

**Columbia River Regional Forum
Water Quality Team Meeting
December 13, 2007**

1. Welcome and Introductions

Today's WQT meeting was co-chaired by Mark Schneider (NOAA) and Agnes Lut (ODEQ) and facilitated by Robin Harkless, with representatives from NOAA, ODEQ, BPA, BOR, LCREP, WDOE and others attending. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should send them to the WQT chair or bring them to the next meeting.

2. Review 2007 FCRPS BiOp

Water quality related changes from Biological Assessment to draft BiOp. Mark Schneider (NOAA) distributed copies of RPA 15, one of only two areas in the new BiOp that substantially address water quality (the other section is in the spill program itself).

RPA 15 sets up a water quality plan that includes:

- Changes to the SYSTDG model to reflect modifications to spillways or spill operations. Continued development of SYSTDG, including improved wind forecasting capabilities.
- Continued development of the CEQUAL W-2 model for estimating river temperatures from Dworshak Dam throughout the lower Snake River to better assess the effects of real-time Dworshak operational decisions on summer water temperatures.
- Expand water temperature modeling capabilities to include the Columbia River from Grand Coulee down to Bonneville. Investigate alternatives to reduce total mass loading of TDG at Bonneville Dam while maintaining juvenile survival performance. There was a suggestion that the geographic details mentioned here be clarified, and that Lake Roosevelt be included.

Update on December 12 status hearing. The comment period on the BiOp has been extended to January 4, 2008, and the final BiOp is due March 18, 2008, per Judge Redden's decision at yesterday's court hearing, Margaret Filardo (FPC) reported.

3. SCT Briefing: Adaptive Management Team Meeting

December 13 AMT meeting update. Agnes Lut (ODEQ) and Andrew Kolosseus (WDOE) reported on the AMT meeting held just prior to today's WQT meeting. The COE presented their spill analysis, which showed similar results to the FPC analysis for the 2007 water year. Filardo will present her final report on this at the next AMT meeting. Kolosseus said he will provide WQT with a link to the AMT web page where all presentations, agendas and meeting notes are posted.

Issues for WQT to consider. There will be further discussion of the types of modeling needed and flow years that need to be modeled. FPC, CRITFC and ODFW will work together on the alternative modeling proposal. Lut and Kolosseus invited people to comment on modeling scenarios they'd like to see, and on the TDG literature review which is available on the AMT website.

There was interesting discussion this morning of the FPC's fish survival data for areas along the lower Snake River and lower Columbia River dams, Lut reported. This will be a subject of discussion at the next AMT meeting.

AMT meeting schedule. The next meeting will be the morning of January 8, 2008 (followed by a WQT meeting in the afternoon, such as today).

4. Briefing: Gas Bubble Trauma Monitoring and Data Reporting for 2007

Margaret Filardo (FPC) distributed copies of the FPC's 2007 Gas Bubble Trauma Monitoring and Data Report and gave a PowerPoint presentation. FPC provides the report under a MOU with the COE as part of the COE's requirement by the states to provide TDG monitoring. The COE presents findings from this report to DEQ at the end of every year.

The only observed signs of GBT in this low-flow, high spill percentage year were found in late-migrating steelhead (the last 5% of the run after June 5) at Little Goose Dam, Filardo said. Both incidence and severity of GBT appear to increase when exposure increases. Steelhead are particularly vulnerable to GBT because their travel times are extremely long during low flows. Steelhead at the tail end of migration may lose the urge to migrate and end up spending an extra year in freshwater.

This year, at the same time steelhead were showing signs of GBT exposure, subyearling fall Chinook migration was underway, which made spill curtailment for steelhead unacceptable. TDG levels throughout the exposure period at Little Goose were around 110% – the state standard year-round without a waiver – but the fish developed signs of GBT anyway.

The variable seems to be travel time. In June and July of 2006, it took most steelhead less than 12-14 days to travel from Lower Granite to Little Goose, compared to 40-80 days to make the same trip in 2007. At that pace, even TDG saturation levels of 110% or less were apparently enough to cause signs of GBT, Filardo said. One factor is the shallowness at which they were migrating. We've had these TDG levels before and not seen GBT signs in fish to this extent, Adams said. The fish were collected at Little Goose, therefore representative of water conditions at Granite, Goose and Lower Monumental dams where TDG levels were in the 105-110% range. Subyearling Chinook migrating at the same time showed no incidence of GBT.

Another important finding of the study, Filardo said, is that even though 2007 was a low flow year, juvenile steelhead survival estimates on the Snake River were as high as those measured in 2006. The difference in the two years was percent spill, with 2007 being a year of high spill percentages. Filardo noted several cautions in interpreting these findings: the small sample size (less than 100 fish), the lack of comparison data from another year, and a possible bias in sampling because late migrating steelhead are larger and easier to catch.

