

# **Appendix D**

## **% TDG Exceedance Tracking System**



## **INTRODUCTION:**

The US Army Corps of Engineers tracks the number of percent TDG exceedances of Washington and Oregon water quality standards (115% in the forebays and 120% in the tailwaters of Columbia and Snake River dams, under the provisions of the state water quality exemptions granted by the states) during the spill season, April 3 through August 31, and designates a cause for each exceedance. The percent TDG exceedances are based on the daily high 12 hour average, except for those exceedances above 125%. This information is provided to the Technical Management Team Regional Forum and can be found at <http://www.nwd-wc.usace.army.mil/tmt/documents/ops/spill/>

Table D-1 provides a listing of the various causes (types) that are designated to each exceedance occurrence. Table D-2 designates a specific exceedance cause (type) for all exceedances at all Corps of Engineers Lower Columbia and Snake River projects. Table D-3 provides the maximum hourly % TDG value and number of exceedances, both hourly and daily high 12 hour average, for all the Corps of Engineers Lower Columbia and Snake River projects plus Chief Joseph at the Middle Columbia River. Table D-4 pertains to those projects in Table D-3 that exceeded the 125% TDG Oregon and Washington state standards and provides the dates these exceedances occurred, the range of values over 125%, and the number of hours that exceeded 125% TDG. Plots and Tables for the percent TDG daily high 12 hour averages can be found in Appendix C within the Fish Passage Implementation Plan Reports.

**TABLE D-1**  
**TYPES OF EXCEEDANCE TRACKING**

TDG EXCEEDANCE TRACKING	
Types of Exceedances:	
1.	Exceedance due to high runoff flows
2.	Exceedance due to Intertie line outages
3.	Exceedance due to unit outages during repair or maintenance
4.	Exceedance due to BPA is unable to handle load so they had to spill
5.	Exceedance due to a break down in communication. (e.g. Teletype transmission failure or project operator misinterpreted teletype)
6.	Exceedance due to uncertainties when using best professional judgment to apply the spill guidance criteria (travel time; degassing; water temperature effects; spill patterns)
7.	Exceedance due to high TDG levels coming from the Mid-Columbia Projects (see Pasco FMS readings).
8.	Exceedance due to high TDG levels coming from the Snake Projects (See Ice Harbor Dam tailwater FMS readings)
9.	Exceedance due to a load rejection, the powerhouse was not working and the river was spilled.
10.	Exceedance due to failure of FMS gages, database outage, and satellite failures, etc
11.	Exceedance due to other unanticipated mechanical problems/maintenance operations (gate was stuck open, passing debris etc.)
12.	Exceedance due to sharp rise in water temperature (a 3 to 5 degree F. change in a day).
13.	Exceedance due to bulk spill pattern being used which generated more TDG than expected.
14.	Exceedance due to non-functioning of flow deflectors during tailwater elevation above 19 ft and especially above 26 ft.

