# Davidson Project Meteorology and Hydrology Baseline Report 2006-2008 

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## BLUE PEARL MINING

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## EXECUTIVE SUMMARY

## Executive Summary

The Davidson Project is located on the east flank of Hudson Bay Mountain, approximately nine kilometres outside of the town of Smithers, British Columbia. Blue Pearl Mining Inc. (Blue Pearl) is proposing to develop the deposit as a 2000 t/day underground molybdenum mine.

This meteorology and hydrology baseline report summarizes results from 2006, 2007, and 2008 from the Davidson meteorology station and for 6 hydrometric stations established for the Davidson Project, as well as available data from government operated stations at the Smithers Airport, Hudson Bay Mountain, Bulkley River and Simpson Creek. This report is a supplement to previous baseline reports that were completed for 2005 and the first half of 2006 (Rescan, 2008). The previous reports also included detailed regional analysis of long-term meteorology and hydrology data from stations monitored by Environment Canada and the WSC.

Results observed in 2006 to 2008 cover a wide range of hydro-climatic conditions. In 2006, 1-in-100 year dry conditions were experienced (based on observed runoff for Bulkley River and Simpson Creek). This resulted in record summer low flows for the Bulkley River, Simpson Creek, and other non-glaciated streams in the area. For Glacier Gulch and Toboggan Creeks, watersheds with glaciers in their headwaters, warmer average summer temperatures resulted in more glacial ablation, which helped maintain higher base flows in these streams.

In 2007, 1-in-100 year wet conditions were experienced (based on runoff for Bulkley River and Simpson Creek). Near-record snowpack and delayed on-set of melt resulted in a large freshet response, which produced the highest observed flood flows in the 78 year record for the Bulkley River station at Quick. Similarly, large freshet flows were observed at Project specific gauges. Secondary peak flows were also observed in July and August, especially for the Glacier Gulch Creek stations (GG4a and GG3), due to a combination of warm temperatures followed by rain storms.

In contrast, 2008 produced near average runoff conditions, as well as relatively moderate peak and low flows.

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## 1. Introduction

The Davidson Project is located on the east flank of Hudson Bay Mountain, approximately nine kilometres outside of the town of Smithers, British Columbia. Blue Pearl Mining Inc. (Blue Pearl) is proposing to develop the deposit as a 2000 t /day underground molybdenum mine.

In 2005, Rescan initiated a comprehensive baseline monitoring program to support Project development, and to provide a basis for conducting an environmental assessment. This included establishing meteorology and hydrology monitoring stations in the Project area. Baseline studies were completed for both meteorology and hydrology, and were included as part of Blue Pearl Mining Inc.'s Application for an Environmental Assessment Certificate, which was submitted to the BC Environmental Assessment Office in September 2008 (Rescan, 2008; see Appendices D1 and F1). These baseline reports include results of on-site monitoring for 2005 and the first half of 2006, as well as a detailed regional analysis of long-term meteorology and hydrology data from stations monitored by Environment Canada and the Water Survey of Canada (WSC).

Since the completion of the original baseline reports, additional on-site data has been collected. This report presents baseline meteorology and hydrology data collected on-site as well as from relevant regional stations between 2006 and 2008.

### 1.1 Project Setting

### 1.1.1 Climate

There is a strong precipitation gradient between the west coast and Smithers, which is approximately 200 km inland. As moist maritime air masses from the coast move inland, they are forced to release much of their moisture on the windward slopes of Coast Mountains before reaching the Project area. Average annual precipitation at the Smithers Airport is 513 mm , compared with $1,322 \mathrm{~mm}$ at Terrace and $2,594 \mathrm{~mm}$ at Prince Rupert (Environment Canada, 2006). Maximum precipitation occurs in the fall and early winter due to the frequent development of Pacific storms.

Being on the lee side of the mountains, the air in the region is dry, with cold winters and mild summers. Extreme temperatures range between $-40^{\circ}$ and $35^{\circ} \mathrm{C}$; however, average monthly temperatures range from $-9^{\circ}$ to $15^{\circ} \mathrm{C}$ (Environment Canada, 2006). Clear skies and stable air are common for the area.

Winds are generally from the southeast, flowing down the Bulkley Valley, except in May, June and July, when winds are typically from the northwest, flowing up the valley. Local topography may have significant effects on microscale weather patterns. For example, a mountain and valley circulation caused by differential heating of the surface air in the valley may form, with winds flowing up the mountainside during the day and down the mountainside at night.

### 1.1.2 Hydrology

The Davidson Project is located in the Kathlyn Creek watershed. Mine infrastructure will potentially affect Kathlyn and Glacier Gulch creeks. Mine water will be discharged into the

Bulkley River following treatment. The study area contains watersheds draining the east side of Hudson Bay Mountain and the Bulkley River.

The Bulkley River is a tributary of the Skeena River, which drains into the Pacific Ocean near Prince Rupert (Figure 1.1-1). The Bulkley River has a large watershed (approximately $9,000 \mathrm{~km}^{2}$ near Smithers) that supports populations of chinook and coho salmon, rainbow and cutthroat trout, Dolly Varden and steelhead. The fishery is important to local First Nations groups and the economy of the area. The streamflow on the Bulkley River has been monitored by the Water Survey of Canada (WSC) since 1915; therefore, a robust baseline dataset is available.

Simpson, Kathlyn, Glacier Gulch and Toboggan creeks - four watersheds that drain across alluvial fans at the base of Hudson Bay Mountain - were also included as part of the study area (Figure 1.1-2). Though the catchments are relatively small, they are in high energy environments that can produce relatively high flow rates and stream velocities. Flows in Glacier Gulch and Toboggan creeks are also influenced by glaciers in their headwaters.

The Kathlyn Creek and Glacier Gulch Creek watersheds have been affected by the historical exploration work at the site, and may be further affected by the proposed development. Kathlyn Creek flows down the mountainside draining into Lake Kathlyn. Based on a search of the Land and Water B.C. database and a survey of the local residents, a total of 35 households and businesses were identified that draw water from streams in the Kathlyn Creek watershed upstream of the lake. Below the lake, Kathlyn creek continues south where it flows into Chicken Creek, which drains into the Bulkley River just downstream of Smithers. Simpson Creek is a tributary that flows into Kathlyn Creek between Lake Kathlyn and Chicken Creek. The Simpson Creek watershed will not be affected by the proposed Project, but serves as a reference station. The WSC has operated a hydrometric monitoring station on Simpson Creek since 1969, providing a good dataset that can be used to prepare long-term average flow estimates applicable to other small watersheds in the study area.

Glacier Gulch Creek flows down the mountainside, then turns north and drains into Toboggan Lake. Groundwater from the existing 1066 adit currently discharges into Glacier Gulch Creek. Further downstream, a diversion structure diverts up to $0.34 \mathrm{~m}^{3} / \mathrm{s}\left(12 \mathrm{ft}^{3} / \mathrm{s}\right)$ of flow from Glacier Gulch Creek to Club Creek according to a water licence held by the Regional District of Bulkley Nechako. Club Creek drains into Lake Kathlyn. From May to October, the Lake Kathlyn Protection Society maintains and operates the diversion to help oxygenate Lake Kathlyn and prevent eutrophication, which was a problem in the early 1990s. Four households were identified with water licenses on Club Creek.

Toboggan Creek drains down the mountainside and reaches the Bulkley valley floor just downstream of Toboggan Lake. The watershed area upstream of the valley floor will not be affected by the proposed Project and serves as a second reference watershed. Downstream of Toboggan Lake, Toboggan Creek flows north and eventually joins the Bulkley River, approximately 28 km downstream of the Chicken Creek confluence.


2. METHODOLOGY

## 2. Methodology

### 2.1 Meteorology

### 2.1.1 Available Regional Data

Environment Canada has operated a meteorology station at the Smithers Airport dating back to 1942. The airport is located approximately 4.5 km east of the Project area, on the floor of the Bulkley Valley; therefore, a robust historical dataset is available for the general area. Hourly and daily data from this station were downloaded from the Environment Canada website (http://climate.weatheroffice.ec.gc.ca/Welcome_e.html). Climate Normals for this station (19712000) were also downloaded.

The BC Ministry of Environment (MOE) has established a snow course station on Hudson Bay Mountain (4B03A), which has been active since 1972. Data from this station was downloaded from the River Forecast Center website (http://www.env.gov.bc.ca/rfc/).

### 2.1.2 On-Site Data Collection

A meteorology station (Plate 2.1-1) was commissioned in October of 2005 in order to capture the local meteorological conditions within the Project area. The Davidson meteorology station is located at an elevation of approximately 700 metres above sea level (masl) at the first switchback on the access road to the 1066 m Adit (Figure 1.1-2). The station was sited according to guidelines set by Environment Canada (i.e., Meteorological Services of Canada (MSC) Guidelines for Co-operative Climatological Autostations; MSC 2004). Environment Canada has adopted and, wherever possible, follows standards set by the World Meteorological Organization (WMO, 1983). The Environment Canada guidelines were established to promote standardization and describe practices, procedures and specifications for proper siting of instruments, precision and accuracy of measurements and archive formats.

The Davidson meteorology station is automated and programmed according to the standard set by the MSC. Automatically logged meteorological data include:

1. two minute wind speed, wind direction and standard deviation of wind direction;
2. hourly average wind speed, wind direction and standard deviation of wind direction;
3. hourly average air temperature;
4. hourly average relative humidity;
5. total precipitation for the last hour; and
6. Hourly average snow depth.

Each day at midnight, the following data was also automatically recorded:

1. daily maximum and minimum air temperature;
2. daily maximum wind speed, wind direction at maximum speed and time;
3. total daily precipitation; and
4. diagnostic information.


Plate 2.1-1. Photo of Davidson Meteorology Station.
The primary concerns when selecting an appropriate location for the meteorological station were to avoid obstructions (e.g., future infrastructure, trees, etc.) that would bias the wind speeds and directions, and to avoid shaded areas that would limit full exposure of the solar panel to the sunlight. MSC guidelines suggest siting the station in a clearing with a radius of at least ten times the height of any nearby building, tree or other obstruction. Finding a location that met these guidelines was not possible, due to the heavy forest cover on the mountainside. Wind speed and direction are likely biased at the current location, the degree to which is not known; however, considering the amount of timber that would have to be harvested in order to meet the MSC guidelines, further clearing in the area was not prudent.

The station's sensors were mounted on a 10 m high aluminium tower that was anchored to a concrete base and strengthened with guy wires. Wind speed is measured in metres per second $(\mathrm{m} / \mathrm{s})$ and wind direction in degrees from true north by a RM Young Model 05305 air quality wind sensor.

The temperature and relative humidity sensors are combined into one unit (Campbell Scientific Model HMP45C212). The combination sensor was mounted on the tower protected from direct radiation by a multi-plate solar radiation shield. Air temperature is measured in degrees Celsius and relative humidity in percent.

Precipitation is measured with a Texas Electronics Model TE525WS tipping bucket rain gauge (TBRG). The TBRG is mounted on a vertical pole beside the 10 m tower and monitors precipitation in mm . For winter operation (October to April), the TBRG is converted (using the Campbell Scientific CS705 adapter) to enable it to monitor snow-water-equivalent (SWE) precipitation. A solution of polypropylene glycol melts snow precipitation and the corresponding solution volume is recorded with the TBRG mechanism. A Campbell Scientific Model SR50 Sonic Ranger is mounted to the 10 m tower and monitors the total depth of the snow pack on the ground.

The sensors for the meteorology station are connected to a Campbell Scientific CR10X datalogger that controls the operation of the station. The datalogger's program monitors the sensors every five seconds and generates hourly and daily averages. The hourly and daily averages are stored in a memory storage module connected to the CR10X datalogger. The modules are changed out on a regular basis and brought back to the office for downloading. The station is powered with a 50 Watt solar panel and a 12 volt deep cycle marine battery, with the entire station grounded to prevent lightning from damaging the electronics.

Regular visits were conducted by field technicians to conduct diagnostic of all sensors and download data. The downloaded data is visually inspected for consistency and any problems are noted before entering data into the database. Due to a malfunction with the snow depth sensor, the measured snow depths from January 16, 2007 to July 11, 2007 are unreliable making them unusable in the analysis. A problem with the precipitation gauge was discovered on December 17, 2007 during a scheduled maintenance of the station. Through investigating the data it was deduced that the problem occurred in early September resulting in the data from September to December 2007 being unusable. The wind sensor appears to have frozen on three occasions, resulting in no measurements during these time periods. The amount of time that the sensor was frozen ranged from 5 hours to 4 days.

### 2.2 Hydrology

### 2.2.1 Available Regional Data

In B.C., there have been a number of studies that have attempted to divide the province into regions of hydrological similarity. Coulson and Obedkoff (1998) analyzed data from over 400 hydrology stations throughout B.C. and identified 17 hydrological zones for the province. Obedkoff (2001) then completed a more detailed analysis of the Skeena region of B.C., with a further supplement in 2003. From Obedkoff (2003), the Davidson study area is located within hydrological Zone 8, the Nechako Plateau. However, it lies right along the border between Zone 8, and Zone 9 (the Southern Hazelton Mountains). Zone 9 is closer to the coast, and therefore generally receives higher precipitation, which is reflected in higher annual runoff totals. Obedkoff included the Bulkley River in Zone 9.

WSC data for unregulated (i.e., natural) streams are available for 12 hydrometric stations ( 9 active) in Zone 8 and for 8 stations ( 7 active) in Zone 9 (Table 2.2-1). Watershed areas for the stations range from 10.8 to $8,940 \mathrm{~km}^{2}$. Six of the watersheds in Zone 8 have areas $<200 \mathrm{~km}^{2}$ and may be similar to the small headwater watersheds in the study area. Data from these stations were used in the original baseline report (Rescan, 2006) to develop estimates of key hydrological parameters, including runoff, peak flows, and low flows.

Table 2.2-1
WSC Hydrometric Stations in Hydrological Zones 8 and 9

| Station Name | Station ID | Period of Record | Drainage <br> Area ( $\mathbf{k m}^{2}$ ) | Median Elevation (m) | Average Annual Runoff (mm) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Zone 8 (Nechako Plateau) |  |  |  |  |  |
| Babine River | 08EC013 | 1972 to present | 6,790 | 939 | 233 |
| Buck Creek | 08EE013 | 1973 to present | 580 | 1,110 | 232 |
| Driftwood River | 08JD006 | 1979 to 1995 | 406 | 1,110 | 646 |
| Goathorn Creek | 08EE008 | 1960 to present | 132 | 1,100 | 381 |
| Maclvor Creek | 08JA016 | 1976 to 1995 | 53.4 | 1,500 | 493 |
| Nautley River | 08JB003 | 1945 to present | 6,030 | 955 | 155 |
| Pinkut Creek | 08EC004 | 1929 to present | 862 | 1,130 | 194 |
| Richfield Creek | 08EE009 | 1964 to 1974 | 173 | 1,040 | 291 |
| Simpson Creek | 08EE012 | 1969 to present | 13.2 | 1,340 | 677 |
| Station Creek | 08EE028 | 1985 to present | 10.8 | 1,450 | 817 |
| Stellako River | 08JB002 | 1929 to present | 3,600 | 949 | 171 |
| Two Mile Creek | 08EE025 | 1982 to present | 20 | 696 | 199 |
| Zone 9 (Southern Hazelton Mountains) |  |  |  |  |  |
| Bulkley River at Quick | 08EE004 | 1930 to present | 7,360 | 1,050 | 566 |
| Bulkley River near Smithers | 08EE005 | 1915 to 1971 | 8,940 |  |  |
| Kiseguecia River | 08EF004 | 1960 to 1971 | 728 | 1,080 | 671 |
| Morice River | 08ED002 | 1929 to present | 1,910 | 1,200 | 1,217 |
| Nadina River | 08JB008 | 1964 to present | 399 | 1,060 | 487 |
| Nanika River | 08EE020 | 1950 to present | 741 | 1,340 | 1,126 |
| Telkwa River | 08EF005 | 1975 to present | 368 | 1,230 | 1,275 |
| Zymoetz River | 08ED001 | 1963 to present | 2,980 | 1,380 | 1,231 |

Two of the regional stations are especially important for the Davidson Project: Bulkley River at Quick (Station ID 08EE004) and Simpson Creek (Station ID 08EE012).

Historical flows have been monitored at a number of locations along the Bulkley River; however, the only currently active station is the Bulkley River at Quick. This station is located approximately 23 km upstream of the town of Smithers. Data is available from this station from 1931 to present, making it a very robust baseline dataset.

At Simpson Creek, flow data are available from 1970 to present, providing a second robust dataset.

### 2.2.2 On-Site Data Collection

Automated hydrometric stations were constructed at seven locations within the Project area (Table 2.2-2; see Figure 2.1-1). To characterize general flow conditions on Hudson Bay Mountain, stations were established at the base of the mountain on Kathlyn Creek (KC1), Glacier Gulch Creek (GG3), and Toboggan Creek (TC2) in April 2005. A station was constructed to monitor discharge from the $1,066 \mathrm{~m}$ exploration Adit (A1) in September 2005; to improve results at this location a V-notch weir was added in April 2006. Also in April 2006, an additional station was established on Glacier Gulch Creek (GG4a), upstream of the Club Creek diversion, and two additional stations were established in the Kathlyn Creek drainage (KC4 and KC3/16) in order to monitor flows near residential water supply sources.

## Table 2.2-2 <br> Davidson Baseline Study Hydrometric Stations

| Hydrometric Station | Drainage Area ( $\mathrm{km}^{2}$ ) | Median Elevation (m) | Monitoring Period | Comments |
| :---: | :---: | :---: | :---: | :---: |
| GG3 | 14.5 | 1,282 | April 2005 to present | At base of Hudson Bay Mountain |
| GG4a | 9.0 | 1,773 | April 2005 to present | Upstream of Club Creek Diversion |
| TC2 | 24.9 | 1267 | April 2005 to present | Reference stream; at base of Hudson Bay Mountain |
| KC1 | 7.5 | 814 | April 2005 to present | At base of Hudson Bay Mountain |
| KC3/16 | 1.3 | n/a | April 2006 to present | Downstream of transmission line; upstream of wetland |
| KC4 | 1.1 | n/a | April 2006 to present | Upstream of GGWG well |
| Adit | n/a | n/a | September 2005 to present | Station monitors discharge from the existing 1066 m Adit; V-notch weir installed on April 12, 2006 |
| Simpson Creek | 13.2 | 1,325 | 1970 to present | Monitored by Water Survey of Canada |
| Bulkley River at Quick | 7,360 | 1,050 | 1930 to present | Monitored by Water Survey of Canada |

Each hydrometric station consists of a staff gauge, INW Model PS9800 pressure transducer and Terrascience Elf2 datalogger. The staff gauge is a semi-permanent installation that provides a visual indication of water depths in the stream. The combination of pressure transducer and datalogger automatically collect a water depth reading at 10 minute intervals.

Water depth readings are subsequently converted to streamflow estimates by use of a stagedischarge curve. A stage-discharge curve is an empirical relationship between water depth (stage) and discharge. In general, a minimum of five to seven manual flow measurements over a range of discharges are required to develop a reliable stage-discharge curve.

Manual streamflow monitoring involves measuring the velocity and depth of the water across a cross-section at regular intervals. The cross-sectional area of the stream $\left(\mathrm{m}^{2}\right)$ and the velocity of the water ( $\mathrm{m} / \mathrm{s}$ ) are used to calculate discharge ( $\mathrm{m}^{3} / \mathrm{s}$ ). Measurements were taken using a handheld Swoffer flow meter. A minimum of ten velocity and depth measurements were taken across the cross-section at each site; in most cases the number of measurements taken at each cross
section exceeded ten. The accuracy of manual flow measurements is affected by flow and channel conditions at each site, but error is typically less than $15 \%$.

The stage-discharge curve equations are calculated using standard methods outlined by the United States Geological Survey (USGS; Rantz et al., 1982). The natural logarithm of both stage and discharge is calculated, and a line is fitted through the logged data with least squares linear regression. The regression coefficients are then back transformed to produce a power function.

## 3. Results and Discussion

### 3.1 Meteorology

### 3.1.1 Temperature

Daily temperatures recorded at the Davidson meteorology station over the monitoring period January 1, 2006 to November 16, 2008 are summarized in Figure 3.1-1 (and in Appendix 3.1-1). The minimum temperature recorded over that period was $-28.0^{\circ} \mathrm{C}$, on January 28, 2008; the maximum temperature recorded was $30.7^{\circ} \mathrm{C}$ on July 12 , 2007. A similar record from the Smithers Airport from January 1, 2006 through December 31, 2008 is summarized in Figure 3.1-2.

Mean monthly temperatures for the monitoring period are compared with climate normals for Smithers Airport in Table 3.1-1. The observed values are well within historical values.

Table 3.1-1
Comparison of Mean Monthly Temperatures ( ${ }^{\circ} \mathrm{C}$ ) with Climate Normals (1971 to 2000)

|  | 2006 |  | 2007 |  | 2008 |  | Smithers Climate <br> Normals (1971 - <br> 2000) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Davidson | Smithers | Davidson | Smithers | Davidson | Smithers | -8.9 |
| Jan | -2.6 | -2.9 | -5.3 | -5.8 | -7.7 | -8.9 | -4.9 |
| Feb | -4.9 | -4.8 | -3.4 | -3.1 | -4.3 | -4.2 | 0.0 |
| Mar | -1.8 | -1.4 | -0.5 | 0.6 | -0.5 | 0.3 | 4.8 |
| Apr | 3.9 | 5.1 | 2.1 | 3.6 | 1.8 | 3.1 | 9.3 |
| May | 8.3 | 9.4 | 7.2 | 8.4 | 8.8 | 10.7 | 12.6 |
| Jun | 13.2 | 13.9 | 10.7 | 12.3 | 9.9 | 11.3 | 15.0 |
| Jul | 14.5 | 15.9 | 13.8 | 15.4 | 11.9 | 13.5 | 14.6 |
| Aug | 12.1 | 13.7 | 12.0 | 13.7 | 12.9 | 14.9 | 9.9 |
| Sep | 9.3 | 10.9 | 8.4 | 10.1 | 8.5 | 10 | 4.5 |
| Oct | 2.7 | 3.7 | 3.5 | 5.3 | 2.8 | 4.2 | -2.3 |
| Nov | -6.8 | -6.1 | -2.6 | -1.9 | $0.6^{1}$ | 0.0 | -7.5 |
| Dec | -3.0 | -3.5 | -8.5 | -9.8 | $\mathrm{n} / \mathrm{a}^{2}$ | -13.0 | 3.9 |
| Mean Annual | 3.7 | 4.5 | 3.1 | 4.1 | $\mathrm{n} / \mathrm{a}$ | 3.5 |  |

1. Average from Nov 1 to 16
2. $n / a=n o t ~ a v a i l a b l e$

### 3.1.2 Wind

Wind roses were generated for the Davidson station (Figure 3.1-3 to 3.1-5). Results were very similar between years, and were consistent between winter and summer, with winds typically from the SSW, flowing down the side of Hudson Bay mountain along the axis of the Kathlyn Creek valley.


