



Grant County
PUBLIC UTILITY DISTRICT
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0309

December 1, 2004

Via: Email 303d@ecy.wa.gov

Mr. Ken Koch
Water Quality Program
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504

Re: Grant PUD's comments on the revised 303(d) listing for waterbody segments: 40946, 40945, 40944 and 11169 for TDG and temperature. Each segment is located on the Columbia River.

Dear Mr. Koch:

Grant PUD filed the enclosed comments on March 15, 2004 in response to the previous draft 303(d) assessment. Those comments are enclosed as comments on the revised 303(d) assessment since many of the issues identified in the District's previous comment letter are applicable to the revised 303(d) assessment.

Please contact me at (509) 754-6612 if you have any questions.

Very truly yours,

A handwritten signature in cursive script that reads "Cliff Sears".

Cliff Sears
Regulatory Compliance Coordinator

Cc: Steve Brown
Laurel Heacock

Public Utility District No. 2 of Grant County, Washington

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Grant County
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March 15, 2005

Mr. Ken Koch
Water Quality Assessment Coordinator
Water Quality Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Comments on the 303(d) listing for waterbody segments: 40946, 40945, 40944 and 11169 for TDG and temperature. Each segment is located on the Columbia River.

Dear Mr. Koch:

Grant PUD (District) owns and operates the Priest Rapids Project, FERC License #2114, consisting of Wanapum and Priest Rapids Dams on the Columbia River. The water body segments identified above represent locations for category 5 listing for temperature and total Dissolved Gas (TDG). These locations appear to correspond with the Wanapum Dam forebay at location 40946, Wanapum Dam tailrace at 40945, Priest Rapids forebay at location 40944 and location 11169, near the Vernita Bridge on the Columbia River.

Grant PUD supports Ecology's efforts to identify waters for the 303(d) list through well documented, scientifically rigorous information so that Ecology's water quality assessments are defensible. However, our review of the assessments has revealed some concerns about the approach used for this assessment.

Temperature

Grant PUD believes that using 2001 data to determine 303(d) listings for temperature is not appropriate. During 2001, the region experienced an extreme drought, with average monthly discharges in the mid-Columbia as low as 56.6 kcfs (July 2001). These lower flows are also more likely influenced by high ambient air temperatures during the summer months. In accordance with WAC 173-201A-200(1)(c)(iii), the probability of exceedance must be more frequent than once every ten years on average to result in violation of the standard. Ecology has not used flow data that has a probability of recurrence of at least once every ten years.

Additionally, in 2001, operators throughout the upper and mid-Columbia River had difficulty deploying water quality equipment to a depth that would avoid near surface

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warming. At the monitoring locations at issue, the standpipes were not designed for the type of low flows that were experienced during 2001. Near surface warming and backwater channels can deviate significantly from the conditions of the main channel. For this reason, the water quality standards require data to be collected in accordance with WAC 173-201A-200(1)(c)(vi) which provides in relevant part:

"Temperature measurements should be taken to represent the dominant aquatic habitat of the monitoring site:

- (A) Be taken from well mixed portions of the rivers and streams; and
- (B) Not be taken from shallow backwater areas, within isolated thermal refuges, at the surface or at the waters edge."

The suggestion that the tailrace area below Priest Rapids Dam qualifies for a 303(d) listing also conflicts with empirical data collected for the District's final license application (FLA) for the Priest Rapids Project. In section E-3.5.3.7 of the FLA, the comparison with the 20°C special condition below Priest Rapids Dam demonstrated that from 1999 through 2001, over 22,000 hourly temperature measurements below Priest Rapids Dam contained no measurements greater than 20°C; showing remarkable compliance with the special condition standard (Table E3-16). (Juul, 2002).