**TABLE D-2**  
**EXCEEDANCE TYPE TRACKING**  
**APRIL 2006**

	Low Gran FB	Low Gran TW	Little Goose FB	Little Goose TW	Low Monu. FB	Low Monu. TW	Ice Harb FB	Ice Harb TW	McNary FB-W	McNary TW	John Day FB	John Day TW	The Dalles FB	The Dalles TW	BON FB	BON TW	Camas FB
4/3/06	---	---	---	---	---	---	---	---									
4/4/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
4/5/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
4/6/06	---	---	---	---	---	---	6	---	---	---	---	---	---	---	---	---	
4/7/06	---	1	---	---	---	---	6	---	---	---	---	---	---	---	---	---	
4/8/06	---	---	---	6	---	---	---	---	---	---	---	---	---	---	---	---	
4/9/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
4/10/06	---	---	---	6	---	6	---	---	Spill Begins	Spill Begins	Spill Begins	Spill Begins	Spill Begins				
4/11/06	---	---	---	1	---	1	---	---	3	---	3	---	---	---	1	1	---
4/12/06	---	---	---	1	---	3	---	---	---	---	---	---	---	6	1	1	
4/13/06	---	---	---	1	---	1	---	---	---	---	3	---	---	6	---	1	
4/14/06	---	---	---	1	---	1	---	---	---	---	3	---	---	6	1	1	
4/15/06	1	---	---	1	---	1	1	---	---	---	3	1	---	6	1	---	
4/16/06	1	---	---	10	---	---	1	---	---	---	3	1	---	---	1	1	
4/17/06	1	---	---	1	---	---	1	---	---	---	3	1	---	1	1	1	
4/18/06	1	---	---	1	---	---	---	---	3	---	3	---	---	1	1	1	
4/19/06	1	1	---	1	---	1	---	---	---	---	---	---	---	1	1	1	
4/20/06	---	1	---	1	---	1	---	7	1	---	3	1	---	1	1	1	
4/21/06	---	---	---	6	6	6	---	7	---	---	---	---	---	1	1	1	
4/22/06	---	---	---	1	6	---	---	---	---	---	---	---	---	14	---		
4/23/06	---	---	---	---	6	6	---	---	---	---	3	---	---	6	14	---	
4/24/06	---	---	---	---	---	---	---	---	1	---	1	1	---	1	1	1	
4/25/06	---	---	---	---	---	---	---	7	---	---	---	1	1	1	---	1	
4/26/06	---	---	---	---	6	---	---	---	1	---	---	---	---	1	1	1	
4/27/06	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	1	
4/28/06	---	---	---	6	---	---	---	7	---	1	---	1	---	1	---	1	
4/29/06	---	---	---	1	---	1	---	7	---	1	---	1	---	1	---	14	
4/30/06	1	---	---	---	---	---	---	---	---	---	---	---	---	1	---	1	---

**TABLE D-2**  
**EXCEEDANCE TYPE TRACKING**  
**MAY 2006**

	Low Gran FB	Low Gran TW	Little Goose FB	Little Goose TW	Low Monu. FB	Low Monu. TW	Ice Harb FB	Ice Harb TW	McNary FB-W	McNary TW	John Day FB	John Day TW	The Dalles FB	The Dalles TW	BON FB	BON TW	Camas FB
5/1/06	---	1	---	---	---	---	6	---	---	---	---	---	---	---	---	1	---
5/2/06	---	1	---	---	1	---	---	---	1	---	1	1	1	---	1	1	1
5/3/06	---	---	1	---	1	---	---	---	1	---	1	1	1	---	1	1	1
5/4/06	---	---	1	---	1	---	1	---	---	---	---	1	---	1	---	1	1
5/5/06	---	---	1	---	1	---	1	---	---	---	1	---	1	---	1	14	1
5/6/06	---	---	1	---	1	---	1	---	---	---	---	---	---	---	---	---	---
5/7/06	---	---	---	6	---	---	---	---	---	---	---	---	---	---	---	14	---
5/8/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13	---
5/9/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13	---
5/10/06	---	---	---	---	6	---	---	---	---	---	---	---	---	---	6	13	---
5/11/06	---	---	---	---	6	6	6	---	---	---	---	---	---	---	6	--	6
5/12/06	---	---	---	---	6	6	6	---	---	---	---	3	---	---	---	14	---
5/13/06	---	---	---	---	---	6	6	---	---	---	---	3	---	---	---	14	---
5/14/06	---	---	---	---	---	---	6	---	---	---	---	3	---	6	--	14	14
5/15/06	---	---	---	---	6	---	6	---	7	---	---	3	---	3	---	14	14
5/16/06	---	1	---	---	1	---	1	---	7	---	---	---	---	---	6	--	6
5/17/06	---	1	1	---	1	---	1	1	7	---	1	3	3	---	1	14	1
5/18/06	---	1	1	1	1	1	1	1	1	1	1	3	3	---	1	1	1
5/19/06	---	1	1	1	1	1	1	1	7	1	1	3	3	---	1	1	1
5/20/06	---	1	1	1	1	1	1	1	---	1	---	3	3	---	1	1	1
5/21/06	---	1	1	1	1	1	1	1	7	1	1	3	3	---	1	1	1
5/22/06	---	1	1	1	1	1	1	1	7	1	1	3	3	---	1	1	1
5/23/06	---	1	1	1	1	1	1	1	---	1	1	3	3	---	1	1	1
5/24/06	---	1	1	1	1	1	1	1	---	1	1	1	1	---	1	1	1
5/25/06	---	1	1	1	1	1	1	1	---	---	---	3	3	---	1	1	1
5/26/06	---	1	1	---	1	---	1	1	---	1	---	3	---	---	1	1	1
5/27/06	---	1	1	1	1	1	1	1	---	1	---	1	1	---	1	1	1
5/28/06	---	1	1	1	1	---	1	---	---	1	---	3	3	1	---	1	--
5/29/06	---	1	---	1	1	---	---	---	---	1	---	1	---	---	1	1	1
5/30/06	---	---	---	1	1	1	1	---	7	1	---	3	3	1	1	1	1
5/31/06	---	---	1	---	1	1	1	---	7	---	---	3	3	1	1	1	1