Davidson Station Daily Temperature January 1, 2006 to November 16, 2008


Smithers Airport Daily Temperature
January 1, 2006 to December 31, 2008
FIGURE 3.1-2

BLUE PEARL MINING



Calms included at center.
Rings drawn at $5 \%$ intervals.
Wind flow is FROM the directions shown.
No observations were missing.


Calms included at center.
Rings drawn at $5 \%$ intervals.
Wind flow is FROM the directions shown.
No observations were missing.


Calms included at center.
Rings drawn at $5 \%$ intervals.
Wind flow is FROM the directions shown.
No observations were missing.

The wind speeds at the Davidson station are low, and there is consistently a high percentage of calm conditions ( $\sim 67 \%$ ). It is likely that the wind speeds at the Davidson station are dampened by trees in the area; due to the heavy forest cover on the mountainside, it was not possible to find a location that met all of the MSC siting guidelines. However, the station is in a location that is likely representative of the wind conditions that would be experienced at the proposed loadout facility, which will also be surrounded by forest cover.

### 3.1.3 Precipitation

Table 3.1-2 and Figure 3.1-6 summarize the total precipitation values for the Davidson and Smithers Airport meteorology stations. Data are presented based on water year, assumed to be November 1 to October 31. A problem was encountered with the precipitation gauge at the Davidson station such that data from the start of the 2007-2008 water year (November 1 to December 12, 2007) were unreliable. For this period, it is assumed that precipitation at the Davidson station was equivalent to observations at the Smithers airport. This is expected to be an under-estimation. Precipitation generally occurs simultaneously at the two stations, though more is recorded at the Davidson station, especially during the winter months.

Figure 3.1-7 summarizes historical annual precipitation observed at the Smithers Airport. The years 2005-2006, 2006-2007 and 2007-2008 fit well within the range of historical observations, and rank 54/64, 8/64, and 50/64, respectively (ranked highest to lowest).

> Table 3.1-2
> Comparison of Monthly Total Precipitation (mm) with Climate Normals $(1971$ to 2000$)$

|  | 2005-2006 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Davidson | Smithers | 2006 - 2007 |  |  |  |  |
| Davidson | 2007 - 2008 |  | Smithers Climate <br> Smithers | Davidson | Smithers | Normals (1971 - 2000) |  |
| Nov | 51.6 | 31.7 | 86.1 | 45.0 | $\mathrm{n} / \mathrm{a}^{1}$ | 36.1 | 55.6 |
| Dec | 48.8 | 33.8 | 68.3 | 41.2 | $\mathrm{n} / \mathrm{a}$ | 33.8 | 50.1 |
| Jan | 51.1 | 28.8 | 93.7 | 56.4 | 32.8 | 26.4 | 50.1 |
| Feb | 22.9 | 5.4 | 51.8 | 35.2 | 56.9 | 39.0 | 26.8 |
| Mar | 17.5 | 14.4 | 50.8 | 18.2 | 35.6 | 24.8 | 20.4 |
| Apr | 26.4 | 5.2 | 31.2 | 24.6 | 12.2 | 2.3 | 21.3 |
| May | 44.4 | 41.8 | 52.8 | 44.0 | 33.0 | 27.0 | 36.0 |
| Jun | 39.4 | 50.4 | 87.4 | 81.0 | 30.0 | 33.7 | 48.8 |
| Jul | 44.7 | 44.0 | 41.4 | 61.8 | 43.2 | 39.3 | 45.2 |
| Aug | 19.3 | 18.2 | 27.9 | 80.6 | 72.4 | 73.8 | 42.9 |
| Sep | 59.7 | 52.0 | n/a | 29.0 | 43.7 | 49.6 | 51.2 |
| Oct | 63.0 | 89.5 | n/a | 90.4 | 65.5 | 49.7 | 64.4 |
| Annual $^{2}$ | 488.8 | 415.2 | 710.8 | 607.4 | 495.2 | 435.5 | 512.8 |

1. $\mathrm{n} / \mathrm{a}=$ not available
2. Where data are not available for the Davidson station, annual total was calculated by assuming that month was equivalent to Smithers Airport total. This is likely an underestimate.

The high rank of the 2006-2007 year was driven by a large winter snowpack. At the Hudson Bay Mountain snow course, maximum snowpack was recorded as 822 mm snow-water-equivalent on May 15. This was the second highest snowpack on record, and $186 \%$ above the expected normal $(441 \mathrm{~mm})$ for the station.


November 1, 2007 to October 31, 2008



Historical Annual Precipitation

Figure 3.1-8 shows snow depth accumulation at the site for the 2007-2008 winter at the Davidson meteorology station. Due to a malfunction of the snow depth sensor, a similar graph could not be produced for the 2006-2007 winter. For 2007-2008, maximum snow depth was 0.95 m on March 3. Snowpack melt began around April 1, and was complete by May 5.

To assess precipitation gradients on Hudson Bay Mountain, data from the Smithers Airport, Davidson Station, and the Hudson Bay Mountain snow course were plotted against elevation (Figure 3.1-9). Data are presented for 2005-2006, 2006-2007, and 2007-2008. Maximum snow-water-equivalent (SWE) for each year was used from the Hudson Bay Mountain snow course. The date of maximum snow pack ranged from April 1 to May 15. To provide an equivalent measure from the two meteorology stations, total precipitation from October 1 to the date of maximum snowpack was calculated. This is based on an assumption that snow begins to accumulate on the mountain at the beginning of October (though it may be observed as rain at lower elevations). A trend line was fit through the data points for each year. The slopes of the trend lines are similar between years, with an average slope of $0.367 \mathrm{~mm} / \mathrm{m}$. This corresponds to a 36.7 mm increase in precipitation for every 100 m increase in elevation. Based on 513 mm average annual precipitation at the Smithers Airport, this represents a $7 \%$ increase in precipitation per 100 m .

The maximum hourly precipitation recorded at the Davidson meteorology station over the monitoring period was 15.2 mm on April 24, 2006; the maximum daily precipitation was 33.5 mm on June 2, 2006. While storms in June are not unusual, based on the Smithers Airport climate normals, the most extreme rainfall events generally occur between November and January.

The maximum precipitation results from the Davidson station were compared to an intensity-duration-frequency (idf) analysis from the Smithers Airport (1971 to 1990) as derived by Environment Canada (Table 3.1-3). The maximum hourly event was approximately a 1 in 10 year event, while the maximum daily event corresponds with between a 1 in 2 (average) and 1 in 5 year event.

## Table 3.1-3 <br> Intensity-Duration-Frequency Precipitation Analysis (1971 to 1990) for Smithers Airport

|  | Return Period Rainfall Amounts (mm) |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Duration | $\mathbf{2 ~ y r}$ | $\mathbf{5} \mathbf{~ y r}$ | $\mathbf{1 0} \mathbf{~ y r}$ | $\mathbf{2 5} \mathbf{~ y r}$ | $\mathbf{5 0} \mathbf{~ y r}$ | $\mathbf{1 0 0} \mathbf{~ r r}$ |
| $5 \mathbf{~ m i n}$ | 2.6 | 4.0 | 4.9 | 6.1 | 6.9 | 7.8 |
| $\mathbf{1 0 ~ m i n}$ | 3.8 | 6.0 | 7.6 | 9.5 | 10.9 | 12.3 |
| $\mathbf{1 5 ~ m i n}$ | 4.5 | 6.9 | 8.4 | 10.4 | 11.9 | 13.3 |
| $\mathbf{3 0 ~ m i n}$ | 6.4 | 9.0 | 10.7 | 12.9 | 14.5 | 16.1 |
| $\mathbf{1} \mathbf{~ h r}$ | 8.6 | 12.2 | 14.5 | 17.5 | 19.7 | 21.9 |
| 2 hr | 11.3 | 15.6 | 18.5 | 22.1 | 24.8 | 27.4 |
| 6 hr | 18.6 | 24.4 | 28.2 | 33.1 | 36.7 | 40.2 |
| $\mathbf{1 2 ~ h r ~}$ | 23.7 | 31.2 | 36.2 | 42.5 | 47.2 | 51.8 |
| $\mathbf{2 4 ~ h r}$ | 29.9 | 39.0 | 45.1 | 52.8 | 58.5 | 64.2 |




Precipitation Gradient Based on Data from Smithers Airport, Davidson Meteorology Station, and Hudson Bay Mountain Snow Course

### 3.2 Hydrology

### 3.2.1 Stage-Discharge Curves

Using results from manual flow measurements collected at each station, stage-discharge curves were generated for each monitoring station (Figures 3.2-1 to 3.2-6).

The stage discharge curves are well defined at low and moderate flows; however, due to a lack of flow measurements during high flow periods, the curves are less defined for these levels. For KC3/16 and GG4a the flow measurements do a reasonable job of covering the observed range in flow. For KC4, GG3 and TC2, substantial extrapolation is required to estimate high flows, resulting in a high level of uncertainty during high flow periods. Attempts were made in 2007 and 2008 to collect flow measurements during the high flow period; unfortunately the timing of field visits were ahead of the main period of melt.

The stage-discharge equation for A1 is defined by the weir equation. For a $60^{\circ}$ weir, this equation is: $\mathrm{Q}=0.787 \mathrm{~h}^{2.5}$; where h is in meters, and Q in $\mathrm{m}^{3} / \mathrm{s}$.

### 3.2.2 Hydrographs

Figures 3.2-7 to 3.2-14 summarize the observed hydrographs for the years 2006, 2007, and 2008 (daily flows are also tabulated in Appendices 3.2-1 to 3.2-6). Table 3.2-1 summarizes key data from these graphs. Results for A1 are presented separately in Section 3.2.3.

### 3.2.2.1 Runoff

Runoff is expressed as a depth of water in mm . It is calculated by dividing the total flow volume $\left(\mathrm{m}^{3}\right)$ observed at a monitoring station with the drainage area $\left(\mathrm{m}^{2}\right)$ flowing into the site. Since it is normalized by watershed area, runoff is a useful measure for comparing the hydrological response of different watersheds. May to October runoff is summarized in Table 3.2-1 to allow comparison of all stations over a consistent monitoring period. Table 3.2-2 summarizes observed monthly runoff for each station.

The 2006, 2007 and 2008 water years resulted in wide ranging runoff conditions for all watersheds. For both the Bulkley River and Simpson Creek, 2006 observed runoff represents approximately 1 -in-100 year dry conditions (Table 3.2-3); while 2007 observed runoff represents the opposite extreme, with approximately $1-i n-100$ year wet conditions. The 2008 water year was near average.

KC3/16 consistently experienced the lowest runoff. This is a very small stream with little contributing area, and relatively low elevation. Snow melts out of this basin early in the spring, and there is little source area to supply baseflow. Flow is near zero by the end of June, with minor response to individual rain storms through the summer.
$\mathrm{KC1}$ and KC 4 exhibit runoff conditions that are similar in both timing and magnitude to Simpson Creek. This is to be expected given that they are neighbouring watersheds with similar contributing area and elevation characteristics. These streams exhibit strong freshet response with highest runoff occurring in May or June, typical of a snow melt dominated regime.


view downstream


view downstream


view downstream


view downstream


view upstream


view downstream

Table 3.2-1
Summary Statistics of Hydrological Parameters for 2006, 2007 and 2008

| Station | Monitoring Period | Runoff |  | Peak Daily Average |  |  | Peak Instantaneous Flow |  |  | June-Sept 7-day Low Flow |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Annual (mm) | May - Oct (mm) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Yield (L/s/km ${ }^{2}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Yield (L/s/km ${ }^{2}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Yield (L/s/km ${ }^{2}$ ) |
| Bulkley River at Quick |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | all year | 392 | 316 | 3-Jun-06 | 450 | 61 | 3-Jun-06 | 460 | 63 | 23-Sep-06 | 54 | 7.4 |
| 2007 | all year | 826 | 696 | 8-Jun-07 | 1020 | 139 | 8-Jun-07 | 1060 | 144 | 27-Sep-07 | 83 | 11.3 |
| 2008 | all year | 510 | 410 | 30-May-08 | 577 | 79 | n/a | n/a | n/a | 30-Sep-08 | 77 | 10.5 |
| Simpson Creek |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | all year | 385 | 355 | 2-Jun-06 | 2.52 | 191 | 3-Jun-06 | 3.42 | 456 | 17-Sep-06 | 0.043 | 3.2 |
| 2007 | all year | 936 | 855 | 4-Jun-07 | 5.59 | 423 | 7-Jun-07 | 6.19 | 825 | 20-Sep-07 | 0.084 | 6.4 |
| 2008 | all year | 622 | 547 | 19-May-08 | 2.01 | 152 | n/a | n/a | n/a | 26-Sep-08 | 0.18 | 13.3 |
| KC1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | 12 Apr-13 Nov | n/a | 265 | 3-Jun-06 | 0.64 | 86 | 3-Jun-06 | 0.77 | 103 | 29-Aug-06 | 0.007 | 1.0 |
| 2007 | 26 Apr-20 Nov | n/a | 645 | 4-Jun-07 | 0.87 | 116 | 4-Jun-07 | 0.88 | 117 | 22-Sep-07 | 0.13 | 17.9 |
| 2008 | 16 Apr-30 Nov | n/a | 359 | 17-May-08 | 0.61 | 81 | 16-May-08 | 0.67 | 89 | 9-Sep-08 | 0.065 | 8.6 |
| KC4 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | 11 Apr - 17 Nov | n/a | 313 | 3-Jun-06 | 0.08 | 72 | 3-Jun-06 | 0.16 | 22 | 19-Sep-06 | 0.006 | 5.3 |
| 2007 | 26 Apr-1 Dec | n/a | 1095 | 5-Jun-07 | 0.26 | 239 | 5-Jun-07 | 1.28 | 171 | 26-Sep-07 | 0.032 | 29.4 |
| 2008 | 16 Apr-30 Nov | n/a | 426 | 16-May-08 | 0.09 | 84 | 16-May-08 | 0.26 | 34 | 26-Sep-08 | 0.014 | 12.4 |
| KC3/16 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | 17 Apr-17 Nov | n/a | 48 | 3-Jun-06 | 0.05 | 39 | 3-Jun-06 | 0.07 | 9 | 21-Jul-06 | 0.001 | 0.8 |
| 2007 | 26 Apr - 31 Oct | n/a | 250 | 3-May-07 | 0.10 | 79 | 3-May-07 | 0.11 | 14 | 1-Aug-07 | 0.007 | 5.0 |
| 2008 | 20 Apr-30 Nov | n/a | 108 | 16-May-08 | 0.05 | 35 | 16-Apr-08 | 0.11 | 14 | 9-Sep-08 | 0.002 | 1.8 |
| GG3 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | 13 Apr-18 Nov | n/a | 906 | 6-Jul-06 | 2.90 | 196 | 2-Jun-06 | 4.72 | 629 | 19-Sep-06 | 0.31 | 21.1 |
| 2007 | 9 May-31 Oct | n/a | 863 | 4-Jun-07 | 5.93 | 401 | 16-Aug-07 | 8.30 | 1107 | 30-Sep-07 | 0.097 | 6.6 |
| 2008 | 16 Apr-30 Nov | n/a | 226 | 20-Aug-08 | 2.00 | 135 | 20-Aug-08 | 3.96 | 527 | 28-Sep-08 | 0.065 | 4.4 |
| GG4a |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | 12 Apr-16 Nov | n/a | 733 | 22-May-06 | 1.79 | 199 | 2-Jun-06 | 4.09 | 545 | 18-Sep-06 | 0.14 | 15.2 |
| 2007 | 9 May - 29 Nov | n/a | 885 | 16-Jul-07 | 1.73 | 192 | 15-Jul-07 | 3.31 | 441 | 30-Sep-07 | 0.15 | 17.2 |
| 2008 | 16 Apr-30 Nov | n/a | 557 | 23-Aug-08 | 0.95 | 106 | 20-Aug-08 | 1.62 | 216 | 25-Sep-08 | 0.15 | 16.4 |
| TC2 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2006 | 13 Apr-17 Nov | n/a | 424 | 3-Jun-06 | 3.24 | 130 | 3-Jun-06 | 5.24 | 699 | 19-Sep-06 | 0.098 | 4.0 |
| 2007 | 9 May-31 Oct | n/a | 871 | 6-Jun-07 | 9.70 | 390 | 6-Jun-07 | 12.3 | 1645 | 24-Sep-07 | 0.25 | 9.9 |
| 2008 | 16 Apr - 30 Nov | n/a | 229 | 2-Jul-08 | 2.11 | 85 | 20-Aug-08 | 3.43 | 457 | 25-Sep-08 | 0.027 | 1.1 |










Table 3.2-2
Summary of Calculated Monthly Runoff (mm)

| Station | Year | Calculated Monthly Runoff (mm) |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| KC3/16 | 2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| KC4 | 2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| KC1 | 2005 | -- | -- | -- | -- | 50 | 78 | 64 | 47 | 29 | 33 | 27 | -- |
| GG4a | 2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GG3 | 2005 | -- | -- | -- | -- | 58 | 107 | 184 | 219 | 80 | 51 | 37 | 25 |
| TC2 | 2005 | -- | -- | -- | -- | 106 | 122 | 111 | 114 | 28 | 20 | 16 | 4 |
| Simpson | 2005 | -- | -- | -- | 57 | 137 | 125 | 96 | 72 | 25 | 24 | -- | -- |
| Bulkley | 2005 | -- | -- | -- | 71 | 131 | 94 | 57 | 39 | 26 | 44 | 45 | 25 |
| KC3/16 | 2006 | -- | -- | -- | 5 | 21 | 18 | 2 | 2 | 2 | 3 | 10 | -- |
| KC4 | 2006 | -- | -- | -- | 19 | 68 | 103 | 65 | 33 | 26 | 18 | 6 | -- |
| KC1 | 2006 | -- | -- | -- | 11 | 67 | 96 | 49 | 12 | 19 | 21 | 8 | -- |
| GG4a | 2006 | -- | -- | -- | 17 | 148 | 211 | 149 | 110 | 83 | 32 | 8 | -- |
| GG3 | 2006 | -- | -- | -- | 13 | 79 | 183 | 291 | 179 | 121 | 54 | 24 | -- |
| TC2 | 2006 | -- | -- | -- | 4 | 72 | 121 | 113 | 62 | 45 | 11 | 2 | -- |
| Simpson | 2006 | 4 | 3 | 4 | 6 | 91 | 151 | 59 | 18 | 23 | 14 | 7 | 5 |
| Bulkley | 2006 | 15 | 9 | 7 | 17 | 73 | 111 | 58 | 37 | 21 | 16 | 15 | 14 |
| KC3/16 | 2007 | -- | -- | -- | -- | 103 | 43 | 17 | 20 | 15 | 51 | 38 | -- |
| KC4 | 2007 | -- | -- | -- | 14 | 111 | 311 | 267 | 166 | 107 | 134 | 100 | -- |
| KC1 | 2007 | -- | -- | -- | 20 | 125 | 161 | 126 | 86 | 58 | 89 | 46 | -- |
| GG4a | 2007 | -- | -- | -- | -- | 42 | 178 | 318 | 241 | 78 | 28 | 10 | -- |
| GG3 | 2007 | -- | -- | -- | -- | 88 | 260 | 318 | 152 | 29 | 16 | 5 | -- |
| TC2 | 2007 | -- | -- | -- | -- | 95 | 311 | 235 | 136 | 52 | 41 | 23 | -- |
| Simpson | 2007 | 5 | 3 | 10 | 35 | 96 | 374 | 210 | 96 | 34 | 46 | 22 | 5 |
| Bulkley | 2007 | 14 | 12 | 11 | 37 | 151 | 238 | 152 | 76 | 40 | 39 | 39 | 17 |
| KC3/16 | 2008 | -- | -- | -- | 23 | 58 | 12 | 7 | 9 | 7 | 15 | -- | -- |
| KC4 | 2008 | -- | -- | -- | 4 | 120 | 85 | 80 | 68 | 41 | 32 | 35 | -- |
| KC1 | 2008 | -- | -- | -- | 14 | 106 | 69 | 64 | 51 | 33 | 36 | 30 | -- |
| GG4a | 2008 | -- | -- | -- | 3 | 61 | 66 | 123 | 177 | 93 | 37 | 14 | -- |
| GG3 | 2008 | -- | -- | -- | 2 | 28 | 16 | 39 | 108 | 29 | 7 | 2 | -- |
| TC2 | 2008 | -- | -- | -- | 0.4 | 64 | 36 | 60 | 56 | 10 | 3 | 2 | -- |
| Simpson | 2008 | 3 | 4 | 8 | 14 | 151 | 116 | 123 | 77 | 49 | 32 | 25 | 20 |
| Bulkley | 2008 | 13 | 10 | 10 | 13 | 123 | 106 | 73 | 49 | 35 | 25 | 27 | 26 |

Note: values in italics indicate months with partial data (due to mobilization/demobilization of station)

GG3 and GG4a exhibit a distinct pattern, with highest runoff occurring in July or August, typical of glacierized watersheds. Glacier cover represents $32 \%$ and $20 \%$ of the GG4a and GG3 watersheds respectively. Observed runoff patterns for these stations are much different than the neighbouring non-glaciated stations. While Simpson Creek and Bulkley River recorded extreme dry conditions in 2006, Glacier Gulch runoff remained relatively high. Average summer temperatures 2006 were 1.0 to $1.5^{\circ} \mathrm{C}$ higher than 2007 and 2008, resulting in greater glacial ablation.

It is important to note that the Club Creek diversion is located between the GG3 and GG4a stations. Flow is not regularly monitored through the diversion; however a monitoring station was operated on Club Creek downstream of the diversion in 2005. Licensed diversion is 0.34 $\mathrm{m}^{3} / \mathrm{s}$, while monitoring results indicate average diversion of approximately $0.12 \mathrm{~m}^{3} / \mathrm{s}$. This equates to approximately 130 mm of runoff that is removed from the GG3 watershed. However, comparison of runoff between GG4a and GG3 does not show a clear signal of the Club Creek diversion. In 2008 runoff was 344 mm lower at GG3 than GG4a, which does suggest influence from Club Creek. In 2007 runoff was only 26 mm lower at GG3, and in 2006, runoff was calculated to be 186 mm higher at GG3. It is not clear what the source of this variability is. It may be related to variation in operation of the diversion from one year to the next. It may also be related to uncertainty in the stage-discharge curves - especially for GG3 - which are not well constrained for high flows.

TC2, which has 7\% glacier cover in the watershed above the station, showed a mixed runoff response, with peak runoff interchanging between freshet as well as later in the summer.

