



November 15, 2011 Mason Dam work session

Jason A Yencopal to: Audie Huber, Carolyn Templeton, Carl Stiff, Colleen Fagan, GRIFFIN Dennis, Emily Carter, Fred Warner, Gary Miller,
Cc: Jason A Yencopal, hmartin

02/17/2012 03:12 PM

Dear Stakeholders,

Attached are the November 15, 2011 stakeholder work session minutes.

From this meeting some action items were discussed and listed below.

- Baker County will provide ODF&W references of the bull trout study (on Baker County Website)
- BOR will provide additional water quality data. (on Baker County Website)
- FS (Dan) will help provide information on bull trout data from Beulah and Wickiup
- ODFW will provide the summary reports regarding the perch netting efforts and their current estimates of Perch in Phillips Reservoir
- ODFW to provide information on their Phillips fish tagging operation
- Baker County will review the options stated at the end of the minutes and pick one to

move

forward with the project.

In order that Baker County can make this decision, we would like to gather your thoughts on monitoring and potential mitigation as discussed during the

meeting.

There were also some other studies that were mentioned that if you have access to would be helpful. (in addition to Buelah and Wickiup, Fall Creek and Cougar reservoirs)

In addition, I had to have my e-mail rebuilt and make a new stakeholder contact list. If you are receiving this and would not like to please let me know and I will fix the list again. If you notice anyone that should be receiving this and is not please let me know and I will add them.

Thank you,
Jason



November 15 Meeting Minutes with tables attached.pdf

November 15, 2011

Mason Dam Work Session

Attendees,

Mike Hall USFS
Gary Miller USF&W
Colleen Fagan ODFW
Mike Gerdes USFS
Nick Myat ODFW
Dan Gonzales USFS
Jeff Tomac USFS
Leslie Gecy Eco West Consulting
Tim Kerns Baker County Commissioner
John Deloly ODEQ
Jason Yencopal Baker County

Rick Reiber BOR
Bob Ross BOR
Mary Grainey OWRD
John Unger OWRD
Ken Homolka ODFW
Ken Hogan FERC
Elizabeth OsierMoats ODFW

Update

Baker County has submitted the Draft Biological Assessment and Preliminary License Proposal. Since that time work has continued in forming the License Application and Draft Final Biological Assessment. Through the perch netting done in Phillips Reservoir two bull trout were discovered and the County is making sure to address this issue in the two above documents.

Bull Trout

Baker County has started to do some additional analysis of the data with the finding of the bull trout. Leslie presented the following update.

One of the things discussed in the DBA was the water quality and the effects on the bull trout particularly the stratification that occurs in Phillips Reservoir. Water quality monitoring was done near the Mason Dam intake. The data was looked at and compared to the life stages of bull trout, juvenile versus adult. Tracking studies that were also looked at which included: Flathead Reservoir, Beulah Reservoir, Lake Billy Chinook, and a couple others to look at the seasonal bull trout movement and how that compares to Phillips Reservoir. The question that we asked ourselves were, how would these movements correlate to the risk of entrainment in Phillips Reservoir? The project is not going to change the risk of entrainment but what will happen to the bull trout once entrained. In looking at the handouts provided (and included at the end of these minutes) Table 5-3 is a new water quality table that is different than the previous tables provided because the previous tables showed the bottom elevation of the intake and not the top. The new tables show the range of condition of temperature and DO from the top to the bottom of the intake. Beginning in the summer, DO conditions are outside bull trout

survival limits. The DO data is not broke into adult or juvenile numbers like the temperature columns, instead any DO below 6.5 would not be suitable for bull trout.

Colleen asked about how close were these measurements to the intake. Jason replied that the water samples were taken near the intake but a little to the Southwest of the intake so that the measurements could be taken of the full water column down to the old river channel which would be the deepest part of the reservoir. Colleen's concern was the horizontal distance of the samples to the intake as the DO could change.

Leslie continued, that in the other reservoir studies that if the reservoir stratifies, or not, because some of the reservoirs don't stratify as much and some of them do, come June the bull trout are moving. The moving starts based on temperature and photoperiod. Even when the reservoir does not stratify the bull trout start to move out of the deep area. There are two things occurring in all of the studies she has seen. One is that there is a pattern of bull trout life history moving out of deep water and the second is the water quality issue. So we are looking at the water quality of the intake and the assumption was made that the water samples are representative of the water at the intake. Figure 5-1 is a graphical representation of table 5-3 DO column and figure 5-2 is a graphical representation of temperature.

Mike G asked what is the irrigation season? Leslie replied May 1st to September 30th but releases may increase due to flood control concerns. Mike added that this would mirror the generation, in which Leslie asked everyone to look at the last figure of the packet. This figure looks at the frequency of operation. The water is shut down to minimum flow on September 30th and this graph shows the number of times the flow exceeded 100 cfs from 2000-2009. This data was looked at to assess the risk of entrainment during operation for bull trout being mid April to mid June when the project could be running, the water quality is suitable, and the life history shows they could or would be within the deeper part of the reservoir. Through this data we are trying to identify the risks of entrainment and tie them into the operation and water quality to show us the highest risk of entrainment.

Colleen asked about the studies that showed the bull trout moving out of the reservoirs, what was the temperature of those? Leslie stated that from the Beulah study that the bull trout migrate in mid April to mid May and that the reservoir rarely exceeds 15 degrees Celsius. Dan stated that most of the adults or sub adults start migrating or staging in April and he wondered what the concern or risk was if it was primarily with juveniles or fry that may stay in the reservoir for a year. By April most of the fish of concern would be already starting to migrate to the headwaters. Leslie replied that the concern is the entrainment of any bull trout. Colleen was wondering if there is a temperature trigger that causes the movement into the tributary streams not just the life history. She also added that in Hells Canyon, they see movement from April into June, so she was looking to see if there is a temperature correlation that we can look at to compare with Phillips Reservoir. Leslie will provide the references she used so that Colleen can review this information. Dan discussed the Beulah study, where some juveniles were entrained in May and then entrained again. They stayed in the reservoir for a while regardless of the temperature showing there is some life history that keeps them there. Leslie added that Beulah is also a cooler reservoir. Rick from BOR added that Reclamation did some extensive water quality monitoring and found that if any bull trout if they were to stay in the reservoir regardless of the contents would not survive. Inhabitable conditions started to occur in mid to late June or the first of July even if there was a substantial amount of water left. However between mixing and wind events the data showed basically the same thing as shown in the Phillips Reservoir data as far as DO and temperature. Reclamation collects water quality data near the dam and that a request can be made to obtain this data. Leslie added that the data was collected during a dry year. Since stratification occurs from the top down you would expect in a wet year that you would get a strong if not stronger stratification. You may also see cooler temperatures but you would have a longer anoxic condition near the bottom.

Discussion about the operation of Phillips occurred. Phillips is used for flood control and irrigation. Water is stored during the winter and released during the summer. Phillips is unique in that when it reaches 100% it still has additional room for flood surcharge which other projects do not have this capability. Depending upon inflows, releases could match inflows and be made at anytime for flood control operations. Reclamation will discuss how often Phillips uses this surcharge area in their Biological Assessment that they will be working on. Phillips does have a dead pool and cannot be drained 100 percent.

The max outflow is 875 cfs with a max velocity of around 2.0. Velocity equals cfs/area. Velocities at the intake will be reviewed to determine the velocity range and how that could affect different fish species. Dan asked if Phillips is able to pass flows both through the outlet and spillway? Phillips is designed in such a way that it can only release flows through the outlet gates until the reservoir reaches its maximum level and then water will go through the spillway. Rick added that at Beulah Reservoir, releases flows through both the spillway at certain depths and the outlet works. It was found that entrainment of bull trout occurred more often when releases were made through the spillway. When releases were changed to the outlet works entrainment decreased to near zero probably because the conditions were perhaps inhospitable and this will be reviewed in the BA for Phillips. Also at Arrowrock they found that entrainment has lessened with releases made through the new clam shell gates that are lower in the reservoir than the releases that used to be made near mid reservoir levels, so lower releases are better in terms of entrainment. Gary asked if that was for all species or just for bull trout. (We had some technical issues and Rick with BOR answered this question later.)

Leslie asked about the report that Timothy Bailey with ODF&W was working on about the perch netting process done in Phillips Reservoir. Nick Myatt will get back to the group after discussing this with Timothy when that could be expected. (Nick received correspondence from Timothy during the meeting that indicated that the summary report for last year is available and that the 2011 summary will be available in about a week. The report of all three years will not be available until early next year).

Rick addressed a question that was raised earlier about if other fish species were affected or just bull trout by having the water withdrawn from a lower level. From Beulah when BOR switched from spillway releases to outlet releases not only was there a substantial reduction in bull trout entrainment but also rainbow and red band trout as well.

Rick felt that typically in the spring that bull trout are seeking prey in the shallow areas that are starting to warm up a little bit. He also found it interesting that ODF&W were able to catch these two bull trout with Merwin traps that only fish about 2 meters below the surface. They have tried to use these in Arrowrock and have not had as much success.

Jason asked that does the finding of two bull trout in Phillips Reservoir change the process as we move forward with the licensing of the Mason Dam Hydroelectric project? Gary does not see where it changes the process but the analysis of the information does change.

Rick brought up a point that may need to be addressed and that would be the addition of the tiger trout which have been introduced into Phillips and tiger musky which has been considered but not introduced at this time. USF&W has had some discussion with ODF&W concerning the tiger musky but at this time there has been no consultation.

Entrainment and Mortality Study

Mike G. asked for an update on the entrainment study with the comments that were received in February. Jason replied that Baker County feels that the project will not change the entrainment through operation of a hydroelectric project because we are not changing the intake. The report looked at other projects to determine the possible entrainment rate. Rick added that Beulah and Arrowrock currently had terms and conditions that have them trap and haul bull trout entrained with success at both projects. The issue he sees is that it would be difficult to trap and haul bull trout that might be injured through the turbines if there is an issue with bull trout at Phillips Reservoir. Bob added that the issue is that the impacts to fish will change with a Francis turbine versus a slide gate (it was difficult to hear Bob, for some reason the phone connection was in and out.)

Dan asked Rick about the outcomes from the studies on the Columbia River with strobe lights and hydro acoustics in deterring fish from intakes? Rick did not believe the outcome of those studies have proven very successful.

Dan also asked if the state is willing to give a waiver from fish passage. Colleen added that a waiver is possible if you go before the Fish and Wildlife Commission and can show a net benefit over what they would expect with passage or with a screen in place. Both are an option but Baker County would need to prepare a proposal and present it to the Fish and Wildlife Commission. Dan asked if this has been done and if both options are being considered. Baker County's standpoint is that the project would not be feasible if fish passage would have to be done and so we will look at some sort of benefit likely through some type of mitigation and working through the waiver process. Rick added that in lieu of a fish ladder an option could be "trap and haul" that would only occur in certain years and for short durations when they are spilling water or releasing a large amount of water. Bob added Reclamation's stand on screening is based on safety that if the screen gets clogged and cannot pass flood or irrigation flows that they would not allow anything to be put in the entrance that would prevent this. Other than a separate intake that would probably not be a starter for Baker County, Reclamation would not entertain any motions that include screens on the intake. Ken Homolka asked what is the issue with the screens? Bob added that Reclamation has a mandate to deliver irrigation water under all conditions and there is also a safety issue and if you cannot control the water through the valves the water could go over the spillway and you would not have any control at that point. What about breakaway panels asked Ken with ODF&W. Bob stated he could look at it but he feels that the cost to do it would probably be expensive. Baker County did look at screening options with the engineers and all the options became economically unfeasible.

Gary added that basically, the comments received are mute because Baker County feels that nothing is changing with the current intake so whatever entrainment there is now is not going to be any different with the project. Baker County took those comments and will make some changes to the study but Baker County feels that the entrainment rate would not increase or decrease with project operation but what will change is the mortality which was also looked at in the report.

Mike G. feels that where we will end up is that in the summary from the entrainment report, it states that 74,000 – 250,000 fish could be entrained per year. Colleen added that there is no information on perch, rainbow, red band, or what size these fish are that are entrained and this could affect the mitigation. Leslie asked if anyone had taken the perch data and come up with any population analysis. Nick stated that he feels there have been some estimates made on perch but is unaware of those made on other species. Colleen asked if Leslie had seen last year's perch report and if not would send it to Jason for distribution to the entire group. Jason's understanding was that Timothy was going to compile the last two years findings from the perch netting process into one report. Mike Hall had an understanding that they have been tagging some of the fish that were caught and releasing them back into Phillips Reservoir so that if they caught all of those fish or a certain number they could determine

the percentage of fish they are catching. Nick thought they had been marking every year but will check with Timothy. Colleen added that ODF&W has not been out doing surveys on population numbers. They try and use the available data to do some of this, however they do know the numbers of stocked fish.