**TABLE D-2**  
**EXCEEDANCE TYPE TRACKING**  
**JUNE 2006**

	Low Gran FB	Low Gran TW	Little Goose FB	Little Goose TW	Low Monu. FB	Low Monu. TW	Ice Harb FB	Ice Harb TW	McNary FB-W	McNary TW	John Day FB	John Day TW	The Dalles FB	The Dalles TW	BON FB	BON TW	Camas FB
6/1/06	---	---	1	--	1	--	1	--	7	1	1	--	1	1	1	1	1
6/2/06	---	---	--	--	1	--	1	--	7	--	1	--	1	--	1	--	1
6/3/06	---	---	--	--	--	6	6	--	--	--	1	--	6	--	1	1	1
6/4/06	---	---	--	--	--	--	1	--	7	--	1	--	1	--	1	--	1
6/5/06	---	---	--	--	--	--	--	--	1	--	4	--	4	--	4	4	4
6/6/06	---	---	--	4	--	--	--	4	7	4	4	4	4	4	4	4	4
6/7/06	---	4	4	4	4	4	4	4	7	4	--	4	4	4	4	4	4
6/8/06	---	4	--	--	4	4	4	--	7	4	--	4	--	--	--	4	--
6/9/06	---	4	--	4	--	--	4	4	--	4	--	4	--	--	--	4	--
6/10/06	---	4	--	4	4	4	4	4	7	4	--	4	4	--	4	4	4
6/11/06	---	4	--	4	4	4	4	4	7	4	--	4	4	4	4	4	4
6/12/06	---	---	--	4	4	4	4	--	7	4	--	4	4	4	4	4	4
6/13/06	---	---	4	--	4	4	4	--	7	4	4	--	--	--	4	4	4
6/14/06	---	---	4	4	4	--	4	--	--	4	4	--	--	--	--	4	--
6/15/06	---	---	--	--	4	4	--	--	--	4	--	4	--	--	--	4	--
6/16/06	---	---	--	--	--	4	--	--	--	4	--	--	--	--	4	4	4
6/17/06	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/18/06	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/19/06	---	---	--	--	--	6	--	--	7	--	--	--	--	--	--	3	--
6/20/06	---	---	--	--	--	6	--	--	--	--	--	--	--	--	--	6	--
6/21/06	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/22/06	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/23/06	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	14	--
6/24/06	---	---	--	--	--	--	--	--	7	--	--	--	3	--	6	14	--
6/25/06	---	---	--	--	--	--	--	--	7	--	--	--	3	--	6	--	6
6/26/06	---	---	--	--	4	--	6	--	7	--	6	--	3	--	6	--	6
6/27/06	---	---	12	--	12	--	12	--	7	--	6	--	3	--	6	--	6
6/28/06	---	---	--	--	6	--	6	--	7	--	--	--	--	--	--	--	--
6/29/06	---	---	--	--	6	--	6	--	--	--	--	--	--	--	--	--	--
6/30/06	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**TABLE D-2**  
**EXCEEDANCE TYPE TRACKING**  
**JULY 2006**

	Low Gran FB	Low Gran TW	Little Goose FB	Little Goose TW	Low Monu. FB	Low Monu. TW	Ice Harb FB	Ice Harb TW	McNary FB-W	McNary TW	John Day FB	John Day TW	The Dalles FB	The Dalles TW	BON FB	BON TW	Camas FB
7/1/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/2/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/3/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/4/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/5/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/6/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/7/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/8/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/9/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/10/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/11/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/12/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/13/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/14/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/15/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/16/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/17/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/18/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/19/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/20/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6
7/21/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6
7/22/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/23/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6
7/24/06	---	---	---	---	---	---	6	---	---	---	---	---	---	---	---	---	6
7/25/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/26/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/27/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/28/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/29/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/30/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7/31/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**TABLE D-2**  
**EXCEEDANCE TYPE TRACKING**  
**AUGUST 2006**

