



FISH PASSAGE CENTER

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MEMORANDUM

TO: Jim Adams, COE

Michele DeHart

FROM: Michele DeHart

DATE: March 5, 2007

RE: Data Request from COE regarding "Spring Spill 2006" memorandum

In an email dated 2-26-07, FPC staff received inquiries from the Corps of Engineers regarding the Fish Passage Center's memo titled "Spring Spill 2006" dated September 29, 2006. The following memorandum is in response to your data request. In your email to the FPC you articulated three different questions.

1. "..., I would like to understand how the spill caps were calculated in the spill analysis that estimated the volume of increased spill had spill been managed only to tailwater TDG gauges at 120%."

The spill caps were calculated using 2006 hourly spill and TDG data from the COE's website: <http://www.nwd-wc.usace.army.mil/perl/dataquery.pl>. For each day's hourly spill and TDG data, we began by sorting all of the data (both TDG and spill) by the highest hours of TDG. Both the average of the days 12 highest hours of TDG and the average of the hourly spill that was associated with each hour of high TDG was calculated. We performed this calculation for each day between April 3rd and June 20th in the Lower Snake River and between April 20th and June 31st in the Lower Columbia River. We then conducted a regression analysis of the daily averages of spill on the daily averages of high TDG, and obtained a regression equation. The last step in the analysis was to solve this equation for either 120% TDG at tailrace monitors or 115% TDG at forebay monitors. Again, it should be clear that these regressions used 2006 spill and TDG data, not historical data. Because our analysis was based on 2006 operations, we felt the 2006 data should be used to predict spill caps. Based on past experience, it is clear that even slight changes to spill patterns or sensor locations can alter the relationship between spill and TDG. For this reason we did not use historical data.

2. “I would also like to know what was the value of the spill caps used in the analysis for each of the 8 Lower Columbia and Lower Snake rivers.”

All of the TDG caps used in this analysis were displayed in Table 2 in the memo of question. This table has been added below.

Project	Spill (Kcfs) if Gas Cap Managed to Project Tailrace Monitor (120%)	Spill (Kcfs) if Gas Cap Managed to Downstream Forebay Monitor (115%)
Lower Granite	54.1	53.1
Little Goose	50.7	30.2
Lower Monumental	39.0	29.5
Ice Harbor	76.2	63.5
McNary	179.2	161.1
John Day	133.5	131.0
The Dalles	147.0	122.2
Bonneville	101.3	113.3

Table 2. Gas cap estimates generated based on regressions between spill volumes and tailrace TDG or in the next downstream forebay for the Spring 2006 data.

3. “Also, the memo indicates that spill above load limitations was not included in the analysis. I was wondering how that was estimated.”

We believe this question was in reference to how we calculated the actual spill in 2006. Basically, for this calculation we did not include spill above the Court Ordered Spill. It was our assumption that spills above the court ordered spill would be because of other factors that would force an involuntary spill situation. This was explained on Page 2, it states,

“Then the actual volume of spill that occurred was calculated (b). This volume did not include any involuntary spill, or spill that was in excess of the court order. This excess spill occurred due to project capacity limits (flow in excess of hydraulic capacity or limited hydraulic capacity due to unit outages) or due to overgeneration or lack of market spill.”

We hope that we have sufficiently answered all of your questions you submitted regarding our September 29, 2006 memorandum. Please do not hesitate to contact us if you need any further assistance.