Mike G. asked about the trap and haul method used and how they monitor what is caught? Rick replied that they try and get as many bull trout as possible but found that short gill net sets have been the best way to capture those fish entrained.

Colleen asked Rick how successful have you been with the gill nets for bull trout? Rick explained that it depends upon the runoff, in some years they may only be out there for two weeks and may only get 12-15 bull trout in good water years. In other years where they only spill for a day or two they may only get a bull trout or two. As he mentioned earlier since BOR has started to discharge from lower in the reservoir that the numbers entrained is less and that their requirements to trap and haul have been less and less because they have been able to pass that water through the valves that otherwise would have gone over the spillway.

Colleen asked that if the Reclamation's cue to trap is based on when the dams are spilling? That is what are found in the terms and conditions for when they spill, if they do not spill they go out every other year stated Rick. Rick recalled that the last time they went out to trap and haul that they only caught about 1-2 bull trout. Mike G. asked if that was done with the gill nets? Rick replied that the gill nets were the method used. Rick added that from his memory he does not believe they have had any mortality using this method. He was not sure if a gill net could be used in the tail race of Mason Dam. Dan was curious about a rotary screw trap. Rick thought that it might work but they have not used one. Jason asked about the depth needed to use one of these traps. Colleen said that there are some that work at 5 to 8 feet deep and Dan added that they can be set fairly shallow. Rick commented that Symbiotics used two traps below Wickiup dam and ran them 24-7 and caught lots of fish. Dan also added that the mortality rate is very low but they need to be checked often. Rick stated that one thing missing from this conversation is that, Reclamation as it works on the BA, will need to step back and discuss bull trout in general from Phillips Reservoir and upstream. There was some decent run off this last spring. Could these bull trout have been flushed down? Did they stay in the reservoir for a little while and then started to move back up to the tributaries. Reclamation consulted with USF&W on the lower Umatilla and in certain years you would see bull trout showing up depending upon run off conditions. Typically these fish would start to work their way back up the tributaries but if they waited too long they could encounter a thermal barrier. From his understanding he does not believe there have been any recent surveys of the upper Powder River basin so it is hard to know if there is a migratory component in this system or larger bull trout that are typically migratory versus the resident bull trout that are smaller. There are some considerations that should be looked at from a Fish and Wildlife standpoint of do we now have a growing population that is starting to migrate or was this occurrence due to runoff, what is going on in the basin?

Gary is not familiar with when the last surveys that was done in the upper Powder River Basin.

Rick continued that at Beulah they were enough bull trout available that they were able to radio tag a few so they could look at entrainment. At Phillips Lake it may be a different scenario and he would be interested with what happens this spring depending upon the runoff but if they are found again. If so it could mean that there is more of a migratory population or are there enough fish in the head waters to radio tag. However, if the numbers are low you probably would not want to harass them and since it

has been sometime since they have been monitored, you would have to put that into perspective as well.

Leslie asked of each agency should Baker County need to do some mitigation in lieu of the screen what their positions are for studies as part of the mitigation? For USF&W, typically studies or research information is not considered mitigation. ODF&W also added that typically the answer would be no, because you really would not see a net benefit to the species in lieu of screening or passage. Ken Homolka added that they would be looking for something that provided no net loss or provide a net benefit as far as habitat or the number of species affected. Colleen added that the passage and screening issue should not be limited to just bull trout but all native migratory species such as red band.

Dan asked that couldn't research be a caveat to management to use this information to form the actions? Colleen stated that her understanding is that the studies that have been conducted as part of the licensing should be giving us the information needed to license the project and what mitigation is needed. Dan added that with Beulah, the information that was received from the studies provided information that was used to adjust the management based on what was found and that it was good mitigation just to get the information that changed the operations and saved a lot of fish. These operations are not changing said Colleen. Ken Hogan brought up the Commission's position as he understands it, is that generally they would not support studies in lieu of mitigation but studies to inform mitigation steps are a different approach and may be considered.

Mike G. suggested that some type of tiered approach for monitoring could be useful over the life of the license, if more information is needed in this case bull trout, then if some type of pre work is needed to inform what the mitigation would be then the Forest Service would include that. Ken Hogan mentioned that FERC could do something similar with an adaptive management approach where you go out and do some study, monitor the effects, evaluate, and make a decision from that point. Where Mike G was going with his questions about the numbers of entrained fish going through Mason Dam, is that we don't know what the composition of the fish are and from the report of 74,000-250,000, he was trying to get an idea of monitoring methods that might inform them on the compositions of the fish entrained. Then based on the information found, some type of mitigation could be done, in addition to tributary work, then these two pieces of information could lead to some better form of mitigation.

Rick added that putting a rotary screw trap below Mason Dam could be a permanent condition for either Reclamation or the County. At this point he is not certain because there needs to be a better handle on the current population.

For an entrainment study ODF&W requested that the actual fish entrained be found by using a rotary screw trap below the dam and in lieu of the study the screen was proposed and in lieu of the screen a literature report was conducted on entrainment. ODF&W would like to have this information before setting mitigation. Are you saying that mitigation would be determining what species and numbers are coming out of the project asked Colleen? No, what Mike G is suggesting that without this information in hand today is that in part of the mitigation package for this project to move forward that we develop a very tiered approach starting with monitoring to figure out what the entrainment is. Based on that move forward with adaptive management, looking at species composition, rate, mortality, using a rotary screw trap below the project, and looking at the composition of the population above the project. Colleen was wondering that if Baker County is seeking a waiver how could the Fish and Wildlife Commission could approve a waiver that is dependent upon information that is yet to be received because there is not the information to determine if this would provide a net benefit.

From Ken Hogan's perspective with an adaptive management approach it would have to have very specific triggers and steps that would have to be defined that would include step by step instructions for what is found and what the outcome would then be. With these triggers and steps being so defined it may help with the Fish and Wildlife Commission. Ken Homolka thinks that this would potentially work but the timing of this sounds like it would be done after the project has been constructed which may still work with this being very specific. The County will look into this, understanding that it will need to gather a lot of information and get back with the agencies with additional questions if needed. Ken Hogan added that if the County so chooses to go this route that additional information should be obtained, gathering more details from the agencies of what they are thinking about for monitoring and potential mitigation to inform your decision.

Mike Hall recapped the discussion in that after the project is implemented there may be some mitigation that the County would be responsible for that we don't know yet based on the monitoring such as that if A = B then C would be done. These could become quite costly for the County.

The County understands this and will have to take all of these measures into consideration when it makes its decision.

Ken Hogan was curious about if Reclamation was starting a BA of Mason Dam. Rick responded that they are currently in the process of drafting a BA. Ken Hogan continued, so regarding all of this recent information we have been talking about, entrainment, how are you addressing this for your biological assessment and why would this be any different for Mason Dam or the hydroelectric project?

If Reclamation is issued a condition to trap and haul bull trout that are entrained, it can be very difficult to trap and haul injured bull trout that have gone through a turbine. We don't know if there would be mortality with the turbines versus the existing outlet works and they may never know that with such low numbers of bull trout. There may need to be a post project study such as a balloon tag study to see what level of mortality there is on whatever fish you release stated Rick.

Ken Hogan was wondering what studies BOR are currently doing for current conditions to assess the reservoir population of entrainment data that the current project is affecting.

BOR has not done anything in Phillips Reservoir because there is not a Biological Opinion that requires them to do anything and there is no funding to do so currently. However, that could change when an opinion is issued but up until that time the best scientific information will be gathered and incorporated into the BA.

Ken Hogan was wondering what scientific information you are collecting for your BA?

BOR would start with the information that was identified during the designation of the critical habitat and there is not a lot of that information out there. The bull trout information from this spring and previous ODF&W and FS studies will be used to form the BA.

Ken Hogan pointed out that then the BOR will be using existing data and not conducting any field studies, which Rick confirmed.

Rick added that in some cases there is more information when there is a bull trout fishery but for Phillips there was no information until this spring, there was nothing on the reservoir fishery. One of the biggest concerns is the abundance of yellow perch and the effect they would have on any salmonid and or bull trout in the reservoir. It is having an effect on the prey base of everything. This will be an issue identified in the BOR BA.

Ken Hogan wanted to make sure that everyone understood that there is a distinct line between the effects of Phillips Reservoir and BOR operations versus the incremental affect of adding a turbine. It is important so you can assess project related effects versus the effects of the entire Phillips Reservoir complex.

Rick added that the effects may not be known until after the project has been approved. At Arrowrock they met several times to discuss the what ifs. At Phillips this will be very difficult because there is not the same bull trout fishery there or at least he does not think so.

With the timing of the BOR BA, BOR would not be collecting any baseline data pre licensing, but post licensing, with Baker County having to do it all with the affects of the current project and the incremental affects of the hydro to determine the mitigation and that is a concern stated Ken Hogan.

Rick understood this and added that on the Arrowrock Project the Boise Board of Control had the license well before the project was constructed and so they did a lot of work post project and the onus was not all on the power plant operator. BOR was informed by the USF&W service that they would be responsible for some of the bull trout monitoring studies.

Bob added that from the Arrowrock project BOR knew that there were existing mitigation measures and there was a take statement so that when they added the hydro what they were really looking for is the mortality through the turbine versus the valves. An understanding of the overall goals is needed to see if the hydro is negatively effecting the overall population. With Arrowrock they are still working on this understanding and if there is a negative effect then the Boise Board of Control would share in the cost in the overall mitigation which could be enhancements. Is the population of bull trout is two or is it a fluke due to the runoff, BOR would like to look at how to move this project forward. Bob encouraged the group to look at the effects of the populations, if they are changing, if the plan is overall affecting the population then what should be done? With a little more water quality analysis done it might confirm what Leslie stated earlier, then bull trout entrainment might be next to nothing as they have seen at other projects.

Because there are so many unknowns with bull trout in the Reservoir he could see some preliminary conditions being; analyze water quality further, perhaps work with the FS to get a more current estimate on population, distribution, and abundance, then go back and re-consult was suggested by Rick.

Gary stated that right now he feels everything is on the table in looking at these things.

Colleen stated that in the entrainment report we are looking at 74000-250000 fish per year. Comments were received from ODF&W and FS with the comments from ODF&W being how can we get information on what species and size of fish are thought to entrained. Could these numbers come from this report to where mitigation could be developed? Colleen also asked for FERC's thoughts and if the study was sufficient?

Ken Hogan replied that as for the study it is still be debated and that if there is an approach that comes out of this discussion that is acceptable to the agencies and the County then that could inform FERC's decision. FERC has been waiting for agency comments and this discussion to figure out if further entrainment studies are needed or if the current report is sufficient to inform the Commission to decide what needs to be done for mitigation. We are not there yet and would like to continue with these discussions.

Gary added that it definitely seems clear that based on all the information we have that the biggest impact with potential entrainment is not with bull trout but with the other species, in which Ken Hogan agreed.

In Rick's opinion the issue with the perch supersedes everything that is going on right now. Until that population is controlled and with the introduction of a predatory fish species, he was unfamiliar with the effects with juvenile bull trout and then the consideration of the tiger musky basically it is almost as if the goal is to clean out Phillips and start from scratch. He felt that this is somewhat a radical move but realistically that is probably what it is going to take to control the yellow perch population. In a you tube video of the netting operations it was amazing to see all the perch in those nets. (There are five short videos that can be found by searching for "Phillips Perch"). Until the perch population is

addressed in the reservoir Rick suggested that we should look at what is happening in the tributaries and then comeback and re-consult.

ODF&W's goal is not the elimination of the perch in the reservoir. The goal is to decrease the numbers and one of their concerns is the entraining perch down in the river below the project and native red band trout as well as rainbow trout stocked for sport fishing so it is not just the biological opinion but also the licensing of the project.

Rick asked if there had been much information collected on the fishery below Mason Dam and if it was good, fair, or poor for trout. Colleen stated that she did not know with Ken Hogan adding that he would consider it great with dozens of fish per hour though they are not big. Leslie asked the question if the entrainment study included information similar to the bull trout information that is going in the BA but included red band, rainbow and yellow perch, would that satisfy the questions about the entrainment study?

