ALASKA POWER AUTHORITY SUSITNA HYDROELECTRIC PROJECT SETTLEMENT PROCESS

POSITION PAPER DISCUSSION MEETING #3

March 22, 1985

Northern Lights Inn 598 W. Northern Lights Blvd. Anchorage, Alaska

Old Business: Revised Papers R-5, W-9

New Business: Position Papers W-13, W-19, R-2, R-3, S-5, F-2.6, F-5, F-12

ATTENDEES

Jack Allen, KK and K Tom Arminski, APA Bruce Bedard, Tyonek/ CIRI Villages Pam Bergmann, HE John Bizer, HE Bob Chlupach, ADF&G Susan Ernst, HE Randy Fairbanks, HE Larry Gilbertson, HE Chris Godfrey, EPA David Harrison, Chickaloon Moose Creek Jack Hession, KK and K Mary Kaye Hession, KK and K Hank Hosking, FWS Rich Kornbrath, KK and K Steve Koslow, KK and K

Mark Kuwada, ADF&G Leroy Latta, ADNR Bob Lindsay, HE Jeff Lowenfels, BHB Eric Marchegiani, APA Dallas Owens, HE Jim Richardson, KK and K Jack Robinson, HE Dan Rosenberg, ADF&G Phil Scordelis, HE Brad Smith, NMFS Tom Stuart, HE Rick Suttle, HE Jim Thrall, HE Sharon Vaissiere, HE Jim Wolfe, FMAA

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ATTENDANCE ROSTER

1 2 3	ALASKA DEPT. FISH & GAME: Bob Chlupach Mark Kuwada Dan Rosenberg	NATIONAL MARINE FISHERIES SERVICE: Brad Smith TYONEK/CIRI:		
4	ALASKA POWER AUTHORITY: Tom Arminski Eric Marchegiani	BRUCE BEDARD		
5	BIRCH-HORTON: Jeff Lowenfels			
7	CHICKALOON MOOSE CREEK: David Harrison			
8 9	DNR/LWM: Leroy Latta			
10	EPA: Chris Godfrey			
11	FMAA: Jim Wolfe			
13	FISH & WILDLIFE SERVICE: Hank Hosking			
14	HARZA-EBASCO: Pam Bergmann			
16 17	John Bizer Susan Ernst Randy Fairbanks Larry Gilbertson			
18	Bob Lindsay Dallas Owens Jack Robinson			
19	Phil Scordelis Tom Stuart			
20	Rick Suttle Jim Thrall Sharon Vaissiere			
22	KNIK KANOERS & KAYAKERS:			
23	Jack Allen Jack Hession			
24	Mary Kaye Hession Rich Kornbrath Steve Koslow			
25	Jim Richardson			



PROCEEDINGS

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I'm Tom Arminski. Roughly what we're MR. ARMINSKI: going to try to do in this meeting is to review each of these issue papers, to resolve the issues if possible. If there are any data gaps that you feel need to be addressed, we'd like you to identify those so we can address them as soon as possible. We'd like to review the analytical methods that were used in the preparation of these issue papers, review the mitigation measures for adequacy; or if you feel that mitigation measures are lacking, you're welcome to suggest We'a like additional mitigation measures for consideration. to talk about the type of settlement instrument that might be used to resolve this issue between the power authority and agencies or intervenors. This might take the form of a simple letter that says we agree with your position. might take the form of a fairly complex agreement between the power authority and all the participants that would be submitted to FERC and incorporated as a special license stipulation. And the last item is to agree on any sort of further action that we might need to resolve the issue. We've got a settlement plan in the back that's been distributed to each of the parties in the past. We haven't had any discussion on that in the last two meetings. If there's anyone here that hasn't been here before that would want to discuss that, we can do that at this time. Sir? Okay.



MR. SMITH: Tom, could you maybe just briefly go over that and explain how the follow-up meetings and such -- and maybe where these meetings fits into the overall process.

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MR. ARMINSKI: Okay. Generally, the way we've got this thing set up is that we've developed position papers for 56 issues that have been identified. And these 56 issues come from, I'd say, an exhaustive review of all the comments, testimony to our Board, whatever, for the last for or five years. And I think we went over something like 1500, 2,000 comments and distilled them down to basically 56 issues that we think cover the spectrum of concerns. What we've done is to prepare position papers that address each one of those issues. And the position papers are capsulizations of studies, statements made in the license application, comments to FERC, whatever -- try to give a brief overview of each issue so that a person that is not familiar with the issue or doesn't have time to review a great number of documents can get the flavor what what we're talking about here; and also the proposed mitigation measures and our position with respect to that issue. Now these things have been mailed out to, probably, around 80 parties. All of the FERC intervenors, all of the Federal agencies that are intervenors, and then State and Federal agencies that are not intervenors. So what we had hoped is that after reviewing these papers the parties that are interested would meet with us in a forum



like this and discuss these points that I addressed earlier. The ultimate goal would be to resolve these issues amongst ourselves so that they wouldn't be subject to Federal FERC in Washington D.C. What we want to do is try and work these things out amongst ourselves here in Alaska and not leave it to a Federal administrative law judge to impose license stipulations or whatever on us that none of us might find a best solution. This paper basically goes through that pro-The way we've got the meeting set up is that we have a series of initial meetings to discuss the papers and then we can have subsequent meetings to discuss any, you know, new mitigation measures that are adopted or proposed; you know, results of on-going studies, whatever. Down towards late in the summer we hope to be able to enter into agreements with the parties and -- The time line basically is dictated by the FERC licensing schedule. The final EIS is supposed to come out in September. Hearings would be ordered shortly thereafter. We'd have a need for a power hearing first that would last -- the hearing's actually very short. It's only a few weeks, but then we've got -- we go into an environmental hearing which -- we've got a fairly lengthy discovery period and they set aside about six months for an evidentiary-type So the total hearing process at FERC encompasses about 20 months; and we'd like to avoid that if at all possible. As I stated, we'd like to try and work things out



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here in Alaska, and not leave our fates up to FERC. And
furthermore, I think we would like to avoid the expense and,
I'm sure, the burden of going through a long hearing in
Washington D.C. Does that basically answer the question?
Jeff, do you have anything to add to that?

MR. LOWENFELS: (Negative nod)

MR. ARMINSKI: Okay. One of the things that we've done is discuss many of these papers in the previous two meetings. And our plan is to, where there's been comments made, bring these up as old business. And what I'll think we'll do is quickly go through R-5 and W-9 that have been revised, and then we'll change the order of the agenda here to address our three whitewater boating first. I think there are a lot of people that would like to leave after that one is discussed. So with that, I think -- Rick, are you going to take....

MR. SUTTLE: R-5?

MR. ARMINSKI: R-5.

MR. ROBINSON: I'd like to say a word. I'm Jack
Robinson. I might say a word with regard to the old business
papers, the papers that were revised based on participants'
comments in past meetings. The lines of the paper that were
changed from the version that was discussed in the previous
meetings is indicated in the right margin by a little
caret so that you can pick out what changes there were from
the last time you saw it. And in addition, on the title page



for the executive summary and the first page of the paper, it says revision one so that you can distinguish that from the one we talked about in past meetings.

MR. ARMINSKI: Dan Rosenberg.

MR. ROSENBERG: Would you give us a call or something to let us know which ones -- which revised papers we'll be discussing.....

MR. ARMINSKI: Okay.

MR. ROSENBERG:a little bit in advance?

MR. ARMINSKI: I think probably the easiest thing to do is to call us because we don't really know with our schedules exactly what we might have to discuss up 'til just about the day before. But we can keep our receptionist advised what the old business subjects would be, and if you want to just call the Power Authority, probably at either of the numbers, the Susitna office or the other office, we can tell you what is going to be on the agenda. Okay? Rick?

MR. SUTTLE: R-5, it says: the significant impact upon nonconsumptive activities, camping, hiking. We discussed some of the comments. Most of the comments that were incorporated were Bruce Bedard's; and on page 2 is the first revision, the last paragraph; and what was added in was the discussion on some of the features of local and/or regional significance such as Stephan Lake, Fog Lake, and Clarence Lake. And the on page 8 on the marks, on the very



last one there, it came out a little more strongly that the Native landowners are interested. I think the last one said appear to be interested. And the addition of adding to -and the State, the very last sentence was added to that, in addition to tour companies. Then finally the revision was on the very last page, page 9, where we discussed developed facilities may also be constructed by Native landowners near Fog Lake, located immediately south of Watana Dam, near the north end of Stephan Lake. Anyone that has questions, we can talk about it now, or we can discuss it later after you've had a chance to look over it. That's fine. MR. ARMINSKI: Brad.... MR. SMITH: I have more of a procedural question here. Have these been mailed out, or were they just handed out today? MR. ARMINSKI: I believe they were just handed out today.

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MR. SMITH: Now, does this constitute what you say is a follow-up meeting for these issues, or what are you doing here?

MR. ARMINSKI: Yeah, I would say that this would begin the -- would be the beginning follow-up meeting for these issues.

MR. SMITH: Okay. I was under the impression that we'd establish a date for the follow-up meetings, and meet just to



talk about that one particular issue. Would that be 2 possible or.... 3 It would. MR. ARMINSKI: MR. SMITH: Okay. I'd suggest that that be done, then. 5 I don't think you're going to get a lot of feedback with 6 this type of procedure. 7 MR. ARMINSKI: Okay. 8 MR. THRALL: I thought that we had a discussion where 9 we thought, maybe, that in some cases we could just present 10 these as old business at a forum like this where there's 11 not -- appear not to be real controversial, changes could be 12 made, and then follow-up meetings could be scheduled if it 13 is perceived to be necessary. Was that.... 14 MR. ARMINSKI: I think that was my understanding. 15 was our first meeting discussion, Brad. I don't think you 16 were.... 17 MR. SMITH: Oh, I wasn't at the first meeting. 18 MR. ARMINSKI: I think one thing is clear to keep in 19 mind, that nothing precludes, you know, anyone from bringing 20 up old business at any time; anytime, you know, someone 21 wants to bring this one back up again at the next meeting 22 as old business if it has some additional problem. But maybe 23 we need to resolve this a little more clearly. 24 I think you have to add a little more MR. SMITH:



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structure to this process or it's going to get awfully

cluttered. However, what you said sounds logical, but I would at least like to see a mailing of these updates before 2 they're discussed. 3 MR. THRALL: We're trying to sort of balance, you know. 5 budgets and deadlines and everything else and numbers of meetings against -- so we need to keep it structured. Maybe that's something we need to take under advisement, think on and report back on at the next meeting; come back with some additional thoughts. 10 MR. ROSENBERG: Rick, did you get Fish and Game's comments 11 on this paper? 12 MR. SUTTLE: You may not have. I apologize. They got 13 out real late, so I'd like to be able to go through it. 14 They've been sent over now. I don't know if you've 15 received.... 16 MR. ARMINSKI: No, we haven't received them yet. 17 MR. ROSENBERG: I'd like to just go through this and 18 discuss it with you later. 19 MR. ARMINSKI: Any more discussion on R-5? Okay. 20 next item is an old business, W-9. This is a paper that 21 dealt with the impact of support facilities on wildlife 22 habitat. Randy, please. 23 MR. FAIRBANKS: Okay. In W-9 we made changes in 24 basically four areas. One was there was a mitigation measure 25 which, essentially -- that was listed in the previous paper



that listed the production of wetland, refined wetland maps, as a mitigation measure that was suggested. That was really a tool for impact assessment and not necessarily a mitigation measure, so that was deleted from the mitigation measure list. Mitigation measure 5, the wording "develop a plan" was changed to "implement a plan"; and that was pertaining to implementing a site rehabilitation plan. And then the comment was made that in the Watana area some of the support facilities are sited in areas that have relatively high value as black bear foraging habitat; and that was incorporated into the text in several different places. And then finally, there was a comment regarding mitigation measure 8 that we should change the wording "compensation lands" to "mitigation lands"; and that was done. So everything that was changed, as Jack indicated earlier, is indicated by a caret in the right margin. The only thing you won't see with a caret is the deletion of that one mitigation measure that was in the previous paper. MR. ARMINSKI: If you'd like, you know, we can bring

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MR. ARMINSKI: If you'd like, you know, we can bring this up next week.

MR. FAIRBANKS: Okay. Yeah, let's go back and look at it again.

MR. ARMINSKI: Okay, we'll do that. We'll bring it up again. Okay. Now for the one everyone's been waiting for. New business. This is the significance of loss of



whitewater resources. The Power Authority feels that the impact of this project will be significant on whitewater resources. There will be a loss. We believe we can provide some compensation for this, but we will not be able to totally mitigate the loss. The significance is somewhat balanced, I think, by the somewhat low number of people that use the resource on an annual basis, but that's not to say that that loss isn't significant to those people. Susan Ernst is going to discuss this paper.

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MS. ERNST: Okay. First I'd like to start by adding an additional mitigation measure that was omitted. was an oversight. There will be some access out of both reservoirs, provided from construction access of each reservoir. We'll have some kind of access that will enable people to put in near the Denali Highway and travel down and access out of the reservoirs. And as far as our approach, it consisted of: We first investigated from the background information we had which consisted of, primarily, an article on Devil's Canyon that was published in the American Whitewater Affiliation Journal. We consulted various river guides published on the Susitna River. We referred to correspondence that had been sent between members of the Knik Kanoers and Kayakers and the APA in recent years. we also discussed the issue with various representations of national river organizations, including the organization of



rivers for the American Whitewater Affiliation and the American Canoe Association. We also discussed the issue with some local kayakers and a nationally known kayaker from Idaho who has kayaked the Devil Canyon. Are there any comments on that?

MR. KORNBRATH: The new mitigation measure that provides the access, is that -- what's the story on the maintenance of the road? Is that an on-going thing where it will be maintained, or is it going to go the route of, like, the Burma road?

MR. ARMINSKI: What we would have to do if we provided the access -- the access as we envision it right now would be the use of a construction road down to the reservoir.

And if it's agreed that this is a needed recreational facility, to provide egress and ingress for boaters, we would maintain that. It would become one of the operation and maintenance costs for the project.

MR. KORNBRATH: Okay.

MR. ARMINSKI: Jim.

MR. RICHARDSON: Maybe just to sort of structure some of the comments that you may get: There's a number of people here that are recreational boaters. That's what you have a resource to talk to here. In reviewing this, we had a general feeling that there's a number of facts presented here. There's nothing really wrong with the data, but some



1 of us do have a problem with the way it's presented; way being: providing information in a way which gives the 2 3 opinion of lessening the impact. And we would like to discuss several of those issues and will be able to contribute as individuals to that. And after we get through the 5 6 list of information about that, then we have some additional 7 mitigation measures to propose and to discuss with you. 8 There are a lot of us here that are not very familiar with the 9 process that you are going through, and much of our information 10 on the project is gleaned from the newspaper. Maybe you 11 could clarify for us what it is that you're talking about. 12 Are you still talking about two-dam system? Are we talking 13 about a single dam at Watana with the lower race? That has 14 some real impact on what it is that we're talking about in 15 terms of impact.

MR. ARMINSKI: Do you want me to address that right now?

MR. RICHARDSON: That would help.

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MR. ARMINSKI: Okay. What's currently proposed is a two-dam system. It's the same, ultimately, as was presented in the FERC license; the difference being that Watana would not be built to the full height initially. So there would be a lower Watana constructed. The Devil Canyon project would be constructed as proposed and then some time in the future, we'd go back and raise Watana to the ultimate height. So that's basically what the project is. The reason for



doing this is that it decreases the initial cost of constrution, although it ultimately results in a higher cost of
construction for the entire project. But we can meet the
low projection, low growth projections, more closely with
that instead of having a big incremental increase in
capapeity. We raise the capacity in three steps rather than
in two. So that's the rationale behind it.

MR. RICHARDSON: Well, that does help us talk about it.

I had been reading in the paper for the last quite a bit of while about a single dam structure that was being considered as sort of a fall back. That's not....

MR. ARMINSKI: Well, it's not economic -- I should say it is economic to build just Watana, but the cost benefit ratio, I think it's just a little over one. And you know, if you're going to sink that much money into something, you'd want to develop it to the extent where you got the best benefit out of it. And secondly, with just Watana alone, you could never -- you can't operate it at full capacity because you've got a problem where to meet the environmental constraints, the flow requirements, you'd have to just primarily, what we'd say, base load it. You could never use it as sort of a peaking project. Devil Canyon, on line downstream, you can peak Watana. And then you can -- your flows out of Devil Canyon can be moderate, you know, so that you don't have major fluctations.



MR. RICHARDSON: Some of the power flow implications aren't really necessary to us, but in terms of our mitigation measures, what we can discuss, it really makes a big difference. So I think we'd better make a differentiation when we're talking about it; and perhaps suggest if we're talking about a single dam structure, some mitigation measures may be appropriate, and if we're talking about a system those will not be appropriate.

MR. ARMINSKI: We're talking about two dams.

MR. LOWENFELS: Yeah, we're talking about a system.

Let me just correct -- correct is not the proper word. The proposal to stage the project has not been approved by the Power Authority board. It's a proposal that seems to make a lot of sense, and it's one that people are talking about as making a lot of sense as being an alternate to putting a lot of up front State dollars into the project. But the license application, as it's currently on file, is for a two-dam project without staging.

MR. RICHARDSON: Okay. That clarifies it. Thank you.

MR. ROSENBERG: I'm under the impression that everything we're discussing now is just the two-dam project staging.

MR. ARMINSKI: That's right.

MR. ALLEN: What is the cost benefit ratio of the whole thing?

MR. ARMINSKI: As proposed now? I think it's 1.43.



MR. RICHARDSON: Well, maybe I can just start out now we're going through here. In discussing several of the points within this paper that we feel could have used a little bit of change. I guess one first item -- and I'd like other people to sort of chip in on these items -- is that we don't feel that the future use of the river was discussed at all in terms of how to evaluate the significance of the impact of the loss. The figures are given that this hasn't received a great deal of use in the past, and therefore that level of use would continue indefinitely into the future. And I don't think that that is a valid assertion. At one point in time the Colorado River was used at a very low level, and now that situation has changed very dramatically. The river was first run, basically, in the 1970's. It hasn't had a great period of use. It's not extremely well known. But the number of recreational boaters within the State of Alaska is increasing as -- if you walk down to any of the sporting good stores and find out the number of boats that they're selling -- that information will be clear to you. And secondly, there's a lot of people that come up from all over the country and from other countries to go recreational boating within the State of Alaska. So that demand is uncertain, but it is very unlikely to remain the same. That is one issue. Maybe I could throw it open for comments. MR. ALLEN: Let me add to that, Jim. I basically felt



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it was a good paper, and it obviously did a very thorough job of gathering material. But I think the thing that was missed is something that we feel very strongly about, and that is that the Susitna River really is a unique river. mean, it's one of a kind. There are other difficult rivers in Alaska and in the rest of the country, and the paper mentions a couple of them, but they really don't compare to the Susitna in terms of the volume and the continuous section of water. You know, every river has one or two drops that are unrunnable, but here is a river that really is accurately compared to Mount Everest. It's a nationally famous river; and of course, it's very difficult. I, myself, wouldn't consider running it. But there are a lot of local boaters who do, and have, and that number will increase. But more importantly this is a river that kayakers anywhere in the country know about, and it's part of a -- you know, there are a lot of people that wouldn't consider climbing Mount Everest, but it's something that, I think, has value simply because of its uniqueness. And I think the use of it will increase. But even though the use, you know, may not compare in terms of the number of people that would take a motorboat out on the reservoir, still there are plenty of lakes in the world, plenty of reservoirs, but there is only one Devil's Canyon. I think that's the point that we feel is really not adequately reflected in this paper.



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MR. HESSION: I can add that it's free-flowing, the Susitna River, as well. I was just thinking of the large whitewater rivers in the Lower 48. A number of those are Those are what boaters call release rivers; the Grand Canyon, for example. But here you have not only a spectacularly big water, it's a natural system. I think that ought to be at least recognized. You mentioned in your paper the Kosina and the Nellie Juan. a member here today, Steve Koslow, down at the end of the table, who's been down the Nellie Juan. We know here of the Kosina, which is in the Wrangells. Those are relatively small type or technical rivers, as boaters refer to them. And they simply don't compare with the Susitna. They're not even in the same league. I'm not downgrading them or criticizing them, I'm just pointing out that it's an entirely different sort of proposition. Steve, do you want to comment on the Nellie Juan? MR. KOSLOW: Yeah, I've found that -- I've never paddled the Susitna. I've been up a few times to run the

MR. KOSLOW: Yeah, I've found that -- I've never paddled the Susitna. I've been up a few times to run the river, but due to weather conditions, I wasn't able to fly in. And I'm that caliber of a boater, and there are more than a dozen of those boaters in the State of Alaska, which has a very small population of kayakers as compared to the rest of the country. I think the Susitna has a great

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1 potential for a lot more use. And the other rivers that you mentioned, the Kosina and the Nellie Juan, also are quite 2 3 incredible rivers in themselves, too, but they certainly don't even come close to the scale that the Susitna River has 5 The Nellie Juan is a small volume; it maybe peaks at 4,000 6 cfs as opposed to the Susitna which is up to 10 times that 7 much. It's difficult in that its portages and its waterfalls 8 are very spectacular. The wildlife is incredible. 9 scenery's incredible with glaciers coming down to the river 10 and et cetera. But the Susitna is still set apart from that. 11 It's just a completely different system. I'd feel real 12 sorry to start from different altitudes. I think that would 13 be a real shame.