> Table 3.2-3
> Annual Runoff Return Period Estimates for the Bulkley River and Simpson Creek

|  | Annual Runoff (mm) |  |
| :--- | :---: | :---: |
|  | Bulkley River | Simpson Creek |
| 2006 | 392 | 385 |
| 2007 | 826 | 936 |
| 2008 | 510 | 622 |
| Return Period |  |  |
| 1 in 100 Dry | 378 | 364 |
| 1 in 50 | 401 | 396 |
| 1 in 25 | 426 | 430 |
| 1 in 10 | 466 | 485 |
| Average | 574 | 633 |
| 1 in 10 Wet | 683 | 780 |
| 1 in 25 | 723 | 835 |
| 1 in 50 | 748 | 870 |
| 1 in 100 | 771 | 901 |

### 3.2.2.2 Low Flows

Corresponding with the dry runoff conditions in 2006, annual and June-Sept low flows were generally the lowest of the three years for the non-glaciated watersheds. For the Bulkley River, the annual 7 -day low flow was well within the range of historical observations (ranked 20 out of 61 years of record), however June-Sept 7-day low flow conditions were the lowest on record. A similar trend is evident for Simpson Creek. For KC1 and KC4, 2006 summer low flows were substantially lower than those observed in 2007 and 2008, and also appear to follow this trend. Conversely, for glaciated streams (GG4a, GG3, and TC2), summer low flows were higher in 2006 than in 2008. For these streams, the warmer summer temperatures in 2006 likely resulted in greater glacial ablation, supporting summer base flows.

### 3.2.2.3 Peak Flows

The most notable feature of the hydrographs is the 2007 freshet period, which produced record flood flows for many rivers in BC , including the highest observed flow in the 78 year record of the Bulkley River at Quick $-1060 \mathrm{~m}^{3} / \mathrm{s}$. The flood flows were generated by large snowpacks ( $162 \%$ of normal for the North West Region of BC on May 1; 186\% of normal at the Hudson Bay Mountain snow course), and delayed onset of melt. In most years, the first two weeks of May see substantial reductions in higher elevation snowpacks as the freshet melt begins. However, in 2007, high elevation snowmelt was subdued, and some snow courses continued to accumulate snow to the middle of May. As a result, rapid snow melt due to warmer temperatures at the end of May resulted in flooding.

The high 2007 freshet peaks were observed at the Project hydrometric stations as well. Observed peaks occurred June 4 at Simpson and Kathlyn Creeks, June 5 on Glacier Gulch Creek, June 6 on Toboggan Creek, and June 8 on the Bulkley River.

While the 2007 freshet was a dominant hydrograph feature, on Glacier Gulch Creek, the highest instantaneous flows of the year at both the GG4a and GG3 stations were observed later in the summer. Flow peaked on July 15 at GG4a, as a result of warm temperatures driving glacier melt (up to $35^{\circ} \mathrm{C}$ at the Smithers Airport on July 12, 2007), followed by 21 mm of precipitation the morning of July 15. Peak flow was observed on August 16 at GG3 following similar weather conditions $\left(28^{\circ} \mathrm{C}, 15 \mathrm{~mm}\right.$ precipitation). This illustrates the importance of the glacier, which covers $32 \%$ and $20 \%$ of the GG4a and GG3 watersheds respectively, to the hydrology of the watershed. While Toboggan Creek ( $7 \%$ glacier cover) also responded to these two events, instantaneous flows were observed during freshet.

The 2007 peak flow at KC3/16 occurred in May - much earlier than the other stations. The watershed above this gauge is small $\left(1.3 \mathrm{~km}^{2}\right)$ and at a relatively low elevation.

### 3.2.3 Flow Monitoring at A1 (1066 Adit)

Figure 3.2-15 (and Appendix 3.2-7) summarizes flow monitored at the portal of the 1066 Adit (station A1). A V-notch weir was installed at the station in April 2006. While the station continued to produce results, data from June 10, 2007 through January 5, 2008 appear anomalous, with rapid changes in observed water levels. There was no underground activity during these times to produce such changes. It is unclear what the cause of this anomaly was;
with no intervention, the water level sensor began producing reliable results again on January 5, 2008. This suggests that there was some type of blockage around the gauge that worked itself free. To ensure data quality for future monitoring, the sensor was replaced in July 2008.

Based on results from other years, and a general understanding of the hydrologic cycle, it is expected that groundwater levels would increase through the summer, peaking in September or October, then decrease through the winter, reaching a minimum level in late April or early May, just before snow melt begins. Using this understanding, flow rates were estimated for the period June 10, 2007 to January 5, 2008 by adding an offset to the observed water levels. There is limited data available to calibrate the estimates against; however, the results give an indication of the expected flow rates for this period.


## 4. Summary

This meteorology and hydrology baseline report summarizes results from 2006, 2007, and 2008. Data are presented for the Davidson meteorology station and for 6 hydrometric stations established for the Davidson Project, as well as available data from government operated stations at the Smithers Airport, Hudson Bay Mountain, Bulkley River and Simpson Creek. This report is a supplement to previous baseline reports that were completed for 2005 and the first half of 2006. The previous reports also included detailed regional analysis of long-term meteorology and hydrology data from stations monitored by Environment Canada and the WSC.

Results observed in 2006 to 2008 cover a wide range of hydro-climatic conditions. In 2006, 1-in-100 year dry conditions were experienced (based on observed runoff for Bulkley River and Simpson Creek). This resulted in record summer low flows for the Bulkley River, Simpson Creek, and other non-glaciated streams in the area ( $\mathrm{KC1}$ and KC 4 ). For Glacier Gulch and Toboggan Creeks, watersheds with glaciers in their headwaters, warmer average summer temperatures resulted in more glacial ablation, which helped maintain higher base flows in these streams.

In 2007, 1-in-100 year wet conditions were experienced (based on runoff for Bulkley River and Simpson Creek). Near-record snowpack and delayed on-set of melt resulted in a large freshet response, which produced the highest observed flood flows in the 78 year record for the Bulkley River station at Quick. Similarly, large freshet flows were observed at Project specific gauges. Secondary peak flows were also observed in July and August, especially for the Glacier Gulch Creek stations (GG4a and GG3), due to a combination of warm temperatures followed by rain storms.

In contrast, 2008 produced near average runoff conditions, as well as relatively moderate peak and low flows.

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Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station

| Date | Daily Air Temperature |  |  | Total Precipitation (mm) | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Maximum } \\ \left({ }^{\circ} \mathrm{C}\right) \\ \hline \end{gathered}$ | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{gathered} \hline \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 18-Oct-05 | 3.5 |  | 1.4 | 3.8 | 0.31 |
| 19-Oct-05 | 4.5 | 1.8 | -0.8 | 0.0 | 0.58 |
| 20-Oct-05 | 5.1 | 1.0 | -2.6 | 0.0 | 0.93 |
| 21-Oct-05 | 6.0 | 4.1 | 1.7 | 0.0 | 1.49 |
| 22-Oct-05 | 8.9 | 6.0 | 4.0 | 0.0 | 1.15 |
| 23-Oct-05 | 8.3 | 5.0 | 1.8 | 0.0 | 0.90 |
| 24-Oct-05 | 10.2 | 6.5 | 1.9 | 0.0 | 0.92 |
| 25-Oct-05 | 13.1 | 10.5 | 4.2 | 0.0 | 1.38 |
| 26-Oct-05 | 6.3 | 2.4 | -0.4 | 0.0 | 1.02 |
| 27-Oct-05 | 6.2 | 2.4 | -0.7 | 0.0 | 0.99 |
| 28-Oct-05 | 5.9 | 4.3 | 2.2 | 0.0 | 1.53 |
| 29-Oct-05 | 5.6 | 3.3 | -0.8 | 0.0 | 0.98 |
| 30-Oct-05 | 6.2 | 2.4 | -0.7 | 0.0 | 0.79 |
| 31-Oct-05 | 5.5 | 3.2 | 0.2 | 0.3 | 1.26 |
| 1-Nov-05 | 3.9 | 1.6 | -0.5 | 0.0 | 0.66 |
| 2-Nov-05 | 3.3 | 1.1 | -1.2 | 0.0 | 0.73 |
| 3-Nov-05 | 2.4 | 1.0 | -0.5 | 3.3 | 0.88 |
| 4-Nov-05 | 0.2 | -1.3 | -3.6 | 0.5 | 0.00 |
| 5-Nov-05 | 0.2 | -2.9 | -5.0 | 0.0 | 0.00 |
| 6-Nov-05 | -0.2 | -2.5 | -5.5 | 3.6 | 0.00 |
| 7-Nov-05 | -1.5 | -4.9 | -8.1 | 0.0 | 0.00 |
| 8-Nov-05 | 2.4 | -1.1 | -3.5 | 2.3 | 0.43 |
| 9-Nov-05 | 4.3 | 2.6 | 1.5 | 22.4 | 0.85 |
| 10-Nov-05 | 3.4 | 0.6 | -1.6 | 2.3 | 1.04 |
| 11-Nov-05 | 0.9 | -1.8 | -3.5 | 0.8 | 0.59 |
| 12-Nov-05 | 1.6 | -1.5 | -3.7 | 0.0 | 0.64 |
| 13-Nov-05 | -0.5 | -2.4 | -4.1 | 0.0 | 0.36 |
| 14-Nov-05 | -1.4 | -2.9 | -4.7 | 2.3 | 0.32 |
| 15-Nov-05 | -0.7 | -1.7 | -2.8 | 7.6 | 0.45 |
| 16-Nov-05 | 3.7 | 0.4 | -2.2 | 0.0 | 1.02 |
| 17-Nov-05 | 4.4 | 0.8 | -2.3 | 4.8 | 1.09 |
| 18-Nov-05 | 7.4 | 4.4 | 2.4 | 0.8 | 1.02 |
| 19-Nov-05 | 10.1 | 5.6 | 3.0 | 1.0 | 1.32 |
| 20-Nov-05 | 4.7 | 2.8 | 0.9 | 0.0 | 0.98 |
| 21-Nov-05 | 7.7 | 4.2 | 2.0 | 0.0 | 1.25 |
| 22-Nov-05 | 7.5 | 4.7 | 2.9 | 0.0 | 1.11 |
| 23-Nov-05 | 4.2 | 2.4 | -0.4 | 0.0 | 0.69 |
| 24-Nov-05 | 5.0 | 1.4 | -1.2 | 0.0 | 0.80 |
| 25-Nov-05 | 5.4 | 1.4 | -1.8 | 0.0 | 0.85 |
| 26-Nov-05 | -1.3 | -4.5 | -6.5 | 0.0 | 0.67 |
| 27-Nov-05 | -2.3 | -3.9 | -6.4 | 0.0 | 0.68 |
| 28-Nov-05 | -4.3 | -5.2 | -7.1 | 0.0 | 0.87 |
| 29-Nov-05 | -6.0 | -7.4 | -9.8 | 0.0 | 0.50 |
| 30-Nov-05 | -7.7 | -8.9 | -10.5 | 0.0 | 0.71 |
| 1-Dec-05 | -9.4 | -9.9 | -11.3 | 0.0 | 1.15 |
| 2-Dec-05 | -8.6 | -9.9 | -11.8 | 0.0 | 0.62 |
| 3-Dec-05 | -8.5 | -11.2 | -14.0 | 0.0 | 0.53 |
| 4-Dec-05 | 0.5 | -4.4 | -8.5 | 3.6 | 0.93 |
| 5-Dec-05 | -3.2 | -7.5 | -10.2 | 0.0 | 0.66 |
| 6-Dec-05 | -4.3 | -6.3 | -8.2 | 0.0 | 0.35 |
| 7-Dec-05 | -3.8 | -5.6 | -7.3 | 1.5 | 0.70 |
| 8-Dec-05 | 3.4 | -2.0 | -6.8 | 3.0 | 0.74 |
| 9-Dec-05 | 6.0 | 2.9 | 1.1 | 1.0 | 1.21 |
| 10-Dec-05 | 9.1 | 4.0 | 0.8 | 1.5 | 1.47 |
| 11-Dec-05 | 7.2 | 3.1 | 1.4 | 0.0 | 0.97 |
| 12-Dec-05 | 3.3 | 0.5 | -1.1 | 0.0 | 0.79 |
| 13-Dec-05 | -1.1 | -3.0 | -5.5 | 0.0 | 0.75 |
| 14-Dec-05 | -4.6 | -5.6 | -7.0 | 0.0 | 0.36 |
| 15-Dec-05 | -4.9 | -6.6 | -8.3 | 0.0 | 0.39 |
| 16-Dec-05 | -6.0 | -7.1 | -8.8 | 0.0 | 0.53 |
| 17-Dec-05 | -6.3 | -8.2 | -9.6 | 0.0 | 0.69 |
| 18-Dec-05 | -8.2 | -9.5 | -10.9 | 0.0 | 0.49 |
| 19-Dec-05 | -4.6 | -9.6 | -13.5 | 0.0 | 0.44 |
| 20-Dec-05 | 0.6 | -4.1 | -8.0 | 2.8 | 0.76 |
| 21-Dec-05 | 2.9 | -0.4 | -2.5 | 2.3 | 0.58 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total Precipitation (mm) | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum $\left({ }^{\circ} \mathrm{C}\right)$ | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{aligned} & \hline \text { Minimum } \\ & \left({ }^{\circ} \mathrm{C}\right) \end{aligned}$ |  |  |
| 22-Dec-05 | 3.6 | 1.8 | -0.5 | 1.8 | 0.71 |
| 23-Dec-05 | 3.1 | 1.4 | 0.1 | 6.6 | 0.77 |
| 24-Dec-05 | 2.8 | 1.0 | -0.3 | 16.0 | 0.64 |
| 25-Dec-05 | 1.5 | 0.5 | -0.3 | 0.3 | 0.31 |
| 26-Dec-05 | 2.9 | 0.9 | -0.3 | 2.5 | 0.58 |
| 27-Dec-05 | 2.9 | 1.2 | -1.0 | 2.0 | 1.01 |
| 28-Dec-05 | 2.7 | -0.2 | -3.8 | 1.5 | 0.91 |
| 29-Dec-05 | 0.9 | -1.6 | -3.4 | 0.0 | 0.75 |
| 30-Dec-05 | 0.6 | -0.8 | -2.5 | 2.0 | 0.79 |
| 31-Dec-05 | 1.6 | -0.4 | -2.9 | 0.3 | 1.00 |
| 1-Jan-06 | 1.0 | -0.8 | -3.5 | 0.0 | 0.64 |
| 2-Jan-06 | 2.5 | 0.7 | -1.4 | 0.8 | 0.85 |
| 3-Jan-06 | -0.4 | -2.5 | -4.9 | 0.0 | 0.51 |
| 4-Jan-06 | -0.4 | -4.0 | -6.8 | 2.0 | 0.59 |
| 5-Jan-06 | 2.9 | 0.3 | -2.5 | 7.6 | 1.63 |
| 6-Jan-06 | -1.2 | -2.9 | -4.3 | 0.0 | 0.55 |
| 7-Jan-06 | -3.6 | -6.1 | -8.7 | 0.0 | 0.33 |
| 8-Jan-06 | 1.5 | -2.8 | -4.5 | 1.3 | 0.69 |
| 9-Jan-06 | 1.7 | -3.0 | -5.2 | 0.0 | 0.83 |
| 10-Jan-06 | -2.3 | -5.0 | -7.7 | 0.0 | 0.48 |
| 11-Jan-06 | -4.8 | -6.5 | -8.2 | 0.0 | 0.11 |
| 12-Jan-06 | -2.3 | -4.3 | -5.5 | 0.0 | 0.60 |
| 13-Jan-06 | 0.0 | -3.2 | -4.7 | 3.3 | 0.35 |
| 14-Jan-06 | -1.6 | -2.8 | -4.0 | 1.0 | 0.62 |
| 15-Jan-06 | -2.8 | -4.9 | -7.2 | 0.0 | 0.77 |
| 16-Jan-06 | -1.4 | -2.9 | -4.5 | 4.6 | 0.89 |
| 17-Jan-06 | 2.6 | 0.4 | -1.4 | 6.6 | 1.28 |
| 18-Jan-06 | 0.9 | -1.6 | -3.4 | 0.0 | 0.99 |
| 19-Jan-06 | -2.7 | -3.9 | -6.0 | 3.6 | 0.50 |
| 20-Jan-06 | -1.9 | -4.0 | -7.0 | 0.8 | 0.00 |
| 21-Jan-06 | 0.2 | -3.6 | -5.7 | 0.8 | 0.33 |
| 22-Jan-06 | 2.0 | 0.5 | -0.7 | 3.3 | 1.08 |
| 23-Jan-06 | 3.1 | -0.2 | -2.2 | 3.8 | 1.05 |
| 24-Jan-06 | 5.5 | 1.6 | -0.9 | 2.0 | 1.15 |
| 25-Jan-06 | 3.4 | 0.9 | -1.4 | 1.3 | 0.77 |
| 26-Jan-06 | -0.9 | -2.3 | -4.5 | 3.8 | 0.39 |
| 27-Jan-06 | -1.9 | -3.8 | -6.9 | 0.0 | 0.56 |
| 28-Jan-06 | -0.6 | -2.3 | -5.0 | 2.0 | 0.95 |
| 29-Jan-06 | -3.8 | -5.9 | -9.4 | 0.0 | 1.18 |
| 30-Jan-06 | -3.0 | -4.8 | -6.7 | 0.8 | 0.70 |
| 31-Jan-06 | 1.7 | -1.7 | -5.5 | 1.8 | 1.10 |
| 1-Feb-06 | 1.3 | -0.9 | -2.0 | 2.8 | 0.71 |
| 2-Feb-06 | 1.8 | -0.9 | -3.1 | 2.0 | 0.75 |
| 3-Feb-06 | 1.9 | -1.6 | -4.4 | 0.3 | 0.87 |
| 4-Feb-06 | -0.6 | -2.0 | -4.4 | 3.6 | 0.47 |
| 5-Feb-06 | -2.8 | -4.5 | -6.2 | 0.5 | 0.41 |
| 6-Feb-06 | -2.8 | -5.3 | -9.2 | 0.0 | 0.77 |
| 7-Feb-06 | 5.1 | 0.5 | -4.7 | 1.0 | 1.30 |
| 8-Feb-06 | 4.2 | -0.3 | -5.5 | 1.5 | 0.97 |
| 9-Feb-06 | -1.2 | -5.6 | -9.3 | 0.0 | 0.63 |
| 10-Feb-06 | 0.9 | -3.1 | -6.6 | 0.3 | 0.84 |
| 11-Feb-06 | -0.1 | -3.1 | -8.2 | 0.0 | 0.69 |
| 12-Feb-06 | 2.0 | -1.4 | -3.6 | 0.0 | 0.67 |
| 13-Feb-06 | 1.0 | -1.6 | -4.3 | 0.3 | 1.23 |
| 14-Feb-06 | 0.6 | -4.3 | -7.3 | 0.0 | 1.01 |
| 15-Feb-06 | -0.8 | -6.9 | -10.8 | 0.0 | 0.71 |
| 16-Feb-06 | -0.7 | -5.9 | -9.0 | 0.0 | 0.80 |
| 17-Feb-06 | -4.5 | -9.8 | -14.4 | 0.0 | 0.51 |
| 18-Feb-06 | -1.1 | -7.0 | -10.8 | 0.0 | 0.68 |
| 19-Feb-06 | 0.2 | -5.2 | -9.1 | 0.0 | 0.55 |
| 20-Feb-06 | 3.1 | -0.9 | -3.1 | 0.3 | 0.74 |
| 21-Feb-06 | 5.5 | 1.3 | -2.2 | 0.0 | 1.43 |
| 22-Feb-06 | -0.4 | -3.3 | -8.0 | 0.0 | 0.84 |
| 23-Feb-06 | -5.5 | -8.1 | -10.9 | 10.4 | 0.90 |
| 24-Feb-06 | -7.7 | -12.1 | -15.8 | 0.0 | 0.98 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | TotalPrecipitation$(\mathrm{mm})$ | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{gathered} \hline \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 25-Feb-06 | -8.8 | -14.2 | -18.7 | 0.0 | 0.54 |
| 26-Feb-06 | -7.3 | -11.9 | -17.3 | 0.0 | 0.49 |
| 27-Feb-06 | -4.9 | -10.2 | -14.2 | 0.0 | 0.73 |
| 28-Feb-06 | -1.7 | -8.6 | -14.4 | 0.0 | 0.68 |
| 1-Mar-06 | -2.7 | -5.1 | -9.1 | 0.0 | 1.21 |
| 2-Mar-06 | 1.9 | -2.6 | -5.7 | 0.0 | 0.49 |
| 3-Mar-06 | -0.2 | -1.9 | -3.5 | 0.0 | 0.51 |
| 4-Mar-06 | 1.6 | -2.3 | -4.7 | 0.0 | 0.61 |
| 5-Mar-06 | 2.4 | -3.3 | -7.7 | 0.0 | 0.62 |
| 6-Mar-06 | -0.1 | -3.0 | -6.0 | 0.0 | 0.58 |
| 7-Mar-06 | 4.8 | -0.8 | -4.3 | 0.0 | 0.62 |
| 8-Mar-06 | 3.5 | -0.2 | -3.0 | 0.5 | 1.14 |
| 9-Mar-06 | 0.0 | -4.5 | -8.8 | 0.3 | 1.07 |
| 10-Mar-06 | -0.6 | -5.9 | -11.3 | 0.0 | 0.72 |
| 11-Mar-06 | -2.8 | -5.3 | -9.7 | 0.0 | 0.85 |
| 12-Mar-06 | -0.6 | -7.9 | -14.8 | 0.0 | 0.82 |
| 13-Mar-06 | 0.0 | -3.6 | -6.5 | 0.0 | 0.84 |
| 14-Mar-06 | 1.5 | -2.8 | -9.6 | 6.1 | 0.98 |
| 15-Mar-06 | -3.0 | -8.9 | -15.1 | 0.0 | 0.58 |
| 16-Mar-06 | 1.4 | -2.9 | -8.6 | 0.0 | 0.93 |
| 17-Mar-06 | 1.8 | -3.1 | -9.6 | 0.3 | 0.98 |
| 18-Mar-06 | -2.6 | -8.3 | -13.6 | 0.3 | 1.13 |
| 19-Mar-06 | 2.8 | -3.3 | -9.3 | 0.3 | 1.00 |
| 20-Mar-06 | 6.7 | -0.7 | -4.6 | 0.8 | 1.05 |
| 21-Mar-06 | 6.7 | 0.4 | -6.0 | 0.0 | 0.76 |
| 22-Mar-06 | 6.5 | 2.9 | -1.3 | 1.5 | 1.20 |
| 23-Mar-06 | 9.7 | 3.2 | -2.1 | 1.3 | 1.50 |
| 24-Mar-06 | 9.5 | 3.8 | 0.2 | 3.6 | 0.71 |
| 25-Mar-06 | 4.4 | 1.3 | -1.0 | 1.8 | 0.51 |
| 26-Mar-06 | 5.5 | 0.6 | -3.9 | 0.3 | 0.99 |
| 27-Mar-06 | 5.5 | 0.5 | -4.8 | 0.5 | 0.96 |
| 28-Mar-06 | 7.4 | 0.7 | -5.2 | 0.0 | 1.09 |
| 29-Mar-06 | 9.3 | 2.8 | -3.1 | 0.3 | 1.03 |
| 30-Mar-06 | 6.7 | 2.2 | -1.3 | 0.0 | 1.07 |
| 31-Mar-06 | 7.3 | 1.3 | -4.2 | 0.0 | 0.82 |
| 1-Apr-06 | 9.8 | 3.4 | -0.3 | 0.0 | 0.85 |
| 2-Apr-06 | 9.9 | 2.8 | -1.4 | 0.8 | 1.07 |
| 3-Apr-06 | 11.5 | 3.8 | -0.6 | 0.0 | 0.96 |
| 4-Apr-06 | 13.6 | 4.5 | -1.3 | 0.3 | 1.13 |
| 5-Apr-06 | 13.8 | 5.1 | -0.9 | 0.3 | 1.15 |
| 6-Apr-06 | 12.4 | 6.1 | 0.9 | 0.0 | 1.12 |
| 7-Apr-06 | 12.4 | 6.1 | 1.4 | 0.0 | 0.98 |
| 8-Apr-06 | 11.1 | 5.4 | -0.2 | 0.0 | 1.22 |
| 9-Apr-06 | 8.8 | 3.4 | -1.0 | 0.0 | 0.95 |
| 10-Apr-06 | 8.9 | 3.4 | -1.3 | 0.0 | 0.91 |
| 11-Apr-06 | 5.9 | 2.1 | -0.5 | 1.5 | 0.75 |
| 12-Apr-06 | 4.9 | 1.4 | -1.7 | 0.8 | 0.70 |
| 13-Apr-06 | 6.0 | 2.1 | -0.8 | 0.0 | 0.99 |
| 14-Apr-06 | 4.5 | 0.2 | -3.6 | 0.5 | 1.05 |
| 15-Apr-06 | 6.6 | -0.4 | -6.3 | 0.3 | 0.97 |
| 16-Apr-06 | 7.6 | 1.5 | -3.8 | 0.5 | 0.98 |
| 17-Apr-06 | 8.5 | 2.8 | -3.0 | 0.0 | 1.19 |
| 18-Apr-06 | 9.0 | 5.2 | 2.4 | 0.3 | 1.52 |
| 19-Apr-06 | 9.2 | 5.7 | -0.4 | 0.0 | 1.55 |
| 20-Apr-06 | 7.3 | 2.6 | -1.6 | 0.0 | 0.89 |
| 21-Apr-06 | 7.6 | 2.2 | -2.3 | 0.3 | 1.17 |
| 22-Apr-06 | 11.4 | 3.3 | -2.8 | 0.0 | 1.22 |
| 23-Apr-06 | 16.5 | 7.3 | -0.4 | 0.3 | 1.27 |
| 24-Apr-06 | 18.7 | 9.2 | 2.0 | 15.5 | 1.23 |
| 25-Apr-06 | 12.0 | 6.6 | 1.3 | 0.0 | 1.22 |
| 26-Apr-06 | 8.7 | 4.0 | 0.6 | 1.3 | 0.78 |
| 27-Apr-06 | 7.4 | 3.9 | -0.4 | 2.3 | 1.09 |
| 28-Apr-06 | 12.7 | 7.1 | 0.3 | 1.8 | 1.41 |
| 29-Apr-06 | 8.7 | 3.0 | -2.2 | 0.0 | 1.15 |
| 30-Apr-06 | 7.1 | 2.4 | -2.0 | 0.0 | 0.96 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