Steelhead passage on the Snake will be monitored again in 2008, as required by DEQ. A phone participant asked why there was zero incidence of GBT in 2001, an even lower flow year than 2007. In 2001, there was no spill at Lower Granite, while in 2007 the RSW was operating there, Filardo replied. The GBT monitoring report will be posted on the FPC website.

5. Review COE 2008 Water Quality Monitoring Plan

Comments submitted. The COE has received four sets of comments on the draft plan, from FPAC, DEQ, FPC and NOAA. However, Adams said, many commenters are waiting for the plan to be updated based on the current BiOp. The draft Water Quality Monitoring Plan is available on the TMT website.

Comments to date focused on two aspects of monitoring:

1. Inclusion of the Camas Washougal gage in the gas abatement monitoring program. There was discussion of whether this gage will actually be used for in-season spill management decisions. USFWS and ODEQ representatives agreed it's confusing to include the Camas Washougal gage in the Water Quality Monitoring Plan – which implies it will serve as a monitoring station for the purpose of managing voluntary spill – since it wasn't included in the federal request to the states for a TDG waiver during spill season. Additionally, the TDG measured at the site may not be representative of Bonneville Dam spill due to the influences of several environmental factors including, water temperature, wind, barometric pressure and biological activity. ODEQ no longer requires the use of Camas-Washougal gage in the new TDG water quality waiver that will expire on August 31, 2009. David Wills (USFWS)

suggested that tables in the document annotate which gages will be used for spill management purposes.

Filardo suggested elevating the issue to the policy level for further consideration, and there was general agreement that it's beyond the scope of the WQT. The issue is part of the agencies' and tribes' discussion of the current BiOp, so it's unlikely anything will change until that gets resolved, Adams said. Jim Adams also said that the COE intends to keep using Camas Washougal for the next several years to assess the impacts of spill management strategies on the lower river.

The COE will clarify section 4 of the plan where this topic is covered, so the document spells out exactly how the gages will be used in 2008, Adams said,. The WMP probably won't be finalized until March 2008.

A meeting participant asked, if DEQ has dropped the waiver at Camas Washougal, meaning it's not included in the forebay requirement of 115%, does that mean that site standard reverts to 110% as it is year round. No, because Cascade Island serves as the Bonneville tailwater gage to which the 120% tailwater applies while the waiver is in effect, Lut replied. During fish passage season, the waiver TDG limits apply to the fixed monitoring stations in the forebay and tailrace of each dam in the Columbia River.

2. Response to malfunctioning water quality gages. The NMFS objected to the plan language allowing up to 48 hours time before the Corps responds to a malfunctioning total dissolved gas monitoring instrument. Schneider explained the NMFS concern for a failure occurring late on a Friday that may not be detected until Monday morning. When this occurred last year gages were out of service for 3-4 days. If the problem isn't resolved for extended periods and results in spill being curtailed, that's unacceptable to USFWS, Wills said and Filardo agreed. This language in the plan has been an issue for the fisheries managers for several years, Schneider noted. Concern was expressed that such problems aren't being communicated to region quickly enough.

In response to these concerns, USGS representatives distributed copies of two graphs:

- A list of missing data occurrences in 2006 and 2007 lasting longer than 24 hours for each of the following gages: John Day tailwater, The Dalles tailwater, Cascade Island (2006); John Day forebay (June 8-12, 2007).
- A cost breakdown of what USGS would charge the COE for various levels of weekend gage surveillance and responses to emergencies.

The cost for USGS monitoring on Saturdays and Sundays for 28 weekends in 2008 would be \$7,100 (this assumes USGS employees check sites

remotely and are not on standby duty for 8 hours). There would be an additional charge of \$1,300 per emergency for USGS workers to visit the site and repair a malfunctioning gage on a weekend, assuming it occurs at John Day.

Filardo questioned how some gages are considered more important than others. Adams and Laura Hamilton (COE) explained that some gages are more critical based on their location, unique limitations and role in TDG management at different times of the spill season. There was agreement that tailwater gages are more likely to fail than forebay gages. If the COE deems a broken gage not in need of fixing over the weekend, that's fine as long as it doesn't impact spill decisions, Wills (USFWS) said. The USGS has offered a low-cost solution (less than \$10,000) to a chronic problem, Schneider (NOAA) said. Schneider also questioned why the Corps continues to disregard Water Quality Monitoring Plan language unacceptable to the fisheries managers yet maintains a fixed monitoring station, Camas Washougal, when the state Water Quality agencies no longer require it as a compliance point.

Wills suggested the COE break out an emergency response for each section of the water quality monitoring plan. Adams said that would be clarified in the next WMP draft.

6. Next WQT Meeting

The next WQT meeting will be on January 8, 2008. Possible agenda items include: the COE's response to concerns about the water quality monitoring plan, an AMT update, and an update on the BiOp. This meeting summary prepared by consultant and writer Pat Vivian.

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