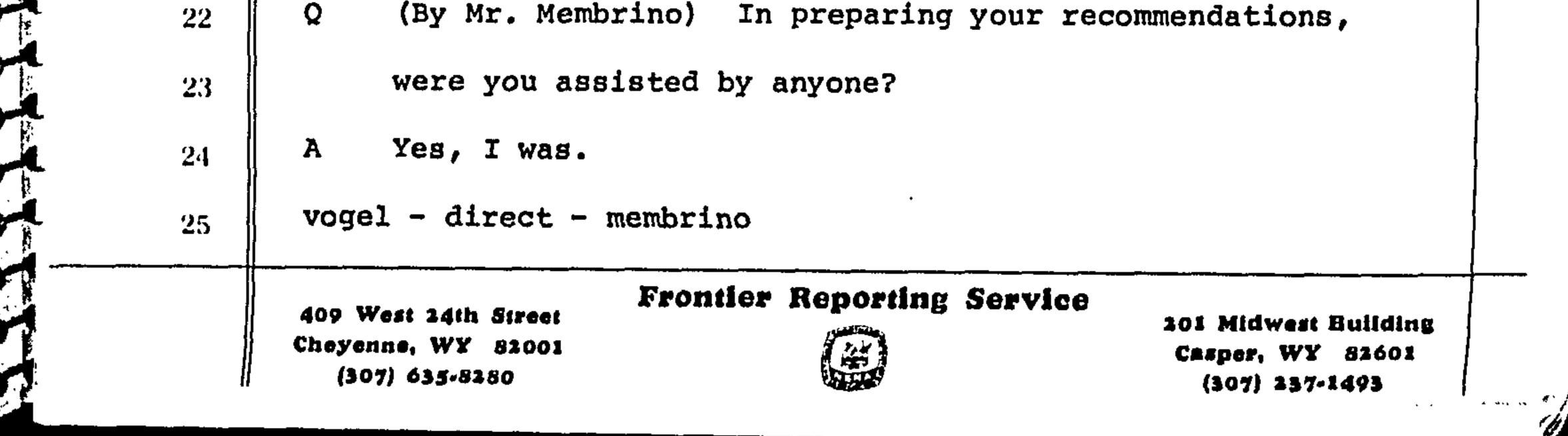
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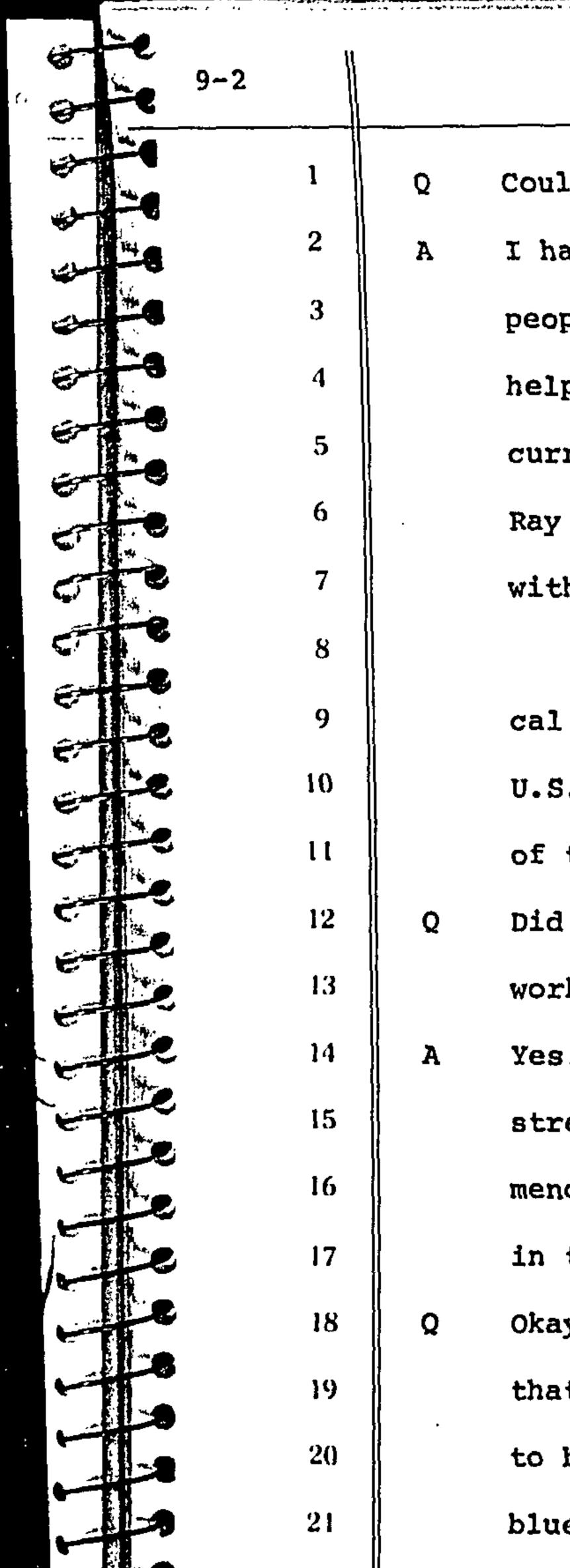
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11	tween the low and the high, so in that sense it's a little
12	limited.
13	THE SPECIAL MASTER: You have it between the low
14	and high, in what terms?
15	THE WITNESS: On an annual basis, what may actually
16	occur.
17	THE SPECIAL MASTER: By gallons by cubic feet
18	per second or by acreage?
19	THE WITNESS: Everything I have, as far as my flow
20	recommendations, are mean monthly flows, mean monthly
21	instantaneous flows and cubic feet per second.





Could you tell the Court who that was? I had assistance in the fieldwork. There was several people that helped me in that area. The person that helped me most was an enrolled Shoshone Indian who's currently enrolled on the reservation. His name is Ray Nation. He is employed as a Biological Technician with our Fish and Wildlife Office in Lander. I also had assistance from personnel of the Ecologi-

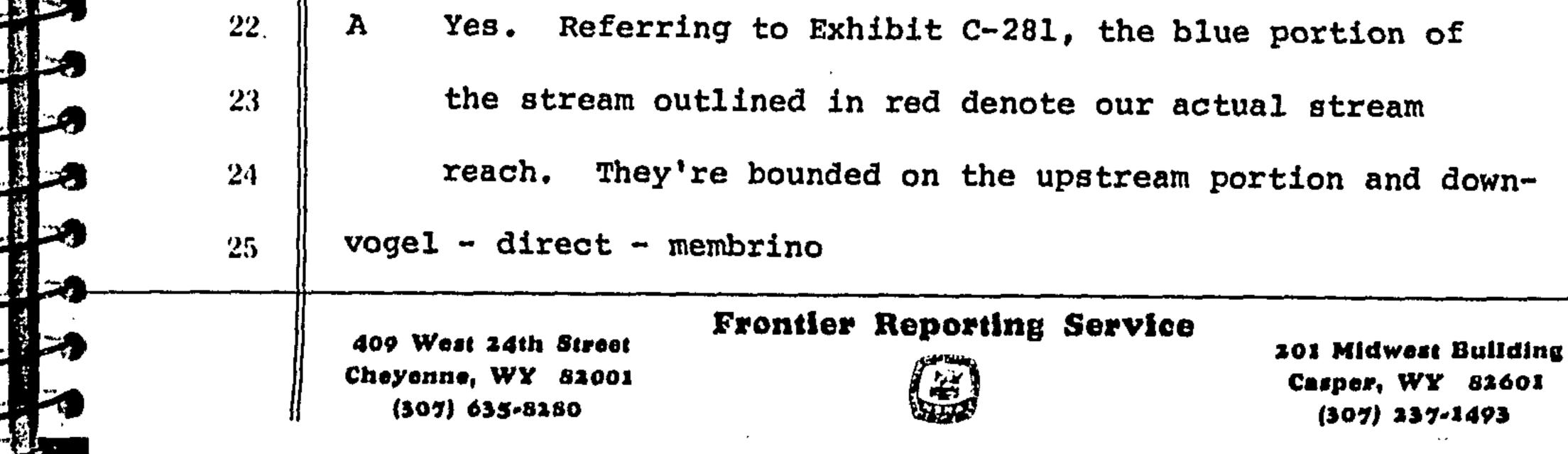
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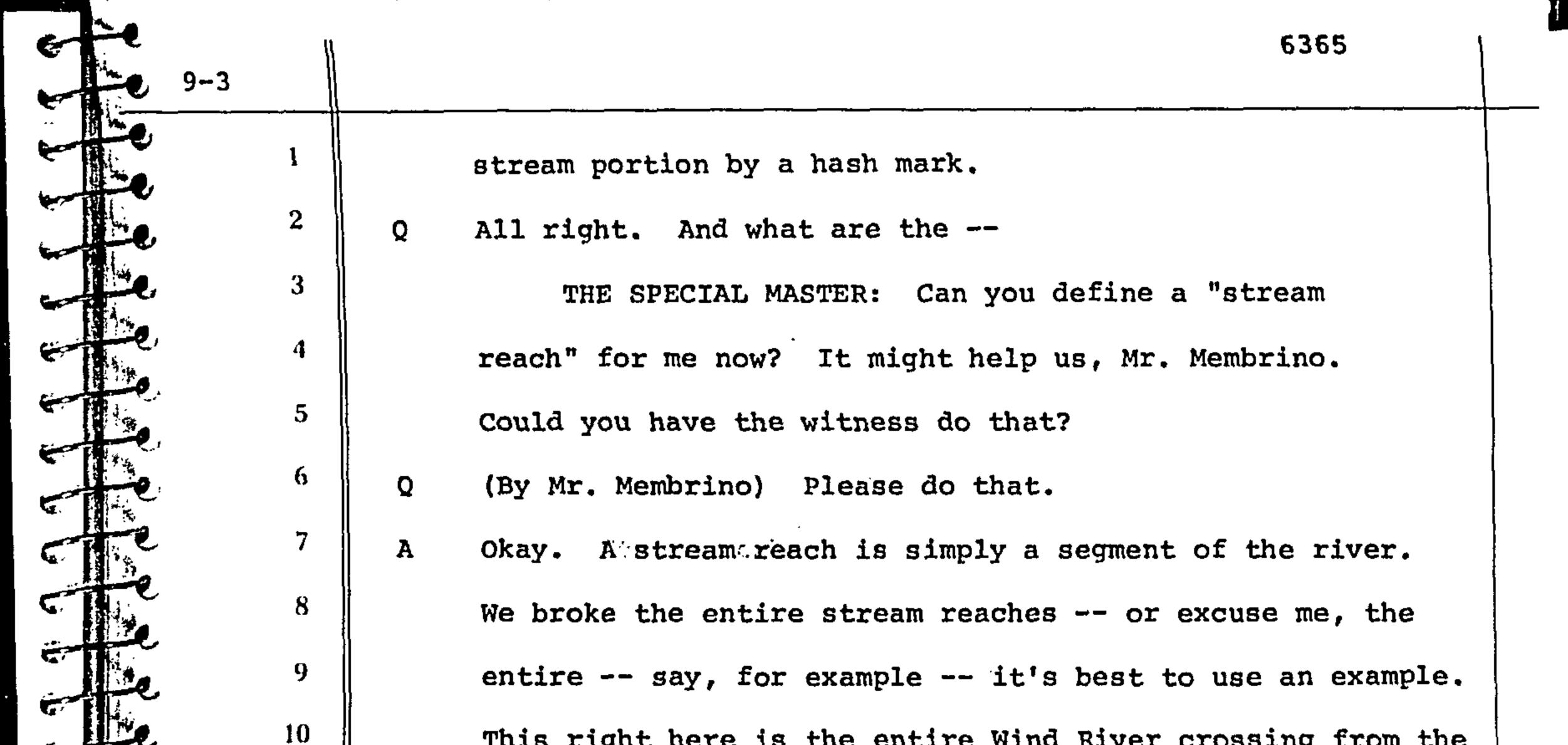
cal Services Division out of Billings, Montana; also the

U.S. Fish and Wildlife Service. They helped me in two

of the study reaches.

- Q Did you consult with anyone else about the -- about your work?
- A Yes. I had periodic contact with the staff of the Instream Flow Group in Fort Collins. As far as the recommendations themselves, they were reviewed by my superiors in the Fish and Wildlife Service.
 - Q Okay. Now, to get us oriented to Exhibit C-281, I notice
 - that there are highlighted in blue on the map what appear
 - to be portions of streams. Could you describe what that
 - blue highlighting is?





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This right here is the entire Wind River crossing from the left-hand portion of the map to the lower right-hand portion of the map, going to Boysen Reservoir, and from Boysen Reservoir out to the northeast boundary of the reservation (indicating). That's one river in itself. Now, we broke that into segments. Each one of those segments I refer to as a stream reach. MR. MEMBRINO: We will get into more detail of what the, of why he selects the stream reach and what goes into that, very shortly, Your Honor.
Q (By Mr. Membrino) First, Mr. Vogel, I'd like you to explain what the yellow dots are on that map.

		409 West 24th Street Cheyenne, WY 82001 (307) 635-8280 Frontier Reporting Service Casper, WY (307) 237-1	82601
·/)	25	vogel - direct - membrino	
	24	actually went out and did our physical measurement of	E
L.	23	show the approximate location of the study site where	e we
	. 22	A The yellow dots that you're referring to on Exhibit (2-281

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9-4		6366
	<u> </u>	hydraulic and fish habitat characteristics.
2	Q	And the red circlesscontaining different numbers?
3	A	That's simply a reference point showing the number of
4		the stream reach, that can be used by the index in the
5		bottom left-hand corner of the exhibit.
6	Q	Thank you. Now, to turn to the Special Master's earlier
7		question about stream reaches, could you tell us how you
8		go about selecting the stream reach?
9	A	Yes. Basically what we did on the reservation was first
10		establish which streams were of importance for establishing



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instream flows. The ones we selected were the ones that

were important for fishery resources and also could have had impacts on them caused by existing and potential water development.