|  |  | Daily Air Temperature |  | Total | Daily Average <br> Wind Speed |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Daximum | Average | Minimum | Precipitation | (mm) | $\left({ }^{\circ} \mathrm{C}\right)$ |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | TotalPrecipitation$(\mathrm{mm})$ | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{gathered} \hline \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 5-Jul-06 | 24.3 | 17.6 | 12.0 | 10.4 | 0.85 |
| 6-Jul-06 | 16.0 | 12.6 | 10.1 | 6.1 | 0.65 |
| 7-Jul-06 | 17.5 | 12.1 | 7.1 | 0.3 | 1.04 |
| 8-Jul-06 | 19.7 | 13.7 | 8.6 | 1.0 | 0.78 |
| 9-Jul-06 | 19.2 | 13.9 | 10.2 | 2.8 | 0.86 |
| 10-Jul-06 | 18.7 | 12.9 | 8.7 | 0.0 | 0.84 |
| 11-Jul-06 | 17.3 | 12.2 | 6.7 | 0.0 | 0.90 |
| 12-Jul-06 | 16.1 | 11.2 | 8.1 | 3.8 | 0.47 |
| 13-Jul-06 | 14.3 | 10.2 | 6.3 | 2.0 | 0.81 |
| 14-Jul-06 | 15.6 | 9.7 | 5.0 | 3.0 | 0.95 |
| 15-Jul-06 | 17.2 | 10.9 | 7.8 | 7.4 | 0.60 |
| 16-Jul-06 | 18.9 | 12.5 | 5.8 | 0.0 | 0.89 |
| 17-Jul-06 | 17.7 | 13.0 | 9.2 | 0.0 | 0.81 |
| 18-Jul-06 | 18.3 | 12.7 | 7.4 | 0.0 | 0.82 |
| 19-Jul-06 | 19.3 | 12.7 | 6.9 | 0.0 | 0.95 |
| 20-Jul-06 | 20.8 | 15.0 | 10.1 | 0.0 | 0.74 |
| 21-Jul-06 | 27.6 | 18.4 | 11.4 | 0.0 | 1.01 |
| 22-Jul-06 | 29.6 | 21.0 | 15.7 | 0.0 | 1.08 |
| 23-Jul-06 | 26.8 | 19.5 | 14.6 | 0.0 | 1.07 |
| 24-Jul-06 | 24.4 | 18.3 | 11.9 | 0.0 | 0.93 |
| 25-Jul-06 | 19.9 | 15.7 | 12.7 | 1.5 | 0.80 |
| 26-Jul-06 | 19.8 | 14.5 | 10.1 | 0.8 | 0.67 |
| 27-Jul-06 | 16.4 | 12.2 | 7.6 | 0.0 | 0.96 |
| 28-Jul-06 | 19.8 | 12.3 | 5.2 | 0.0 | 0.96 |
| 29-Jul-06 | 16.7 | 12.9 | 10.4 | 5.1 | 1.33 |
| 30-Jul-06 | 19.4 | 13.2 | 9.7 | 0.5 | 0.63 |
| 31-Jul-06 | 18.0 | 12.7 | 9.4 | 0.0 | 0.60 |
| 1-Aug-06 | 15.7 | 10.6 | 7.7 | 1.0 | 0.65 |
| 2-Aug-06 | 15.7 | 10.6 | 6.5 | 0.0 | 0.63 |
| 3-Aug-06 | 16.3 | 10.1 | 5.0 | 2.3 | 0.78 |
| 4-Aug-06 | 18.7 | 9.7 | 3.1 | 0.0 | 0.95 |
| 5-Aug-06 | 18.6 | 12.7 | 9.2 | 2.0 | 0.73 |
| 6-Aug-06 | 16.2 | 11.7 | 8.6 | 0.3 | 0.86 |
| 7-Aug-06 | 13.5 | 10.7 | 8.7 | 3.6 | 0.58 |
| 8-Aug-06 | 17.4 | 12.2 | 7.9 | 0.0 | 0.83 |
| 9-Aug-06 | 17.0 | 11.5 | 7.2 | 0.0 | 0.66 |
| 10-Aug-06 | 19.4 | 12.5 | 7.0 | 0.0 | 1.00 |
| 11-Aug-06 | 19.8 | 13.0 | 6.8 | 0.0 | 1.00 |
| 12-Aug-06 | 18.4 | 13.9 | 10.6 | 0.0 | 0.71 |
| 13-Aug-06 | 19.1 | 13.0 | 8.9 | 0.0 | 0.58 |
| 14-Aug-06 | 15.3 | 10.8 | 8.1 | 2.5 | 0.64 |
| 15-Aug-06 | 19.5 | 11.9 | 5.3 | 0.0 | 1.11 |
| 16-Aug-06 | 21.8 | 13.7 | 6.5 | 0.0 | 1.06 |
| 17-Aug-06 | 24.2 | 16.3 | 9.6 | 0.0 | 1.03 |
| 18-Aug-06 | 18.5 | 14.2 | 8.7 | 0.0 | 0.88 |
| 19-Aug-06 | 19.4 | 12.0 | 5.5 | 0.0 | 1.12 |
| 20-Aug-06 | 22.4 | 13.6 | 6.4 | 0.0 | 1.21 |
| 21-Aug-06 | 19.2 | 13.5 | 9.0 | 0.0 | 0.76 |
| 22-Aug-06 | 18.6 | 12.4 | 6.4 | 0.0 | 0.92 |
| 23-Aug-06 | 19.7 | 12.8 | 6.1 | 0.0 | 0.94 |
| 24-Aug-06 | 19.3 | 13.3 | 9.3 | 0.0 | 0.97 |
| 25-Aug-06 | 22.6 | 14.4 | 8.0 | 0.0 | 0.94 |
| 26-Aug-06 | 20.1 | 13.4 | 7.4 | 0.0 | 1.11 |
| 27-Aug-06 | 19.0 | 13.1 | 7.7 | 0.0 | 0.75 |
| 28-Aug-06 | 16.1 | 11.5 | 5.7 | 2.0 | 0.72 |
| 29-Aug-06 | 14.0 | 8.5 | 4.0 | 0.3 | 0.73 |
| 30-Aug-06 | 11.8 | 8.0 | 5.4 | 3.3 | 0.64 |
| 31-Aug-06 | 11.1 | 8.0 | 5.1 | 2.0 | 0.79 |
| 1-Sep-06 | 18.4 | 11.2 | 6.2 | 0.0 | 1.24 |
| 2-Sep-06 | 20.8 | 13.0 | 7.2 | 0.0 | 0.90 |
| 3-Sep-06 | 22.3 | 13.3 | 7.3 | 0.0 | 1.11 |
| 4-Sep-06 | 24.5 | 15.2 | 8.9 | 0.0 | 0.88 |
| 5-Sep-06 | 20.1 | 13.7 | 9.3 | 0.0 | 1.04 |
| 6-Sep-06 | 19.9 | 12.0 | 5.6 | 0.0 | 0.86 |
| 7-Sep-06 | 15.1 | 10.7 | 7.6 | 0.0 | 0.52 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total Precipitation (mm) | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{aligned} & \hline \text { Minimum } \\ & \left({ }^{\circ} \mathrm{C}\right) \end{aligned}$ |  |  |
| 8-Sep-06 | 14.7 | 10.6 | 8.2 | 4.8 | 0.46 |
| 9-Sep-06 | 15.6 | 10.9 | 7.3 | 0.8 | 0.39 |
| 10-Sep-06 | 14.9 | 9.4 | 6.0 | 1.3 | 0.74 |
| 11-Sep-06 | 14.7 | 9.0 | 4.8 | 0.0 | 0.76 |
| 12-Sep-06 | 14.0 | 8.7 | 4.4 | 0.0 | 0.82 |
| 13-Sep-06 | 12.0 | 8.1 | 4.9 | 2.0 | 0.94 |
| 14-Sep-06 | 8.5 | 5.7 | 2.1 | 1.3 | 1.06 |
| 15-Sep-06 | 7.2 | 4.0 | 1.3 | 0.0 | 0.60 |
| 16-Sep-06 | 11.5 | 6.5 | 3.0 | 0.0 | 0.88 |
| 17-Sep-06 | 8.2 | 5.9 | 4.3 | 8.6 | 0.94 |
| 18-Sep-06 | 10.4 | 6.3 | 3.3 | 0.0 | 0.54 |
| 19-Sep-06 | 11.5 | 6.4 | 2.9 | 1.0 | 0.53 |
| 20-Sep-06 | 8.1 | 6.6 | 5.6 | 18.3 | 0.34 |
| 21-Sep-06 | 10.8 | 6.5 | 4.0 | 0.0 | 0.97 |
| 22-Sep-06 | 9.1 | 6.0 | 4.0 | 2.3 | 0.39 |
| 23-Sep-06 | 17.0 | 10.8 | 6.8 | 0.0 | 0.75 |
| 24-Sep-06 | 15.3 | 11.1 | 8.3 | 4.1 | 1.02 |
| 25-Sep-06 | 12.2 | 10.2 | 7.9 | 8.4 | 0.70 |
| 26-Sep-06 | 14.6 | 10.6 | 8.2 | 0.3 | 0.62 |
| 27-Sep-06 | 15.8 | 11.2 | 9.2 | 2.0 | 0.78 |
| 28-Sep-06 | 16.6 | 11.3 | 7.9 | 0.0 | 0.82 |
| 29-Sep-06 | 11.6 | 9.2 | 7.7 | 3.8 | 0.62 |
| 30-Sep-06 | 9.6 | 6.4 | 1.3 | 0.8 | 0.85 |
| 1-Oct-06 | 6.6 | 2.8 | 0.4 | 0.0 | 0.87 |
| 2-Oct-06 | 6.4 | 0.9 | -1.8 | 0.0 | 0.78 |
| 3-Oct-06 | 5.9 | 0.6 | -3.2 | 0.3 | 0.74 |
| 4-Oct-06 | 10.2 | 3.1 | -2.0 | 4.3 | 0.69 |
| 5-Oct-06 | 7.9 | 4.9 | 1.4 | 0.0 | 0.78 |
| 6-Oct-06 | 7.1 | 3.1 | 0.5 | 0.0 | 0.92 |
| 7-Oct-06 | 8.0 | 2.4 | -1.4 | 0.0 | 0.87 |
| 8-Oct-06 | 8.6 | 2.2 | -1.7 | 0.0 | 0.85 |
| 9-Oct-06 | 9.1 | 4.1 | 0.4 | 0.0 | 0.48 |
| 10-Oct-06 | 11.5 | 5.9 | 2.1 | 0.0 | 0.70 |
| 11-Oct-06 | 12.2 | 6.6 | 2.2 | 0.0 | 0.50 |
| 12-Oct-06 | 12.2 | 7.7 | 5.2 | 0.0 | 0.65 |
| 13-Oct-06 | 13.5 | 8.1 | 3.6 | 0.0 | 0.47 |
| 14-Oct-06 | 8.5 | 7.2 | 6.4 | 2.3 | 0.27 |
| 15-Oct-06 | 7.3 | 6.3 | 4.4 | 4.6 | 0.52 |
| 16-Oct-06 | 6.1 | 3.0 | -1.4 | 0.0 | 1.04 |
| 17-Oct-06 | 3.7 | 0.2 | -2.7 | 0.0 | 0.55 |
| 18-Oct-06 | 9.4 | 4.8 | 1.2 | 1.3 | 0.60 |
| 19-Oct-06 | 9.4 | 6.2 | 3.3 | 1.5 | 0.85 |
| 20-Oct-06 | 7.3 | 4.3 | 1.4 | 0.0 | 0.87 |
| 21-Oct-06 | 9.8 | 5.3 | 2.6 | 0.0 | 0.62 |
| 22-Oct-06 | 8.8 | 4.9 | 1.2 | 0.0 | 0.82 |
| 23-Oct-06 | 8.6 | 3.9 | 0.3 | 4.6 | 1.09 |
| 24-Oct-06 | 5.3 | 2.5 | -0.3 | 3.6 | 0.89 |
| 25-Oct-06 | 3.9 | 1.5 | -0.3 | 6.4 | 0.99 |
| 26-Oct-06 | 4.2 | 0.9 | -1.3 | 0.0 | 0.99 |
| 27-Oct-06 | 0.3 | -0.2 | -0.8 | 19.6 | 0.22 |
| 28-Oct-06 | 0.4 | -0.7 | -2.3 | 14.5 | 0.00 |
| 29-Oct-06 | -1.0 | -3.7 | -8.8 | 0.3 | 0.00 |
| 30-Oct-06 | -5.8 | -8.4 | -10.3 | 0.0 | 0.00 |
| 31-Oct-06 | -4.4 | -7.6 | -9.9 | 0.0 | 0.27 |
| 1-Nov-06 | -1.8 | -4.9 | -7.4 | 0.3 | 0.36 |
| 2-Nov-06 | -1.3 | -2.7 | -3.4 | 0.0 | 0.91 |
| 3-Nov-06 | -2.0 | -2.7 | -3.5 | 0.0 | 0.68 |
| 4-Nov-06 | -1.7 | -2.9 | -3.8 | 5.8 | 0.62 |
| 5-Nov-06 | -1.7 | -3.6 | -5.0 | 5.1 | 0.33 |
| 6-Nov-06 | 1.9 | -1.0 | -2.7 | 8.4 | 0.97 |
| 7-Nov-06 | 3.0 | 0.7 | -4.2 | 5.6 | 0.87 |
| 8-Nov-06 | -0.8 | -3.7 | -5.3 | 0.0 | 0.73 |
| 9-Nov-06 | -1.0 | -4.5 | -7.7 | 0.0 | 0.79 |
| 10-Nov-06 | -1.2 | -3.0 | -4.2 | 2.5 | 0.90 |
| 11-Nov-06 | -0.1 | -2.4 | -6.3 | 1.0 | 0.68 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | TotalPrecipitation$(\mathrm{mm})$ | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average $\left({ }^{\circ} \mathrm{C}\right)$ | Minimum ( ${ }^{\circ} \mathrm{C}$ ) |  |  |
| 12-Nov-06 | -4.0 | -5.4 | -6.8 | 0.0 | 0.40 |
| 13-Nov-06 | -2.9 | -5.1 | -6.9 | 0.0 | 0.50 |
| 14-Nov-06 | 0.0 | -2.2 | -5.2 | 21.8 | 0.75 |
| 15-Nov-06 | -0.7 | -2.9 | -8.8 | 2.8 | 0.00 |
| 16-Nov-06 | -2.1 | -4.9 | -9.8 | 1.0 | 0.00 |
| 17-Nov-06 | 0.0 | -2.2 | -3.7 | 9.9 | 0.00 |
| 18-Nov-06 | 2.7 | -0.7 | -4.7 | 0.8 | 0.61 |
| 19-Nov-06 | 4.3 | 2.1 | -1.6 | 4.3 | 1.78 |
| 20-Nov-06 | -0.5 | -2.0 | -3.6 | 2.3 | 0.43 |
| 21-Nov-06 | -3.5 | -4.8 | -7.6 | 0.0 | 0.81 |
| 22-Nov-06 | -7.4 | -9.3 | -10.8 | 1.5 | 0.86 |
| 23-Nov-06 | -10.4 | -12.0 | -15.2 | 0.0 | 0.54 |
| 24-Nov-06 | -10.7 | -12.6 | -15.2 | 2.8 | 1.10 |
| 25-Nov-06 | -15.1 | -17.4 | -19.9 | 0.0 | 1.51 |
| 26-Nov-06 | -18.8 | -20.4 | -23.2 | 0.0 | 1.06 |
| 27-Nov-06 | -15.9 | -18.3 | -23.1 | 0.0 | 1.12 |
| 28-Nov-06 | -17.0 | -22.3 | -27.0 | 0.0 | 0.51 |
| 29-Nov-06 | -15.4 | -16.6 | -18.2 | 10.2 | 1.07 |
| 30-Nov-06 | -14.4 | -17.0 | -19.9 | 0.0 | 0.50 |
| 1-Dec-06 | -7.8 | -12.5 | -14.9 | 0.0 | 0.27 |
| 2-Dec-06 | -1.3 | -5.6 | -10.1 | 0.0 | 0.54 |
| 3-Dec-06 | 1.3 | -0.4 | -3.0 | 1.0 | 0.43 |
| 4-Dec-06 | 0.6 | -0.3 | -2.2 | 3.0 | 0.30 |
| 5-Dec-06 | -0.3 | -2.0 | -4.5 | 7.1 | 0.50 |
| 6-Dec-06 | 2.1 | 0.5 | -0.6 | 3.0 | 0.54 |
| 7-Dec-06 | 4.6 | 2.6 | 0.4 | 1.8 | 1.08 |
| 8-Dec-06 | 2.0 | -1.3 | -3.6 | 0.0 | 0.79 |
| 9-Dec-06 | 2.5 | 0.4 | -1.6 | 4.8 | 0.68 |
| 10-Dec-06 | 1.6 | -0.3 | -2.5 | 1.0 | 0.62 |
| 11-Dec-06 | 4.2 | 0.4 | -2.4 | 0.3 | 0.87 |
| 12-Dec-06 | 0.3 | -2.1 | -4.1 | 0.0 | 0.65 |
| 13-Dec-06 | 1.6 | -0.1 | -1.8 | 7.4 | 1.50 |
| 14-Dec-06 | 1.2 | -1.8 | -4.8 | 0.3 | 0.79 |
| 15-Dec-06 | -2.0 | -4.7 | -8.1 | 0.3 | 0.67 |
| 16-Dec-06 | -7.5 | -10.4 | -13.0 | 0.0 | 0.56 |
| 17-Dec-06 | -4.3 | -10.1 | -13.9 | 1.3 | 0.45 |
| 18-Dec-06 | 4.6 | -0.3 | -4.5 | 21.1 | 0.80 |
| 19-Dec-06 | 0.3 | -1.1 | -2.6 | 0.5 | 0.00 |
| 20-Dec-06 | 4.0 | 1.4 | -1.0 | 1.5 | 1.47 |
| 21-Dec-06 | 4.0 | 1.0 | -3.4 | 1.8 | 1.65 |
| 22-Dec-06 | -1.2 | -4.1 | -7.4 | 0.3 | 1.15 |
| 23-Dec-06 | -1.9 | -5.0 | -10.3 | 7.4 | 0.56 |
| 24-Dec-06 | -2.5 | -6.1 | -12.0 | 0.0 | 1.16 |
| 25-Dec-06 | -0.5 | -2.6 | -5.1 | 0.0 | 0.79 |
| 26-Dec-06 | -2.0 | -3.8 | -5.2 | 1.0 | 0.42 |
| 27-Dec-06 | -3.6 | -7.4 | -10.6 | 0.0 | 0.88 |
| 28-Dec-06 | -3.4 | -7.4 | -12.3 | 0.3 | 0.81 |
| 29-Dec-06 | -2.7 | -4.5 | -6.5 | 0.0 | 0.88 |
| 30-Dec-06 | -0.7 | -3.0 | -5.4 | 3.3 | 0.76 |
| 31-Dec-06 | 1.7 | -2.9 | -6.0 | 0.0 | 0.80 |
| 1-Jan-07 | 2.7 | 1.1 | -0.2 | 6.4 | 0.99 |
| 2-Jan-07 | 2.9 | 0.7 | -0.6 | 17.5 | 0.58 |
| 3-Jan-07 | 1.1 | -1.2 | -2.9 | 0.8 | 0.55 |
| 4-Jan-07 | -2.1 | -5.2 | -7.9 | 0.0 | 0.96 |
| 5-Jan-07 | 0.0 | -4.1 | -6.9 | 3.6 | 0.95 |
| 6-Jan-07 | -1.2 | -4.0 | -6.9 | 1.5 | 1.12 |
| 7-Jan-07 | 0.7 | -2.0 | -7.2 | 9.4 | 1.62 |
| 8-Jan-07 | -3.4 | -5.3 | -8.0 | 4.3 | 0.73 |
| 9-Jan-07 | -4.5 | -5.8 | -6.9 | 7.6 | 0.34 |
| 10-Jan-07 | -6.6 | -12.0 | -18.0 | 0.0 | 0.78 |
| 11-Jan-07 | -17.2 | -18.9 | -20.4 | 0.5 | 0.33 |
| 12-Jan-07 | -14.8 | -18.5 | -20.8 | 0.0 | 0.25 |
| 13-Jan-07 | -10.9 | -13.9 | -16.0 | 7.9 | 0.20 |
| 14-Jan-07 | -3.2 | -8.1 | -11.6 | 0.0 | 0.40 |
| 15-Jan-07 | 2.2 | -1.4 | -4.5 | 0.0 | 0.98 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total <br> Precipitation <br> $(\mathrm{mm})$ <br> 0.0 | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum $\left({ }^{\circ} \mathrm{C}\right)$ | Average ( ${ }^{\circ} \mathrm{C}$ ) | Minimum ( ${ }^{\circ} \mathrm{C}$ ) |  |  |
| 16-Jan-07 | -1.4 | -4.0 | -7.9 | 0.0 | 0.90 |
| 17-Jan-07 | -4.8 | -6.7 | -9.2 | 0.0 | 0.51 |
| 18-Jan-07 | -2.5 | -4.6 | -7.2 | 1.8 | 0.31 |
| 19-Jan-07 | -3.9 | -5.1 | -6.8 | 0.3 | 0.29 |
| 20-Jan-07 | -3.2 | -5.8 | -7.9 | 0.5 | 0.42 |
| 21-Jan-07 | 0.4 | -1.7 | -3.6 | 13.2 | 0.32 |
| 22-Jan-07 | 3.0 | 0.5 | -0.9 | 5.3 | 0.86 |
| 23-Jan-07 | 3.4 | 1.1 | -0.8 | 5.8 | 0.75 |
| 24-Jan-07 | 8.1 | 2.8 | 0.1 | 7.4 | 1.07 |
| 25-Jan-07 | 0.5 | -4.0 | -8.0 | 0.0 | 0.86 |
| 26-Jan-07 | -4.6 | -7.5 | -10.0 | 0.0 | 0.55 |
| 27-Jan-07 | -6.8 | -8.4 | -10.3 | 0.0 | 0.42 |
| 28-Jan-07 | -4.3 | -6.8 | -9.3 | 0.0 | 0.46 |
| 29-Jan-07 | -1.6 | -4.5 | -6.3 | 0.0 | 0.41 |
| 30-Jan-07 | -3.6 | -5.7 | -8.5 | 0.0 | 0.37 |
| 31-Jan-07 | -4.4 | -6.5 | -8.4 | 0.0 | 0.33 |
| 1-Feb-07 | -4.7 | -6.4 | -8.2 | 0.0 | 0.37 |
| 2-Feb-07 | -6.6 | -8.3 | -10.3 | 0.0 | 0.26 |
| 3-Feb-07 | -3.6 | -6.7 | -9.4 | 0.0 | 0.31 |
| 4-Feb-07 | 0.6 | -2.6 | -7.2 | 8.4 | 0.46 |
| 5-Feb-07 | 1.9 | 0.6 | -0.4 | 3.6 | 0.39 |
| 6-Feb-07 | 3.4 | 1.0 | -0.1 | 4.1 | 0.46 |
| 7-Feb-07 | 1.5 | -1.0 | -4.4 | 0.0 | 1.22 |
| 8-Feb-07 | -4.1 | -5.6 | -7.3 | 1.0 | 1.35 |
| 9-Feb-07 | -7.1 | -8.1 | -9.0 | 0.0 | 0.93 |
| 10-Feb-07 | -6.1 | -8.5 | -10.8 | 0.3 | 0.45 |
| 11-Feb-07 | -3.1 | -5.6 | -7.8 | 0.0 | 1.08 |
| 12-Feb-07 | -6.4 | -7.8 | -9.2 | 0.0 | 1.66 |
| 13-Feb-07 | -5.6 | -7.8 | -9.4 | 0.3 | 1.03 |
| 14-Feb-07 | 1.9 | -3.0 | -7.3 | 6.1 | 0.87 |
| 15-Feb-07 | 1.5 | 0.1 | -1.2 | 5.1 | 0.71 |
| 16-Feb-07 | 3.3 | -0.1 | -3.0 | 4.3 | 0.93 |
| 17-Feb-07 | 4.7 | 1.1 | -1.0 | 3.3 | 0.76 |
| 18-Feb-07 | 3.3 | 0.1 | -2.0 | 1.3 | 0.57 |
| 19-Feb-07 | 1.0 | -1.2 | -3.0 | 5.6 | 0.66 |
| 20-Feb-07 | 1.4 | -2.2 | -5.7 | 0.3 | 0.83 |
| 21-Feb-07 | 1.7 | -2.0 | -4.3 | 0.3 | 0.78 |
| 22-Feb-07 | 0.5 | -4.1 | -7.6 | 0.0 | 0.66 |
| 23-Feb-07 | -0.1 | -3.5 | -6.8 | 0.0 | 0.83 |
| 24-Feb-07 | 1.7 | -2.0 | -4.5 | 0.3 | 1.04 |
| 25-Feb-07 | 0.5 | -1.5 | -3.4 | 0.5 | 0.95 |
| 26-Feb-07 | 0.4 | -1.6 | -2.9 | 0.3 | 0.52 |
| 27-Feb-07 | 0.9 | -1.9 | -5.5 | 0.3 | 0.64 |
| 28-Feb-07 | -2.1 | -5.8 | -10.8 | 6.9 | 0.74 |
| 1-Mar-07 | -6.7 | -9.9 | -13.3 | 0.0 | 0.51 |
| 2-Mar-07 | -1.2 | -4.9 | -8.3 | 0.3 | 0.75 |
| 3-Mar-07 | 9.2 | 4.5 | -2.4 | 3.0 | 1.97 |
| 4-Mar-07 | 6.0 | 3.1 | 0.5 | 1.3 | 1.06 |
| 5-Mar-07 | 7.5 | 4.7 | 2.0 | 1.0 | 0.89 |
| 6-Mar-07 | 9.9 | 5.9 | 1.4 | 1.3 | 1.01 |
| 7-Mar-07 | 6.1 | 1.7 | -2.8 | 0.3 | 1.25 |
| 8-Mar-07 | 3.3 | -0.3 | -2.8 | 0.5 | 0.81 |
| 9-Mar-07 | 2.8 | -0.8 | -3.5 | 2.3 | 1.15 |
| 10-Mar-07 | 0.5 | -1.5 | -3.0 | 3.0 | 0.63 |
| 11-Mar-07 | 3.3 | -1.4 | -4.8 | 0.8 | 0.87 |
| 12-Mar-07 | 3.0 | -2.3 | -5.8 | 4.6 | 0.93 |
| 13-Mar-07 | 1.9 | -2.8 | -6.5 | 0.0 | 0.81 |
| 14-Mar-07 | 1.5 | -2.9 | -8.1 | 0.0 | 0.94 |
| 15-Mar-07 | 1.8 | -1.4 | -4.0 | 0.8 | 0.65 |
| 16-Mar-07 | 2.2 | 0.0 | -2.1 | 5.8 | 0.73 |
| 17-Mar-07 | 4.8 | 0.4 | -6.4 | 1.5 | 1.18 |
| 18-Mar-07 | 1.3 | -3.2 | -8.6 | 0.0 | 0.83 |
| 19-Mar-07 | 0.7 | -1.8 | -3.8 | 2.5 | 0.90 |
| 20-Mar-07 | 1.4 | -2.2 | -5.8 | 0.8 | 1.09 |
| 21-Mar-07 | 5.1 | -1.1 | -5.7 | 2.8 | 1.21 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total Precipitation (mm) | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{gathered} \hline \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 22-Mar-07 | 8.7 | 3.0 | -0.5 | 0.5 | 1.03 |
| 23-Mar-07 | 7.0 | 2.9 | -0.6 | 1.5 | 0.86 |
| 24-Mar-07 | 3.6 | 0.7 | -3.0 | 1.3 | 0.74 |
| 25-Mar-07 | 5.6 | 1.1 | -2.8 | 0.8 | 0.91 |
| 26-Mar-07 | 3.5 | -0.4 | -3.0 | 0.3 | 0.63 |
| 27-Mar-07 | 4.0 | -1.5 | -7.8 | 0.8 | 1.21 |
| 28-Mar-07 | 5.0 | 1.6 | -1.9 | 0.0 | 1.56 |
| 29-Mar-07 | 3.0 | -0.1 | -3.6 | 10.2 | 1.01 |
| 30-Mar-07 | 3.2 | -3.3 | -8.1 | 0.8 | 1.10 |
| 31-Mar-07 | 0.8 | -3.2 | -6.2 | 2.3 | 0.84 |
| 1-Apr-07 | -1.4 | -5.3 | -7.4 | 0.3 | 1.08 |
| 2-Apr-07 | -3.2 | -7.5 | -12.1 | 0.0 | 1.25 |
| 3-Apr-07 | -3.1 | -8.3 | -13.6 | 0.3 | 1.34 |
| 4-Apr-07 | 2.4 | -3.5 | -10.5 | 0.0 | 1.22 |
| 5-Apr-07 | 1.9 | -0.4 | -2.3 | 0.8 | 1.33 |
| 6-Apr-07 | 7.0 | 3.6 | 1.2 | 3.0 | 0.68 |
| 7-Apr-07 | 14.3 | 5.8 | 1.7 | 0.8 | 0.64 |
| 8-Apr-07 | 10.5 | 5.0 | 2.1 | 1.8 | 0.66 |
| 9-Apr-07 | 7.7 | 3.5 | 0.4 | 5.1 | 0.61 |
| 10-Apr-07 | 8.5 | 2.9 | -1.8 | 0.8 | 1.00 |
| 11-Apr-07 | 8.2 | 1.8 | -2.9 | 0.0 | 1.01 |
| 12-Apr-07 | 9.3 | 4.0 | -0.6 | 0.3 | 0.93 |
| 13-Apr-07 | 5.3 | 2.7 | 0.6 | 1.8 | 0.81 |
| 14-Apr-07 | 6.2 | 2.2 | -1.0 | 2.0 | 0.90 |
| 15-Apr-07 | 4.3 | 1.1 | -1.1 | 0.8 | 0.89 |
| 16-Apr-07 | 6.0 | 1.9 | -0.5 | 1.5 | 0.65 |
| 17-Apr-07 | 7.2 | 1.9 | -1.6 | 0.5 | 0.98 |
| 18-Apr-07 | 10.5 | 3.4 | -2.7 | 1.0 | 1.11 |
| 19-Apr-07 | 10.8 | 4.4 | 0.1 | 0.5 | 1.14 |
| 20-Apr-07 | 8.0 | 3.7 | 0.4 | 0.8 | 0.73 |
| 21-Apr-07 | 10.5 | 5.4 | 1.3 | 0.5 | 1.12 |
| 22-Apr-07 | 10.8 | 5.6 | 2.2 | 0.0 | 1.06 |
| 23-Apr-07 | 7.2 | 4.8 | 2.0 | 1.8 | 0.96 |
| 24-Apr-07 | 9.6 | 4.6 | 0.4 | 1.3 | 1.04 |
| 25-Apr-07 | 7.7 | 3.7 | 0.5 | 0.8 | 0.87 |
| 26-Apr-07 | 10.3 | 4.4 | -0.2 | 2.8 | 1.12 |
| 27-Apr-07 | 8.6 | 3.0 | -1.4 | 1.0 | 1.00 |
| 28-Apr-07 | 8.2 | 2.9 | -0.8 | 0.8 | 1.00 |
| 29-Apr-07 | 9.6 | 3.5 | -1.0 | 0.5 | 1.11 |
| 30-Apr-07 | 8.1 | 3.4 | -1.5 | 0.0 | 0.94 |
| 1-May-07 | 11.0 | 5.2 | -1.2 | 0.0 | 0.99 |
| 2-May-07 | 8.7 | 5.7 | 0.1 | 19.8 | 1.03 |
| 3-May-07 | 9.5 | 3.4 | -0.2 | 3.8 | 0.86 |
| 4-May-07 | 10.3 | 4.7 | -0.5 | 0.3 | 1.37 |
| 5-May-07 | 7.7 | 4.2 | -0.1 | 0.0 | 1.02 |
| 6-May-07 | 13.2 | 7.1 | 2.5 | 0.5 | 1.53 |
| 7-May-07 | 5.6 | 2.9 | 0.5 | 8.4 | 0.51 |
| 8-May-07 | 9.3 | 3.7 | -0.6 | 1.0 | 1.10 |
| 9-May-07 | 8.5 | 3.8 | -1.4 | 0.0 | 1.15 |
| 10-May-07 | 10.3 | 4.1 | -1.0 | 0.0 | 0.87 |
| 11-May-07 | 9.3 | 4.2 | 0.2 | 1.0 | 0.98 |
| 12-May-07 | 10.4 | 4.3 | -1.3 | 0.3 | 1.23 |
| 13-May-07 | 12.5 | 5.9 | -0.8 | 0.3 | 1.13 |
| 14-May-07 | 13.6 | 6.3 | 0.9 | 0.0 | 1.16 |
| 15-May-07 | 19.9 | 11.2 | 2.4 | 0.5 | 1.46 |
| 16-May-07 | 15.0 | 9.0 | 2.5 | 0.0 | 1.07 |
| 17-May-07 | 9.6 | 5.5 | 1.5 | 0.0 | 0.83 |
| 18-May-07 | 11.6 | 6.2 | 1.1 | 1.0 | 1.04 |
| 19-May-07 | 9.0 | 5.3 | 1.7 | 8.9 | 1.01 |
| 20-May-07 | 14.3 | 7.3 | 0.2 | 0.8 | 1.29 |
| 21-May-07 | 16.2 | 9.1 | 1.6 | 0.3 | 1.32 |
| 22-May-07 | 18.0 | 10.4 | 2.8 | 0.0 | 1.40 |
| 23-May-07 | 18.9 | 11.0 | 4.0 | 0.3 | 1.46 |
| 24-May-07 | 21.3 | 12.4 | 4.1 | 0.3 | 1.33 |
| 25-May-07 | 20.9 | 13.2 | 7.7 | 0.0 | 1.07 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | TotalPrecipitation$(\mathrm{mm})$ | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | Minimum ( ${ }^{\circ} \mathrm{C}$ ) |  |  |
| 26-May-07 | 13.4 | 9.1 | 5.2 | 1.8 | 0.74 |
| 27-May-07 | 11.8 | 8.1 | 4.0 | 0.3 | 1.21 |
| 28-May-07 | 18.3 | 9.7 | 1.6 | 0.8 | 1.11 |
| 29-May-07 | 15.1 | 10.0 | 6.0 | 1.0 | 0.79 |
| 30-May-07 | 18.0 | 9.2 | 4.9 | 1.3 | 0.86 |
| 31-May-07 | 19.0 | 10.9 | 3.7 | 0.5 | 0.98 |
| 1-Jun-07 | 22.2 | 14.4 | 7.4 | 0.5 | 1.10 |
| 2-Jun-07 | 24.0 | 16.0 | 7.9 | 0.3 | 1.24 |
| 3-Jun-07 | 30.0 | 19.3 | 9.5 | 0.0 | 1.08 |
| 4-Jun-07 | 17.2 | 13.5 | 10.4 | 7.9 | 0.51 |
| 5-Jun-07 | 16.1 | 12.3 | 9.6 | 0.8 | 0.66 |
| 6-Jun-07 | 10.4 | 9.6 | 8.9 | 23.1 | 0.27 |
| 7-Jun-07 | 15.1 | 9.8 | 4.7 | 1.8 | 1.01 |
| 8-Jun-07 | 16.9 | 9.5 | 3.4 | 0.3 | 1.16 |
| 9-Jun-07 | 14.6 | 9.2 | 4.3 | 5.3 | 0.78 |
| 10-Jun-07 | 14.9 | 8.5 | 3.6 | 0.5 | 0.83 |
| 11-Jun-07 | 14.9 | 8.3 | 2.1 | 0.0 | 0.76 |
| 12-Jun-07 | 13.5 | 8.5 | 3.7 | 0.5 | 0.82 |
| 13-Jun-07 | 16.9 | 9.8 | 3.8 | 0.3 | 0.81 |
| 14-Jun-07 | 19.3 | 12.4 | 4.8 | 0.5 | 0.94 |
| 15-Jun-07 | 20.2 | 12.9 | 7.9 | 0.5 | 0.95 |
| 16-Jun-07 | 20.7 | 13.2 | 8.0 | 2.8 | 0.79 |
| 17-Jun-07 | 13.0 | 10.5 | 7.1 | 3.8 | 0.41 |
| 18-Jun-07 | 14.0 | 8.3 | 3.5 | 1.0 | 0.72 |
| 19-Jun-07 | 12.4 | 7.0 | 2.7 | 2.3 | 0.72 |
| 20-Jun-07 | 13.5 | 9.5 | 7.0 | 5.8 | 0.59 |
| 21-Jun-07 | 15.8 | 9.7 | 4.6 | 3.8 | 0.78 |
| 22-Jun-07 | 14.8 | 8.7 | 3.8 | 4.8 | 0.73 |
| 23-Jun-07 | 14.0 | 8.6 | 4.1 | 0.5 | 0.78 |
| 24-Jun-07 | 15.8 | 9.6 | 3.0 | 0.3 | 1.13 |
| 25-Jun-07 | 16.0 | 10.1 | 4.7 | 0.3 | 0.97 |
| 26-Jun-07 | 17.9 | 10.8 | 5.0 | 0.5 | 0.75 |
| 27-Jun-07 | 17.7 | 10.8 | 7.4 | 8.4 | 1.06 |
| 28-Jun-07 | 13.2 | 9.2 | 6.7 | 7.1 | 0.57 |
| 29-Jun-07 | 14.9 | 10.5 | 7.8 | 3.8 | 0.39 |
| 30-Jun-07 | 16.8 | 11.0 | 5.9 | 0.0 | 0.68 |
| 1-Jul-07 | 17.2 | 11.1 | 4.4 | 0.0 | 1.02 |
| 2-Jul-07 | 17.7 | 11.9 | 6.2 | 0.3 | 0.82 |
| 3-Jul-07 | 19.3 | 12.9 | 9.7 | 0.0 | 0.69 |
| 4-Jul-07 | 20.2 | 14.2 | 8.6 | 0.0 | 0.96 |
| 5-Jul-07 | 19.3 | 12.5 | 6.9 | 0.0 | 0.92 |
| 6-Jul-07 | 16.9 | 10.9 | 5.1 | 0.3 | 0.98 |
| 7-Jul-07 | 18.1 | 11.8 | 4.2 | 0.0 | 0.92 |
| 8-Jul-07 | 15.9 | 12.2 | 8.6 | 0.3 | 0.63 |
| 9-Jul-07 | 17.2 | 11.6 | 6.6 | 0.5 | 0.70 |
| 10-Jul-07 | 22.9 | 15.9 | 10.3 | 0.0 | 0.75 |
| 11-Jul-07 | 27.3 | 18.9 | 12.5 | 0.0 | 1.10 |
| 12-Jul-07 | 30.7 | 20.8 | 12.5 | 0.0 | 1.12 |
| 13-Jul-07 | 28.1 | 21.6 | 16.2 | 0.0 | 0.97 |
| 14-Jul-07 | 24.7 | 18.2 | 14.5 | 0.3 | 0.82 |
| 15-Jul-07 | 18.8 | 15.5 | 10.8 | 20.1 | 0.57 |
| 16-Jul-07 | 21.1 | 14.4 | 8.7 | 0.0 | 0.93 |
| 17-Jul-07 | 20.4 | 15.0 | 9.2 | 0.0 | 0.65 |
| 18-Jul-07 | 21.4 | 16.0 | 12.6 | 1.0 | 0.74 |
| 19-Jul-07 | 17.4 | 14.5 | 10.6 | 0.5 | 0.42 |
| 20-Jul-07 | 18.2 | 12.7 | 9.3 | 5.1 | 0.85 |
| 21-Jul-07 | 19.8 | 14.0 | 8.8 | 1.3 | 0.66 |
| 22-Jul-07 | 19.5 | 12.8 | 9.2 | 2.8 | 0.87 |
| 23-Jul-07 | 15.7 | 11.1 | 8.1 | 2.8 | 0.64 |
| 24-Jul-07 | 16.4 | 11.3 | 7.6 | 0.0 | 0.53 |
| 25-Jul-07 | 20.2 | 12.8 | 5.9 | 0.0 | 1.09 |
| 26-Jul-07 | 22.7 | 15.9 | 11.4 | 0.0 | 0.78 |
| 27-Jul-07 | 19.5 | 14.5 | 11.4 | 0.0 | 0.59 |
| 28-Jul-07 | 17.2 | 13.2 | 10.3 | 1.8 | 0.54 |
| 29-Jul-07 | 16.6 | 10.8 | 7.1 | 3.6 | 0.80 |

