

**Technical Memorandum**  
**Hydrology for the Idylwilde Dam and Power Plant**  
**2002-2009**

**Submitted To:**  
**Water Consult**  
**Loveland, Colorado**

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## Table of Contents

|                    |   |
|--------------------|---|
| Introduction:..... | 1 |
| Methodology:.....  | 1 |
| Results:.....      | 3 |

## List of Tables

|                                                                                                 |    |
|-------------------------------------------------------------------------------------------------|----|
| Table 1. Summary of preliminary hydrology data for Idylwilde Dam and Power Plant 2002-2009..... | 4  |
| Table A-1 Inflow to Dam.....                                                                    | 11 |
| Table A-2 Penstock Flows.....                                                                   | 21 |
| Table A-3Bypass Flows.....                                                                      | 31 |

## List of Figures

|                                                                                                      |   |
|------------------------------------------------------------------------------------------------------|---|
| Figure 1. Average daily flows, Big Thompson forebay, penstock and in the Bypass reach 2002-2009..... | 5 |
| Figure 2. Average daily bypass flows, 2002 – 2009.....                                               | 6 |
| Figure 3. Average daily bypass flows (truncated to 30 cfs and lower), 2002 – 2009.....               | 7 |
| Figure 4. Average daily penstock flows on days when power was generated, 2002 – 2009.....            | 8 |
| Figure 5. Average flows by day for the time period 2002-2009.....                                    | 9 |

## **Introduction:**

The purpose of this memorandum is to provide estimates for the period of January 1, 2002 to September 30, 2009 of 1) flows to Idylwilde Dam (forebay), 2) diversions from the dam to the Idylwilde Hydropower Plant (penstock flows), and 3) flows in the reach between the dam and power plant return flow to the Big Thompson River (bypass flows). The methodology for developing the estimates is described in this memo.

## **Methodology:**

Discharge data for the power plant and bypass reach are not directly gaged. There are stream discharge data for several locations in the Big Thompson River upstream and downstream of Idylwilde Dam. A previous hydrology analysis technique was developed in 1992 to compute inflow to the forebay, bypass flows, and penstock flows (W.J. Miller & Associates, 1993). The previous analysis determined that the combined USGS gage data from two locations provides an approximation of inflow to the forebay. These gages are:

USGS gage for the Big Thompson River at the mouth at the mouth of the canyon (06738000).

USBR Dille tunnel diversions (State of Colorado - DILTUNCO).

The period of record applied in this analysis for the gaged flows was January 1, 2002 to September 30, 2009. Power generation data is available from 2002 – 2010. The inflow to the forebay was calculated as the combined flow of the Big Thompson River at the mouth plus the Dille Tunnel diversions (Table A-1, Appendix A). This is the same approach as used in 1992.

In addition to the above data, City of Loveland power generation data and turbine characteristics (personal communication to Miller Ecological Consultants, Inc from Larry Howard, City of Loveland) was used to determine the flow through the penstock.

Daily power generation data is available from 2002-2010. The turbine characteristics are 27.8 cfs per turbine at maximum power. Maximum power was determined from the graphed data for turbine discharge and efficiency. Maximum power at 325 feet net head is 880 HP and 27.8 cfs. Turbine efficiency at 325 feet net head and 880 HP is 84 percent. The horsepower was converted to energy (KW) by multiplying a conversion factor of 0.746 and the efficiency (0.84). This results in a maximum power for a single turbine of 551 KW at 27.8 cfs. The combined power and discharge for both turbines is 1102 KW at 55.6 cfs. The power output was assumed to decrease linearly with lower discharges. This information was obtained from the specifications for the turbines produced by the turbine manufacturer (James Leffel & Company, October 7, 1977).

Based on the turbine characteristics, a linear regression was calculated to relate power generated with penstock discharge. The regression for the power equation is:

$$Y = 0.050545 * \text{Power} + 0.0$$

Where:

Y = penstock flow (cfs)

Power = average daily power from turbine (KW)

For some days, the plant was operating only part of the day. Therefore, the computed average daily flows for those days may be lower than the actual flow through the turbines than the part of the day when the turbines were operating. The calculated daily penstock flows are presented in Table A-2, Appendix A.

Bypass flows were then calculated by subtracting the penstock flow from the inflow to the forebay using the following equation:

$$\text{Bypass} = \text{Inflow} - \text{Penstock}$$

Where:

Bypass = bypass flow in cfs

Inflow = Inflow to the forebay in cfs

Penstock = penstock flow in cfs

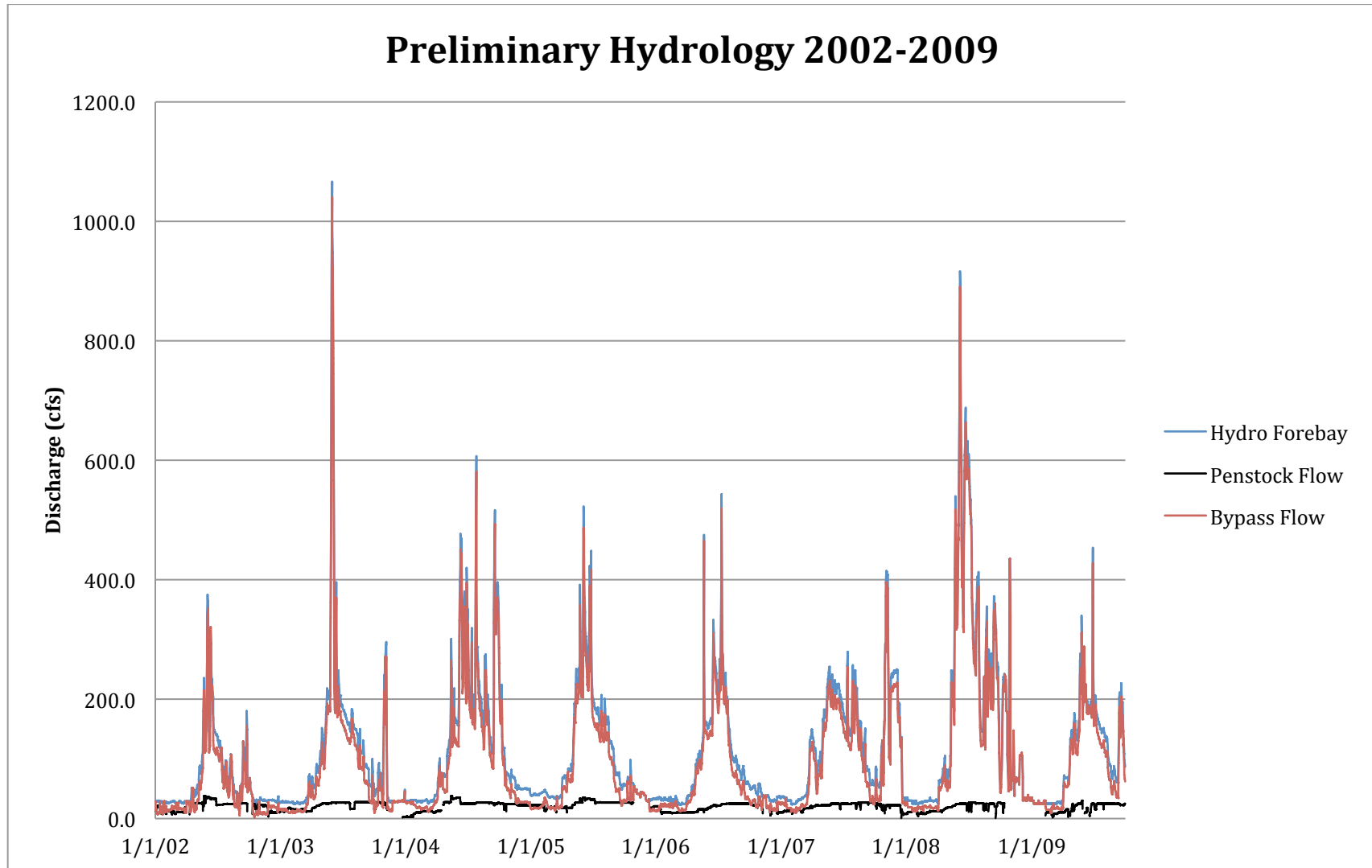
Bypass flows are presented in Table A-3, Appendix A.

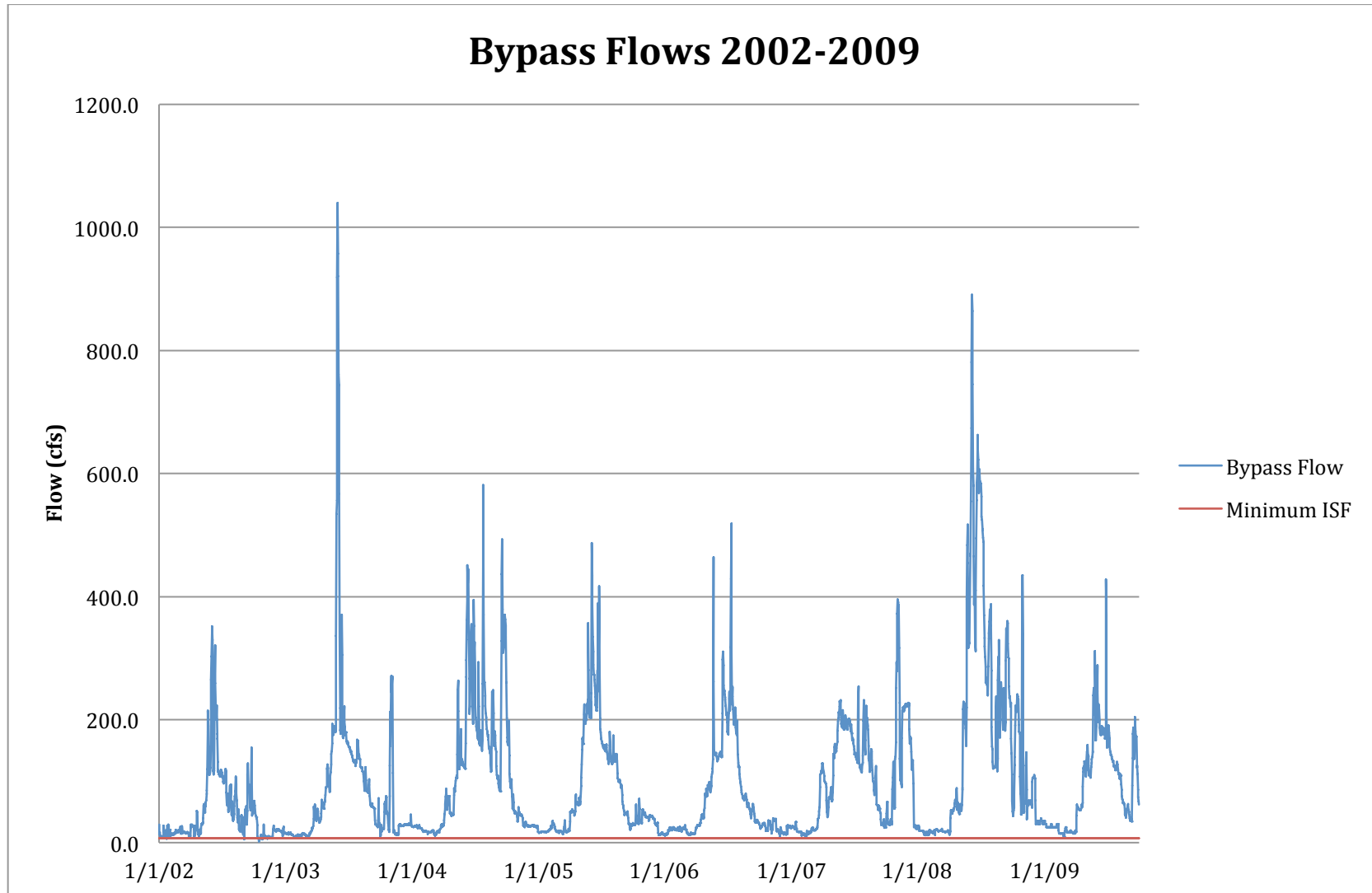
## Results:

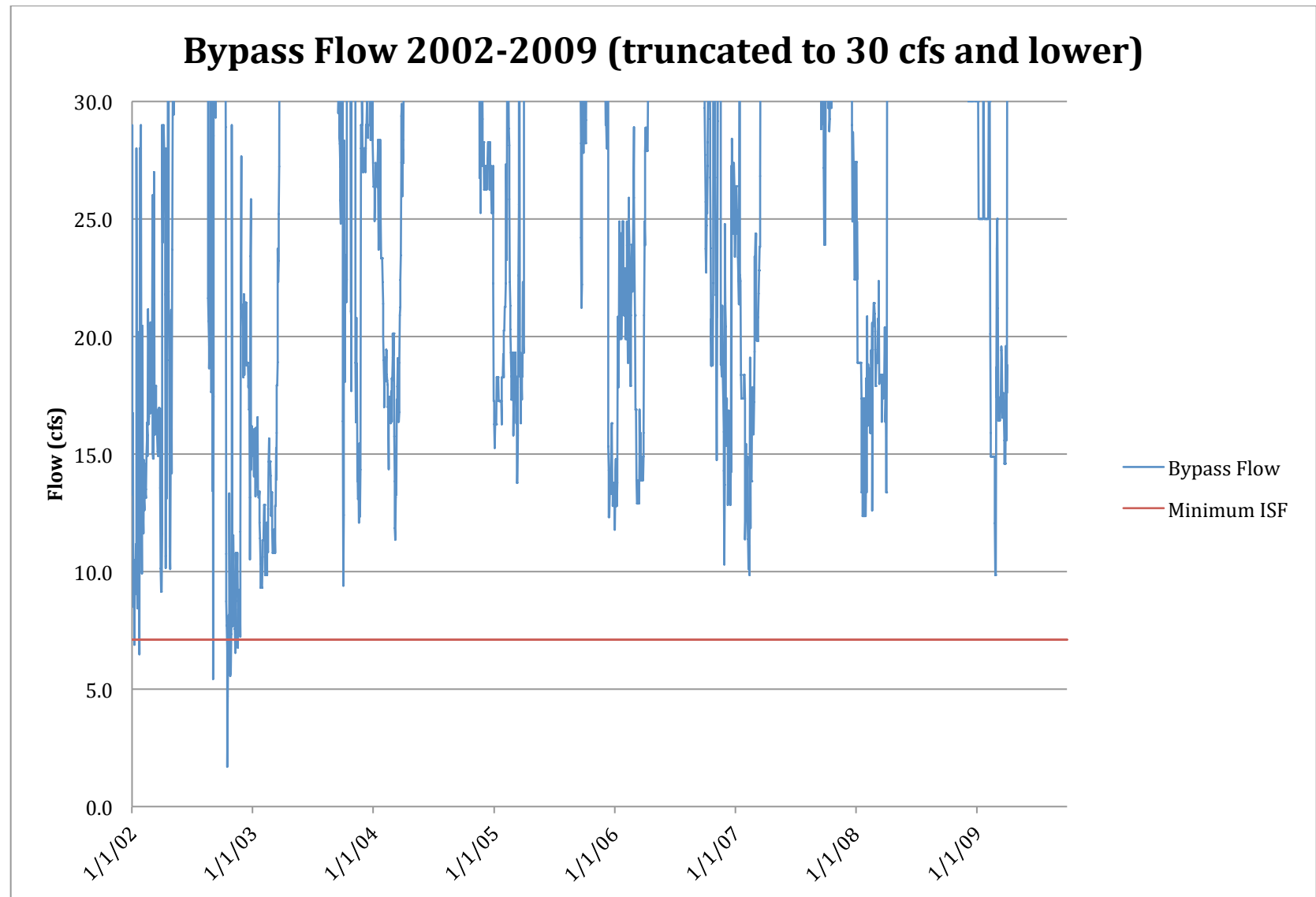
The minimum flow for the inflow and bypass generally occur in late fall and winter (Figure 1, Tables A-1 – A-3). Minimum inflows ranged from 23 cfs to 28 cfs. The lowest minimum, average and maximum flows occurred in 2002 during a severe drought (Table 1). Maximum flows in the bypass reach are similar to maximum inflows. Minimum flows in the bypass reach were greater than 7 cfs in all years except 2002 (Figure 2, Figure 3). Maximum diversion to the power plant was 38 cfs in 2002, however, the maximum flows in most years was approximately 26 cfs (Figure 4). Prior to 2006, winter operations included providing peaking power in the early evening to match increased demands. Beginning in 2006, the peaking operation was discontinued and a steady state operation during the winter was maintained (email, Pitts to Howard, Dec, 2010). Daily flows for each year are presented in the Appendix. Daily bypass flows for 2002 – 2009 typically follow the shape of a snowmelt hydrograph with peak flows in May or June and low flows in winter (Figure 1). Average daily flows for the inflow, penstock and bypass by year show a wide variability depending on water availability (Figures 2-4). Flows averaged for the 2002-2009 period show that penstock flows are generally less than 30 cfs. Flows in the bypass reach are greater than the minimum instream flow (Minimum ISF) (Figure 5).

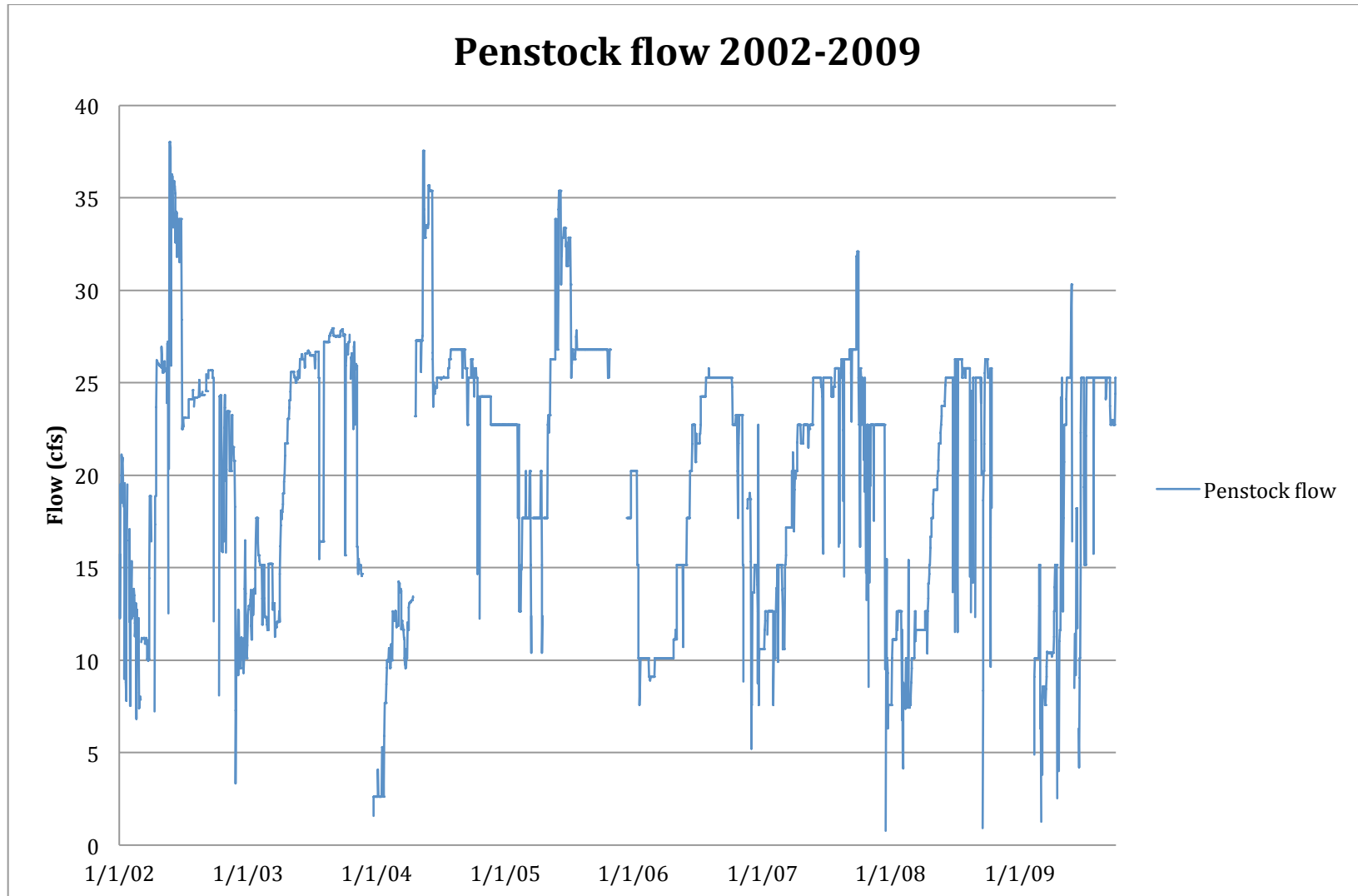
**Table 1. Summary of preliminary hydrology data for Idylwilde Dam and Power Plant 2002-2009.**