So using these as our guide, we went to the field, we looked at maps. The maps are referred to, things such

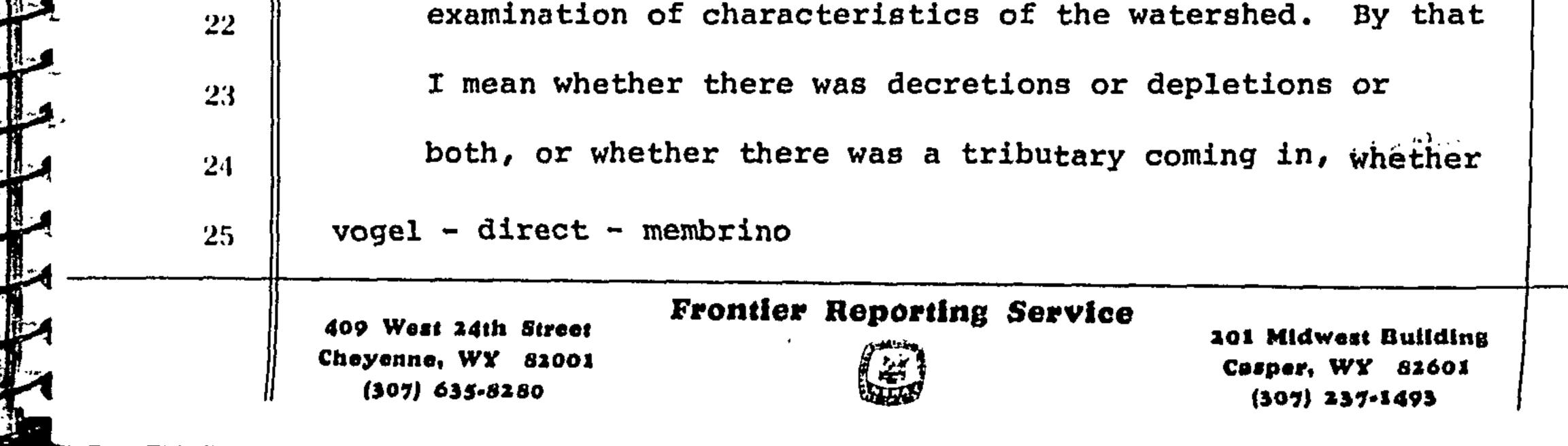
as topographic maps. We even used aerial photographs in

some cases to compile as much information as we could of

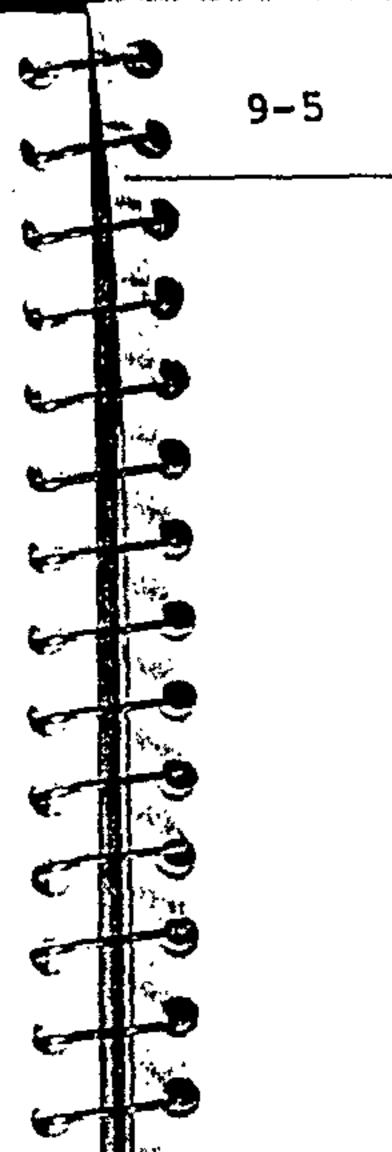
each stream that we were going to investigate.

Socwhat weddid was we break the entire segment of --

the entire river up into segments. We did this through



there was a major diversion going off from the stream; the general stream morphology. In other words, what kind of stream did it look like, was it a highly gradient stream, was it really a steep gradient stream, what did the substrate look like, was it cobbly substrate or muddy substrate. And then we broke it into homogeneous sections, and these were our stream reaches. Referring back to the example on the Big Wind River, this right here was determined to be a stream reach, from the left-hand corner of



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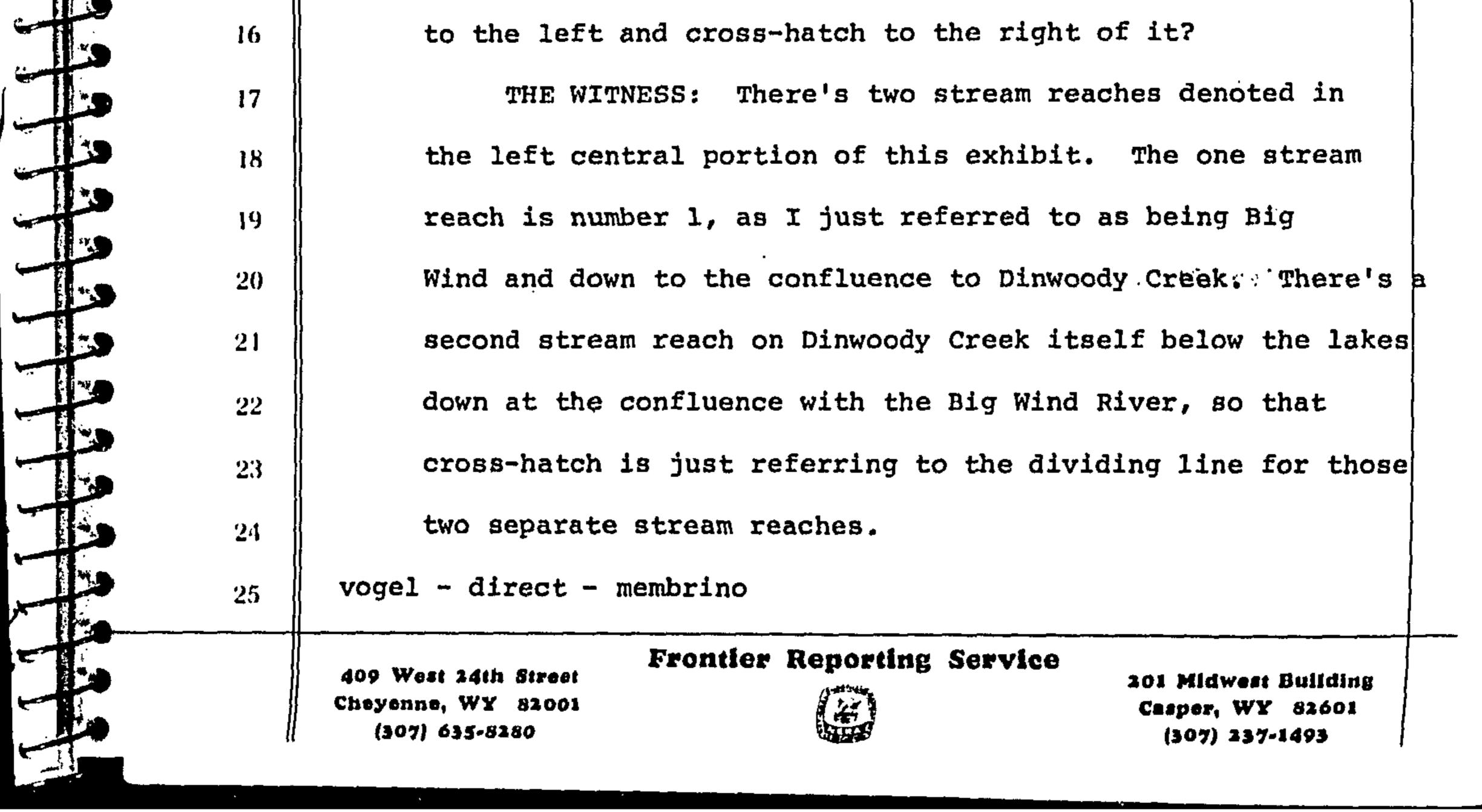
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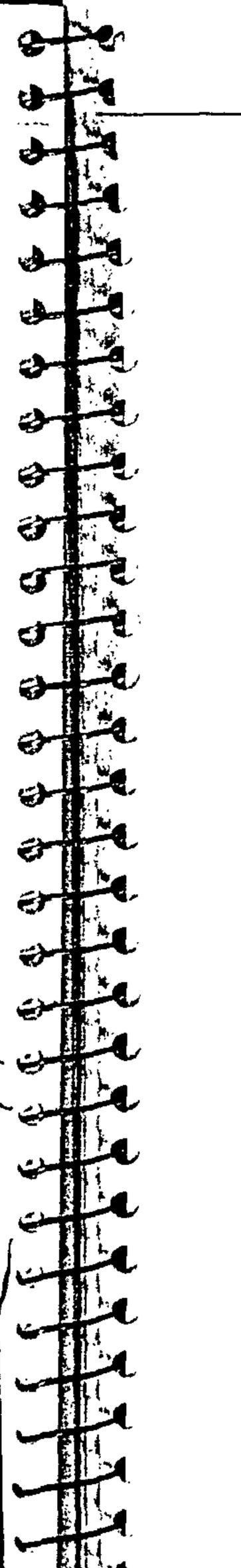
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10		the map by the reservation boundary down to the confluence
11		of Dinwoody Creek.
12	Q	Now, that's designated on the map as stream reach number
13		1?
14	A	Number 1.
15		THE SPECIAL MASTER: Why does it have a line hatched
16		to the left and cross-hatch to the right of it?
17		THE WITNESS: There's two stream reaches denoted in
18		the left central portion of this exhibit. The one stream
19		reach is number 1, as I just referred to as being Big
20		Wind and down to the confluence to Dinwoody Creek; There's
21		second stream reach on Dinwoody Creek itself below the lakes





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Back to the selection of the actual stream reach, upon examination of all the variables I referred to, we broke segments of the river into what we considered homogeneous segments. (By Mr. Membrino) What do you mean by that? I mean by homogeneous segments, that those portions of the streams that I felt were homogeneous, have similar characteristics. They have similar type substrates, similar type fish habitat, similar general stream morphology.

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Upon breaking it into those segments, we would go

out and examine it from say one stream reach to another and

verify our findings, our division of stream reaches.

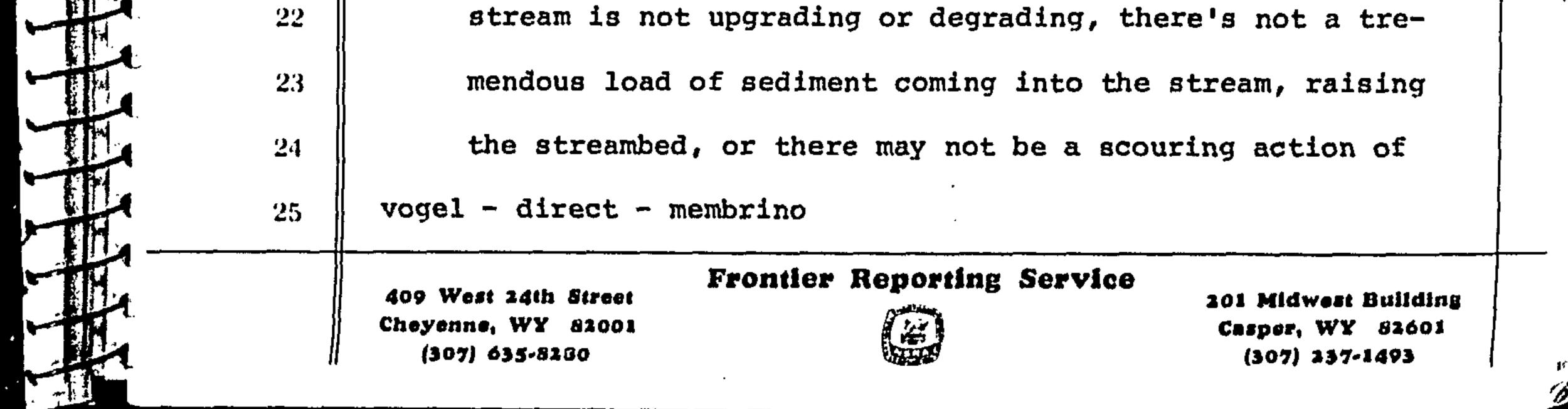
Q Did you have to make any assumptions about these stream reaches?

A Yes. Basically before we even do the study, we had to determine if the watershed is an equilibrium. In my opinion we believe as far as the study was concerned --THE SPECIAL MASTER: Mr. Vogel, what do you mean that

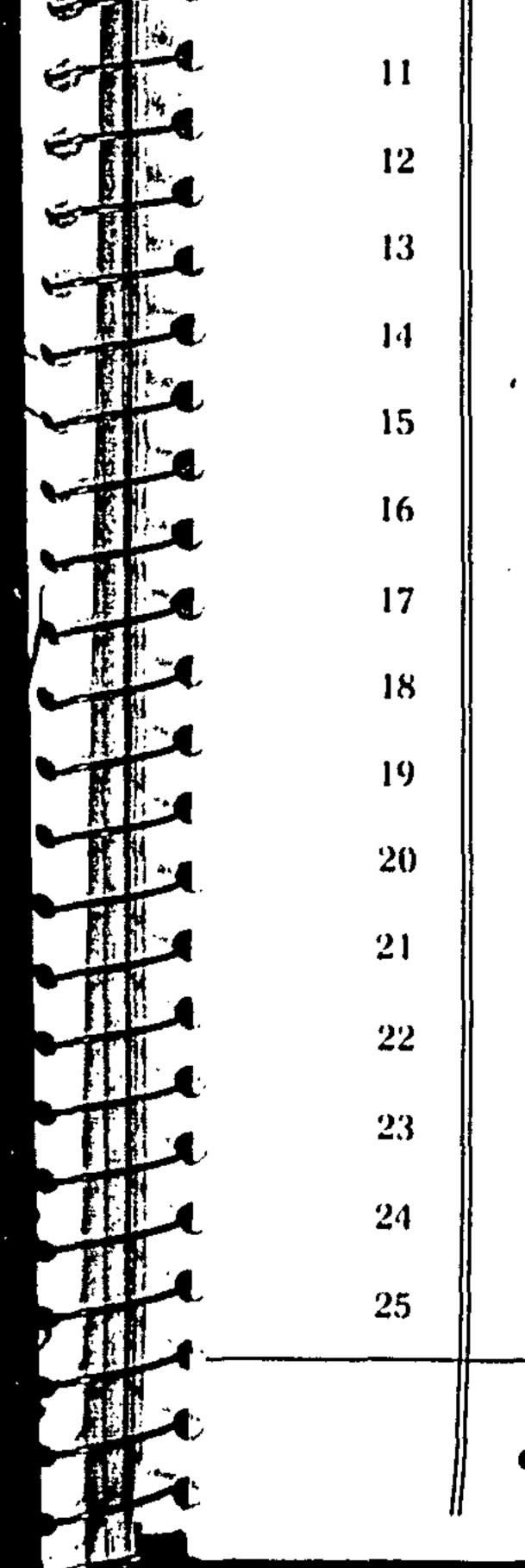
the water should have to be in equilibrium?