MS. ERNST: Could I ask you: Would you say that the main difference between the Susitna and these others is the volume?

MR. KOSLOW: I'd say the scale of the river, the size of the river, certainly, the hydraulics are of a scale that you just don't find.

MR. ALLEN: In fact, you can put whitewater into two different categories: technical rivers and big volume rivers. The Kosina and the Nellie Juan are on the technical side; small, but difficult because highly constricted by rocks and boulders. The Susitna is the big volume. And we have some other rivers. The Nenana is probably as close as



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that. The Lowe near Valdez is a fairly big volume river, but the Susitna is a very big volume river with a very restricted flow which creates really unique hydraulics, unique wave actions; and as they say, for that reason, it's really famous outside of Alaska.

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MR. KORNBRATH: I'd like to make a few comments on that. I was part of a three-man, two-woman team that went there in '81; and we took a paddle raft, one single raft, from the Denali Highway and made our way down to Gold Creek Bridge. Part of the river above the canyon almost epitomizes the interior Alaskan type of major river system. It's got spectacular scenery and wildlife. And a point to be made about that, I think, is that -- I'm a geologist. I spend a lot of time in helicopters. And to really address the resource value by flying through the canyon and landing, or landing at various gravel bars, is just a lot different than making your way on water or on foot through the entire system. When you have to work that hard for something, you appreciate it a lot more. And I think you have to take that in consideration when you're addressing the value of a resource. When we got to Devil's Canyon -- we'd used air photos and maps and reconnaissance flights to identify where the rapids were. There are four major sets of rapids that run anywhere from a half mile to two miles long, and we portaged three of those. We set the trip up in such a way



where each member had a backpack. One carried the raft. The others carried the waterproof bags with gear and food and tents and what not. Portaged one set of rapids. Camp out along the side and photograph the rapids. Spend a few days there, then we would float a few miles of river down to the next set of major rapids, take out, portage that, spend a couple days, and make our way down the canyon in that way. And that trip is perfectly feasible. only one, what I would call difficult, very difficult portage, and that's the last portage that takes you down to the river at the bottom of the canyon. The access for getting out above that last set of rapids, which incidentally starts approximately at the location of the Devil's Canyon Dam -- the access for getting out is quite easy. the old airstrip there, and there's an overgrown road that gets you up to the canyon rim about 500 feet above the water level; and then you hike about a mile-and-a-half along that rim looking down all the time on this spectacular gorge; and then your access getting back into the canyon is relatively difficult. Somebody maybe could find a better way, but we were in a position where we had to use ropes to get down there and get our gear down there. But..... MR. SUTTLE: Excuse me. are you on the south --

MR. SUTTLE: Excuse me. are you on the south -- you're talking about the south side?

MR. KORNBRATH: South side, right. And, you know, I've



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suggested to other boaters, and I intend myself to go back and do the same trip. What the Susitna has is it has options. You can go to the head of the canyon or you can head over to Stephan Lake and get out that way, or you can take a more diffcult trip, and if you have the skills, someone like Steve, you can run rapids, or you can portage some rapids and run other rapids, or you can portage all the rapids. All of those options are perfectly feasible. That's mainly the point I wanted to make. It looks a lot different on the ground and on the water than it does when you're flying around and stopping. It is unique. It is a unique resource.

MR. RICHARDSON: Just to back up one step. A couple of the characteristics of the river which are not present in some of the other rivers that were suggested of other Class VI rivers that are in the State of Alaska: The Susitna, the Devil's Canyon creek, is continuous. It can be run from one end to the other if water levels are appropriate. You don't need to portage around. And that continuous run — kayakers are inordinately fond of being able to run an entire system without having to get out and go around obstacles. So that is very important. Something else that follows on uniqueness: The discussion that is — I think it's on the bottom of page 3 — that says that this river — sort of supporting the fact that in the paper this was not



a unique system, says that this river was not included as -it's not a wild and scenic river, and it wasn't included
under ANILCA. And there are reasons for that, and maybe
some other people can comment on that.

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MR. HESSION: I'll take that point up. In the House passed bill, HR 39, the Big Susitna was a so-called study river, in a pencil edition of the wild and scenic river study, that simply did not survive the negotiations that went on, and eventually it was dropped out. Backing up to Rich's comment, I would like you to recognize more clearly the significance of the upper Susitna, Talkeetna combination. I think that is - I would rate that as a wilderness trip of the very highest in Alaska. It also has another feature that is very valuable from the point of view of river users, and that is it's road accessible at both ends. central Alaska, readily accessible from both Anchorage and Fairbanks. In other words, you don't have to spend hundreds of dollars to get into a wilderness river run that's comparable to anything else in Alaska. You're in there right now under existing conditions. You might as well be in far southwest Alaska, in the arctic. It's comparable to wilderness anywhere in Alaska in my opinion. So if you can discuss the project in those terms, we still have a major resource about Devil's Canyon rapids, in other words, in terms of a wilderness run, a whitewater run, that's



outstanding.

MR. KORNBRATH: Yeah, I think it's just a matter of time before you see commercial operators, if in fact the dams aren't built, operating on that river, because it's the type of experience that the tourist industry is going to jump right on to. The future use of the river, it may surprise us all. It's that unique of a resource.

MR. RICHARDSON: Maybe I can throw out another point.

MR. ARMINSKI: Jim?

MR. RICHARDSON: Sure.

MR. ARMINSKI: Would you fill out your name tag so that she can get your name every time you speak?

MR. RICHARDSON: Let's see if I can talk while I write here. Another point that's made in terms of, I think, giving the impression of lessening the impact of the potential loss of the river system is the point in the paper that says it's a Native ownership and that the owners of the land are considering restricting access to the land at this point because of their concern over liability. I would suggest that that's an irrelevant point. There is a lot of land in the State of Alaska that is in private ownership and people get access to use that for recreational purposes. We as a person, as a boater, as a club, you don't need to go further than Eagle River to see an example where there's a heavily used river resource that is on Native-owned land.



And we have been able, and have to be in the future continue to be able to have cooperative agreements. We work with the Eklutna Corporation. We get a license from them to run the Alaska Championship -- we being the Knik Kanoers and Kayakers -- run the Alaska Championship Slalom race. you go out there in the first week of August, it has hundreds -- you know, last year there was probably about 500 spectators lining the banks of the river, and I believe 60 participants in a slalom race. It's a fun event for us and it's a fun event for other people that takes place partially on Eklutna land. We have a history of being able to use land. And I don't think that's something that's appropriate to throw out as something to say: Well, we're not going to be able to use it anyway. Well, let me just say that the reason MR. ARMINSKI:

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MR. ARMINSKI: Well, let me just say that the reason it's in here is the Native communities brought that up. Bruce, do you want to say anything about that?

MR. BEDARD: Unlike Eklutna, you've got to realize that you're dealing with different Native groups. Tyonek happens to be the owner of this particular area that you're talking about. It is their desire that -- because of liability and because of trust rights and possible abuses of trust rights, that we may close that stretch because it is non-navigable; and like it or not, it may happen.

MR. MARCHEGIANI: When you say that, Bruce -- my name's



Eric Marchegiani. When you say that it's non-navigable, just so that Jim knows, what does that mean? Does that mean that you own land underneath the water? Does that mean that you just own up to the water?

MR. BEDARD: Of non-navigable land, we own straight across.

MR. MARCHEGIANI: So....

MR. BEDARD: So it's up in the air about the water issue. That's something that I don't want to discuss. But as far as -- what I'm stating is that because of the rapids, the danger of the rapids, it's become important. And some of the people that have run the rapids have drowned in that area. And we don't want that to occur. The mineral interest is CIRI. The service interest is the village corporation. And we've discussed quite heavily about the particular use. Our feelings is that if the dam did go, you're looking at a Class VI rapid, at present, could possibly be downgraded to a Class II with a dam in place. And it is our opinion that below the dam you would have more use than you have now because of the dangers of running it as a Class VI. You can disagree with me, but that's our option.

MR. ALLEN: Let me ask a question there. First of all, let me make a comment that the trespass concern, I think, is a legitimate concern, that the adjoining landowner has the right to close his land to trespassers. I think the liability concern is a red herring. I don't know of any case where ownership of a river has been a basis for liability



of accident to a boater. If it were, the State of Alaska 2 which owns a lot of river beds would be sued everyday, 3 because people are hurt on rivers all over the State. But I think when you try to throw in liability you really are 5 stretching it. Trespass is a legitimate concern. 6 MR. BEDARD: Well, looking at the legal profession and 7 the way people are suing in this day and age, it's hard to 8 tell, you know. And we just don't want to open Pandora's 9 box to a possible lawsuit. 10 MR. ALLEN: My other thought was if that's the attitude 11 of the adjoining landowners, then does that mean that the 12 reservoir if it's built will be inaccessible for boating use? 13 I mean, there's..... 14 MR. ARMINSKI: Leroy from DNR. 15 MR. LATIA: I was just going to say in the application 16 you have 200 foot linear above the highest water, so..... 17 MR. ALLEN: The project boundary doesn't stand..... 18 MR. LATIA:how to get to that bend, I don't know. 19 MR. ALLEN: The final thing I want to get to is the 20 use point you make as to the usability of the river below 21 the dam. We're very concerned about what kind of release 22 schedule we can expect if the dam is built. And I think 23 the paper, if I recall, seems to indicate that either the 24 release will be so low from the lower dam, the Devil's 25 Canyon Dam, that the remainder of the rapids below the dam



will not be runable at all, or that the water will be conducted through a penstock below that thing and put back into the river below; is that the case?

MS. ERNST: That is the case. The entire Devil
Canyon rapids will be either inundated or largely dewatered.
There may be some releases from the cone valves.

MR. ALLEN: So what is the Class III whitewater that they're talking about? Where would that....

MR. BEDARD: You've still got quite a bit of cfs running out of there. You've got the flow from Portage Creek, which is a pretty good size flow as well, not too far down from where the proposed dam is. That particular canyon, because it is a canyon, and even down river of the dam, you're still looking at a mile-and-a-half of canyon walls downriver of where the proposed dam is going to be. You're going to have a flow; and that flow, based on what I'm reading in their flow reports, is sizeable enough to be a Class III whitewater.

MS. HESSION: Can we get this straight. What do you say this flow would be immediately downstream from Devil Canyon? Is it dewatered or is there several thousand cfs?

MR. ERNST: From the dam to a point immediate upstream from Portage Creek, that portion will be almost always dewatered. There'll be some occasions when there is some water. Downstream of Portage Creek there will be flows.



MR. ALLEN: Is that 8,000? 1 MR. ERNST: That's on page 8. Median, 9,000; minimum, 8,000. 2 I'd like to also point out that the MR. HESSION: 3 question of navigability is as yet unresolved. 4 MR. BEDARD: Not on that question, because the portion 5 of the river from Portage Creek to Devil's Creek is -- we've already got an easement document and a BLM conveyance 7 document giving us title to that stretch of the area. MR. HESSION: All right. 10 MR. BEDARD: The rest of the river is in question. 11 MR. HESSION: I was referring to the pending Gulkana 12 River case in which the State of Alaska is attempting to 13 have the river determined navigable on the basis of kayak, 14 canoe, raft use. 15 BEDARD: I don't think that's going to fly, but.... 16 MR. HESSION: I don't know whether it's going to fly 17 either, but it strikes me until that test of navigability 18 is determined by the courts one way or the other, I don't 19 think we can assume ownership based on present navigability 20 determinations. 21 MR. BEDARD: It's already been done, so..... 22 MR. HESSION: Well, you look at..... 23 MR. BEDARD: We've got title to it, so it'll be..... 24 MR. HESSION: You'd be out of business. It'd revert 25 to State ownership if it can be shown to be navigable.



MR. BEDARD: Well, regardless, what I'm saying is that 1 we own the land to the mean high water mark. You still have 2 to portage. 3 MR. HESSION: Well. maybe it's possible to portage 5 below the mean high water mark. MR. BEDARD: I doubt it. 6 MR. LATTA: It would be the mean high water mark 7 before construction, so if it's dewatered you could walk. 8 MR. BEDARD: No, but without the dam is what I'm 9 10 getting out. I'm just arguing the point of navigability. MR. HESSION: Could you describe for us the stretch of 11 river that your corporations own land on? 12 MR. HARRISON: We own it all. 13 MR. BEDARD: You mean the entire stretch? 14 MR. HESSION: No, what portion of the river from, say, 15 Gull Creek upstream, the Sirian and the Tyonek. 16 17 MR. BEDARD: Are you talking about what we have claimed or what 18 MR. HESSION: The lands abutting the rapids. Whatever, 19 you know. 20 MR. BEDARD: What we claimed is roughly just a little 21 22 bit north of Gold Creek all the way to up beyond Watana 23 Creek, about 80 miles or 90 miles of river. 24 MR. HESSION: So that's selected status then? MR. BEDARD: Yes. It will be conveyed. 25



MR. HESSION: So you have applied for it?

MR. BEDARD: No. We've already got ic's on the major portion of the river. There's a questionable stretch that we do not have the title yet to, and that supposedly is supposed to take place shortly, within March or April. 142,000 acres is to be conveyed this month or next month. They presently have conveyed about 60,000 acres of land up there. We will have about 215,000 acres, total acres, in that area which is both sides of the river, that whole stretch.

MR. HESSION: Let's assume for the moment that the dams are not built for one reason or another. Would you still proceed with your selections?

MR. BEDARD: Oh, yeah. Our selections are concrete. We're stuck with them whether we want them or not, and that was not our only criteria in selecting this land. There's other criteria: mineral development, timber development, recreational development as well as residential and business.

MR. KORNBRATH: Getting back to the whitewater.

The bottom line, it seems to me -- what I hear is: With the dams in place there will not be any boaters going up there to run whitewater. In other words, that last set of rapids in the gorge below the Devil's Canyon Dam will be dewatered or will be partly tailrace, and that section is



only about three-quarters of a mile long anyway. petered out when you hit Portage Creek, the actual whitewater rapids. Okay. So you won't have that. You will, certainly be getting boaters up there to do a semi-wilderness float from Portage Creek down to Talkeetna or wherever they want to go, but that is basically flatwater boating. MR. HARRISON: Well, before this dam even gets started I think you better get tribal consent, otherwise you are illegal. The State of Alaska does not have no authority. The Federal government cannot appropriate Indian lands without tribal consent. Therefore, this Alaska Native Claims Settlement Act that all you people think we have a law is genocidal and it's seditious and it's illegal. MR. ALLEN: Weren't there any site easements imposed on your ic? MR. BEDARD: Well, the easements are in kind of unusual There is no easement on the Devil's Canyon stretch. 18 The easements are just coming down the bend below where the proposed Watana Dam is, and where it come like this, the 20 That's river. It looks like a dipper. That's the easement. the ingress to go on this side. So it's a one-acre site 22 with a small trail. 23 MR. ALLEN: And what was the purpose of putting those 24 easements on there?

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MR. BEDARD: Well, you're probably aware that the

easement -- the Natives have taken the position that the easements for recreational purposes are not proper, but the easement for ingress and egress is proper use, and to get from private lands to public lands is a proper use. Other than that, they don't identify recreational uses.

MR. ALLEN: Well, did the BLM determine that the river itself was an access route from public land to public land and was therefore entitled to have site easements?

MR. BEDARD: No.

MR. ALLEN: So they just put one access easement?

MR. BEDARD: There's an access easement going across the land at Gold Creek, an existing ATV trail that was put in by the miners way back when. It's to Stephan Lake. There's another access coming from State lands to Upper Lake in the Fog Lake district to one of the lakes only, but it doesn't go through. It stops right there because there's a 40-acre private landholder there.

MR. ALLEN: It's a legal access from the river to Stephan Lake?

MR. BEDARD: Yes. That's the other access. It's a trail only, from the river coming down about a mile-and-a-half to the north end of Stephan Lake. In our proposal, we're proposing recreational planning for that area, We're trying to cooperate with the State's plan.

MR. ALLEN: Would it be possible to legally get to the



river and get out without trespassing on Native lands? MR. BEDARD: Not if you're going to go through Devil's 2 Canyon. Myself, I don't mind kayaking myself. Unless 3 you're real brave, I wouldn't go down through Devil Canyon. MR. ALLEN: Well, I wouldn't either. But the upper 5 part of the river, you could legally access it and get out 6 by Stephan Lake without trespassing? 7 MR. BEDARD: Well, you still got the problem of Prairie 8 Creek where you're going to trespass there. 9 MR. ALLEN: Is that all Native? 10 MR. BEDARD: That's all Native owned, the entire stretch... 11 MR. HESSION: How do you.... 12 13 MR. BEDARD:including the upper part of the Talkeetna River. 14 MR. HESSION: Excuse me. I want to follow that point 15 How do you trespass if you float down Prairie Creek? 16 17 MR. BEDARD: You can't float Prairie Creek without 18 getting -- you'd have to float. It's just that you can't 19 get a raft.... 20 MR. KOSLOW: I've paddled that river for the last seven 21 years, and I've been able to negotiate the whole river 22 without getting out of it. 23 MR. BEDARD: It must have been real high water. 24 MR. HESSION: Well, I've been down it, too, and I 25 didn't get out and portage. Several of us here have.



MR. ALLEN: Well, I've got to say, yeah, there are log jams.

MR. BEDARD: That's what I'm getting at.

MR. ALLEN: You've got to portage the log jams.

And if that's a non-navigable river, as I'm sure it is,
you'd be in trespass as soon as you climbed around the log
jam.

MR. SUTTLE: I think, to bring this around to the position paper again -- I think the reason that the Native land ownership is discussed in here is with respect to bringing it out with regards to the future use that you mentioned earlier, Jim. And it is a point, trying to protect the future use -- I think it's something that needs to be brought out and made reflective to the total use; I guess another point on future use that I want to make to help us to better project that. A good place to start is with the existing use. And that's something where maybe you can -- maybe later here address, the use information you have in the paper; or later on we can discuss, if you have updated information on that. That would sure help us.

MR. ALLEN: Let me just add a point. We are very mindful of trespass and of the need to respect those private landowners' rights. We feel that one of the reasons the Natives selected this land was to develop it for its recreational potential. And of course, we're part of the recreational



community. We expect the Natives are going to be interested in reaching some accommodation with us after we get past the stage of we-they, genocide, et cetera, et cetera. Then we'll start to work together and, you know, I don't think that the trespass is an insurmountable issue.

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MR. BEDARD: Like I said, our trespass concerns on Prairie Creek drainage is of concern there, but I don't believe the intent of Knik and of Tyonek who own that stretch, the Prairie Creek stretch -- is not to close that. But the intent was to be concerned about the liability of the rafters in Devil Canyon. And due to the fact that there are some mineral interests there — as you said, you're a geologist --there's the concern of the amateur rockhounder and recreational miner getting in that area and getting into that, and we don't want that to occur. And a lot of it has happened in the past only because they aren't aware that that's not State or Federal land. They don't know that it's not public land. And shortly you'll see things coming out in the paper bringing that out, like we did in Beluga and you're aware that we did open Beluga to recreational permit. You have to have a permit to go in there. There's a fee for that.

MR. ALLEN: And that's as it should be. You have a resource and you're entitled to....

MR. BEDARD: So like I said, there's a lot of things



that we have identified in Prairie Creek as one of the things we're incorporating into our recreational plan. But in Devil Canyon we have very, very grave concerns about that because people have, you know, gotten killed in that canyon.

MR. ALLEN: Well, nobody has yet -- no landowner has yet been held liable simply for owning the bed of a river that somebody's killed on.

MR. BEDARD: Well, there's always the chance of a lawsuit.

And lawsuits, whether they occur or not can occur if someone gets killed. And some family feels: The Natives own it.

I'll try suing them. And when the Federal government owns the land, or public lands, they can't sue. So when private owners own something, everyone's out to sue you.

MS. HESSION: Of course, in the Lower 40 most of the waterways are surrounded by private land. I'm not aware of any instance where the landowner was held liable for somebody's boating accident. On the Susitna one person has died well above Devil Canyon.

MR. BEDARD: Yean, on Vee Canyon.