Comparisons above Priest Rapids Dam with the 18°C criterion are not as simple because the policy guidance and temperature standard considers natural conditions. To estimate natural conditions, Juul (2002) used historical data from Rock Island Dam during the 1933-41 time period when it was the only mainstem Columbia River dam and its very limited storage and low height would have negligible effects on temperature. Review of this data showed that high percentages of temperature readings were greater than 18°C with some July through September periods showing nearly 100% of temperature measurements greater than the present-day standard. While large percentages of available data (Juul 2002) are greater than the 18°C criteria, these values should not be considered violations of water quality standards when natural conditions were warmer.

Additionally, the effects of the Priest Rapids Project on exceedences of the current water temperature criteria (the standard in place prior to July 1, 2003) using the MASS 1 model performed by Batelle showed that the number of excursions above the criteria were fewer under current conditions than with the project effects removed. This strongly suggests that excursions above the criteria are due to the effects from projects upstream.

Total Dissolved Gas

An analysis of hourly measurements recorded during the non-fish spill season (September through March) between Wanapum Dam forebay and Vermita Bridge in 1995 and from 1999-2001 were <110% saturation for more than 98% of the time. The maximum percentages ranged from 0-6% at the Priest Rapids Project tailwaters during the same time period. (Priest Rapids Project FLA Section 3.5.3.2).

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The District recorded the following excursions above the TDG criteria during non-fish spill periods during 2002 and 2003. The resulting compliance with the TDG standard ranged from 97.1 to 96.6%. These data are summarized in the following table.

Excursions Above the 110% TDG Criteria Outside of Fish Spill Season 2002 -2003				
FMS Location	# observations	# excursions	# excursions permitted for 303(d) list 1	% compliance
RI Tailrace (Chelan)	N/A	N/A	N/A	N/A
Wanapum Forebay	443	13	53	97.1
Wanapum Tailrace	478	22	57	95.4
Pr. Rapids Forebay	479	15	57	96.9
Pr. Rapids Tailrace	382	13	47	96.6

Water Quality Program Policy 1-11 states that a segment will be placed in the waters of concern category if the number of exceedances is below the minimum required to place it on the 303(d) list, but is 5% or more of the samples. In the present case, the number of excursions of the 110% standard are less than 5% of the samples reported in 2002-2003 and from 1999-2001. Accordingly, the non-fish spill period is inappropriate for listing on the 303(d) list because the risk of TDG exceeding 110% saturation between September through March is negligible.

During the Fish-Spill season, spill is managed through the Mid-Columbia Coordinating Committee (MCCC) representatives consisting of Washington State Department of Fish and Wildlife, NOAA Fisheries and Washington State Department of Ecology staff members. Generally, fish management agencies have sought spill quantities in order to remain as close as possible to the TDG criteria at FMS sites to promote fish passage over the spillways. Ecology's participation on the MCCC provides assurance that criteria will be attained and spill quantities reduced when conditions that influence TDG also change, such as change in barometric pressure, water temperature, incoming gas levels, total river flow or tail water elevation. Excursions above the numeric criteria are usually no more than 2% due to imprecision in reproducing exact TDG levels at specific spillway gate set points due to all of the TDG variability described. Since 2000, progress toward attaining TDG criteria are also assured through the TDG Abatement Plans on file with WDOE. Therefore, category 4b, Has a Pollution Control Plan, would appear to be an alternative to a category 5 classification.

Conclusions:

To analyze temperature, Ecology should not use data collected in 2001 but instead should use more representative water years. Further, the area below Priest Rapids Dam does not qualify for listing on a 303(d) list when the data is compared with the 20°C criterion. Additionally, for the temperature analysis, Ecology should compare the frequency of

1 WQ Program Policy 1-11, Revised September 2002, page 26.

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excursions under current conditions with "natural conditions." Finally, category 4b would appear to be an alternative classification appropriate for the fish-spill season and the proposed category 5, 303(d) listing, would not be appropriate for the non-fish spill period.

The District appreciates the opportunity to comment on the draft water quality assessment. If you have any questions, please do not hesitate to contact me at (509) 754-6612.