THE WITNESS: Basically what that means, we want to

make sure the balance is not -- We want to make sure the



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9-	1	the stream. In other words, a digging action, a degrada-
3	2	tion of the stream.
3	3	THE SPECIAL MASTER: How can you avoid that kind of
3	4	action in a one hundred year cycle?
19 19	5	THE WITNESS: That's what is referred to, that's called
	6	dynamic equilibrium. Over long periods of time there is
T	7	some form of acridation or degradation of the stream
5	8	channel, but in terms of short periods, it's not that
	9	obvious. If it's out of the dynamic equilibrium, those
	10	conditions would be apparent over a short period of



a short period of

time, you are right. That does appear over a long period of time, but we didn't feel it was important for the study to take them.

(By Mr. Membrino) When you speak of dynamic equilibrium, Q are you talking more in terms of hydrology, the balance of water in the system or what is happening to the streambed itself?

A I will be referring to both.

Õ Okay.

Originally I was talking about the hydrology as far as Ά

the stream, as far as what is happening to the stream,

but it's also tied with what is happening to the stream-

bed itself. In other words, if there is a scouring action

it is changing the streambed morphology.

In selecting the stream reaches, did you -- did you con-Q vogel - direct - membrino

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sult with anyone?

Yes, I did. I consulted with my boss, Dick Baldes A

in Lander, and I conferred with him and he agreed that

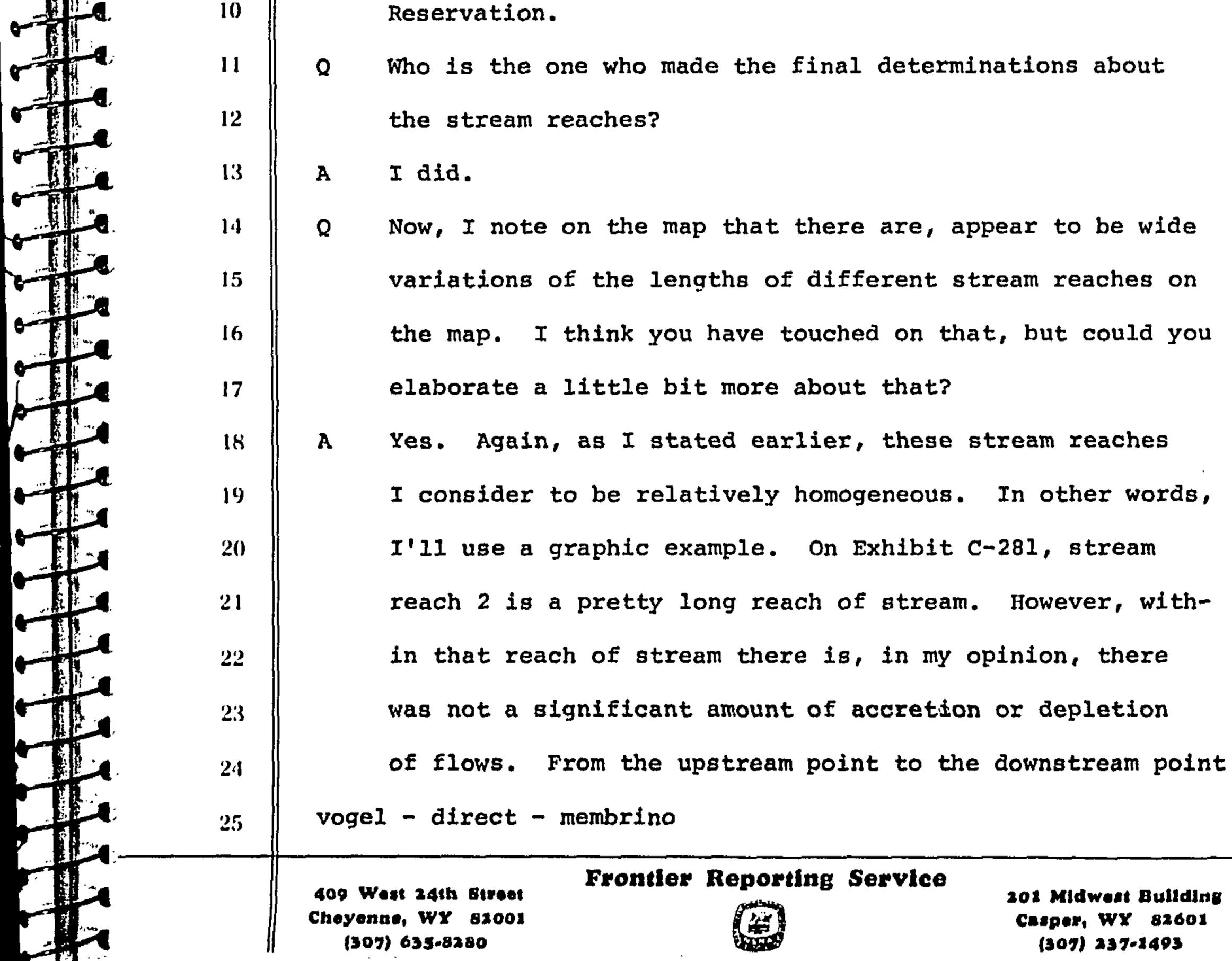
the segments I had selected were proper stream reaches

to evaluate.

- Could you describe his position? Q
- He's the Project Leader of the Lander U.S. Fish and A

Wildlife Service Office. He's also a Fishery Management

Biologist and Shoshone Indian of the Wind River Indian



Reservation.

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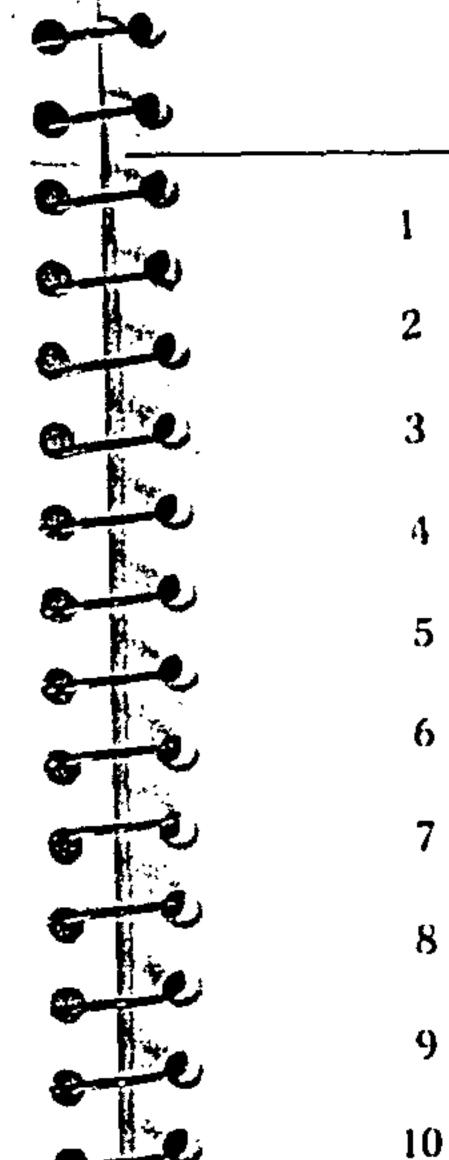
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there was very little change as far as characteristics of substrate, general channel morphology, presence or absence of fish habitat. Other portions of streams such as up above Dinwoody Creek refer to as, in this exhibit, stream reach number 1, had definite characteristics apart from stream reach number 2. Does that fairly conclude your discussion of the selection

process for the stream reaches?

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Yes, it does. Α

That brings us to what I say as the second part of your Q outline, the selection of a study site. Would you describe for the Court how you go about doing that? Upon the selection of the stream reach, our next objective A is to go outline and actually chose the site where we are going to do our physical measurements of the stream. To do this we have to do so on a random basis. By "random" I am not referring to haphazard, I'm referring to a statistically random selection, eliminate as much bias as possible in the process.

What I did was break the entire segment of stream work



reaches into equal segments. More often than not on the

reservation I used one mile segments of stream. For

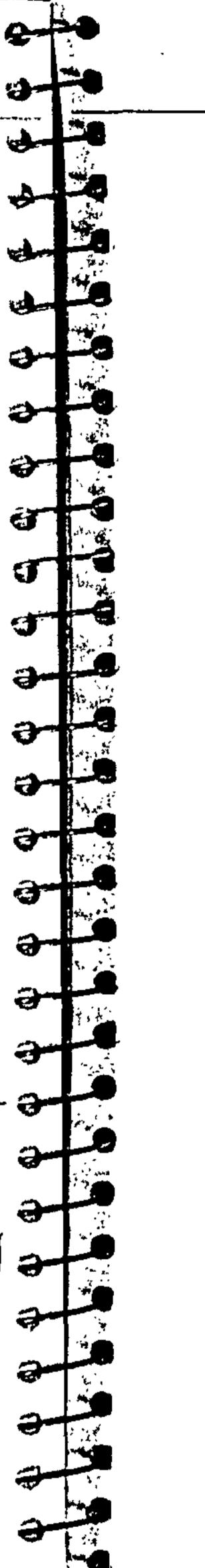
example, if stream reach number 2 on Exhibit C-281, if

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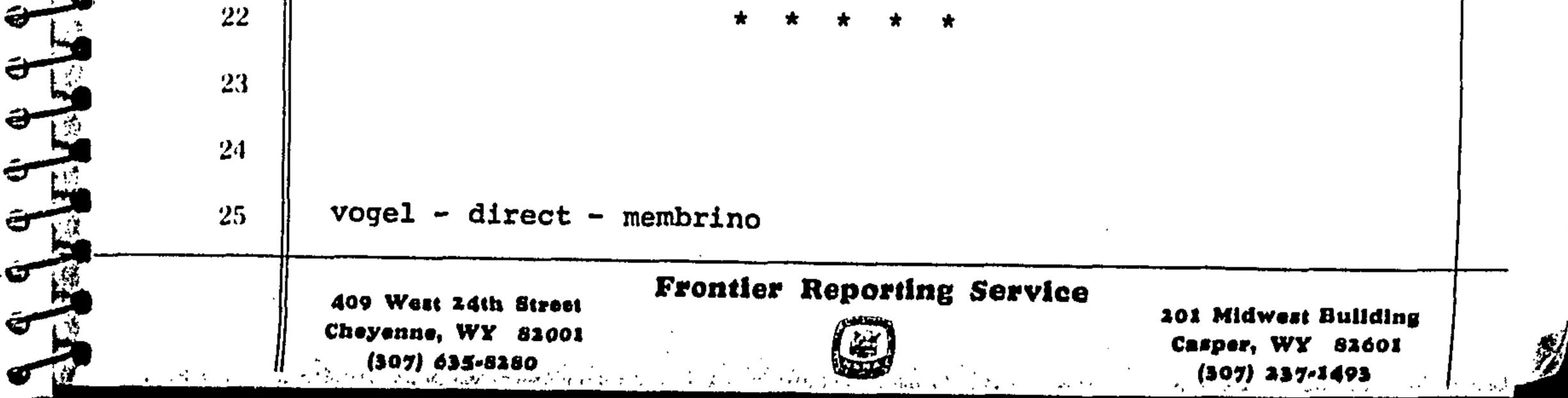
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this segment was 40 miles long I broke it into 40 equal one-mile segments, and I numbered those segments consecutively up the stream. Now, I referred to the back of a statistical textbook, most of the textbooks have this in the back. They have a random numbers table. A random numbers table is a compilation of a tremendous volume of numbers that statistically have no bearing on each other. In other words they're completely unbiased numbers. They're

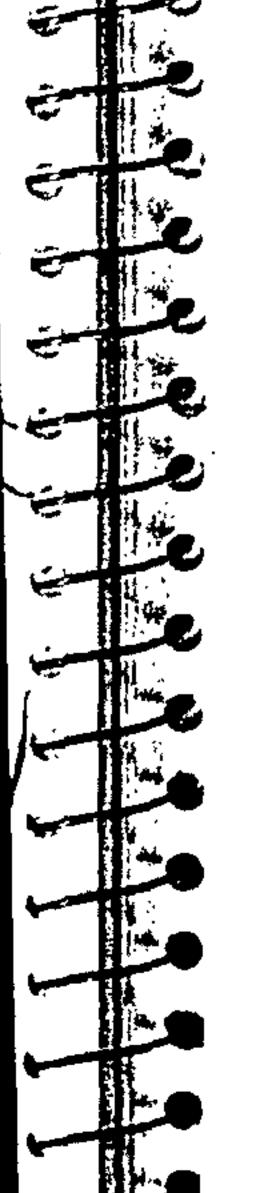
6372

usually generated by computers.

So, I referred to the back and I chose my study sites just by simply choosing numbers off the random number table. Like, for example, if I was going to choose three candidate reaches, three potential reaches where I might want to go out and look at, I would choose maybe the first three numbers off the second page of this crandom numbers table. Once I did that, I would take them in the order I chose them; number 1, number 2, number 3.