"No, I think that information needs to be included in the study and that is some of the information that we are looking for but we would need to see what the final product is." stated Colleen. Baker County could talk with Nadine and Timothy about what fish may be found near the intake seasonally. How the species and the sizes correlate to the 74,000-250,000 thousand fish per year and can we get there from the report.

Those are the key questions added Mike G. What is the percent of mortality of the species entrained and with that figure we could get to what type of or amount of mitigation we would be looking at. Without these numbers we are looking at the larger numbers and trying to figure out how we can get to some mitigation.

Dan was not sure how you would get to mortality because the fish don't die necessarily because they are entrained.

Not necessarily but given the type of configuration of what Mason Dam has and the proposal of the Francis turbine there is going to be a high percentage of mortality. You would collect the fish somewhere below the project either dead or alive and that would give us an estimate of mortality or escapement in percentage of species composition stated Mike G. As for as differentiating between BOR and the project as it exists today with what is being proposed it looks like you could, if we go to post construction monitoring, that you could select through the bifurcation valve where the water would be released so you could have a BOR result and with project to see what the difference.

Would this be baseline data then asked Dan, yes it would replied Mike G.

Bob added that when they did the studies on Arrowrock they were able to do an apples to apples comparison by running water through the clamshell valves/gates and then through the turbines for mortality. The other thing you can expect or ask yourself is why a Kaplan has a higher survival rate than a Francis and that is because the clearances are smaller. However, the larger the turbine the better the survival rate and it also depends on the size of the fish entrained through the turbine.

Baker County tried to look for examples that were close but there are no other dams that are exactly like Mason Dam so it is difficult to compare sometimes. In the study the results were to try and show that from the gate valve to the turbine that there should be less mortality. What Baker County is hearing is that the report did not capture the information to show this drop in mortality? Yes, it did not get what we were really looking for which was the specific impact from the proposed project and for us to move forward with some sort of direct mitigation we would need the direct impact. That is Mike G. is proposing the plan discussed above so we can move forward and then identify that. What we may have done during the study phase could take place post project and if we have built in the triggers correctly. Then it would give the state information for the waiver but also Baker County what this is going to cost in the long run which is a very important question and if we do our work correctly then everyone would have a clear expectations of all the agencies and Baker County. Absent of that if we don't want to go

with that then we need to install a new study right now to get an idea of entrainment so we have a better understanding of what mitigation is to move forward stated Mike G.

Regarding the ILP process and the licensing process there are three approaches to finalize the study. 1) Finalize the study addressing the agency comments with maybe some additional analysis and file it and the commission will review the data and either approve it or require an additional study. 2) Let FERC know that we are going to do additional studies, develop a study plan and get approval. 3) Do option 1 and propose the adaptive management approach as a PM&E.

Baker County will meet internally and discuss the options that were brought up.

We appreciate everyone's involvement and continuing to work with Baker County.

Table 5.3. Water Quality Conditions Within the Range of Mason Dam Intake Elevations During 2007.

Date	Intake Elevation (m below surface)		DO (ppm)		Temperature (° C)	
	Top	Bottom	Top	Bottom	Top	Bottom
11-May	21.9	18.0	8.6	8.6	11.1	11.1
17-May	21.4	17.5	8.1	7.6	9.1	8.9
25-May	21.0	17.1	7.6	7.3	10.8	10.2
1-Jun	20.6	16.7	6.7	5.9	10.1	10.0
9-Jun	20.1	16.2	7.4	6	12.9	10.8
15-Jun	19.5	15.6	6.6	6.6	13.0	13.5
22-Jun	19.5	15.6	5.8	4.2	12.9	11.3
28-Jun	18.9	15.0	5.2	4.8	14.5	14.2
6-Jul	18.1	14.2	3.5	3.5	12.7	12.7
17-Jul	16.8	12.9	2.6	0.9	14.9	12.0
24-Jul	15.7	11.8	1.8	1	15.0	13.5
7-Aug	13.2	9.3	6.0	0.1	20.7	14.8
14-Aug	11.8	7.9	5.2	0.1	20.1	17.0
21-Aug	10.2	6.3	6.2	2.3	19.5	18.9
13-Sep	7.7	3.8	9.6	7.4	17.7	16.9
21-Sep	7.3	3.4	5.8	7.7	15.4	17.0
28-Sep	7.0	3.1	6.0	5.7	13.4	15.4
5-Oct	6.8	2.9	6.2	6.2	No data	No data
12-Oct	6.6	2.7	6.5	6.5	10.8	10.8

The lightly shaded cells identify dates on which conditions would not be suitable for juvenile bull trout (temperatures greater than 8 ° C). The darker cells indicates dates on which conditions would not be suitable for either juvenile or adult bull trout (temperatures 15 ° C or greater, DO less than 6.5 ppm).

Figure 5-1. Dissolved Oxygen Levels at the Range of Mason Dam Intake Elevations. Based on 2007 Data.

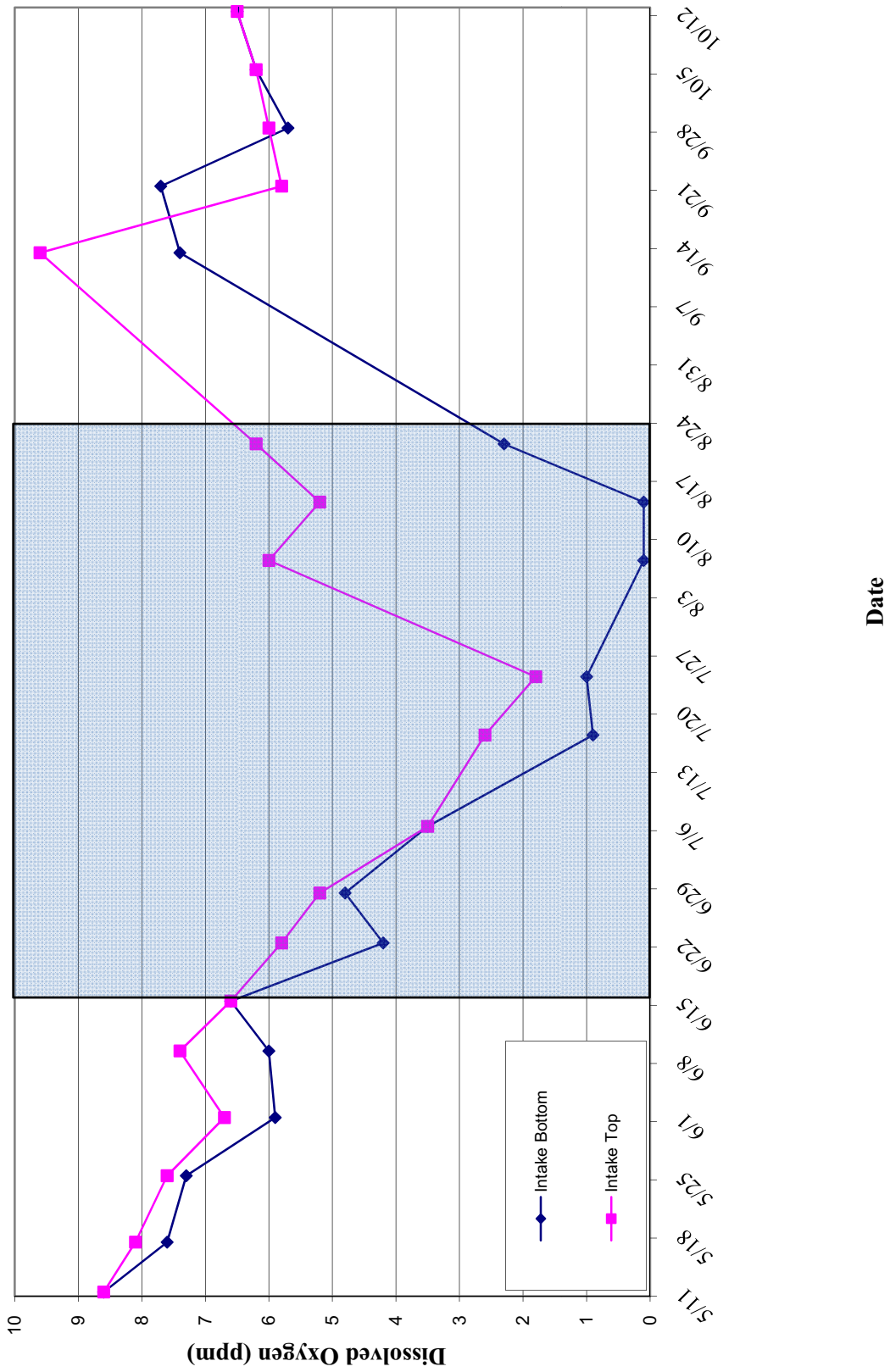
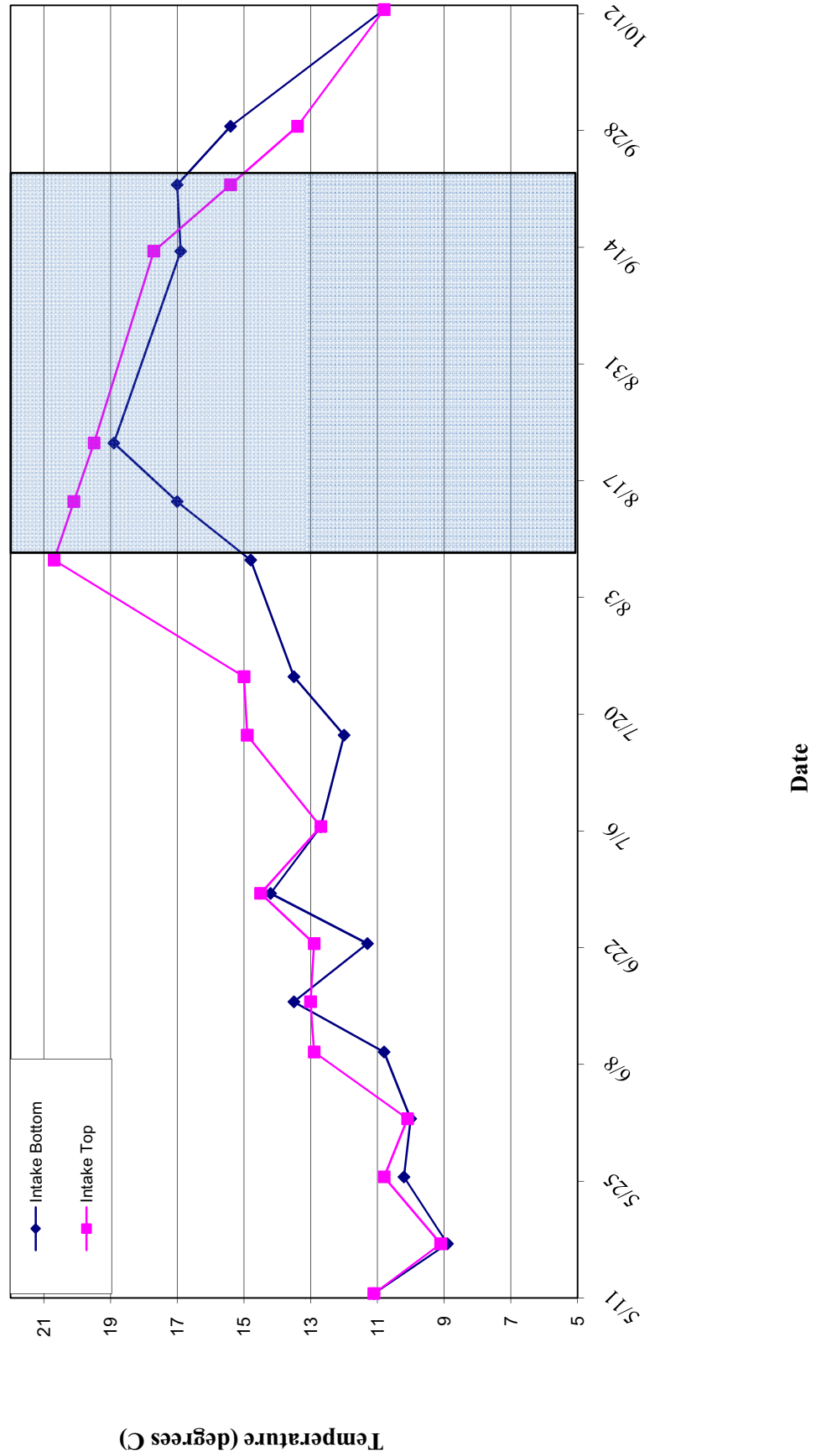
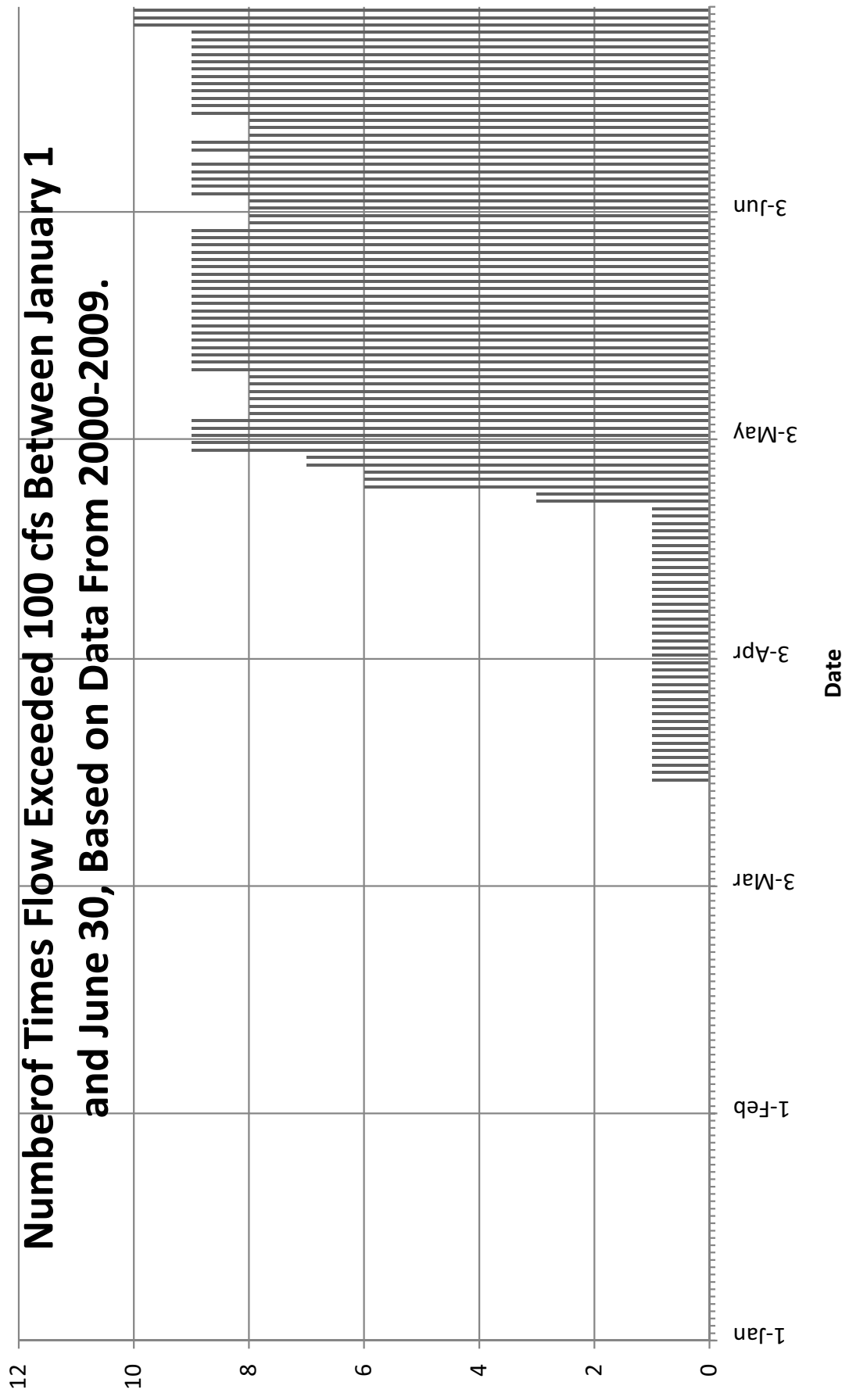