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total <br> Precipitation <br> $(\mathrm{mm})$ <br> 0.8 | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{gathered} \hline \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 30-Jul-07 | 14.7 | 9.3 | 5.1 | 0.8 | 0.55 |
| 31-Jul-07 | 14.6 | 10.9 | 7.4 | 0.3 | 0.61 |
| 1-Aug-07 | 20.3 | 13.4 | 6.8 | 0.0 | 0.92 |
| 2-Aug-07 | 21.4 | 14.0 | 9.4 | 0.3 | 0.94 |
| 3-Aug-07 | 23.1 | 15.4 | 8.9 | 0.0 | 0.97 |
| 4-Aug-07 | 22.2 | 15.1 | 8.3 | 0.0 | 1.09 |
| 5-Aug-07 | 22.4 | 15.4 | 9.3 | 0.0 | 1.07 |
| 6-Aug-07 | 22.4 | 16.1 | 9.9 | 0.0 | 1.13 |
| 7-Aug-07 | 18.2 | 13.5 | 9.3 | 0.0 | 0.97 |
| 8-Aug-07 | 15.6 | 10.9 | 8.3 | 7.1 | 0.53 |
| 9-Aug-07 | 17.9 | 11.1 | 7.5 | 0.5 | 1.06 |
| 10-Aug-07 | 17.8 | 12.0 | 7.3 | 0.0 | 0.81 |
| 11-Aug-07 | 15.2 | 10.4 | 7.9 | 7.4 | 0.66 |
| 12-Aug-07 | 11.7 | 9.6 | 7.4 | 3.0 | 1.47 |
| 13-Aug-07 | 16.7 | 10.6 | 6.2 | 0.0 | 1.01 |
| 14-Aug-07 | 20.2 | 11.7 | 4.6 | 0.0 | 1.05 |
| 15-Aug-07 | 23.7 | 15.2 | 8.4 | 0.0 | 1.13 |
| 16-Aug-07 | 26.0 | 16.7 | 10.3 | 5.1 | 0.84 |
| 17-Aug-07 | 13.0 | 11.6 | 9.8 | 1.0 | 0.22 |
| 18-Aug-07 | 14.0 | 10.2 | 7.1 | 0.5 | 0.74 |
| 19-Aug-07 | 15.3 | 9.8 | 6.7 | 0.5 | 0.68 |
| 20-Aug-07 | 16.0 | 11.4 | 8.0 | 0.5 | 0.69 |
| 21-Aug-07 | 16.5 | 11.8 | 7.9 | 0.3 | 0.81 |
| 22-Aug-07 | 17.7 | 12.0 | 6.6 | 0.3 | 0.92 |
| 23-Aug-07 | 18.7 | 12.4 | 7.4 | 0.3 | 0.89 |
| 24-Aug-07 | 12.8 | 10.8 | 9.2 | 0.3 | 0.42 |
| 25-Aug-07 | 14.4 | 10.1 | 7.2 | 0.3 | 0.56 |
| 26-Aug-07 | 13.9 | 8.7 | 5.6 | 0.3 | 0.90 |
| 27-Aug-07 | 15.0 | 8.8 | 5.2 | 0.0 | 1.03 |
| 28-Aug-07 | 16.0 | 9.7 | 5.0 | 0.0 | 0.65 |
| 29-Aug-07 | 15.6 | 12.1 | 10.0 | 0.3 | 0.70 |
| 30-Aug-07 | 14.6 | 11.2 | 8.5 | 0.3 | 0.65 |
| 31-Aug-07 | 13.7 | 9.9 | 5.8 | 0.0 | 0.77 |
| 1-Sep-07 | 14.4 | 9.9 | 6.3 | 0.0 | 0.75 |
| 2-Sep-07 | 15.8 | 9.6 | 5.4 | 0.0 | 0.64 |
| 3-Sep-07 | 16.2 | 11.6 | 8.3 | 0.3 | 0.71 |
| 4-Sep-07 | 14.0 | 10.3 | 7.7 | 0.0 | 0.54 |
| 5-Sep-07 | 12.8 | 8.7 | 6.1 | 0.3 | 0.65 |
| 6-Sep-07 | 13.4 | 9.3 | 5.6 | 0.0 | 0.57 |
| 7-Sep-07 | 13.1 | 9.0 | 5.5 | 0.0 | 0.79 |
| 8-Sep-07 | 14.6 | 8.6 | 3.6 | 0.0 | 1.03 |
| 9-Sep-07 | 18.3 | 12.3 | 6.7 | 0.0 | 1.02 |
| 10-Sep-07 | 19.6 | 13.5 | 9.1 | 0.3 | 1.10 |
| 11-Sep-07 | 19.2 | 13.9 | 10.1 | 0.0 | 1.15 |
| 12-Sep-07 | 17.6 | 12.0 | 7.5 | 0.0 | 1.18 |
| 13-Sep-07 | 17.8 | 9.8 | 3.8 | 0.0 | 1.07 |
| 14-Sep-07 | 17.7 | 10.4 | 4.8 | 0.3 | 0.96 |
| 15-Sep-07 | 13.0 | 9.4 | 7.5 | 0.0 | 0.63 |
| 16-Sep-07 | 12.2 | 8.3 | 3.6 | 0.0 | 0.90 |
| 17-Sep-07 | 12.3 | 6.9 | 3.2 | 0.0 | 0.72 |
| 18-Sep-07 | 11.4 | 6.5 | 3.1 | 0.0 | 1.03 |
| 19-Sep-07 | 8.6 | 4.7 | 0.5 | 0.0 | 0.50 |
| 20-Sep-07 | 11.8 | 7.8 | 4.6 | 0.3 | 0.74 |
| 21-Sep-07 | 11.6 | 7.4 | 5.0 | 0.0 | 0.89 |
| 22-Sep-07 | 10.0 | 6.0 | 3.7 | 0.0 | 0.69 |
| 23-Sep-07 | 10.7 | 6.2 | 3.0 | 0.0 | 0.72 |
| 24-Sep-07 | 11.7 | 7.5 | 4.9 | 0.0 | 0.78 |
| 25-Sep-07 | 12.0 | 7.9 | 5.0 | 0.0 | 0.90 |
| 26-Sep-07 | 12.7 | 7.3 | 2.2 | 0.3 | 0.85 |
| 27-Sep-07 | 9.9 | 6.1 | 1.0 | 0.0 | 0.80 |
| 28-Sep-07 | 7.5 | 3.0 | 0.2 | 0.0 | 0.67 |
| 29-Sep-07 | 5.0 | 2.4 | -0.1 | 0.0 | 0.71 |
| 30-Sep-07 | 7.8 | 4.9 | 3.2 | 0.0 | 0.61 |
| 1-Oct-07 | 8.6 | 4.7 | 1.8 | 0.0 | 0.70 |
| 2-Oct-07 | 7.7 | 3.6 | 0.9 | 0.0 | 0.58 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | TotalPrecipitation$(\mathrm{mm})$ | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | Minimum ( ${ }^{\circ} \mathrm{C}$ ) |  |  |
| 3-Oct-07 | 6.8 | 2.9 | 0.6 | 0.0 | 0.62 |
| 4-Oct-07 | 4.6 | 1.9 | -0.2 | 0.0 | 0.59 |
| 5-Oct-07 | 3.8 | 1.1 | -1.0 | 0.0 | 0.63 |
| 6-Oct-07 | 7.0 | 3.5 | 1.0 | 0.0 | 0.91 |
| 7-Oct-07 | 7.9 | 3.8 | 0.1 | 0.0 | 0.85 |
| 8-Oct-07 | 7.6 | 2.8 | -0.4 | 0.0 | 0.87 |
| 9-Oct-07 | 5.8 | 3.7 | 1.7 | 0.0 | 1.03 |
| 10-Oct-07 | 10.4 | 6.1 | 0.4 | 0.0 | 1.00 |
| 11-Oct-07 | 9.0 | 5.4 | 1.9 | 0.3 | 0.71 |
| 12-Oct-07 | 9.4 | 4.7 | 1.2 | 0.0 | 0.59 |
| 13-Oct-07 | 8.7 | 6.8 | 4.9 | 0.0 | 1.35 |
| 14-Oct-07 | 9.2 | 7.2 | 5.1 | 0.0 | 0.94 |
| 15-Oct-07 | 9.1 | 6.1 | 3.9 | 0.0 | 0.77 |
| 16-Oct-07 | 10.2 | 5.9 | 3.3 | 0.0 | 0.53 |
| 17-Oct-07 | 6.2 | 4.4 | 2.3 | 0.0 | 0.88 |
| 18-Oct-07 | 6.6 | 3.1 | 0.0 | 0.0 | 0.75 |
| 19-Oct-07 | 3.2 | 1.5 | 0.1 | 0.0 | 0.29 |
| 20-Oct-07 | 5.3 | 2.2 | -0.2 | 0.0 | 0.72 |
| 21-Oct-07 | 9.2 | 4.2 | -0.4 | 0.0 | 1.37 |
| 22-Oct-07 | 3.8 | 1.5 | -0.1 | 0.0 | 0.34 |
| 23-Oct-07 | 7.6 | 2.7 | -0.3 | 0.0 | 0.64 |
| 24-Oct-07 | 8.6 | 4.0 | 0.0 | 0.0 | 2.20 |
| 25-Oct-07 | 6.6 | 2.3 | -0.2 | 0.3 | 1.06 |
| 26-Oct-07 | 4.3 | 1.6 | -0.4 | 0.3 | 0.65 |
| 27-Oct-07 | 4.9 | 2.2 | 0.4 | 0.0 | 0.92 |
| 28-Oct-07 | 3.7 | 2.8 | 2.1 | 5.3 | 0.43 |
| 29-Oct-07 | 3.6 | 1.3 | -1.0 | 0.0 | 0.80 |
| 30-Oct-07 | 5.1 | 1.6 | -0.7 | 2.5 | 0.77 |
| 31-Oct-07 | 6.6 | 2.8 | -0.8 | 0.0 | 1.24 |
| 1-Nov-07 | 4.2 | 0.9 | -1.2 | 0.0 | 0.76 |
| 2-Nov-07 | 1.3 | -0.1 | -0.9 | 0.3 | 0.91 |
| 3-Nov-07 | 0.0 | -0.7 | -1.7 | 0.0 | 0.44 |
| 4-Nov-07 | 1.0 | -1.1 | -2.5 | 0.0 | 0.12 |
| 5-Nov-07 | 0.8 | -0.7 | -1.8 | 0.0 | 0.71 |
| 6-Nov-07 | 1.2 | 0.2 | -0.4 | 0.0 | 0.37 |
| 7-Nov-07 | 5.7 | 1.8 | 0.1 | 0.3 | 0.71 |
| 8-Nov-07 | 2.0 | 0.1 | -0.9 | 0.0 | 0.63 |
| 9-Nov-07 | 3.2 | 0.1 | -0.8 | 0.3 | 0.63 |
| 10-Nov-07 | 4.2 | 1.7 | -2.0 | 0.0 | 1.31 |
| 11-Nov-07 | 1.5 | -0.5 | -3.4 | 0.0 | 1.09 |
| 12-Nov-07 | 0.7 | -0.8 | -2.2 | 0.0 | 0.30 |
| 13-Nov-07 | 1.0 | -1.2 | -3.0 | 0.0 | 0.64 |
| 14-Nov-07 | 0.4 | -2.2 | -4.8 | 0.0 | 1.07 |
| 15-Nov-07 | 3.5 | -0.1 | -3.2 | 0.3 | 0.85 |
| 16-Nov-07 | 4.0 | 1.6 | -0.8 | 0.0 | 0.93 |
| 17-Nov-07 | 1.2 | -0.5 | -2.7 | 0.0 | 0.60 |
| 18-Nov-07 | 0.5 | -2.8 | -4.2 | 0.0 | 0.42 |
| 19-Nov-07 | -2.5 | -3.8 | -5.2 | 0.0 | 0.32 |
| 20-Nov-07 | -4.4 | -6.0 | -7.8 | 0.0 | 0.45 |
| 21-Nov-07 | -6.0 | -7.8 | -10.3 | 0.3 | 0.54 |
| 22-Nov-07 | -8.2 | -9.7 | -11.0 | 0.0 | 0.60 |
| 23-Nov-07 | -5.9 | -7.6 | -9.1 | 0.0 | 0.37 |
| 24-Nov-07 | -2.5 | -4.9 | -6.6 | 0.0 | 0.51 |
| 25-Nov-07 | -1.2 | -3.1 | -4.0 | 0.0 | 0.62 |
| 26-Nov-07 | -0.3 | -2.1 | -3.6 | 0.0 | 0.39 |
| 27-Nov-07 | -1.5 | -3.2 | -5.5 | 0.0 | 0.42 |
| 28-Nov-07 | -4.0 | -5.5 | -7.0 | 0.0 | 0.23 |
| 29-Nov-07 | -4.5 | -8.0 | -12.3 | 0.0 | 0.55 |
| 30-Nov-07 | -10.5 | -12.8 | -15.3 | 0.0 | 0.44 |
| 1-Dec-07 | -12.0 | -13.8 | -16.7 | 0.0 | 1.00 |
| 2-Dec-07 | -14.5 | -16.5 | -18.0 | 0.0 | 2.22 |
| 3-Dec-07 | -14.4 | -17.0 | -18.3 | 0.0 | 2.24 |
| 4-Dec-07 | -12.6 | -14.9 | -16.5 | 0.0 | 0.47 |
| 5-Dec-07 | -12.7 | -14.2 | -16.8 | 0.0 | 0.18 |
| 6-Dec-07 | -13.6 | -15.5 | -18.5 | 0.0 | 0.39 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)
$\begin{array}{lccccc}\hline & & \text { Daily Air Temperature } & & \begin{array}{c}\text { Total }\end{array} & \begin{array}{c}\text { Daily Average } \\ \text { Wind Speed }\end{array} \\$\cline { 2 - 4 } (maximum \& Average \& Minimum <br> ( \& Precipitation\end{array}$)$
(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total <br> Precipitation <br> $(\mathrm{mm})$ | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average $\left({ }^{\circ} \mathrm{C}\right)$ | $\begin{gathered} \hline \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 10-Feb-08 | -10.6 | -16.0 | -20.3 | 1.5 | 0.67 |
| 11-Feb-08 | 0.9 | -5.5 | -11.6 | 3.8 | 0.62 |
| 12-Feb-08 | 4.5 | 1.1 | -1.6 | 4.6 | 0.91 |
| 13-Feb-08 | 4.2 | -0.4 | -2.0 | 0.0 | 0.88 |
| 14-Feb-08 | 3.5 | 0.0 | -1.6 | 7.9 | 0.33 |
| 15-Feb-08 | 3.3 | 0.5 | -2.1 | 4.3 | 0.86 |
| 16-Feb-08 | 1.0 | -2.1 | -4.9 | 0.0 | 1.00 |
| 17-Feb-08 | -1.4 | -4.6 | -7.4 | 0.0 | 0.60 |
| 18-Feb-08 | 2.0 | -3.8 | -8.0 | 0.0 | 0.71 |
| 19-Feb-08 | 3.1 | -2.4 | -5.9 | 0.0 | 0.66 |
| 20-Feb-08 | 4.2 | -0.1 | -3.1 | 0.0 | 0.79 |
| 21-Feb-08 | 5.2 | 0.4 | -2.2 | 0.0 | 0.55 |
| 22-Feb-08 | 3.3 | 0.3 | -1.4 | 0.0 | 0.44 |
| 23-Feb-08 | 5.2 | 0.7 | -2.2 | 0.3 | 0.71 |
| 24-Feb-08 | 3.2 | -0.4 | -2.8 | 0.0 | 0.61 |
| 25-Feb-08 | 6.9 | 0.8 | -3.8 | 0.0 | 0.78 |
| 26-Feb-08 | 2.0 | 0.8 | -0.6 | 4.8 | 0.73 |
| 27-Feb-08 | 3.8 | 0.6 | -2.6 | 2.8 | 1.02 |
| 28-Feb-08 | 3.3 | -0.3 | -2.0 | 3.0 | 0.53 |
| 29-Feb-08 | 2.6 | -0.1 | -1.4 | 10.7 | 0.72 |
| 1-Mar-08 | 4.4 | -0.4 | -3.6 | 1.5 | 1.11 |
| 2-Mar-08 | 1.7 | -1.4 | -4.3 | 4.8 | 0.46 |
| 3-Mar-08 | 2.0 | 0.2 | -1.0 | 9.1 | 0.34 |
| 4-Mar-08 | 3.4 | -1.1 | -4.4 | 0.8 | 1.04 |
| 5-Mar-08 | 4.2 | -1.1 | -5.6 | 0.3 | 0.76 |
| 6-Mar-08 | 4.7 | -0.4 | -3.8 | 0.0 | 0.80 |
| 7-Mar-08 | 4.2 | 0.0 | -4.0 | 0.0 | 0.75 |
| 8-Mar-08 | 6.6 | 1.9 | -0.5 | 0.8 | 0.79 |
| 9-Mar-08 | 5.1 | 1.9 | -0.1 | 0.0 | 0.93 |
| 10-Mar-08 | 4.5 | 1.9 | -0.4 | 2.8 | 0.82 |
| 11-Mar-08 | 6.5 | 2.4 | -0.7 | 2.3 | 0.81 |
| 12-Mar-08 | 3.5 | -0.7 | -4.0 | 0.3 | 1.04 |
| 13-Mar-08 | 5.0 | -1.3 | -6.1 | 0.0 | 0.77 |
| 14-Mar-08 | 3.8 | 0.0 | -2.7 | 0.0 | 0.35 |
| 15-Mar-08 | 1.8 | -1.3 | -6.0 | 1.0 | 0.80 |
| 16-Mar-08 | -0.9 | -3.9 | -7.0 | 0.5 | 0.85 |
| 17-Mar-08 | 4.6 | 0.2 | -2.2 | 2.0 | 0.99 |
| 18-Mar-08 | 6.2 | 1.5 | -3.2 | 0.8 | 1.38 |
| 19-Mar-08 | 3.3 | -0.6 | -4.7 | 0.0 | 0.88 |
| 20-Mar-08 | 4.9 | -0.1 | -5.9 | 0.0 | 0.89 |
| 21-Mar-08 | 4.6 | 0.4 | -2.9 | 0.0 | 0.88 |
| 22-Mar-08 | 6.7 | 2.4 | -0.9 | 0.0 | 1.45 |
| 23-Mar-08 | 4.3 | 1.1 | -4.0 | 0.3 | 1.13 |
| 24-Mar-08 | 2.4 | -2.1 | -6.6 | 0.0 | 0.77 |
| 25-Mar-08 | 4.6 | -0.8 | -5.9 | 0.0 | 0.94 |
| 26-Mar-08 | 4.7 | 0.2 | -4.2 | 0.3 | 0.66 |
| 27-Mar-08 | 3.9 | -1.4 | -6.2 | 7.9 | 0.70 |
| 28-Mar-08 | 4.0 | -3.1 | -8.2 | 0.3 | 0.90 |
| 29-Mar-08 | 2.8 | -2.4 | -6.9 | 0.0 | 1.12 |
| 30-Mar-08 | 2.9 | -3.5 | -9.5 | 0.0 | 0.87 |
| 31-Mar-08 | 3.6 | -3.5 | -9.6 | 0.0 | 1.15 |
| 1-Apr-08 | 5.1 | -0.1 | -5.2 | 0.0 | 1.06 |
| 2-Apr-08 | 6.0 | 1.1 | -2.4 | 0.0 | 1.01 |
| 3-Apr-08 | 5.0 | 1.2 | -1.6 | 0.0 | 0.85 |
| 4-Apr-08 | 7.2 | 2.1 | -3.5 | 0.5 | 1.05 |
| 5-Apr-08 | 7.2 | 2.4 | -2.3 | 0.0 | 0.99 |
| 6-Apr-08 | 7.4 | 2.0 | -1.7 | 0.0 | 0.86 |
| 7-Apr-08 | 7.6 | 2.2 | -1.7 | 0.0 | 0.79 |
| 8-Apr-08 | 4.3 | -0.4 | -3.5 | 0.0 | 0.83 |
| 9-Apr-08 | 4.1 | -0.3 | -5.2 | 0.0 | 0.87 |
| 10-Apr-08 | 7.0 | 2.1 | -2.4 | 0.0 | 0.81 |
| 11-Apr-08 | 5.4 | 1.8 | -0.9 | 1.3 | 0.77 |
| 12-Apr-08 | 13.1 | 5.4 | -0.2 | 1.3 | 1.16 |
| 13-Apr-08 | 7.3 | 3.0 | -1.7 | 0.0 | 1.31 |
| 14-Apr-08 | 6.0 | 0.6 | -3.7 | 0.0 | 0.88 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total Precipitation (mm) | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{aligned} & \hline \text { Minimum } \\ & \left({ }^{\circ} \mathrm{C}\right) \end{aligned}$ |  |  |
| 15-Apr-08 | 8.2 | 2.5 | -2.3 | 0.5 | 0.87 |
| 16-Apr-08 | 10.4 | 5.1 | 1.0 | 0.0 | 1.25 |
| 17-Apr-08 | 3.7 | 0.8 | -3.8 | 0.5 | 1.15 |
| 18-Apr-08 | 2.2 | -1.8 | -5.0 | 0.0 | 1.12 |
| 19-Apr-08 | 1.2 | -3.7 | -7.8 | 0.5 | 1.36 |
| 20-Apr-08 | 1.6 | -3.0 | -8.5 | 0.0 | 1.18 |
| 21-Apr-08 | 6.2 | -0.3 | -7.2 | 0.8 | 1.19 |
| 22-Apr-08 | 8.4 | 2.3 | -3.6 | 0.3 | 1.07 |
| 23-Apr-08 | 8.4 | 2.9 | -1.7 | 0.0 | 1.14 |
| 24-Apr-08 | 3.4 | 0.2 | -3.5 | 0.0 | 1.02 |
| 25-Apr-08 | 9.5 | 1.1 | -5.7 | 1.0 | 1.10 |
| 26-Apr-08 | 13.0 | 4.9 | -2.7 | 0.0 | 1.10 |
| 27-Apr-08 | 12.8 | 6.7 | 2.3 | 3.0 | 1.14 |
| 28-Apr-08 | 8.2 | 4.3 | 0.5 | 1.3 | 0.89 |
| 29-Apr-08 | 9.0 | 3.6 | -1.7 | 0.8 | 1.40 |
| 30-Apr-08 | 11.3 | 4.9 | -0.4 | 0.5 | 1.57 |
| 1-May-08 | 12.3 | 5.3 | -2.0 | 0.0 | 1.30 |
| 2-May-08 | 10.8 | 6.5 | 2.6 | 0.0 | 1.06 |
| 3-May-08 | 10.9 | 5.1 | 0.2 | 1.0 | 1.25 |
| 4-May-08 | 13.5 | 5.5 | -0.5 | 0.0 | 0.97 |
| 5-May-08 | 12.1 | 6.4 | 2.1 | 0.0 | 0.95 |
| 6-May-08 | 11.4 | 5.6 | 1.4 | 0.0 | 0.99 |
| 7-May-08 | 9.4 | 4.0 | -1.7 | 0.0 | 1.35 |
| 8-May-08 | 13.5 | 6.0 | 0.0 | 0.0 | 1.18 |
| 9-May-08 | 14.6 | 8.4 | 1.9 | 0.5 | 1.11 |
| 10-May-08 | 12.7 | 8.2 | 2.9 | 0.0 | 1.02 |
| 11-May-08 | 11.7 | 5.8 | 1.4 | 0.0 | 0.75 |
| 12-May-08 | 10.2 | 4.0 | -1.1 | 2.0 | 1.13 |
| 13-May-08 | 11.9 | 5.4 | 2.1 | 2.3 | 0.98 |
| 14-May-08 | 10.6 | 6.9 | 3.3 | 2.3 | 1.15 |
| 15-May-08 | 11.4 | 8.6 | 5.6 | 9.9 | 0.81 |
| 16-May-08 | 22.1 | 11.4 | 4.2 | 2.3 | 1.17 |
| 17-May-08 | 22.7 | 13.8 | 7.5 | 0.0 | 1.02 |
| 18-May-08 | 18.7 | 11.7 | 5.8 | 0.0 | 1.28 |
| 19-May-08 | 11.8 | 8.0 | 5.8 | 0.8 | 0.88 |
| 20-May-08 | 13.5 | 7.7 | 4.7 | 2.0 | 0.76 |
| 21-May-08 | 14.8 | 9.1 | 4.7 | 0.5 | 1.21 |
| 22-May-08 | 14.7 | 9.0 | 5.2 | 0.0 | 1.04 |
| 23-May-08 | 18.1 | 11.3 | 4.2 | 0.5 | 1.01 |
| 24-May-08 | 18.5 | 13.5 | 9.3 | 0.0 | 1.06 |
| 25-May-08 | 22.5 | 15.4 | 10.8 | 0.8 | 1.33 |
| 26-May-08 | 23.1 | 16.3 | 10.1 | 0.3 | 1.27 |
| 27-May-08 | 19.8 | 14.6 | 9.5 | 0.0 | 1.14 |
| 28-May-08 | 11.4 | 9.8 | 8.6 | 1.5 | 0.46 |
| 29-May-08 | 12.0 | 9.1 | 7.3 | 4.1 | 0.47 |
| 30-May-08 | 15.7 | 9.3 | 5.0 | 0.8 | 0.87 |
| 31-May-08 | 19.6 | 11.2 | 3.3 | 1.5 | 1.10 |
| 1-Jun-08 | 20.7 | 12.2 | 4.7 | 0.0 | 1.15 |
| 2-Jun-08 | 16.4 | 10.9 | 5.5 | 0.0 | 0.76 |
| 3-Jun-08 | 13.4 | 8.7 | 5.2 | 0.0 | 0.81 |
| 4-Jun-08 | 14.0 | 9.0 | 3.0 | 0.0 | 0.81 |
| 5-Jun-08 | 12.9 | 8.6 | 4.2 | 0.0 | 0.88 |
| 6-Jun-08 | 17.1 | 9.7 | 2.8 | 0.3 | 1.00 |
| 7-Jun-08 | 13.3 | 7.6 | 1.7 | 0.0 | 0.87 |
| 8-Jun-08 | 10.6 | 5.8 | 0.8 | 0.0 | 0.77 |
| 9-Jun-08 | 14.4 | 7.9 | 1.9 | 0.0 | 0.86 |
| 10-Jun-08 | 17.9 | 10.8 | 4.3 | 0.0 | 0.95 |
| 11-Jun-08 | 20.1 | 12.3 | 4.2 | 1.0 | 1.06 |
| 12-Jun-08 | 11.7 | 8.3 | 4.3 | 4.6 | 0.66 |
| 13-Jun-08 | 11.6 | 7.5 | 4.3 | 0.8 | 0.67 |
| 14-Jun-08 | 14.8 | 8.9 | 3.2 | 0.3 | 0.90 |
| 15-Jun-08 | 14.8 | 9.3 | 4.8 | 0.0 | 0.70 |
| 16-Jun-08 | 14.8 | 8.2 | 3.1 | 0.8 | 0.82 |
| 17-Jun-08 | 12.2 | 7.9 | 3.8 | 3.3 | 0.71 |
| 18-Jun-08 | 14.2 | 8.0 | 3.6 | 1.3 | 0.88 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