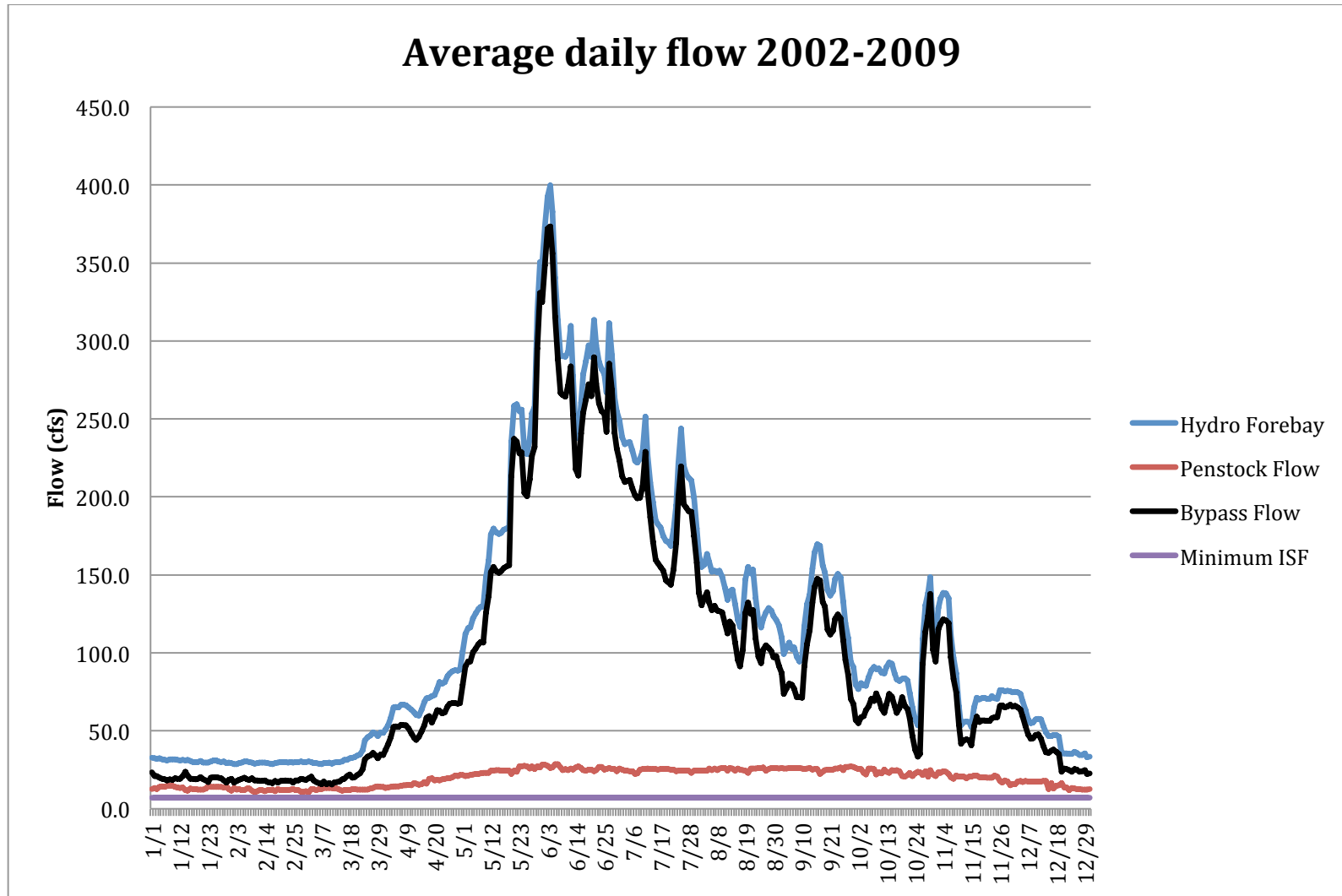
| Hydrology summary data 2002-2009 |         | 2002  | 2003   | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
|----------------------------------|---------|-------|--------|-------|-------|-------|-------|-------|-------|
| Inflow                           | Minimum | 23.0  | 24.0   | 25.0  | 28.0  | 23.0  | 23.0  | 25.0  | 25.0  |
|                                  | Average | 65.3  | 109.6  | 132.5 | 104.0 | 87.2  | 128.7 | 180.7 | 107.0 |
|                                  | Maximum | 375.0 | 1066.0 | 607.0 | 522.0 | 543.0 | 415.0 | 916.0 | 453.0 |
| Penstock                         | Minimum | 0.0   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
|                                  | Average | 16.6  | 19.0   | 21.0  | 20.6  | 16.7  | 20.2  | 13.5  | 14.8  |
|                                  | Maximum | 38.0  | 28.0   | 37.6  | 35.4  | 25.8  | 32.1  | 26.3  | 30.3  |
| Bypass                           | Minimum | 1.7   | 9.3    | 11.4  | 12.3  | 10.3  | 9.8   | 12.4  | 9.8   |
|                                  | Average | 48.7  | 90.6   | 111.5 | 83.4  | 70.5  | 108.5 | 167.2 | 92.2  |
|                                  | Maximum | 352.0 | 1039.7 | 581.2 | 486.6 | 518.7 | 395.6 | 890.7 | 427.7 |

**Figure 1. Average daily flows, Big Thompson forebay, penstock and in the Bypass reach 2002-2009.**

**Figure 2. Average daily bypass flows, 2002 – 2009.**

**Figure 3. Average daily bypass flows (truncated to 30 cfs and lower), 2002 – 2009.**

**Figure 4. Average daily penstock flows on days when power was generated, 2002 – 2009.**

**Figure 5. Average flows by day for the time period 2002-2009.**

**A) Appendix A – Daily flow data for Idylwilde Dam and  
Power Plant**

**Table A-1 Inflow to Dam**

**Table A-2 Penstock Flow**

**Table A-3 Bypass Flow**

**Table A-1. Inflow to Dam.**

| Date   | Table A-1 Inflow to Dam |      |      |      |      |      |      |      |
|--------|-------------------------|------|------|------|------|------|------|------|
|        | 2002                    | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 1-Jan  | 29.0                    | 28.0 | 29.0 | 39.0 | 32.0 | 36.0 | 35.0 | 35.0 |
| 2-Jan  | 29.0                    | 28.0 | 29.0 | 38.0 | 34.0 | 37.0 | 35.0 | 30.0 |
| 3-Jan  | 29.0                    | 28.0 | 29.0 | 39.0 | 35.0 | 37.0 | 30.0 | 30.0 |
| 4-Jan  | 28.0                    | 27.0 | 29.0 | 39.0 | 33.0 | 37.0 | 35.0 | 30.0 |
| 5-Jan  | 29.0                    | 27.0 | 29.0 | 39.0 | 33.0 | 36.0 | 30.0 | 30.0 |
| 6-Jan  | 29.0                    | 29.0 | 29.0 | 39.0 | 34.0 | 35.0 | 30.0 | 25.0 |
| 7-Jan  | 28.0                    | 28.0 | 29.0 | 39.0 | 33.0 | 37.0 | 30.0 | 25.0 |
| 8-Jan  | 28.0                    | 29.0 | 30.0 | 41.0 | 34.0 | 37.0 | 30.0 | 25.0 |
| 9-Jan  | 30.0                    | 27.0 | 29.0 | 41.0 | 35.0 | 36.0 | 30.0 | 25.0 |
| 10-Jan | 30.0                    | 28.0 | 29.0 | 41.0 | 36.0 | 35.0 | 30.0 | 25.0 |
| 11-Jan | 29.0                    | 27.0 | 29.0 | 41.0 | 35.0 | 34.0 | 30.0 | 25.0 |
| 12-Jan | 30.0                    | 27.0 | 29.0 | 41.0 | 33.0 | 34.0 | 30.0 | 25.0 |
| 13-Jan | 28.0                    | 27.0 | 30.0 | 41.0 | 35.0 | 34.0 | 30.0 | 25.0 |
| 14-Jan | 28.0                    | 27.0 | 30.0 | 40.0 | 35.0 | 34.0 | 30.0 | 25.0 |
| 15-Jan | 29.0                    | 28.0 | 31.0 | 40.0 | 33.0 | 34.0 | 30.0 | 25.0 |
| 16-Jan | 28.0                    | 29.0 | 29.0 | 40.0 | 30.0 | 35.0 | 30.0 | 25.0 |
| 17-Jan | 28.0                    | 27.0 | 29.0 | 40.0 | 31.0 | 31.0 | 30.0 | 25.0 |
| 18-Jan | 27.0                    | 27.0 | 31.0 | 40.0 | 33.0 | 31.0 | 25.0 | 25.0 |
| 19-Jan | 29.0                    | 27.0 | 31.0 | 40.0 | 33.0 | 30.0 | 25.0 | 25.0 |
| 20-Jan | 27.0                    | 27.0 | 30.0 | 40.0 | 32.0 | 30.0 | 30.0 | 30.0 |
| 21-Jan | 26.0                    | 27.0 | 30.0 | 40.0 | 30.0 | 30.0 | 25.0 | 30.0 |
| 22-Jan | 27.0                    | 27.0 | 31.0 | 40.0 | 33.0 | 30.0 | 25.0 | 25.0 |
| 23-Jan | 26.0                    | 28.0 | 31.0 | 39.0 | 34.0 | 30.0 | 25.0 | 25.0 |
| 24-Jan | 28.0                    | 28.0 | 31.0 | 41.0 | 35.0 | 30.0 | 25.0 | 25.0 |
| 25-Jan | 28.0                    | 27.0 | 31.0 | 41.0 | 35.0 | 30.0 | 30.0 | 25.0 |
| 26-Jan | 28.0                    | 27.0 | 31.0 | 41.0 | 35.0 | 30.0 | 30.0 | 25.0 |
| 27-Jan | 29.0                    | 27.0 | 31.0 | 41.0 | 33.0 | 31.0 | 25.0 | 25.0 |
| 28-Jan | 28.0                    | 27.0 | 31.0 | 42.0 | 31.0 | 31.0 | 25.0 | 25.0 |
| 29-Jan | 27.0                    | 27.0 | 31.0 | 41.0 | 31.0 | 30.0 | 30.0 | 25.0 |
| 30-Jan | 27.0                    | 27.0 | 31.0 | 43.0 | 33.0 | 24.0 | 25.0 | 25.0 |
| 31-Jan | 28.0                    | 27.0 | 30.0 | 43.0 | 33.0 | 25.0 | 25.0 | 25.0 |
| 1-Feb  | 28.0                    | 27.0 | 29.0 | 44.0 | 32.0 | 23.0 | 25.0 | 25.0 |
| 2-Feb  | 26.0                    | 27.0 | 28.0 | 44.0 | 30.0 | 24.0 | 25.0 | 25.0 |
| 3-Feb  | 26.0                    | 27.0 | 27.0 | 44.0 | 31.0 | 25.0 | 25.0 | 25.0 |
| 4-Feb  | 27.0                    | 28.0 | 29.0 | 45.0 | 32.0 | 24.0 | 25.0 | 25.0 |
| 5-Feb  | 27.0                    | 28.0 | 29.0 | 45.0 | 30.0 | 24.0 | 25.0 | 30.0 |
| 6-Feb  | 26.0                    | 28.0 | 29.0 | 45.0 | 34.0 | 25.0 | 25.0 | 30.0 |
| 7-Feb  | 26.0                    | 25.0 | 28.0 | 46.0 | 35.0 | 25.0 | 27.0 | 30.0 |

| Date      | Table A-1 Inflow to Dam |      |      |      |      |      |      |      |
|-----------|-------------------------|------|------|------|------|------|------|------|
|           | 2002                    | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 8-Feb     | 27.0                    | 25.0 | 29.0 | 47.0 | 31.0 | 24.0 | 27.0 | 30.0 |
| 9-Feb     | 27.0                    | 25.0 | 29.0 | 47.0 | 29.0 | 24.0 | 27.0 | 30.0 |
| 10-Feb    | 26.0                    | 25.0 | 29.0 | 48.0 | 29.0 | 24.0 | 26.0 | 25.0 |
| 11-Feb    | 27.0                    | 24.0 | 29.0 | 46.0 | 32.0 | 25.0 | 26.0 | 25.0 |
| 12-Feb    | 27.0                    | 24.0 | 29.0 | 45.0 | 36.0 | 25.0 | 26.0 | 25.0 |
| 13-Feb    | 27.0                    | 25.0 | 28.0 | 44.0 | 34.0 | 26.0 | 28.0 | 25.0 |
| 14-Feb    | 27.0                    | 26.0 | 27.0 | 44.0 | 33.0 | 29.0 | 26.0 | 25.0 |
| 15-Feb    | 28.0                    | 26.0 | 27.0 | 43.0 | 31.0 | 27.0 | 26.0 | 25.0 |
| 16-Feb    | 28.0                    | 26.0 | 27.0 | 41.0 | 29.0 | 29.0 | 27.0 | 25.0 |
| 17-Feb    | 28.0                    | 26.0 | 30.0 | 40.0 | 27.0 | 29.0 | 25.0 | 25.0 |
| 18-Feb    | 28.0                    | 27.0 | 30.0 | 39.0 | 27.0 | 29.0 | 28.0 | 25.0 |
| 19-Feb    | 28.0                    | 28.0 | 30.0 | 38.0 | 30.0 | 29.0 | 28.0 | 25.0 |
| 20-Feb    | 29.0                    | 27.0 | 29.0 | 37.0 | 32.0 | 32.0 | 28.0 | 25.0 |
| 21-Feb    | 28.0                    | 27.0 | 29.0 | 36.0 | 33.0 | 33.0 | 28.0 | 25.0 |
| 22-Feb    | 30.0                    | 27.0 | 29.0 | 35.0 | 33.0 | 33.0 | 28.0 | 25.0 |
| 23-Feb    | 29.0                    | 27.0 | 29.0 | 35.0 | 31.0 | 32.0 | 29.0 | 25.0 |
| 24-Feb    | 29.0                    | 26.0 | 30.0 | 35.0 | 32.0 | 33.0 | 29.0 | 25.0 |
| 25-Feb    | 29.0                    | 24.0 | 29.0 | 36.0 | 33.0 | 31.0 | 29.0 | 25.0 |
| 26-Feb    | 28.0                    | 24.0 | 30.0 | 37.0 | 35.0 | 31.0 | 29.0 | 25.0 |
| 27-Feb    | 27.0                    | 25.0 | 30.0 | 35.0 | 38.0 | 32.0 | 29.0 | 25.0 |
| 28-Feb    | 27.0                    | 25.0 | 31.0 | 36.0 | 35.0 | 34.0 | 29.0 | 25.0 |
| 2/29/2002 |                         |      | 32.0 |      |      |      | 28.0 |      |
| 1-Mar     | 26.0                    | 27.0 | 31.0 | 36.0 | 33.0 | 34.0 | 28.0 | 25.0 |
| 2-Mar     | 27.0                    | 26.0 | 32.0 | 37.0 | 31.0 | 35.0 | 29.0 | 25.0 |
| 3-Mar     | 26.0                    | 26.0 | 32.0 | 37.0 | 31.0 | 34.0 | 29.0 | 25.0 |
| 4-Mar     | 26.0                    | 26.0 | 30.0 | 37.0 | 27.0 | 35.0 | 29.0 | 25.0 |
| 5-Mar     | 26.0                    | 27.0 | 28.0 | 37.0 | 27.0 | 34.0 | 29.0 | 25.0 |
| 6-Mar     | 26.0                    | 27.0 | 26.0 | 36.0 | 27.0 | 35.0 | 30.0 | 25.0 |
| 7-Mar     | 26.0                    | 27.0 | 25.0 | 36.0 | 24.0 | 36.0 | 30.0 | 25.0 |
| 8-Mar     | 27.0                    | 27.0 | 27.0 | 35.0 | 24.0 | 36.0 | 32.0 | 25.0 |
| 9-Mar     | 27.0                    | 26.0 | 28.0 | 34.0 | 23.0 | 37.0 | 33.0 | 25.0 |
| 10-Mar    | 27.0                    | 28.0 | 28.0 | 35.0 | 23.0 | 37.0 | 35.0 | 25.0 |
| 11-Mar    | 28.0                    | 28.0 | 27.0 | 34.0 | 23.0 | 38.0 | 29.0 | 25.0 |
| 12-Mar    | 29.0                    | 28.0 | 29.0 | 34.0 | 23.0 | 39.0 | 30.0 | 25.0 |
| 13-Mar    | 29.0                    | 27.0 | 29.0 | 36.0 | 24.0 | 40.0 | 30.0 | 25.0 |
| 14-Mar    | 29.0                    | 29.0 | 30.0 | 33.0 | 23.0 | 40.0 | 30.0 | 25.0 |
| 15-Mar    | 27.0                    | 31.0 | 31.0 | 33.0 | 23.0 | 41.0 | 30.0 | 27.0 |
| 16-Mar    | 28.0                    | 31.0 | 29.0 | 38.0 | 25.0 | 41.0 | 30.0 | 28.0 |
| 17-Mar    | 27.0                    | 32.0 | 28.0 | 36.0 | 27.0 | 44.0 | 30.0 | 28.0 |

| Date   | Table A-1 Inflow to Dam |      |       |      |      |       |       |       |
|--------|-------------------------|------|-------|------|------|-------|-------|-------|
|        | 2002                    | 2003 | 2004  | 2005 | 2006 | 2007  | 2008  | 2009  |
| 18-Mar | 27.0                    | 35.0 | 28.0  | 35.0 | 24.0 | 53.0  | 30.0  | 27.0  |
| 19-Mar | 26.0                    | 34.0 | 28.0  | 36.0 | 26.0 | 56.0  | 28.0  | 27.0  |
| 20-Mar | 26.0                    | 35.0 | 30.0  | 36.0 | 24.0 | 57.0  | 29.0  | 27.0  |
| 21-Mar | 26.0                    | 37.0 | 31.0  | 37.0 | 24.0 | 62.0  | 29.0  | 27.0  |
| 22-Mar | 26.0                    | 39.0 | 31.0  | 34.0 | 25.0 | 68.0  | 29.0  | 28.0  |
| 23-Mar | 27.0                    | 51.0 | 32.0  | 35.0 | 24.0 | 75.0  | 30.0  | 27.0  |
| 24-Mar | 25.0                    | 71.0 | 33.0  | 36.0 | 24.0 | 107.0 | 29.0  | 26.0  |
| 25-Mar | 25.0                    | 62.0 | 37.0  | 35.0 | 24.0 | 128.0 | 30.0  | 25.0  |
| 26-Mar | 27.0                    | 62.0 | 40.0  | 36.0 | 25.0 | 132.0 | 30.0  | 25.0  |
| 27-Mar | 28.0                    | 74.0 | 40.0  | 36.0 | 24.0 | 134.0 | 32.0  | 25.0  |
| 28-Mar | 29.0                    | 60.0 | 39.0  | 40.0 | 25.0 | 137.0 | 32.0  | 25.0  |
| 29-Mar | 28.0                    | 51.0 | 38.0  | 38.0 | 26.0 | 135.0 | 29.0  | 28.0  |
| 30-Mar | 28.0                    | 49.0 | 40.0  | 37.0 | 31.0 | 149.0 | 28.0  | 30.0  |
| 31-Mar | 28.0                    | 48.0 | 39.0  | 37.0 | 34.0 | 149.0 | 29.0  | 26.0  |
| 1-Apr  | 28.0                    | 53.0 | 40.0  | 52.0 | 35.0 | 145.0 | 25.0  | 29.0  |
| 2-Apr  | 29.0                    | 63.0 | 45.0  | 68.0 | 34.0 | 137.0 | 25.0  | 28.0  |
| 3-Apr  | 24.0                    | 71.0 | 49.0  | 67.0 | 38.0 | 135.0 | 30.0  | 54.0  |
| 4-Apr  | 27.0                    | 68.0 | 60.0  | 69.0 | 39.0 | 135.0 | 51.0  | 72.0  |
| 5-Apr  | 28.0                    | 61.0 | 68.0  | 69.0 | 38.0 | 128.0 | 64.0  | 67.0  |
| 6-Apr  | 29.0                    | 58.0 | 76.0  | 67.0 | 38.0 | 121.0 | 64.0  | 68.0  |
| 7-Apr  | 28.0                    | 54.0 | 88.0  | 71.0 | 39.0 | 119.0 | 65.0  | 69.0  |
| 8-Apr  | 28.0                    | 51.0 | 94.0  | 72.0 | 39.0 | 117.0 | 63.0  | 69.0  |
| 9-Apr  | 27.0                    | 51.0 | 101.0 | 69.0 | 38.0 | 118.0 | 60.0  | 68.0  |
| 10-Apr | 25.0                    | 53.0 | 84.0  | 69.0 | 38.0 | 118.0 | 64.0  | 68.0  |
| 11-Apr | 29.0                    | 55.0 | 67.0  | 70.0 | 41.0 | 113.0 | 65.0  | 68.0  |
| 12-Apr | 28.0                    | 56.0 | 72.0  | 72.0 | 42.0 | 91.5  | 64.0  | 69.0  |
| 13-Apr | 29.0                    | 60.0 | 75.0  | 68.0 | 42.0 | 73.0  | 66.0  | 69.0  |
| 14-Apr | 28.0                    | 67.0 | 77.0  | 59.0 | 47.0 | 64.0  | 68.0  | 68.0  |
| 15-Apr | 32.0                    | 85.0 | 76.0  | 57.0 | 53.0 | 65.0  | 72.0  | 69.0  |
| 16-Apr | 48.0                    | 91.0 | 76.0  | 63.0 | 55.0 | 67.0  | 78.0  | 70.0  |
| 17-Apr | 52.0                    | 88.0 | 76.0  | 68.0 | 54.0 | 80.0  | 84.0  | 64.0  |
| 18-Apr | 48.0                    | 86.0 | 76.0  | 78.0 | 54.0 | 88.0  | 79.0  | 62.1  |
| 19-Apr | 49.0                    | 82.0 | 73.0  | 84.0 | 57.0 | 97.0  | 79.0  | 57.9  |
| 20-Apr | 52.0                    | 81.0 | 71.0  | 84.0 | 51.0 | 95.0  | 85.0  | 64.6  |
| 21-Apr | 50.0                    | 77.1 | 72.0  | 84.0 | 49.0 | 93.0  | 101.0 | 91.2  |
| 22-Apr | 48.0                    | 77.1 | 76.0  | 81.0 | 50.0 | 93.0  | 105.0 | 118.8 |
| 23-Apr | 45.0                    | 85.1 | 74.0  | 80.0 | 51.0 | 94.0  | 80.0  | 132.5 |
| 24-Apr | 39.0                    | 89.1 | 70.0  | 79.0 | 64.0 | 103.0 | 70.0  | 134.9 |
| 25-Apr | 37.0                    | 92.1 | 73.0  | 82.0 | 67.0 | 112.0 | 83.0  | 134.5 |