Figure 5-2. Temperatures at the Range of Mason Dam Intake Elevations. Based on 2007 Data.



Number of Times Flow Exceeded 100 cfs Between January 1 and June 30, Based on Data From 2000-2009.





Re: Mason Dam Work Session

Jason Yencopal to: Jason Yencopal

11/15/2011 03:36 PM

Cc: "Audie Huber", "Carolyn Templeton", "Carl Stiff", "Colleen Fagan", "GRIFFIN Dennis", "Emily Carter", "Fred Warner", "Gary Miller", "Ken Anderson", "Kenneth Hogan", "GRAINEY Mary S", "Mike Gerdes",

From: Jason Yencopal/Baker County
To: "Jason Yencopal" <jyencopal@bakercounty.org>
Cc: "Audie Huber" <Audiehuber@ctuir.com>, "Carolyn Templeton" <Carolyn.Templeton@ferc.gov>, "Carl Stiff" <cbstiff@wildblue.net>, "Colleen Fagan" <Colleen.E.Fagan@state.or.us>, "GRIFFIN Dennis" <Dennis.Griffin@state.or.us>, "Emily

Dear Stakeholders,

I want to thank you again for attending and calling in. I want to apologize for the long delay on starting the conference call. It was not until after the meeting when I was discussing it with those that were still around that I realized we were so late. I had my back to the wall that had the clock and the time on the conference phone stated 9:53 when I started dialing. I will be working on the meeting notes and be getting back to you all soon.

Thank you,
Jason

On Nov 15, 2011, at 9:45, "Jason Yencopal" <jyencopal@bakercounty.org> wrote:

> ----- Forwarded by Jason Yencopal/Baker County on 11/15/2011 09:35 AM -----
>
> From: Jason Yencopal/Baker County
> To: Carl Stiff/Baker County@Baker County, undefined, Fred Warner/Baker County@Baker County, "Mike Hall" <mhall02@fs.fed.us>, "Leslie Gecy" <lgecy@ecowest-inc.com>, "Ted Sorenson" <ted@tsorenson.net>, "Nick Josten" <gsense@cableone.net>
> Date: 11/14/2011 10:00 PM
> Subject: Mason Dam Work Session
>
>
>
> Dear Stakeholders,
>
> I decided to include a little agenda and some charts and tables we will discuss .
>
> Agenda
>
> -Welcome
>
> -Brief Project Update
>
> -Bull Trout Discussion
> Baker County's Bull Trout additional analysis
> Any changes to the process from the finding and designation?
> Additional discussion
>
> -Fish Entrainment & Mortality Study

> (Report can be found at the following page http://www.bakercounty.org/mason_dam/home.html under
the additional study reports folder)
> Discussion
>
> -Other Comments
>
> -Adjourn
>
> If you have any problems with the conference call please let me know by calling my cell phone at
541.519.0599.
>
> Thank you,
>
> Jason
>
>
>
> - Nov_15_2011 worksession data.pdf
> <Nov_15_2011 worksession data.pdf>

Table 5.3. Water Quality Conditions Within the Range of Mason Dam Intake Elevations During 2007.

Date	Intake Elevation (m below surface)		DO (ppm)		Temperature (° C)	
	Top	Bottom	Top	Bottom	Top	Bottom
11-May	21.9	18.0	8.6	8.6	11.1	11.1
17-May	21.4	17.5	8.1	7.6	9.1	8.9
25-May	21.0	17.1	7.6	7.3	10.8	10.2
1-Jun	20.6	16.7	6.7	5.9	10.1	10.0
9-Jun	20.1	16.2	7.4	6	12.9	10.8
15-Jun	19.5	15.6	6.6	6.6	13.0	13.5
22-Jun	19.5	15.6	5.8	4.2	12.9	11.3
28-Jun	18.9	15.0	5.2	4.8	14.5	14.2
6-Jul	18.1	14.2	3.5	3.5	12.7	12.7
17-Jul	16.8	12.9	2.6	0.9	14.9	12.0
24-Jul	15.7	11.8	1.8	1	15.0	13.5
7-Aug	13.2	9.3	6.0	0.1	20.7	14.8
14-Aug	11.8	7.9	5.2	0.1	20.1	17.0
21-Aug	10.2	6.3	6.2	2.3	19.5	18.9
13-Sep	7.7	3.8	9.6	7.4	17.7	16.9
21-Sep	7.3	3.4	5.8	7.7	15.4	17.0
28-Sep	7.0	3.1	6.0	5.7	13.4	15.4
5-Oct	6.8	2.9	6.2	6.2	No data	No data
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The lightly shaded cells identify dates on which conditions would not be suitable for juvenile bull trout (temperatures greater than 8 ° C). The darker cells indicates dates on which conditions would not be suitable for either juvenile or adult bull trout (temperatures 15 ° C or greater, DO less than 6.5 ppm).

Figure 5-1. Dissolved Oxygen Levels at the Range of Mason Dam Intake Elevations. Based on 2007 Data.