|  | Daily Air Temperature |  |  | TotalPrecipitation$(\mathrm{mm})$ | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | Minimum ( ${ }^{\circ} \mathrm{C}$ ) |  |  |
| 19-Jun-08 | 16.5 | 9.8 | 1.4 | 0.8 | 0.90 |
| 20-Jun-08 | 16.6 | 11.4 | 4.7 | 0.0 | 0.65 |
| 21-Jun-08 | 18.4 | 11.8 | 8.3 | 4.6 | 0.83 |
| 22-Jun-08 | 13.5 | 9.0 | 3.7 | 3.0 | 0.83 |
| 23-Jun-08 | 16.4 | 10.0 | 2.6 | 0.0 | 0.80 |
| 24-Jun-08 | 13.7 | 9.3 | 3.3 | 1.0 | 0.72 |
| 25-Jun-08 | 12.0 | 7.3 | 1.6 | 2.8 | 0.60 |
| 26-Jun-08 | 14.8 | 8.7 | 3.3 | 2.0 | 0.48 |
| 27-Jun-08 | 18.0 | 11.9 | 5.8 | 1.0 | 0.75 |
| 28-Jun-08 | 19.1 | 13.7 | 9.0 | 1.0 | 0.87 |
| 29-Jun-08 | 23.1 | 14.0 | 6.5 | 1.0 | 1.01 |
| 30-Jun-08 | 26.3 | 17.5 | 8.9 | 0.5 | 1.10 |
| 1-Jul-08 | 29.6 | 18.7 | 11.9 | 2.0 | 1.21 |
| 2-Jul-08 | 26.7 | 18.1 | 10.4 | 2.0 | 0.91 |
| 3-Jul-08 | 20.0 | 16.0 | 12.5 | 0.0 | 0.67 |
| 4-Jul-08 | 20.5 | 14.8 | 10.7 | 0.0 | 0.63 |
| 5-Jul-08 | 17.6 | 12.9 | 9.6 | 8.6 | 0.70 |
| 6-Jul-08 | 16.9 | 11.4 | 6.2 | 1.3 | 0.77 |
| 7-Jul-08 | 12.0 | 9.0 | 5.3 | 0.5 | 0.43 |
| 8-Jul-08 | 16.1 | 10.9 | 7.0 | 0.8 | 0.55 |
| 9-Jul-08 | 11.7 | 8.4 | 4.7 | 0.0 | 0.60 |
| 10-Jul-08 | 15.5 | 8.9 | 3.5 | 0.5 | 1.02 |
| 11-Jul-08 | 17.7 | 11.1 | 4.2 | 0.5 | 0.78 |
| 12-Jul-08 | 16.8 | 12.3 | 8.5 | 0.0 | 0.57 |
| 13-Jul-08 | 14.8 | 10.7 | 8.2 | 0.0 | 0.58 |
| 14-Jul-08 | 17.8 | 11.9 | 5.6 | 0.8 | 0.96 |
| 15-Jul-08 | 21.3 | 12.5 | 6.6 | 2.8 | 1.01 |
| 16-Jul-08 | 16.9 | 12.2 | 7.8 | 0.0 | 0.87 |
| 17-Jul-08 | 15.3 | 10.8 | 7.6 | 0.5 | 0.49 |
| 18-Jul-08 | 15.1 | 10.6 | 7.0 | 0.0 | 0.78 |
| 19-Jul-08 | 13.1 | 10.0 | 7.5 | 4.6 | 0.38 |
| 20-Jul-08 | 15.1 | 11.1 | 8.5 | 2.8 | 0.60 |
| 21-Jul-08 | 15.4 | 9.8 | 5.0 | 0.3 | 0.83 |
| 22-Jul-08 | 20.0 | 10.6 | 3.2 | 0.0 | 1.07 |
| 23-Jul-08 | 20.3 | 13.2 | 5.7 | 0.0 | 1.11 |
| 24-Jul-08 | 21.8 | 13.6 | 6.4 | 0.0 | 1.08 |
| 25-Jul-08 | 24.5 | 16.6 | 7.2 | 0.0 | 0.93 |
| 26-Jul-08 | 17.0 | 13.2 | 10.4 | 4.6 | 0.58 |
| 27-Jul-08 | 17.6 | 12.2 | 5.6 | 2.0 | 0.82 |
| 28-Jul-08 | 11.7 | 8.0 | 4.5 | 5.8 | 0.73 |
| 29-Jul-08 | 16.3 | 11.6 | 6.5 | 2.5 | 0.68 |
| 30-Jul-08 | 14.2 | 9.1 | 5.3 | 0.3 | 0.59 |
| 31-Jul-08 | 14.5 | 9.0 | 3.8 | 0.0 | 0.92 |
| 1-Aug-08 | 18.4 | 11.3 | 3.7 | 0.0 | 0.89 |
| 2-Aug-08 | 19.8 | 11.9 | 5.8 | 0.0 | 1.08 |
| 3-Aug-08 | 20.9 | 13.6 | 6.7 | 0.0 | 1.07 |
| 4-Aug-08 | 23.2 | 15.5 | 7.7 | 0.0 | 1.15 |
| 5-Aug-08 | 26.1 | 17.4 | 9.9 | 0.0 | 1.15 |
| 6-Aug-08 | 29.4 | 19.2 | 11.3 | 0.0 | 1.07 |
| 7-Aug-08 | 25.8 | 18.3 | 11.6 | 0.0 | 1.13 |
| 8-Aug-08 | 23.2 | 17.6 | 12.0 | 0.0 | 0.73 |
| 9-Aug-08 | 18.7 | 14.7 | 11.5 | 2.0 | 0.63 |
| 10-Aug-08 | 13.8 | 11.2 | 8.5 | 7.6 | 0.51 |
| 11-Aug-08 | 19.5 | 12.7 | 6.7 | 0.0 | 0.87 |
| 12-Aug-08 | 16.8 | 12.8 | 8.6 | 2.5 | 0.73 |
| 13-Aug-08 | 17.2 | 12.9 | 8.7 | 0.0 | 0.46 |
| 14-Aug-08 | 24.7 | 17.4 | 11.2 | 0.0 | 0.91 |
| 15-Aug-08 | 26.9 | 17.8 | 12.2 | 0.0 | 1.06 |
| 16-Aug-08 | 25.3 | 18.0 | 12.7 | 0.0 | 1.19 |
| 17-Aug-08 | 25.8 | 17.7 | 11.6 | 0.0 | 1.07 |
| 18-Aug-08 | 18.8 | 13.5 | 8.9 | 1.3 | 1.23 |
| 19-Aug-08 | 18.3 | 13.6 | 9.5 | 0.5 | 0.83 |
| 20-Aug-08 | 14.9 | 10.7 | 8.4 | 32.8 | 0.43 |
| 21-Aug-08 | 16.1 | 11.0 | 8.4 | 0.3 | 0.57 |
| 22-Aug-08 | 14.9 | 11.0 | 8.7 | 3.8 | 0.62 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (continued)