| Date   | Table A-1 Inflow to Dam |        |       |       |       |       |       |       |
|--------|-------------------------|--------|-------|-------|-------|-------|-------|-------|
|        | 2002                    | 2003   | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 26-Apr | 36.0                    | 100.1  | 72.0  | 79.0  | 89.0  | 99.0  | 77.0  | 143.8 |
| 27-Apr | 41.0                    | 113.1  | 72.0  | 79.0  | 91.0  | 90.0  | 71.0  | 148.2 |
| 28-Apr | 46.0                    | 112.1  | 73.0  | 91.0  | 85.0  | 93.0  | 67.0  | 144.2 |
| 29-Apr | 47.0                    | 114.0  | 72.0  | 86.0  | 91.0  | 91.0  | 64.0  | 142.1 |
| 30-Apr | 40.0                    | 115.0  | 73.0  | 85.0  | 99.0  | 104.0 | 65.0  | 133.0 |
| 1-May  | 43.0                    | 144.0  | 105.0 | 85.0  | 93.0  | 132.0 | 72.0  | 135.3 |
| 2-May  | 50.0                    | 152.0  | 116.0 | 98.0  | 87.0  | 167.0 | 82.0  | 145.3 |
| 3-May  | 56.0                    | 147.0  | 110.0 | 115.0 | 95.0  | 164.0 | 81.0  | 160.0 |
| 4-May  | 57.0                    | 121.0  | 110.9 | 129.0 | 109.0 | 160.0 | 74.0  | 168.1 |
| 5-May  | 57.0                    | 117.2  | 119.2 | 149.0 | 106.0 | 178.0 | 74.0  | 176.8 |
| 6-May  | 55.0                    | 125.1  | 128.0 | 174.0 | 103.0 | 183.0 | 71.0  | 163.6 |
| 7-May  | 58.2                    | 117.1  | 131.0 | 192.0 | 105.0 | 178.0 | 80.0  | 163.6 |
| 8-May  | 66.0                    | 108.1  | 132.0 | 194.0 | 114.0 | 169.0 | 105.0 | 148.0 |
| 9-May  | 86.0                    | 109.1  | 136.0 | 187.0 | 108.0 | 172.0 | 108.0 | 132.0 |
| 10-May | 89.0                    | 134.1  | 132.0 | 187.0 | 101.0 | 171.0 | 236.0 | 139.0 |
| 11-May | 86.0                    | 140.1  | 171.0 | 225.0 | 97.0  | 175.0 | 248.0 | 133.0 |
| 12-May | 75.0                    | 152.1  | 286.0 | 251.0 | 99.0  | 183.0 | 228.0 | 134.0 |
| 13-May | 75.0                    | 169.2  | 301.0 | 235.0 | 102.0 | 186.0 | 233.0 | 136.0 |
| 14-May | 86.0                    | 174.0  | 251.0 | 225.0 | 107.0 | 204.0 | 239.0 | 131.0 |
| 15-May | 85.0                    | 187.0  | 182.0 | 219.0 | 122.0 | 220.0 | 247.0 | 148.0 |
| 16-May | 89.0                    | 218.0  | 154.0 | 231.0 | 127.0 | 225.0 | 215.0 | 155.0 |
| 17-May | 96.0                    | 209.0  | 157.0 | 235.0 | 130.0 | 235.0 | 209.0 | 161.0 |
| 18-May | 105.9                   | 209.0  | 160.0 | 225.0 | 135.0 | 233.0 | 207.0 | 164.0 |
| 19-May | 112.0                   | 200.0  | 160.0 | 228.0 | 151.0 | 244.0 | 179.0 | 172.0 |
| 20-May | 132.2                   | 209.0  | 162.0 | 239.0 | 475.0 | 253.0 | 241.0 | 174.0 |
| 21-May | 180.0                   | 210.0  | 218.0 | 251.0 | 277.0 | 248.0 | 418.0 | 265.0 |
| 22-May | 235.0                   | 208.0  | 184.0 | 253.0 | 159.0 | 254.0 | 506.0 | 277.0 |
| 23-May | 228.0                   | 210.0  | 161.0 | 266.0 | 164.0 | 231.0 | 540.0 | 239.0 |
| 24-May | 182.2                   | 215.0  | 160.0 | 391.0 | 160.0 | 226.0 | 478.0 | 234.0 |
| 25-May | 156.0                   | 205.0  | 169.0 | 314.0 | 158.0 | 218.0 | 380.0 | 240.0 |
| 26-May | 148.0                   | 208.2  | 165.0 | 244.0 | 161.0 | 214.0 | 340.0 | 340.0 |
| 27-May | 147.0                   | 362.1  | 161.0 | 238.0 | 160.0 | 212.0 | 343.0 | 275.0 |
| 28-May | 148.0                   | 559.0  | 160.0 | 230.0 | 161.0 | 223.0 | 349.0 | 197.0 |
| 29-May | 158.0                   | 583.0  | 163.0 | 230.0 | 156.0 | 241.0 | 348.0 | 183.0 |
| 30-May | 193.0                   | 945.0  | 159.0 | 256.0 | 155.0 | 230.0 | 422.0 | 190.0 |
| 31-May | 265.0                   | 1066.0 | 157.0 | 260.0 | 150.0 | 216.0 | 494.0 | 196.0 |
| 1-Jun  | 339.0                   | 984.0  | 157.0 | 237.0 | 152.0 | 209.0 | 490.0 | 231.0 |
| 2-Jun  | 375.0                   | 947.0  | 156.0 | 278.0 | 152.0 | 209.0 | 579.0 | 288.0 |
| 3-Jun  | 352.0                   | 788.0  | 156.0 | 522.0 | 155.0 | 223.0 | 699.0 | 246.0 |

| Date   | Table A-1 Inflow to Dam |       |       |       |       |       |       |       |
|--------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
|        | 2002                    | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 4-Jun  | 365.0                   | 771.0 | 197.0 | 469.0 | 156.0 | 220.0 | 806.0 | 214.0 |
| 5-Jun  | 242.0                   | 593.0 | 305.0 | 421.0 | 158.0 | 220.0 | 916.0 | 207.0 |
| 6-Jun  | 153.0                   | 361.1 | 332.0 | 370.0 | 162.0 | 232.0 | 889.0 | 225.0 |
| 7-Jun  | 146.0                   | 245.1 | 397.0 | 346.0 | 162.0 | 224.0 | 770.0 | 216.0 |
| 8-Jun  | 152.0                   | 209.0 | 423.0 | 319.0 | 164.0 | 222.0 | 633.0 | 199.0 |
| 9-Jun  | 154.0                   | 203.0 | 477.0 | 305.0 | 168.0 | 212.0 | 606.0 | 196.0 |
| 10-Jun | 295.0                   | 208.0 | 446.0 | 305.0 | 167.0 | 210.0 | 491.0 | 196.0 |
| 11-Jun | 321.0                   | 274.0 | 469.0 | 298.0 | 165.0 | 209.0 | 412.0 | 197.0 |
| 12-Jun | 293.0                   | 396.0 | 464.0 | 288.0 | 159.0 | 225.0 | 459.0 | 193.0 |
| 13-Jun | 257.0                   | 332.0 | 355.0 | 270.0 | 159.0 | 225.0 | 438.0 | 187.0 |
| 14-Jun | 232.0                   | 235.3 | 291.0 | 257.0 | 162.0 | 218.0 | 347.0 | 188.0 |
| 15-Jun | 234.0                   | 198.2 | 234.0 | 255.0 | 232.0 | 219.0 | 337.0 | 190.0 |
| 16-Jun | 223.0                   | 196.2 | 246.0 | 248.0 | 320.0 | 226.0 | 435.0 | 188.0 |
| 17-Jun | 211.0                   | 216.1 | 299.0 | 248.0 | 333.0 | 220.0 | 520.0 | 183.0 |
| 18-Jun | 203.0                   | 234.0 | 303.0 | 253.0 | 311.0 | 225.0 | 582.0 | 185.0 |
| 19-Jun | 165.0                   | 248.0 | 363.0 | 314.0 | 278.0 | 214.0 | 609.0 | 186.0 |
| 20-Jun | 149.0                   | 224.0 | 380.0 | 279.0 | 269.0 | 205.0 | 626.0 | 186.0 |
| 21-Jun | 149.0                   | 215.0 | 363.0 | 423.0 | 270.0 | 204.0 | 688.0 | 196.0 |
| 22-Jun | 148.0                   | 201.0 | 330.0 | 371.0 | 264.0 | 208.0 | 665.0 | 191.0 |
| 23-Jun | 145.0                   | 202.0 | 314.0 | 327.0 | 259.0 | 203.0 | 648.0 | 197.0 |
| 24-Jun | 145.0                   | 206.0 | 252.0 | 393.0 | 253.0 | 203.0 | 608.0 | 194.0 |
| 25-Jun | 144.0                   | 206.0 | 218.0 | 448.0 | 243.0 | 192.0 | 582.0 | 197.0 |
| 26-Jun | 141.0                   | 191.0 | 246.0 | 306.0 | 233.0 | 195.0 | 621.0 | 204.0 |
| 27-Jun | 140.0                   | 189.0 | 420.0 | 233.0 | 230.0 | 195.0 | 632.0 | 453.0 |
| 28-Jun | 140.0                   | 188.0 | 378.0 | 216.0 | 232.0 | 192.0 | 587.0 | 395.0 |
| 29-Jun | 141.0                   | 191.0 | 334.0 | 212.0 | 217.0 | 187.0 | 586.0 | 241.0 |
| 30-Jun | 137.0                   | 189.0 | 351.0 | 202.0 | 202.0 | 182.0 | 596.0 | 180.0 |
| 1-Jul  | 137.0                   | 186.0 | 302.0 | 201.0 | 199.0 | 176.0 | 610.0 | 181.0 |
| 2-Jul  | 130.0                   | 183.0 | 248.0 | 198.0 | 198.0 | 169.0 | 589.0 | 192.0 |
| 3-Jul  | 132.0                   | 182.0 | 229.0 | 194.0 | 212.0 | 170.0 | 556.0 | 196.0 |
| 4-Jul  | 128.0                   | 182.0 | 221.0 | 193.0 | 233.0 | 171.0 | 551.0 | 200.0 |
| 5-Jul  | 122.0                   | 179.0 | 214.0 | 188.0 | 267.0 | 168.0 | 536.0 | 206.0 |
| 6-Jul  | 119.0                   | 178.0 | 208.0 | 184.0 | 256.0 | 164.0 | 534.0 | 194.0 |
| 7-Jul  | 128.0                   | 176.0 | 204.0 | 184.0 | 237.0 | 160.0 | 511.0 | 184.0 |
| 8-Jul  | 130.0                   | 173.0 | 198.0 | 182.0 | 249.0 | 166.0 | 500.0 | 178.0 |
| 9-Jul  | 122.0                   | 175.0 | 194.0 | 185.0 | 340.0 | 161.0 | 444.0 | 174.0 |
| 10-Jul | 118.0                   | 171.0 | 193.0 | 179.0 | 453.0 | 155.0 | 396.0 | 171.0 |
| 11-Jul | 119.0                   | 169.0 | 319.0 | 177.0 | 543.0 | 157.0 | 359.0 | 168.0 |
| 12-Jul | 119.0                   | 168.0 | 247.0 | 175.0 | 336.0 | 256.0 | 345.0 | 168.0 |

| Date   | Table A-1 Inflow to Dam |       |       |       |       |       |       |       |
|--------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
|        | 2002                    | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 13-Jul | 116.0                   | 166.0 | 186.0 | 185.0 | 249.0 | 279.0 | 328.0 | 165.0 |
| 14-Jul | 105.0                   | 162.0 | 189.0 | 175.0 | 277.0 | 191.0 | 312.0 | 163.0 |
| 15-Jul | 88.0                    | 160.0 | 183.0 | 186.0 | 262.0 | 154.0 | 286.0 | 160.0 |
| 16-Jul | 84.0                    | 159.0 | 194.0 | 181.0 | 241.0 | 151.0 | 293.0 | 158.0 |
| 17-Jul | 84.0                    | 157.0 | 208.0 | 173.0 | 225.0 | 146.0 | 294.0 | 157.0 |
| 18-Jul | 80.0                    | 159.0 | 187.0 | 167.0 | 217.0 | 148.0 | 284.0 | 158.0 |
| 19-Jul | 74.0                    | 158.0 | 182.0 | 163.0 | 216.0 | 147.0 | 282.0 | 151.0 |
| 20-Jul | 78.0                    | 161.0 | 183.0 | 162.0 | 222.0 | 144.0 | 268.0 | 149.0 |
| 21-Jul | 76.0                    | 156.0 | 175.0 | 157.0 | 232.0 | 139.0 | 265.0 | 150.0 |
| 22-Jul | 82.0                    | 150.0 | 192.0 | 156.0 | 244.0 | 141.0 | 312.0 | 151.0 |
| 23-Jul | 87.4                    | 148.0 | 284.0 | 163.0 | 231.0 | 139.0 | 358.0 | 147.0 |
| 24-Jul | 92.8                    | 145.0 | 476.0 | 185.0 | 212.0 | 152.0 | 366.0 | 143.0 |
| 25-Jul | 97.8                    | 151.0 | 607.0 | 207.0 | 203.0 | 154.0 | 385.0 | 145.0 |
| 26-Jul | 97.0                    | 153.0 | 397.0 | 189.0 | 203.0 | 167.0 | 405.0 | 147.0 |
| 27-Jul | 94.4                    | 184.0 | 289.0 | 177.0 | 200.0 | 224.0 | 400.0 | 146.0 |
| 28-Jul | 83.6                    | 172.0 | 287.0 | 167.0 | 198.0 | 257.0 | 387.0 | 146.0 |
| 29-Jul | 70.4                    | 182.0 | 287.0 | 163.0 | 186.0 | 237.0 | 413.0 | 147.0 |
| 30-Jul | 68.3                    | 176.0 | 265.0 | 158.0 | 169.0 | 228.0 | 378.0 | 152.0 |
| 31-Jul | 67.2                    | 161.0 | 249.0 | 155.0 | 155.0 | 200.0 | 305.0 | 144.0 |
| 1-Aug  | 64.4                    | 159.0 | 237.0 | 158.0 | 148.0 | 182.0 | 214.0 | 142.0 |
| 2-Aug  | 59.4                    | 157.0 | 230.0 | 155.0 | 151.0 | 169.0 | 182.0 | 136.0 |
| 3-Aug  | 56.0                    | 152.0 | 223.0 | 165.0 | 148.0 | 192.0 | 178.0 | 137.0 |
| 4-Aug  | 62.0                    | 152.0 | 211.0 | 201.0 | 137.0 | 248.0 | 157.0 | 139.0 |
| 5-Aug  | 71.0                    | 151.0 | 208.0 | 184.0 | 129.0 | 248.0 | 146.0 | 129.0 |
| 6-Aug  | 84.0                    | 150.0 | 204.0 | 169.0 | 124.0 | 202.0 | 147.0 | 137.0 |
| 7-Aug  | 100.0                   | 149.0 | 199.0 | 163.0 | 122.0 | 203.0 | 149.0 | 137.0 |
| 8-Aug  | 101.0                   | 148.0 | 202.0 | 159.0 | 116.0 | 205.0 | 149.0 | 134.0 |
| 9-Aug  | 108.0                   | 150.0 | 194.0 | 158.0 | 110.0 | 219.0 | 148.0 | 134.0 |
| 10-Aug | 107.0                   | 149.0 | 180.0 | 171.0 | 107.0 | 209.0 | 148.0 | 120.0 |
| 11-Aug | 95.0                    | 143.0 | 182.0 | 168.0 | 104.0 | 182.0 | 149.0 | 111.0 |
| 12-Aug | 79.8                    | 143.0 | 179.0 | 160.0 | 102.0 | 162.0 | 145.0 | 101.0 |
| 13-Aug | 69.0                    | 141.0 | 173.0 | 161.0 | 98.0  | 159.0 | 220.0 | 96.0  |
| 14-Aug | 69.0                    | 139.0 | 168.0 | 171.0 | 97.0  | 147.0 | 238.0 | 95.0  |
| 15-Aug | 65.0                    | 127.0 | 154.0 | 160.0 | 101.0 | 141.0 | 210.0 | 90.0  |
| 16-Aug | 58.0                    | 114.0 | 142.0 | 139.0 | 97.0  | 152.0 | 178.0 | 90.0  |
| 17-Aug | 57.0                    | 111.0 | 144.0 | 132.0 | 94.0  | 164.0 | 139.0 | 91.0  |
| 18-Aug | 54.0                    | 117.0 | 181.0 | 130.0 | 95.0  | 161.0 | 161.0 | 88.0  |
| 19-Aug | 46.0                    | 116.0 | 272.0 | 129.0 | 95.0  | 152.0 | 278.0 | 88.0  |
| 20-Aug | 45.0                    | 150.0 | 266.0 | 126.0 | 98.0  | 163.0 | 316.0 | 78.0  |

| Date   | Table A-1 Inflow to Dam |       |       |       |       |       |       |       |
|--------|-------------------------|-------|-------|-------|-------|-------|-------|-------|
|        | 2002                    | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 21-Aug | 44.0                    | 129.0 | 254.0 | 129.0 | 105.0 | 160.0 | 315.0 | 71.1  |
| 22-Aug | 43.0                    | 111.0 | 275.0 | 127.0 | 103.0 | 144.0 | 355.0 | 68.8  |
| 23-Aug | 44.0                    | 111.0 | 237.0 | 129.0 | 99.0  | 131.0 | 261.0 | 66.8  |
| 24-Aug | 46.0                    | 112.0 | 206.0 | 124.0 | 95.0  | 127.0 | 188.0 | 66.0  |
| 25-Aug | 45.0                    | 114.0 | 192.0 | 121.0 | 89.0  | 125.0 | 171.0 | 73.2  |
| 26-Aug | 43.0                    | 112.0 | 184.0 | 116.0 | 83.0  | 123.0 | 234.0 | 79.0  |
| 27-Aug | 45.0                    | 112.0 | 208.0 | 120.0 | 83.0  | 111.0 | 249.0 | 80.0  |
| 28-Aug | 42.0                    | 109.0 | 201.0 | 121.0 | 87.0  | 104.0 | 283.0 | 83.0  |
| 29-Aug | 42.0                    | 115.0 | 189.0 | 117.0 | 90.0  | 108.0 | 266.0 | 87.8  |
| 30-Aug | 42.0                    | 131.0 | 179.0 | 104.0 | 88.0  | 109.0 | 250.0 | 84.0  |
| 31-Aug | 41.0                    | 122.0 | 174.0 | 94.0  | 85.0  | 107.0 | 266.0 | 79.0  |
| 1-Sep  | 38.0                    | 103.0 | 150.0 | 89.0  | 80.0  | 134.0 | 271.0 | 75.0  |
| 2-Sep  | 37.0                    | 92.0  | 137.0 | 87.0  | 80.0  | 151.0 | 225.0 | 70.0  |
| 3-Sep  | 30.0                    | 89.0  | 133.0 | 84.0  | 78.0  | 105.0 | 209.0 | 67.0  |
| 4-Sep  | 42.0                    | 90.0  | 131.0 | 79.0  | 75.0  | 88.0  | 254.0 | 65.0  |
| 5-Sep  | 54.0                    | 87.0  | 136.0 | 77.0  | 72.0  | 88.0  | 277.0 | 61.0  |
| 6-Sep  | 54.0                    | 86.0  | 129.0 | 72.0  | 65.0  | 88.0  | 265.0 | 61.0  |
| 7-Sep  | 54.0                    | 89.0  | 123.0 | 76.3  | 71.0  | 87.9  | 259.0 | 66.0  |
| 8-Sep  | 55.0                    | 91.0  | 117.0 | 75.8  | 75.0  | 80.0  | 221.0 | 65.0  |
| 9-Sep  | 59.0                    | 86.0  | 112.0 | 75.4  | 77.0  | 80.0  | 207.0 | 60.0  |
| 10-Sep | 59.0                    | 85.0  | 111.0 | 74.0  | 83.0  | 83.0  | 221.0 | 60.0  |
| 11-Sep | 55.0                    | 85.0  | 111.0 | 76.3  | 88.0  | 82.0  | 321.0 | 118.0 |
| 12-Sep | 77.0                    | 84.0  | 109.0 | 75.4  | 88.0  | 82.0  | 372.0 | 163.0 |
| 13-Sep | 111.0                   | 84.0  | 109.0 | 71.7  | 82.0  | 82.3  | 358.0 | 202.0 |
| 14-Sep | 129.0                   | 83.0  | 225.3 | 71.4  | 81.0  | 75.8  | 356.0 | 211.0 |
| 15-Sep | 120.0                   | 83.0  | 350.2 | 77.3  | 73.0  | 74.3  | 360.0 | 178.0 |
| 16-Sep | 119.0                   | 64.0  | 459.1 | 67.3  | 68.1  | 64.5  | 357.0 | 158.0 |
| 17-Sep | 118.0                   | 57.0  | 516.0 | 59.0  | 59.6  | 55.6  | 324.0 | 160.0 |
| 18-Sep | 107.0                   | 58.0  | 404.0 | 57.0  | 58.0  | 56.7  | 309.0 | 199.0 |
| 19-Sep | 87.0                    | 57.0  | 352.0 | 58.0  | 58.0  | 55.8  | 318.0 | 227.0 |
| 20-Sep | 83.0                    | 56.0  | 334.0 | 55.0  | 58.0  | 56.6  | 274.0 | 204.0 |
| 21-Sep | 82.0                    | 56.0  | 343.0 | 51.0  | 58.0  | 57.0  | 255.0 | 193.0 |
| 22-Sep | 78.0                    | 55.0  | 363.0 | 48.0  | 59.0  | 59.0  | 259.0 | 194.0 |
| 23-Sep | 120.0                   | 53.6  | 379.0 | 49.0  | 62.0  | 60.0  | 261.0 | 195.0 |
| 24-Sep | 180.0                   | 52.6  | 394.0 | 56.7  | 62.0  | 65.0  | 248.0 | 145.0 |
| 25-Sep | 149.0                   | 64.5  | 396.0 | 57.2  | 60.0  | 59.0  | 254.0 | 148.0 |
| 26-Sep | 73.0                    | 100.1 | 389.0 | 56.4  | 59.0  | 56.0  | 195.0 | 134.0 |
| 27-Sep | 44.0                    | 78.0  | 379.0 | 57.3  | 58.0  | 56.0  | 171.0 | 109.0 |
| 28-Sep | 53.0                    | 58.0  | 361.0 | 54.6  | 58.0  | 57.0  | 137.0 | 98.0  |