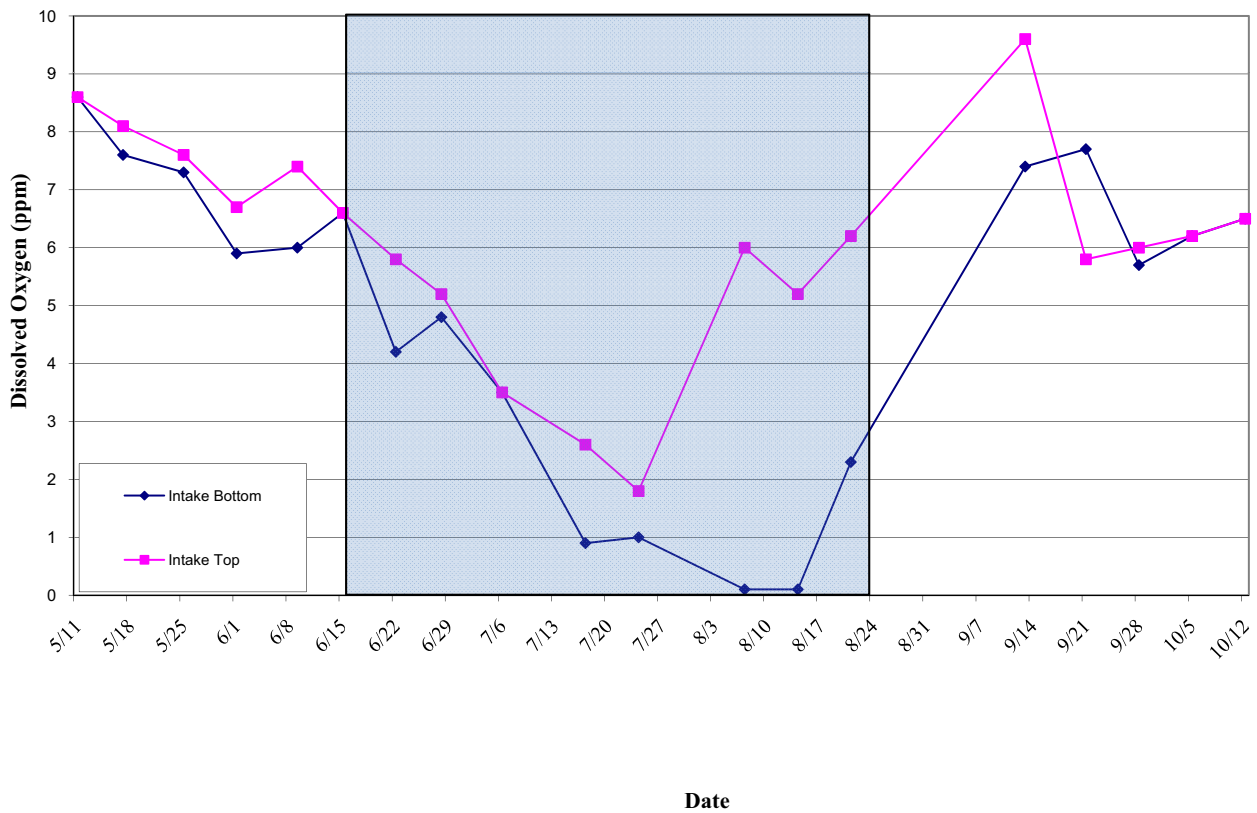
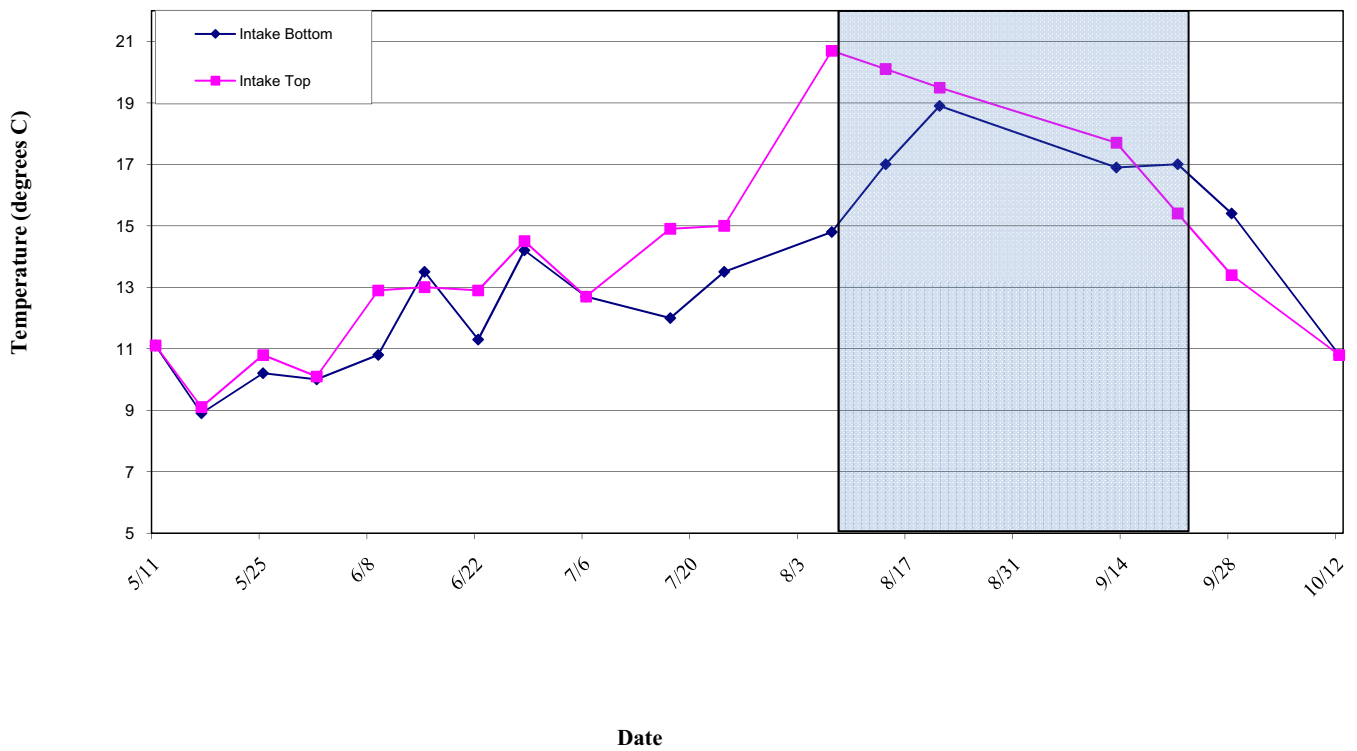
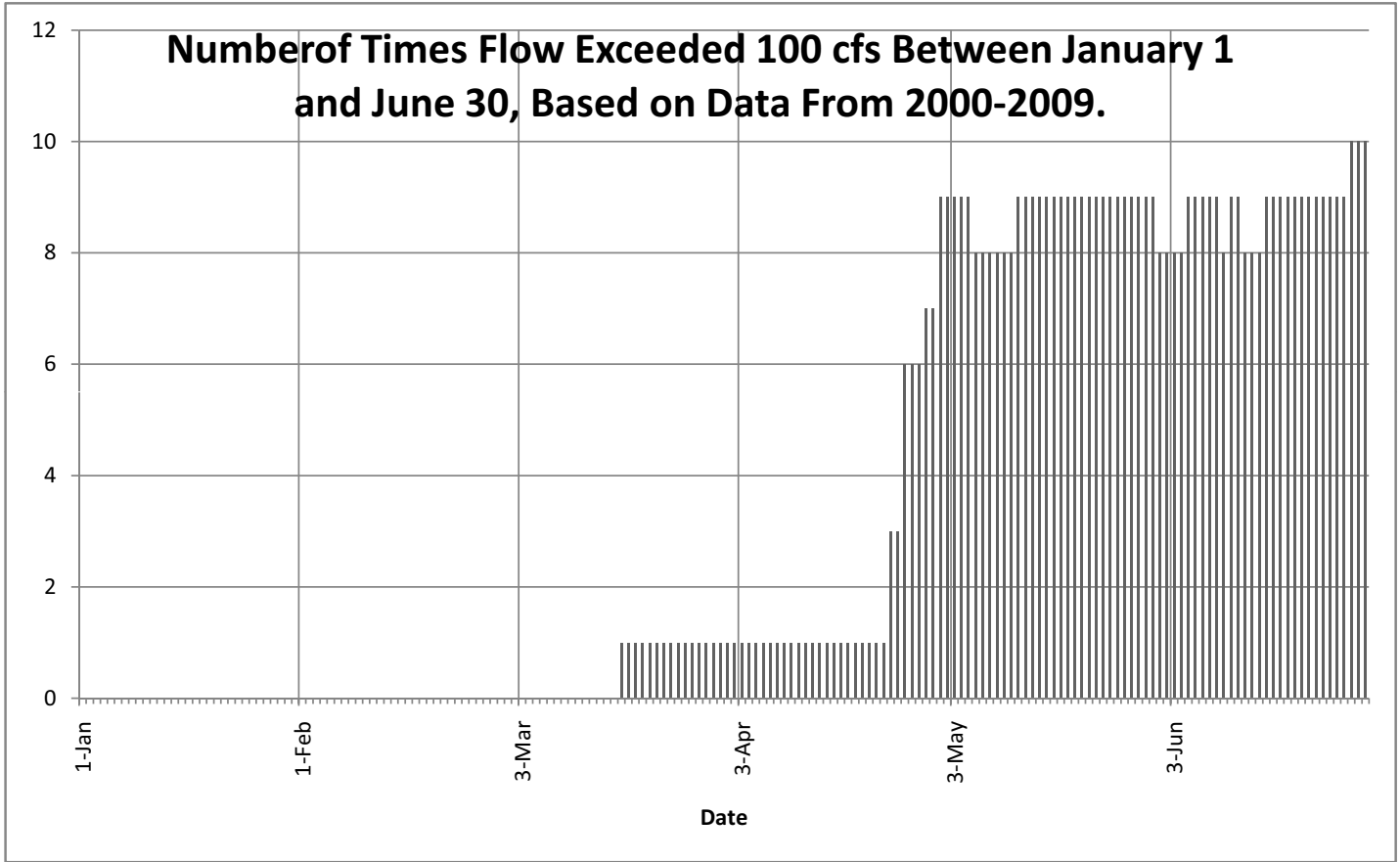


Figure 5-2. Temperatures at the Range of Mason Dam Intake Elevations. Based on 2007 Data.







Phillips Reservoir Water Quality Data

Rieber, Richard W to: Lay, Clyde H.
Cc: "Stroud, Bill L", "jyencopal@bakercounty.org"

11/15/2011 01:09 PM

From: "Rieber, Richard W" <RRieber@usbr.gov>
To: "Lay, Clyde H." <CLay@usbr.gov>
Cc: "Stroud, Bill L" <BStroud@usbr.gov>, "jyencopal@bakercounty.org" <jyencopal@bakercounty.org>

Clyde/Norbert- There was a conference call today on Phillips Reservoir and the progress Baker County is making towards obtaining a license for hydropower at Mason Dam. During the call, they requested any water quality data that Reclamation has for Phillips Reservoir. I have cc'd Jason who is working for Baker County and who requested this information. Please send any information we have to Jason and myself.

Jason- This information will likely be in spreadsheet form and has yet to be summarized. However, it should provide you with additional years of data similar to what Leslie presented during today's call.

I'm going to be out of the office until Nov. 22. If you have any questions once you receive the information, please let me know and we can discuss.

Thank you

rick

Richard W. Rieber
Fishery Biologist
Bureau of Reclamation
1150 N. Curtis Rd.
Boise, Idaho 83706
(208)378-5313
(208)378-5066 - FAX



RE: Mason Dam Work Session Agenda and Conference Call Info

DADOLY John to: jyencopal@bakercounty.org

11/14/2011 10:01 AM

From: DADOLY John <DADOLY.John@deq.state.or.us>
To: "jyencopal@bakercounty.org" <jyencopal@bakercounty.org>

History: This message has been replied to.

Jason, can you e-mail me the Fish Entrainment and Mortality Study so I can review it before the meeting? Is it on the FERC website? I could get it there.

Thanks

John Dadoly

DEQ Water Quality Program

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Sunday, November 13, 2011 2:12 PM
To: Audie Huber; Carolyn Templeton; Carl Stiff; FAGAN Colleen E; GRIFFIN Dennis; Emily Carter; Fred Warner; Gary Miller; Ken Anderson; Kenneth Hogan; GRAINEY Mary S; Mike Gerdes; Micheal Hall; Randy Joseph; KIRK Steve; Quentin Lawson; LUSK Rick M; Robert Ross; Shawn Steinmetz; Susan Rosebrough; STAHL Thomas; Timothy Welch; Joseph Hassell; Carl Merkle; lgecy@ecowest-inc.com; ted@tsorenson.net; gsense@cableone.net; HOMOLKA Ken; Jeff Tomac; Rick Rieber; DADOLY John; Elizabeth A OsierMoats
Subject: Mason Dam Work Session Agenda and Conference Call Info

Dear Stakeholders,

I am resending the following information as I received an interesting error message and am not sure how many of you received the original e-mail.

The phone number for the conference call is 1.877.820.7831. The Passcode is 8204693#. If you have any troubles please call my cell phone at 541.519.0599. Again the meeting will be held at the City Hall NOT the Courthouse.

As for the agenda, Baker County would like to have an open forum to discuss any issues before the license application is submitted. We would like to hear any additional comments on the Fish Entrainment and Mortality study and thoughts about the two bull trout that were found in Phillips Reservoir during the netting process for perch reduction.

I look forward to seeing and talking with you all soon,
Jason



Fw: Mason Dam Work Session

Jason Yencopal to: Audie Huber, Carolyn Templeton, Carl Stiff, Colleen Fagan, GRIFFIN Dennis, Emily Carter, Fred Warner, Gary Miller, Ken
11/15/2011 09:45 AM
Cc: jyencopal

From: Jason Yencopal/Baker County
To: "Audie Huber" <Audiehuber@ctuir.com>, "Carolyn Templeton" <Carolyn.Templeton@ferc.gov>, "Carl Stiff" <cbstiff@wildblue.net>, "Colleen Fagan" <Colleen.E.Fagan@state.or.us>, "GRIFFIN Dennis" <Dennis.Griffin@state.or.us>, "Emily Yencopal" <jyencopal@bakercounty.org>

----- Forwarded by Jason Yencopal/Baker County on 11/15/2011 09:35 AM -----

From: Jason Yencopal/Baker County
To: Carl Stiff/Baker County@Baker County, undefined, Fred Warner/Baker County@Baker County, "Mike Hall" <mhall02@fs.fed.us>, "Leslie Gecy" <lgecy@ecowest-inc.com>, "Ted Sorenson" <ted@tsorenson.net>, "Nick Josten" <gsense@cableone.net>
Date: 11/14/2011 10:00 PM
Subject: Mason Dam Work Session

Dear Stakeholders,

I decided to include a little agenda and some charts and tables we will discuss .

Agenda

-Welcome

-Brief Project Update

-Bull Trout Discussion

Baker County's Bull Trout additional analysis

Any changes to the process from the finding and designation?

Additional discussion

-Fish Entrainment & Mortality Study

(Report can be found at the following page http://www.bakercounty.org/mason_dam/home.html under the additional study reports folder)

Discussion

-Other Comments

-Adjourn

If you have any problems with the conference call please let me know by calling my cell phone at 541.519.0599.

Thank you,

Jason



Nov_15_2011 worksession data.pdf



Mason Dam

DADOLY John to: jyencopal@bakercounty.org

09/30/2011 02:36 PM

From: DADOLY John <DADOLY.John@deq.state.or.us>
To: "jyencopal@bakercounty.org" <jyencopal@bakercounty.org>

Jason, I will be taking over as the DEQ 401 Certification representative on this project from Steve Kirk. Please let me know when you anticipate that an application will be submitted and when there are meetings being scheduled. I am available on most of the meeting dates suggested in the previous e-mail chain sent to Steve (October 17-20, November 7, and November 14 and 15).