) 10-1	L L-ma	6373
	1	A. The first one I would look at on the map: I would take
	2	my USGS topographic map out and look at where I had
	3	actually broken that one, my division. I would look at
	4	it as far as a general channel shape. I would look at
	5	it as far as access, whether there's roads to it, and
	6	then I would go out and examine this stream reach that is
	7	one of my segments myself. I would actually drive out in
e	8	the field or use a boat to go upstream or downstream and
	9	examine what that particular candidate reach looked like.
	10	If I determined that this first collection of a candidate



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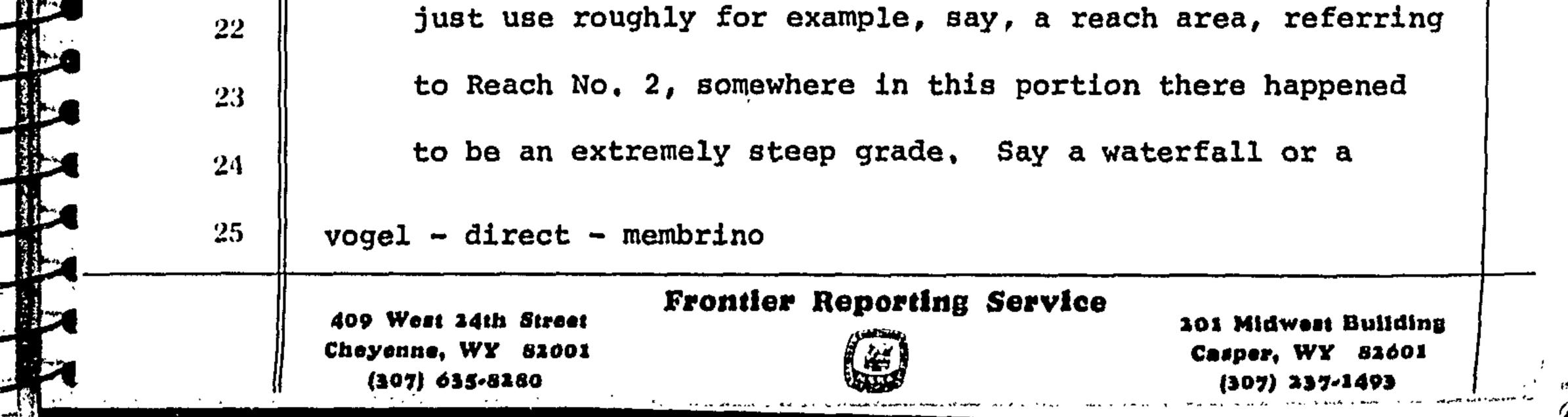
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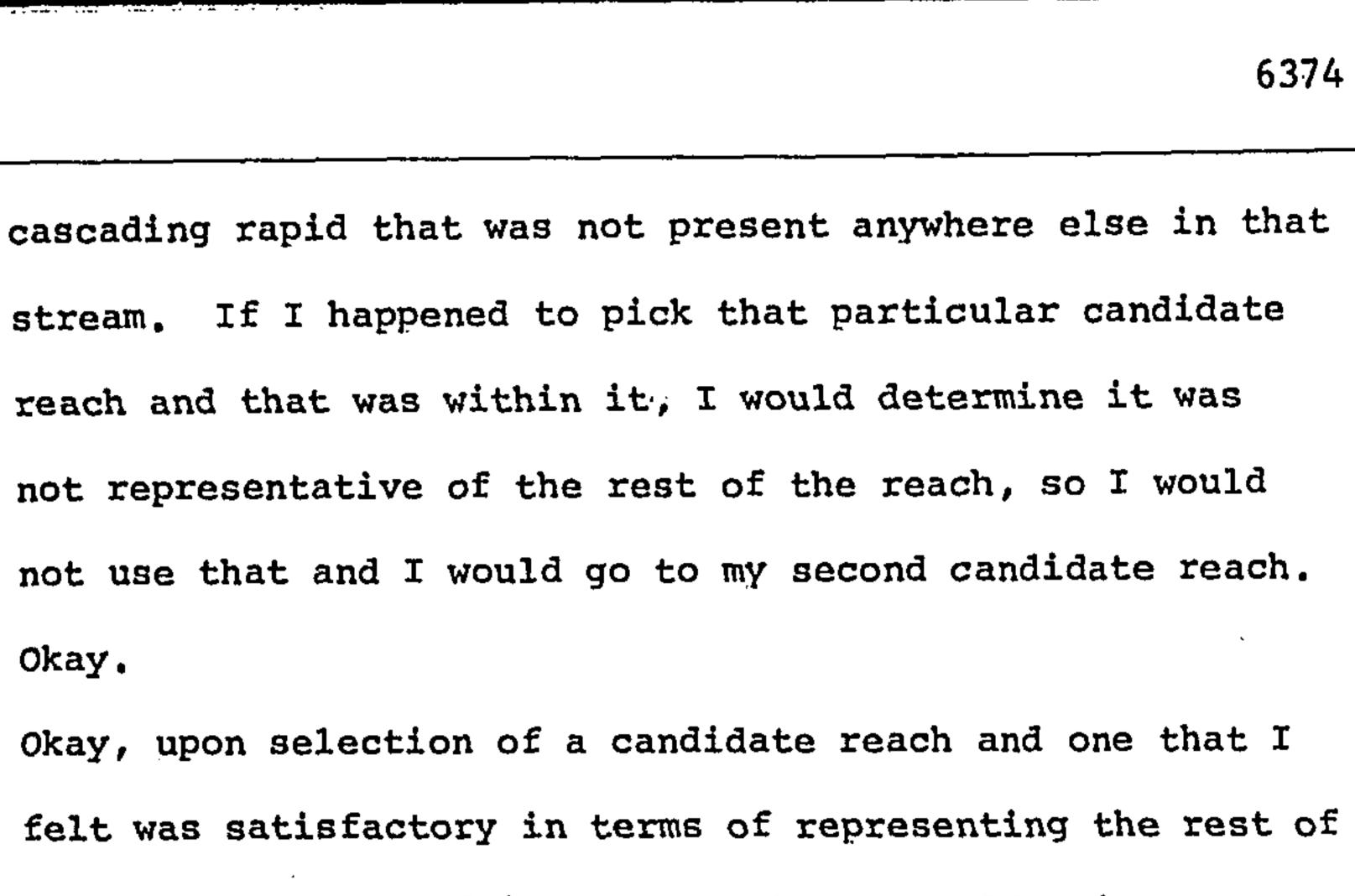
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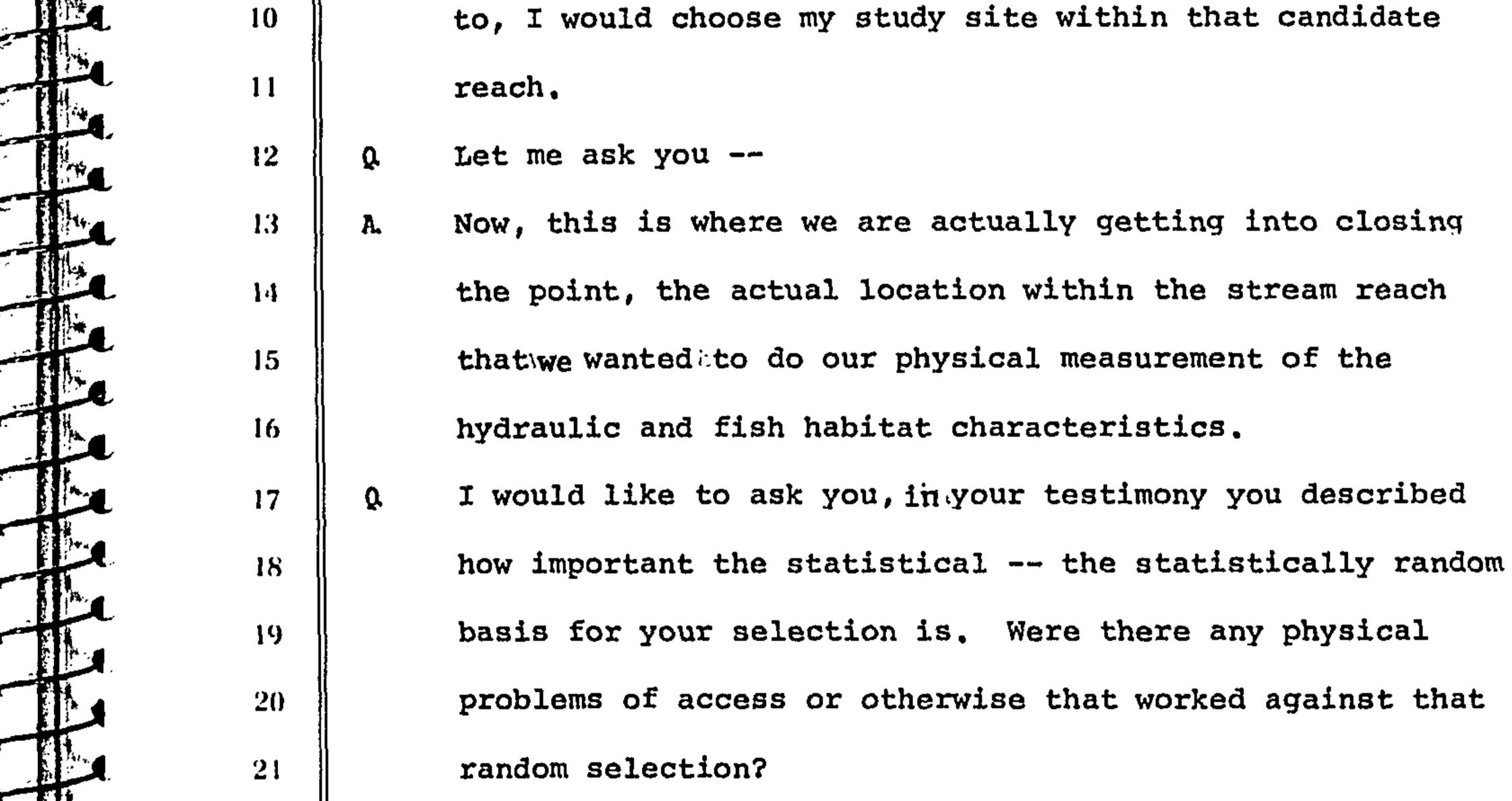
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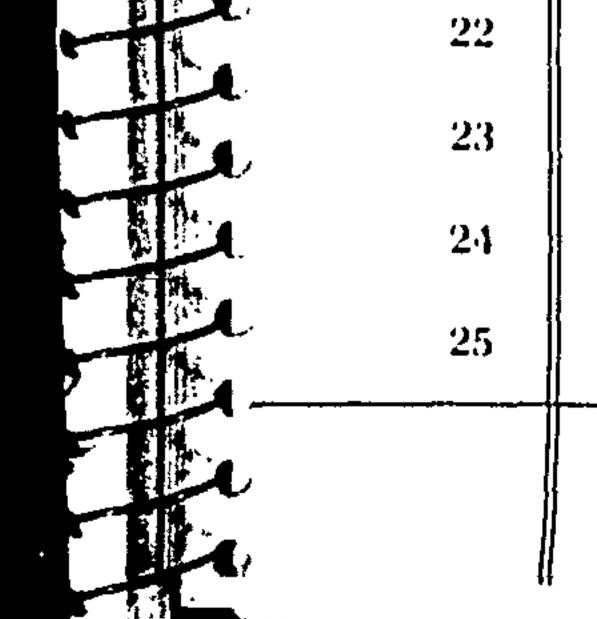
reach was not representative of the rest of the stream reaches -- excuse me, the rest of the candidate reaches within those -- within that stream reach, I would have thrown it out because it was not representative of the rest of the system. Ideally, I wanted to choose a reach that is representative of entire segments of the stream within reason. Would you give an example of what would be an atypical Q. feature that you stumbled on in one of your candidate reaches? Well, it might be -- I can't think of one offhand, but I'll A. |





the stream reach and it was one that I could gain access





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Yes, we did the best job we could as far as gaining access Α, to them. We did have numerous problems gaining access to some of these reaches on the Reservation because a large

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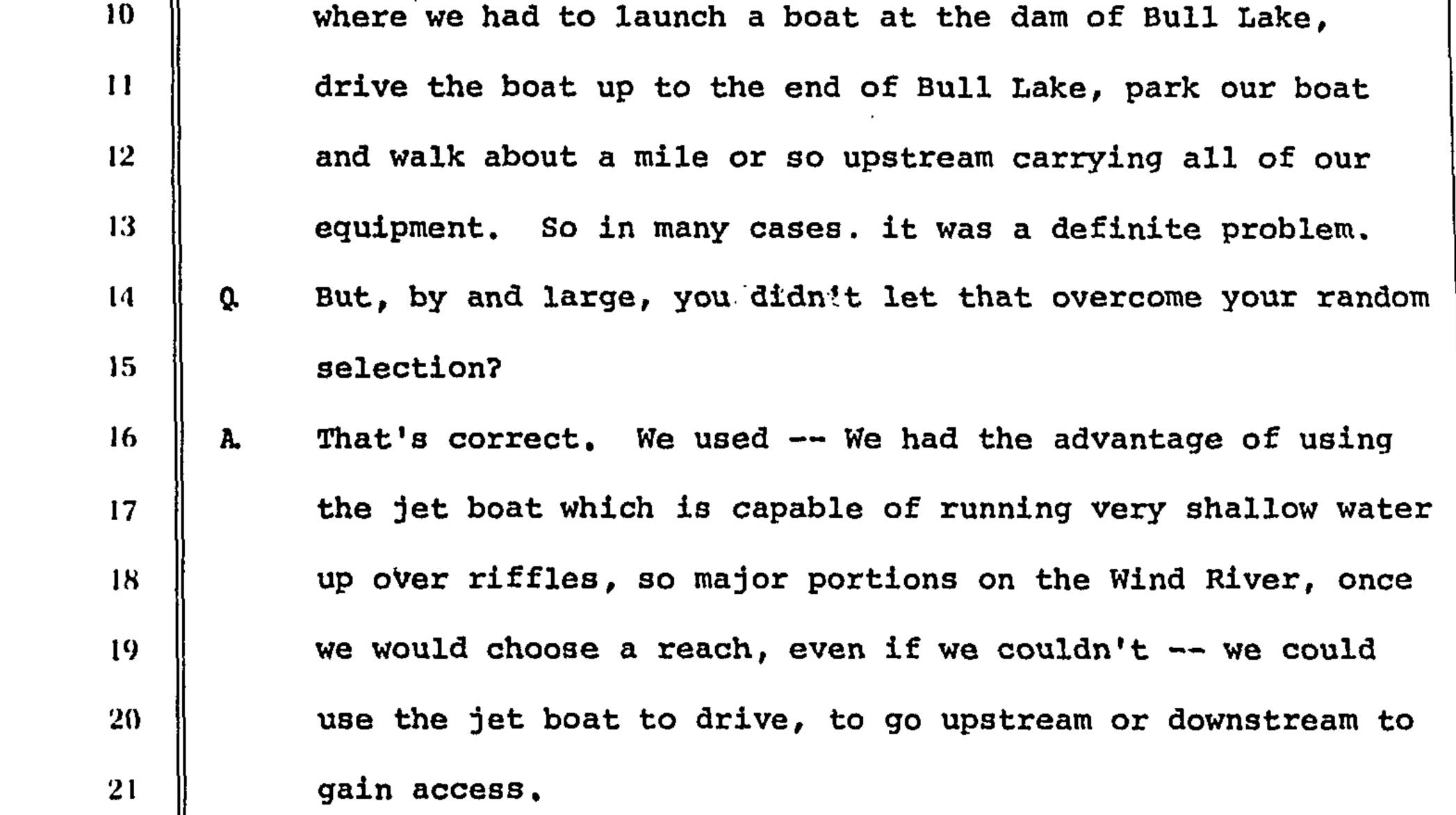
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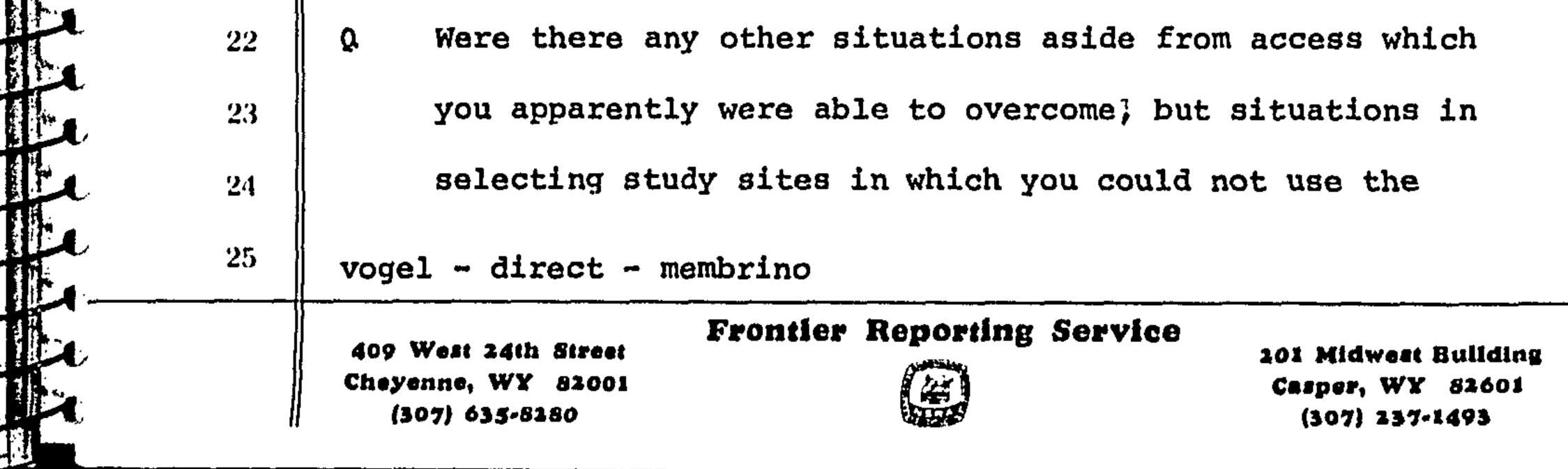
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Q, 1	portion of these streams are inaccessible. For example,
2	in the Wind River Canyon it's a deep, swift-flowing river.
. 3	This is denoted as Stream Reach No. 6 on Exhibit 281. As
 4	I said, it was a steep, swift-flowing river and there is
5	no boat ramps there for us to launch our boat. So, to
6	gain access, we had to actually lower a boat over the side
27	of the canyon through the use of ropes and pulleys.
8	There was another instance, for example, in Stream
9	Reach No. 8 it is the Bull Lake Creek above Bull Lake
10	where we had to launch a boat at the dam of Bull Lake,