MS. HESSION: So people can die in whitewater, they can die on lakes, they can die on ponds. I don't think there's any way to make the world totally safe. If there is reason for private owners to be concerned about potentially being held liable then maybe that needs to be addressed in State



law, and it would just be a factor for Devil Canyon and corporations zoning land along that. It would be any place where, because the need of corporations or other private owners want to welcome tourism and visitation, therefore there are going to be people on there. So that's pernaps something that needs to be addressed and put before the State legislature.

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MR. LOWENFELS: Well, we need to address in this position, I think, your contention that the future use estimate, that there is no future use estimate in here. And I would like to hope -- I would like to feel that we would be able to come to you and get that information from you to put into the position paper. I think some of our efforts in the past may not have been as smoothly handled as possible. We'd like to open up that line of communication. I think we also have to take a look at the question of Native impact. Now, we've mentioned it here, and maybe what we need to do is footnote it and indicate that there's a lot of questions about whether this is something that, first of all, is permanent given the fact that the Natives may very well decide if you would indemnify them and pay a proper fee you could use the river resources. So we need to address those things, and we recognize those. I don't -- I'm not sure we'll gain much more by continuing to discuss those issues. be very helpful, for a number of reasons, if we could assume for a couple of minutes that the dam that's proposed is going



to be licensed; the mitigation measures we've discussed in here. I know it's heresy to put yourself in that mind set, but the mitigation measures we've discussed in here are very likely to be mitigation measures that would be adopted as license conditions by the Federal regulatory commission if, in fact, with regard to this particular issue — if in fact a dam is constructed. How do you feel about those mitigation measures? Assume again, and we understand it's just an assumption, et cetera, that the dams are going to be built. Have we hit mitigation measures and minimization measures properly, or are there other ones we should be putting in here? Could we get some kind of reaction in that regard?

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MR. HARRISON: We have it. I would like to make another comment in regards to this genocidal act of ANCSA in which Mr. Allen referred that — about my comment a minute ago. If each and every one of you would have studied the Federal regulation, the Federal acts, concerning aboriginal title transfers, you would see why I'm saying this is a genocidal act. In that act it says in 1971 there is no more Native people born to the American people. That's bull crap.

MR. ALLEN: But we're all nere, you know. We're going to have to....

MR. HARRISON: Well, Mr. Allen, this is.....

MR. ALLEN: We're here to talk about whitewater. We're



1 not here to talk about ANCSA or aboriginal rights. 2 are plenty of forums for that discussion and..... 3 MR. HARRISON: That is the basis for this. MR. ALLEN: No, it isn't. 5 MR. HARRISON: Yes, it is. 6 MR. ALLEN: The issue on the agenda.... 7 MR. HARRISON: The issue here is the Native population 8 in Alaska has the authority to tell you what you are going 9 to do with their lands. Mr. Allen, you know that as a 10 regional solicitor. 11 MR. ALLEN: I'm not running this meeting, but I came 12 here with the understanding we were going to talk about 13 whitewater. 14 MR. ARMINSKI: Dave, can we.... 15 MR. HARRISON: Well, I can see that this meeting is a 16 waste or everybody's time. 17 MR. ALLEN: You can find plenty of places to talk about 18 your concerns about ANCSA, but this is -- the people that 19 came to this meeting didn't come to hear you rant about 20 genocide. 21 MR. HARRISON: They're wasting their time, everyone in here. 22 MR. LOWENFELS: Okay. If you would assume for a couple 23 minutes that the dam is going to be built as suggested, the 24 two-dam configuration, what mitigation measures should we



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be highlighting that we have not touched upon, and what is

your reaction to the ones we have touched upon?

MR. KORNBRATH: I'd like to see at least one more mitigation measure added to that list, but I feel it's important. And you know, as I see it, once that the dams go you have access, public access, to some degree to whatever arrangements. This is going to be a place that probably people head for, tourists and some locals to take a look at it or enjoy the scenery, boating, what have you. I think that to me it would be very important to see the -- what I call that stretch of river and especially the Devil's Canyon stretch recorded for all time. I think it should be photographed. I think movies of, possibly, boaters running the rapids should be taken. I think slides, perhaps a multi-image slide show. Something along those lines would be worth having in your visitor's center.

MR.SUTTLE: I think that's a good point.

MR. RICHARDSON: Jack, you've got a list; don't you?

MR. HESSION: Yes. We have discussed this among ourselves and feel that the mitigation measures as proposed are totally inadequate and insufficient; and furthermore that if both dams are built then for all practical purposes the whitewater resource is lost. I don't think anyone interested in that form of recreation would bother to put in at any point along the river. However, if you were to add some additional mitigation there might be some interest



in the Devil Canyon stretch, and that would involve a sort of release schedule. 2 MR. ALLEN: You mean if only one dam were built? 3 MR. HESSION: No, assuming both dams. MR. ALLEN: Both dams? 5 MR. HESSION: Below Devil Canyon, if there were a 6 release schedule such that the flow was sufficient for 7 8 whitewater boating at certain times during the summer months, that would be one way of mitigating the loss. Another one 10 that's already been touched on is access. If access to the 11 dam sites, particularly the Susitna, the Devil Canyon dam, 12 if access was assured; you know, some way of camping there overnight and primitive camping facilities, parking area 13 with the assurance that you could stay there. That's 14 15 another mitigation. 16 MS. ERNST: Is that so that you can run the stretch 17 below Devil Canyon? 18 MR. HESSION: Uh-huh. You'd have to have some way to 19 get down to the put-in and put in; get down to the river at 20 that point. Apparently, the steep canyon walls at that 21 point are such that it might be difficult. And I didn't 22 realize until this morning that the lower, the first mile-23 and-a-half stretch, was going to be dewatered entirely.

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MS. HESSION: Would a release be impossible?

MR. ARMINSKI: John, can you talk about the release



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MR. BIZER: Okay. During the summer, basic operation of the reservoirs and so forth is to store the water for release later on in the summer. Now, generally the way the -- based on the record, historical record, that we do have and imposing an operational regime on that, the reservoir becomes filled to its maximum, or near maximum, capacity so that they have sufficient water run through the winter. generally in the first of August to mid-August, that time frame. Once that occurs, then flows in excess of what they need for power would have to be released to maintain -- so we don't get a surcharge in the reservoir. So that periodically, and depending on the low demand during the summer, the power demand, there would be releases from either Watana, when it's the Watana only situation, and then when Devil Canyon comes on there would be releases from Devil Canyon that would not be going through the powerhouse. basically between the end of July and the end of August and middle of September, there would be flows, releases, from the dams that would water that area. So that time frame you're talking about....

MR. HESSION:right at Devil Canyon dam so that the last rapid would have water in it. It wouldn't be rerouted and then put back in the river?

MR. BIZER: No. The release would be through the



release facilities.....

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MR. ALLEN: In the dams.

MR. BIZER:in the dams themselves. In Devil Canyon it would be the cone valves.

MR. ALLEN: Would it bee -- we have a -- although we're not absolutely sure of the levels. The people that have run it feel that 13,000 is probably the minimum that, at least, some of the rapids can safely be run at. How feasible would it be to make your releases on a -- kind of a uneven basis; release a large amount during the day and then maybe shut it off during the night?

MR. BIZER: Okay. This is one of the things we have to deal with in asking that kind of thing is the effects on the fish populations which is an interreaction. It's not an issue right now. But one of the things that we're looking at in our flow regime that we consider on that is the fluctuation and flow. In general terms, very general terms, flow fluctuation to any extent is looked down upon with respect to fish. We are talking about a time period when the salmon are going to be spawning, and that's a fairly critical time in the cycle of the fish. There has been in the initial -- in the license application the flow regime which is proposed there calls for a minimum of 12,000 cfs during this August, September time frame. That has been revised now and we're currently looking at another flow



regime which maintains a minimum of 9,000 cfs through the summer from the first of June through the middle of September. Under both regimes, under either one of those, generally in August the mean flows are going to be somewhat above that simply because the reservoirs are full. I don't have with me right now what the estimates of the flows are, but there are times during the summer under any of these flow regimes that the flows will be significantly greater than 13,000. It could be up as high as 20,000 cfs. Okay? Another thing that happens is that when Devil Canyon comes on line, you're going to have a significant increase in the capacity of the dams to produce power; and that's in just a short period of time from what we're estimating, 2001 which is the last year of Watana and 2002 is the first year of Devil Canyon. You're going to have an increase of capacity of about 600 megawatts by putting that -- the dam on. As a result, you're going to be able to generate more power with less flow, or the same amount of flow. So the flows needed during the winter are going to be considerably less to get the same amount of power. The reservoirs won't be drawn down as far -- or the Watana won't be drawn down as far, and as a result you'll be able to fill it sooner in the summer and have to release water to a larger extent during the latter part of the summer. We're talking there in terms of flows in excess of 15,000 cfs. Again, it depends upon whether it's a wet



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year or a dry year or whatever, the supply of water. But during those times when water is released from the dam, and the most likely times are, in late July up to the middle of September. At those times you're going to have flows in your -- quite possibly in the level you're talking about, the 13,000 cfs or greater.

MR. ARMINSKI: Jack, you filed recently with FERCA a submission that talks about the proposed flow regime. And correct me if I'm wrong, but there's a printout on the back of that thing that's three or four inches thick, and I think it tells -- was it 33 or 34 years of record? -- what the releases would be from the dams; and get some idea from that.

MR. THRALL: In getting back to what you were interested in in terms of predictability, or some ability to predict ahead of time when some of these releases will be, as John indicated, the operation of the project will eventually come to be some set of compromise between the environmental needs, the need not to release some of these waters — at certain times of year you're going to get temperature effects and you get water flow fluctuation effects — to the need to maintain your reservoir at a certain level. And basically, a lot of these releases are made in response to storm events in the basin. And there are ways of getting some level of prediction so the people can hear about this. I was involved, as John was, I think, in working with Corps of



Engineers on hooking a hydropower development on the Gauley That's whitewater. You people may be familiar with that. It's a very popular river with the dam already there. We're looking at whitewater, and we found there that it would be possible, for example, to give some additional prediction. What happens is that -- what happened there at the time we were looking at it is there would be a storm in the basin and the Corps would call up a couple of whitewater people and people would, literally, get in their cars and drive for, you know, 24 hours straight to get there when they knew the Corps would be releasing flows. You'd probably have the same sort of a situation. You could get some sort of prediction. But when the reservoir is rising and it's getting to a certain critical point, they're going to release. They're forced to release. When you have to worry about predicting storm events and, you know, whether this range is going to continue for another 24 hours or cut off, it makes it -- the time you've got to make a prediction gets cut back.

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MS. HESSION: Yes, we are aware of the Gauley situation. Several of us here have run it, and we were looking specifically to that sort of situation when we recommended back in '82 that the schedule be published far enough in advance to allow people to come.

MR. THRALL: There's certainly that possibility. And



what would happen, I would imagine, is that that sort of a release schedule would be established rather roughly at first; and with experience, as the project experience grew, and sitting down and probably negotiating some tradeoffs with some of the fisheries people, you would refine that. Because certainly in the Gauley situation, what we found was that fisheries, and whitewater and rapids were very often in total opposition for their needs. So you get into some real tradeoffs there.

MS. ERNST: I'd like to mention in talking about flows and looking at some of the documents for flow release schedules, we need to remember that the flows that have been published are for below the tailrace. So the flows that you're concerned about are flows that will -- that will be be discharged from what they call the fixed cone valves. And those flows have been published, too, recently. I believe now that they are quite a bit below the 13,000 cfs. That's something that we can go back....

MR. ALLEN: Well, we don't really know the 13 is the critical level for that section of water. There's some of the holes up above, I think -- isn't that right, Steve?

MR. KOSLOW: Yeah, the ledge drops that....

MR. ALLEN: Hotel Rock, it's unrunable below that; right?

MR. BIZER: That's the question I was going get follow-up



on a little bit as to whether the 13 seems reasonable for that reach, or what kind of minimum flow do you think would be necessary?

MR. ALLEN: Maybe much less is tolerable there. I don't know the nature of those rapids. Do you, Rich?

MR. ARMINSKI: Does our aerial photography cover that part of the river at the different flows?

UNIDENTIFIED: I believe it does.

MR. BIZER: It comes pretty close if it doesn't. I know it goes up to Portage Creek, and it may -- I know some of the aerial photography does go up above. And we do have that photography at about -- when the flow in the river at Gold Creek was about 20,000 cfs. But less than that, we've got additional photography now ranging from 5,100 cfs all the way up to 2,600 -- or 26,000 cfs. And right offhand, I'm not sure how far up that goes. I know it goes at least to Portage Creek, and it may go up to the dam site. I'm not real sure on that.

MR. MARCHEGIANI: I have a question. I'm a little bit confused. I don't whitewater at all myself. But you're talking about a minimum flow of about 13,000. My impression — I'm a hydraulic engineer so to speak — is that if you have too much water in that river you're going to really have a problem because of exactly what you're talking about, the hydraulics are unique. If you have a lot of water going



down there you have a better chance of killing yourself. 1 MR. ALLEN: Not always. It depends on the configuration 2 of the rapid; and there are certain ledge drops that are 3 very much like a low dam where the water comes over them without much turbulence but creates a backwash behind that 5 6 dam that's the killer. There's no way to fight your way 7 through that backwash and it just keeps recirculating you into 8 the waterfall. 9 MR. MARCHEGIANI: Can it generally be stated that more 10 water is better? 11 MR. ALLEN: No. It depends on the nature of the rapid. 12 In some configurations more water is safer, in others less. 13 MR. MARCHEGIANI: If you have a bracket that you feel 14 comfortable with, what is it? 15 MR. ALLEN: We don't know enough about that particular 16 section of the last rapid. There's some rapids further up 17 that people who have seen them say they are killers at less than 13,000 feet. You get in a hole and if you were swimming 18 19 or even in your boat, you'd be unable to get out of it. 20 MR. MARCHEGIANI: Okay. 21 MR. ALLEN: Whereas more water washes the rapid out. 22 Sometimes the higher water just washes the whole thing out 23 and you just go on through. 24 MR. MARCHEGIANI: What you're really saying is there 25 are sections in the river where 13,000 would provide you



with the ability to get through it. If you went to 20,000 in some areas you might have difficulty getting through the river?

MR. ALLEN: Well, most people that have run it have run it between 15 and 26; and the feeling is that below 13 it's not safe to run, and above 35 it would also be a killer.

MR. SUTTLE: Would checking these air photos that Don mentioned, at various flows, be helpful in helping you make that type of determination?

MR. ALLEN: I frankly doubt it.

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MR. KORNBRATH: I think I can address that. a set of air photos, pretty good quality, through there. And when we were there it was really high water level. And the lower stretch, which is the only thing we're concerned with, the last set of rapids, you've got at least three river-wide holes, that type of rapid. It's real similar to the ledge rapids that are up at the head of the canyon at Devil's Creek. It's a rapid that goes the width of the river. There's no way around it; and it's just a drop like a stair step. You've got at least three of those up there. The rest of the turbulence in there is generally just big, breaking waves and turbulence from waves bouncing off the canyon walls. Probably the biggest problem with the flows in that stretch of river would be if you make the flow so low that you get a situation like Jack was talking about



where you potentially get trapped in these recirculating eddies. With higher water that type of rapid would probably be the type that would tend to wash out and be a little bit easier. It would push you on through and you wouldn't get stuck there. But the thing about access is that in order to run that stretch of the rapids, you really have to access the rapid, the canyon, real close to the base of the dam because if you only have access three-quarters of a mile, below the dam for whatever reason -- the walls are too steep or the tailrace or whatever -- then there are no rapids to run, no Class VI rapids.

MR. MARCHEGIANI: Do you know what year that photography is that you have?

MR. KORNBRATH: I think it's '77. And some is colored infrared and I've got black-and-white's, too.

MR. MARCHEGIANI: That just helps us.

MR. ARMINSKI: Jim, can we keep moving on through this?

MR. RICHARDSON: I just have one set of comments that you can take out of context here, a hypothetical situation. And again, if you suggest a hypothetical situation that the dams are going to be built, I'd like to suggest one that the Watana Dam gets built and the Devil's Canyon rapid is going to be free-flowing after that dam is built. Don't take that out of context. But if that situation should at any time arise, these comments on the minimum flows are



important. And the fellow that was going to come this morning and didn't make it, Chris Roach, has run the canyon a couple times at different water levels. And yesterday we discussed with him this type of ledge drop action at the lower end, and he suggested that at water levels below 13 the Devil's Canyon rapid would be extremely dangerous. So it needs more water, a higher water flow, so that it gets enough push to make the configuration runable. So now we can switch back to the situation that we're talking about.

MR. THRALL: Just, I think, to reiterate, it would certainly be helpful to us, any detailed information, more detailed information you could provide on your estimates of what would or wouldn't be appropriate flows at any stetch -- would certainly be of use.

MR. BEDARD: Could I throw in a quick question?

MR. ARMINSKI: Sure.

MR. BEDARD: Would you see that — if the Natives were to provide some kind of easement to APA right at the foothill of the dam so that kayakers would have an area, say a one-acre site, as a mitigation; is that something that, you people, would be acceptable to? What would you need? I hear you talking about you'd like to see some kind of access, but you're not saying.....

MR. RICHARDSON: Kayakers and canoers -- I don't want to -- we're talking kayakers because to this point in time



other types of crafts haven't negotiated the rapids successfully, although a person tried it in a river boat. But he was just trying to show us how to do it. Generally in other rivers that we boat, canoers and kayakers have fairly rudimentary needs. You need a path from someplace that you could take a vehicle where you drive in, access. You need a road, hopefully not too far to the edge of the water. You need a place where if you're going to camp, a primitive camping site; again, nothing fancy. And where you're in a situation where you're leaving vehicles in a road access situation and taking vehicles out, you sometimes leave vehicles there. That is about all we look for. And in running a river where you have multi-day trips, you need areas to camp. Now frequently those are gravel bars in the middle of the river, things like that.

MR. BEDARD: BLM has presently provided for that so-called purpose. It was the one-acre site. But like I say, it's way -- almost 40 miles away from Devil Canyon. It's closer to Watana.

MR. RICHARDSON: Well, given the system that we're talking about, a system where people are going to be putting in below Devil Canyon and running from there, an access site would be useful. Although personally, the way it sounds the Devil's Canyon were built you wouldn't have many customers because there's no water coming out of that dam.



If it were built and if people were going to run it, that's the type of facilities that they would look for.

MR. KORNBRATH: Yeah, basically you get boaters going in there to, perhaps, put in and float down to Portage Creek and do some fishing there and then continue on their way.

MR. RICHARDSON: Talkeetna or Gold Creek.

MS. ERNST: Can I just clarify then. If Devil Canyon rapids are not runable, you still are interested in these kinds of facilities at Portage Creek; is that right? Near Portage Creek?

MR. KORNBRATH: Yes. The only nearest place to put in if you don't do something like that would be Gold Creek at the bridge which is a very -- quite a popular trip now. Certainly not a wilderness trip, but it's a nice two or three day trip; and there are side creeks that come in where, you know, you can get some grayling fishing and trout fishing. Side hikes, too. I don't know whose land it is.

MR. MARCHEGIANI: Going back to your communication that you were talking about photographing the canyon, looking at boaters running down through it -- or kayaking down through it. If we were to decide to go ahead and do something like that, within the State of Alaska -- as I said, I'm not a kayaker -- my understanding is, at least listening to this room, there's not a whole lot of us that are going to go down that river outside of one individual -- would we have a hard



time finding somebody to go down that river? Are we talking about six people within the state? Are we going to have to 2 go out of the state and do whatever? Are we talking six, 3 10, 20? MR. KOSLOW: We could get a team of six together, 5 probably, to run a trip for that to show you that -- to 6 document the fact that the river is unrunable. It wouldn't be that difficult to get a group together, I don't think. MR. KORNBRATH: If ABC sports can do it, I don't see why we couldn't. Give these guys a chance to be on film. 10 they'll crawl out of the woodworks and they'll be there. 11 I'd say there's more than a dozen that MR. KOSLOW: 12 I can think of that live in Alaska that have the capabilities 13 of running that river, and under the right circumstances 14 15 would probably do it. MR. ARMINSKI: In the interests of time, can we conclude 16 the discussion on this? I think it's 7:00 and we've got to 17 spend more time with you folks and get some more information. 18 19 MS. HESSION: Can I just clarify it in my own mind now: 20 When you were discussing potentially 9,000 cfs all summer long or potentially, presumably, a lower low, and then as of 21 22 August 1st it would be going up to a higher rate, you were 23 meaning outflow right there at the Devil Canyon dam, and therefore something -- No? 24



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MR. THRALL: No, that's the outlet of the powerhouse.