Thanks,
John Dadoly
Oregon DEQ Water Quality Program
700 SE Emigrant, Suite 330
Pendleton, OR 97801
(541)278-4616



RE: Mason Dam Meeting

Gerdes, Michael to: jyencopal@bakercounty.org, Rieber,
Richard W, Audie Huber, Carolyn
Templeton, Carl Stiff, Colleen Fagan, 09/28/2011 08:39 AM

From: "Gerdes, Michael" <mgerdes@fs.fed.us>
To: "jyencopal@bakercounty.org" <jyencopal@bakercounty.org>, "Rieber, Richard W" <RRieber@usbr.gov>, Audie Huber <Audiehuber@ctuir.com>, Carolyn Templeton <Carolyn.Templeton@ferc.gov>, Carl Stiff <cbstiff@wildblue.net>, Colleen Fagan

In September, the FS, FWS, ODFW and BOR had a conversation regarding the recent events of bull trout documentation in Phillips reservoir, designation of bull trout critical habitat including the reservoir and upstram tributaries, BOR's upcoming BA for Phillips reservoir/Mason Dam, Baker County's entrainment report and agency comments, and from that conversation I suggested to Jason that we all meet again to discuss these events and elements. I recommend that these elements and any other item folks want to discuss frame the agenda.

I am available Oct 17 -20 and Nov 7 & 10, and 14 & 15.

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Tuesday, September 27, 2011 4:35 PM
To: Audie Huber; Carolyn Templeton; Carl Stiff; Colleen Fagan; GRIFFIN Dennis; Emily Carter; Fred Warner; Gary Miller; Ken Anderson; Kenneth Hogan; GRAINEY Mary S; Gerdes, Michael; Hall, Mike; Randy Joseph; KIRK Steve; Quentin Lawson; LUSK Rick M; Robert Ross; Shawn Steinmetz; Susan Rosebrough; Thomas Stahl; Timothy Welch; GRIFFIN Dennis; Joseph Hassell; Carl Merkle; lgecy@ecowest-inc.com; ted@tsorenson.net; gsense@cableone.net; Ken Homolka; Tomac, Jeff; devito.paul@deq.state.or.us
Subject: Mason Dam Meeting

Dear Stakeholders,

In a recent conversation with Mike Gerdes I was informed that some discussion had taken place with some agencies about the bull trout documentation from the perch netting done this spring. We discussed having a meeting to discuss the bull trout with all the stakeholders. Please send dates and times that would work for you from mid October to mid November.

We will hold the meeting in Baker City and will have a conference call as well.

Thank you,
Jason



Re: Mason Dam Meeting

Gary_Miller to: jyencopal
Cc: "Rieber, Rick"

09/27/2011 04:44 PM

From: Gary_Miller@fws.gov
To: jyencopal@bakercounty.org
Cc: "Rieber, Rick" <rriever@pn.usbr.gov>

Hi Jason,

Please add Rick Reiber with BOR in Boise to your email list. I'm cc: Rick on this email. Rick is the lead fisheries biologist for the BOR reinitiation of consultation for Mason Dam and effects to bull trout critical habitat.

And I'll send you my available dates later today or tomorrow morning.

Thanks,

Gary

Gary S. Miller, Field Supervisor
USFWS - La Grande Field Office
3502 Highway 30
La Grande, OR 97850

Phone: 541-962-8509

Fax: 541-962-8581

Email: gary_miller@fws.gov

<http://www.fws.gov/oregonfwo/FieldOffices/LaGrande>

jyencopal@ba
kercounty.org

09/27/2011
04:34 PM

To "Audie Huber" <Audiehuber@ctuir.com>, "Carolyn Templeton" <Carolyn.Templeton@ferc.gov>, "Carl Stiff" <cbstiff@wildblue.net>, "Colleen Fagan" <Colleen.E.Fagan@state.or.us>, "GRIFFIN Dennis" <Dennis.Griffin@state.or.us>, "Emily Carter" <Emily.Carter@ferc.gov>, "Fred Warner" <fwarner@bakercounty.org>, "Gary Miller" <Gary_Miller@fws.gov>, "Ken Anderson" <kenanderson@fs.fed.us>, "Kenneth Hogan" <Kenneth.Hogan@ferc.gov>, "GRAINEY Mary S" <Mary.S.GRAINEY@state.or.us>, "Mike Gerdes" <Mgerdes@FS.fed.us>, "Micheal Hall" <Mhall02@fs.fed.us>, "Randy Joseph" <randy@josephmillworks.com>, "KIRK Steve" <Kirk.Steve@deq.state.or.us>, "Quentin Lawson" <Quentin.Lawson@ferc.gov>, "LUSK Rick M" <Rick.M.LUSK@state.or.us>, "Robert Ross" <rross@pn.usbr.gov>, "Shawn Steinmetz" <shawnsteinmetz@ctuir.com>, "Susan Rosebrough" <Susan_Rosebrough@nps.gov>, "Thomas Stahl" <Thomas.Stahl@state.or.us>, "Timothy Welch" <Timothy.Welch@ferc.gov>, "GRIFFIN Dennis" <Dennis.Griffin@state.or.us>, "Joseph Hassell" <Joseph.Hassell@ferc.gov>, "Carl Merkle" <CarlMerkle@ctuir.org>, lgecy@ecowest-inc.com, ted@tsorenson.net, gsense@cableone.net, "Ken Homolka" <ken.homolka@state.or.us>, "Jeff Tomac" <jtomac@fs.fed.us>, devito.paul@deq.state.or.us

cc

Subject Mason Dam Meeting

Dear Stakeholders,

In a recent conversation with Mike Gerdes I was informed that some discussion had taken place with some agencies about the bull trout documentation from the perch netting done this spring. We discussed having a meeting to discuss the bull trout with all the stakeholders. Please send dates and times that would work for you from mid October to mid November. We will hold the meeting in Baker City and will have a conference call as well.

Thank you,
Jason



RE: Mason Dam Hydroelectric Project Update

Timothy Bailey to: jyencopal

06/07/2011 02:34 PM

From: "Timothy Bailey" <timothy.d.bailey@state.or.us>
To: <jyencopal@bakercounty.org>

Jason,

Thought that I had provided you all the details that I have, but to make sure, following are the details.

Two bull trout were captured during our yellow perch removal project at Phillips Reservoir this spring. Six Merwin trap nets were deployed in the reservoir from April 11 through April 29th. They were deployed primarily in the upper half of the reservoir. When dip-netting fish from the trap nets, which was done daily to every other day, trout were placed in aerated live wells and then transported by boat to our project staging area at the Union Creek boat launch. At the boat launch, the trout were then transferred to another aerated live well and then weighed, measured for length and returned to the reservoir. This is how the two bull trout were handled.

The bull trout captured on April 13th, which I personally identified, was 213 mm in length and weighed 93 grams. The bull trout captured on April 18th was identified by Todd Callaway (retired ODFW biologist), was 234 mm in length and weighed 237 grams. Both were returned to the reservoir in good condition. Information was not recorded on which trap they were captured in.

I will be preparing a report of our perch removal project (2009-2011) and hope to have it complete this fall. I'll send you a copy when complete.

Let me know if you have further questions.

Tim Bailey
La Grande District Fish Biologist
Oregon Department of Fish & Wildlife
107 20th Street
La Grande, OR 97850
(541) 962-1829

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Tuesday, June 07, 2011 1:58 PM
To: Timothy Bailey
Subject: RE: Mason Dam Hydroelectric Project Update

Tim,

I was just checking in to see if you have had a chance to gather the additional data on the bull trout.

Thank you,
Jason



Re: Mason Dam Hydroelectric Project Update

Leslie Gecy to: Colleen Fagan

05/13/2011 10:26 AM

hmartin, Audie Huber, Carl Merkle, Carolyn Templeton, Carl Stiff,
Cc: GRIFFIN Dennis, Emily Carter, Fred Warner, Gary Miller, gsense,
Joseph Hassell, jtomac, jyencopal, ken homolka, Kenneth Hogan,

From: Leslie Gecy <lgecy@ecowest-inc.com>
To: Colleen Fagan <colleen.e.fagan@state.or.us>
Cc: hmartin@bakercounty.org, Audie Huber <audiehuber@ctuir.com>, Carl Merkle
<carlmerkle@ctuir.org>, Carolyn Templeton <carolyn.templeton@ferc.gov>, Carl Stiff
<cbstiff@wildblue.net>, GRIFFIN Dennis <dennis.griffin@state.or.us>, Emily Carter

Colleen/Tim,

Can you please provide the following information:

1. Lengths and weights of the fish.
2. I understand both were juveniles. Is that correct?
3. The locations of the captures. I have a copy of the map for a previous perch removal effort, so you could just say, the northernmost location near the tributary or the one by the boat dock etc and I should be able to id on the map I already have.
4. Did you take any photos that can be shared?
5. Did you make any notes about the habitat? I am presuming (based on what I have read in previous ODFW perch reports) that the captures were made in vegetated littoral zones, very close to shore and in shallow water. I need to know if that is correct.

Thank you. We just want to make sure that all of the information in the project BA is correct.

Leslie

Leslie Gecy
Senior Plant/Wildlife Biologist
Certified Wetland professional #000455
EcoWest Consulting, Inc
13740 Red Fox
Baker City, OR 97814
541-403-1163

Information contained in the accompanying transmission is intended only for the use of the individual or entity identified above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination or distribution of the accompanying communication is prohibited. If you received this communication in error, please notify the sender and delete this message from your computer. Any communication contrary to the company's e-mail policy and outside the scope of sender's employment will be sender's responsibility and the company will not accept any liability in respect to the communication.

----- "Colleen Fagan" <colleen.e.fagan@state.or.us> wrote:

> FYI
>
> Jason,
>
> Here are all of the details I can give you regarding the bull trout

> we
> captured in Phillips Reservoir. Both were captured in Merwin trap
> nets
> during the perch removal project. One bull trout was captured on
> April
> 13, 2011 and the other on April 18, 2011. I confirmed the
> identification
> of the one captured on April 13th and Todd Callaway confirmed
> identification of the one caught on April 18th. Both fish were
> weighed
> and measured for length and returned to the reservoir in good
> condition.
> Let me know if you need additional information.
>
> Tim Bailey
> La Grande District Fish Biologist
> Oregon Department of Fish & Wildlife
> 107 20th Street
> La Grande, OR 97850
> (541) 962-1829
>
> -----Original Message-----
> From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
> Sent: Thursday, May 12, 2011 9:54 AM
> To: Audie Huber; Carolyn Templeton; Carl Stiff; Colleen Fagan;
> GRIFFIN
> Dennis; Emily Carter; Fred Warner; Gary Miller; Kenneth Hogan;
> GRAINEY
> Mary S; Mike Gerdes; Micheal Hall; Randy Joseph; KIRK Steve; Quentin
> Lawson; LUSK Rick M; Robert Ross; Shawn Steinmetz; Susan Rosebrough;
> Thomas Stahl; Timothy Welch; GRIFFIN Dennis; Joseph Hassell; Carl
> Merkle; lgecy@ecowest-inc.com; ted@tsorenson.net;
> gsense@cableone.net;
> Ken.Homolka@state.or.us; jtomac@fs.fed.us
> Cc: hmartin@bakercounty.org; jyencopal@bakercounty.org
> Subject: Mason Dam Hydroelectric Project Update
>
>
> Dear Stakeholders,
>
> I just wanted to update you on our progress. We are in the final
> stages
> of completing the License Application and the Draft Final Biological
> Assessment. However, it was brought before the County that during
> the
> Perch removal process that there may have been some bull trout
> documented.
> In order to full address this in the Draft Final Biological
> Assessment
> Baker County is waiting for more information on the bull trout.
>
> Sincerely,
> Jason



RE: Mason Dam Hydroelectric Project Update

Ken Homolka to: jyencopal

05/12/2011 02:09 PM

From: "Ken Homolka" <ken.homolka@state.or.us>
To: <jyencopal@bakercounty.org>

Jason,
What do you need from ODFW regarding the bull trout?