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	1		random selection basis?
	2	A.	Yes, these was three, to my recollection no, there was
	3		two and actually located on Bull Lake Creek below Bull
	4		Lake, Bull LakelCreek above Bull Lake, and also in Crow
	5		Creek above Crow Creek Canyon. And those areas, I can go
-	6		through them and just refer to them one by one.
5	7	Q	Sure.
	8	A.	For example, in Crow Creek above Crow Creek Canyon,
	9		denoted as Stream Reach 16 on Exhibit C-281. Upon the
	10	II II	actual visit to the field. we found that there was numerou

and the second states and a second size of the second second

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actual visit to the field, we found that there was numerous beaver ponds in that section of stream. The IFG incremental methodology does not allow one to actually go in and model a beaver pond. It is more like a reservoir or a lake on a smaller scale. We were more concerned with flowing water in the stream. So we actually had to pick our study site there upon its merits of fish habitat and its merits as far as being a stream jin itself and not influenced by things such as beaver dams. On Bull Lake Creek itself these were very short segments of stream, so we could not really break the stream into many segments and then choose them randomly from that.

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	409 West 24th StreetFrontier Reporting Service409 West 24th Street201 Midwest BuildingCheyenne, WY 82001Casper, WY 82601(307) 635-8280(307) 237-1493
25	vogel - direct - membrino
24	its merits as far as fish habitat and its merits as far as
23	so we simply went to those areas, chose our study sites and
22	We were already dealing with a small portion of the stream,

6377 10-5 use in modeling the hydraulics for the IFG computer pro-2 grams. Those are the only three of which I am aware. 3 I now direct your attention to what's been marked Okay. 0. 4 for identification as United States Exhibit WRIR C-282 5 and ask you to identify that, please. 6 This is an example, top view schematic, of a study site. **A.** 7 MR, MEMBRINO: Just one moment, please. 8 MR, WHITE: We'll pick those up later, That's all 9 right.

and the second second second and the second s

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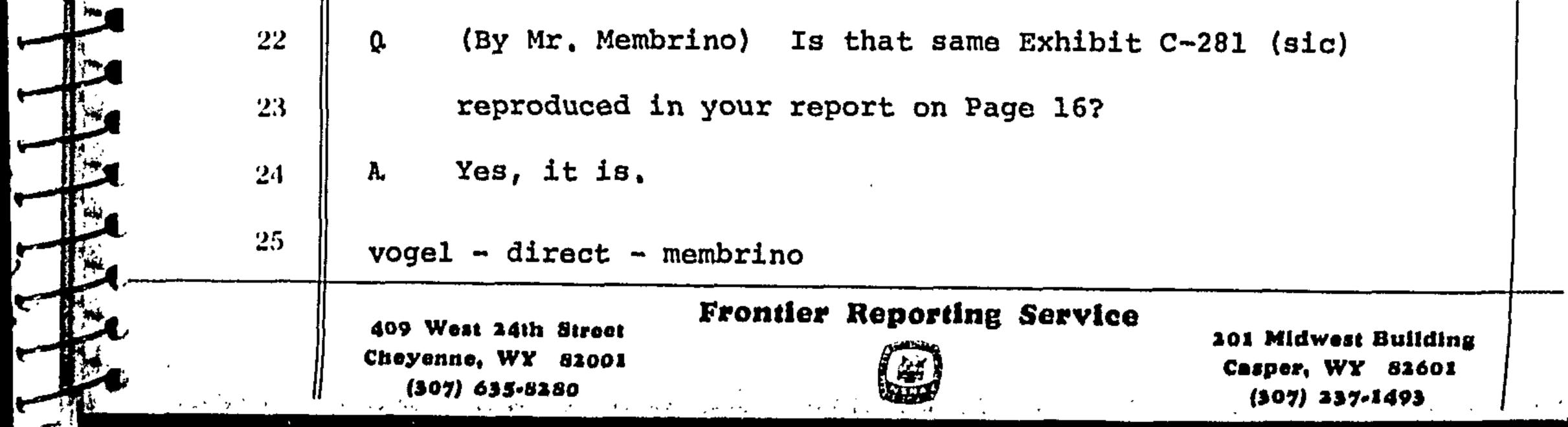
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THE SPECIAL MASTER: Let me ask a question, if I may,

in the interim.

MR. MEMBRINO: Sure.

THE SPECIAL MASTER: Give me a description of the numbers, for example, on the flow at the top of the exhibit, 4 plus 70 refers to what? THE WITNESS: That refers to 470 feet. The plus sign is simply a denotion made by surveyors. When we surveyed all these transects, I simply adopted their notation, so that refers to 470 feet above transect zero plus zero zero. Each one of these is the distance in feet above the downstream most transect.



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wedan-		1	Q	I think it would be helpful for us to identify some of the
سيريه سراين		2		features on that exhibit. Would you describe for the
-		3		Court what is depicted on that in a schematic fashion?
		4	A.	Okay, Again, this is just an example of the placement of
		5		transects within a study site. This figure encompasses
ð		6		the entire study site. As you remember, we have selected
T		7		our stream reach where we wanted to make a claim and we
5		8		have actually selected our study site. Now, the next
ر ې مړي		9		step was to go into Step 3 and do our actual hydraulic
	1 miles	10		and habitat measurements,

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The whole objective of establishing these transects

is to simulate what is actually in the stream. So, to do

so, we went in and we placed transects at various portions

across the stream itself.

THE SPECIAL MASTER: Define that and describe that

transect or that act you just stated.

You went in and placed a transect?

THE WITNESS: Okay, we --

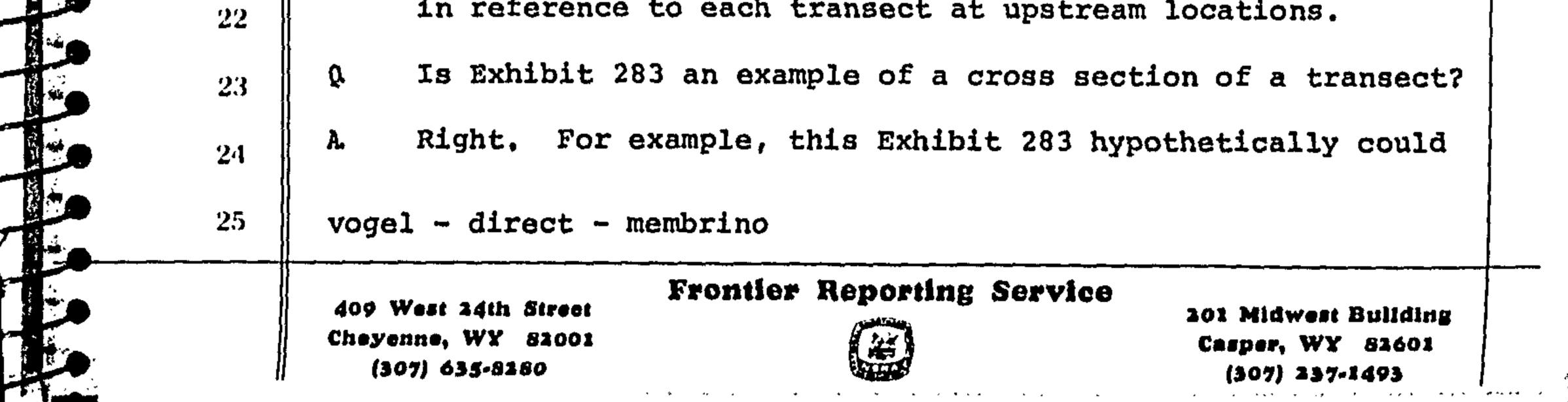
THE SPECIAL MASTER: What did you do?