| Date   | Table A-1 Inflow to Dam |       |       |      |      |       |       |      |
|--------|-------------------------|-------|-------|------|------|-------|-------|------|
|        | 2002                    | 2003  | 2004  | 2005 | 2006 | 2007  | 2008  | 2009 |
| 29-Sep | 51.0                    | 58.0  | 287.0 | 59.0 | 56.0 | 57.0  | 94.0  | 92.0 |
| 30-Sep | 48.0                    | 59.0  | 286.0 | 58.0 | 55.0 | 56.0  | 77.0  | 87.0 |
| 1-Oct  | 48.0                    | 44.0  | 228.0 | 57.0 | 53.0 | 56.0  | 70.0  |      |
| 2-Oct  | 59.0                    | 37.0  | 196.0 | 57.0 | 51.0 | 70.0  | 68.0  |      |
| 3-Oct  | 68.0                    | 40.0  | 189.0 | 55.0 | 49.0 | 84.0  | 78.0  |      |
| 4-Oct  | 60.0                    | 39.0  | 183.0 | 55.0 | 48.0 | 87.0  | 82.0  |      |
| 5-Oct  | 49.0                    | 44.0  | 191.0 | 55.0 | 50.0 | 82.0  | 81.0  |      |
| 6-Oct  | 47.0                    | 44.0  | 201.0 | 56.0 | 51.0 | 65.0  | 126.0 |      |
| 7-Oct  | 44.0                    | 49.0  | 224.0 | 59.0 | 50.0 | 57.0  | 139.0 |      |
| 8-Oct  | 41.0                    | 49.0  | 167.0 | 59.0 | 50.0 | 56.0  | 216.0 |      |
| 9-Oct  | 41.0                    | 49.0  | 137.0 | 62.0 | 51.0 | 55.0  | 233.0 |      |
| 10-Oct | 39.0                    | 50.0  | 125.0 | 70.0 | 54.0 | 55.0  | 237.0 |      |
| 11-Oct | 37.0                    | 48.0  | 118.0 | 60.0 | 54.0 | 55.0  | 238.0 |      |
| 12-Oct | 35.0                    | 49.0  | 115.0 | 61.0 | 54.0 | 54.0  | 239.0 |      |
| 13-Oct | 33.0                    | 77.0  | 117.0 | 60.0 | 55.0 | 52.0  | 242.0 |      |
| 14-Oct | 32.0                    | 90.0  | 118.0 | 58.0 | 55.0 | 61.0  | 241.0 |      |
| 15-Oct | 31.0                    | 93.0  | 118.0 | 57.7 | 55.0 | 58.0  | 238.0 |      |
| 16-Oct | 26.0                    | 81.0  | 99.0  | 58.1 | 52.0 | 57.0  | 234.0 |      |
| 17-Oct | 29.0                    | 75.0  | 80.0  | 57.0 | 50.0 | 56.0  | 233.0 |      |
| 18-Oct | 28.0                    | 76.0  | 79.0  | 97.9 | 47.0 | 55.0  | 191.0 |      |
| 19-Oct | 24.0                    | 74.0  | 78.0  | 80.3 | 42.0 | 106.0 | 180.0 |      |
| 20-Oct | 24.0                    | 77.0  | 78.0  | 62.6 | 44.0 | 121.0 | 179.0 |      |
| 21-Oct | 24.0                    | 76.0  | 77.0  | 60.4 | 42.0 | 120.0 | 177.0 |      |
| 22-Oct | 32.0                    | 73.0  | 77.0  | 60.1 | 41.0 | 131.0 | 107.0 |      |
| 23-Oct | 28.0                    | 72.0  | 72.0  | 59.7 | 39.0 | 103.0 | 80.0  |      |
| 24-Oct | 23.0                    | 58.3  | 76.0  | 59.0 | 39.0 | 86.0  | 60.1  |      |
| 25-Oct | 26.0                    | 47.4  | 75.0  | 59.4 | 44.0 | 78.0  | 46.0  |      |
| 26-Oct | 29.0                    | 46.4  | 74.0  | 57.9 | 59.0 | 76.0  | 46.0  |      |
| 27-Oct | 30.0                    | 40.2  | 72.0  | 53.3 | 57.0 | 149.0 | 358.0 |      |
| 28-Oct | 31.0                    | 101.1 | 72.0  | 53.4 | 59.0 | 163.0 | 434.0 |      |
| 29-Oct | 28.0                    | 152.1 | 71.0  | 54.0 | 58.0 | 172.0 | 435.0 |      |
| 30-Oct | 29.0                    | 240.1 | 69.0  | 52.0 | 59.0 | 251.0 | 339.0 |      |
| 31-Oct | 26.0                    | 181.1 | 66.0  | 49.0 | 56.0 | 293.0 | 132.0 |      |
| 1-Nov  | 28.0                    | 240.1 | 59.0  | 48.0 | 50.0 | 293.0 | 48.0  |      |
| 2-Nov  | 35.0                    | 271.0 | 59.0  | 45.0 | 45.0 | 395.0 | 50.0  |      |
| 3-Nov  | 35.0                    | 270.0 | 72.0  | 46.0 | 45.0 | 415.0 | 63.0  |      |
| 4-Nov  | 33.0                    | 282.0 | 82.0  | 49.0 | 42.0 | 414.0 | 67.0  |      |
| 5-Nov  | 33.0                    | 296.0 | 75.0  | 44.0 | 38.0 | 413.0 | 67.0  |      |
| 6-Nov  | 32.0                    | 292.0 | 73.0  | 41.0 | 37.0 | 407.0 | 64.0  |      |

| Date   | Table A-1 Inflow to Dam |       |      |      |      |       |       |      |
|--------|-------------------------|-------|------|------|------|-------|-------|------|
|        | 2002                    | 2003  | 2004 | 2005 | 2006 | 2007  | 2008  | 2009 |
| 7-Nov  | 31.0                    | 129.9 | 71.0 | 41.0 | 36.0 | 409.0 | 65.0  |      |
| 8-Nov  | 31.0                    | 35.0  | 70.0 | 41.0 | 38.0 | 339.0 | 125.0 |      |
| 9-Nov  | 30.0                    | 31.0  | 69.0 | 41.0 | 40.0 | 250.0 | 147.0 |      |
| 10-Nov | 30.0                    | 36.0  | 68.0 | 41.0 | 39.0 | 159.0 | 86.0  |      |
| 11-Nov | 31.0                    | 32.0  | 70.0 | 41.0 | 37.0 | 125.0 | 38.0  |      |
| 12-Nov | 30.0                    | 34.0  | 70.0 | 42.0 | 35.0 | 122.0 | 56.0  |      |
| 13-Nov | 32.0                    | 29.0  | 69.0 | 41.0 | 35.0 | 119.0 | 66.0  |      |
| 14-Nov | 30.0                    | 30.0  | 67.0 | 41.0 | 37.0 | 118.0 | 66.0  |      |
| 15-Nov | 31.0                    | 28.0  | 65.0 | 35.0 | 35.0 | 113.0 | 60.0  |      |
| 16-Nov | 32.0                    | 28.0  | 63.0 | 36.0 | 35.0 | 193.0 | 69.0  |      |
| 17-Nov | 30.0                    | 30.0  | 52.0 | 45.0 | 39.0 | 237.0 | 66.0  |      |
| 18-Nov | 30.0                    | 27.0  | 51.0 | 42.0 | 37.0 | 239.0 | 65.0  |      |
| 19-Nov | 29.0                    | 28.0  | 51.0 | 44.0 | 37.0 | 242.0 | 66.0  |      |
| 20-Nov | 29.0                    | 30.0  | 51.0 | 44.0 | 37.0 | 243.0 | 65.0  |      |
| 21-Nov | 29.0                    | 28.0  | 48.0 | 43.0 | 39.0 | 244.0 | 63.0  |      |
| 22-Nov | 30.0                    | 27.0  | 54.0 | 42.0 | 40.0 | 236.0 | 65.0  |      |
| 23-Nov | 30.0                    | 29.0  | 56.0 | 44.0 | 38.0 | 239.0 | 69.0  |      |
| 24-Nov | 28.0                    | 28.0  | 56.0 | 42.0 | 37.0 | 242.0 | 62.0  |      |
| 25-Nov | 30.0                    | 29.0  | 55.0 | 43.0 | 36.0 | 244.0 | 57.0  |      |
| 26-Nov | 29.0                    | 29.0  | 52.0 | 41.0 | 35.0 | 248.0 | 99.0  |      |
| 27-Nov | 31.0                    | 29.0  | 50.0 | 39.0 | 33.0 | 244.0 | 106.0 |      |
| 28-Nov | 30.0                    | 30.0  | 50.0 | 39.0 | 29.0 | 244.0 | 106.0 |      |
| 29-Nov | 31.0                    | 28.0  | 51.0 | 39.0 | 29.0 | 245.0 | 106.0 |      |
| 30-Nov | 31.0                    | 27.0  | 51.0 | 39.0 | 30.0 | 244.0 | 106.0 |      |
| 1-Dec  | 31.0                    | 27.0  | 49.0 | 37.0 | 29.0 | 246.0 | 105.0 |      |
| 2-Dec  | 31.0                    | 28.0  | 49.0 | 32.0 | 28.0 | 248.0 | 110.0 |      |
| 3-Dec  | 31.0                    | 28.0  | 50.0 | 31.0 | 29.0 | 250.0 | 105.0 |      |
| 4-Dec  | 31.0                    | 28.0  | 50.0 | 29.0 | 29.0 | 244.0 | 105.0 |      |
| 5-Dec  | 31.0                    | 28.0  | 50.0 | 29.0 | 31.0 | 244.0 | 69.0  |      |
| 6-Dec  | 31.0                    | 28.0  | 49.0 | 29.0 | 29.0 | 249.0 | 30.0  |      |
| 7-Dec  | 30.0                    | 28.0  | 50.0 | 28.0 | 29.0 | 207.0 | 30.0  |      |
| 8-Dec  | 32.0                    | 27.0  | 50.0 | 28.0 | 29.0 | 184.0 | 35.0  |      |
| 9-Dec  | 31.0                    | 29.0  | 49.0 | 31.0 | 28.0 | 184.0 | 35.0  |      |
| 10-Dec | 31.0                    | 29.0  | 50.0 | 32.0 | 30.0 | 195.0 | 35.0  |      |
| 11-Dec | 31.0                    | 29.0  | 50.0 | 33.0 | 32.0 | 193.0 | 35.0  |      |
| 12-Dec | 31.0                    | 30.0  | 50.0 | 33.0 | 32.0 | 191.0 | 35.0  |      |
| 13-Dec | 30.0                    | 29.0  | 51.0 | 32.0 | 31.0 | 170.0 | 30.0  |      |
| 14-Dec | 29.0                    | 29.0  | 50.0 | 30.0 | 31.0 | 144.0 | 30.0  |      |
| 15-Dec | 29.0                    | 29.0  | 51.0 | 30.0 | 29.0 | 128.0 | 30.0  |      |

| <b>Date</b> | <b>Table A-1 Inflow to Dam</b> |             |             |             |             |             |             |             |
|-------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|             | <b>2002</b>                    | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
| 16-Dec      | 29.0                           | 29.0        | 50.0        | 31.0        | 28.0        | 130.0       | 30.0        |             |
| 17-Dec      | 29.0                           | 29.0        | 50.0        | 32.0        | 27.0        | 135.0       | 30.0        |             |
| 18-Dec      | 28.0                           | 29.0        | 49.0        | 31.0        | 27.0        | 136.0       | 30.0        |             |
| 19-Dec      | 29.0                           | 29.0        | 51.0        | 31.0        | 36.0        | 112.0       | 35.0        |             |
| 20-Dec      | 28.0                           | 29.0        | 49.0        | 32.0        | 37.0        | 39.1        | 35.0        |             |
| 21-Dec      | 27.0                           | 29.0        | 49.0        | 33.0        | 36.0        | 35.0        | 40.0        |             |
| 22-Dec      | 27.0                           | 31.0        | 50.0        | 34.0        | 36.0        | 35.0        | 35.0        |             |
| 23-Dec      | 27.0                           | 31.0        | 49.0        | 34.0        | 36.0        | 35.0        | 35.0        |             |
| 24-Dec      | 27.0                           | 31.0        | 48.0        | 34.0        | 36.0        | 35.0        | 35.0        |             |
| 25-Dec      | 37.0                           | 31.0        | 48.0        | 34.0        | 35.0        | 35.0        | 35.0        |             |
| 26-Dec      | 37.0                           | 31.0        | 48.0        | 33.0        | 38.0        | 35.0        | 30.0        |             |
| 27-Dec      | 26.0                           | 31.0        | 48.0        | 34.0        | 38.0        | 30.0        | 35.0        |             |
| 28-Dec      | 26.0                           | 31.0        | 50.0        | 33.0        | 37.0        | 30.0        | 35.0        |             |
| 29-Dec      | 26.0                           | 48.0        | 45.0        | 33.0        | 36.0        | 30.0        | 30.0        |             |
| 30-Dec      | 27.0                           | 31.0        | 40.0        | 34.0        | 34.0        | 30.0        | 35.0        |             |
| 31-Dec      | 27.0                           | 30.0        | 40.0        | 33.0        | 35.0        | 35.0        | 35.0        |             |
| Minimum     | 23.0                           | 24.0        | 25.0        | 28.0        | 23.0        | 23.0        | 25.0        | 25.0        |
| Average     | 65.3                           | 109.6       | 132.5       | 104.0       | 87.2        | 128.7       | 180.7       | 107.0       |
| Maximum     | 375.0                          | 1066.0      | 607.0       | 522.0       | 543.0       | 415.0       | 916.0       | 453.0       |

**Table A-2 Penstock Flows.**

| <b>Date</b> | <b>Table A-2 Penstock flow s</b> |             |             |             |             |             |             |             |
|-------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|             | <b>2002</b>                      | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
| 1-Jan       | 0.0                              | 12.4        | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |
| 2-Jan       | 15.7                             | 12.7        | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |
| 3-Jan       | 12.3                             | 12.9        | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |
| 4-Jan       | 19.5                             | 12.9        | 2.6         | 22.7        | 20.2        | 10.6        | 10.1        | 0.0         |
| 5-Jan       | 18.5                             | 12.9        | 4.1         | 22.7        | 20.2        | 10.6        | 11.1        | 0.0         |
| 6-Jan       | 18.5                             | 12.9        | 2.6         | 22.7        | 20.2        | 10.6        | 11.1        | 0.0         |
| 7-Jan       | 21.1                             | 12.9        | 2.6         | 22.7        | 20.2        | 11.6        | 11.1        | 0.0         |
| 8-Jan       | 20.3                             | 13.3        | 2.6         | 22.7        | 20.2        | 12.1        | 11.1        | 0.0         |
| 9-Jan       | 20.6                             | 13.8        | 2.6         | 22.7        | 20.2        | 12.6        | 11.1        | 0.0         |
| 10-Jan      | 21.0                             | 11.9        | 2.6         | 22.7        | 15.2        | 12.6        | 11.1        | 0.0         |
| 11-Jan      | 19.5                             | 11.1        | 2.6         | 22.7        | 15.2        | 12.6        | 11.1        | 0.0         |
| 12-Jan      | 18.8                             | 11.1        | 2.6         | 22.7        | 15.2        | 12.6        | 11.1        | 0.0         |
| 13-Jan      | 18.3                             | 12.0        | 2.6         | 22.7        | 15.2        | 0.0         | 11.1        | 0.0         |
| 14-Jan      | 0.0                              | 13.4        | 2.6         | 22.7        | 10.1        | 0.0         | 11.1        | 0.0         |
| 15-Jan      | 9.0                              | 13.8        | 2.6         | 22.7        | 10.1        | 11.4        | 11.1        | 0.0         |
| 16-Jan      | 19.6                             | 12.4        | 2.7         | 22.7        | 10.1        | 12.6        | 11.1        | 0.0         |
| 17-Jan      | 12.9                             | 13.7        | 5.3         | 22.7        | 7.6         | 12.6        | 12.6        | 0.0         |
| 18-Jan      | 13.1                             | 13.7        | 5.3         | 22.7        | 8.6         | 12.6        | 11.6        | 0.0         |
| 19-Jan      | 8.8                              | 13.8        | 5.3         | 22.7        | 10.1        | 12.6        | 11.6        | 0.0         |
| 20-Jan      | 7.8                              | 13.8        | 5.3         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 21-Jan      | 12.7                             | 13.6        | 2.6         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 22-Jan      | 16.5                             | 14.9        | 2.6         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 23-Jan      | 19.5                             | 16.6        | 5.9         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 24-Jan      | 0.0                              | 17.7        | 7.7         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 25-Jan      | 0.0                              | 17.7        | 7.7         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 26-Jan      | 0.0                              | 17.7        | 7.7         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 27-Jan      | 0.0                              | 17.7        | 7.7         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 28-Jan      | 0.0                              | 17.7        | 7.7         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 29-Jan      | 12.1                             | 17.7        | 8.7         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 30-Jan      | 17.1                             | 16.4        | 9.6         | 22.7        | 10.1        | 12.6        | 12.6        | 0.0         |
| 31-Jan      | 7.6                              | 15.7        | 10.0        | 22.7        | 10.1        | 12.6        | 10.0        | 0.0         |
| 1-Feb       | 7.5                              | 15.7        | 10.0        | 22.7        | 10.1        | 7.6         | 6.8         | 0.0         |
| 2-Feb       | 14.2                             | 15.7        | 10.0        | 22.7        | 10.1        | 10.1        | 11.6        | 0.0         |
| 3-Feb       | 13.3                             | 15.4        | 10.0        | 22.7        | 10.1        | 10.1        | 5.1         | 0.0         |
| 4-Feb       | 15.4                             | 15.2        | 10.0        | 22.7        | 10.1        | 10.1        | 4.1         | 0.0         |
| 5-Feb       | 12.3                             | 15.2        | 10.7        | 17.7        | 10.1        | 10.1        | 8.8         | 0.0         |
| 6-Feb       | 13.0                             | 15.2        | 9.9         | 17.7        | 10.1        | 10.1        | 7.6         | 0.0         |
| 7-Feb       | 13.4                             | 15.2        | 9.9         | 22.7        | 10.1        | 12.6        | 8.2         | 0.0         |