Ken Homolka
Oregon Department of Fish and Wildlife
Hydropower Program Leader
3406 Cherry Ave
Salem, Or 97303
503-947-6090

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Thursday, May 12, 2011 9:54 AM
To: Audie Huber; Carolyn Templeton; Carl Stiff; Colleen Fagan; GRIFFIN
Dennis; Emily Carter; Fred Warner; Gary Miller; Kenneth Hogan; GRAINEY
Mary S; Mike Gerdes; Micheal Hall; Randy Joseph; KIRK Steve; Quentin
Lawson; LUSK Rick M; Robert Ross; Shawn Steinmetz; Susan Rosebrough;
Thomas Stahl; Timothy Welch; GRIFFIN Dennis; Joseph Hassell; Carl
Merkle; lgecy@ecowest-inc.com; ted@tsorenson.net; gsense@cableone.net;
Ken.Homolka@state.or.us; jtomac@fs.fed.us
Cc: hmartin@bakercounty.org; jyencopal@bakercounty.org
Subject: Mason Dam Hydroelectric Project Update

Dear Stakeholders,

I just wanted to update you on our progress. We are in the final stages of completing the License Application and the Draft Final Biological Assessment. However, it was brought before the County that during the Perch removal process that there may have been some bull trout documented.

In order to full address this in the Draft Final Biological Assessment Baker County is waiting for more information on the bull trout.

Sincerely,
Jason



LA and DFBA Update

Jason Yencopal to: Audie Huber, Carolyn Templeton, Carl Stiff, Colleen Fagan, GRIFFIN Dennis, Emily Carter, Fred Warner, Gary Miller, Ken
04/12/2011 09:52 AM
Cc: Heidi Martin, Jason Yencopal

From: Jason Yencopal/Baker County
To: "Audie Huber" <Audiehuber@ctuir.com>, "Carolyn Templeton" <Carolyn.Templeton@ferc.gov>, "Carl Stiff" <cbstiff@wildblue.net>, "Colleen Fagan" <Colleen.E.Fagan@state.or.us>, "GRIFFIN Dennis" <Dennis.Griffin@state.or.us>, "Emily
Cc: Heidi Martin/Baker County@Baker County, Jason Yencopal/Baker County@Baker County

Dear Stakeholders,

Just wanted to give you an update since we were hoping to have the LA and DFBA done in March. We decided to conduct a fish habitat survey and are working on analyzing the data collected to put into the LA and DFBA. We hope with this extra information that it addresses and explains all aspects of the project and answers most of the questions. We originally thought we could get this survey done and compile all the information in March but we need a little more time.

Thank you for your understanding,
Jason



Mason Dam - Comments

Michael Gerdes to: jyencopal, Ken Homolka, Colleen Fagan,
Gary Miller, Kenneth Hogan, Mike Hall

04/05/2011 11:56 AM

From: Michael Gerdes <mgerdes@fs.fed.us>
To: jyencopal@bakercounty.org, "Ken Homolka" <ken.homolka@state.or.us>, "Colleen Fagan" <colleen.e.fagan@state.or.us>, "Gary Miller" <gary_miller@fws.gov>, "Kenneth Hogan" <kenneth.hogan@ferc.gov>, Mike Hall <mhall02@fs.fed.us>

History: This message has been forwarded.

Hi Jason, below are the Forest Service comments on two of Baker County's plans for the Mason Dam project and the most recent 6-month progress report.

Mason Dam Entrainment and Mortality:

Forest Service concurs and supports Oregon Department of Fish & Wildlife comments of March 15, 2011. The study does not address site-specific entrainment and mortality of fish species composition or size distribution occurring in Phillips Reservoir. Further, it does not address the specific operations (reservoir fluctuations for irrigation withdrawal) of the project. These two factors are key and are interrelated in determining entrainment and mortality impacts to the fisheries resources.

The Forest Service letters (filed with FERC) regarding Baker County installation of the exclusionary intake screen in lieu of an entrainment study and a requirement of a rigorous scientific entrainment study if the exclusionary intake screen were not installed were specific to meet Forest Service requirements for adequate evidence to support FPA Section 4(e) terms and conditions. A vital part of the site-specific analysis is to solidly establish the linkage between the resources affected, project operations and the relationship with USDA Forest Service Forest Plan direction.

While the study provides a relative comparison of similar facilities and designs it needs to have additional analysis to fully disclose the potential impacts of the project on site-specific fish entrainment and mortality.

The Forest Service recommends that the stakeholders meet to discuss the methods required to provide the additional analysis.

Noxious Weed Management Plan

Procedure

5.3: Need to consult/coordinate with Forest Service invasive coordinators prior to any treatment activities. It is important to consult with us prior to the chemical treatment of invasives due to the controversial nature of our new EIS.

5.5: At the January meeting, Forest Service invasive coordinators should be present.

Mitigation

6.1: It is important to emphasize that prior to restoration/reseeding, consultation with FS Botanists must be conducted. Plus, the use of non-native seeding is discussed and while the use of non-native seeds are not prohibited they are not the preferred alternative.

March 8, 20011 6-month Progress Report

The update provided a clear description of the transmission segment right-of-way. The Forest Service requires the amount, location, species, and diameters of all trees that will be removed by segment. Forest Plan direction restricts cutting of all trees > 21" dbh.

Please call if you have any questions.

Mike Gerdes
USDA Forest Service - PNW
541.447.5448
mgerdes@fs.fed.us



RE: Fish Entrainment and Mortality at Mason Dam Draft Final Report

Ken Homolka to: Audie Huber, Carl Merkle, Carolyn Templeton,
Carl Stiff, Colleen Fagan, GRIFFIN Dennis, 03/15/2011 04:42 PM
Emily Carter, Fred Warner, Gary Miller,
Cc: hmartin

From: "Ken Homolka" <ken.homolka@state.or.us>
To: "Audie Huber" <audiehuber@ctuir.com>, "Carl Merkle" <carlmerkle@ctuir.org>, "Carolyn Templeton" <carolyn.templeton@ferc.gov>, "Carl Stiff" <cbstiff@wildblue.net>, "Colleen Fagan" <colleen.e.fagan@state.or.us>, "GRIFFIN Dennis" <dennis.griffin@state.or.us>, "Emily" <hmartin@bakercounty.org>

History: This message has been forwarded.

Jason,
Please see attached comments from ODFW.

Ken Homolka
Hydropower Program Leader
3406 Cherry Ave
Salem, Or 97303
503-947-6090

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Monday, February 14, 2011 9:59 AM
To: Audie Huber; Carolyn Templeton; Carl Stiff; Colleen Fagan; GRIFFIN Dennis; Emily Carter; Fred Warner; Gary Miller; Ken Anderson; Kenneth Hogan; GRAINEY Mary S; Mike Gerdes; Micheal Hall; Randy Joseph; KIRK Steve; Quentin Lawson; LUSK Rick M; Robert Ross; Shawn Steinmetz; Susan Rosebrough; Thomas Stahl; Timothy Welch; GRIFFIN Dennis; Joseph Hassell; Carl Merkle; lgocy@ecowest-inc.com; ted@tsorenson.net; gsense@cableone.net; Ken Homolka; Jeff Tomac
Cc: hmartin@bakercounty.org; jyencopal@bakercounty.org
Subject: Fish Entrainment and Mortality at Mason Dam Draft Final Report

Dear Stakeholders,

Attached is the paper study done for the Mason Dam Hydroelectric Project (P-12686) for fish entrainment and turbine mortality. Please review the report and provide comments no later than March 15, 2011.

If I may be of any help please let me know.

Sincerely,
Jason Yencopal

(See attached file: Mason Dam Entrainment and Mortality Draft Final Report Feb_14_2011.pdf)



ODFW comments on entrainment report 3-15-11.pdf



Oregon

John Kitzhaber, Governor

Department of Fish and Wildlife

Fish Division

Hydropower Program

3406 Cherry Avenue, NE

Salem, OR 97303

(503) 947-6090

FAX (503) 947-6070

March 15, 2011

Jason Yencopal
Baker County
1995 Third Street
Baker City, Oregon 97814

Via Electronic Mail



Subject: Mason Dam Hydroelectric Project (FERC 12686)
Report on Fish Entrainment and Mortality at Mason Dam

Dear Mr. Yencopal;

The Oregon Department of Fish and Wildlife (ODFW) received your email dated February 14, 2011 requesting our review of the draft final report on Mason Dam Entrainment and Mortality. We have reviewed the report and are providing the following comments.

General comments

The study is focused on making inferences regarding fish mortality through the existing intake and proposed hydroelectric facility by citing studies from “similar” facilities. There does not appear to be great similarity between the facilities selected for making inferences about fish entrainment, and there is really no discussion about the fish communities involved, which would have a large influence on entrainment. The report suggests that the projects listed in Table 1 have characteristics similar to the proposed Mason Dam project, but the report does not indicate whether these reservoirs are operated with similar seasonal water elevation changes as Phillips Reservoir. Many reservoirs that are dedicated to hydropower generation are maintained close to full pool to maximize generation. Most (67%) of the projects compared in Table 1 are classified as “run-of-the-river” suggesting that inflow equals outflow and reservoir elevation varies only slightly. The other 33% of the projects in Table 1 are either “pulsing” or “peaking” projects, which suggests relatively short-term fluctuations in reservoir elevation on a daily or several-day interval. It is ODFW understanding that the flow releases from Mason Dam will not be modified to specifically accommodate hydropower generation by either maintaining year-round full reservoir pool, or operating the project as a “pulsing” or “peaking” project. This significantly weakens the findings of the study. A more thorough and transparent discussion is needed regarding the selection of comparison sites in order to make inferences regarding fish entrainment and mortality.

Specific comments

Page 1, Present Conditions: The purpose of the perch removal project at Phillips Reservoir is to reduce perch abundance in the reservoir, not “rid the lake of yellow perch” as the report states. We recommend that you make the appropriate revision in the report.

Page 2, 2nd paragraph: This section reads that fingerling and catchable rainbow trout are stocked in the river annually. This is incorrect, only legal-sized rainbow trout are stocked in the river. We recommend that you make the appropriate revision in the report.

Page 5, 2nd paragraph: In the review of entrainment studies, of which 50 are indicated to be available, 24 were selected because of similar characteristics and because they are primarily warmwater fisheries. The Powder River above and below Mason Dam is primarily a coldwater fishery. We recommend that facilities affecting coldwater fisheries also be included in the analysis of entrainment and mortality.

Page 9, Size Composition: The report needs to include a discussion of size and species, not just size.

Page 10, Species and Seasonal Composition: This section suggests that entrainment of rainbow trout (redband trout) would likely be lower because they spawn in shallow water habitat and would not be subject to entrainment via a deep-water intake. Actually the spawning occurs in streams. However, at any one time there would be several age classes of rainbow/redband trout utilizing the reservoir, not just adult spawners, outside of spawning time. These are sub-adult fish that would actually be more susceptible to entrainment.

Page 11, The discussion indicates that jet flow valves at Tieton Dam would provide a first-order estimate of fish mortality at Mason Dam, but no information is provided to support the conclusion that fish mortality is similar between jet-flow and slide gate valves. Supporting information should be provided, including empirical data.

Conclusion

ODFW believes the report relies on several flawed assumptions regarding the applicability of the entrainment results from the listed projects to Mason Dam. The report suggests that the existing projects provide similar conditions as Phillips Reservoir, but the operating modes of the selected projects do not appear to be similar to Phillips Reservoir. The report should be revised to address ODFW’s specific comments regarding fisheries management and by conducting the additional data analysis. ODFW recommends that you conduct additional consultation with the fishery agencies to ensure we can reach agreement on the potential effects of the project on entrainment and mortality.

ODFW appreciates the opportunity to provide these comments. If you have any questions please call me at 503-947-6090, or contact me by email at Ken.Homolka@state.or.us.

Sincerely



Ken Homolka
Hydropower Program Leader



Mason Dam
Michael Gerdes to: jyencopal

03/14/2011 05:00 PM

From: Michael Gerdes <mgerdes@fs.fed.us>
To: jyencopal@bakercounty.org

Hi Jason, I have not forgot about you or the dam project. Many things have come along to slow my progress. Wanted to let you know that the FS will provide comments on the plans BC offered for review. Hope to have comments to you by the end of the week or early next week. Let me know if that does not work. Thanks

Mike Gerdes
USDA Forest Service - PNW
541.447.5448
mgerdes@fs.fed.us



RE: Mason Dam Intake
Ames, Karl S to: jyencopal@bakercounty.org

03/10/2011 02:21 PM

From: "Ames, Karl S" <KAmes@usbr.gov>
To: "jyencopal@bakercounty.org" <jyencopal@bakercounty.org>

Jason,

Yes, I suppose it would be ok to reference our guidelines.