	Low Gran FB	Low Gran TW	Little Goose FB	Little Goose TW	Low Monu. FB	Low Monu. TW	Ice Harb FB	Ice Harb TW	McNary FB-W	McNary TW	John Day FB	John Day TW	The Dalles FB	The Dalles TW	BON FB	BON TW	Camas FB
8/1/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/2/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/3/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/4/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/5/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/6/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	---
8/7/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/8/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/9/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/10/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/11/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/12/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/13/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	---
8/14/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	---
8/15/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/16/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/17/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/18/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/19/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	---
8/20/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	---
8/21/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/22/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/23/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/24/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/25/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/26/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/27/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/28/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	---
8/29/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/30/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8/31/06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>TOTALS</b>	<b>0</b>	<b>28</b>	<b>24</b>	<b>19</b>	<b>56</b>	<b>29</b>	<b>51</b>	<b>22</b>	<b>31</b>	<b>32</b>	<b>20</b>	<b>38</b>	<b>40</b>	<b>10</b>	<b>51</b>	<b>61</b>	<b>63</b>
<b>Exceedance Criteria</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>	<b>120.0</b>	<b>115.0</b>

**TABLE D-3**  
**2006 SPILL SEASON - Starting April 3, L. Snake R and April 10, L. Columbia R:**  
**MAXIMUM %TDG and NUMBER of EXCEEDANCES**

<b>Station</b>	<b>APR</b>	<b>MAY</b>	<b>JUN</b>	<b>JUL</b>	<b>AUG</b>
<b>Middle Columbia River</b>					
Chief Joseph Forebay (CHJ)					
Maximum hourly % TDG	106.9	115.1	118.1	117.8	112.9
Number of hours over 110%	0	439	719	724	186
Chief Joseph Tailwater (CHQW)					
Maximum hourly % TDG	107.0	135.7	131.2	117.6	112.8
Number of hours over 110%	0	407	718	731	192
<b>Lower Snake River</b>					
Lower Granite Forebay (LWG)					
Maximum hourly % TDG	110.0	109.0	107.0	106.5	103.4
Number of hours over 115%	0	0	0	0	0
Number of days high 12 hour avg over 115%	0	0	0	0	0
Lower Granite Tailwater (LGNW)					
Maximum hourly % TDG	127.1	134.5	125.9	115.8	118.9
Number of hours over 120%	129	344	83	0	0
Number of days high 12 hour avg over 120%	7	16	5	0	0
Little Goose Forebay (LGS)					
Maximum hourly % TDG	116.0	125.7	120.1	114.2	109.5
Number of hours over 115%	44	375	82	0	0
Number of days high 12 hour avg over 115%	2	17	5	0	0
Little Goose Tailwater (LGSW)					
Maximum hourly % TDG	127.7	127.5	127.9	119.3	118.3
Number of hours over 120%	10	200	83	0	0
Number of days high 12 hour avg over 120%	0	11	7	0	0
Lower Monumental Forebay (LMNA)					
Maximum hourly % TDG	120.3	130.6	128.6	114.6	109.0
Number of hours over 115%	284	529	303	0	0
Number of days high 12 hour avg over 115%	16	25	15	0	0
Lower Monumental Tailwater (LMNW)					
Maximum hourly % TDG	122.6	127.5	128.8	119.7	121.3
Number of hours over 120%	48	291	159	0	8
Number of days high 12 hour avg over 120%	4	15	10	0	0
Ice Harbor Forebay (IHRA)					
Maximum hourly % TDG	117.9	124.9	121.2	115.7	111.8
Number of hours over 115%	201	494	339	7	0
Number of days high 12 hour avg over 115%	11	23	16	1	0
Ice Harbor Tailwater (IDS)					
Maximum hourly % TDG	122.8	126.3	125.8	116.1	115.0
Number of hours over 120%	110	244	49	0	0
Number of days high 12 hour avg over 120%	5	12	5	0	0
<b>Lower Columbia River</b>					
McNary Washington Forebay (MCNA)					
Maximum hourly % TDG	117.3	118.9	119.8	114.6	109.1
Number of hours over 115%	78	174	355	0	0
Number of days high 12 hour avg over 115%	5	9	17	0	0
McNary Tailwater (MCPW)					
Maximum hourly % TDG	124.1	123.0	122.9	123.4	117.4
Number of hours over 120%	76	260	210	5	0
Number of days high 12 hour avg over 120%	6	14	12	0	0