| Date      | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|-----------|---------------------------|------|------|------|------|------|------|------|
|           | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 8-Feb     | 12.9                      | 15.2 | 9.9  | 22.7 | 10.1 | 12.6 | 8.6  | 0.0  |
| 9-Feb     | 12.4                      | 15.2 | 9.6  | 12.6 | 10.1 | 13.9 | 8.6  | 0.0  |
| 10-Feb    | 12.7                      | 13.3 | 9.6  | 12.6 | 10.1 | 13.9 | 8.6  | 4.9  |
| 11-Feb    | 13.9                      | 11.9 | 10.6 | 12.6 | 10.1 | 13.9 | 7.4  | 9.1  |
| 12-Feb    | 13.5                      | 11.9 | 10.9 | 12.6 | 10.1 | 15.2 | 10.1 | 10.1 |
| 13-Feb    | 12.0                      | 15.2 | 10.1 | 12.6 | 9.1  | 15.2 | 10.1 | 10.1 |
| 14-Feb    | 11.3                      | 15.2 | 10.0 | 15.2 | 9.1  | 9.9  | 10.1 | 10.1 |
| 15-Feb    | 11.7                      | 15.2 | 10.0 | 14.9 | 9.1  | 15.2 | 9.0  | 10.1 |
| 16-Feb    | 12.2                      | 15.2 | 12.6 | 15.2 | 8.9  | 15.2 | 7.6  | 10.1 |
| 17-Feb    | 13.1                      | 13.3 | 12.6 | 17.7 | 9.1  | 15.2 | 7.6  | 10.1 |
| 18-Feb    | 6.8                       | 12.3 | 12.6 | 17.7 | 9.1  | 15.2 | 7.4  | 10.1 |
| 19-Feb    | 8.2                       | 12.3 | 12.6 | 17.7 | 9.1  | 15.2 | 15.4 | 10.1 |
| 20-Feb    | 12.7                      | 12.3 | 12.1 | 17.7 | 9.1  | 15.2 | 7.6  | 10.1 |
| 21-Feb    | 11.4                      | 12.3 | 12.1 | 17.7 | 9.1  | 15.2 | 7.6  | 10.1 |
| 22-Feb    | 10.2                      | 12.3 | 12.4 | 17.7 | 9.1  | 15.2 | 7.4  | 10.1 |
| 23-Feb    | 10.5                      | 12.3 | 12.7 | 17.7 | 9.1  | 15.2 | 7.6  | 10.1 |
| 24-Feb    | 10.5                      | 11.9 | 12.3 | 17.7 | 9.1  | 15.2 | 7.6  | 12.9 |
| 25-Feb    | 12.3                      | 11.6 | 12.6 | 17.7 | 9.1  | 15.2 | 7.6  | 15.2 |
| 26-Feb    | 7.4                       | 11.6 | 11.8 | 17.7 | 9.1  | 13.8 | 8.0  | 15.2 |
| 27-Feb    | 7.5                       | 11.6 | 11.9 | 17.7 | 9.1  | 12.6 | 8.8  | 15.2 |
| 28-Feb    | 7.8                       | 11.6 | 11.9 | 20.2 | 9.1  | 10.6 | 9.6  | 6.3  |
| 2/29/2002 |                           |      | 11.9 |      |      |      | 10.1 |      |
| 1-Mar     | 8.0                       | 15.2 | 11.8 | 17.7 | 10.1 | 10.6 | 10.1 | 7.6  |
| 2-Mar     | 7.9                       | 15.2 | 11.9 | 17.7 | 10.1 | 10.6 | 10.1 | 1.3  |
| 3-Mar     | 0.0                       | 15.2 | 11.9 | 17.7 | 10.1 | 10.6 | 10.1 | 0.0  |
| 4-Mar     | 11.0                      | 15.2 | 14.3 | 17.7 | 10.1 | 10.6 | 10.1 | 0.0  |
| 5-Mar     | 11.2                      | 15.2 | 14.2 | 17.7 | 10.1 | 13.9 | 10.1 | 3.8  |
| 6-Mar     | 11.2                      | 15.2 | 14.2 | 17.7 | 10.1 | 15.2 | 10.1 | 7.9  |
| 7-Mar     | 11.1                      | 15.2 | 13.6 | 17.7 | 10.1 | 15.2 | 10.1 | 8.6  |
| 8-Mar     | 0.0                       | 15.2 | 13.8 | 17.7 | 10.1 | 15.7 | 11.2 | 8.6  |
| 9-Mar     | 11.2                      | 15.2 | 13.7 | 17.7 | 10.1 | 17.2 | 12.6 | 8.0  |
| 10-Mar    | 11.2                      | 15.2 | 13.8 | 17.7 | 10.1 | 17.2 | 12.6 | 8.2  |
| 11-Mar    | 11.2                      | 15.2 | 13.7 | 20.2 | 10.1 | 17.2 | 11.0 | 8.6  |
| 12-Mar    | 11.2                      | 12.7 | 11.7 | 20.2 | 10.1 | 17.2 | 11.6 | 8.1  |
| 13-Mar    | 11.2                      | 13.1 | 12.1 | 20.2 | 10.1 | 17.2 | 11.6 | 7.6  |
| 14-Mar    | 11.1                      | 13.1 | 12.1 | 15.2 | 10.1 | 17.2 | 11.6 | 7.6  |
| 15-Mar    | 10.9                      | 13.1 | 11.9 | 10.4 | 10.1 | 17.2 | 11.6 | 7.6  |
| 16-Mar    | 11.1                      | 13.1 | 11.9 | 12.4 | 10.1 | 17.2 | 11.6 | 8.4  |
| 17-Mar    | 11.2                      | 13.1 | 11.6 | 0.0  | 10.1 | 17.2 | 11.6 | 9.1  |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 18-Mar | 11.2                      | 11.3 | 11.6 | 0.0  | 10.1 | 17.2 | 11.6 | 9.7  |
| 19-Mar | 10.9                      | 11.7 | 11.2 | 17.7 | 10.1 | 17.2 | 11.6 | 10.5 |
| 20-Mar | 11.1                      | 11.8 | 11.1 | 17.7 | 10.1 | 17.2 | 11.6 | 10.4 |
| 21-Mar | 10.0                      | 11.8 | 10.1 | 17.7 | 10.1 | 17.2 | 11.6 | 10.4 |
| 22-Mar | 10.1                      | 11.8 | 9.8  | 17.7 | 10.1 | 17.2 | 11.6 | 10.4 |
| 23-Mar | 10.0                      | 11.8 | 9.6  | 17.7 | 10.1 | 17.2 | 11.6 | 10.4 |
| 24-Mar | 10.0                      | 12.1 | 9.6  | 17.7 | 10.1 | 17.2 | 11.6 | 10.4 |
| 25-Mar | 10.0                      | 12.1 | 9.6  | 17.7 | 10.1 | 17.2 | 11.6 | 10.4 |
| 26-Mar | 10.1                      | 12.1 | 10.6 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 27-Mar | 14.4                      | 12.1 | 10.1 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 28-Mar | 18.9                      | 12.1 | 10.1 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 29-Mar | 18.9                      | 12.1 | 12.0 | 17.7 | 10.1 | 21.2 | 11.6 | 10.4 |
| 30-Mar | 18.8                      | 12.1 | 12.0 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 31-Mar | 18.9                      | 12.6 | 11.6 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 1-Apr  | 16.4                      | 12.1 | 11.6 | 17.7 | 10.1 | 17.0 | 11.6 | 10.2 |
| 2-Apr  | 0.0                       | 14.7 | 12.8 | 17.7 | 10.1 | 19.2 | 11.6 | 10.4 |
| 3-Apr  | 0.0                       | 16.2 | 13.1 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 4-Apr  | 0.0                       | 17.3 | 13.1 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 5-Apr  | 0.0                       | 18.1 | 13.1 | 17.7 | 10.1 | 19.8 | 11.6 | 10.4 |
| 6-Apr  | 0.0                       | 18.1 | 13.1 | 17.7 | 10.1 | 20.2 | 11.6 | 10.4 |
| 7-Apr  | 0.0                       | 17.6 | 13.1 | 17.7 | 10.1 | 20.2 | 12.6 | 11.3 |
| 8-Apr  | 0.0                       | 18.0 | 13.2 | 17.7 | 10.1 | 20.2 | 12.6 | 12.6 |
| 9-Apr  | 0.0                       | 18.0 | 13.2 | 17.7 | 10.1 | 20.2 | 12.6 | 12.6 |
| 10-Apr | 0.0                       | 18.4 | 13.2 | 17.7 | 10.1 | 21.8 | 12.6 | 14.0 |
| 11-Apr | 7.2                       | 19.0 | 13.2 | 20.2 | 10.1 | 22.7 | 12.6 | 15.2 |
| 12-Apr | 17.3                      | 19.0 | 13.2 | 20.2 | 10.1 | 22.7 | 12.6 | 15.2 |
| 13-Apr | 18.9                      | 19.0 | 13.4 | 20.2 | 10.1 | 22.7 | 10.4 | 15.2 |
| 14-Apr | 0.0                       | 19.7 | 13.4 | 15.2 | 10.1 | 22.7 | 12.6 | 15.2 |
| 15-Apr | 18.9                      | 20.0 | 0.0  | 10.4 | 10.1 | 22.7 | 13.3 | 15.2 |
| 16-Apr | 23.7                      | 21.1 | 0.0  | 12.4 | 10.1 | 22.7 | 14.2 | 15.2 |
| 17-Apr | 26.2                      | 21.7 | 0.0  | 0.0  | 10.1 | 22.7 | 14.2 | 2.5  |
| 18-Apr | 26.2                      | 21.7 | 0.0  | 0.0  | 10.1 | 22.7 | 14.7 | 0.0  |
| 19-Apr | 26.1                      | 21.7 | 23.2 | 17.7 | 10.1 | 22.7 | 15.2 | 0.0  |
| 20-Apr | 0.0                       | 21.7 | 23.2 | 17.7 | 10.1 | 21.7 | 15.2 | 0.0  |
| 21-Apr | 0.0                       | 21.7 | 23.2 | 17.7 | 10.1 | 21.7 | 16.1 | 0.0  |
| 22-Apr | 26.1                      | 21.7 | 27.3 | 17.7 | 10.1 | 21.7 | 16.7 | 4.0  |
| 23-Apr | 26.0                      | 21.7 | 27.3 | 17.7 | 10.1 | 21.7 | 16.7 | 11.0 |
| 24-Apr | 26.0                      | 23.0 | 27.3 | 17.7 | 11.1 | 21.7 | 16.7 | 11.6 |
| 25-Apr | 25.9                      | 23.0 | 27.3 | 17.7 | 11.1 | 21.7 | 17.7 | 11.6 |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 26-Apr | 25.9                      | 23.0 | 27.3 | 17.7 | 11.1 | 21.7 | 17.7 | 11.6 |
| 27-Apr | 25.9                      | 23.0 | 27.3 | 17.7 | 11.1 | 22.7 | 17.7 | 17.6 |
| 28-Apr | 25.9                      | 23.7 | 27.3 | 17.7 | 11.1 | 22.7 | 17.7 | 24.2 |
| 29-Apr | 25.9                      | 24.1 | 27.3 | 17.7 | 11.6 | 22.7 | 17.7 | 21.6 |
| 30-Apr | 25.8                      | 24.1 | 27.3 | 17.7 | 11.6 | 22.7 | 18.4 | 25.3 |
| 1-May  | 26.9                      | 24.1 | 27.3 | 22.7 | 11.6 | 22.7 | 19.2 | 17.6 |
| 2-May  | 26.3                      | 24.5 | 27.3 | 22.7 | 11.1 | 22.7 | 19.2 | 12.6 |
| 3-May  | 25.9                      | 25.6 | 27.3 | 23.3 | 15.2 | 22.7 | 19.2 | 12.6 |
| 4-May  | 25.6                      | 25.6 | 27.3 | 23.3 | 15.2 | 22.7 | 19.2 | 15.0 |
| 5-May  | 25.6                      | 25.6 | 27.3 | 22.3 | 15.2 | 22.7 | 19.2 | 17.7 |
| 6-May  | 25.6                      | 25.6 | 27.3 | 23.3 | 15.2 | 22.7 | 19.2 | 20.7 |
| 7-May  | 25.6                      | 25.6 | 25.6 | 23.3 | 15.2 | 22.7 | 19.2 | 22.7 |
| 8-May  | 26.1                      | 25.6 | 27.3 | 23.3 | 15.2 | 22.7 | 19.2 | 22.7 |
| 9-May  | 26.2                      | 25.6 | 27.3 | 26.3 | 15.2 | 22.7 | 19.2 | 22.7 |
| 10-May | 25.8                      | 25.6 | 27.3 | 26.3 | 15.2 | 22.7 | 19.2 | 22.7 |
| 11-May | 25.7                      | 25.6 | 27.5 | 26.3 | 15.2 | 21.5 | 19.2 | 22.7 |
| 12-May | 25.7                      | 25.4 | 37.6 | 26.3 | 15.2 | 22.5 | 19.8 | 22.7 |
| 13-May | 25.6                      | 25.3 | 37.6 | 26.3 | 15.2 | 22.5 | 20.2 | 24.1 |
| 14-May | 25.6                      | 25.3 | 37.6 | 26.3 | 15.2 | 22.5 | 20.2 | 25.3 |
| 15-May | 25.8                      | 25.3 | 37.6 | 26.3 | 15.2 | 22.5 | 20.8 | 25.3 |
| 16-May | 23.9                      | 25.0 | 34.4 | 26.3 | 15.2 | 22.7 | 21.7 | 25.3 |
| 17-May | 27.1                      | 25.0 | 32.9 | 26.3 | 15.2 | 22.7 | 21.7 | 25.3 |
| 18-May | 27.2                      | 25.0 | 32.9 | 26.3 | 15.2 | 22.7 | 21.7 | 25.3 |
| 19-May | 27.2                      | 25.3 | 32.9 | 26.3 | 15.2 | 22.7 | 21.7 | 25.3 |
| 20-May | 12.5                      | 25.3 | 33.4 | 26.3 | 10.7 | 22.7 | 21.7 | 25.3 |
| 21-May | 0.0                       | 25.2 | 33.5 | 26.3 | 15.2 | 22.7 | 22.3 | 25.3 |
| 22-May | 20.3                      | 25.2 | 33.5 | 26.3 | 15.2 | 22.7 | 22.7 | 25.3 |
| 23-May | 38.0                      | 25.6 | 33.5 | 33.9 | 15.2 | 22.7 | 23.2 | 25.3 |
| 24-May | 38.0                      | 25.6 | 33.5 | 33.9 | 15.2 | 22.7 | 23.8 | 25.3 |
| 25-May | 38.0                      | 25.6 | 33.4 | 33.9 | 15.2 | 25.3 | 23.8 | 25.3 |
| 26-May | 37.7                      | 25.7 | 33.4 | 27.8 | 15.2 | 25.3 | 23.8 | 28.6 |
| 27-May | 25.9                      | 25.7 | 33.6 | 27.8 | 15.2 | 25.3 | 23.8 | 30.3 |
| 28-May | 35.4                      | 25.3 | 35.7 | 26.8 | 15.2 | 25.3 | 23.8 | 30.3 |
| 29-May | 35.7                      | 26.3 | 35.7 | 26.8 | 15.2 | 25.3 | 23.8 | 16.4 |
| 30-May | 36.3                      | 26.3 | 35.7 | 26.8 | 15.2 | 25.3 | 23.8 | 0.0  |
| 31-May | 0.0                       | 26.3 | 35.4 | 30.4 | 17.7 | 25.3 | 23.8 | 0.0  |
| 1-Jun  | 36.2                      | 26.3 | 35.4 | 34.4 | 17.7 | 25.3 | 23.8 | 0.0  |
| 2-Jun  | 33.4                      | 26.4 | 35.4 | 35.4 | 17.7 | 25.3 | 24.0 | 0.0  |
| 3-Jun  | 0.0                       | 26.5 | 35.4 | 35.4 | 17.7 | 25.3 | 24.9 | 0.0  |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 4-Jun  | 35.9                      | 26.5 | 35.4 | 35.4 | 17.7 | 25.3 | 25.3 | 8.5  |
| 5-Jun  | 35.9                      | 26.3 | 35.4 | 35.4 | 17.7 | 25.3 | 25.3 | 11.4 |
| 6-Jun  | 35.8                      | 26.3 | 35.4 | 35.4 | 17.7 | 25.3 | 25.3 | 0.0  |
| 7-Jun  | 35.6                      | 26.3 | 35.4 | 35.4 | 17.7 | 25.3 | 25.3 | 0.0  |
| 8-Jun  | 35.2                      | 26.3 | 26.6 | 30.3 | 17.7 | 25.3 | 25.3 | 0.0  |
| 9-Jun  | 32.6                      | 26.3 | 26.3 | 32.3 | 20.2 | 25.3 | 25.3 | 9.2  |
| 10-Jun | 34.2                      | 26.3 | 23.7 | 31.8 | 20.2 | 25.3 | 25.3 | 18.2 |
| 11-Jun | 0.0                       | 25.9 | 24.9 | 32.9 | 20.2 | 25.3 | 25.3 | 18.2 |
| 12-Jun | 34.3                      | 25.8 | 25.0 | 32.9 | 20.2 | 25.3 | 25.3 | 18.2 |
| 13-Jun | 34.2                      | 26.6 | 24.4 | 32.9 | 20.2 | 25.3 | 25.3 | 11.7 |
| 14-Jun | 31.8                      | 26.6 | 24.4 | 32.9 | 20.2 | 25.3 | 25.3 | 0.0  |
| 15-Jun | 33.8                      | 26.6 | 24.5 | 33.4 | 21.7 | 25.3 | 25.3 | 0.0  |
| 16-Jun | 0.0                       | 26.6 | 24.7 | 33.4 | 22.7 | 24.8 | 25.3 | 0.0  |
| 17-Jun | 33.9                      | 26.6 | 24.7 | 33.4 | 22.7 | 24.8 | 25.3 | 6.3  |
| 18-Jun | 33.8                      | 26.6 | 24.7 | 33.4 | 22.7 | 24.8 | 25.3 | 4.2  |
| 19-Jun | 33.9                      | 26.6 | 24.8 | 33.4 | 22.7 | 24.3 | 25.3 | 9.0  |
| 20-Jun | 33.9                      | 26.7 | 24.7 | 33.4 | 22.7 | 24.3 | 25.3 | 10.1 |
| 21-Jun | 31.5                      | 26.7 | 25.3 | 33.4 | 22.7 | 16.7 | 25.3 | 10.1 |
| 22-Jun | 33.8                      | 26.7 | 25.3 | 32.3 | 22.7 | 15.8 | 25.3 | 15.2 |
| 23-Jun | 33.9                      | 26.6 | 25.3 | 32.6 | 22.7 | 25.3 | 25.3 | 22.3 |
| 24-Jun | 33.8                      | 26.6 | 25.3 | 31.3 | 20.7 | 25.3 | 25.3 | 25.3 |
| 25-Jun | 33.9                      | 26.6 | 25.3 | 31.3 | 20.7 | 25.3 | 13.7 | 25.3 |
| 26-Jun | 33.9                      | 26.5 | 25.3 | 31.3 | 20.7 | 25.3 | 16.3 | 25.3 |
| 27-Jun | 28.4                      | 26.5 | 25.3 | 31.3 | 22.2 | 25.3 | 25.3 | 25.3 |
| 28-Jun | 22.5                      | 26.5 | 25.3 | 31.3 | 21.7 | 25.3 | 0.0  | 25.3 |
| 29-Jun | 22.5                      | 26.5 | 25.3 | 32.9 | 21.7 | 25.3 | 0.0  | 25.3 |
| 30-Jun | 23.0                      | 26.5 | 25.3 | 32.9 | 21.7 | 25.3 | 11.5 | 25.3 |
| 1-Jul  | 22.6                      | 26.5 | 25.3 | 32.9 | 21.7 | 25.3 | 26.3 | 25.3 |
| 2-Jul  | 23.1                      | 26.5 | 25.2 | 32.9 | 21.7 | 25.3 | 26.3 | 19.4 |
| 3-Jul  | 23.1                      | 26.5 | 25.3 | 32.9 | 21.7 | 25.3 | 26.3 | 15.2 |
| 4-Jul  | 23.1                      | 26.5 | 25.3 | 32.9 | 21.7 | 25.3 | 26.3 | 15.2 |
| 5-Jul  | 23.1                      | 26.5 | 25.3 | 30.3 | 21.7 | 25.3 | 26.3 | 15.2 |
| 6-Jul  | 23.1                      | 26.5 | 25.3 | 30.3 | 21.7 | 25.3 | 26.3 | 15.2 |
| 7-Jul  | 23.1                      | 26.5 | 25.3 | 25.3 | 22.2 | 25.3 | 15.8 | 15.2 |
| 8-Jul  | 23.1                      | 26.5 | 25.3 | 26.8 | 22.2 | 25.3 | 11.5 | 22.1 |
| 9-Jul  | 23.1                      | 26.5 | 25.3 | 26.0 | 22.7 | 25.3 | 26.3 | 25.3 |
| 10-Jul | 0.0                       | 25.8 | 25.3 | 26.8 | 24.3 | 25.3 | 26.3 | 25.3 |
| 11-Jul | 0.0                       | 26.3 | 25.3 | 26.8 | 24.3 | 25.3 | 26.3 | 25.3 |
| 12-Jul | 0.0                       | 26.7 | 25.3 | 26.8 | 24.3 | 25.3 | 26.3 | 25.3 |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 13-Jul | 0.0                       | 26.7 | 25.3 | 26.3 | 24.3 | 25.3 | 26.3 | 25.3 |
| 14-Jul | 23.1                      | 26.7 | 25.3 | 26.3 | 24.3 | 25.3 | 26.3 | 25.3 |
| 15-Jul | 23.1                      | 26.7 | 25.3 | 26.3 | 24.3 | 25.3 | 26.3 | 25.3 |
| 16-Jul | 23.1                      | 26.7 | 25.3 | 26.3 | 24.3 | 24.3 | 26.3 | 25.3 |
| 17-Jul | 24.1                      | 26.7 | 25.3 | 26.3 | 24.3 | 24.3 | 26.3 | 25.3 |
| 18-Jul | 0.0                       | 26.7 | 25.3 | 26.3 | 24.3 | 24.3 | 26.3 | 25.3 |
| 19-Jul | 24.1                      | 26.7 | 25.3 | 26.8 | 24.3 | 24.3 | 26.3 | 25.3 |
| 20-Jul | 24.1                      | 26.7 | 25.3 | 26.8 | 24.3 | 24.3 | 26.3 | 25.3 |
| 21-Jul | 24.1                      | 25.3 | 25.3 | 27.5 | 24.3 | 24.3 | 25.3 | 25.3 |
| 22-Jul | 24.1                      | 25.3 | 25.3 | 27.9 | 24.3 | 24.8 | 25.3 | 25.3 |
| 23-Jul | 24.1                      | 15.5 | 25.8 | 26.8 | 24.3 | 24.8 | 25.8 | 25.3 |
| 24-Jul | 0.0                       | 16.4 | 25.8 | 26.8 | 25.3 | 24.8 | 25.8 | 25.3 |
| 25-Jul | 24.1                      | 16.4 | 25.8 | 26.8 | 25.3 | 24.8 | 25.8 | 25.3 |
| 26-Jul | 24.1                      | 16.4 | 26.3 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 27-Jul | 0.0                       | 16.4 | 26.3 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 28-Jul | 24.1                      | 16.4 | 26.3 | 26.8 | 0.0  | 25.8 | 25.8 | 25.3 |
| 29-Jul | 24.6                      | 16.4 | 26.3 | 26.8 | 0.0  | 25.8 | 25.4 | 15.8 |
| 30-Jul | 24.6                      | 16.4 | 26.8 | 26.8 | 25.3 | 25.8 | 25.3 | 25.3 |
| 31-Jul | 0.0                       | 16.4 | 26.8 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 1-Aug  | 23.7                      | 16.4 | 26.8 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 2-Aug  | 24.2                      | 16.4 | 26.8 | 26.8 | 25.8 | 25.8 | 25.8 | 25.3 |
| 3-Aug  | 0.0                       | 16.4 | 26.8 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 4-Aug  | 24.2                      | 16.4 | 26.8 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 5-Aug  | 24.2                      | 27.2 | 26.8 | 26.8 | 25.3 | 25.8 | 25.8 | 25.3 |
| 6-Aug  | 24.2                      | 27.2 | 26.8 | 26.8 | 25.3 | 16.1 | 25.8 | 25.3 |
| 7-Aug  | 24.2                      | 27.2 | 26.8 | 26.8 | 25.3 | 0.0  | 25.8 | 25.3 |
| 8-Aug  | 24.2                      | 27.2 | 26.8 | 26.8 | 25.3 | 16.3 | 25.8 | 25.3 |
| 9-Aug  | 24.2                      | 27.2 | 26.8 | 26.8 | 25.3 | 25.3 | 25.8 | 25.3 |
| 10-Aug | 0.0                       | 27.2 | 26.8 | 26.8 | 25.3 | 25.3 | 25.8 | 25.3 |
| 11-Aug | 0.0                       | 27.2 | 26.8 | 26.8 | 25.3 | 25.3 | 25.8 | 25.3 |
| 12-Aug | 0.0                       | 27.2 | 26.8 | 26.8 | 25.3 | 25.3 | 14.5 | 25.3 |
| 13-Aug | 0.0                       | 27.2 | 26.8 | 26.8 | 25.3 | 26.3 | 0.0  | 25.3 |
| 14-Aug | 24.3                      | 27.2 | 26.8 | 26.8 | 25.3 | 26.3 | 0.0  | 25.3 |
| 15-Aug | 24.3                      | 27.2 | 26.8 | 26.8 | 25.3 | 26.3 | 12.6 | 25.3 |
| 16-Aug | 25.2                      | 27.2 | 26.8 | 26.8 | 25.3 | 26.3 | 24.6 | 25.3 |
| 17-Aug | 24.3                      | 27.2 | 26.8 | 26.8 | 25.3 | 22.4 | 23.3 | 25.3 |
| 18-Aug | 0.0                       | 27.2 | 26.8 | 26.8 | 25.3 | 18.6 | 24.4 | 25.3 |
| 19-Aug | 24.4                      | 27.2 | 26.8 | 26.8 | 25.3 | 0.0  | 14.2 | 25.3 |
| 20-Aug | 24.4                      | 27.5 | 26.8 | 26.8 | 25.3 | 14.5 | 14.2 | 25.3 |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 21-Aug | 24.4                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 22-Aug | 24.4                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 23-Aug | 24.4                      | 27.7 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 24-Aug | 24.4                      | 27.7 | 26.8 | 26.8 | 25.3 | 26.3 | 0.0  | 25.3 |
| 25-Aug | 24.5                      | 27.7 | 26.8 | 26.8 | 25.3 | 26.3 | 0.0  | 25.3 |
| 26-Aug | 0.0                       | 27.9 | 26.8 | 26.8 | 25.3 | 26.3 | 0.0  | 25.3 |
| 27-Aug | 0.0                       | 27.9 | 26.8 | 26.8 | 25.3 | 26.3 | 12.3 | 25.3 |
| 28-Aug | 24.4                      | 27.9 | 26.8 | 26.8 | 25.3 | 26.3 | 21.9 | 25.3 |
| 29-Aug | 24.4                      | 28.0 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 30-Aug | 24.4                      | 28.0 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 31-Aug | 0.0                       | 28.0 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 1-Sep  | 24.6                      | 27.5 | 25.3 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 2-Sep  | 0.0                       | 27.5 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 24.1 |
| 3-Sep  | 24.6                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 24.5 |
| 4-Sep  | 24.6                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.3 | 25.3 | 25.3 |
| 5-Sep  | 25.5                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.8 | 25.3 | 25.3 |
| 6-Sep  | 0.0                       | 27.5 | 26.8 | 26.8 | 25.3 | 26.8 | 25.3 | 25.3 |
| 7-Sep  | 24.6                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.8 | 25.3 | 25.3 |
| 8-Sep  | 24.6                      | 27.5 | 26.8 | 26.8 | 25.3 | 26.8 | 25.3 | 25.3 |
| 9-Sep  | 0.0                       | 27.5 | 25.8 | 26.8 | 25.3 | 26.8 | 25.3 | 25.3 |
| 10-Sep | 25.2                      | 27.5 | 25.8 | 26.8 | 25.3 | 25.5 | 25.3 | 25.3 |
| 11-Sep | 25.7                      | 27.5 | 25.8 | 26.8 | 25.3 | 22.9 | 25.3 | 25.3 |
| 12-Sep | 25.7                      | 27.5 | 25.8 | 26.8 | 25.3 | 26.8 | 23.9 | 25.3 |
| 13-Sep | 0.0                       | 27.5 | 25.8 | 26.8 | 25.3 | 26.8 | 25.3 | 25.3 |
| 14-Sep | 0.0                       | 27.5 | 25.8 | 26.8 | 25.3 | 26.8 | 20.0 | 23.8 |
| 15-Sep | 25.7                      | 27.5 | 22.7 | 26.8 | 25.3 | 26.8 | 0.0  | 22.7 |
| 16-Sep | 25.7                      | 27.5 | 22.7 | 26.8 | 25.3 | 26.8 | 0.0  | 22.7 |
| 17-Sep | 25.7                      | 27.5 | 22.7 | 26.8 | 25.3 | 26.8 | 0.9  | 22.7 |
| 18-Sep | 25.7                      | 27.5 | 25.3 | 26.8 | 25.3 | 26.8 | 8.3  | 23.0 |
| 19-Sep | 0.0                       | 27.5 | 25.3 | 26.8 | 25.3 | 26.8 | 18.7 | 23.0 |
| 20-Sep | 25.7                      | 27.5 | 25.3 | 26.8 | 25.3 | 26.8 | 20.2 | 23.0 |
| 21-Sep | 25.7                      | 27.8 | 25.3 | 26.8 | 25.3 | 26.8 | 20.2 | 23.0 |
| 22-Sep | 25.7                      | 27.8 | 25.3 | 26.8 | 25.3 | 26.8 | 21.7 | 22.7 |
| 23-Sep | 25.3                      | 27.8 | 25.3 | 26.8 | 25.3 | 26.8 | 25.5 | 22.7 |
| 24-Sep | 25.3                      | 27.8 | 25.3 | 26.8 | 25.3 | 26.8 | 26.3 | 22.7 |
| 25-Sep | 25.3                      | 27.9 | 25.3 | 26.8 | 25.3 | 31.8 | 26.3 | 22.7 |
| 26-Sep | 12.1                      | 27.9 | 26.3 | 26.8 | 25.3 | 31.8 | 26.3 | 22.7 |
| 27-Sep | 0.0                       | 27.9 | 26.3 | 26.8 | 25.3 | 32.1 | 26.3 | 22.7 |
| 28-Sep | 0.0                       | 27.5 | 26.3 | 26.8 | 25.3 | 32.1 | 26.3 | 24.4 |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 29-Sep | 0.0                       | 27.5 | 26.3 | 26.8 | 25.3 | 32.1 | 26.3 | 25.3 |
| 30-Sep | 0.0                       | 27.5 | 25.8 | 26.8 | 25.3 | 32.1 | 26.3 | 25.3 |
| 1-Oct  | 0.0                       | 27.6 | 25.8 | 26.8 | 25.3 | 25.3 | 26.3 |      |
| 2-Oct  | 0.0                       | 27.6 | 25.3 | 26.8 | 25.3 | 22.7 | 25.3 |      |
| 3-Oct  | 0.0                       | 27.6 | 25.3 | 26.8 | 25.3 | 22.7 | 25.3 |      |
| 4-Oct  | 0.0                       | 15.7 | 24.3 | 26.8 | 25.3 | 20.7 | 25.3 |      |
| 5-Oct  | 0.0                       | 15.7 | 25.8 | 26.8 | 25.3 | 16.1 | 0.0  |      |
| 6-Oct  | 0.0                       | 25.9 | 25.8 | 26.8 | 25.3 | 25.8 | 0.0  |      |
| 7-Oct  | 0.0                       | 26.5 | 25.5 | 26.8 | 24.8 | 25.8 | 0.0  |      |
| 8-Oct  | 0.0                       | 26.5 | 25.8 | 26.8 | 22.7 | 25.3 | 25.8 |      |
| 9-Oct  | 0.0                       | 27.1 | 25.8 | 0.0  | 22.7 | 25.3 | 9.7  |      |
| 10-Oct | 0.0                       | 26.5 | 25.3 | 26.8 | 22.7 | 22.7 | 16.6 |      |
| 11-Oct | 8.1                       | 26.5 | 25.3 | 26.8 | 22.7 | 24.8 | 25.8 |      |
| 12-Oct | 24.3                      | 26.6 | 25.3 | 26.8 | 22.7 | 25.3 | 25.8 |      |
| 13-Oct | 24.3                      | 27.2 | 25.3 | 26.8 | 22.7 | 22.7 | 18.2 |      |
| 14-Oct | 24.3                      | 27.2 | 14.7 | 26.8 | 22.7 | 22.7 | 0.0  |      |
| 15-Oct | 24.3                      | 27.2 | 24.3 | 26.8 | 22.7 | 22.7 | 0.0  |      |
| 16-Oct | 24.3                      | 27.2 | 24.3 | 26.8 | 22.7 | 20.8 | 0.0  |      |
| 17-Oct | 24.3                      | 27.6 | 24.3 | 26.8 | 23.3 | 22.7 | 0.0  |      |
| 18-Oct | 20.8                      | 0.0  | 24.3 | 26.8 | 23.3 | 25.3 | 0.0  |      |
| 19-Oct | 15.9                      | 0.0  | 0.0  | 25.3 | 23.3 | 19.1 | 0.0  |      |
| 20-Oct | 15.9                      | 25.2 | 12.2 | 25.3 | 23.3 | 22.7 | 0.0  |      |
| 21-Oct | 15.8                      | 26.4 | 24.3 | 25.3 | 23.3 | 14.7 | 0.0  |      |
| 22-Oct | 18.7                      | 26.1 | 24.3 | 25.8 | 20.2 | 0.0  | 0.0  |      |
| 23-Oct | 19.4                      | 26.6 | 24.3 | 25.3 | 17.7 | 13.2 | 0.0  |      |
| 24-Oct | 16.4                      | 26.3 | 24.3 | 26.8 | 20.2 | 22.7 | 0.0  |      |
| 25-Oct | 20.4                      | 26.3 | 24.3 | 26.8 | 21.7 | 22.7 | 0.0  |      |
| 26-Oct | 22.5                      | 25.6 | 24.3 | 26.8 | 22.7 | 19.4 | 0.0  |      |
| 27-Oct | 24.3                      | 22.5 | 24.3 | 0.0  | 23.3 | 13.7 | 0.0  |      |
| 28-Oct | 23.7                      | 25.7 | 24.3 | 0.0  | 23.3 | 22.7 | 0.0  |      |
| 29-Oct | 19.7                      | 26.9 | 24.3 | 0.0  | 23.3 | 8.5  | 0.0  |      |
| 30-Oct | 0.0                       | 27.2 | 24.3 | 0.0  | 23.3 | 0.0  | 0.0  |      |
| 31-Oct | 15.8                      | 24.4 | 24.3 | 0.0  | 23.3 | 0.0  | 0.0  |      |
| 1-Nov  | 20.3                      | 22.7 | 24.3 | 0.0  | 23.3 | 14.2 | 0.0  |      |
| 2-Nov  | 23.5                      | 0.0  | 24.3 | 0.0  | 23.3 | 22.7 | 0.0  |      |
| 3-Nov  | 23.5                      | 25.7 | 24.3 | 0.0  | 23.3 | 19.4 | 0.0  |      |
| 4-Nov  | 23.5                      | 26.0 | 24.3 | 0.0  | 23.3 | 22.7 | 0.0  |      |
| 5-Nov  | 23.5                      | 25.7 | 24.3 | 0.0  | 23.3 | 22.7 | 0.0  |      |
| 6-Nov  | 23.5                      | 25.9 | 24.3 | 0.0  | 15.2 | 22.7 | 0.0  |      |