| Date | Daily Air Temperature |  |  | Total Precipitation (mm) | Daily Average Wind Speed (m/s) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maximum ( ${ }^{\circ} \mathrm{C}$ ) | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{aligned} & \hline \text { Minimum } \\ & \left({ }^{\circ} \mathrm{C}\right) \end{aligned}$ |  |  |
| 23-Aug-08 | 15.5 | 12.3 | 9.7 | 8.6 | 0.63 |
| 24-Aug-08 | 17.0 | 12.9 | 6.8 | 3.8 | 0.88 |
| 25-Aug-08 | 13.5 | 9.0 | 5.3 | 0.0 | 0.71 |
| 26-Aug-08 | 12.7 | 7.9 | 4.7 | 2.8 | 0.77 |
| 27-Aug-08 | 12.2 | 8.4 | 5.5 | 3.0 | 0.50 |
| 28-Aug-08 | 13.7 | 9.4 | 6.5 | 0.8 | 0.76 |
| 29-Aug-08 | 9.4 | 6.9 | 5.0 | 2.3 | 0.49 |
| 30-Aug-08 | 12.0 | 7.3 | 4.9 | 0.3 | 0.60 |
| 31-Aug-08 | 12.7 | 7.6 | 4.6 | 0.0 | 0.88 |
| 1-Sep-08 | 13.3 | 7.9 | 3.4 | 0.0 | 0.63 |
| 2-Sep-08 | 12.4 | 7.8 | 4.2 | 2.3 | 0.82 |
| 3-Sep-08 | 12.2 | 7.2 | 2.7 | 0.0 | 0.75 |
| 4-Sep-08 | 12.1 | 8.9 | 5.9 | 0.0 | 0.53 |
| 5-Sep-08 | 14.4 | 10.1 | 6.6 | 0.0 | 0.70 |
| 6-Sep-08 | 15.4 | 9.0 | 4.7 | 0.0 | 0.96 |
| 7-Sep-08 | 16.6 | 10.1 | 4.5 | 0.0 | 0.89 |
| 8-Sep-08 | 16.4 | 11.6 | 4.6 | 0.0 | 0.91 |
| 9 -Sep-08 | 13.9 | 7.6 | 2.2 | 0.0 | 1.03 |
| 10-Sep-08 | 11.9 | 8.8 | 5.9 | 4.1 | 0.53 |
| 11-Sep-08 | 10.0 | 8.3 | 5.1 | 16.3 | 0.66 |
| 12-Sep-08 | 11.0 | 6.4 | 3.3 | 0.3 | 1.06 |
| 13-Sep-08 | 12.9 | 6.6 | 2.5 | 0.0 | 0.98 |
| 14-Sep-08 | 15.5 | 8.6 | 3.5 | 0.0 | 0.98 |
| 15-Sep-08 | 18.7 | 12.3 | 8.0 | 0.0 | 0.84 |
| 16-Sep-08 | 17.6 | 13.0 | 9.0 | 0.0 | 0.66 |
| 17-Sep-08 | 18.0 | 12.1 | 9.2 | 0.0 | 0.96 |
| 18-Sep-08 | 18.0 | 11.6 | 7.1 | 0.0 | 0.85 |
| 19-Sep-08 | 16.3 | 11.5 | 7.9 | 0.0 | 0.54 |
| 20-Sep-08 | 14.4 | 10.2 | 6.2 | 1.3 | 0.79 |
| 21-Sep-08 | 9.4 | 6.6 | 1.8 | 4.6 | 0.59 |
| 22-Sep-08 | 8.7 | 3.8 | 0.5 | 0.0 | 0.83 |
| 23-Sep-08 | 9.1 | 3.2 | -0.8 | 0.3 | 0.94 |
| 24-Sep-08 | 6.8 | 4.7 | 1.6 | 0.3 | 0.56 |
| 25-Sep-08 | 9.2 | 4.3 | -0.4 | 0.0 | 0.65 |
| 26-Sep-08 | 10.7 | 6.6 | 3.3 | 11.9 | 0.64 |
| 27-Sep-08 | 10.6 | 6.2 | 3.0 | 0.3 | 0.73 |
| 28-Sep-08 | 7.8 | 5.5 | 2.5 | 2.0 | 0.61 |
| 29-Sep-08 | 16.9 | 11.9 | 7.7 | 0.3 | 1.03 |
| 30-Sep-08 | 18.9 | 13.6 | 9.7 | 0.0 | 0.83 |
| 1-Oct-08 | 18.6 | 12.8 | 8.6 | 0.0 | 0.67 |
| 2-Oct-08 | 18.8 | 13.6 | 7.6 | 0.0 | 0.85 |
| 3-Oct-08 | 12.3 | 8.1 | 4.9 | 0.0 | 0.75 |
| 4-Oct-08 | 6.4 | 5.4 | 4.2 | 3.0 | 0.28 |
| 5-Oct-08 | 7.6 | 4.7 | 0.8 | 2.3 | 0.60 |
| 6-Oct-08 | 6.8 | 3.4 | 1.1 | 1.3 | 0.55 |
| 7-Oct-08 | 6.2 | 3.1 | 0.4 | 2.3 | 0.65 |
| 8-Oct-08 | 5.6 | 1.7 | -1.0 | 0.5 | 0.78 |
| 9-Oct-08 | 3.4 | 0.7 | -2.5 | 0.0 | 0.76 |
| 10-Oct-08 | 2.9 | -0.8 | -3.7 | 0.0 | 0.73 |
| 11-Oct-08 | 6.9 | 3.6 | 1.2 | 1.5 | 0.50 |
| 12-Oct-08 | 7.6 | 4.7 | 2.7 | 0.3 | 0.60 |
| 13-Oct-08 | 7.7 | 3.3 | -0.7 | 1.0 | 0.86 |
| 14-Oct-08 | 6.3 | 1.6 | -0.7 | 0.0 | 0.77 |
| 15-Oct-08 | 5.1 | 0.7 | -2.0 | 0.0 | 0.81 |
| 16-Oct-08 | 3.1 | -0.1 | -2.5 | 2.8 | 0.52 |
| 17-Oct-08 | 6.6 | 2.0 | -0.1 | 3.6 | 0.98 |
| 18-Oct-08 | 5.3 | 0.8 | -1.4 | 0.3 | 0.92 |
| 19-Oct-08 | 4.8 | 2.1 | -0.4 | 0.0 | 0.68 |
| 20-Oct-08 | 5.3 | 2.2 | -0.2 | 6.6 | 0.76 |
| 21-Oct-08 | 4.6 | 1.1 | -1.2 | 9.1 | 0.91 |
| 22-Oct-08 | 5.2 | 3.4 | 0.4 | 18.5 | 1.09 |
| 23-Oct-08 | 5.0 | 2.1 | -0.4 | 2.3 | 0.89 |
| 24-Oct-08 | 4.9 | 2.6 | 0.9 | 3.6 | 1.43 |
| 25-Oct-08 | 2.6 | 0.0 | -4.0 | 0.0 | 1.48 |
| 26-Oct-08 | 1.6 | -1.2 | -4.8 | 0.0 | 0.71 |

(continued)

Appendix 3.1-1
Daily Meteorological Data from Davidson Met Station (completed)

| Date | Daily Air Temperature |  |  | Total <br> Precipitation <br> $(\mathrm{mm})$ <br> 0 | Daily Average Wind Speed ( $\mathrm{m} / \mathrm{s}$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Maximum } \\ & \left({ }^{\circ} \mathrm{C}\right) \\ & \hline \end{aligned}$ | Average ( ${ }^{\circ} \mathrm{C}$ ) | $\begin{gathered} \text { Minimum } \\ \left({ }^{\circ} \mathrm{C}\right) \end{gathered}$ |  |  |
| 27-Oct-08 | 5.0 | 0.8 | -2.4 | 0.3 | 0.99 |
| 28-Oct-08 | 10.0 | 4.2 | 0.5 | 1.8 | 0.85 |
| 29-Oct-08 | 3.6 | 1.1 | -2.7 | 0.8 | 0.89 |
| 30-Oct-08 | 2.9 | -0.9 | -4.6 | 0.3 | 0.67 |
| 31-Oct-08 | 3.2 | 1.1 | -0.7 | 3.6 | 0.41 |
| 1-Nov-08 | 5.7 | 3.1 | 1.7 | 5.6 | 0.46 |
| 2-Nov-08 | 8.5 | 6.2 | 2.5 | 1.0 | 0.99 |
| 3-Nov-08 | 5.4 | 2.2 | -1.9 | 0.0 | 0.90 |
| 4-Nov-08 | 0.5 | -0.9 | -2.5 | 0.0 | 0.23 |
| 5-Nov-08 | -0.5 | -2.1 | -3.8 | 0.0 | 0.00 |
| 6-Nov-08 | 1.3 | -0.1 | -1.9 | 0.0 | 1.20 |
| 7-Nov-08 | 3.3 | 1.0 | -0.6 | 12.2 | 0.35 |
| 8-Nov-08 | 4.5 | 3.2 | 0.9 | 6.6 | 0.59 |
| 9-Nov-08 | 2.8 | 0.3 | -2.7 | 1.0 | 0.68 |
| 10-Nov-08 | 2.1 | -1.2 | -2.9 | 0.0 | 0.35 |
| 11-Nov-08 | 2.4 | 1.2 | 0.3 | 22.6 | 1.15 |
| 12-Nov-08 | 4.0 | 1.8 | 0.1 | 6.4 | 0.98 |
| 13-Nov-08 | 3.2 | 0.6 | -2.1 | 0.0 | 1.47 |
| 14-Nov-08 | 0.6 | -1.6 | -2.3 | 0.0 | 0.71 |
| 15-Nov-08 | 0.2 | -1.9 | -4.4 | 0.0 | 0.61 |
| 16-Nov-08 | -0.7 | -2.9 | -5.1 | 0.0 | 0.42 |
| 17-Nov-08 |  |  |  |  |  |
| 18-Nov-08 |  |  |  |  |  |
| 19-Nov-08 |  |  |  |  |  |
| 20-Nov-08 |  |  |  |  |  |
| 21-Nov-08 |  |  |  |  |  |
| 22-Nov-08 |  |  |  |  |  |
| 23-Nov-08 |  |  |  |  |  |
| 24-Nov-08 |  |  |  |  |  |
| 25-Nov-08 |  |  |  |  |  |
| 26-Nov-08 |  |  |  |  |  |
| 27-Nov-08 |  |  |  |  |  |
| 28-Nov-08 |  |  |  |  |  |
| 29-Nov-08 |  |  |  |  |  |
| 30-Nov-08 |  |  |  |  |  |