**TABLE D-3 (continued)**  
**2006 SPILL SEASON - Starting April 3, L. Snake R and April 10, L. Columbia R:**  
**MAXIMUM %TDG and NUMBER of EXCEEDANCES**

<b>Station</b>	<b>APR</b>	<b>MAY</b>	<b>JUN</b>	<b>JUL</b>	<b>AUG</b>
<b>Lower Columbia River</b>					
John Day Forebay (JDY)					
Maximum hourly % TDG	116.1	117.7	118.1	114.0	105.7
Number of hours over 115%	39	148	190	0	0
Number of days high 12 hour avg over 115%	2	8	10	0	0
John Day Tailwater (JHAW)					
Maximum hourly % TDG	123.3	124.2	123.4	120.2	118.9
Number of hours over 120%	150	303	153	9	0
Number of days high 12 hour avg over 120%	11	19	8	0	0
The Dalles Forebay (TDA)					
Maximum hourly % TDG	121.3	118.5	123.6	113.9	109.3
Number of hours over 115%	118	277	172	0	0
Number of days high 12 hour avg over 115%	7	19	14	0	0
The Dalles Tailwater (TDDO)					
Maximum hourly % TDG	121.6	121.5	123.1	117.9	115.2
Number of hours over 120%	25	38	58	0	0
Number of days high 12 hour avg over 120%	1	4	5	0	0
Bonneville Forebay (BON)					
Maximum hourly % TDG	118.5	120.6	121.1	115.1	111.7
Number of hours over 115%	251	465	288	1	0
Number of days high 12 hour avg over 115%	14	21	16	0	0
Cascade Island Washington (CCIW)					
Maximum hourly % TDG	126.5	127.5	125.5	120.5	119.2
Number of hours over 120%	256	546	367	10	0
Number of days high 12 hour avg over 120%	16	27	18	0	0
Camas/Washougal (CWMW)					
Maximum hourly % TDG	119.2	120.5	119.0	119.3	117.7
Number of hours over 115%	276	435	291	60	87
Number of days high 12 hour avg over 115%	16	22	15	4	6

**TABLE D-4**  
**2006 SPILL SEASON (April 3 – August 31):**  
**HOURS OVER 125% TDG**

<b>Project</b>	<b>Dates</b>	<b>Range of %TDG</b>	<b>Number of Hours</b>
CHQW	May 25 - 29	125.6 - 135.7	88
CHQW	June 3 - 11, 13 - 15, 17	125.2 - 131.2	70
LGNW	April 11 - 12	126.7 - 127.1	2
LGNW	May 17 - 27	125.6 - 134.5	208
LGNW	June 11	125.1 - 125.9	5
LGSA	May 21 - 22	125.1 - 125.7	23
LGSW	April 13	125.7 - 127.7	3
LGSW	May 20 - 22	125.1 - 127.5	33
LGSW	June 10 - 11	125.1 - 127.9	9
LMNA	May 21 - 23	125.4 - 130.6	47
LMNA	June 12 - 13	125.1 - 128.6	27
LMNW	May 20 - 22	125.2 - 127.5	18
LMNW	June 10	125.4 - 128.8	2
IDSW	May 19 - 24	125.1 - 126.3	27
IDSW	June 11	125.6 - 125.8	5
CCIW	June 1, 10, 11	125.1 - 125.5	22
<b>TOTAL HOURS:</b>			<b>589</b>

**TABLE D-5**  
**REGIONAL ESTABLISHED 7Q10 FLOWS**

Project	7Q10 flows (kcfs) - as a daily average	Power house capacity within 1% efficiency	Power house capacity without one unit	The volume of Spill at 7Q10 flows
BON	467.03	257	242	225.03
TDA	461.18	288	267	194.18
JDA	454.37	331	310	144.37
MCN	446.76	172	160	286.76
IHR	214.00	92	77	137.00
LMN	214.00	115	94	120.00
LGS	214.00	115	94	120.00
LWG	214.00	115	94	120.00

The 7Q10 flow is the average daily flow level when the water quality standards no longer apply. The 7Q10 flow is the project flow that it is able to physically handle with all turbines except one are working. These flows were established through negotiations with Oregon and Washington.