The flows that come out of the outlet of the dam are release flows that come through the fixed cone valve structures; and those are made in response to basin storm events where there's a need to release water from the reservoir. They generally come in the fall of the year. They can occur other times of the year as well. We have, and without going back to the analysis that we've got -- what we've done is taken the years -- some what, 32, John? Thirty-two years of records?

MR. BIZER: Thirty-four years of records.

MR. THRALL: Thirty-four years of records, climate data, and superimpose that on the reservoir system on the river, superimpose the power operation of the project and everything, and we can run a model that tell us, given that type of climate scenario, when we do or don't have to release water from the face of the dam. What we'll have to do to really get a better response to you, or give you better feel for what's possible, is to go back and look at that information. But the 9,000 cfs that John was talking about is down where the water that goes through the power terminal comes out; right?

MR. BIZER: Well, it would probably be a combination because....

MR. THRALL: Well, yeah.

MR. BIZER: It'll be a combination. Part of that will



be for power generation. I don't know what the volume would be required for the power generation at that time. It might be on the order of 5 to 6,000 cfs. The remainder to make up to that minimum flow of 9,000 will be released from the dam. So that flow might be on the order of 3 to 4,000 cfs.

MR. THRALL: Again, but that's the minimum?

MR. BIZER: Yeah.

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MR. THRALL: And on a year in, year out, we're not -- we don't ride along the minimum all the time?

MR. BIZER: Yeah.

MR. THRALL: We're above the minimum. It gets to be a very complex thing which is why you have to go back and look at our output.

MR. BIZER: Based on the 50 -- or 30 years or 34 years of record in the operation, I think the median flow, 50 percent of the time or greater -- or if 50 percent of the cases that we've looked at, if you impose these power demands on the flows historically. Given those flows, at least 50 percent of the time you'd get flows in excess of maybe 12 to 13 to 14,000 cfs. Again, that depends really on the demand for power, how much water is coming down the river from earlier in the summer. If you get a real dry year like -- was it in 1969, I think was a real dry year. If the project would have been in position during 1969, they would probably have had trouble filling the reservoir. Okay? On the other



hand in, I think it was, 19 -- it was about the mid-fifties, there was a period in there where the flow -- it was an extremely wet period. And there were times when the flow 3 in the river under natural conditions were in excess of 70,000 cfs. And that, of course, would fill the reservoir 5 6 very rapidly and you'd get a lot more flow. 7 I thought there was a 100,000 year one time MR. ALLEN: 8 -- one year? That's downstream further, yes. If you MR. BIZER: 10 get that at -- at Sunshine or the Parks Highway bridge down at the mouth you get flows in excess of 10,000 at the mouth 11 12 almost annually. But I'm talking at Gold Creek. 13 MR. ALLEN: No, I thought there was a year at Gold 14 Creek where there was a flood; a 100 year flood had made 15 100,000 cfs. 16 MS. BERGMANN: Maybe in 1971 that was. 17 UNIDENTIFIED: Approximately 92,000. 18 MR. BIZER: Yeah. Okay. 19 UNIDENTIFIED: Not quite 100. 20 MS. ERNST: And so we want to make it clear then, that 21 these flows you're talking about, John, are downstream in 22 the rapid; right? 23 MR. BIZER: Pardon? 24 These flows that you're talking about are MS. ERNST: 25 downstream in the rapids?



MS. BERGMANN: Partly downstream, partly upstream.

MR. BIZER: Yes. Partly upstream.

MR. HESSION: If I can summarize this discussion with respect to our basic interest in mitigation, it would be that we would look towards a Gauley River model for releases from Devil Canyon dam such that you could, perhaps, optimize whitewater at the same time as protect fishery and other values. I'm familiar with the detail with the Gauley River situation, and also somewhat with the Akully River resolution. And that just involves trying to figure out flows that can satisfy different interests.

MR. BEDARD: I have just two things. Primarily page 7 and page 9. On page 7 in the bottom paragraph you mention the trip to Stephan Lake will not be possible after the project is completed unless the boaters traverse the Watana Reservoir. When you are referring to boaters here, are you including the kayakers and canoers and rafters?

MS. ERNST: Yes.

MR. BEDARD: The reason is, on the canyon walls, you know, they submitted that they can portage there, I can't see any reason why they can't portage others, the Watana dam site. I guess the indication is saying they can't do it, because they're....

MR. ALLEN: What I think it means, is that you got to float down the reservoir to get to the portage.



MR. BEDARD: No. Just when you come to the dam itself, 1 you portage around the dam, go back to foothill of the dam 2 and then go back on. 3 MS. HESSION: Assuming it's physically possible if 4 you're surrounded by..... 5 MR. BEDARD: Well, no. The Watana dam site on each 6 7 side is pretty flat area. MS. ERNST: So the concerns -- assuming that you can get 8 out again, the concerns would be ownership, the Power Authority 9 who owns the land. 10 MR. BEDARD: Is that what this means? It's not 11 explained, you know, of -- back up of what you're trying to 12 say here? 13 14 MS. ERNST: I guess it's too.... MR. BEDARD: If it's, again, access, it's something that 15 16 we're going to have to mitigate. MS. HESSION: Bruce, hadn't you said that there was an 17 easement up to Stephan, up to the north end? 18 19 MR. BEDARD: Well, this is where these easements end 20 Back me up on that. The easements are only identified 21 at points, and the point they identified is sort of midway 22 between where the Watana dam is proposed and where the Devil 23 Canyon dam is proposed. It's a midway out point north and 24 south of the river, but only on each side in that particular area, one-acre site; each one with a little trail going to 25



the public land. And the public lands, as far as going to Stephan Lake, stops at Stephan Lake. That's where the easement stops.

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MR. SUTTLE: I think maybe we can just restructure to clarify this. Essentially it's saying that you won't be able to have access to Stephan Lake unless you float down the reservoir and portage down Watana Dam.

MR. BEDARD: I think that should be clarified. says here that it will be impossible, or not possible; and I think it needs clarification that it is possible and can be mitigated if it needs access or an additional easement or whatever. But is should be addressed. The page 9 is roughly the same thing. It's saying that because of the access to project lands will be restricted, and exiting the steep river bluffs prior to the Watana dan site may be difficult for boaters. Again, now at Watana, that's easy to exit right now; and even with the dam in place, in fact, it will be even easier. But again, this is something that I would have to bring back to the Native leaders and it is something that they would like to have. I would like to know it so I can bring it back to the people I represent. If you want us to provide boating access and one-acre sites, I can address this in our recreational plans as our part of the mitigation we're trying to do here.

MR. KORNBRATH: Once the dams are built, you're looking



at a different type of boater than the free flowing-type 1 boaters that, you know, are up here. MR. BEDARD: There still might be the rafter that would 3 come down the Denali Highway to the Watana dam and then portage below the dam and then come off at Stephan Lake to 5 go down Prairie Creek. 6 MR. ALLEN: Yeah, I think there will be some of those, 7 and I think it's safe to say that those kinds of access easements that you're talking about would be very welcome 10 to those boaters. MR. BEDARD: Yeah, 'cause the access easements which 11 we argued with BLM to try to accommodate those easements, 12 belong with what the, you know -- the project was sinking 13 and at the time BLM said: No, this is how we're going to do 14 it. And we were stuck with those easements as they're 15 designed now even though we didn't agree with them. 16 MR. ALLEN: They don't make much sense. 17 MR. BEDARD: Well, that's what I tried to tell BLM at 18 the time of negotiating these was that -- I said: Look, the 19 20 project is going to go here and here and it makes sense to 21 put these easements at these locations. 22 MR. LOWENFELS: Well, we know it wasn't a stubborn 23 solicitor.



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MR. BEDARD: At the time -- but I don't want to down-

grade BLM, but that was just one of the problems we had.

MS. ERNST: I'd like to summarize the additional mitigation measures that were proposed. One was recording the Devil Canyon rapids through film. First was recording the use of the Devil Canyon rapids through film or multi-media and installing that in the visitor's center. Publishing release schedules was mentioned. And I'd like to clarify that below Portage Creek — or the release schedules that have been published in terms of median flows and low flows, and as far as the portion of the Susitna River between the dam and Portage Creek, those flows again have been published.

And access to Devil Canyon dam, or to the remaining portion of the rapids, was proposed. And we'll have to go back and see if that's possible to run that portion of the river. I think that's all.

MR. LOWENFELS: Susan, can you find out who among the KKK we should be sending the flows that have been published? There are so many things that are published that you're probably getting as intervenors, it would be easier perhaps if we identified some of this information and sent a separate packet to you?

MR. HESSION: Yes.

MR. LOWENFELS: Should that go to Jim or

MR. RICHARDSON: It should go to the president of the club. The current president is Mike Grijalva, G-r-i-j-a-l-v-a.

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The address is Post Office Box 101935, Anchorage, 99510.

Okay? How is the information that we get, the regular intervenor mail, addressed?

MS. HESSION: Well, none of it would have Mike's name on it, so you know, we'll be able to tell. We all open the mail, anyhow. However, we'll be looking especially for that.

MR. SUTTLE: I think that's the point. We want certain things with respect to use, flow information that we need to get back to you, and get your information, and us give you information; and the contact point should be Mike.

MS. HESSION: Yeah, if you just put his name on it.

That is the regular Knik Kanoers post office box, the address you were just given.

MR. ARMINSKI: Okay. One last thing — I think we'll break here — that I didn't mention earlier. We've got a matrix on the back wall on the easel there. And basically it's got all the issues I want to access and all the parties that we deal with on the other access; and it's sort of a score card for us to know where we're at. And we'd like someone from your organization to say what your position is on this position, whether it's — I suspect your position is as yet unresolved. And just note that so that we can keep track of where we are with everyone on these things. It's not a commitment. You can come back and erase your name



1 next week and change whatever. That's all. Thanks a lot 2 for coming. 3 MR. HESSION: Well, I for one want to say thank you. (Break) 5 MR. ARMINSKI: To keep things confused, I think we'll 6 address the monitoring plans first and see how -- I think 7 those are going to be the most time consuming here. Why 8 don't we start with F-12, fisheries monitoring? 9 MR. THRALL: Tom, we're sending out for our fisheries 10 monitoring person. 11 MR. ARMINSKI: Oh, okay. Is he bringing donuts? 12 MR. THRALL: I think he might have gone downstairs. 13 I think he might have looked at the agenda and decided he 14 might go downstairs for a minute. 15 MR. ROSENBERG: I had a question which we might get 16 right off the bat. 17 MR. ARMINSKI: Okay. 18 MR. ROSENBERG: F-4. It's the procedural thing again 19 of the relationship between this monitoring plan and the 20 fish mitigation plan which is going to be backed up by a 21 monitoring plan. Is that what this is? Is this sort of the 22 initial discussion on how that is going to procedure-wise.... 23 MR. ARMINSKI: Yeah, I think that would be fair to say. 24 Are you it, for monitoring? Okay. Basically, our position 25 is that we propose to formulate and implement a monitoring



The goal of that is to ascertain the efficacy of our mitigation measures and suggest -- help us to develop any 2 other mitigation measures that would be required. Larry? 3 MR. GILBERTSON: Basically what we did was looked at the information that we've accumulated on the Susitna and its 5 resources. We looked at the issues of concern to the agencies, reviewed the mitigation proposals that were already put forth, 7 and came up with a general group of subjects -- or parameters to measure that we thought would have the greatest utility in 10 monitoring the efficiency of the overall mitigation; in 11 other words, maintaining production in the system; other 12 monitoring efforts to follow the success of particular 13 mitigation measures and then, also, just looking at some 14 other environmental parameters that would give us information 15 on the general quality of the environment. And those are 16 the things that are included in this general list of subjects 17 for monitoring. 18 MR. ARMINSKI: Any discussion? 19 MR. ROSENBERG: Yes. I have to get organized though. 20 MR. ARMINSKI: Okay. 21 Turn you name tag so that she can see it. . MR. LATTA: 22 MR. ROSENBERG: I'm Dan Rosenberg. I know on table 1, 23 if I can find it, if I have the right paper. 24 MR. LATTA: Next. 25 MR. ROSENBERG: Table 1 is on page -- it follows page 7



There is not much in the way of monitoring for dissolved 1 2 gas supersaturation. And in view of the last meeting and that, I also question why, say, temperature and ice 3 turbidity and sediment wasn't monitored -- is not being monitored in '86 and '87. I guess that's why my comment is. 5 It's a question of why we're not monitoring for dissolved 7 gas supersaturation beyond 1985 and why we're not monitoring 8 for temperature, ice turbidity and sediment in '86 and '87. 9 It seems that those are important to get good baseline information on, that might affect the future monitoring once 10 11 the dams are in place. 12 MR. GILBERTSON: Okay. Both of those -- excuse. The 13 case of the supersaturation, we already have at least two

MR. GILBERTSON: Okay. Both of those -- excuse. The case of the supersaturation, we already have at least two years of information. I think we might have three, I'm not sure; but two or three years of information, anyway. And our feeling is that with another year of information that we'd have enough to establish the base line condition. It's a flow related thing, the supersaturation. So our feeling is that once you have enough data points to cover a range of flows that would be -- that we would have under natural, and with project, conditions then you can establish the relationship between flow and supersaturation; and you wouldn't need to monitor any more pre-project. Now, I would say that at the end of the 1985 field season if we determine that in fact we have not covered an important range



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of flows and we do not have that relationship wired down,
then there would be an obvious need to measure it again in
the next field season. But there is just a -- we felt that
one more year would be sufficient to give us that base line.

MR. ROSENBERG: Yeah, there's a lot of -- or is there a lot of variability in there that would make it advantageous to have a longer term monitoring, and is the cost that much? Perhaps there's more to be gained from it. All right. I think that's what you're saying is that you will proceed with it. And that should be written in here that you will go ahead with it if you don't feel that the information up to that point is sufficient.

MR. GILBERTSON: Okay. We'll have a report coming out I apologize, I don't remember if it's late this fiscal year or next fiscal year -- that will summarize the gas -- is it next year?

MR. MARCHEGIANI: I'm not sure.

MR. GILBERTSON: I can't remember. Anyway, it will summarize the information we do have already on the supersaturation in a single document. So everybody will get a clear idea of what the variation is and what our needs would be to set up the base line. On the temperature in ice, again, that's a condition that we feel we do have a lot of natural condition data on. We have three, four years of observation on the ice processes; and you know, we're not



sure what else -- what more -- what we would gain by continuing that on a yearly basis, but we're open to suggestion.

MR. ROSENBERG: My only suggestion is that there is more to be gained than lost when the system is as variable as it may be. We're talking about once these dams are in place, the monitoring plan, they go on for a long period of time. The better base line information, the better conclusions can be drawn from the monitoring plan post-project.

MR. ARMINSKI: I guess there's a point of diminishing returns.

MR. ROSENBERG: Yeah, I'm sure that there is.

MR. ARMINSKI: You know, we come under fire about the money we've spent already and, you know, if we can in good conscience — I mean, I guess as scientists we all think: Boy, it would be nice to have a little more data. But you know, you've got to recognize that there is a cost benefit ratio.

MR. MARCHEGIANI: The bottom line is that we've collected -- what is it? -- three years of temperature information. We've spent a fair amount of effort in looking at ice modeling, the state of the art, the best thing we can do. We've reinforced with a number of years of actual ice observations, calibrations of those models. We've done everything that we feel is physically possible within that



system to try to predict what might happen, observe what its existing situation is, and we just don't see -- I mean, we could continue to monitor it like next year, let's say; the following year we monitor it. What does that mean? Again, that's one more piece and how does that change what we saw the year before? Well, it's about the same.

MR. ROSENBERG: We don't know that, Eric.

MR. MARCHEGIANI: Pardon?

MR. ROSENBERG: Do we know that?

MR. MARCHEGIANI: Oh, no, I don't know what it's going to be next year, but what I'm saying is: How is it going to differentiate -- how is it going to improve our ability to do anything? What we've tried to do is take that information and use it to calibrate the models given the information that we have so that we could basically extrapolate. We've done that. We feel that we've done the very best that we can as far as providing information in that area. To go a step further and spend additional money, we just don't feel that it's reasonable.

MR. ROSENBERG: Okay. I guess my only answer to your question is: How do we know, is that post-project is when we'll find out.

MR. MARCHEGIANI: That's correct.

MR. ROSENBERG: When it's too late to do anything about it, that's when we'll find out how effective this one was.



MR. ARMINSKI: Well, two more years may not, and so 1 2 on. MR. ROSENBERG: No. I agree two more years may not. 3 Two more years may not cost much either, and it may cost a 4 significant amount more in the future. 5 6 MR. MARCHEGIANI: If you can tell us what we're going 7 to gain. 8 MR. ROSENBERG: No. I can't. 9 MR. MARCHEGIANI: Well, that makes it very difficult for 10 us to try to address what you want. What you're saying is 11 you want us to address looking at additional studies, but 12 yet there's.... 13 MR. ROSENBERG: These are not. These are just 14 continuations of these monitoring programs. We're not 15 talking about initiating new studies. 16 MR. THRALL: Dan, you're talking about the gas and 17 turbidity and all of those things that you mentioned 18 originally; right? 19 MR. ROSENBERG: Gas and turbidity and temperature, ice. 20 MR. THRALL: Maybe when you -- when water quality 21 sampling programs are established, sort of the way you do 22 it -- one way you do it, is you go out and you sample for 23 lots and lots of things initially, and you watch the 24 variability, you observe the variability over time. And 25 where you see very little variability, then you start to



cut back on the frequency of measuring those particular parameters, and other things that are varying you continue.

Maybe what we need to do is go through a little exercise on the variability of those data and come back to you and discuss what we think that indicates in terms of needs for monitoring.

MR. ROSENBERG: Yeah, well, I think that's what Larry was implying, or saying.

*MR. THRALL: So we'll go back and look at our data, look at our various -- come up with an analysis and discuss it with you. Would that be.....

MR. ROSENBERG: Sure.

MR. ARMINSKI: Other comments? Hank.

MR. HOSKING: I'd like to discuss resident species for a moment. On the fish mitigation plan with the flows proposed and so forth, it was sort of a selling fact that the side slough habitat modifications would benefit resident species. And here on page 14 the statement is made: No specific monitoring studies are proposed for resident species. And I would like to suggest that standard catch techniques and results per unit of effort be included with the salmon monitoring, and so forth; and then keep track of resident species by this standard unit of effort each year as you go along so in fact we do have some indication of the benefits or lack of benefits on side slough habitat



modification. We do want to know that part. 1 MR. GILBERTSON: Right. It'll make your day. 2 MR. HOSKING: You're going to have to give us all the 3 concessions before you're through. MR. GILBERTSON: At the time that we wrote this 5 position paper, our feeling was that by monitoring the 6 production of species fluction like salmon and Coho salmon 7 8 we would cover resident species, because their use of the 9 critical habitats are similar in time and space. Since that time we've decided that, well, maybe it's not that good; and 10 11 so we have initiated a resident species monitoring program 12 that will begin next year. And it follows kind of what 13 you're suggesting, a catch per effort. Now in that scheme 14 we're focusing on rainbow trout in the Middle River. We chose that one because it is -- its use of the mainstem 15 16 and critical habitats is so similar to Arctic grayling and 17 dolly varden that we felt that by focusing on that one we 18 could cover those other species. 19 MR. HOSKING: Would that be included in the revision 20 of this particular paper? 21 MR. GILBERTSON: Right. We'd include it in this 22 revision. 23 MR. HOSKING: Okay. 24 MR. GILBERTSON: One point -- one thing that we're



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struggling with -- and if any of the agencies want to give

us some hints, we are concerned a little bit about how we factor in the impacts of increased use of the resource up there, non-project related increase in harvest. By simply monitoring with a catch reference type model on the resident species, all we would be able to detect is a change in the abundance of that species. It would not tell us why the abundance changed, if it was changed.

MR. HOSKING: Yeah. I have no idea. Fish and Game, for example, would be doing creel census work; or anything like that, I don't know.

MR. GILBERTSON: They don't -- I don't believe they do that work in the Middle River area. They do it in some of the tributaries.

MR. HOSKING: On page -- pardon me? On page 18 the last sentence in the first two paragraphs reads similar: Appropriate remedial action will be performed. And one is to maintain slough productivity. The other refers to the size of fish runs. I think we need some explanation of what sppropriate remedial actions are.

MR. GILBERTSON: Well, let's start with one that I think is the easy one first. If the abundance of fish returning to these -- I mean, if we modify these sloughs and do what we hope they're going to do, we're going to create some great spawning habitat. One of the problems that you management people have to face when you do something like



that is over-escapement to those areas. If you get into that situation -- it really -- I'm hesitating a little bit because this really gets into a management decision. But what we mean by remedial actions here is there are things that you can do to limit the number of spawners that would enter those areas if everybody agreed that that was a thing that they wanted to do.