| Date   | Table A-2 Penstock flow s |      |      |      |      |      |      |      |
|--------|---------------------------|------|------|------|------|------|------|------|
|        | 2002                      | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 7-Nov  | 23.5                      | 16.1 | 24.3 | 0.0  | 15.2 | 22.7 | 0.0  |      |
| 8-Nov  | 23.5                      | 16.1 | 24.3 | 0.0  | 8.8  | 22.7 | 0.0  |      |
| 9-Nov  | 23.5                      | 14.7 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 10-Nov | 20.2                      | 15.2 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 11-Nov | 20.2                      | 15.5 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 12-Nov | 20.2                      | 15.2 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 13-Nov | 21.6                      | 15.2 | 24.3 | 0.0  | 0.0  | 17.5 | 0.0  |      |
| 14-Nov | 20.2                      | 14.9 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 15-Nov | 20.2                      | 14.9 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 16-Nov | 23.3                      | 14.9 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 17-Nov | 23.3                      | 15.2 | 24.3 | 0.0  | 0.0  | 22.7 | 0.0  |      |
| 18-Nov | 21.6                      | 14.9 | 24.3 | 0.0  | 18.2 | 22.7 | 0.0  |      |
| 19-Nov | 21.2                      | 14.7 | 24.3 | 0.0  | 18.2 | 22.7 | 0.0  |      |
| 20-Nov | 21.5                      | 14.6 | 24.3 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 21-Nov | 21.5                      | 14.7 | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 22-Nov | 20.8                      | 14.7 | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 23-Nov | 20.8                      | 14.7 | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 24-Nov | 20.8                      | 0.0  | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 25-Nov | 18.3                      | 0.0  | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 26-Nov | 7.3                       | 0.0  | 22.7 | 0.0  | 19.1 | 22.7 | 0.0  |      |
| 27-Nov | 3.3                       | 0.0  | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 28-Nov | 8.8                       | 0.0  | 22.7 | 0.0  | 18.7 | 22.7 | 0.0  |      |
| 29-Nov | 9.7                       | 0.0  | 22.7 | 0.0  | 15.3 | 22.7 | 0.0  |      |
| 30-Nov | 10.1                      | 0.0  | 22.7 | 0.0  | 5.2  | 22.7 | 0.0  |      |
| 1-Dec  | 10.1                      | 0.0  | 22.7 | 0.0  | 7.6  | 22.7 | 0.0  |      |
| 2-Dec  | 10.1                      | 0.0  | 22.7 | 0.0  | 7.6  | 22.7 | 0.0  |      |
| 3-Dec  | 11.2                      | 0.0  | 22.7 | 0.0  | 13.6 | 22.7 | 0.0  |      |
| 4-Dec  | 12.7                      | 0.0  | 22.7 | 0.0  | 13.6 | 22.7 | 0.0  |      |
| 5-Dec  | 9.2                       | 0.0  | 22.7 | 0.0  | 13.6 | 22.7 | 0.0  |      |
| 6-Dec  | 12.6                      | 0.0  | 22.7 | 0.0  | 13.6 | 22.7 | 0.0  |      |
| 7-Dec  | 10.5                      | 0.0  | 22.7 | 0.0  | 13.6 | 22.7 | 0.0  |      |
| 8-Dec  | 10.8                      | 0.0  | 22.7 | 0.0  | 13.6 | 22.7 | 0.0  |      |
| 9-Dec  | 9.6                       | 0.0  | 22.7 | 0.0  | 15.2 | 22.7 | 0.0  |      |
| 10-Dec | 9.6                       | 0.0  | 22.7 | 0.0  | 15.2 | 22.7 | 0.0  |      |
| 11-Dec | 9.6                       | 0.0  | 22.7 | 0.0  | 15.2 | 22.7 | 0.0  |      |
| 12-Dec | 9.6                       | 0.0  | 22.7 | 17.7 | 15.2 | 22.7 | 0.0  |      |
| 13-Dec | 11.2                      | 0.0  | 22.7 | 17.7 | 15.2 | 22.7 | 0.0  |      |
| 14-Dec | 10.1                      | 0.0  | 22.7 | 17.7 | 15.2 | 22.7 | 0.0  |      |
| 15-Dec | 10.1                      | 0.6  | 22.7 | 17.7 | 15.2 | 9.5  | 0.0  |      |

| <b>Date</b> | <b>Table A-2 Penstock flow s</b> |             |             |             |             |             |             |             |
|-------------|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|             | <b>2002</b>                      | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
| 16-Dec      | 10.1                             | 0.0         | 22.7        | 17.7        | 15.2        | 0.0         | 0.0         |             |
| 17-Dec      | 10.1                             | 0.0         | 22.7        | 17.7        | 14.1        | 0.8         | 0.0         |             |
| 18-Dec      | 10.1                             | 0.0         | 22.7        | 17.7        | 12.6        | 10.0        | 0.0         |             |
| 19-Dec      | 11.2                             | 0.0         | 22.7        | 17.7        | 8.7         | 15.5        | 0.0         |             |
| 20-Dec      | 9.3                              | 0.0         | 22.7        | 17.7        | 22.7        | 10.1        | 0.0         |             |
| 21-Dec      | 10.1                             | 0.0         | 22.7        | 17.7        | 7.6         | 10.1        | 0.0         |             |
| 22-Dec      | 10.1                             | 0.0         | 22.7        | 17.7        | 9.3         | 9.3         | 0.0         |             |
| 23-Dec      | 13.8                             | 1.6         | 22.7        | 17.7        | 10.6        | 6.3         | 0.0         |             |
| 24-Dec      | 16.5                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 25-Dec      | 13.6                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 26-Dec      | 11.2                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 27-Dec      | 11.7                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 28-Dec      | 10.1                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 29-Dec      | 10.1                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 30-Dec      | 10.8                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| 31-Dec      | 12.1                             | 2.6         | 22.7        | 20.2        | 10.6        | 7.6         | 0.0         |             |
| Minimum     | 0.0                              | 0.0         | 0.0         | 0.0         | 0.0         | 0.0         | 0.0         | 0.0         |
| Average     | 16.6                             | 19.0        | 21.0        | 20.6        | 16.7        | 20.2        | 13.5        | 14.8        |
| Maximum     | 38.0                             | 28.0        | 37.6        | 35.4        | 25.8        | 32.1        | 26.3        | 30.3        |

**Table A-3Bypass Flows.**

| Date   | Table A-3 Bypass flow |      |      |      |      |      |      |      |
|--------|-----------------------|------|------|------|------|------|------|------|
|        | 2002                  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 1-Jan  | 29.0                  | 15.6 | 26.4 | 16.3 | 11.8 | 25.4 | 27.4 | 35.0 |
| 2-Jan  | 13.3                  | 15.3 | 26.4 | 15.3 | 13.8 | 26.4 | 27.4 | 30.0 |
| 3-Jan  | 16.7                  | 15.1 | 26.4 | 16.3 | 14.8 | 26.4 | 22.4 | 30.0 |
| 4-Jan  | 8.5                   | 14.1 | 26.4 | 16.3 | 12.8 | 26.4 | 24.9 | 30.0 |
| 5-Jan  | 10.5                  | 14.1 | 24.9 | 16.3 | 12.8 | 25.4 | 18.9 | 30.0 |
| 6-Jan  | 10.5                  | 16.1 | 26.4 | 16.3 | 13.8 | 24.4 | 18.9 | 25.0 |
| 7-Jan  | 6.9                   | 15.1 | 26.4 | 16.3 | 12.8 | 25.4 | 18.9 | 25.0 |
| 8-Jan  | 7.7                   | 15.7 | 27.4 | 18.3 | 13.8 | 24.9 | 18.9 | 25.0 |
| 9-Jan  | 9.4                   | 13.2 | 26.4 | 18.3 | 14.8 | 23.4 | 18.9 | 25.0 |
| 10-Jan | 9.0                   | 16.1 | 26.4 | 18.3 | 20.8 | 22.4 | 18.9 | 25.0 |
| 11-Jan | 9.5                   | 15.9 | 26.4 | 18.3 | 19.8 | 21.4 | 18.9 | 25.0 |
| 12-Jan | 11.2                  | 15.9 | 26.4 | 18.3 | 17.8 | 21.4 | 18.9 | 25.0 |
| 13-Jan | 9.7                   | 15.0 | 27.4 | 18.3 | 19.8 | 34.0 | 18.9 | 25.0 |
| 14-Jan | 28.0                  | 13.6 | 27.4 | 17.3 | 24.9 | 34.0 | 18.9 | 25.0 |
| 15-Jan | 20.0                  | 14.2 | 28.4 | 17.3 | 22.9 | 22.6 | 18.9 | 25.0 |
| 16-Jan | 8.4                   | 16.6 | 26.3 | 17.3 | 19.9 | 22.4 | 18.9 | 25.0 |
| 17-Jan | 15.1                  | 13.3 | 23.7 | 17.3 | 23.4 | 18.4 | 17.4 | 25.0 |
| 18-Jan | 13.9                  | 13.3 | 25.7 | 17.3 | 24.4 | 18.4 | 13.4 | 25.0 |
| 19-Jan | 20.2                  | 13.2 | 25.7 | 17.3 | 22.9 | 17.4 | 13.4 | 25.0 |
| 20-Jan | 19.2                  | 13.2 | 24.7 | 17.3 | 21.9 | 17.4 | 17.4 | 30.0 |
| 21-Jan | 13.3                  | 13.4 | 27.4 | 17.3 | 19.9 | 17.4 | 12.4 | 30.0 |
| 22-Jan | 10.5                  | 12.1 | 28.4 | 17.3 | 22.9 | 17.4 | 12.4 | 25.0 |
| 23-Jan | 6.5                   | 11.4 | 25.1 | 16.3 | 23.9 | 17.4 | 12.4 | 25.0 |
| 24-Jan | 28.0                  | 10.3 | 23.3 | 18.3 | 24.9 | 17.4 | 12.4 | 25.0 |
| 25-Jan | 28.0                  | 9.3  | 23.3 | 18.3 | 24.9 | 17.4 | 17.4 | 25.0 |
| 26-Jan | 28.0                  | 9.3  | 23.3 | 18.3 | 24.9 | 17.4 | 17.4 | 25.0 |
| 27-Jan | 29.0                  | 9.3  | 23.3 | 18.3 | 22.9 | 18.4 | 12.4 | 25.0 |
| 28-Jan | 28.0                  | 9.3  | 23.3 | 19.3 | 20.9 | 18.4 | 12.4 | 25.0 |
| 29-Jan | 14.9                  | 9.3  | 22.3 | 18.3 | 20.9 | 17.4 | 17.4 | 25.0 |
| 30-Jan | 9.9                   | 10.6 | 21.4 | 20.3 | 22.9 | 11.4 | 12.4 | 25.0 |
| 31-Jan | 20.4                  | 11.3 | 20.0 | 20.3 | 22.9 | 12.4 | 15.0 | 25.0 |
| 1-Feb  | 20.5                  | 11.3 | 19.0 | 21.3 | 21.9 | 15.4 | 18.2 | 25.0 |
| 2-Feb  | 11.8                  | 11.3 | 18.0 | 21.3 | 19.9 | 13.9 | 13.4 | 25.0 |
| 3-Feb  | 12.7                  | 11.6 | 17.0 | 21.3 | 20.9 | 14.9 | 19.9 | 25.0 |
| 4-Feb  | 11.6                  | 12.8 | 19.0 | 22.3 | 21.9 | 13.9 | 20.9 | 25.0 |
| 5-Feb  | 14.7                  | 12.8 | 18.3 | 27.3 | 19.9 | 13.9 | 16.2 | 30.0 |
| 6-Feb  | 13.0                  | 12.8 | 19.1 | 27.3 | 23.9 | 14.9 | 17.4 | 30.0 |
| 7-Feb  | 12.6                  | 9.8  | 18.1 | 23.3 | 24.9 | 12.4 | 18.8 | 30.0 |