THE WITNESS: We placed a head stake on the left bank

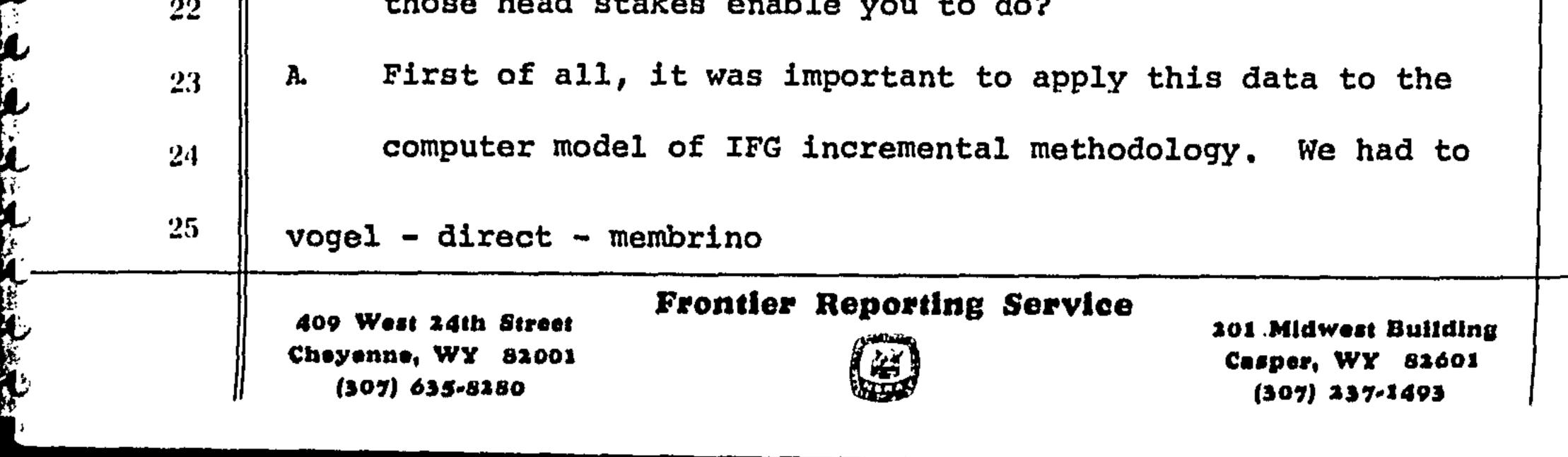
and the right bank of the stream --

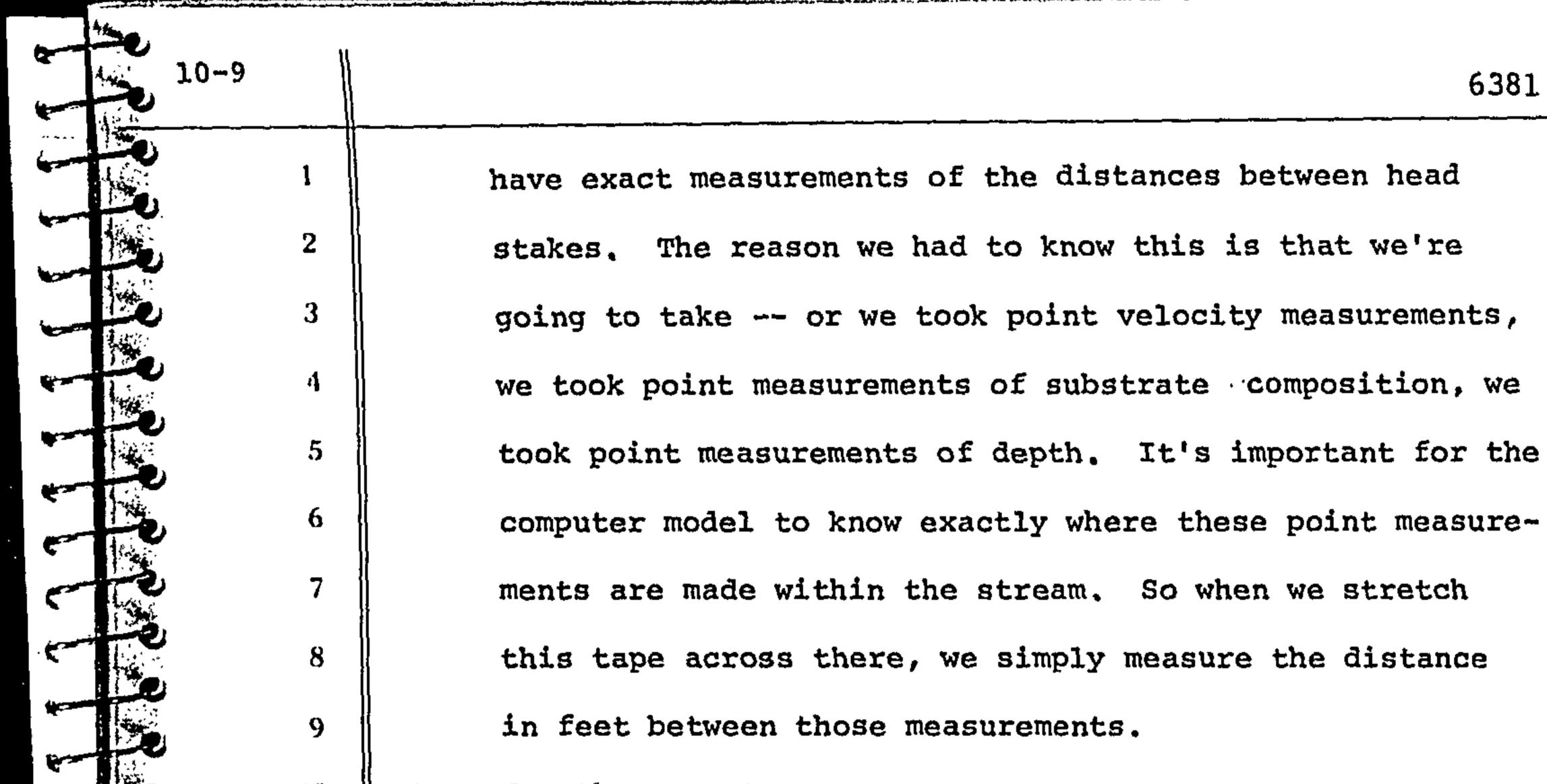
		409 West 24th StreetFrontier Reporting Service201 Midwest BuildingCheyenne, WY 82001Casper, WY 82601(307) 635-8280(307) 237-1493	
	25	vogel - direct - membrino	
	24	on and have Mr. Vogel identify United States Exhibit	
Ti	23	his explanation of that, Your Honor, I would like to put	
3	22	MR.MEMBRINO: If I can interrupt. I think in aid to	

	·		
10-7			6379
	1	- <u>_* , _</u> * <u>, _</u> ** ,,, * *	WRIR C-283, which is another drawing.
	2		THE SPECIAL MASTER: Okay.
	3	Q	(By Mr. Membrino) Would you please identify that, Mr.
	4		Vogel?
	5	A.	Yes, Exhibit C-283 is a cross-sectional profile of a hypo-
	6		thetical transect.
	7	Q	And is that reproduced at Page 17 of your report, Exhibit
e	8		C-280?
	9	A.	Yes.
	10	Q	Please continue with your answer to the Master's question
	11		about head stake placement?
	12	A.	Yes, a transect is simply a cross section of a stream.
	13		We place a head stake on the left bank and the right bank.
	14		I'll be referring to left bank and right bank in the
	15		future in the testimony. That just simply refers to, as
	16		though you were standing in the stream facing downstream,
	17		the left bank would be on your left side and the right bank
	18		would be on your right side. So we place a cross section,
	19		we place a wire across the stream for use in reference
	20		not only in reference to the stream channels on both sides,
	21		but also in reference to the streambed itself. And also
		ł	in metersones he cach homenscel al unative an line li

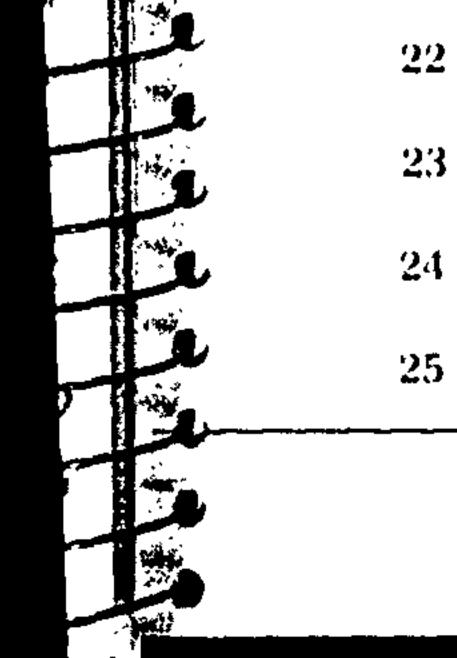


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• • • •		1	be this transect right here (indicating) referred	to on
		2	Exhibit C-282 as the transect stationed as zero pl	.us 50.
		3	That's simply a cross-sectional view of this top v	view of
		4	the transect.	
		5	Q All right, could you point out where the head stal	ces are
		6	and where your wire is stretched on 283?	
		7	A. Yes. In Exhibit 283, this is a head stake denoted	1 on it
			as far as on my right, on the right-hand corner of	f the
		: 9	exhibit and one on the left-hand corner of the ex	hibit,
		10	and the wire was simply stretched between those t	wo head
		11	stakes.	
		12	Q Would you tell us about the significance of the p	lacement
		; 13	of the head stakes, please?	
•		• 1 4	A. Yes, the head stakes were our point of reference	for the
•		15	entire study site. It was from the head stakes t	hat we
		16	did our measurements of the streambed itself as f	ar as
		17	what the elevation of the bed is, We did our mea	surement
		18	of distance from each transect upstream.	
		19	Q All right. And in terms, in lateral terms, that	is the
		20	distance between the left bank and the right bank	in the
	J.	21	head stakes, what is the what does the placeme	nt of
	بقليه	22	those head stakes enable you to do?	





10	Q	Can the computer
11		THE SPECIAL MASTER: Between those what?
12		THE WITNESS: Between the different measurements.
13	Q.	(By Mr. Membrino) Can you tell me whether or not then the
14		computer will be informed about anything outside the head
15		stakes? Do you take any measurements outside the head
16		stakes?
17	A.	Yes, it's there's several pieces of information we can
18		gain from the head stakes themselves. Once we have
19		established the head stakes, we have a reference point to
20		go back to. We can use that reference point to establish
21		what the elveation of each one of these distances



excuse me, each one of these locations of a point measure-

ment, we can actually reconstruct streambed profile, what

the contour of the streambed itself looks like. We can

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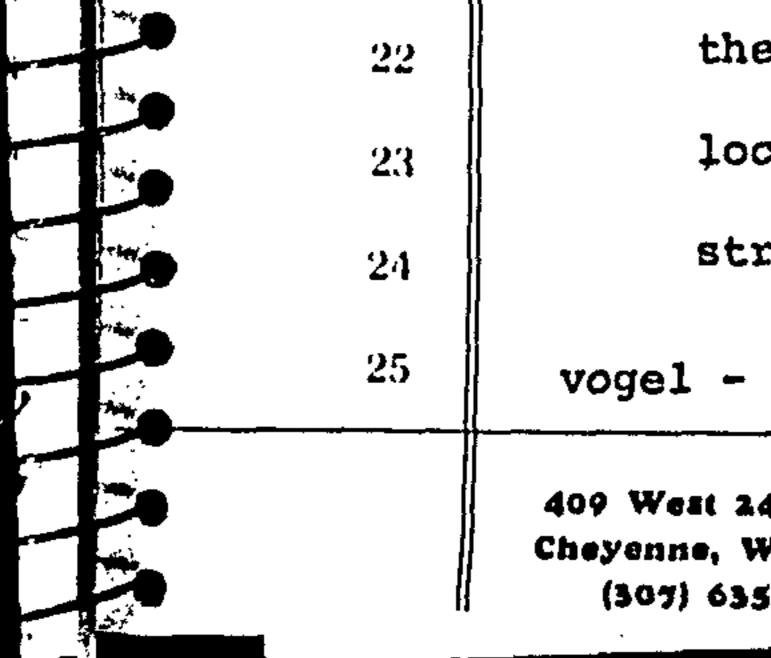
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also use these head stakes as to how far it is up to the next transect in the stream,

THE SPECIAL MASTER: How do you do that and what is a head stake? Is it a piece of wood, 4x4, driven down with guy wires, or what are we talking about? THE WITNESS: The head stakes we used were simply pieces of rebar pounded into the ground, 1/4-inch rebar. (By Mr. Membrino) And what is that --Q.

THE SPECIAL MASTER: Quarter-inch rebar?

10		THE WITNESS: Yes.
11		THE SPECIAL MASTER: And it sustains the wire that
12		you pull taut across the river no matter how long it is
13		to the other stake?
14		THE WITNESS: Right. Usually what we did, if it was
 15		going to be a long distance, we would pound a stake behind
16		the head stake and cement it into the ground, so it was
17		very strong and secure to support our wire across the
18		stream.
19	Q	(By Mr. Membrino) Could you describe what the vertical
20		hash marks are on 283?
21	A.	This is just an example again, but in this example, C-283,



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the vertical lines that are dotted refer to the actual

locations that we make for these velocity depths and sub-

strates. They are also referring to the locations where

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	10-11		6383	
	1		we are going to do our measurements of what the streambed	
	2		elevation would be at each one of those points.	
	3	Q	Now, would you explain the information gathering process	
مسلاب	4		now that you have set your head stakes and	
	5	A.	Okay, this is again back to Step No. 3, our hydraulic and	
-	6		habitat measurements.	
	7		Our very first concern was to place our downstream	
	8		most transects in the study site at a hydraulic control.	
	9		This is determined by the IFG to be the proper method for	
	10		establishing the study site. And the hydraulic control is	



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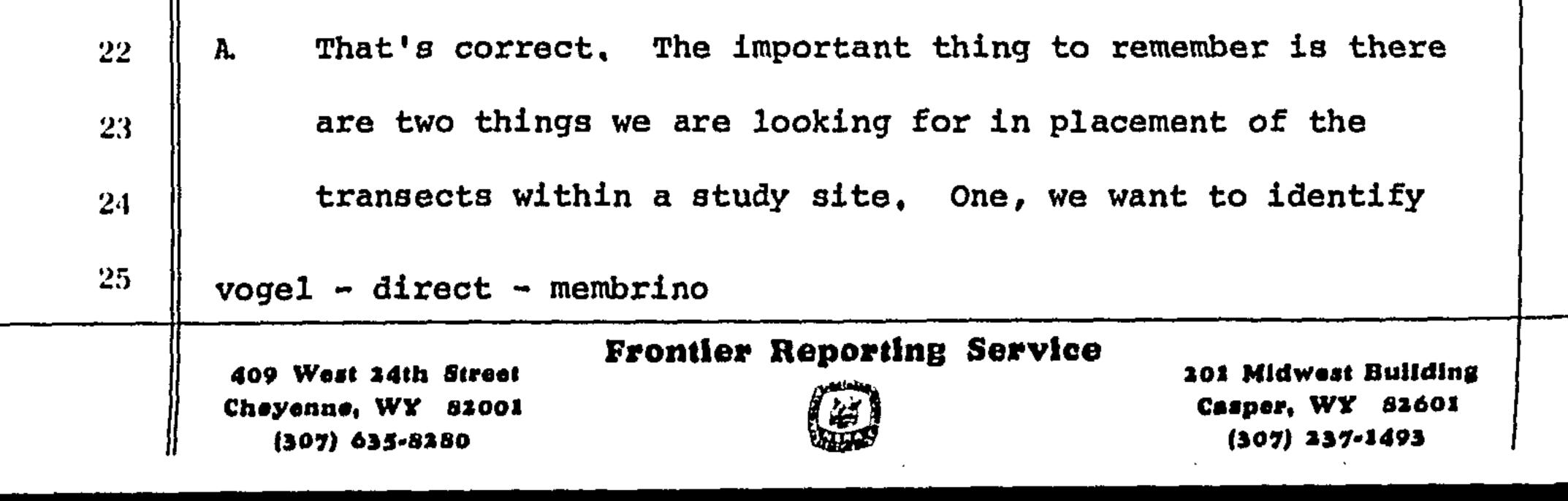
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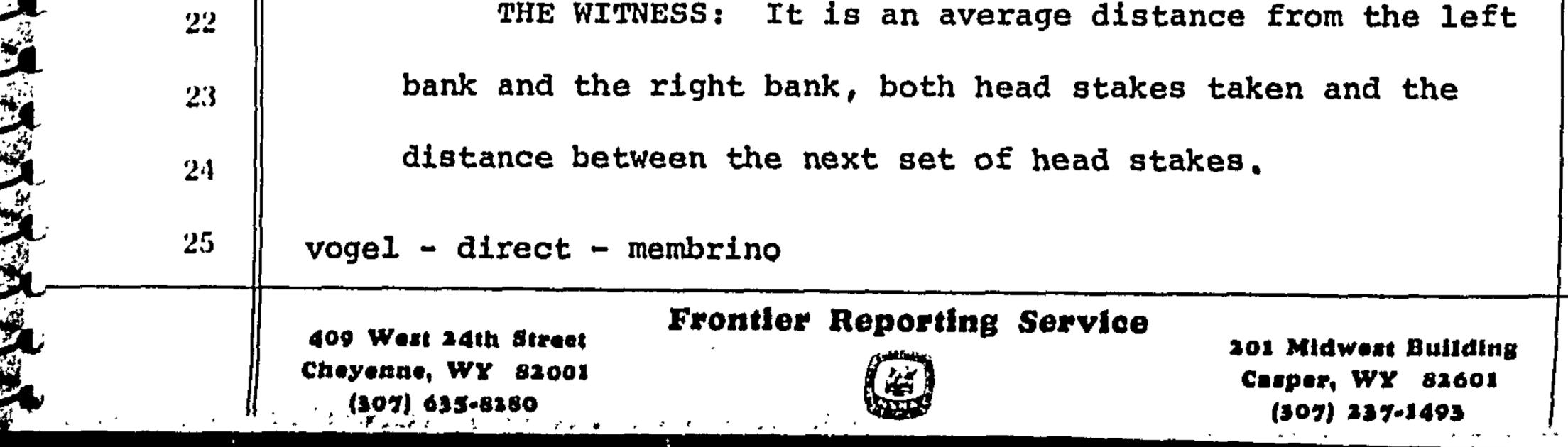
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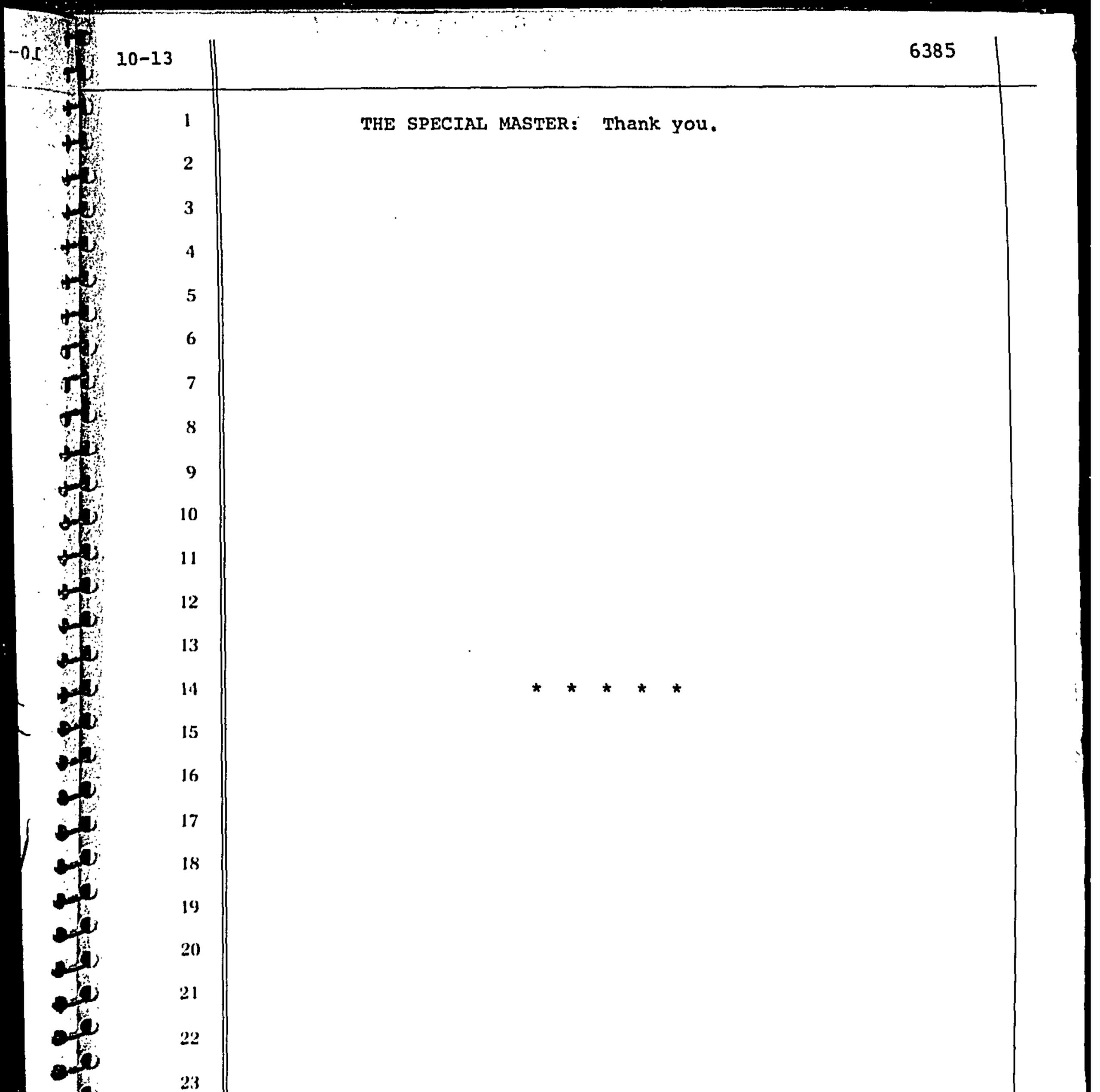
establishing the study site. And the hydraulic control is any physical feature within the stream, whether it be natural or manmade, that has a -- exhibits a stage discharge relationship. It is a feature that would have a damming influence on the water upstream from that point. For example, in this Exhibit C-282 would be the head of a riffle or the head of these rapids. There might be a shallow section there of cobble that actually has a damming influence on the water upstream from that point. So that was our very first consideration. So, for example, behind that 0+00 transect upstream the Q