MR. HOSKING: Okay. My point -- I realize that there are many options, but my point is in terms of this paper right here. I think that you should be including some of these in here. And if you feel that they are all management decisions I think that should be so stated.

MR. GILBERTSON: Okay. It's not -- all right. Sure.

MR. HOSKING: Along those lines.

MR. GILBERTSON: Okay. On the other side, if they are too low then we would go back with agencies and talk about other options available.

MR. HOSKING: Okay. Fine. I think that should be included in here; that's all.

MR. GILBERTSON: Okay.

MR. LOWENFELS: I think the point -- and maybe I'm reading between the lines -- but you've got a basic check list that you've got to go through to make sure that we've considered everything. And unless we list those things, you can't tell.



MR. HOSKING: That's true.

MR. LOWENFELS: So we've got to do that for record purposes, if not just to explain to you what we are considering.

MR. HOSKING: Right. I like to think that appropriate remedial action is to build a \$30,000,000 fish hatchery out there; and maybe the Power Authority thinks that an incubation box for \$4,000 is appropriate. So who is to know what we're talking about?

MR. ARMINSKI: Brad?

MR. SMITH: Well, are we looking at this issue paper as more or less an agreement to agree, or should it, or later iterations of this paper, establish monitoring goals like the number of fish that we expect -- that we consider to be the base line condition for evaluation purposes? And how are we going to get to that point? And the second question I had has to do with: We've mentioned earlier, we've talked about the formation of an inter-agency team to evaluate the results of the monitoring efforts and maybe recommend any changes with the mitigative structures or alternatives, or possibly revise how we're going to monitor or what we're going to monitor for. I think we have to look a little at that; and particularly if the inter-agency team isn't established, how the contact and coordination is going to occur, how issues are going to be resolved that come up,



and what status or what standing the agencies will have at that point given that the license will have been issued.

MR. GILBERTSON: In answer to your first question, what I'm looking for in this document in terms of agreement or disagreement is, in a general sense, have we covered the major components that ought to go in the long-term monitoring plan? I'm just talking about the long-term. I'm not talking about construction. The details of the monitoring plan, we are looking forward to covering that in the arena of these technical meetings that we've had; more technical level meetings like the one we'll have next week. And what we want to do in those is go through some of the actual details about how we will measure production of the various species in the system and some criteria for judgment; get into a little bit of the statistics of monitoring. Is that what you were.....

MR. SMITH: Yeah. It's kind of a similar situation with temperatures, I guess, trying to resolve what temperatures we'd like to see released for fisheries purposes; that type of refinement. In both instances, it's not clear to me though whether eventually, you know, we're going to hold off on final approval of this until that series of technical meetings and discussions have occurred, and we can slap it back into this issue paper, and then put that package into FERC for final license conditions; or whether it's going to



remain open with just a commitment from both agencies to develop these.

MR. MARCHEGIANI: Are you looking for, Brad, you know when we have those technical meetings and whatnot, we'll discuss details and whatnot -- one of the things that may make us feel a little bit better is, specifically -- or give us better directions, is what details you are actually looking for. The other thing is: Are you looking for those details to be included in this paper?

MR. SMITH: That's what I'm asking.

MR. ARMINSKI: You know, I think there's going to be a number of papers that just, you know, discuss issues that you can't put the depth in the paper that's going to be required, you know, for the satisfaction of license conditions. And you know, as far as the monitoring plan, it's never going to be the paper. I think we're going to have to -- well, I know we're going to put together a specific monitoring plan; and that's something that we're all going to agree to. And it's not going to be this paper, it's going to be that plan.

MR. LOWENFELS: What the paper does though, is sets out, in this particular instance, a generalized position. And I guess what we're looking back from you in this particular instance is some sort of an indication that our thrust and our position is correct. And what I'm hearing now is,



first of all, we need a more detail. And I guess this is one of those papers where we need to really address with you what we expect to happen afterwards -- some of the discussion further on down on this list -- before it makes sense to you whether it's an acceptable document to you.

MR. SMITH: Sure. I think the points brought out here in the paper that it's unreasonable to develop a final plan at this point, that the nature of the beast is that you're going to get changes occurring daily that you have to react to and it has to remain flexible. What I'm asking for right now is a little more detail about how the agencies are going to be involved in those decisions, how the process goes past the resolution of this particular issue. And it sounds like this is a kind of a general agreement. That's fine, but I don't know once this is signed off what.....

MR. ARMINSKI: Well, I guess one of the things we could do in this paper is outline how we get from here, this general paper, to the specific agreement on the monitoring plan.

MR. LOWENFELS: For example, this happens to be one of those items that there is a standard language used by the Federal Energy Regulatory Commission for a licensing condition on post-construction monitoring. It's three paragraphs long. Now, that's all FERC requires. And as I recollect, it appoints a three-person team which studies the



system. The last one I saw was a 10-year study period; 10-year monitoring period. Now, that's not acceptable 2 either, but that's what FERC accepts. I don't think that's 3 what you want to live with, and that's too open-ended for the APA to live with. So what you'd want is a stipulation 5 in the license that adopts a monitoring plan that we 6 7 jointly agree to. MR. SMITH: Sure. 8 MR. LOWENFELS: And that plan would be developed more 9 or less through technical discussions between the staffs 10 of the APA and the agencies. 11 MR. SMITH: And that would end in what, a memorandum of 12 agreement or something? 13 MR. LOWENFELS: No, I think that would end in an actual 14 plan that would be acceptable. 15 MR. MARCHEGIANI: Similar to your better practices 16 manual? 17 MR. LOWENFELS: Yeah, maybe a little tighter. 18 MR. SMITH: And submitted to FERC for specific license 19 conditions. 20 MR. LOWENFELS: Right. Or in FERC's standard license 21 22 condition have that referenced as the base document. MR. SMITH: Okay. You don't think that that level of 23 24 25



detail is appropriate or necessary for this settlement issue?

MR. LOWENFELS: No. I mean it's part of the issue, but I don't think it's appropriate for this document.

MR. SMITH: Okay.

MR. THRALL: When you initially brought this up, I thought I heard you asking about -- what I was hearing you say is you were kind of telling us, or starting to tell us, what you saw as some of the things that would have to go into a settlement instrument; and not just describe what the monitoring plan is, but at some point how, you know, the results of that monitoring plan are going to be evaluated and how some changes are going to be implemented.

MR. SMITH: Somewhere we have to establish that.

MR. THRALL: And I guess what my understanding is that that will evolve as part of the settlement of this issue, and it's down there on the agreement of the type of the settlement instrument and action plan to resolve the issue, and it'll be some sort of a condition of it. The question, for example, of how you measure, you know, impacts. Where do you worry about annual fluctuations of populations. I just want to -- I'm trying to clarify in my mind. Is that what you were really driving at originally?

MR. SMITH: Yeah, it is. And do you feel like that's described or brought out in the paper?



MR. THRALL: It probably isn't and I think it's..... 1 MR. IOWENFELS: The revision will have it. I mean I think 2 we'll just have to include it. Well, let me back up a second. 3 4 What I hear from you is that missing from this paper is a 5 better discussion of how the monitoring program is going to 6 relate -- how it's going to operate and how discoveries made 7 as a result of the monitoring program are going to be 8 translated into changes..... MR. THRALL: Changes in mitigation.... 10 MR. LOWENFELS:changes in operation or mitigation 11 or maintenance or whatever. 12 MR. THRALL: Sure. 13 MR. SMITH: And how issues would be resolved among 14 the agencies and such, you know; and what standing we would 15 have in that process. 16 MR. LOWENFELS: Just talking out loud, doing our 17 homework out loud for a second, I think what that may 18 require is sort of an inclusion of the FERC process post-19 license; a discussion of that and a recognition of that 20 so that we all know what will happen. 21 MR. SMITH: Uh-huh. 22 MR. ROBINSON: May I make a point here that might help 23 shed some light? FERC has its license articles, as we're 24



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discussed, Brad, some of which are standard as Jeff has

pointed out. I think as Tom has pointed out, we'd all be

better off if -- the more specific the better. And if we can something, a document that lays all these things out, that everyone's already agreed to, why it will sail right through and be a good idea. One of the things that can happen, based on my past experience: If you don't, if you use the general language in some of the FERC articles they say some things like in consultation with the appropriate agencies, and then it lists them. The applicant has to study such and such a resource for x number of years, write a report and then go back and talk to these agencies. And then there's another part, as I recall, that says something like if there's still a problem and it can't be resolved amicably, then it gets thrown back into the FERC arena again. And so it's carrying it one step on farther. What we're trying to do here, avoiding that sort of thing, right up front it would also help for the rundown of the process. We've got a plan that we can all agree to and work out together. And the details -- I think that there seems to be some general agreement here that the details of such a plan would come largely from some of the technical meetings that Larry was talking about. And so it seems to me that a lot of this could be encompassed in, what sounds like, one collection of documents or one single document that would respond to your concerns.

MR. SMITH: Yeah. And get as much of this done for



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incorporation into the license as possible. We're very leery about having FERC be an arbitrator or make decisions about post-license changes.

MR. LOWENFELS: Well, the appointing of the biologist, for example; there's no reason why we can't come up with three names of respected individuals or five or 10. I mean, we can be as specific as we can get in this and then present that to FERC. I think that's what we'd want to do, not....

MR. SMITH: Oh, yeah, there's likely possibilities there.

MR. LOWENFELS: I feel very uncomfortable about allowing a FERC Administrative Law Judge to tell this group, you know, who should be on that monitoring team.

MR. SMITH: Yeah.

MR. LOWENFELS: I don't think it matters to the APA who's on that monitoring team, but it certainly matters, I think, to the fisheries biologists. We're going to work with whoever is appointed. You people are going to appoint the experts in the area, you know, not somebody that just happens to teach in the University in Washington D.C. or something of that sort known by an Administrative Law Judge. So I think we'll end up with a detailed monitoring plan with as much detail as even who's going to be on the plan, how often they're going to meet, the base line data that they're going to work from, the types of data that they're going to



collect, where they're going to keep it; all that kind of 2 stuff. And if you'd like to start working on it right now 3 and kind of hand us something..... MR. SMITH: Sure. Maybe this paper could establish a 5 time when these series of technical meetings are supposed 6 to start up or something so we can compare that to when, 7 like Dan pointed out -- when the availability of that mitigation 8 plan is going to be, and see if it all makes sense. 9 MR. LOWENFELS: Let me ask this: Is there a particular 10 monitoring plan or model of a plan or an actual plan that is 11 in effect as a result of some other construction project in 12 the country that you people are aware of? I'm speaking out 13 of turn. I don't know whether there's a whole package of 14 these things, but if you know of something that should be a 15 model that we should be looking at, get it to us.

MR. SMITH: I'd be interested, too, and I am checking that. Terror has got the only thing and there is some fisheries work going on with Terror, but I'm not aware of anything on this scale.

MR. LOWENFELS: And of course, it doesn't necessarily -- it could be a Canadian monitoring plan. It doesn't have to be an existing FERC project by any means.

MR. LATTA: It could be a Russian one.

MR. LOWENFELS: It could be a Russian one.

MR. HOSKING: I would like to see discussed in one of



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these technical meetings the APA's projected monitoring plan with the use of the Environmental Field Officer position; and we should have all the agencies involved right there. I commend APA for this approach. I think it's a good one. However, I do remain skeptical of having quality assurance and quality control on the same payroll. I think you're saying there we need to discuss with the agencies how we can get over this bit of skepticism and be assured we'll all be getting the same information on the current planning. 10 MR. THRALL: Hank, could I say something about this? MR. HOSKING: Sure. 12 MR. THRALL: Right now, because this is something that 13 I'm kind of interested in, and have been involved in some of 14 the thinking that went into this Environmental Field Officer. 15 I think it's very important for people to realize what sort 16 of philosophy has gone into thinking about the Environmental 17 Field Officer. I don't know if you were involved in some 18 meetings, oh, half a year ago or so where there was discussion 19 of best practices manuals and how those were going to be 20 developed, where Charlie Craddock talked about, you know, the 21 contract development -- development of contract documents 22 for the contractor and so on? Did you attend? 23 MR. HOSKING: I don't know if I was there or not. 24 don't think so. It was August?



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MR. THRALL: Yeah. Well, basically the thinking that goes into this in appointing an Environmental Field -- having the Power Authority appoint an Environment Field Officer and then giving him some sort of instructions to go out there and sort of protect the environment, you know, it's sort of a vague charge. It's not what we're talking about at all. What we're talking about in this is part of our overall process that when the contract documents for this job are put together, they will specify -- and you as an agency will be involved in seeing what they specify -- they specify certain things that the contractors have to do, environmental conditions they have to comply with. And that will be a -- the Environmental Field Officer's job will be to enforce that. He's going to have something very specific to enforce, and he's going to have a contract to work with. This is the basic philosophy. And our feeling is that we approach it in this way. You avoid, first of all, that conflict of interest thing. It's just like the Power Authority will have other -- they have engineers out there who are -- their job is to make sure when that contractor places fill it's the right quality of material, it's compacted in the right way, you know, and put in at the right place. And if they don't do it that way, there's no problem of a contract dispute, the contractor just has to do it over and do it right, and it's his loss. And our thought is that



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Environmental Field Officer should have that same level of authority and clearly defined role, that he has contract documents that clearly state....

MR. HOSKING: I appreciate the intent. I agree it

looks very good on paper. Too many times I've been in the situation where the environment cencerns, because of the schedule crunch or something like this, were overruled by a construction manager or something like this that happens on a day-to-day basis.

MR. THRALL: The thought is that the Environment Field Officer is going to have the same authority....

MR. HOSKING: I know what the thought is.

MR. THRALL:as any engineer who inspects it.

And the thing is -- I guess the reason we see this as being the way to go is that it's not -- it doesn't become a nebulous thing. It's not that the contractor, when he entered into this job and signed the contract, didn't know -- or can make the case that he wasn't aware he had to do these things; and he can't make -- So then when, you know -- it's not a case of him having any leeway to say: I've got a claim here; it's going to cost you more money. It's his -- it comes out of his hide.

MR. HOSKING: Okay. Now, let's....

MR. THRALL: That's the intent anyhow.

MR. HOSKING: These sort of things should be discussed



at a technical meeting, I think.

MR. THRALL: Right.

MR. HOSKING: I can appreciate what you're saying and I think it can be resolved, but it does warrant additional discussion and resolution in more detail before I'm willing to accept what's presented.

MR. THRALL: Okay.

MR. HOSKING: I'd also like to suggest, Tom, that the operation of the EFO here, the way it's described, be compared to the way it's described with the Bradley Lake project, because there are a few discrepancies as to how the situation would work.

MR. ARMINSKI: Okay.

MR. HOSKING: And I think that it ought to be a consistent presentation by the Power Authority for all the projects that are involved.

MR. ARMINSKI: Okay.

MR. HOSKING: And I'd be glad to sit down with anybody and work out discrepancies and that sort of thing that I come up with between the difference on the two of them.

MR. ARMINSKI: Yeah, I guess one of the things that I just have to say is that a lot of how this will work hinges upon the construction management of the project. And you know, we're not at the point of having developed that right now, so there may — while there are similarities between



1 the projects, they may not be managed in the same manner. MR. HOSKING: Jack, I'm not ready to sign off on this 2 one. 3 MR. ROBINSON: Okay. 4 MR. THRALL: I'm not trying to get anything out of you 5 The basic concept, though, that this guy should 6 like that. 7 have some teeth, and that the contractor should be aware of 8 and had made provision for complying with these, whatever 9 the environmental conditions are, is that something that 10 you basically consider 11 MR. HOSKING: Yes, I commend the thing the way it's 12 set up on paper. I think it's real good. 13 MR. THRALL: Your question is the details of how it 14 would actually be enforced? 15 MR. HOSKING: Right, the implementation and so forth. 16 MR. ROSENBERG: Just for the -- just to be sure I have 17 this straight. On page 14 on that resident fish section, 18 that's going to be struck and there's going to be a new 19 paragraph or paragraphs on resident fish and monitoring? 20 MR. GILBERTSON: Yeah. We'll revise this to point out 21 that we will be monitoring resident fishes starting in FY 22 '86. Actually it started -- excuse me. Some initial work 23 has been going on the last two years in establishing index



areas and some....

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MR. ROSENBERG: Okay. I was also under the impression

-- I think it's from that resident juvenile report -- that 1 2 there were two, 3,000 rainbows in that section which I 3 think is a fairly sufficient quantity. And I think that's 4 somewhat similar to the number of, say, Coho's; is that --Do you know if that's correct? Because here it says that..... 5 6 MR. GILBERTSON: Well, there would be more Coho juveniles 7 in the area. 8 MR. ROSENBERG: Okay. It says that their population 9 numbers appear to be low compared with the salmon species; 10 and I wasn't so sure that that was correct compared to all the salmon species. I'll have.... 11 12 MR. MARCHEGIANI: It depends on what.... 13 MR. ROSENBERG:to go back and check on that, get 14 a time of year. 15 MR. MARCHEGIANI: It depends on what you genetically 16 are saying; or whether you're saying all the species or 17 you're saying one specific species. 18 MR. ROSENBERG: I'm saying any one given specific 19 species. 20 MR. GILBERTSON: One of the things that we have to 21 face in developing a monitoring plan is that some of the 22 species are going to be difficult to monitor just because 23 when you go out on the river and sample you don't catch 24 very many of them; and unless you go to some specific sites,



Coho is one of them.

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MR. ROSENBERG: Yeah, I can appreciate that.

MR. GILBERTSON: And rainbow, you can go out and catch a reasonable number of them at certain times of the year in certain places, but in — you know, if you were just to go out on any given day during the summer and hit any given stretch on the river, you'd have a really difficult time getting enough — catching enough to have any statistical meaning or merit. And so that's one of the things that we have to deal with when we're looking at this resident fish monitoring, is exactly how can we monitor them from a statistical point of view.

MR. HOSKING: It is a problem, but it's still a requirement as far as our mitigation policy goes. On page 6, for example, it talks about the critical life history stages of fish, including down at the bottom where it concludes adult salmon. And then on the next page, egg incubation, juvenile rearing and outmigration; and I'd like to see numbers of resident species included right here as an item specifically identified in the monitoring program.

MR. GILBERTSON: Would you be willing to live with abundance rather than -- or densities rather than numbers?

MR. HOSKING: The problem....

MR. GILBERTSON: It's kind of a tricky question, but if we're going to use a catch per effort model, we're really talking about densities. We're not trying to estimate the



number of fish. That's what I'm getting at.

MR. HOSKING: Yeah. We want some sort of a relative figure that we can compare from one situation to the next. I think we're talking the same thing.

MR. GILBERTSON: Right, we are.

MR. ARMINSKI: Anything else? It looks at this point as if we're for sure not going to make it. Is there anybody that can't come back this afternoon that has an interest in a paper that we should discuss this morning? Bob, you came in from Palmer or Big Lake?

CHLUPACH: Yeah. It doesn't make any difference.

MR. ARMINSKI: Okay. Let's start back up at the top, W-13, Human Activity/Wildlife Disturbance.

MR. FAIRBANKS: Okay. Do you want to go through 19?

MR. ARMINSKI: Okay. Let's do 19. I'm sorry.

MR. FAIRBANKS: Well, this paper just basically presents conceptual measures for monitoring wildlife botanical resources. It's based on measures presented in the license application and the BMP manuals; and it's basically thrown out for your comments. The whole monitoring plan is in detail in preparation right now and will be included in the mitigation plan which is due to the -- at least the first version of the monitoring aspect in the mitigation plan will be available this summer. So this can be made available for comments, and your comments then can be incorporated



into the actual plans being developed separately from this. 2 MR. HOSKING: I have the same sort of comment, Randy, or 3 page 3. In the first paragraph of that, it says by incor-4 porating the environmental concerns and so forth. I'm just 5 not willing yet to make that assumption that the concerns 6 will be enforced in the field. 7 MR. FAIRBANKS: You're talking about EFO division and 8 how it operates. MR. HOSKING: Right. 10 MR. ROSENBERG: Yeah, I had that same comment. 11 that's number 13 -- what? -- number 13 of the mitigation? 12 MR. FAIRBANKS: Right. 13 MR. ROSENBERG: We're not willing to make that assumption 14 either. 15 MR. FAIRBANKS: Okay. 16 MR. LINDSAY: Are you guys saying that there'll be 17 things that come up in the field that can't be possibly 18 covered on paper. I don't understand what your concern is. 19 MR. HOSKING: What my concern is that regardless of 20 this person who is out there, if he works day by day, there 21 are going to be situations that have to be handled immediately. 22 You've got a bulldozer idling right there. Too many times 23 I have seen construction managers brush environmental concerns 24 aside and set the bulldozer in motion. 25 MR. THRALL: Again, the intent is to avoid that.