Very truly yours,



Clifford R. Sears
Regulatory Compliance Coordinator

cc: Linda Jones
Joe Lukas
Tom Dresser

0309 ECOLOGY
RESPONSE

Koch, Ken

From: Pickett, Paul
Sent: Tuesday, December 21, 2004 5:31 PM
To: Koch, Ken
Cc: Braley, Susan; Erickson, Karol (ECY)
Subject: RE: Grant PUD's comments on WDOE's revised 303(d) list

Ken,

I've reviewed the following listings referenced in the Grant County letter for Temperature (all Category 5):

40946 - WAN - Wanapum Forebay.
40945 - WANW - Wanapum Tailrace.
40962 - PRD - Priest Rapids Forebay
11169 - PRXW - Priest Rapids Downstream / Columbia River near Vernita Bridge.
6309 (40944) - PAQW - Pasco

These stations all have multiple years of continuous monitoring. My understanding is that under the listing policy: "When continuous monitoring data are available, Ecology will assess the seven-day average of daily maximum (for temperature) ... measurements....a waterbody segment will be placed on the 303(d) list for temperature ... when at least one seven-day average shows a violation of the water quality standard."

The continuous data that I have reviewed is the daily average temperature, so my analysis is based on the 7-day average of the daily average. Therefore this is a conservative analysis: if the seven day average of the daily average exceeds the criteria, then by definition the seven-day average of the daily maximum would exceed the criteria.

One of Grant PUD's concerns was that 2001 was not a representative year. Therefore I reviewed four years, and the following table presents a summary of my review.

Number of 7-day periods when the 7-day average temperature exceeded the criterion

Site name	Criterion	2000	2001	2002	2003
WAN - Wanapum Forebay.	18 deg C	66	77	0	89
WANW - Wanapum Tailrace.	18 deg C	57	62	30	86
PRD - Priest Rapids Forebay	18 deg C	50	69	0	91
PRXW - Priest Rapids Downstream / Columbia River near Vernita Bridge.	20 deg C	0	0	0	39
PAQW - Pasco	20 deg C	10	13	13	44

This confirms the designation of these listings as Category 5 waters.

Let me know if you have any questions.

Paul

*Paul J. Pickett, P.E.
Water Quality Engineer
Environmental Assessment Program
Washington State Dept. of Ecology
P.O. Box 47710
Olympia, WA 98504-7710*

*voice (360) 407-6882
fax (360) 407-6884*

From: Koch, Ken
Sent: Friday, December 03, 2004 3:06 PM
To: Pickett, Paul
Subject: RE: Grant PUD's comments on WDOE's revised 303(d) list

He apparently has concerns that the listings were not assessed properly and that Category 5 is inappropriate. We (you, me, Chad Brown) took a look at these matters during the first comment period. What is now presented on the "Detailed Listings" is where the database currently sits in terms of assessment.

Please verify the assessments are correct. If you could verify by December 31st, that would be fine. I don't anticipate any changes. There may be a difference of opinion based on "days" versus "sampling events" and that may be where the concern lies.

For the TDG, we moved from Cat 5 to Cat 4A (in August '04) due to TMDL approval, so I think the concerns about TDG are moot.

Can you send us a note (for the record) that these listings have been re-reviewed and whether or not these listings are being carried in the correct category. (Category 5 versus Category 2)

Do you need any links to the policy or other WQ document?

Ken

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

From: Pickett, Paul
Sent: Friday, December 03, 2004 2:53 PM
To: Koch, Ken
Cc: Erickson, Karol (ECY)
Subject: RE: Grant PUD's comments on WDOE's revised 303(d) list

What specifically can I do that would be helpful, and when would you like it by?

Paul

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

From: Cliff Sears [<mailto:CSEARS@gcpud.org>]
Sent: Wednesday, December 01, 2004 2:51 PM
To: 303d
Cc: Laurel Heacock; Linda Jones; Stephen Brown
Subject: Grant PUD's comments on WDOE's revised 303(d) list

Dear Mr. Koch:
Attached for filing are comments from Grant PUD concerning the above referenced matter. Thank you for your consideration of the enclosed.

Cliff Sears
Regulatory Compliance Coordinator
(509) 754-6612