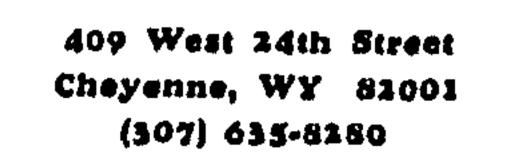
water would be deeper than at the riffle?



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10		10-12	63	384
	•••	1	the hydraulic characteristics of the stream and the ot	her
		2	is we want to identify the habitat characteristics of	the
		3	stream.	
		4	Q So subsequent transects are placed upstream at portion	S
		5	of the river to describe both those values. For examp	ole,
	5-2	6	in this Exhibit C-283 (sic), the transect most immedia	tely
	TE	7	upstream, zero plus 50 may denote a pobl? This is act	ually
		8	fish habitat?	
		9	A. Maybe a pool, a deeper portion of the stream where fis	sh
		10	may live.	1
		11	THE SPECIAL MASTER: Does the zero plus 50 mean	that
		12	it is the same elevation from mean sea level as zero p	plus
	he	13	zero zero?	
Ļ ,	-	14	THE WITNESS: No. All these transects, all the v	water
		15	surface at all these transects will be increases in	
		16	elevation as we go upstream. The zero plus 50 simply	
		17	refers to the distance between transect zero plus zero	0
ľ		18	zero and zero plus 50.	
4		19	THE SPECIAL MASTER: As being what, 50 feet?	
•		20	THE WITNESS: Fifty feet.	
,	i i	21	THE SPECIAL MASTER: From what point to what point	nt?
		22	THE WITNESS: It is an average distance from the	left







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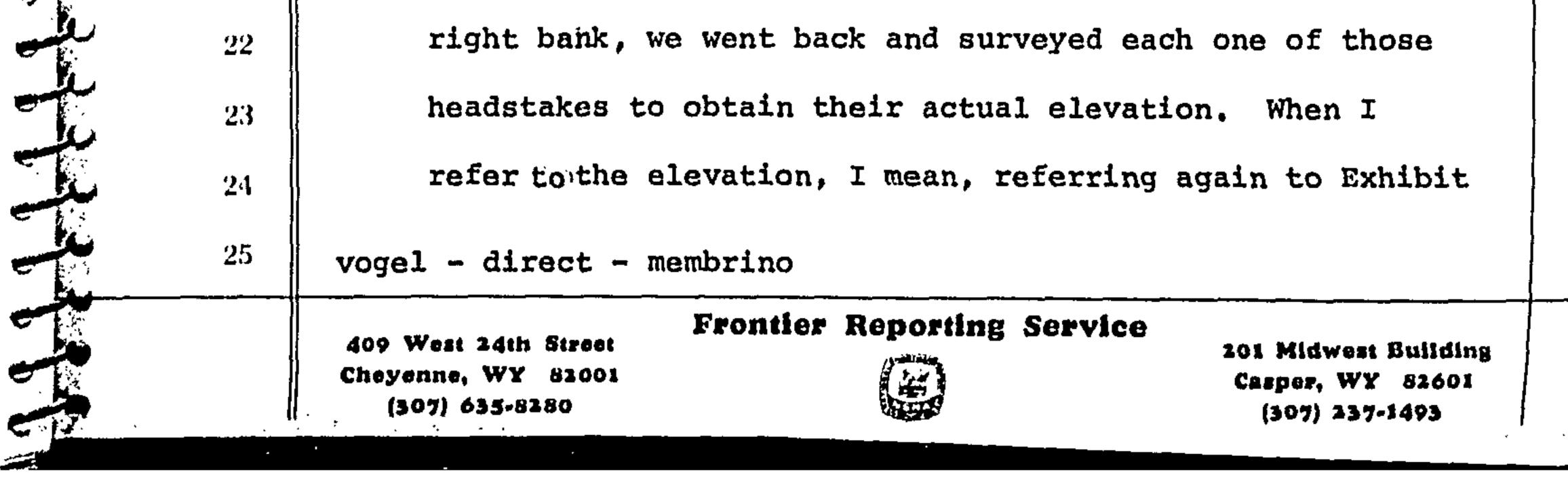
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11-1 MR-1	na	6386
1	Q	(By Mr. Membrino) Please continue.
2	A.	So we continued to place these transects further upstream
3		to describe both the hydraulics of the stream and fish
4		habitats present in the stream. Going upstream, this here
5		most likely would be a hydraulic control, so we place a
6		transect through there (indicating). Further upstream we
7		have an island in this exhibit, theremight be different
8		types of fish habitat present that we want the computer
9		to know about when it's going to model the stream. The
10		same thing goes for the other transects upstream, and we
11		added another hydraulic control at 470 feet. So we en-
12		compassed the entire study site and we've placed transects
13		in places we thought it was necessary to meet the charac-
14		teristics describing habitat and hydraulics.
15	Q	Having set all the transects in place now, what did you do
16		at each one?
17	A	Now, we had to do our actual measurements; the velocity,
18		depth and streambed profile, so we started off with the
19		very first transect excuse me, wë didn't talk about the
20		elevation of the headstakes. The very first thing we do
24		once we place these headstakes at both the left bank and
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	2 A. 3 4 5 6 7 8 9 10 10 11 12 13 14 15 Q. 16 17 A. 18 19 20

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	6387
	C-283, I'm referring to the actual elevation of the top of
	this headstake.
	This isn't an elevation above sea level, it's just
	simply a level from a benchmark that we may have established
	arbitrarily as 100 feet. The important thing is that every-
	thing be referenced to one central elevation so the computer
	has something to go by when it does its modeling.
Q.	So to amplify your response to the Master's question, you
	described that the Exhibit 282 describes horizontal dis-



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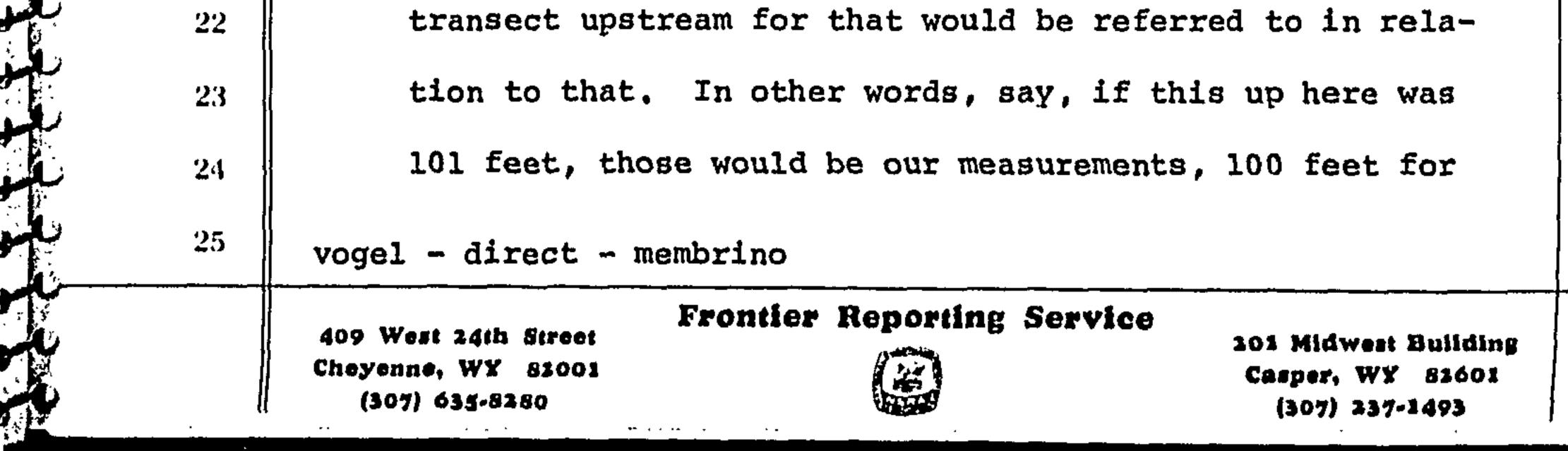
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tances, that is, zero plus zero zero to 50 and so forth, between the transects, and you're now saying that you also established vertical, vertical distances between each transect? That's correct. We found out it's called differential **A.** leveling. We went and found what the difference in elevation between a headstake and a transect downstream and referred it to one that would be upstream. For example, if this hypothetical transect referred to in Exhibit C-283, on the left-hand portion of the exhibit, or to be this transect on my left, the left-hand portion of the exhibit, and the transect zero plus zero zero were 100 feet, a



	2		· · ·		
) // 11-3	3		6388	
0	U.				
1.		1		this headstake, 100 feet for that one. These measurements	
-		2			
	U.			were made to the nearest one hundredth of a foot.	
- 		3	Q.	Now, we're back again to the specific transect and what you	
		4		đỏ with what you do at it.	
		5	A.	Upon establishing all our transects within a study site,	
		6		we went to our very first transect, the downstream tran-	
0		7		sect, and began our measurements. Our first concern was	
0		8		to measure the streambed profile. We now have a measure-	
		9		ment for what the headstake elevations would be. Now, our	
		10		objective was to measure actually what the streambed profile	