MR. HASKING: I know what the intent is. 1 MR. THRALL: But I understand. I think I understand 2 what it is you would like to see. 3 MR. LATTA: You can only shut a job down so many times 4 when you start delaying the completion of the project, and 5 6 that's where the pressure comes in. MR. THRALL: Yeah. And our intent is we put this 7 together in such a way that the contractor knows what we're 8 trying to avoid is someone out there, you know, baring his 9 10 chest to the bulldozer and causing, you know, everybody a 11 lot of problem; and the contractor being able to say, you know: Well, this is costing me time and money and, you know, 12 13 I didn't know anything about this, and this is the way I'm 14 supposed to do it. We're trying to have it as clear-cut 15 as we possibly can so that the contractor has been clearly 16 told and has signed the contract that says you do certain 17 things in certain ways. And you avoid these. And maybe 18 part of it is -- and there's some additional authority on 19 an ad hoc. 20 MR. HOSKING: Okay. In the technical meeting, I think 21 we can address measures to..... 22 MR. THRALL: Right. 23 MR. HOSKING:satisfactorily meet our concerns. 24 MR. THRALL: And I think the thing is that when we'll 25 finally see how this works is when the contract documents



go out. And one of your, probably, concerns will be to somehow be involved in what that is.....

MR. HOSKING: Right.

MR. THRALL:what those conditions really turn out to be.

MR. ROSENBERG: Another concern of ours was the -- I believe it's in this paper, the mention of not funding any agency positions, or funding any agency involvement in the post-construction monitoring.

MR. HOSKING: That was in number 12, Dan, that specific statement.

MR. ROSENBERG: That was in number 12. Let's go back to that for a minute. We feel that this project will cause a great deal of agency involvement and that the Power Authority should be responsible for funding some of that. What level is something that I think we should discuss. I don't think we — we don't want to rule out at this point in time that the Power Authority will not fund any agency involvement in this monitoring process, or post-construction process.

MR. ARMINSKI: Okay. I guess our feeling was that earlier on a point was raised that there should be a Power Authority funded agency monitoring team. And this monitoring team would be basically a field team that would spend time on the project. And I think that the proposal -- or it was



thought that this might be similar to the JAFWAT thing on the pipeline. And I guess our position is that we feel that we'd all be better served if we established the EFO, and through contractual means strive to keep things in an environmentally sensible — operated in a sensible manner. That's not to say that we might not fund a position such as your position or DNR's positions. We have — or say with Fish and Game, and DNR — to continually work with us on this project and other Power Authority projects. And also, that's not to say that we won't have agency people out in the field where we would fund meals, lodging, transportation at the site and whatever. But the concept that we're trying to get away from is continual maintenance of a monitoring — agency monitoring team out in the field.

MR. ROSENBERG: Okay. In addition to that EFO, we do think that it's going to be necessary to have some level of agency involvement in the field.

MR. ARMINSKI: So we agree.

MR. ROSENBERG: Yeah.

MR. ARMINSKI: Leroy?

MR. LATTA: We have still got a pipeline coordinator, Bruce Stafford; and you might want to talk to Alyeska and see how they've worked that. They might provide some kind of a model.

MR. ROSENBERG: My understanding is that that's being



done away with.

MR. LATTA: Yeah, I think it is tapering off, but it's been several years since the pipeline was done.

MR. ARMINSKI: Other comments on W-19?

MR. ROSENBERG: I have a few on these -- on page ii on the second page. On there, number 2, we feel that records of impoundment crossing and impoundment-caused mortality will be collected. It should also be collected in the winter-time. There may be possibilities for mortality during the winter because of ice shelving.

MR. FAIRBANKS: Yeah, that was an oversight.

MR. ARMINSKI: Bruce?

MR. BEDARD: Has there been any kind of a studies done on that to date of mortalities? The Yukon River, every year you can see lots of caribou when breakup comes. Apparently it's soft spots in the ice and they can't get back out and they drown. Has any kind of study been done on the Susitna similarity so that you'd have some kind of -- you might have someone accuse you later of killing caribou if they see some. You'd be able to see them much better in slow-moving water.

MR. FAIRBANKS: That's true.

MR. BEDARD: That's okay.

MR. FAIRBANKS: Other than the movement and distribution studies that, you know, that have been conducted, there haven't been any specific studies of that. The caribou in



the project area don't typically move in mass to cross the river. And aside from having somebody stationed all along the river for days and days at a time, I don't know how you'd really study it other than the fact that we've had a lot of people out in the field observing.

MR. BEDARD: I just thought I'd bring that up, because I do know that any time you construct a dam project then somebody will come back on you later and say: You've got no facts to show that there was any mortality prior to that.

MR. FAIRBANKS: We know that there are accidents that occur in the field right now. We have documents that some of the radio-collared animals have died through drownings, particularly moose. I don't know if we have documented any caribou drownings yet, but we have documented some moose drownings when they're attempting to cross some of the streams in the project area, not necessarily the Susitna. I think one of them was crossing the Susitna. It was a calf. And another one was documented when it was trying to cross Susitna Creek, I think. But you know, we've documented that there are some accidents that occur; but the total extent of that is really difficult to put your finger on.

MR. ROSENBERG: Shall I go on? I have some more here.

MR. ARMINSKI: Sure. Please.

MR. ROSENBERG: Under number 3, moose, we'd like also

-- what it says is: throughout the license period to document



the browse production of lands enhanced for moose. I'd like to add to that: not only browse production, but use by 2 moose. 3 MR. FAIRBANKS: Okav. MR. ROSENBERG: Next, number 5. That is just contingent 5 on the discussion from -- what was it? -- W-5, the sheep 6 use of Jay Creek. 7 R MR. FAIRBANKS: Right. 9 MR. ROSENBERG: That population level effect, we talked 10 about just what that means and all. Once we get the other 11 one settled.... MR. FAIRBANKS: Right. 12 13 MR. ROSENBERG:we can settle that in here. number 6, we'd like someone to keep track or monitor, 14 15 essentially, nuisance bear instances and try to associate 16 it with mortalities resulting from that or other factors; 17 just to sort of keep track of that officially. 18 MR. FAIRBANKS: Right. 19 MR. ROSENBERG: And we do have pretty good data on bear 20 distribution and habitat use, pre-project information, and 21 we'd like to see that continued post-project to ascertain 22 any changes that may result from the project. 23 MR. FAIRBANKS: All right. I'm just taking down all 24 of your comments here and we'll all consider them in 25 developing the final mitigation or monitoring plan.



1 MR. ROSENBERG: Okay. And on number 10 I have a question on swans. Are there molting swans up there? 2 3 MR. FAIRBANKS: Swan observations have been really scarce. The only ones we've seen. Now there's no real 5 congregations of them. We've just seen occasional swans. I think, at Stephan Lake. The only ones that have even been observed even, I think, nesting are closest to Stephan Lake. And then there's a little pond up the east fork of Watana 9 Creek, a long ways from the project features. Other than 10 that, we haven't seen any. 11 MR. ROSENBERG: Okay. My concern there was just --12 well, it was a concern for molting swans and swan broods 13 being identified..... 14 MR. FAIRBANKS: Okay. 15 MR. ROSENBERG:you know, throughout the construction 16 phase, so that activities can be regulated around those; 17 not just nests, but any swans with broods during the brooding 18 period.... 19 MR. FAIRBANKS: All right. 20 MR. ROSENBERG:and if there are molting concen-21 trations during the molting. And I think that's all I had. 22 MR. ARMINSKI: Leroy? 23 MR. LATTA: Just an update on the Dall Creek -- I mean, 24 Jay Creek mineral lick. Five of the mining claims were 25



closed, and three of the new ones that we can't -- we don't 1 2 even have mailing addresses for the miners. But five of the ones that were on the status plat were closed in the 3 last week. Got it verbal from Jerry Gallagher yesterday, and as soon as we get through with Bradley, we'll get back 5 6 on that and get you some more information. 7 MR. ROSENBERG: Okay. What close are they in? And 8 what does closed mean? 9 MR. LATTA: Basically, I got this second-hand from Debbie as I was walking out the door. She said they're 10 11 closed, and I assume that means that they've either withdrawn 12 their application or they've closed it for some other reason. 13 MR. ROSENBERG: Oh, I see. Okay. 14 MR. FAIRBANKS: What claims are you talking about are 15 the ones that you sent over? 16 MR. LATTA: The ones that are plotted on the status 17 map currently, five of those were closed. Of the ones that 18 aren't plotted, three of them we don't have a mailing address 19 so we can't get ahold of the miner to even find out -- you 20 know, to get anything over to the phone as to where it's 21 located. 22 MR. BEDARD: This is at Jay Creek? 23 MR. LATTA: Jay Creek, yes. 24 MR. ROSENBERG: I'd say those would be invalid claims.



MR. LATTA:

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I don't -- I guess Mary Kaye would have been

1 the one to speak to that. MR. BEDARD: Do you have the dates of entry on those? MR. LATTA: We haven't spent a whole lot of time on that because we're trying to get Bradley done by next week. 5 MR. BEDARD: If you had dates of entry, in essence, 6 prior to August 31, '71 -- if they were prior to that they 7 may possibly be valid, but after that no way. MR. ARMINSKI: Okay. 9 MR. MARCHEGIANI: Dan, just so that I understand where 10 you're coming from, and Randy does, when you said for your 11 discussion of bears that a lot of information was collected 12 and whatnot, and that you kind of expect the studies to 13 continue in that area, do you mean at the same level, like 14 presumably collars and whatnot? 15 MR. ROSENBERG: Just at a level sufficient -- whatever 16 level is necessary to be able to detect changes in habitat 17 use distribution. 18 MR. MARCHEGIANI: Just to know what you were looking for. 19 MR. ROSENBERG: Whatever's decided to be appropriate, 20 yeah. That doesn't necessarily..... 21 MR. ARMINSKI: Okay. Let's move on to W-13. 22 position is that we propose to mitigate human activities and 23 our monitoring will serve to determine whether the mitigation 24 measures are effective. Randy? 25



MR. FAIRBANKS: Okay.

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This paper is pretty

straightforward. The sources of it is, anyway, based on review of the general literature on disturbance effects on wildlife; review of other large projects, hydroelectric and large development projects such as Terror Lake, and their effects; and review of other mitigation measures or restrictions related to disturbance that have been proposed or implemented on other projects. The paper, although it doesn't really make it clear, it really does deal with construction activities. The issue is not — I mean, implies that but it doesn't come out and say it; but that's what we're limiting this paper to. So, any comments?

MR. ARMINSKI: Comments?

MR. LATTA: Just -- I should have brought it with me, but we had a meeting with DOT's aviation planners and I was just going to suggest that you get ahold of them on this. They were in yesterday talking about, on a state-wide basis -- talking airstrips. And they've got quite a bunch of big plans they may put together. I don't know. Anyway, you should get ahold of them. I've got their address and phone number back at the office. I'll call you.

MR. FAIRBANKS: Plans regarding?

MR. LATTA: well, they're putting together a state-wide aviation plan that covers everything from maintenance to who puts out NOTAM's. I mean, it's just very comprehensive state-wide plan.



MR. ARMINSKI: Dan. did you have a comment? MR. ROSENBERG: Please, year, a couple of things. First 2 on sheep, there have been sheep located down by Vee Canyon, 3 identified, and there's possibly another lick area down there. And we would just like that to be included in the, sort of, pre-project monitoring. I mean, essentially these mitigation measures that apply to sheep at Jay Creek should also apply 7 to sheep at Vee Canyon. MR. FAIRBANKS: That's true. That'll happen if, in fact, we can document there is a lick there. Last year is 10 11 the first time they were ever seen out there, and I don't 12 think there was any observation of licking activities. But 13 we'll continue to look for sheep in that area and if it does happen -- we'll certainly look. 14 15 MR. ROSENBERG: Okay. And the dates on the second page, 16 Mitigation Measures Endorsed by the APA, number 2, still on 17 sheep here. The dates April 15th to June 15th should be 18 changed to May 1st and July 15th, according to the report, 19 the sheep report, under the big game studies. 20 MR. FAIRBANKS: Okay. May 1st and July 15th is the 21 recommendation? 22 WR. ROSENBERG: Yeah, and that should just be consisten . 23 That's mentioned several times. 24 MR. FAIRBANKS: Okay.



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MR. ROSENBERG: The other recommendation that that report

made was that it should be prohibited -- project related aircraft landings should be prohibited within one mile of 2 the mineral lick as opposed to half a mile. That was the 3 recommendation in the report. 4 MR. FAIRBANKS: Okay. We'll consider that. 5 6 MR. ROSENBERG: Okay. MR. FAIRBANKS: 7 So you're talking -- okay. 8 number 2. 9 MR. ROSENBERG: And also for consideration is that in 10 the report on big game studies, line 5 on wolves, the 11 recommendation there -- this refers to number 4 on this list 12 -- is that project related aircraft landings should be 13 prohibited within a mile-and-a-half of known active wolf 14 dens. 15 MR. FAIRBANKS: Okay. 16 MR. ROSENBERG: And number 8, page 7 of the executive 17 summary -- I just want to reiterate in regards to swans that 18 it should be during nesting, rearing and molting season if 19 indeed there are molting swans. 20 MR. FAIRBANKS: All right. 21 MR. ROSENBERG: And then just to be consistent, as I 22 said before, on number 10, the dates of May 1st to July 15th 23 and the one-mile distance. 24 MR. FAIRBANKS: Un-huh. 25 MR. ROSENBERG: On number 11, that should also apply



to the Jay Creek mineral lick site. MR. FAIRBANKS: Yeah. I think number 10 was intended 2 3 to cover.... MR. ROSENBERG: Yeah, it may be redundant in that sense. 5 And I believe that's all I have. MR. MARCHEGIANI: I have a question, Dan. 7 MR. ROSENBERG: All right. MR. MARCHEGIANI: It kind of, I think, confronts the issue, and maybe I'm off base a little bit, but maybe you could straighten me away. I think there's a State policy, 10 11 or some Fish and Game policy, as far as shooting wolves, 12 and now we're worried about landing a mile-and-a-half away 13 from wolves. Maybe there's a scarcity of wolves in the 14 Susitna area and they got too many up north. Could you 15 clarify that? 16 MR. ROSENBERG: You did give me the opportunity to say 17 you were off base. 18 MR. MARCHEGIANI: I'm kind of ignorant when it comes 19 to wolves, but at least the Department has been shooting 20 wolves. I'd like kind of a clarification. 21 MR. ROSENBERG: Yeah, I believe the Department's 22 management strategy for, as far as aerial wolf hunting goes, 23 is related to -- geographically related. 24 MR. LOWENFELS: It's also in suspension now. 25 MR. ROSENBERG: It's also in suspension now.



MR. MARCHEGIANI: That clarifies the issue. There's a 1 number of people that would ask us the same question, why 2 moving something around for a mile-and-a-half around a 3 wolf den.... MR. ROSENBERG: Yeah, we're looking at individual 5 populations, I believe; and I think this is a separate 6 population than those that are being managed otherwise. 7 MR. LATTA: Maybe we could just fly them down as a 8 9 mitigation measure. MR. ROSENBERG: Or we could take a break now. 10 MR. ARMINSKI: Any other comments on this position 11 12 paper? 13 MR. FAIRBANKS: Of course, all these restrictions on 14 distance and time, you set them up with the idea that you 15 are going to try to meet all of them. There are some construction activities that just have to be done to build 16 17 the dam, and so there are certain -- you know, if a wolf den is in the wrong place, it's not going to be avoided. 18 But if it's in an area that is 10 miles from the dam then 19 20 there's no need for people to be making project related 21 aircraft landings close by. We can institute the restrictions 22 and monitor their success. 23 MR. ROSENBERG: You know, in some of these, like the 24 Nelchina calving grounds of the Nelchina caribou herd which



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is in here, is there even a need to operate in that area at all?

MR. FAIRBANKS: Probably not.

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MR. THRALL: I think there's probably no hard-and-fast project need to go in certain areas, but when the project is on-going there are going to be, just as there now are, people, various specialists, going out to the project site for various reasons and they'll want to be looking at a lot of various -- not just the dam site. And they'll have legitimate purposes for doing that. Like anybody else, you want to familiarize yourself with the area that you're going to be working in; or you'll be asked to make judgments and you'll ask to see the upper basin or something. And it's important, then, to have restrictions if that guy says for some reason, says: I'd like to set down here. I'd like to land here and look at this, you know, geological feature or something. As to this, those things can happen. have those restrictions then it's very clear-cut. If you want to do that, we'll have to clear that area. This is not the time to do it.

MR. MARCHEGIANI: A good example, that might be a climate station. We might just want to talk climate station in a certain area. Gee, that's not a good place to put it for these reasons.

MR. ARMINSKI: Okay. Any more discussion on this one? I see everybody's looking at their watches so we have an opportunity to quit and come back.



MR. LOWENFELS: Let's take a five-minute break if we're 2 going to go through it. 3 MR. ARMINSKI: Five minutes. (Break) 5 6 MR. ARMINSKI: R-2, hunting and recreational trapping. 7 Rick, do you want to take that one, please. 8 MR. SUTTLE: Sure. Do you.... 9 MR. ARMINSKI: Do I want to say our position? Our 10 position is that the project will reduce availability of 11 moose, black bear and brown bear in the area. 12 reduction will affect the hunting experience and demand and 13 location and expectations in the area. However, the project 14 will provide improved access in the area. And let's see, 15 as far as trapping, our position is that it would not affect 16 significantly recreational trapping. Furthermore, I think 17 the Board of Game would -- may be involved in revising 18 management goals in the area. 19 MR. SUTTLE: Hank? 20 MR. HOSKING: On your executive summary the position 21 is.... 22 MR. ARMINSKI: Can we.... 23 MR. SUTTLE: I'm sorry. That's my fault. 24 MR. ARMINSKI: Yeah. Let's hear from Rick. 25 MR. SUTTLE: Let me run through a quick approach here.

MR. ROBINSON: Which ones do we have left?

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My fault, Hank. I've got a couple corrections I need to make anyway.

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MR. HOSKING: Oh, thank you. You'll take care of my questions.

MR. SUTTLE: Yeah, maybe. Basically the approach was to pull together wildlife population information and hunting use data, and evaluate that with respect to the issue as it's stated. The sources were mostly the ADF&G, Fish and Game, big game studies by Ballard and Miller and Pitcher; and a review of the specific hunting, or harvest, information that they have that's set up by the specific reporting code units in the project area; as well as a review of the information and license application, particularly chapter 3, fish and wildlife. With respect to trapping, we've reviewed the data that did exist -- and that's basically in the license application, chapter 3 -- and some of the recent fur bear studies done by Phil Gipson, which should be spelled with a "p" instead of a "b" in my paper. A couple other ones before we get into it, a couple comments and corrections, to the position on page 1. That first sentence should be struck and the first sentence on page i of the position should be interjected in that.

MR. THRALL: Could you repeat that? I'm not sure everybody caught it, what you're trying to do.

MR. SUTTLE: On page 1, the first sentence says: It is



the Alaska Power Authority's position that the project will not significantly affect the availability of game in the area. 2 That should be struck and the correction will be what's on 3 the executive summary: It is the Alaska Power Authority's 4 position that the project will reduce the availability of 5 moose, black bear and brown bear in the area. Now, on page 6 4, just a minor one in the third paragraph, the second to 7 last sentence where it says Parks Highway. That's actually 8 Denali Highway. 9 MR. ARMINSKI: Take it away. 10 MR. HOSKING: You got it. 11 MR. ROBINSON: That took care of it, right, eh? 12 MR. HOSKING: You bet. 13 MR. LOWENFELS: I'm still trying to find the correction 14 on page 4. I think it was page 4. 15 16 MR. ARMINSKI: Yeah. What was the question on page 4 again? 17 MR. SUTTLE: Third paragraph, second to last sentence 18 says: young bull moose in areas of GMU 13 near the Parks 19 20 Highway. And it's Denali Highway. 21 MR. LOWENFELS: You get the hidden martini award. No one else here knew that was a mistake. 22 23 MR. HOSKING: Sorry I read it. 24 MR. ARMINSKI: Okay. Leroy, do you have a comment? 25 MR. LATTA: I was just going to say our recreational



people didn't have any problems with it.

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MR. LOWENFELS: They should have. Fire them.

MR. LATTA: Hey, we're going to get out of here by noon

MR. BEDARD: I do have some comments.