| Date      | Table A-3 Bypass flow |      |      |      |      |      |      |      |
|-----------|-----------------------|------|------|------|------|------|------|------|
|           | 2002                  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
| 8-Feb     | 14.1                  | 9.8  | 19.1 | 24.3 | 20.9 | 11.4 | 18.4 | 30.0 |
| 9-Feb     | 14.6                  | 9.8  | 19.4 | 34.4 | 18.9 | 10.1 | 18.4 | 30.0 |
| 10-Feb    | 13.3                  | 11.7 | 19.4 | 35.4 | 18.9 | 10.1 | 17.4 | 20.1 |
| 11-Feb    | 13.1                  | 12.1 | 18.4 | 33.4 | 21.9 | 11.1 | 18.6 | 15.9 |
| 12-Feb    | 13.5                  | 12.1 | 18.1 | 32.4 | 25.9 | 9.8  | 15.9 | 14.9 |
| 13-Feb    | 15.0                  | 9.8  | 17.9 | 31.4 | 24.9 | 10.8 | 17.9 | 14.9 |
| 14-Feb    | 15.7                  | 10.8 | 17.0 | 28.8 | 23.9 | 19.1 | 15.9 | 14.9 |
| 15-Feb    | 16.3                  | 10.8 | 17.0 | 28.1 | 21.9 | 11.8 | 17.0 | 14.9 |
| 16-Feb    | 15.8                  | 10.8 | 14.4 | 25.8 | 20.1 | 13.8 | 19.4 | 14.9 |
| 17-Feb    | 14.9                  | 12.7 | 17.4 | 22.3 | 17.9 | 13.8 | 17.4 | 14.9 |
| 18-Feb    | 21.2                  | 14.7 | 17.4 | 21.3 | 17.9 | 13.8 | 20.6 | 14.9 |
| 19-Feb    | 19.8                  | 15.7 | 17.4 | 20.3 | 20.9 | 13.8 | 12.6 | 14.9 |
| 20-Feb    | 16.3                  | 14.7 | 16.9 | 19.3 | 22.9 | 16.8 | 20.4 | 14.9 |
| 21-Feb    | 16.6                  | 14.7 | 16.9 | 18.3 | 23.9 | 17.8 | 20.4 | 14.9 |
| 22-Feb    | 19.8                  | 14.7 | 16.6 | 17.3 | 23.9 | 17.8 | 20.6 | 14.9 |
| 23-Feb    | 18.5                  | 14.7 | 16.3 | 17.3 | 21.9 | 16.8 | 21.4 | 14.9 |
| 24-Feb    | 18.5                  | 14.1 | 17.7 | 17.3 | 22.9 | 17.8 | 21.4 | 12.1 |
| 25-Feb    | 16.7                  | 12.4 | 16.4 | 18.3 | 23.9 | 15.8 | 21.4 | 9.8  |
| 26-Feb    | 20.6                  | 12.4 | 18.2 | 19.3 | 25.9 | 17.2 | 21.0 | 9.8  |
| 27-Feb    | 19.5                  | 13.4 | 18.1 | 17.3 | 28.9 | 19.4 | 20.2 | 9.8  |
| 28-Feb    | 19.2                  | 13.4 | 19.1 | 15.8 | 25.9 | 23.4 | 19.4 | 18.7 |
| 2/29/2002 |                       |      | 20.1 |      |      |      | 17.9 |      |
| 1-Mar     | 18.0                  | 11.8 | 19.2 | 18.3 | 22.9 | 23.4 | 17.9 | 17.4 |
| 2-Mar     | 19.1                  | 10.8 | 20.1 | 19.3 | 20.9 | 24.4 | 18.9 | 23.7 |
| 3-Mar     | 26.0                  | 10.8 | 20.1 | 19.3 | 20.9 | 23.4 | 18.9 | 25.0 |
| 4-Mar     | 15.0                  | 10.8 | 15.7 | 19.3 | 16.9 | 24.4 | 18.9 | 25.0 |
| 5-Mar     | 14.8                  | 11.8 | 13.8 | 19.3 | 16.9 | 20.1 | 18.9 | 21.2 |
| 6-Mar     | 14.8                  | 11.8 | 11.8 | 18.3 | 16.9 | 19.8 | 19.9 | 17.1 |
| 7-Mar     | 14.9                  | 11.8 | 11.4 | 18.3 | 13.9 | 20.8 | 19.9 | 16.4 |
| 8-Mar     | 27.0                  | 11.8 | 13.2 | 17.3 | 13.9 | 20.3 | 20.8 | 16.4 |
| 9-Mar     | 15.8                  | 10.8 | 14.3 | 16.3 | 12.9 | 19.8 | 20.4 | 17.0 |
| 10-Mar    | 15.8                  | 12.8 | 14.2 | 17.3 | 12.9 | 19.8 | 22.4 | 16.8 |
| 11-Mar    | 16.8                  | 12.8 | 13.3 | 13.8 | 12.9 | 20.8 | 18.0 | 16.4 |
| 12-Mar    | 17.8                  | 15.3 | 17.3 | 13.8 | 12.9 | 21.8 | 18.4 | 16.9 |
| 13-Mar    | 17.8                  | 13.9 | 16.9 | 15.8 | 13.9 | 22.8 | 18.4 | 17.4 |
| 14-Mar    | 17.9                  | 15.9 | 17.9 | 17.8 | 12.9 | 22.8 | 18.4 | 17.4 |
| 15-Mar    | 16.1                  | 17.9 | 19.1 | 22.6 | 12.9 | 23.8 | 18.4 | 19.4 |
| 16-Mar    | 16.9                  | 17.9 | 17.1 | 25.6 | 14.9 | 23.8 | 18.4 | 19.6 |
| 17-Mar    | 15.8                  | 18.9 | 16.4 | 36.0 | 16.9 | 26.8 | 18.4 | 18.9 |

| Date   | Table A-3 Bypass flow |      |      |      |      |       |      |       |
|--------|-----------------------|------|------|------|------|-------|------|-------|
|        | 2002                  | 2003 | 2004 | 2005 | 2006 | 2007  | 2008 | 2009  |
| 18-Mar | 15.8                  | 23.7 | 16.4 | 35.0 | 13.9 | 35.8  | 18.4 | 17.3  |
| 19-Mar | 15.1                  | 22.3 | 16.8 | 18.3 | 15.9 | 38.8  | 16.4 | 16.5  |
| 20-Mar | 14.9                  | 23.2 | 18.9 | 18.3 | 13.9 | 39.8  | 17.4 | 16.6  |
| 21-Mar | 16.0                  | 25.2 | 20.9 | 19.3 | 13.9 | 44.8  | 17.4 | 16.6  |
| 22-Mar | 15.9                  | 27.2 | 21.2 | 16.3 | 14.9 | 50.8  | 17.4 | 17.6  |
| 23-Mar | 17.0                  | 39.2 | 22.4 | 17.3 | 13.9 | 57.8  | 18.4 | 16.6  |
| 24-Mar | 15.0                  | 58.9 | 23.4 | 18.3 | 13.9 | 89.8  | 17.4 | 15.6  |
| 25-Mar | 15.0                  | 49.9 | 27.4 | 17.3 | 13.9 | 110.8 | 18.4 | 14.6  |
| 26-Mar | 16.9                  | 49.9 | 29.4 | 18.3 | 14.9 | 111.8 | 18.4 | 14.6  |
| 27-Mar | 13.6                  | 61.9 | 29.9 | 18.3 | 13.9 | 113.8 | 20.4 | 14.6  |
| 28-Mar | 10.1                  | 47.9 | 28.9 | 22.3 | 14.9 | 116.8 | 20.4 | 14.6  |
| 29-Mar | 9.1                   | 38.9 | 26.0 | 20.3 | 15.9 | 113.8 | 17.4 | 17.6  |
| 30-Mar | 9.2                   | 36.9 | 28.0 | 19.3 | 20.9 | 128.8 | 16.4 | 19.6  |
| 31-Mar | 9.1                   | 35.4 | 27.4 | 19.3 | 23.9 | 128.8 | 17.4 | 15.6  |
| 1-Apr  | 11.6                  | 40.9 | 28.4 | 34.3 | 24.9 | 128.0 | 13.4 | 18.8  |
| 2-Apr  | 29.0                  | 48.3 | 32.2 | 50.3 | 23.9 | 117.8 | 13.4 | 17.6  |
| 3-Apr  | 24.0                  | 54.8 | 35.9 | 49.3 | 27.9 | 114.8 | 18.4 | 43.6  |
| 4-Apr  | 27.0                  | 50.7 | 46.9 | 51.3 | 28.9 | 114.8 | 39.4 | 61.6  |
| 5-Apr  | 28.0                  | 42.9 | 54.9 | 51.3 | 27.9 | 108.2 | 52.4 | 56.6  |
| 6-Apr  | 29.0                  | 39.9 | 62.9 | 49.3 | 27.9 | 100.8 | 52.4 | 57.6  |
| 7-Apr  | 28.0                  | 36.4 | 74.9 | 53.3 | 28.9 | 98.8  | 52.4 | 57.7  |
| 8-Apr  | 28.0                  | 33.0 | 80.8 | 54.3 | 28.9 | 96.8  | 50.4 | 56.4  |
| 9-Apr  | 27.0                  | 33.0 | 87.8 | 51.3 | 27.9 | 97.8  | 47.4 | 55.4  |
| 10-Apr | 25.0                  | 34.6 | 70.8 | 51.3 | 27.9 | 96.2  | 51.4 | 54.0  |
| 11-Apr | 21.8                  | 36.0 | 53.8 | 49.8 | 30.9 | 90.3  | 52.4 | 52.8  |
| 12-Apr | 10.7                  | 37.0 | 58.8 | 51.8 | 31.9 | 68.8  | 51.4 | 53.8  |
| 13-Apr | 10.1                  | 41.0 | 61.6 | 47.8 | 31.9 | 50.3  | 55.6 | 53.8  |
| 14-Apr | 28.0                  | 47.3 | 63.6 | 43.8 | 36.9 | 41.3  | 55.4 | 52.8  |
| 15-Apr | 13.1                  | 65.0 | 76.0 | 46.6 | 42.9 | 42.3  | 58.7 | 53.8  |
| 16-Apr | 24.3                  | 69.9 | 76.0 | 50.6 | 44.9 | 44.3  | 63.8 | 54.8  |
| 17-Apr | 25.8                  | 66.3 | 76.0 | 68.0 | 43.9 | 57.3  | 69.8 | 61.5  |
| 18-Apr | 21.8                  | 64.3 | 76.0 | 78.0 | 43.9 | 65.3  | 64.3 | 62.1  |
| 19-Apr | 22.9                  | 60.3 | 49.8 | 66.3 | 46.9 | 74.3  | 63.8 | 57.9  |
| 20-Apr | 52.0                  | 59.3 | 47.8 | 66.3 | 40.9 | 73.3  | 69.8 | 64.6  |
| 21-Apr | 50.0                  | 55.3 | 48.8 | 66.3 | 38.9 | 71.3  | 84.9 | 91.2  |
| 22-Apr | 21.9                  | 55.4 | 48.7 | 63.3 | 39.9 | 71.3  | 88.3 | 114.8 |
| 23-Apr | 19.0                  | 63.4 | 46.7 | 62.3 | 40.9 | 72.3  | 63.3 | 121.5 |
| 24-Apr | 13.0                  | 66.0 | 42.7 | 61.3 | 52.9 | 81.3  | 53.3 | 123.3 |
| 25-Apr | 11.1                  | 69.0 | 45.7 | 64.3 | 55.9 | 90.3  | 65.3 | 122.9 |

| Date   | Table A-3 Bypass flow |        |       |       |       |       |       |       |
|--------|-----------------------|--------|-------|-------|-------|-------|-------|-------|
|        | 2002                  | 2003   | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 26-Apr | 10.1                  | 77.0   | 44.7  | 61.3  | 77.9  | 77.3  | 59.3  | 132.2 |
| 27-Apr | 15.1                  | 90.0   | 44.7  | 61.3  | 79.9  | 67.3  | 53.3  | 130.6 |
| 28-Apr | 20.1                  | 88.4   | 45.7  | 73.3  | 73.9  | 70.3  | 49.3  | 120.0 |
| 29-Apr | 21.1                  | 89.9   | 44.7  | 68.3  | 79.4  | 68.3  | 46.3  | 120.5 |
| 30-Apr | 14.2                  | 90.9   | 45.7  | 67.3  | 87.4  | 81.3  | 46.6  | 107.7 |
| 1-May  | 16.1                  | 119.9  | 77.7  | 62.3  | 81.4  | 109.3 | 52.8  | 117.7 |
| 2-May  | 23.7                  | 127.5  | 88.7  | 75.3  | 75.9  | 144.3 | 62.8  | 132.7 |
| 3-May  | 30.1                  | 121.4  | 82.7  | 91.7  | 79.8  | 141.3 | 61.8  | 147.4 |
| 4-May  | 31.4                  | 95.4   | 83.6  | 105.7 | 93.8  | 137.3 | 54.8  | 153.1 |
| 5-May  | 31.4                  | 91.6   | 91.9  | 126.7 | 90.8  | 155.3 | 54.8  | 159.1 |
| 6-May  | 29.4                  | 99.5   | 100.7 | 150.7 | 87.8  | 160.3 | 51.8  | 142.9 |
| 7-May  | 32.6                  | 91.5   | 105.4 | 168.7 | 89.8  | 155.3 | 60.8  | 140.9 |
| 8-May  | 39.9                  | 82.5   | 104.7 | 170.7 | 98.8  | 146.3 | 85.8  | 125.3 |
| 9-May  | 59.8                  | 83.5   | 108.7 | 160.7 | 92.8  | 149.3 | 88.8  | 109.3 |
| 10-May | 63.2                  | 108.5  | 104.7 | 160.7 | 85.8  | 148.3 | 216.8 | 116.3 |
| 11-May | 60.3                  | 114.5  | 143.5 | 198.7 | 81.8  | 153.5 | 228.8 | 110.3 |
| 12-May | 49.3                  | 126.7  | 248.4 | 224.7 | 83.8  | 160.5 | 208.2 | 111.3 |
| 13-May | 49.4                  | 143.9  | 263.4 | 208.7 | 86.8  | 163.5 | 212.8 | 111.9 |
| 14-May | 60.4                  | 148.7  | 213.4 | 198.7 | 91.8  | 181.5 | 218.8 | 105.7 |
| 15-May | 59.2                  | 161.7  | 144.4 | 192.7 | 106.8 | 197.5 | 226.2 | 122.7 |
| 16-May | 65.1                  | 193.0  | 119.6 | 204.7 | 111.8 | 202.3 | 193.3 | 129.7 |
| 17-May | 68.9                  | 184.0  | 124.1 | 208.7 | 114.8 | 212.3 | 187.3 | 135.7 |
| 18-May | 78.7                  | 184.0  | 127.1 | 198.7 | 119.8 | 210.3 | 185.3 | 138.7 |
| 19-May | 84.8                  | 174.7  | 127.1 | 201.7 | 135.8 | 221.3 | 157.3 | 146.7 |
| 20-May | 119.7                 | 183.7  | 128.6 | 212.7 | 464.3 | 230.3 | 219.3 | 148.7 |
| 21-May | 180.0                 | 184.8  | 184.5 | 224.7 | 261.8 | 225.3 | 395.7 | 239.7 |
| 22-May | 214.7                 | 182.8  | 150.5 | 226.7 | 143.8 | 231.3 | 483.3 | 251.7 |
| 23-May | 190.0                 | 184.4  | 127.5 | 232.1 | 148.8 | 208.3 | 516.8 | 213.7 |
| 24-May | 144.2                 | 189.4  | 126.5 | 357.1 | 144.8 | 203.3 | 454.2 | 208.7 |
| 25-May | 118.0                 | 179.4  | 135.6 | 280.1 | 142.8 | 192.7 | 356.2 | 214.7 |
| 26-May | 110.3                 | 182.5  | 131.6 | 216.2 | 145.8 | 188.7 | 316.2 | 311.4 |
| 27-May | 121.1                 | 336.4  | 127.4 | 210.2 | 144.8 | 186.7 | 319.2 | 244.7 |
| 28-May | 112.6                 | 533.7  | 124.3 | 203.2 | 145.8 | 197.7 | 325.2 | 166.7 |
| 29-May | 122.3                 | 556.7  | 127.3 | 203.2 | 140.8 | 215.7 | 324.2 | 166.6 |
| 30-May | 156.7                 | 918.7  | 123.3 | 229.2 | 139.8 | 204.7 | 398.2 | 190.0 |
| 31-May | 265.0                 | 1039.7 | 121.6 | 229.6 | 132.3 | 190.7 | 470.2 | 196.0 |
| 1-Jun  | 302.8                 | 957.7  | 121.6 | 202.6 | 134.3 | 183.7 | 466.2 | 231.0 |
| 2-Jun  | 341.6                 | 920.6  | 120.6 | 242.6 | 134.3 | 183.7 | 555.0 | 288.0 |
| 3-Jun  | 352.0                 | 761.5  | 120.6 | 486.6 | 137.3 | 197.7 | 674.1 | 246.0 |

| Date   | Table A-3 Bypass flow |       |       |       |       |       |       |       |
|--------|-----------------------|-------|-------|-------|-------|-------|-------|-------|
|        | 2002                  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 4-Jun  | 329.1                 | 744.5 | 161.6 | 433.6 | 138.3 | 194.7 | 780.7 | 205.5 |
| 5-Jun  | 206.1                 | 566.7 | 269.6 | 385.6 | 140.3 | 194.7 | 890.7 | 195.6 |
| 6-Jun  | 117.2                 | 334.8 | 296.6 | 334.6 | 144.3 | 206.7 | 863.7 | 225.0 |
| 7-Jun  | 110.4                 | 218.8 | 361.6 | 310.6 | 144.3 | 198.7 | 744.7 | 216.0 |
| 8-Jun  | 116.8                 | 182.7 | 396.4 | 288.7 | 146.3 | 196.7 | 607.7 | 199.0 |
| 9-Jun  | 121.4                 | 176.7 | 450.7 | 272.7 | 147.8 | 186.7 | 580.7 | 186.8 |
| 10-Jun | 260.8                 | 181.7 | 422.3 | 273.2 | 146.8 | 184.7 | 465.7 | 177.8 |
| 11-Jun | 321.0                 | 248.1 | 444.1 | 265.1 | 144.8 | 183.7 | 386.7 | 178.8 |
| 12-Jun | 258.7                 | 370.2 | 439.0 | 255.1 | 138.8 | 199.7 | 433.7 | 174.8 |
| 13-Jun | 222.8                 | 305.4 | 330.6 | 237.1 | 138.8 | 199.7 | 412.7 | 175.3 |
| 14-Jun | 200.2                 | 208.7 | 266.6 | 224.1 | 141.8 | 192.7 | 321.7 | 188.0 |
| 15-Jun | 200.2                 | 171.7 | 209.5 | 221.6 | 210.3 | 193.7 | 311.7 | 190.0 |
| 16-Jun | 223.0                 | 169.6 | 221.3 | 214.6 | 297.3 | 201.2 | 409.7 | 188.0 |
| 17-Jun | 177.1                 | 189.5 | 274.3 | 214.6 | 310.3 | 195.2 | 494.7 | 176.7 |
| 18-Jun | 169.2                 | 207.4 | 278.3 | 219.6 | 288.3 | 200.2 | 556.7 | 180.8 |
| 19-Jun | 131.1                 | 221.4 | 338.2 | 280.6 | 255.3 | 189.7 | 583.7 | 177.0 |
| 20-Jun | 115.1                 | 197.3 | 355.3 | 245.6 | 246.3 | 180.7 | 600.7 | 175.9 |
| 21-Jun | 117.5                 | 188.3 | 337.7 | 389.6 | 247.3 | 187.3 | 662.7 | 185.9 |
| 22-Jun | 114.2                 | 174.3 | 304.7 | 338.7 | 241.3 | 192.2 | 639.7 | 175.8 |
| 23-Jun | 111.1                 | 175.4 | 288.7 | 294.4 | 236.3 | 177.7 | 622.7 | 174.7 |
| 24-Jun | 111.2                 | 179.4 | 226.7 | 361.7 | 232.3 | 177.7 | 582.7 | 168.7 |
| 25-Jun | 110.1                 | 179.4 | 192.7 | 416.7 | 222.3 | 166.7 | 568.3 | 171.7 |
| 26-Jun | 107.1                 | 164.5 | 220.7 | 274.7 | 212.3 | 169.7 | 604.7 | 178.7 |
| 27-Jun | 111.6                 | 162.5 | 394.7 | 201.7 | 207.8 | 169.7 | 606.7 | 427.7 |
| 28-Jun | 117.5                 | 161.5 | 352.7 | 184.7 | 210.3 | 166.7 | 587.0 | 369.7 |
| 29-Jun | 118.5                 | 164.5 | 308.7 | 179.1 | 195.3 | 161.7 | 586.0 | 215.7 |
| 30-Jun | 114.0                 | 162.5 | 325.7 | 169.1 | 180.3 | 156.7 | 584.5 | 154.7 |
| 1-Jul  | 114.4                 | 159.5 | 276.7 | 168.1 | 177.3 | 150.7 | 583.7 | 155.7 |
| 2-Jul  | 106.9                 | 156.5 | 222.8 | 165.1 | 176.3 | 143.7 | 562.7 | 172.6 |
| 3-Jul  | 108.9                 | 155.5 | 203.7 | 161.1 | 190.3 | 144.7 | 529.7 | 180.8 |
| 4-Jul  | 104.9                 | 155.5 | 195.7 | 160.1 | 211.3 | 145.7 | 524.7 | 184.8 |
| 5-Jul  | 98.9                  | 152.5 | 188.7 | 157.7 | 245.3 | 142.7 | 509.7 | 190.8 |
| 6-Jul  | 95.9                  | 151.5 | 182.7 | 153.7 | 234.3 | 138.7 | 507.7 | 178.8 |
| 7-Jul  | 104.9                 | 149.5 | 178.7 | 158.7 | 214.8 | 134.7 | 495.2 | 168.8 |
| 8-Jul  | 106.9                 | 146.5 | 172.7 | 155.2 | 226.8 | 140.7 | 488.5 | 155.9 |
| 9-Jul  | 98.9                  | 148.5 | 168.7 | 159.0 | 317.3 | 135.7 | 417.7 | 148.7 |
| 10-Jul | 118.0                 | 145.2 | 167.7 | 152.2 | 428.7 | 129.7 | 369.7 | 145.7 |
| 11-Jul | 119.0                 | 142.7 | 293.7 | 150.2 | 518.7 | 131.7 | 332.7 | 142.7 |
| 12-Jul | 119.0                 | 141.3 | 221.7 | 148.2 | 311.7 | 230.7 | 318.7 | 142.7 |