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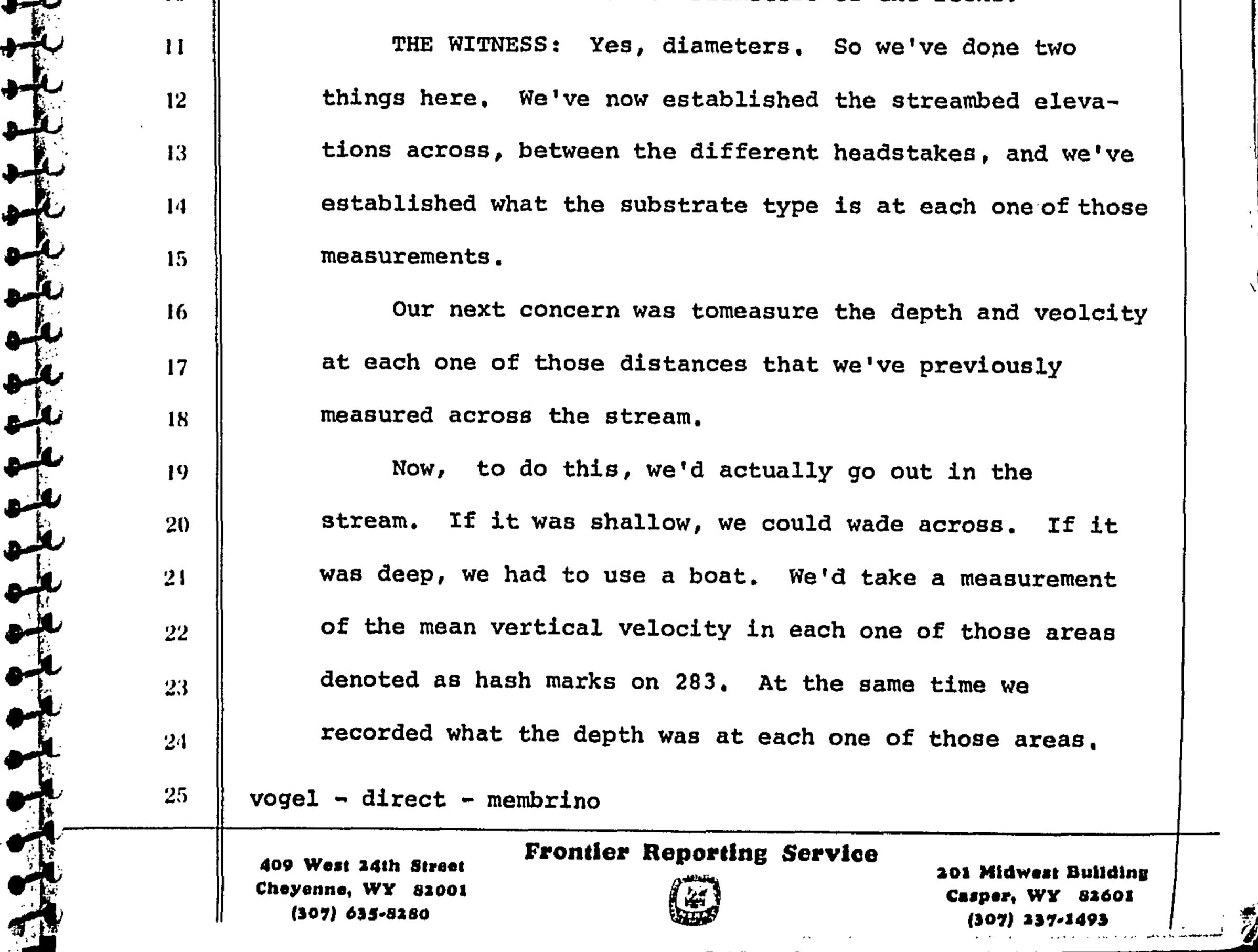
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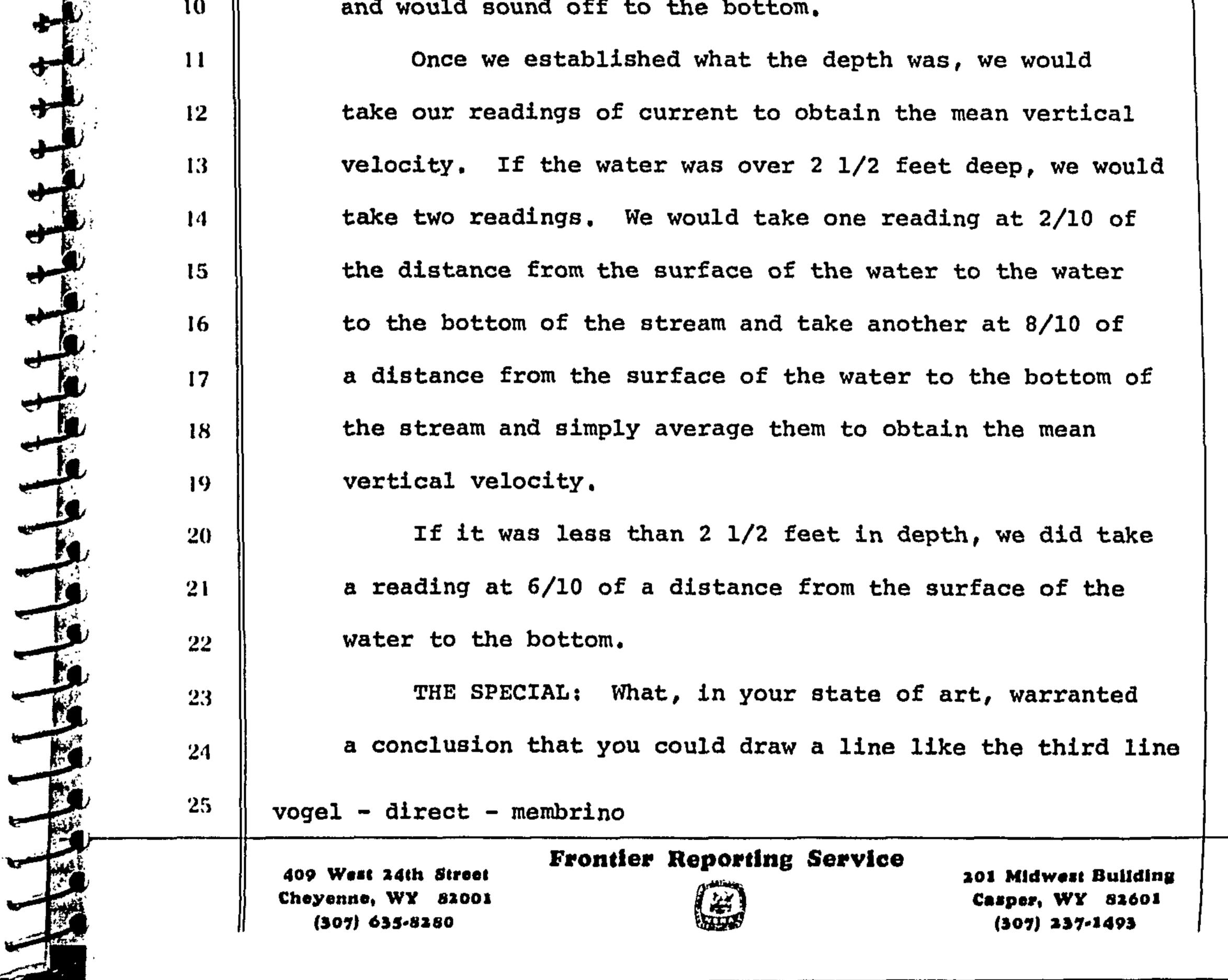
objective was to measure actually what the streambed profile would be, what the elevations may be one foot away from the headstakes, 10 feet or 100 feet away from the headstakes. This information is used for the computer to model the stream hydraulics and fish habitat. So our first objective was to go out and do point measurements at distances away from each headstake. And at each one of those measurements, as far as the streambed elevation, we also do a measurement of what the substrate may be. Again, when I say "substrate", I'm referring to the actual streambed material. For example, cobble was a substrate that appeared quite frequently in most of our

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25	vogel - direct - membrino
24	THE SPECIAL MASTER: I don't need that if anybody
23	Q Could you give a rough definition of what cobble is?
22	study regions.

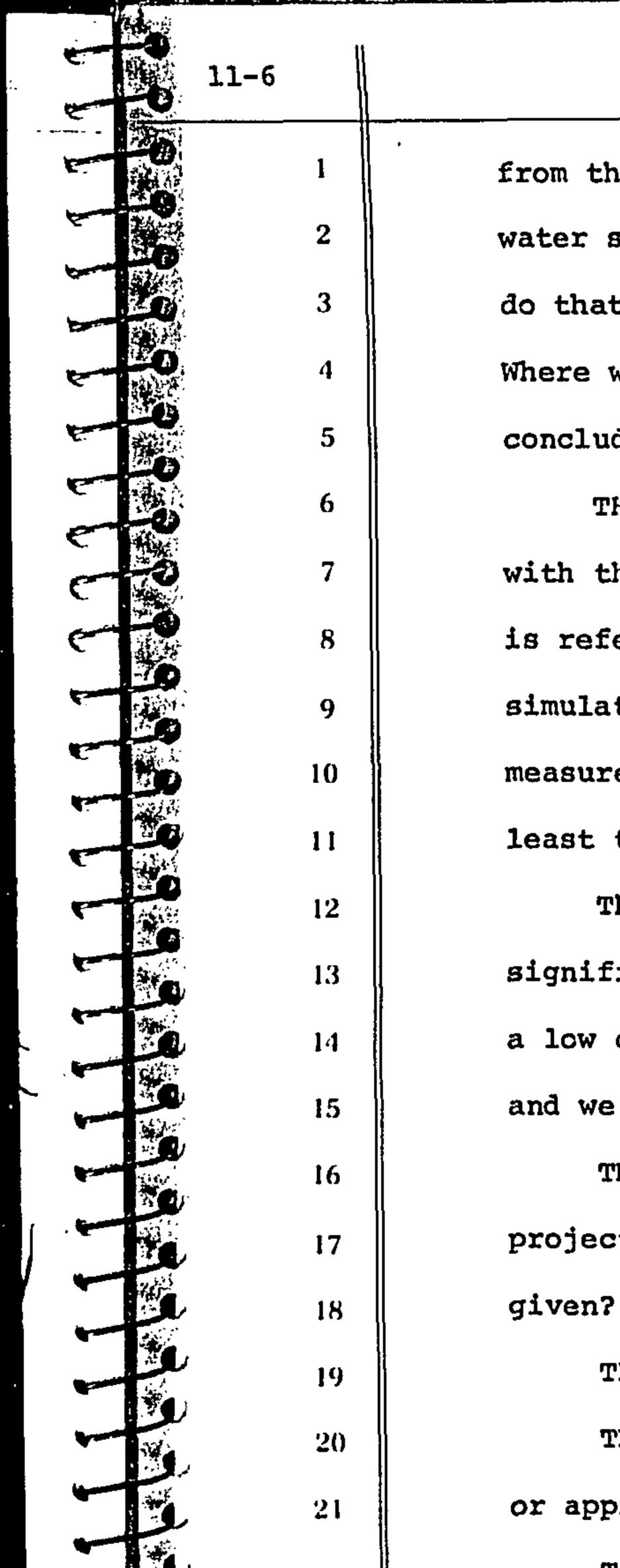
	11-4	6389
	1	else doesn't.
	2	MR. WHITE: You may want to hear it. It may be
ste	3	different from what you've heard before.
	4	THE WITNESS: IFG's got a scale that they use as far
	5	as denoting different sizes of substrates. We refer to
	6	cobble as approximately just a little bit less than 3 inches
T	. 7	to up to about 10 inches in diameter.
	8	Sand was Gravel would be something less than 3
	9	inches down to, say, a couple millimeters.
	10	THE SPECIAL MASTER: Diameters of the rocks?



we set		
11-4	11-5	6390
	1	THE SPECIAL MASTER: How would you find that depth if
	2	it's more than your feet would tell you or a stick? You
	3	use the probing?
	4	THE WITNESS: Pardon?
	5	THE SPECIAL MASTER: Probing or soundings?
	6	THE WITNESS: They would be soundings. I think the
8	7	deepest place we had in the Reservation was the Wind River
T	; 8	Canyon. It had a depth of 9 feet. We simply used a winch
	9	that had gragiadiations marked in feet, tenths of feet,
	. 10	



and would sound off to the bottom.



from the top on Exhibit 283 and conclude that is where the water surface was at the lowest of all measured flow and do that in transect after transect at any given study area? Where were the statistics available to you or how did you conclude that? THE WITNESS: There was -- We used two computer models with the IFG incremental methodology. One computer model is referred to as IFG-2, The second computer hydraulic

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simulation model is referred to as IFG-4. IFG-2 requires

measurements of only one discharge and IFG-4 requires at

least two or three or maybe more measured discharges.

The IFG-4 requires also that those discharges be

significantly different, such that we measure the flow at

a low discharge, a medium discharge and a high discharge,

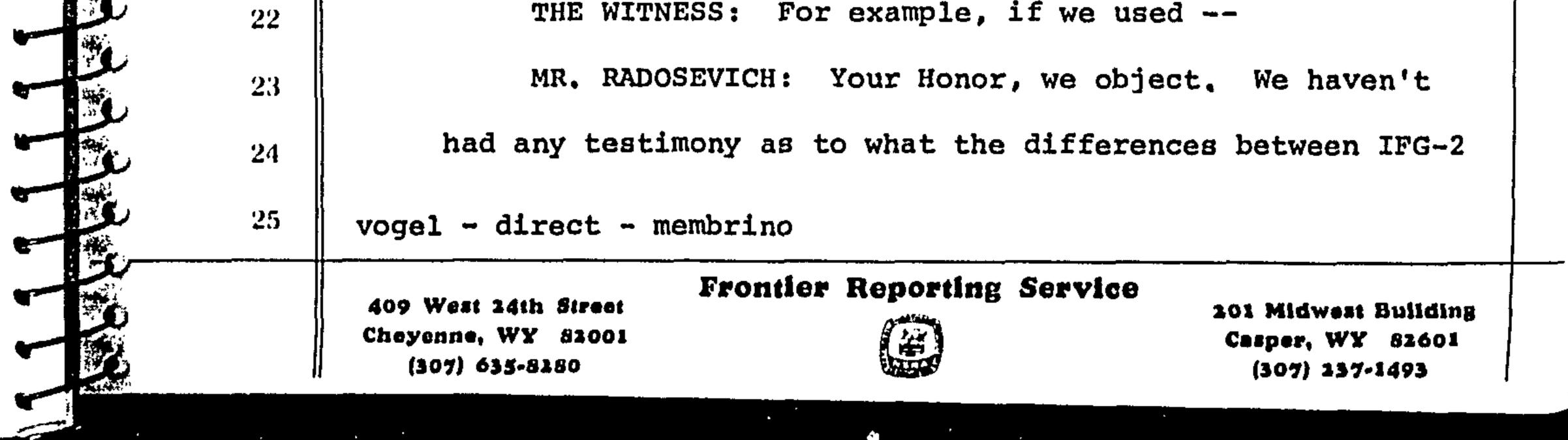
and we do the same process for each.

THE SPECIAL MASTER: That line is a hypothetical or a projection based upon the statistics that you've been

THE WITNESS: Right.

THE SPECIAL MASTER: And you would extrapolate that

or apply to a given area.



11-7 and IFG-4. What are we having described? 2 THE SPECIAL MASTER: Well, of course, he was just 3 answering my question. 4 It's almost lunchtime, so why don't we take a break 5 and be back at 1:30? 6 MR. MEMBRINO: Sure. 7 THE SPECIAL MASTER: Let's do that; it's a good place 8 to break. 9

(Thereupon a lunch recess was