Karl

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Thursday, March 10, 2011 2:43 PM
To: Ames, Karl S
Subject: RE: Mason Dam Intake

Karl,

Would it be ok to site the Reclamation guidelines for the velocity not to exceed 2 ft/sec. This information would help us deal with the US Fish and Wildlife Service and our Biological Assessment with the bull trout and explain why we see perch in the stilling basin and not trout. If you have any questions or would like to talk more about this please give me a call on my cell phone 541.519.0599.

Thank you,
Jason

<p>"Ames, Karl S" <KAmes@usbr.gov> <RRoss@usbr.gov>, "jyencopal@bakercounty.org" 03/03/2011 07:43 M.H" <BA1bl@usbr.gov> AM Dam Intake</p>	<p>To: "Ross, Robert W" <jyencopal@bakercounty.org> cc: "Albl, Bernhard" Subject: RE: Mason</p>
--	---

Mr. Yencopal,

There are no charts for the intake velocities. You would need to calculate the velocity, based on the discharge and the area. I calculate that the velocity through the intake trashracks would be about 1.7 feet/second, with the outlet works capacity of 875 cfs @ reservoir elevation 4070.5 feet. (Reclamation guidelines say, when trashracks are inaccessible for cleaning, that the velocity should not exceed 2 ft/sec.)

Karl S. Ames, P.E.
Civil Engineer

Bureau of Reclamation
Snake River Area Office
Middle Snake Field Office
230 Collins Road
Boise, Idaho 83702
(208) 383-2268

-----Original Message-----

From: Ross, Robert W
Sent: Thursday, March 03, 2011 7:39 AM
To: Ames, Karl S
Subject: FW: Mason Dam Intake

-----Original Message-----

From: Ross, Robert W
Sent: Thursday, March 03, 2011 7:39 AM
To: 'jyencopal@bakercounty.org'; Albl, Bernhard M.H
Subject: RE: Mason Dam Intake

Mark or Karl,

Can you help Jason Yencopal on this information request on Mason dam.

Your time should be charged to the FERC licensing number provided earlier.

Bob Ross

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Wednesday, March 02, 2011 3:53 PM
To: Ross, Robert W
Subject: Mason Dam Intake

Bob,

Do you know what the intake velocity's are for Phillips Res. I don't know if there is a chart or if you just have at certain cfs released then the velocity around the intake.

Thank you,
Jason



RE: Mason Dam Intake

Ames, Karl S to: Ross, Robert W, jyencopal@bakercounty.org
Cc: "Albl, Bernhard M.H"

03/03/2011 07:43 AM

From: "Ames, Karl S" <KAmes@usbr.gov>
To: "Ross, Robert W" <RRoss@usbr.gov>, "jyencopal@bakercounty.org" <jyencopal@bakercounty.org>
Cc: "Albl, Bernhard M.H" <BAbl@usbr.gov>

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Karl S. Ames, P.E.
Civil Engineer
Bureau of Reclamation
Snake River Area Office
Middle Snake Field Office
230 Collins Road
Boise, Idaho 83702
(208) 383-2268

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From: Ross, Robert W
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Subject: FW: Mason Dam Intake

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Bob Ross

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Thank you,
Jason



RE: TMMP Plan
KIRK Steve to: jyencopal

02/23/2011 04:43 PM

From: "KIRK Steve" <KIRK.Steve@deq.state.or.us>
To: <jyencopal@bakercounty.org>

Jason - see attached example for a larger project. You could trim down the scope.

Steve Kirk

-----Original Message-----

From: jyencopal@bakercounty.org [mailto:jyencopal@bakercounty.org]
Sent: Wednesday, February 23, 2011 9:54 AM
To: KIRK Steve
Subject: TMMP Plan

Steve,

I was wondering if you had an outline or some examples I could look at for a Turbidity Management and Monitoring Plan. I have made most of the changes in the draft 401 water quality certification and am ready to work on the TMMP plan.

Thank you,
Jason



Turbidity Management Plan_2010 1-28.pdf



TURBIDITY MONITORING PLAN

POWERDALE HYDROELECTRIC PROJECT REMOVAL FERC PROJECT NO. 2659

January 28, 2010

Turbidity Monitoring Plan

Powerdale Hydroelectric Project

FERC No. 2659

TABLE OF CONTENTS

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1.0 INTRODUCTION

The purpose of this Turbidity Monitoring Plan is to describe actions that PacifiCorp will undertake to monitor and respond to short-term turbidity increases in the Hood River associated with the removal of PacifiCorp’s Powerdale Hydroelectric Project. The Turbidity Monitoring Plan will be implemented in addition to PacifiCorp’s Erosion and Sediment Control Plan for the project.

The Hood River is a glacially fed system, with headwaters on Mt. Hood. High turbidity events are common in glacially fed streams, due to the large volume of very fine glacial till moving down the stream. PacifiCorp will implement the management practices described in the Erosion and Sediment Control Plan to control increases in turbidity during the removal of the Powerdale Hydroelectric Project.

2.0 BACKGROUND

PacifiCorp is the licensee and operator of the Powerdale Hydroelectric Project (Project), which is regulated by the Federal Energy Regulatory Commission (FERC) as Project No. 2659. On November 22, 2005, the FERC issued PacifiCorp an Order (113 FERC 62,148) granting the surrender of the Project’s license and its removal. The Order establishes PacifiCorp requirements for project removal and stipulates consistency with applicable sections of the Settlement Agreement dated June 16, 2003 among PacifiCorp and the following state and federal agencies (agencies):

- National Marine Fisheries Service
- U.S. Department of Interior – Fish and Wildlife Service
- Oregon Department of Fish and Wildlife
- Oregon Department of Environmental Quality
- Oregon Water Resources Department
- Confederated Tribes of the Warm Springs Reservation of Oregon

- American Rivers
- Hood River Watershed Group

The Powerdale Hydroelectric Project is located on PacifiCorp lands within a rugged valley in Hood River County, Oregon, along the Hood River near the City of Hood River. The lower portion of the Project, including the powerhouse and a portion of the flowline is located in the Columbia River Gorge National Scenic Area, which is managed by the U.S. Forest Service. This project was operated in a run-of-river mode. As a result of severe damage from a November 2006 flood event on the Hood River, the Project is not operable for the production of electricity. Physical decommissioning of the project is scheduled to begin in April 2010.

The Oregon Department of Environmental Quality (DEQ) issued a Clean Water Act section 401 certification for the project on June 11, 2004. The conditions of this certification, "Clean Water Act Section 401 Water Quality Certification Conditions for the Interim Operation and Decommissioning of the Powerdale Hydroelectric Project," are incorporated verbatim into the FERC Order and into the November 3, 2009 U.S. Department of the Army Clean Water Act section 404 permit for the project.

3.0 TURBIDITY MONITORING AND RESPONSES

Task 1 Monitoring During Non-Cofferdam Construction or Removal Activity

Turbidity monitoring will occur each day that in-water work is conducted and while the contractor is working using a calibrated turbidimeter (in-lieu of visual monitoring). The monitoring will be conducted at the following locations and frequency:

- Representative Background Point (M1): A sample will be taken every four (4) hours at a relatively undisturbed area approximately 100 feet upstream from the location of the in-water work to establish background turbidity levels for each monitoring cycle. Background turbidity, location, and time will be recorded prior to monitoring downstream from the point of discharge.
- Downstream Monitoring Point (M2): Monitoring will occur every four (4) hours approximately 100 feet downstream from the sand settling basin. The measured turbidity will be compared against the contemporaneous background turbidity measurement. The turbidity, location, and time will be recorded for each sample.

Turbidity results from M2 will be compared to the background levels taken at M1 during each monitoring interval. PacifiCorp will act on the monitoring results as described below and as summarized in Table 1.

If the turbidity measured at M2 exceeds the background level by more than 5 NTUs but less than 50 NTUs, PacifiCorp's contractor will inspect the implementation of required management practices and take any corrective action that may be necessary. If, during in-water work activities, the turbidity measured at M2 exceeds the background level by more

than 30 NTUs but less than 50 NTUs, PacifiCorp will also increase the frequency of turbidity monitoring from 4 hours to 2 hours until the turbidity at M2 is 5 NTUs or less than background turbidity or the contractor ceases in-water work for that day. If the level at M2 drops to 5 NTUs or less than background turbidity, the monitoring frequency will revert to 4 hours. If the turbidity measured at M2 exceeds the background level by more than 50 NTUs, or exceeds the background level by more than 5 NTUs for two consecutive monitoring intervals, PacifiCorp’s environmental inspector will inform the Resident Manager, who will then require the contractor to stop work on activities that cause turbidity at M2 until the turbidity measured at M2 does not exceed background turbidity by more than 5 NTUs..

Table 1. Powerdale dam removal turbidity monitoring procedures, non-cofferdam construction.

MONITORING WITH A TURBIDMETER		
TURBIDITY LEVEL AT M2	ACTION AT 1 ST MONITORING INTERVAL	ACTION AT 2 ND MONITORING INTERVAL
Below background to 5 NTUs above background	Continue to monitor at M1 and M2 every 4 hours	Continue to monitor at M1 and M2 every 4 hours
More than 5 to 30 NTUs above background	Inspect implementation of required management practices and take any corrective action that may be needed. Continue to monitor every 4 hours	Stop work on activities that may cause turbidity at M2 if turbidity at M2 exceeds background turbidity by 5 to 30 NTUs for two consecutive monitoring intervals
More than 30 to less than 50 NTUs above background	Inspect implementation of required management practices and take any corrective action that may be needed. Continue to monitor every 2 hours until turbidity at M2 is 5 NTUs or less above background turbidity.	Stop work on activities that may cause turbidity at M2 if turbidity at M2 exceeds background turbidity by more than 30 to less than 50 NTUs for two consecutive monitoring intervals
50 NTUs or more above background	Stop work on activities that may cause turbidity at M2	Stop work on activities that may cause turbidity at M2

NTU = Nephelometric Turbidity Unit

PacifiCorp will make copies of daily logs of turbidity monitoring available to OR DEQ, ACOE, National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), and Oregon Department of Fish and Wildlife (ODFW) upon request. The log will include:

- Background NTUs
- M2 NTUs
- Comparison of the points in NTUs, and
- Location and time for each reading.

(Derived from 2007, Oregon Department of Environmental Quality, General Conditions (Water Quality Certification) for USACE NWP Categories)

Task 2 Monitoring During Cofferdam Construction and Removal

During periods in which cofferdams are in active construction or removal, PacifiCorp will monitor turbidity at 4-hour intervals at the same upstream background point (M1) and downstream point (M2) discussed above. Monitoring at both M1 and M2 will begin each day at 06:00 or prior to commencing in-water work, if in-water work commences after 6:00. Additional monitoring will be conducted at 10:00, 14:00, and 18:00. In-water activity will be allowed to begin if pre-construction turbidity is <50 NTUs over background. Monitoring will then continue at 4-hour intervals without action, *i.e.*, regardless of turbidity levels. However, if turbidity at M2 is ≥ 50 NTUs over background at 06:00 or the first monitoring event of the day, in-water work will not be allowed to begin until turbidity at M2 is less than 50 NTUs above background. Once in-water work begins, the next monitoring time will be at the closest 4-hour interval (10:00 or 14:00) and monitoring will continue at 4-hour intervals until 18:00 for that day.

PacifiCorp's environmental inspector and Resident Manager will assess and correct as necessary required management practices during periods when turbidity at M2 is 50 NTUs or more above background turbidity and will evaluate whether additional management practices to reduce turbidity are feasible. This approach will ensure that in-water work will not begin during any 24-hour period in which turbidity at M2 exceeds background turbidity by 50 NTUs or more.

Task 3 Reporting

PacifiCorp's environmental inspector will prepare a daily narrative discussing all turbidity at M2 that resulted in the stoppage of work or that exceeded 50 NTUs above background turbidity, subsequent monitoring, any actions taken in response, and the effectiveness of the actions. This report will include methods, results, and actions taken. The report will also contain daily calibration records and data sheets to provide an accurate and complete record of all monitoring activities.

Schedule

Water quality monitoring will begin with the onset of in-water work and continue until it is completed (approximately July 1 – September 30, 2010).