| Date   | Table A-3 Bypass flow |       |       |       |       |       |       |       |
|--------|-----------------------|-------|-------|-------|-------|-------|-------|-------|
|        | 2002                  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  |
| 13-Jul | 116.0                 | 139.3 | 160.7 | 158.7 | 224.7 | 253.7 | 301.7 | 139.7 |
| 14-Jul | 81.9                  | 135.3 | 163.7 | 148.7 | 252.7 | 165.7 | 285.7 | 137.7 |
| 15-Jul | 64.9                  | 133.3 | 157.7 | 159.7 | 237.7 | 128.7 | 259.7 | 134.7 |
| 16-Jul | 60.9                  | 132.3 | 168.7 | 154.7 | 216.7 | 126.7 | 266.7 | 132.7 |
| 17-Jul | 59.9                  | 130.3 | 182.7 | 146.7 | 200.7 | 121.7 | 267.7 | 131.7 |
| 18-Jul | 80.0                  | 132.3 | 161.7 | 140.7 | 192.7 | 123.7 | 257.7 | 132.7 |
| 19-Jul | 49.9                  | 131.3 | 156.7 | 136.2 | 191.7 | 122.7 | 255.7 | 125.7 |
| 20-Jul | 53.9                  | 134.3 | 157.7 | 135.2 | 197.7 | 119.7 | 241.7 | 123.7 |
| 21-Jul | 51.9                  | 130.7 | 149.7 | 129.5 | 207.7 | 114.7 | 239.7 | 124.7 |
| 22-Jul | 57.9                  | 124.7 | 166.7 | 128.1 | 219.7 | 116.2 | 286.7 | 125.7 |
| 23-Jul | 63.3                  | 132.5 | 258.2 | 136.2 | 206.7 | 114.2 | 332.2 | 121.7 |
| 24-Jul | 92.8                  | 128.6 | 450.2 | 158.2 | 186.7 | 127.2 | 340.2 | 117.7 |
| 25-Jul | 73.7                  | 134.6 | 581.2 | 180.2 | 177.7 | 129.2 | 359.2 | 119.7 |
| 26-Jul | 72.9                  | 136.6 | 370.7 | 162.2 | 177.7 | 141.2 | 379.2 | 121.7 |
| 27-Jul | 94.4                  | 167.6 | 262.7 | 150.2 | 174.7 | 198.2 | 374.2 | 120.7 |
| 28-Jul | 59.5                  | 155.6 | 260.7 | 140.2 | 198.0 | 231.2 | 361.2 | 120.7 |
| 29-Jul | 45.8                  | 165.6 | 260.7 | 136.2 | 186.0 | 211.2 | 387.6 | 131.2 |
| 30-Jul | 43.7                  | 159.6 | 238.2 | 131.2 | 143.7 | 202.2 | 352.7 | 126.7 |
| 31-Jul | 67.2                  | 144.6 | 222.2 | 128.2 | 129.7 | 174.2 | 279.2 | 118.7 |
| 1-Aug  | 40.7                  | 142.6 | 210.2 | 131.2 | 122.7 | 156.2 | 188.2 | 116.7 |
| 2-Aug  | 35.2                  | 140.6 | 203.2 | 128.2 | 125.2 | 143.2 | 156.2 | 110.7 |
| 3-Aug  | 56.0                  | 135.6 | 196.2 | 138.2 | 122.7 | 166.2 | 152.2 | 111.7 |
| 4-Aug  | 37.8                  | 135.6 | 184.2 | 174.2 | 111.7 | 222.2 | 131.2 | 113.7 |
| 5-Aug  | 46.8                  | 123.8 | 181.2 | 157.2 | 103.7 | 222.2 | 120.2 | 103.7 |
| 6-Aug  | 59.8                  | 122.8 | 177.2 | 142.2 | 98.7  | 185.9 | 121.2 | 111.7 |
| 7-Aug  | 75.8                  | 121.8 | 172.2 | 136.2 | 96.7  | 203.0 | 123.2 | 111.7 |
| 8-Aug  | 76.8                  | 120.8 | 175.2 | 132.2 | 90.7  | 188.7 | 123.2 | 108.7 |
| 9-Aug  | 83.8                  | 122.8 | 167.2 | 131.2 | 84.7  | 193.7 | 122.2 | 108.7 |
| 10-Aug | 107.0                 | 121.8 | 153.2 | 144.2 | 81.7  | 183.7 | 122.2 | 94.7  |
| 11-Aug | 95.0                  | 115.8 | 155.2 | 141.2 | 78.7  | 156.7 | 123.2 | 85.7  |
| 12-Aug | 79.8                  | 115.8 | 152.2 | 133.2 | 76.7  | 136.7 | 130.5 | 75.7  |
| 13-Aug | 69.0                  | 113.8 | 146.2 | 134.2 | 72.7  | 132.7 | 220.0 | 70.7  |
| 14-Aug | 44.7                  | 111.8 | 141.2 | 144.2 | 71.7  | 120.7 | 238.0 | 69.7  |
| 15-Aug | 40.7                  | 99.8  | 127.2 | 133.2 | 75.7  | 114.7 | 197.4 | 64.7  |
| 16-Aug | 32.8                  | 86.8  | 115.2 | 112.2 | 71.7  | 125.7 | 153.4 | 64.7  |
| 17-Aug | 32.7                  | 83.8  | 117.2 | 105.2 | 68.7  | 141.6 | 115.7 | 65.7  |
| 18-Aug | 54.0                  | 89.8  | 154.2 | 103.2 | 69.7  | 142.4 | 136.6 | 62.7  |
| 19-Aug | 21.6                  | 88.8  | 245.2 | 102.2 | 69.7  | 152.0 | 263.8 | 62.7  |
| 20-Aug | 20.6                  | 122.5 | 239.2 | 99.2  | 72.7  | 148.5 | 301.8 | 52.7  |

| Date   | Table A-3 Bypass flow |       |       |       |      |       |       |       |
|--------|-----------------------|-------|-------|-------|------|-------|-------|-------|
|        | 2002                  | 2003  | 2004  | 2005  | 2006 | 2007  | 2008  | 2009  |
| 21-Aug | 19.6                  | 101.5 | 227.2 | 102.2 | 79.7 | 133.7 | 289.7 | 45.8  |
| 22-Aug | 18.6                  | 83.5  | 248.2 | 100.2 | 77.7 | 117.7 | 329.7 | 43.5  |
| 23-Aug | 19.6                  | 83.3  | 210.2 | 102.2 | 73.7 | 104.7 | 235.7 | 41.5  |
| 24-Aug | 21.6                  | 84.3  | 179.2 | 97.2  | 69.7 | 100.7 | 188.0 | 40.7  |
| 25-Aug | 20.5                  | 86.3  | 165.2 | 94.2  | 63.7 | 98.7  | 171.0 | 47.9  |
| 26-Aug | 43.0                  | 84.1  | 157.2 | 89.2  | 57.7 | 96.7  | 234.0 | 53.7  |
| 27-Aug | 45.0                  | 84.1  | 181.2 | 93.2  | 57.7 | 84.7  | 236.7 | 54.7  |
| 28-Aug | 17.6                  | 81.1  | 174.2 | 94.2  | 61.7 | 77.7  | 261.1 | 57.7  |
| 29-Aug | 17.6                  | 87.0  | 162.2 | 90.2  | 64.7 | 81.7  | 240.7 | 62.5  |
| 30-Aug | 17.6                  | 103.0 | 152.2 | 77.2  | 62.7 | 82.7  | 224.7 | 58.7  |
| 31-Aug | 41.0                  | 94.0  | 147.2 | 67.2  | 59.7 | 80.7  | 240.7 | 53.7  |
| 1-Sep  | 13.4                  | 75.5  | 124.7 | 62.2  | 54.7 | 107.7 | 245.7 | 49.7  |
| 2-Sep  | 37.0                  | 64.5  | 110.2 | 60.2  | 54.7 | 124.7 | 199.7 | 45.9  |
| 3-Sep  | 5.4                   | 61.5  | 106.2 | 57.2  | 52.7 | 78.7  | 183.7 | 42.5  |
| 4-Sep  | 17.4                  | 62.5  | 104.2 | 52.2  | 49.7 | 61.7  | 228.7 | 39.7  |
| 5-Sep  | 28.5                  | 59.5  | 109.2 | 50.2  | 46.7 | 61.2  | 251.7 | 35.7  |
| 6-Sep  | 54.0                  | 58.5  | 102.2 | 45.2  | 39.7 | 61.2  | 239.7 | 35.7  |
| 7-Sep  | 29.4                  | 61.5  | 96.2  | 49.5  | 45.7 | 61.1  | 233.7 | 40.7  |
| 8-Sep  | 30.4                  | 63.5  | 90.2  | 49.0  | 49.7 | 53.2  | 195.7 | 39.7  |
| 9-Sep  | 59.0                  | 58.5  | 86.2  | 48.6  | 51.7 | 53.2  | 181.7 | 34.7  |
| 10-Sep | 33.8                  | 57.5  | 85.2  | 47.2  | 57.7 | 57.5  | 195.7 | 34.7  |
| 11-Sep | 29.3                  | 57.5  | 85.2  | 49.5  | 62.7 | 59.1  | 295.7 | 92.7  |
| 12-Sep | 51.3                  | 56.5  | 83.2  | 48.6  | 62.7 | 55.2  | 348.1 | 137.7 |
| 13-Sep | 111.0                 | 56.5  | 83.2  | 44.9  | 56.7 | 55.5  | 332.7 | 176.7 |
| 14-Sep | 129.0                 | 55.5  | 199.5 | 44.6  | 55.7 | 49.0  | 336.0 | 187.2 |
| 15-Sep | 94.3                  | 55.5  | 327.5 | 50.5  | 47.7 | 47.5  | 360.0 | 155.3 |
| 16-Sep | 93.3                  | 36.5  | 436.4 | 40.5  | 42.8 | 37.7  | 357.0 | 135.3 |
| 17-Sep | 92.3                  | 29.5  | 493.3 | 32.2  | 34.3 | 28.8  | 323.1 | 137.3 |
| 18-Sep | 81.3                  | 30.5  | 378.7 | 30.2  | 32.7 | 29.9  | 300.7 | 176.0 |
| 19-Sep | 87.0                  | 29.5  | 326.7 | 31.2  | 32.7 | 29.0  | 299.3 | 204.0 |
| 20-Sep | 57.3                  | 28.5  | 308.7 | 28.2  | 32.7 | 29.8  | 253.8 | 181.0 |
| 21-Sep | 56.3                  | 28.2  | 317.7 | 24.2  | 32.7 | 30.2  | 234.8 | 170.0 |
| 22-Sep | 52.3                  | 27.2  | 337.7 | 21.2  | 33.7 | 32.2  | 237.3 | 171.3 |
| 23-Sep | 94.7                  | 25.8  | 353.7 | 22.2  | 36.7 | 33.2  | 235.5 | 172.3 |
| 24-Sep | 154.7                 | 24.8  | 368.7 | 29.9  | 36.7 | 38.2  | 221.7 | 122.3 |
| 25-Sep | 123.7                 | 36.6  | 370.7 | 30.4  | 34.7 | 27.2  | 227.7 | 125.3 |
| 26-Sep | 60.9                  | 72.2  | 362.7 | 29.6  | 33.7 | 24.2  | 168.7 | 111.3 |
| 27-Sep | 44.0                  | 50.1  | 352.7 | 30.5  | 32.7 | 23.9  | 144.7 | 86.3  |
| 28-Sep | 53.0                  | 30.5  | 334.7 | 27.8  | 32.7 | 24.9  | 110.7 | 73.6  |

| Date   | Table A-3 Bypass flow |       |       |      |      |       |       |      |
|--------|-----------------------|-------|-------|------|------|-------|-------|------|
|        | 2002                  | 2003  | 2004  | 2005 | 2006 | 2007  | 2008  | 2009 |
| 29-Sep | 51.0                  | 30.5  | 260.7 | 32.2 | 30.7 | 24.9  | 67.7  | 66.7 |
| 30-Sep | 48.0                  | 31.5  | 260.2 | 31.2 | 29.7 | 23.9  | 50.7  | 61.7 |
| 1-Oct  | 48.0                  | 16.4  | 202.2 | 30.2 | 27.7 | 30.7  | 43.7  |      |
| 2-Oct  | 59.0                  | 9.4   | 170.7 | 30.2 | 25.7 | 47.3  | 42.7  |      |
| 3-Oct  | 68.0                  | 12.4  | 163.7 | 28.2 | 23.7 | 61.3  | 52.7  |      |
| 4-Oct  | 60.0                  | 23.3  | 158.7 | 28.2 | 22.7 | 66.3  | 56.7  |      |
| 5-Oct  | 49.0                  | 28.3  | 165.2 | 28.2 | 24.7 | 65.9  | 81.0  |      |
| 6-Oct  | 47.0                  | 18.1  | 175.2 | 29.2 | 25.7 | 39.2  | 126.0 |      |
| 7-Oct  | 44.0                  | 22.5  | 198.5 | 32.2 | 25.2 | 31.2  | 139.0 |      |
| 8-Oct  | 41.0                  | 22.5  | 141.2 | 32.2 | 27.3 | 30.7  | 190.2 |      |
| 9-Oct  | 41.0                  | 21.9  | 111.2 | 62.0 | 28.3 | 29.7  | 223.3 |      |
| 10-Oct | 39.0                  | 23.5  | 99.7  | 43.2 | 31.3 | 32.3  | 220.4 |      |
| 11-Oct | 28.9                  | 21.5  | 92.7  | 33.2 | 31.3 | 30.2  | 212.2 |      |
| 12-Oct | 10.7                  | 22.4  | 89.7  | 34.2 | 31.3 | 28.7  | 213.2 |      |
| 13-Oct | 8.7                   | 49.8  | 91.7  | 33.2 | 32.3 | 29.3  | 223.8 |      |
| 14-Oct | 7.7                   | 62.8  | 103.3 | 31.2 | 32.3 | 38.3  | 241.0 |      |
| 15-Oct | 6.7                   | 65.8  | 93.7  | 30.9 | 32.3 | 35.3  | 238.0 |      |
| 16-Oct | 1.7                   | 53.8  | 74.7  | 31.3 | 29.3 | 36.2  | 234.0 |      |
| 17-Oct | 4.7                   | 47.4  | 55.7  | 30.2 | 26.7 | 33.3  | 233.0 |      |
| 18-Oct | 7.2                   | 76.0  | 54.7  | 71.1 | 23.7 | 29.7  | 191.0 |      |
| 19-Oct | 8.1                   | 74.0  | 78.0  | 55.0 | 18.7 | 86.9  | 180.0 |      |
| 20-Oct | 8.1                   | 51.8  | 65.8  | 37.3 | 20.7 | 98.3  | 179.0 |      |
| 21-Oct | 8.2                   | 49.6  | 52.7  | 35.1 | 18.7 | 105.3 | 177.0 |      |
| 22-Oct | 13.3                  | 46.9  | 52.7  | 34.3 | 20.8 | 131.0 | 107.0 |      |
| 23-Oct | 8.6                   | 45.4  | 47.7  | 34.4 | 21.3 | 89.8  | 80.0  |      |
| 24-Oct | 6.6                   | 32.0  | 51.7  | 32.2 | 18.8 | 63.3  | 60.1  |      |
| 25-Oct | 5.6                   | 21.1  | 50.7  | 32.6 | 22.3 | 55.3  | 46.0  |      |
| 26-Oct | 6.5                   | 20.7  | 49.7  | 31.1 | 36.3 | 56.6  | 46.0  |      |
| 27-Oct | 5.7                   | 17.7  | 47.7  | 53.3 | 33.7 | 135.3 | 358.0 |      |
| 28-Oct | 7.3                   | 75.4  | 47.7  | 53.4 | 35.7 | 140.3 | 434.0 |      |
| 29-Oct | 8.3                   | 125.2 | 46.7  | 54.0 | 34.7 | 163.5 | 435.0 |      |
| 30-Oct | 29.0                  | 212.9 | 44.7  | 52.0 | 35.7 | 251.0 | 339.0 |      |
| 31-Oct | 10.2                  | 156.7 | 41.7  | 49.0 | 32.7 | 293.0 | 132.0 |      |
| 1-Nov  | 7.7                   | 217.3 | 34.7  | 48.0 | 26.7 | 278.8 | 48.0  |      |
| 2-Nov  | 11.5                  | 271.0 | 34.7  | 45.0 | 21.7 | 372.3 | 50.0  |      |
| 3-Nov  | 11.5                  | 244.3 | 47.7  | 46.0 | 21.7 | 395.6 | 63.0  |      |
| 4-Nov  | 9.5                   | 256.0 | 57.7  | 49.0 | 18.7 | 391.3 | 67.0  |      |
| 5-Nov  | 9.5                   | 270.3 | 50.7  | 44.0 | 14.7 | 390.3 | 67.0  |      |
| 6-Nov  | 8.5                   | 266.1 | 48.7  | 41.0 | 21.8 | 384.3 | 64.0  |      |

| Date   | Table A-3 Bypass flow |       |      |      |      |       |       |      |
|--------|-----------------------|-------|------|------|------|-------|-------|------|
|        | 2002                  | 2003  | 2004 | 2005 | 2006 | 2007  | 2008  | 2009 |
| 7-Nov  | 7.5                   | 113.8 | 46.7 | 41.0 | 20.8 | 386.3 | 65.0  |      |
| 8-Nov  | 7.5                   | 18.9  | 45.7 | 41.0 | 29.2 | 316.3 | 125.0 |      |
| 9-Nov  | 6.5                   | 16.3  | 44.7 | 41.0 | 40.0 | 227.3 | 147.0 |      |
| 10-Nov | 9.8                   | 20.8  | 43.7 | 41.0 | 39.0 | 136.3 | 86.0  |      |
| 11-Nov | 10.8                  | 16.5  | 45.7 | 41.0 | 37.0 | 102.3 | 38.0  |      |
| 12-Nov | 9.8                   | 18.8  | 45.7 | 42.0 | 35.0 | 99.3  | 56.0  |      |
| 13-Nov | 10.4                  | 13.8  | 44.7 | 41.0 | 35.0 | 101.5 | 66.0  |      |
| 14-Nov | 9.8                   | 15.1  | 42.7 | 41.0 | 37.0 | 95.3  | 66.0  |      |
| 15-Nov | 10.8                  | 13.1  | 40.7 | 35.0 | 35.0 | 90.3  | 60.0  |      |
| 16-Nov | 8.7                   | 13.1  | 38.7 | 36.0 | 35.0 | 170.3 | 69.0  |      |
| 17-Nov | 6.7                   | 14.8  | 27.7 | 45.0 | 39.0 | 214.3 | 66.0  |      |
| 18-Nov | 8.4                   | 12.1  | 26.7 | 42.0 | 18.8 | 216.3 | 65.0  |      |
| 19-Nov | 7.8                   | 13.3  | 26.7 | 44.0 | 18.8 | 219.3 | 66.0  |      |
| 20-Nov | 7.5                   | 15.4  | 26.7 | 44.0 | 18.3 | 220.3 | 65.0  |      |
| 21-Nov | 7.5                   | 13.3  | 25.3 | 43.0 | 20.3 | 221.3 | 63.0  |      |
| 22-Nov | 9.2                   | 12.3  | 31.3 | 42.0 | 21.3 | 213.3 | 65.0  |      |
| 23-Nov | 9.2                   | 14.3  | 33.3 | 44.0 | 19.3 | 216.3 | 69.0  |      |
| 24-Nov | 7.2                   | 28.0  | 33.3 | 42.0 | 18.3 | 219.3 | 62.0  |      |
| 25-Nov | 11.7                  | 29.0  | 32.3 | 43.0 | 17.3 | 221.3 | 57.0  |      |
| 26-Nov | 21.7                  | 29.0  | 29.3 | 41.0 | 15.9 | 225.3 | 99.0  |      |
| 27-Nov | 27.7                  | 29.0  | 27.3 | 39.0 | 14.3 | 221.3 | 106.0 |      |
| 28-Nov | 21.2                  | 30.0  | 27.3 | 39.0 | 10.3 | 221.3 | 106.0 |      |
| 29-Nov | 21.3                  | 28.0  | 28.3 | 39.0 | 13.7 | 222.3 | 106.0 |      |
| 30-Nov | 20.9                  | 27.0  | 28.3 | 39.0 | 24.8 | 221.3 | 106.0 |      |
| 1-Dec  | 20.9                  | 27.0  | 26.3 | 37.0 | 21.4 | 223.3 | 105.0 |      |
| 2-Dec  | 20.9                  | 28.0  | 26.3 | 32.0 | 20.4 | 225.3 | 110.0 |      |
| 3-Dec  | 19.8                  | 28.0  | 27.3 | 31.0 | 15.4 | 227.3 | 105.0 |      |
| 4-Dec  | 18.3                  | 28.0  | 27.3 | 29.0 | 15.4 | 221.3 | 105.0 |      |
| 5-Dec  | 21.8                  | 28.0  | 27.3 | 29.0 | 17.4 | 221.3 | 69.0  |      |
| 6-Dec  | 18.4                  | 28.0  | 26.3 | 29.0 | 15.4 | 226.3 | 30.0  |      |
| 7-Dec  | 19.5                  | 28.0  | 27.3 | 28.0 | 15.4 | 184.3 | 30.0  |      |
| 8-Dec  | 21.2                  | 27.0  | 27.3 | 28.0 | 15.4 | 161.3 | 35.0  |      |
| 9-Dec  | 21.4                  | 29.0  | 26.3 | 31.0 | 12.8 | 161.3 | 35.0  |      |
| 10-Dec | 21.4                  | 29.0  | 27.3 | 32.0 | 14.8 | 172.3 | 35.0  |      |
| 11-Dec | 21.4                  | 29.0  | 27.3 | 33.0 | 16.8 | 170.3 | 35.0  |      |
| 12-Dec | 21.4                  | 30.0  | 27.3 | 15.3 | 16.8 | 168.3 | 35.0  |      |
| 13-Dec | 18.8                  | 29.0  | 28.3 | 14.3 | 15.8 | 147.3 | 30.0  |      |
| 14-Dec | 18.9                  | 29.0  | 27.3 | 12.3 | 15.8 | 121.3 | 30.0  |      |
| 15-Dec | 18.9                  | 28.4  | 28.3 | 12.3 | 13.8 | 118.5 | 30.0  |      |

| <b>Date</b> | <b>Table A-3 Bypass flow</b> |             |             |             |             |             |             |             |
|-------------|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|             | <b>2002</b>                  | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> |
| 16-Dec      | 18.9                         | 29.0        | 27.3        | 13.3        | 12.8        | 130.0       | 30.0        |             |
| 17-Dec      | 18.9                         | 29.0        | 27.3        | 14.3        | 12.9        | 134.2       | 30.0        |             |
| 18-Dec      | 17.9                         | 29.0        | 26.3        | 13.3        | 14.4        | 126.0       | 30.0        |             |
| 19-Dec      | 17.8                         | 29.0        | 28.3        | 13.3        | 27.3        | 96.5        | 35.0        |             |
| 20-Dec      | 18.7                         | 29.0        | 26.3        | 14.3        | 14.3        | 29.0        | 35.0        |             |
| 21-Dec      | 16.9                         | 29.0        | 26.3        | 15.3        | 28.4        | 24.9        | 40.0        |             |
| 22-Dec      | 16.9                         | 31.0        | 27.3        | 16.3        | 26.7        | 25.7        | 35.0        |             |
| 23-Dec      | 13.2                         | 29.4        | 26.3        | 16.3        | 25.4        | 28.7        | 35.0        |             |
| 24-Dec      | 10.5                         | 28.4        | 25.3        | 13.8        | 25.4        | 27.4        | 35.0        |             |
| 25-Dec      | 23.4                         | 28.4        | 25.3        | 13.8        | 24.4        | 27.4        | 35.0        |             |
| 26-Dec      | 25.8                         | 28.4        | 25.3        | 12.8        | 27.4        | 27.4        | 30.0        |             |
| 27-Dec      | 14.3                         | 28.4        | 25.3        | 13.8        | 27.4        | 22.4        | 35.0        |             |
| 28-Dec      | 15.9                         | 28.4        | 27.3        | 12.8        | 26.4        | 22.4        | 35.0        |             |
| 29-Dec      | 15.9                         | 45.4        | 22.3        | 12.8        | 25.4        | 22.4        | 30.0        |             |
| 30-Dec      | 16.2                         | 28.4        | 17.3        | 13.8        | 23.4        | 22.4        | 35.0        |             |
| 31-Dec      | 14.9                         | 27.4        | 17.3        | 12.8        | 24.4        | 27.4        | 35.0        |             |
| Minimum     | 1.7                          | 9.3         | 11.4        | 12.3        | 10.3        | 9.8         | 12.4        | 9.8         |
| Average     | 48.7                         | 90.6        | 111.5       | 83.4        | 70.5        | 108.5       | 167.2       | 92.2        |
| Maximum     | 352.0                        | 1039.7      | 581.2       | 486.6       | 518.7       | 395.6       | 890.7       | 427.7       |