They're mild. The recreational trapping, at least on our land, is not going to occur. We're not going to allow it. I thought I'd Trapping right now isn't profitable let that be known. anyhow, and we don't foresee recreational trapping as a benefit. On page iii where it says at the top: Users that presently fly into the area disturbed by project features for a remote hunting experience will be adversely affected by the project. Well, whether the project goes or not we feel that's going to change anyhow by virtue of our land ownership. And I thought that should be known. below that, Recreational Trapping, I had a question on the first one. The number of trappers presently in the project impoundment areas does not appear to be large (between 7 and 9). My question is: Where? I've never seen trappers out there, at least on the lands that are within the dam itself or south of that. There might be some trappers in the north part of the Talkeetna River and portions of the -- the seven portions of the Prairie Creek, but I don't know of any in that real remote area that I know of. I know of a guy from Cantwell who married a Native. He and his wife do some



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limited trapping, primarily in the Butte Lake, Deadman Lake

area. Is that what you're referring to?

MR. FAIRBANKS: I think most of the trapping -- this was based on a survey that Phil Gipson did and the trappers that they found, they were trapping over by the reservoir. Most of them were at the upper part of the Watana reservoir. There's several of them near the mouth of Oshetna River and Goose Creek, and then there was one or two trappers that have trapped Watana Creek and Tsusena Creek areas.

MR. BEDARD: Okay. We also feel that, at least at present under the pricing of furs, that the project should not, in our opinion, cause any inducement to increased trapping. And again, like I said, we're not going to allow recreational trapping. There might be some permit trapping allowed if the price of furs go up. We'll allow them access to our land, but right now our plans do not have it. Also, under mitigation measures, we would like to add a three in there: Proposed agreements with CIRI Native corporations to open lands to wildlife mitigation and recreational uses, we'd like to have that put in as a mitigation thing which we are presently working on. But I think it should be worded here that that could be a mitigation measure.

MR. ARMINSKI: Earlier you made a statement that you wouldn't allow recreational trapping. But if we reached an agreement to use Native lands for recreation, would that then allow recreational trapping on those lands?



MR. BEDARD: We would have to look at the terms of the agreement that we worked out, what type of things that that would include. And we don't see recreational trapping as a viable industry anyway. At least at this time, I don't think of any.

MR. ARMINSKI: It's not. I guess in my mind recreational trapping is not an industry. You go out there for fun. It's more or less to get out.

MR. MARCHEGIANI: Bruce, do you feel, you know, that that is something we can address at the time that it is an option? The option's not closed?

MR. BEDARD: It's not closed, but we would -- right now the way we're looking at it, our intent is not to allow recreational trapping, because there is some subsistence Natives that may feel that -- that are shareholders of our corporation -- that may feel an infringement, maybe, on some special subsistence privilege that they have; and we have to look further into that. But our position is right now to keep closed until we have more of our own internal studies.

MR. FAIRBANKS: Bruce, are you saying also that you would prohibit big game hunting?

MR. BEDARD: No, no. That's different. We're actually looking at that as part of our recreational plan for final development which is one of the big businesses there at



present.

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MR. FAIRBANKS: I thought you said earlier that even if the project doesn't go that wilderness hunting would not....

MR. BEDARD: No, I didn't say wilderness hunting. I said recreational trapping. Certain areas may be closed, and I was referring to a McNeil river concept of the brown bear migration area. We're looking at that as, possibly — trying to see how we can develop a four-square mile area as a preservation site whether the project goes or not, and that is going to depend a lot on whether we can get help from the State — from the Feds to develop such a concept.

MR. LATTA: Wave your hand at him.

MR. BEDARD: But that's in our own, you know, internal policy.

MR. ARMINSKI: You don't need money to do nothing.

MR. BEDARD: Well, it's not really doing nothing. You still have to build a tower, a viewing tower, of some type; and a caged in area to protect the people who are going to study the bears, if it's towards viewing the bears; and you want to control trails to that site off in the more accessible areas.

MR. ROSENBERG: I need to make clear, Bruce, and I think you're aware of it, that if you do want to develop that area for recreational use, to view bears or whatever, and you want that on a long term, four square miles may not



be very sufficient to keep those bears coming back to the Prairie Creek area.

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MR. BEDARD: Yeah, that's the thing we're looking into. Right now the minimum I recommended was four square miles. And I have to work with two Native groups on that because it's two different landowners that have that area. one Native group says: Yeah, I can fork over four square miles, but the other one hasn't given me any commitment. So I can't speak to the other one in that relationship until I get some more commitments, trying to convince them that it is a plus to their overall recreational plan by incorporating that. It's my own personal feeling and it's something that I've been pushing for for several years. Also, on page 5 on the bottom, it says: Unregulated ATV use off the access road could result in considerable impact. We agree with that. And again, on our land we will want that regulated; and we will regulate that, again, whether the project goes or not. We're not going to allow any type of ATV use within our land borders. I would suggest the same thing, maybe, for the project area, at least within a certain perimeter. You might want to identify areas where you wouldn't want that type of use, because it can be damaging. You can look up there now and fly over and you can see ATV trails, and it looks like superhighways. Now again, on closing the roads, with the two Native groups -- it's actually three, but two -



whether they want any kind of open use -- of course, that's Knik -- and until we can all, ourselves, internally get together on this, I can't take no position on it. But it's difficult because one side is saying that we want access and the other side is saying we want access, but we want nobody else to have it. And so I have a little problem with that myself, you know, to make a presentation. I just want it to be known that we're still working on that. Now on the page 8 where it says: Land management plans of Native landowners will largely determine the future of trapping south of the river. Again, our plans may include restrictions in our permits. I'll leave that open that way. That's it.

MR. MARCHEGIANI: Bruce, do you foresee within the next six months the question being internally answered as far as access?

MR. BEDARD: I'm hoping sooner that that, because either this month or next month the balance of 142,000 acres will be conveyed, and CIRI has 10 days to convey that to the villages. And what I've done, I've broken it down, the whole area, in three management districts. And then I have submanagement plans built into that because of the different land owners which is CIRI, Knik, Chickaloon and and Tyonek. We're still in doubt of whether Chickaloon will own any land there at all. They have not been conveyed any



to date. Tyonek and Knik has, primarily most of the river corridor.

MR. MARCHEGIANI: Is it fair to say that we would expect a recommendation from you six months or earlier?

MR. BEDARD: I would hope. And my personal feeling is I'm hoping as soon as conveyance is done I can set them down at a table where we can discuss how this project is actually going to affect their lands and what they want out of this. I'll ask them directly, you know: What do you want out of this? What are you willing to forego and what are you willing not to forego? And I can have something better to present. Right now these are strictly things we have discussed on a summary basis without making it concrete.

MR. ARMINSKI: Dan?

MR. ROSENBERG: Okay. A couple of comments on the second page of the executive summary under use of game resource. I just wanted to point out that on the third one down it says: Many black and brown bears harvested are taken by people hunting moose or caribou, which is also considered to be an incidental harvest. But I just wanted to mention that the use — or the number of people hunting exclusively for brown bears, which is in the springtime, has been increasing steadily in Game Management Unit 13 since 1980; and in 1980, which was the first year that that Game Management Unit was open for spring hunting, there were,



I believe, 18 percent of the harvest was spring harvest.

And then it's increased every year up 'til 1984 where 37

percent of the harvest of brown bears was a spring harvest.

So there are -- or there is an increase in the number of black and brown bears being harvested in the spring in addition to those incidental harvests in the fall during moose and caribou hunting.

MR. BEDARD: It may be greater next season because of that big article the Times putin about bow hunters. It kind of made it kind of attractive with nice pictures of bears all over the place.

MR. ROSENBERG: I wanted to bring that up. The second comment, it says: Hunting of Dall sheep is not expected to increase significantly. The whole project is predicated on the fact that there's going to be a large population growth, and that's why we need all this additional power. So I think consistent with that is a percentage of those people are going to be hunting; and so I think that we can expect an increase in all types of hunting.

MR. SUTTLE: I think one question I have on that, Dan, I think what that should be reflecting is that the -- I think the one study that mentioned Dall sheep, that most of the legal rams are all taken right now. So I think you're probably going to need some clarification on that, the hunting pressure, the amount of hunting increase, with the



overall impact on the resource in terms of taking legal rams shouldn't change much.

MR. ROSENBERG: Okay. Along those lines the bottom of that page, it says: The proposed access road may redistribute the heavy hunting use that now occurs along the Denali Highway. I believe that it will just extend rather than redistribute the heavy hunting pressure for those same reasons, that there will just be more and more of a demand to hunt. So it really won't -- it may not redistribute it. It may just extend that demand into an area.

MR. MARCHEGIANI: Is that more of a measurement type thing where the Board of Game could just close hunting within 5 miles of the access road?

MR. ROSENBERG: Board of Game regulations are not what we're considering to be a mitigation measure.

MR. MARCHEGIANI: What I'm trying to say is: It's a management tool; and part of what we've been told already is that we're not making any recommendations as far as management goes. I'm at kind of a loss. I'd ask the means of dealing with it. I mean, the Department can either say, well, there is going to be hunting pressure along the road and allow it, or else they can turn around and restrict it. We don't have any control of that.

MR. ARMINSKI: I'm not sure that Dan said, though, that this is a bad thing, you know, that needs to be mitigated.



MR. ROSENBERG: I'm just clarifying what here is listed 2 as present knowledge, or access to the area, whatever. I'm 3 just trying to clarify the information that's presented here. Other than that, the proposal on mitigation measures endorsed by the Power Authority, I believe we've commented on the recreation plan and on the proposed wildlife 7 mitigation measures in the license application; and I don't 8 know if we've gotten anything back on those comments yet 9 10 that I'm aware of. I'd have to check on that before I say 11 anything about that. But also additional refinements, are those additional refinements that have already been made or 12 13 are those additional refinements that will come out in the future? 14 15 I believe that was a reflection of the MR. SUTTLE: 16 additional mitigation measures, the mitigation planning 17 measures, that Randy is doing right now. 18 MR. ROSENBERG: So those additional refinements haven't 19 come out? 20 MR. FAIRBANKS: Yeah. They're not finalized. 21 MR. ROSENBERG: They're in addition to this document, 22 is what I'm asking. 23 MR. FAIRBANKS: Yeah. 24 MR. ROSENBERG: Okay. That's all I have. 25 MR. ARMINSKI: Okay. Anything else on this one?

MR. MARCHEGIANI: Okay.

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The next one is R-3, our real position on whitewater boating. S-5, need for public services and facilities. Basically this relates to additional facilities that would have to be provided to compensate for impacts of increased populations on area communities. And our position is that by employing the mitigation measures the impacts on these communities would be insignificant except in Cantwell where a railhead would be established and there would be an increase in facilities required there. But, in fact, Cantwell has expressed a desire to have their community increased. Okay. Sharon, are you going to take that one?

MS. VAISSIERE: This paper was based mostly on information from the license application and on projections of the number of workers and their family members who would be expected to live in area communities. And those were based on the worst case where workers would use their own personal vehicles to go to and from the project. The other thing that they were based on were projections of facilities and services requirements due to the population increases in these communities. And what I looked at first were what communities were most likely to be concerned, based on the worst case projections and how facilities and services are currently provided for in those communities; and then summarized the projected facilities and services requirements under this worst case scenario and stated the State's



responsibility to mitigate these facilities and services effects; and finally outlined the most important mitigation measure, and that being the worker transportation plan with an impact management program and monitoring. Any discussion:

MR. ROSENBERG: I have no comments.

MR. LATTA: NJ, no jurisdiction.

MR. ARMINSKI: Okay. We'll have a revision of that paper coming out. Okay, next one is F-2.6. This is the -- it deals with changing water quality parameters, in particular, nutrients. Our position is that no mitigation measures are required and that the impacts of the project on nutrients is insignificant. Tom, are you going to take this?

MR. STUART: I think the three or four basic points that I might make here, and what we try to make in this paper, that is that the real question here, the issue at hand, is how will nutrient changes caused by the project affect the trophic status, and what will be the trophic status, of the reservoirs and the downstream areas. It's our feeling at the current time that under natural conditions there are probably more than enough phosphorus and nitrogen micronutrients to meet the demand in the river, and that other limiting things in the environment probably supersede the available quantities of nitrogen and phosphorus. We don't really expect the project to reduce concentrations of nitrogen and phosphorus to levels that would cause limitation of primary



productivity or to levels that would lessen the trophic status of the stream downstream or the reservoirs themselves. We think that both the reservoirs and the stream will be characteristically rather impoverished. You might call them oligotrophic although that terminology is not really applicable to the river at the moment and we don't foresee any mitigation at the present time.

MR. ARMINSKI: Bob.

MR. CHLUPACH: I have a question, due more out of ignorance, I guess, than anything. Assuming the dams are constructed, what is the projected effect of, say, the dissolved nitrogen or, say, the gasses in the water on incubating fish or rearing fish? Is it negligible or -- The reason I ask is because I don't know myself.

MR. STUART: We're not projecting -- and we discussed that in another issue on another day, but dissolved concentrations of nitrogen are expected not to exceed the State statutes downstream from Devil's Canyon; less than 110 percent supersaturation. Is that what you're asking?

MR. CHLUPACH: Uh-huh.

MR. ARMINSKI: Yeah. I guess, in fact, there probably would be an improved condition, because you would -- with the project you wouldn't have those high flows that go through Devil Canyon that causes a supersaturation effect. Furthermore, the dam doesn't spill into a plunge pool as in



many other dams; and the event of a spill is related to the 50-year event. Otherwise, all the water, rather than be spilled through a spillway, is released through a cone value which does not result in a supersaturated condition. Hank?

MR. HOSKING: Sailing to the top paragraph on page 3, is there any documentation on the pre-project status of the herbivores and detrivores below the dam river reach? Are there any plans to monitor these populations under project conditions to verify that no adverse impacts will occur? And what is the status on primary productivity information?

MR. STUART: I'll start back at your first question. There has been some invertebrate animal collection. It's been rather limited. This area was collected in 1982, I believe, and reported in 1983. There's been another study subsequent to that which we have not received information from as far as I know, not even a draft report from ADF&G. I am not sure exactly what we collected or how many places they collected or how that study was carried out.

MR. HOSKING: Okay. I was under the idea -- under the impression that there would be primary productivity? Is there such a thing?

MR. STUART: Yeah.

MR. GILBERTSON: Let me expand on Tom's answer on the first question. There will be a report coming out in the next month on the insect populations. In addition, there's



going to be a one-year -- let's call it a one-year monitoring study in FY '86 to give us estimates of number of organisms per area, or something like that; something that will give us base line information and that we can compare with project measurements. Okay, on the primary productivity, there will be some information available toward the end of this fiscal year on, at a general level, as to what we expect with project conditions to be like for primary productivity; and that's going to focus on a photic zone type of analysis using the assumption that if the substrate's right and if the sun -- and we get light to the substrate, then you're going to get production. Now to follow up on that in this coming field season, we will do some on-site measurements of primary productivity and establish some information for base line for then comparing with project conditions.

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MR. HOSKING: Okay. If these proposed studies and activities aren't identified in another issue paper, I think it would be appropriate to include them in here.

MR. GILBERTSON: We have the same problem here as with the earlier one. When we wrote this position paper we didn't think that we would need to monitor those things. But on further considering the problem, we decided that it would be a good idea to monitor.

MR. HOSKING: Okay. Well, along those lines then, on



page 9 where it says: No mitigation measures have been 1 proposed. I think this should be expanded along those lines. 2 It's my way of thinking that a mitigation measure would be 3 comparing with what you have now and what you have later on. And the same thing where it says no mitigation measures, 5 6 on issue F-12 we've looked at before. I think on page 13, 7 it indicates in that paper that nitrogen and phosphorus 8 monitoring will occur along with turbidity sampling. So 9 again, you read one paper where it says this is what's going 10 to be done, and then I read this paper and it says nothing 11 is going to be done. 12 That's the result of, probably, MR. GILBERTSON: Okay. 13 an improper mindset that we have, is we in our minds are 14 separating mitigation from monitoring plan; and really they 15 are. 16 MR. HOSKING: Okay. I see what you're saying. 17 MR. GILBERTSON: We could put that in. There's no 18 problem. We can change our mindset. 19 MR. HOSKING: You won't change mine. 20 MR. GILBERTSON: No. you're probably right. The 21 monitoring ought to go in. 22 MR. THRALL: Put that in writing, please. 23 MR. GILBERTSON: Okay. Which is that, the monitoring 24 ought to go in or the..... 25 MR. ARMINSKI: What else have you got?



MR. HOSKING: That's all I've got for this one. 1 MR. ARMINSKI: Dan? 2 MR. ROSENBERG: No. That answers any questions I had. 3 MR. ARMINSKI: Bruce? 4 MR. BEDARD: On page 8, this table 2 where you show 5 grayling per mile, is this the basis of what you estimate 6 the losses to be? 7 8 MR. MARCHEGIANI: Wait. We're on.... 9 MR. ARMINSKI: That's the next one. We're on 2.6, the 10 nutrient. 11 MR. BEDARD: Oh, you mentioned F-5. I thought we were on F-5. 12 MR. ARMINSKI: 13 No. 14 MR. BEDARD: All right. 15 MR. LATTA: Throw some water on that guy. 16 MR. BEDARD: No, I have no questions. 17 MR. ARMINSKI: Okay. Let's move on to F-5, impoundment 18 effects. It's our position that arctic grayling habitat 19 in tributaries will be inundated by the impoundments and 20 lost and therefore should be mitigated. It lists some 21 mitigation measures here we can discuss. Let's see. Who's 22 going to discuss this one? John? 23 MR. GILBERTSON: First of all, the information that I 24 used in preparing this report is based on information provided 25 by the Alaska Department of Fish and Game through a



hydroaquatic study team, and their studies of the impoundment zone, particularly the studies conducted in 1982. addition, I used the information that is being generated by the need for power people and the reservoir operations' people to get an idea of what was going on, how the reservoir would be operated; and in addition to that some of the information on turbidity contained in the Peratrovich, Nottingham and Drage report; and in the license application; and the information contained in the license application pertaining to the reservoir areas. There are a couple of things that probably should be corrected or discussed in a little bit more detail, and that is: I understand from, I believe, it was your previous meeting here that the concept or the measure for supplementing the existing rainbow population programs in the Anchorage area, I believe there was some discussion of whether to omit that completely; and we were not clear as to whether or not there was a comprehensive agreement among all of the agencies for that deletion of that consideration, so it is in this particular document at this particular point. And until we get a clear statement, agreement, from all the agencies we will continue to use that as an option; or it's still an option whether we get a clear consensus from all of the agencies on that.

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MR. ARMINSKI: Bob?



MR. CHLUPACH: I can't, of course, say what the Department -- how the Department would prioritize this type of mitigation. I have to give a little background on what I do. I'm the F.R.E.D. area biologist in northen Cook Inlet, so if there's any enhancement programs to be developed up there, I would be the one essentially responsible for that. In talking with Larry Engle, the area sport fish biologist in Palmer, and the sport fish people in Anchorage, they are currently utilizing all the existing lakes that can support a landlocked trout stocking program, or grayling or Coho, program to -- I don't know whether you think that there are other lakes that can be used right now. are not, because all the lakes are being planted on a priority basis. In other words, there's just no other existing lake between here and Talkeetna. I'm sure there are some that could be stocked, but they're not of the priority of, say, of Kepler-Bradley Lake or Seymore Lake, or something like that in the Big Lake area. So I don't understand, I guess, what the mitigation would be if these things are currently fully utilized.

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MR. GILBERTSON: Well, if the Department tells us that there aren't places to plant rainbow trout, then we just omit that one. I guess, then, what kind of things do you see as possibilities for mitigating for the impoundment area loss?



MR. CHLUPACH: So the questions, then, that you ask is for instance, let's say, in the case of king salmon on the second page there, the loss of 25 to 75 -- I don't mean to change this in relation to what you're saying just because you want a mitigation answer. What you're essentially coming down and saying is, perhaps, more king salmon in some other drainage of the Susitna River would be a potential mitigation result for the sacrifice of, say, those other fish upstream.

MR. GILBERTSON: That's certainly an option.

MR. ROSENBERG: Excuse me a second. Yeah, I think two things. One, we did — the Fish and Game view is to rule out the rainbow propagation as being thing, and I'm rather concerned as to what other agencies have to all agree on this. I mean, I agree there should be agency agreement, but I don't know which ones you are referring to, because as you know we keep — as you know, we bring it up and we bring it up, and you keep putting it back in. So I think it should just be clarified.

MR. GILBERTSON: Well, part of our goal in this process is to satisfy as many people as we possibly can. And Fish and Wildlife service does have a mitigation policy. We're not arguing with the logic of the proposals that you put forth after the mitigation workshop. We think that it's a good idea, too, but we're a little bit uncomfortable about how



that fits in to Fish and Wildlife service's mitigation policy. If I remember right, the main two that you proposed were improving access for fishermen to east side tributaries on the Susitna, and looking at some habitat replacement options on the Middle River.

MR. ROSENBERG: Exactly. That's what I -- that was my second point to be brought up here, yeah.

MR. GILBERTSON: Okay. So, you know, as I tried to say -- I probably didn't do a very good job -- is I tried to say in the last position paper meeting was, you know: We have received your coments and we agree with them. The reason it didn't show up as an option here is we're still -- haven't gotten word from any of the other agencies on how they feel about the thing.

MR. HOSKING: Okay. Here's a word from Fish and Wildlife Service. We would prefer the development of new habitat, or access to new habitat, along the Middle River; and then provide access for individuals to get in there, this type of thing. So I think that is in line with our mitigation policy, new habitat is developed, or access by the fish to the habitat, and then access for people to utilize it.

MR. BIZER: This would be primarily for anadromous fish rather than the resident fish though.

MR. HOSKING: No, I think it would be access for



people just to the river. But the new habitat, primarily, I think probably for resident fish.

MR. ROSENBERG: I think what we're anxious to say, and I think he agrees with us, that it's maybe very difficult to replace in kind the grayling that are lost through the impoundment, so we're suggesting alternatives to that.

MR. HOSKING: Perhaps there is some side channel or some side slough or something like this that -- or tributaries where additional access could be provided.

MR. GILBERTSON: Okay. One of the things that we're looking at right now for one of our mitigation tasks in FY '86 is to do a survey of the area for potential habitat improvement, looking at some of the tributaries for blockages and, you know, natural blocks to migration and things like that. It would be especially, I guess, where the grayling and rainbow — it's opening up new habitat to them for spawning and tributary rearing during the open water season.

MR. HOSKING: I like the idea you've proposed here on paper on developing borrow sites. I think that's pretty neat, but I'd really like to ask some questions here if you're talking about borrow sites above the dams and so forth; such things as: Are they going to be inundated by high reservoir flows? Are you looking at just ground water sources here? Are you providing channels between the borrow sites and the



reservoir itself, this type of thing. And I guess what little bit I've seen about borrow areas I don't know if there are going to be any of them that lend themselves to this type of thing. It would be a clear water system.

MR. BIZER: Okay. There are two basic groups of borrow sites that I was referring to in this particular one. One is the borrow sites for the fill for the dam, and I believe there's one immediately downstream of the Watana reservoir in the Tsusena Creek mouth area. And of course, we don't know exactly how that material is going to be removed as yet, but in terms of recontouring it post-project — or once the construction is finished, it could be in such a way that we can insure that, you know, clear water areas would be available within that area, including a channel.

MR. HOSKING: That is a very valid option to my way of thinking, in conjunction with this exploration of traditional habitat. I like that very much.

MR. BIZER: The other borrow sites that might be involved might be those that would be located along the access road, if in fact they are needed. There is some question as to whether or not they'll be able to get enough fill from either end for the access road to complete the bed for the road. However, they may need to acquire materials from along the corridor at that point. And those



borrow sites could be located or constructed in such a way 1 that they could provide additional habitat for grayling. 2 MR. HOSKING: What you have in mind there is just a 3 put and take type thing? MR. BIZER: Yes. 5 6 MR. BEDARD: Would this be similar to what is presently 7 -- before you get in to Chitna? Where they put the road right through they created a pretty deep area where they 8 9 dug out material to build that road, and then the cuts are filled in with water because on the other side was a natural 10 11 lake. Eventually that side filled up with water and it has 12 grayling in it, good-sized grayling. I've caught grayling and rainbow out of that man-made pond, so to speak. 13 14 MR. BIZER: That's the kind of thing that we would have 15 in mind. 16 MR. BEDARD: Is that what you're talking about? MR. BIZER: Yes. 17 18 MR. ARMINSKI: Bob. 19 MR. CHLUPACH: Again, out of ignorance, is the put and 20 take factor when you factor this into the borrow pits, is 21 that factored in on an annual basis per stocking? 22 other words, once you get the borrow site in there it doesn't 23 do you any good to put one stocking of grayling in there 24 'cause they're not going to propagate themselves in a



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borrow pit.

MR. ARMINSKI: All right. This would be an annual restocking?

MR. CHLUPACH: That's what I'm saying. Is that part of the mitigation, is the annual stock of the borrow pit on an annual basis?

MR. BEDARD: Well, rainbow would, but I don't know if grayling would.

MR. GILBERTSON: Rainbow still need flowing water, too.

MR. BEDARD: No, they spawn in Florence Lake, and as far as I know there's no flowing water in there.

MR. GILBERTSON: It would be incorporated into the mitigation plan if this option were one that you wanted. Another possibility in developing these borrow sites along the access road that may be a little touchy — I don't know But you could associate these things with tributaries if the proper materials were available near a tributary. So, you know, if the agencies wish this sort of thing in the mitigation, you might be able to direct the engineering a little bit in terms of where they build the borrow pits, how they excavate them, and then how they leave them — is you might be able to design a connection with the tributary and create some — not just the put and take situation, but maybe create some overwintering habitat in some of the tributaries which, you know, which would be of real value in that area, looking at winter conditions in the tributaries.



MR. BIZER: I think in terms of the annual stocking. too, I think it would depend a little bit on, first of all. whether or not the fish that were stocked in any given year were able to survive the winter. Okay? So that you'd probably want to structure the pond to have sufficient depth so that it wouldn't freeze to the bottom, so you could have carry-over from year to year. And secondly, you'd want to sort of keep an eye -- keep tabs on how many fish were actually taken, what the harvest pressure really is on it. So it may be, you know -- you may be stocking, you know, with fry or fingerlings if we get sufficient numbers of them but then those might not become catchable or desirous -desirable until they are maybe, you know, eight, 10, 12 inches long. And so you'd want to provide sufficient depth and so forth to provide for overwintering. And again, you'd be able to monitor the populations to the point where if there's sufficient fishing pressure to them, we could replace. We may not need it every year. It may be a bi-annual kind of thing.

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MR. THRALL: I think the important thing here is the concept because there's a lot of detail that cannot be worked out until people actually go in and sample borrow pit sites. Until contractor develops his plan to remove borrow, you don't know exactly how deep these sites are going to be or exactly what their location is going to be.



But the concept, I think, is a valid one.

MR. ARMINSKI: Bob, please.

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Something else that, perhaps, MR. CHLUPACH: Yeah. should be incorporated in the mitigation end of it is: I know from experience that in developing -- say, for instance, in transporting fish from one area to another you have to go through a whole series of different planning processes, different transport permit approvals, and so forth and so on, just for disease screening purposes and to keep in check the tranferring of diseases that are inherent in fish from one watershed to another. Perhaps something should be built into the mitigation process that a brood be in part developed, say, three years before the dam goes in so that you're already sitting there ready to go when the dam is finished; because what I'm saying is: Maybe after the disease screening process is all said and done on a particular brood source, perhaps it doesn't lie in your drainage, and in fact it does have a virus or a bacteria that someone doesn't want transferred, then you're left without a brood. What I am saying is develop the potential brood from the existing stocks that are already there to avoid a potential problem after the dam is in.

MR. ARMINSKI: Yeah. Okay.

MR. BEDARD: I want to bring up something through the mitigation. The Kepler-Bradley Lake area was recently -- a



lot of that was just recently acquired by the State, additional pressure that is going to be put on that area. I would rather see that be mitigated rather than the Anchorage lakes and ponds. I've fished that area and there's some sizeable rainbow in there now. There's grayling in Vic -- not Victor, but Irene Lake, and there's silver salmon in Victor Lake, and Long Lake also has, really, 7 trophy size rainbow. I've caught them 25 inches out of there. 8 What I would like to see, because I know that's going to be 9 opened up because the State now owns it, is prior to that 10 any mitigation. That would be a prime area. It's still kind 11 of a woodsy-type atmosphere, yet close to populations, and 12 that's more attractive than any site that's close by in 13 access. And I see a big pressure coming on there. If we 14 don't have a suitable stocking program, that's going to be 15 16 diminished.

MR. ARMINSKI: Any other comments?

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MR. BEDARD: Oh, yeah. Again, on this table 2, page 8, this grayling per mile bit, is that the basis for loss of fish or how do they come up with that? I'm kind of dumb on this, the kind of reasons where it makes any sense to me. Trout know no boundaries on any tributary. They don't necessarily spawn in any particular area. And it's just saying that the first mile-and-a-half of Tsusena Creek is impacted by 440 fish per mile. How do they determine that?



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I'm just curious. I know that the Tsusena is quite a 1 distance and those fish might come down and then be counted 2 in that area at that time, but I'm not quite sure how they 3 determine it. Did they take a count of fish and estimate so much per mile, and that's how much is going to be alloted? 5 MR. BIZER: Okay. The basic method for determining 6 the population levels in these things is a marked release 7 method -- or mark recapture. And what they, basically --8 9 the ADF&G basically delineated a specific reach within each 10 of these drainages as an index for the remainder -- an index area for the remainder of the river. And based on their 11 12 mark recapture estimates, they had an estimate of densities per mile; and this is based on during the summer period. 13 14 MR. BEDARD: The reason I'm asking that is: If that's 15 the case, once the areas that are lost are impounded, what is 16 the additional capacity that the remaining portion of that 17 tributary can handle an additional fish per mile? So that 18 you -- so that the loss may not be as great as what you're 19 showing. 20 There's several aspects to your MR. BIZER: Okay. 21 question. A basic assumption of these estimates per mile 22 is that -- or the population estimates -- is that the 23 entire reach of these tributaries are at capacity. 24 MR. BEDARD: Yeah, that's....



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MR. BIZER: Okay. That's a basic assumption. Whether

in fact that is true or not, there's really -- it's very 1 difficult to try to estimate what the capacity is and where 2 the population is relative to that capacity. 3 MR. BEDARD: Don't we have, of all the streams 4 throughout Alaska -- don't we have any kind of data that 5 could, through a model or something, tell us what is the 6 7 capacity of a certain size stream based on the length of 8 the stem? 9 MR. BIZER: I think you'd find it very difficult to find somebody that would go out on a limb and say that. 10 11 MR. BEDARD: Okay. The reason why I'm saying that is: 12 How can someone determine that's going to be the loss of the 13 fish if they don't have that kind of information on how 14 much a stream can actually handle? 15 MR. THRALL: I think the thing here, Bruce, is that 16 this is a reasonable way -- it probably gives you, you know, 17 a conservative estimate of the loss. 18 MR. BEDARD: Okay. 19 MR. THRALL: And I think the time and effort spent to 20 maybe refine that could just as well be spent in refining a 21 mitigation and.... 22 MR. BEDARD: Okay. I'll buy that. 23 MR. THRALL:replace the fish. 24 MR. BEDARD: I'm just asking because it didn't make 25 much sense to me.



MR. THRALL: It's a very difficult thing. And you're dealing with an open system, not a closed system, so you kind of have to limit what you can really do.

MR. BEDARD: Well, on the lake trout on page 11, it says: A small population of lake trout will be lost at Sally Lake. And we are concerned with that, because Sally Lake is entirely on our land. Is there any way of mitigating lake trout population in a similar lake like at Fog Lake?

I believe one or two or those lakes could handle lake trout, but I don't know if there's -- I know there's lake trout in some of the Fog Lakes, but I don't know if there's lake trout in all five of them. And maybe one of those lakes could handle an additional population of lake trout as an offset to Sally Lake; I don't know. I'm just bringing that up.

MR. ROSENBERG: While we're on that one, could I just make one comment on that? It says: A small population of lake trout was identified in Sally Lake. And then it says: Due to insufficient recaptures of marked fish, the population size could not be estimated. And I guess I would assume — maybe there's more to this than what it reads — but if you go out and you mark a bunch of fish, your recaptures are very low relative to the numbers of fish you mark, wouldn't that indicate that there's, perhaps, a high population — or a large population. Excuse me.

MR. BIZER: If there were a large population in this



lake, you'd expect first of all to catch a larger number of 2 fish in a confined system such as Sally Lake. 3 MR. ROSENBERG: It doesn't say that. MR. THRALL: I think it's not that there were a lot of 5 fish marked and then very few recaptured. I think it was very few captured to even mark in the first place. 7 MR. ROSENBERG: Okay. That's what I wanted to know. MR. BIZER: Yeah, that's basically right. I think. basically, a general rule of thumb for population estimates 10 is that you should get something like five percent of your 11 recapture should be marked, or your second collection, to 12 get a reliable estimate. And that, in fact, as I recall 13 right offhand -- that, in fact, was achieved. However, 14 they only caught, I think it was, 30 fish total; and some 15 of those they were unable to release back as marked fish 16 because they used -- in some cases, I think they used gill 17 nets on it. 18 MR. ROSENBERG: Okay. Maybe I was just reading -sort of reading it wrong, but I just wasn't sure. 20 MR. BIZER: It may be stated just a little bit -- I 21 can understand where you might be -- the statement might be 22 a little bit misleading. 23 MR. BEDARD: On page 18 I had a question there on dolly



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varden.

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It says -- oh, yeah. My question was in regards

to why are the fish dwarfed up there? Is it because of their

present environment, the streams being very low or small?

MR. BIZER: You know, there are several factors that go into that. One of them is it's cold, just the habitat itself is such that -- The other thing is that Morrow, on several studies that have been conducted and are referred to by Morrow, indicates that there tends to be two strains of dolly varden and one is a dwarf strain.

MR. BEDARD: Similar to eastern brook trout?

MR. BIZER: Yeah, right.

MR. BEDARD: The reason why I was asking is historically in the Kinegak (ph) River in the State of Maine when they built the dams back in the mid-1800's, they found that the eastern brook trout got larger behind the impoundment versus the smaller ones below the impoundment.

MR. BIZER: Uh-huh.

MR. BEDARD: And I'm wondering if the same type of environment might occur on this that would create a recreational fishing potential? It's kind of opposite to what they're saying here that not be likely that a significant sport fish would be developed in a reservoir. I disagree with that myself. My own experience of four major dams on the Kinegak (ph) River, behind the impoundment was the best fishing, especially for trophy size fish. And over a 100 years of dams in that area have not affected the fish downriver or upriver, including the winter flows and ice



of six feet. 1 2 MR. BIZER: I'd like to ask you a question about this Maine system there. Is that a glacially fed system? 3 MR. BEDARD: No. but it has a lot of siltation. 5 fed from the Mt. Katadin (ph) area which -- glacial silt was there at one time but the glaciers have all melted versus 7 like it's still melting in Washington State. 8 MR. BIZER: Uh-huh. 9 MR. BEDARD: So there's still glacial silt that feeds 10 the river, but with the damming the silt kind of almost 11 went away. The river got cleaner. 12 MR. BIZER: Much of this is the projection of the loss 13 of the recreational fisheries based on the experience in 14 glacially fed lakes here in Alaska. For example, Tustemena 15 Lake is a glacially fed lake that remains turbid throughout 16 the year; and the sport fishing in Tustemena is not 17 significant. Similarly with Eklutna reservoir. It is a 18 glacially fed, and again there is not a significant fishery 19 in it. That's not to say that there aren't fish in there. 20 It's just that it's not sport fishery. 21 MR. ARMINSKI: Okay. Any other comments? 22 MR. ROSENBERG: Just a couple brief ones, I hope. 23 MR. ARMINSKI: Okay. 24 MR. ROSENBERG: Just going back to the borrow pit idea. 25 Generally, the positive aspects of the borrow sites that we



1 see -- and I don't know if this would be possible or not --2 and this would be using borrow sites as a recreational 3 fishery for construction workers. I don't know if the timing would be in the proper sequence, but that can be possible. 5 That seems like a way to alleviate some of the fishing 6 pressures on the tributaries and lakes in the project area. 7 by directing that fishery to, perhaps, those borrow sites. 8 MR. THRALL: I think we've just the other day been 9 discussing this within the terms of, maybe, some put and 10 take fisheries in some of the lakes right near the 11 construction; lakes that right now may have very little in 12 the way of fisheries resources. But you can do some put 13 and take fishery, stocking, and you could keep a lot of the 14 construction work force happy; you know, go out and catch 15 some rainbow or something. Plus the concept we were kicking 16 around is very similar to what you're just saying. 17 MR. ROSENBERG: Okay. 18 MR. BIZER: I'd like to summarize, if nobody has any 19 further questions.... 20 MR. ROSENBERG: Just.... 21 MR. BIZER: Okay. 22 MR. ROSENBERG: Well, one more thing on the statement or 23 the second page of the executive summary on the end of the



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observed in this reach in each study year, the loss of these

third paragraph. Since only 25 to 75 salmon have been

spawning areas is not considered significant. And I think a case can be made, and I think we are making a case, the loss of 25 to 75 king salmon is worthy of a little more consideration. It may have an effect on the returning king salmon and the recreational fishery. Bob, do you want to talk about this some more?

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MR. CHLUPACH: Yeah, I'm thinking -- let's take, for example, the 25 to 75 king salmon doesn't seem like too many fish, but there are several drainages on the Susitna River that sometimes don't even get 25 fish into them. It's very, very important. But all of these fish amalgamated into one compose an entire fishery all the way from a commercial fishery to a subsistence fishery to a sport fishery and a variety of different user groups. But if we take 25 king salmon, and for theoretical purposes 8,000 eggs per female, that's in the vicinity of 200,000 eggs. you run through all of the little survival regimes what you're talking about at a minimum is 200 king salmon adults returning to the Susitna drainage. Fifty percent of that will probably be harvested by the commercial fishery. Another 100 fish will be entering the Susitna drainage. All those fish are going to pass by the Alexander Creek, Deska, Willow Creek, Montana Creek, all the way on up. So by the time it gets up there you can very easily see that, say, 25 fish as spawners that means 75 fish were caught. And I



think recent creel census, or past creel census by sport 1 fish division, all along the Susitna River will indicate 2 that the number of man hours spent and the amount of money 3 spent on just catching one king salmon -- and I admit it's not a trophy fish in the Susitna River -- the number of 5 6 fish and the amount of money spent in just catching that one 7 king salmon is a vast number of dollars; and that trend is 8 not going to decrease. And with that in mind, since that 9 trend is not going to decrease, I just can't -- I don't 10 understand how we can rationalize 25 to 75 king salmon adults 11 away. 12 MR. BEDARD: I was under the understanding that 25 to 75 13 fish was not just kings; there was a combination of salmon. 14 Am I wrong? 15 MR. ARMINSKI: John? 16 MR. BIZER: This should be kings. This is evidence of 17 kings. 18 MR. BEDARD: Go up the canyon? 19 MR. BIZER: Well, to various points up the canyon. 20 The majority of these fish probably -- oh, 50 percent or 21 more -- have been observed at the mouths of Cheechako Creek 22 and what is now referred to as Chinook Creek, which are 23 immediately upstream of the Devil Canyon dam site. 24 MR. BEDARD: Were they actually spawning there? 25 MR. BIZER: There were, I think, maybe four or five



spawning pairs at each site. Some of these numbers include some that were seen at Devil Creek and as far up as Fog Creek, but I think the numbers there were on the order of two or three individuals, and in one case it was just one individual, which is kind of difficult for it to spawn. The statement of considering it not significant is really in relevance to the Portage Creek fishery -- or the escapement into Portage Creek which is estimated at approximately 1,000 fish. So relative to that number, the 25 to 75 fish of which only a portion of them are actually able to spawn were -- we considered it not that significant. In your case, Bob, of the multiplication factor, I think one thing -- I don't know if you took into consideration that this was 20 -- used the entire 25 to 75 fish. If so, 50 percent of them were females and so..... MR. CHLUPACH: But I did use the lower figure, too. MR. BIZER: Okay.

MR. ROSENBERG: One more brief comment. This is just to reiterate a point that we've been making in the past. This has to be considered in the light of accumulative impacts, also; and so that's just one of the arguments that — one of the problems that we've had with this position paper process in general, and it's not considered here in that light. It needs to be.

MR. ARMINSKI: Bruce?

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1 MR. BEDARD: Yeah. I'm just wondering: In terms of 2 being able, you know, to analyze impacts for laymen, would 3 it be better to talk in terms of number of pairs sighted 4 rather than number of fish? It makes more sense to me if I 5 was trying to evaluate like he was doing the number of eggs 6 that would possibly be lost if an impoundment took place. 7 If I saw 75 fish, I don't know if it's male or female. MR. BIZER: Okay. Just a reference in there may be to 9 say what proportion is male, or something like that -- or 10 what proportion is female. 11 MR. BEDARD: Or something that refers to it so that 12 someone can sit down, like a layman, and make some kind of 13 quick analysis where you're making sense out of it. 14 MR. BIZER: Okay. We can add a little parenthetical 15 statement in there. 16 MR. ARMINSKI: Okay. Anything else? Can we call it 17 quits? Okay, great. Now, we'll go through the last two 18 agendi. When's the next meeting, Jack? 19 MR. ROBINSON: April the 5th. 20 END OF PROCEEDINGS 21 22 23 24 25