Appendix 3.2-1
Summary of Daily Flow: KC1

| 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) |
| 1-Apr |  | 1-May | 0.075 | 1-Jun | 0.388 | 1-Jul | 0.146 | 1-Aug | 0.083 | 1-Sep | 0.014 | 1-Oct | 0.102 | 1-Nov | 0.051 |
| 2-Apr |  | 2-May | 0.062 | 2-Jun | 0.619 | 2-Jul | 0.172 | 2-Aug | 0.066 | 2-Sep | 0.015 | 2-Oct | 0.085 | 2 -Nov | 0.046 |
| $3-\mathrm{Apr}$ |  | 3-May | 0.055 | 3-Jun | 0.643 | 3 -Jul | 0.189 | 3-Aug | 0.055 | 3-Sep | 0.016 | 3-Oct | 0.069 | $3-\mathrm{Nov}$ | 0.043 |
| 4-Apr |  | 4-May | 0.055 | 4-Jun | 0.412 | 4-Jul | 0.199 | 4-Aug | 0.045 | 4-Sep | 0.013 | 4 -Oct | 0.056 | 4-Nov | 0.041 |
| 5-Apr |  | 5-May | 0.063 | 5-Jun | 0.327 | 5-Jul | 0.202 | 5-Aug | 0.043 | 5-Sep | 0.010 | 5-Oct | 0.048 | 5 -Nov | 0.040 |
| $6-\mathrm{Apr}$ |  | 6-May | 0.082 | 6 -Jun | 0.273 | 6-Jul | 0.277 | 6-Aug | 0.060 | 6-Sep | 0.010 | 6 -Oct | 0.044 | 6 -Nov | 0.040 |
| 7-Apr |  | 7-May | 0.103 | 7-Jun | 0.260 | 7-Jul | 0.233 | 7-Aug | 0.074 | 7-Sep | 0.010 | 7-Oct | 0.040 | 7-Nov | 0.058 |
| 8 -Apr |  | 8-May | 0.099 | 8-Jun | 0.295 | 8 -Jul | 0.169 | 8-Aug | 0.064 | 8 -Sep | 0.014 | 8-Oct | 0.032 | 8 -Nov | 0.067 |
| $9-\mathrm{Apr}$ |  | 9-May | 0.087 | 9 -Jun | 0.325 | 9 -Jul | 0.177 | 9 -Aug | 0.065 | 9-Sep | 0.015 | 9-Oct | 0.028 | $9-\mathrm{Nov}$ | 0.091 |
| 10-Apr |  | 10-May | 0.077 | 10-Jun | 0.359 | 10-Jul | 0.168 | 10-Aug | 0.058 | 10-Sep | 0.019 | 10-Oct | 0.027 | 10-Nov | 0.062 |
| 11-Apr |  | 11-May | 0.070 | 11-Jun | 0.393 | 11-Jul | 0.135 | 11-Aug | 0.045 | 11-Sep | 0.021 | 11-Oct | 0.027 | 11-Nov | 0.042 |
| 12-Apr | 0.068 | 12-May | 0.065 | 12-Jun | 0.392 | 12-Jul | 0.116 | 12-Aug | 0.040 | 12-Sep | 0.022 | 12-Oct | 0.029 | 12-Nov | 0.050 |
| 13-Apr | 0.049 | 13-May | 0.061 | 13-Jun | 0.377 | 13-Jul | 0.120 | 13-Aug | 0.038 | 13-Sep | 0.020 | 13-Oct | 0.027 | 13-Nov | 0.089 |
| 14-Apr | 0.067 | 14-May | 0.056 | 14-Jun | 0.349 | 14-Jul | 0.149 | 14-Aug | 0.037 | 14-Sep | 0.021 | 14-Oct | 0.034 | 14-Nov |  |
| 15-Apr | 0.075 | 15-May | 0.053 | 15-Jun | 0.281 | 15-Jul | 0.142 | 15-Aug | 0.036 | 15-Sep | 0.018 | 15-Oct | 0.045 | 15-Nov |  |
| 16-Apr | 0.051 | 16-May | 0.057 | 16-Jun | 0.250 | 16-Jul | 0.135 | 16-Aug | 0.033 | 16-Sep | 0.017 | 16-Oct | 0.077 | 16-Nov |  |
| 17-Apr | 0.040 | 17-May | 0.119 | 17-Jun | 0.235 | 17-Jul | 0.115 | 17-Aug | 0.029 | 17-Sep | 0.019 | 17-Oct | 0.090 | 17-Nov |  |
| 18-Apr | 0.026 | 18-May | 0.193 | 18-Jun | 0.210 | 18-Jul | 0.103 | 18-Aug | 0.027 | 18-Sep | 0.021 | 18-Oct | 0.077 | 18-Nov |  |
| 19-Apr | 0.031 | 19-May | 0.221 | 19-Jun | 0.176 | 19-Jul | 0.095 | 19-Aug | 0.028 | 19-Sep | 0.019 | 19-Oct | 0.066 | 19-Nov |  |
| 20-Apr | 0.027 | 20-May | 0.292 | 20-Jun | 0.168 | 20-Jul | 0.087 | 20-Aug | 0.025 | 20-Sep | 0.045 | 20-Oct | 0.064 | 20-Nov |  |
| 21-Apr | 0.025 | 21-May | 0.266 | 21-Jun | 0.148 | 21-Jul | 0.093 | 21-Aug | 0.022 | 21-Sep | 0.064 | 21-Oct | 0.061 | 21-Nov |  |
| 22-Apr | 0.028 | 22-May | 0.221 | 22-Jun | 0.136 | 22-Jul | 0.123 | 22-Aug | 0.017 | 22-Sep | 0.089 | 22-Oct | 0.055 | 22-Nov |  |
| 23-Apr | 0.026 | 23-May | 0.530 | 23-Jun | 0.121 | 23-Jul | 0.139 | 23-Aug | 0.013 | 23-Sep | 0.098 | 23-Oct | 0.051 | 23-Nov |  |
| 24-Apr | 0.032 | 24-May | 0.506 | 24-Jun | 0.120 | 24-Jul | 0.143 | 24-Aug | 0.010 | 24-Sep | 0.189 | 24-Oct | 0.065 | 24-Nov |  |
| 25-Apr | 0.041 | 25-May | 0.401 | 25-Jun | 0.163 | 25-Jul | 0.127 | 25-Aug | 0.008 | 25-Sep | 0.160 | 25-Oct | 0.071 | 25-Nov |  |
| 26-Apr | 0.052 | 26-May | 0.343 | 26-Jun | 0.224 | 26-Jul | 0.116 | 26-Aug | 0.006 | 26-Sep | 0.182 | 26-Oct | 0.074 | 26-Nov |  |
| 27-Apr | 0.058 | 27-May | 0.321 | 27-Jun | 0.239 | 27-Jul | 0.106 | 27-Aug | 0.006 | 27-Sep | 0.176 | 27-Oct | 0.078 | 27-Nov |  |
| 28-Apr | 0.071 | 28-May | 0.315 | 28-Jun | 0.198 | 28-Jul | 0.088 | 28-Aug | 0.008 | 28-Sep | 0.135 | 28-Oct | 0.139 | 28-Nov |  |
| 29-Apr | 0.073 | 29-May | 0.340 | 29-Jun | 0.143 | 29-Jul | 0.071 | 29-Aug | 0.005 | 29-Sep | 0.113 | 29-Oct | 0.073 | 29-Nov |  |
| 30-Apr | 0.082 | 30-May | 0.288 | 30-Jun | 0.118 | 30-Jul | 0.067 | 30-Aug | 0.009 | 30-Sep | 0.099 | 30-Oct | 0.065 | 30-Nov |  |
|  |  | 31-May | 0.300 |  |  | 31-Jul | 0.090 | 31-Aug | 0.012 |  |  | 31-Oct | 0.057 |  |  |
| 2007 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) |
| 1-Apr |  | 1-May | 0.279 | 1-Jun | 0.459 | 1-Jul | 0.360 | 1-Aug | 0.214 | 1-Sep | 0.233 | 1-Oct | 0.178 | 1-Nov | 0.213 |
| 2-Apr |  | 2-May | 0.285 | 2-Jun | 0.571 | 2-Jul | 0.331 | 2-Aug | 0.222 | 2-Sep | 0.208 | 2-Oct | 0.183 | 2-Nov | 0.205 |
| 3-Apr |  | 3-May | 0.442 | 3-Jun | 0.726 | 3 -Jul | 0.345 | 3-Aug | 0.231 | 3-Sep | 0.199 | $3-\mathrm{Oct}$ | 0.183 | 3 -Nov | 0.197 |
| 4-Apr |  | 4-May | 0.419 | 4-Jun | 0.871 | 4-Jul | 0.395 | 4-Aug | 0.234 | 4-Sep | 0.214 | 4-Oct | 0.199 | 4-Nov | 0.187 |
| 5-Apr |  | 5-May | 0.380 | 5-Jun | 0.798 | 5 -Jul | 0.401 | 5-Aug | 0.230 | 5-Sep | 0.212 | $5-\mathrm{Oct}$ | 0.188 | $5-\mathrm{Nov}$ | 0.186 |
| 6 -Apr |  | 6 -May | 0.344 | 6 -Jun | 0.778 | 6 -Jul | 0.344 | 6-Aug | 0.221 | 6-Sep | 0.206 | 6-Oct | 0.186 | 6 -Nov | 0.196 |
| 7-Apr |  | 7-May | 0.354 | 7-Jun | 0.756 | 7-Jul | 0.308 | 7-Aug | 0.226 | 7-Sep | 0.190 | 7-Oct | 0.267 | 7-Nov | 0.235 |
| 8 -Apr |  | 8-May | 0.354 | 8-Jun | 0.556 | 8 -Jul | 0.305 | 8-Aug | 0.212 | 8 -Sep | 0.174 | 8 -Oct | 0.243 | 8 -Nov | 0.238 |
| 9-Apr |  | 9-May | 0.319 | 9 -Jun | 0.469 | 9 9-Jul | 0.322 | 9-Aug | 0.206 | 9-Sep | 0.163 | 9-Oct | 0.229 | $9-\mathrm{Nov}$ | 0.234 |
| 10-Apr |  | 10-May | 0.292 | 10-Jun | 0.492 | 10-Jul | 0.419 | 10-Aug | 0.219 | 10-Sep | 0.164 | 10-Oct | 0.215 | 10-Nov | 0.248 |
| 11-Apr |  | 11-May | 0.272 | 11-Jun | 0.420 | 11-Jul | 0.500 | 11-Aug | 0.209 | 11-Sep | 0.174 | 11-Oct | 0.208 | 11-Nov | 0.239 |
| 12-Apr |  | 12-May | 0.255 | 12-Jun | 0.367 | 12-Jul | 0.498 | 12-Aug | 0.212 | 12-Sep | 0.172 | 12-Oct | 0.209 | 12-Nov | 0.218 |
| 13-Apr |  | 13-May | 0.241 | 13-Jun | 0.339 | 13-Jul | 0.508 | 13-Aug | 0.230 | 13-Sep | 0.163 | 13-Oct | 0.208 | 13-Nov | 0.200 |
| 14-Apr |  | 14-May | 0.237 | 14-Jun | 0.338 | 14-Jul | 0.473 | 14-Aug | 0.207 | 14-Sep | 0.152 | 14-Oct | 0.271 | 14-Nov | 0.186 |
| 15-Apr |  | 15-May | 0.244 | 15-Jun | 0.402 | 15-Jul | 0.563 | 15-Aug | 0.187 | 15-Sep | 0.142 | 15-Oct | 0.312 | 15-Nov | 0.181 |
| 16-Apr |  | 16-May | 0.278 | 16-Jun | 0.447 | 16-Jul | 0.436 | 16-Aug | 0.233 | 16-Sep | 0.138 | 16-Oct | 0.285 | 16-Nov | 0.187 |
| 17-Apr |  | 17-May | 0.332 | 17-Jun | 0.496 | 17-Jul | 0.348 | 17-Aug | 0.421 | 17-Sep | 0.134 | 17-Oct | 0.262 | 17-Nov | 0.176 |
| 18-Apr |  | 18-May | 0.314 | 18-Jun | 0.441 | 18-Jul | 0.345 | 18-Aug | 0.493 | 18-Sep | 0.136 | 18-Oct | 0.237 | 18-Nov | 0.163 |
| 19-Apr |  | 19-May | 0.313 | 19-Jun | 0.366 | 19-Jul | 0.360 | 19-Aug | 0.312 | 19-Sep | 0.132 | 19-Oct | 0.242 | 19-Nov | 0.153 |
| 20-Apr |  | 20-May | 0.321 | 20-Jun | 0.334 | 20-Jul | 0.341 | 20-Aug | 0.248 | 20-Sep | 0.136 | 20-Oct | 0.225 | 20-Nov | 0.152 |
| 21-Apr |  | 21-May | 0.314 | 21-Jun | 0.374 | 21-Jul | 0.325 | 21-Aug | 0.219 | 21-Sep | 0.132 | 21-Oct | 0.210 | 21-Nov |  |
| 22-Apr |  | 22-May | 0.328 | 22-Jun | 0.362 | 22-Jul | 0.332 | 22-Aug | 0.204 | 22-Sep | 0.130 | 22-Oct | 0.233 | 22-Nov |  |
| 23-Apr |  | 23-May | 0.369 | 23-Jun | 0.344 | 23-Jul | 0.310 | 23-Aug | 0.193 | 23-Sep | 0.136 | 23-Oct | 0.332 | 23-Nov |  |
| 24-Apr |  | 24-May | 0.402 | 24-Jun | 0.316 | 24-Jul | 0.266 | 24-Aug | 0.187 | 24-Sep | 0.137 | 24-Oct | 0.444 | 24-Nov |  |
| 25-Apr |  | 25-May | 0.451 | 25-Jun | 0.307 | 25-Jul | 0.236 | 25-Aug | 0.215 | 25-Sep | 0.135 | 25-Oct | 0.386 | 25-Nov |  |
| 26-Apr | 0.395 | 26-May | 0.550 | 26-Jun | 0.295 | 26-Jul | 0.249 | 26-Aug | 0.217 | 26-Sep | 0.141 | 26-Oct | 0.323 | 26-Nov |  |
| 27-Apr | 0.372 | 27-May | 0.491 | 27-Jun | 0.343 | 27-Jul | 0.268 | 27-Aug | 0.195 | 27-Sep | 0.161 | 27-Oct | 0.294 | 27-Nov |  |
| 28-Apr | 0.348 | 28-May | 0.407 | 28-Jun | 0.394 | 28-Jul | 0.272 | 28-Aug | 0.177 | 28-Sep | 0.210 | 28-Oct | 0.273 | 28-Nov |  |
| 29-Apr | 0.322 | 29-May | 0.396 | 29-Jun | 0.395 | 29-Jul | 0.276 | 29-Aug | 0.296 | 29-Sep | 0.205 | 29-Oct | 0.257 | 29-Nov |  |
| 30-Apr | 0.299 | 30-May | 0.441 | 30-Jun | 0.385 | 30-Jul | 0.259 | 30-Aug | 0.320 | 30-Sep | 0.188 | 30-Oct | 0.238 | 30-Nov |  |
|  |  | 31-May | 0.460 |  |  | 31-Jul | 0.229 | 31-Aug | 0.269 |  |  | 31-Oct | 0.230 |  |  |
| 2008 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) |
| 1-Apr |  | 1-May | 0.113 | 1-Jun | 0.329 | 1-Jul | 0.346 | 1-Aug | 0.093 | 1-Sep | 0.096 | 1-Oct | 0.158 | 1 -Nov | 0.077 |
| 2-Apr |  | 2-May | 0.121 | 2-Jun | 0.319 | 2-Jul | 0.427 | 2-Aug | 0.082 | 2-Sep | 0.087 | 2-Oct | 0.140 | 2-Nov | 0.096 |
| $3-\mathrm{Apr}$ |  | 3-May | 0.145 | 3-Jun | 0.291 | 3 -Jul | 0.376 | 3-Aug | 0.078 | 3-Sep | 0.083 | 3-Oct | 0.134 | 3 -Nov | 0.120 |
| 4-Apr |  | 4-May | 0.148 | 4-Jun | 0.249 | 4-Jul | 0.307 | 4-Aug | 0.087 | 4-Sep | 0.077 | 4-Oct | 0.124 | 4-Nov | 0.118 |
| 5-Apr |  | 5-May | 0.150 | 5 -Jun | 0.218 | 5-Jul | 0.309 | 5-Aug | 0.106 | 5-Sep | 0.069 | $5-\mathrm{Oct}$ | 0.114 | 5 -Nov | 0.104 |
| 6-Apr |  | 6-May | 0.151 | 6 -Jun | 0.188 | 6 -Jul | 0.305 | 6 -Aug | 0.128 | 6-Sep | 0.065 | 6-Oct | 0.110 | 6-Nov | 0.088 |
| 7-Apr |  | 7-May | 0.150 | 7-Jun | 0.174 | 7-Jul | 0.216 | 7-Aug | 0.149 | 7-Sep | 0.063 | 7-Oct | 0.108 | 7-Nov | 0.081 |
| 8 -Apr |  | 8-May | 0.144 | 8-Jun | 0.155 | 8-Jul | 0.161 | 8-Aug | 0.133 | 8-Sep | 0.060 | 8 -Oct | 0.098 | 8 -Nov | 0.098 |
| 9-Apr |  | 9-May | 0.138 | 9 -Jun | 0.136 | $9-\mathrm{Jul}$ | 0.147 | 9-Aug | 0.137 | 9-Sep | 0.058 | 9-Oct | 0.087 | $9-\mathrm{Nov}$ | 0.126 |
| 10-Apr |  | 10-May | 0.156 | 10-Jun | 0.120 | 10-Jul | 0.128 | 10-Aug | 0.161 | 10-Sep | 0.061 | 10-Oct | 0.078 | 10-Nov | 0.113 |
| 11-Apr |  | 11-May | 0.183 | 11-Jun | 0.130 | 11-Jul | 0.116 | 11-Aug | 0.149 | 11-Sep | 0.120 | 11-Oct | 0.075 | 11-Nov | 0.110 |
| 12-Apr |  | 12-May | 0.177 | 12-Jun | 0.182 | 12-Jul | 0.146 | 12-Aug | 0.129 | 12-Sep | 0.185 | 12-Oct | 0.071 | 12-Nov | 0.186 |
| 13-Apr |  | 13-May | 0.167 | 13-Jun | 0.176 | 13-Jul | 0.157 | 13-Aug | 0.126 | 13-Sep | 0.147 | 13-Oct | 0.088 | 13-Nov | 0.164 |
| 14-Apr |  | 14-May | 0.151 | 14-Jun | 0.156 | 14-Jul | 0.138 | 14-Aug | 0.111 | 14-Sep | 0.110 | 14-Oct | 0.100 | 14-Nov | 0.133 |
| 15-Apr |  | 15-May | 0.312 | 15-Jun | 0.151 | 15-Jul | 0.132 | 15-Aug | 0.127 | 15-Sep | 0.089 | 15-Oct | 0.089 | 15-Nov | 0.110 |
| 16-Apr | 0.103 | 16-May | 0.586 | 16-Jun | 0.145 | 16-Jul | 0.139 | 16-Aug | 0.127 | 16-Sep | 0.088 | 16-Oct | 0.078 | 16-Nov | 0.093 |
| 17-Apr | 0.114 | 17-May | 0.608 | 17-Jun | 0.146 | 17-Jul | 0.139 | 17-Aug | 0.120 | 17-Sep | 0.098 | 17-Oct | 0.087 | 17-Nov | 0.085 |
| 18-Apr | 0.078 | 18-May | 0.592 | 18-Jun | 0.148 | 18-Jul | 0.128 | 18-Aug | 0.112 | 18-Sep | 0.096 | 18-Oct | 0.073 | 18-Nov | 0.076 |
| 19-Apr | 0.098 | 19-May | 0.454 | 19-Jun | 0.143 | 19-Jul | 0.114 | 19-Aug | 0.088 | 19-Sep | 0.086 | 19-Oct | 0.068 | 19-Nov | 0.104 |
| 20-Apr | 0.084 | 20-May | 0.382 | 20-Jun | 0.156 | 20-Jul | 0.131 | 20-Aug | 0.305 | 20-Sep | 0.079 | 20-Oct | 0.085 | 20-Nov | 0.063 |
| 21-Apr | 0.063 | 21-May | 0.330 | 21-Jun | 0.234 | 21-Jul | 0.154 | 21-Aug | 0.274 | 21-Sep | 0.087 | 21-Oct | 0.079 | 21-Nov | 0.061 |
| 22-Apr | 0.059 | 22-May | 0.303 | 22-Jun | 0.306 | 22-Jul | 0.130 | 22-Aug | 0.160 | 22-Sep | 0.098 | 22-Oct | 0.148 | 22-Nov | 0.052 |
| 23-Apr | 0.052 | 23-May | 0.303 | 23-Jun | 0.234 | 23-Jul | 0.115 | 23-Aug | 0.217 | 23-Sep | 0.101 | 23-Oct | 0.163 | 23-Nov | 0.054 |
| 24-Apr | 0.035 | 24-May | 0.347 | 24-Jun | 0.212 | 24-Jul | 0.115 | 24-Aug | 0.238 | 24-Sep | 0.088 | 24-Oct | 0.157 | 24-Nov | 0.045 |
| 25-Apr | 0.043 | 25-May | 0.411 | 25-Jun | 0.188 | 25-Jul | 0.117 | 25-Aug | 0.176 | 25-Sep | 0.079 | 25-Oct | 0.128 | 25-Nov | 0.044 |
| 26-Apr | 0.040 | 26-May | 0.505 | 26-Jun | 0.167 | 26-Jul | 0.137 | 26-Aug | 0.128 | 26-Sep | 0.080 | 26-Oct | 0.107 | 26-Nov | 0.044 |
| 27-Apr | 0.082 | 27-May | 0.471 | 27-Jun | 0.168 | 27-Jul | 0.156 | 27-Aug | 0.133 | 27-Sep | 0.106 | 27-Oct | 0.092 | 27-Nov | 0.038 |
| 28-Apr | 0.109 | 28-May | 0.431 | 28-Jun | 0.255 | 28-Jul | 0.143 | 28-Aug | 0.150 | 28 -Sep | 0.113 | 28-Oct | 0.084 | 28-Nov | 0.034 |
| 29-Apr | 0.118 | 29-May | 0.391 | 29-Jun | 0.275 | 29-Jul | 0.163 | 29-Aug | 0.140 | 29-Sep | 0.124 | 29-Oct | 0.078 | 29-Nov | 0.033 |
| 30-Apr | 0.116 | 30-May | 0.342 | 30-Jun | 0.274 | 30-Jul | 0.159 | 30-Aug | 0.128 | 30-Sep | 0.168 | 30-Oct | 0.067 | 30-Nov | 0.049 |
|  |  | 31-May | 0.312 |  |  | 31-Jul | 0.125 | 31-Aug | 0.110 |  |  | 31-Oct | 0.070 |  |  |

Appendix 3.2-2
Summary of Daily Flow: KC4


APPENDIX 3.2-3 SUMMARY OF DAILY FLOW: KC3/16


Appendix 3.2-4
Summary of Daily Flow: GG3

| 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3 / \mathrm{s}}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3 / \mathrm{s}}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3 / \mathrm{s}}$ ) | Date | Flow ( $\mathrm{m}^{3 / \mathrm{s}}$ ) |
| 1-Apr |  | 1-May | 0.144 | 1-Jun | 0.905 | 1-Jul | 1.032 | 1-Aug | 1.162 | 1-Sep | 0.934 | 1-Oct | 0.437 | 1-Nov | 0.249 |
| 2-Apr |  | 2-May | 0.146 | 2-Jun | 2.355 | 2-Jul | 1.190 | 2-Aug | 1.010 | 2-Sep | 0.855 | 2-Oct | 0.374 | 2-Nov | 0.250 |
| 3-Apr |  | 3-May | 0.152 | 3-Jun | 1.884 | 3-Jul | 1.386 | 3-Aug | 0.894 | 3-Sep | 0.882 | 3-Oct | 0.333 | 3-Nov | 0.249 |
| 4-Apr |  | 4-May | 0.163 | 4-Jun | 0.949 | 4-Jul | 1.473 | 4-Aug | 0.945 | 4-Sep | 1.043 | 4-Oct | 0.305 | 4-Nov | 0.248 |
| $5-\mathrm{Apr}$ |  | 5-May | 0.179 | 5-Jun | 0.867 | 5-Jul | 1.596 | 5-Aug | 1.368 | 5-Sep | 0.891 | $5-\mathrm{Oct}$ | 0.298 | $5-\mathrm{Nov}$ | 0.243 |
| $6-\mathrm{Apr}$ |  | 6-May | 0.188 | 6-Jun | 0.703 | 6-Jul | 2.901 | 6-Aug | 0.976 | 6-Sep | 0.694 | 6-Oct | 0.264 | 6-Nov | 0.242 |
| 7-Apr |  | 7-May | 0.188 | 7-Jun | 0.682 | 7-Jul | 1.961 | 7-Aug | 0.998 | 7-Sep | 0.666 | 7-Oct | 0.240 | 7-Nov | 0.252 |
| 8-Apr |  | 8-May | 0.183 | 8-Jun | 0.825 | 8-Jul | 1.996 | 8-Aug | 1.171 | 8-Sep | 1.029 | 8-Oct | 0.224 | 8-Nov | 0.244 |
| $9-\mathrm{Apr}$ |  | 9-May | 0.187 | 9-Jun | 0.954 | $9-\mathrm{Jul}$ | 1.973 | 9-Aug | 0.996 | 9-Sep | 0.764 | $9-\mathrm{Oct}$ | 0.257 | $9-\mathrm{Nov}$ | 0.232 |
| 10-Apr |  | 10-May | 0.194 | 10-Jun | 1.159 | 10-Jul | 1.800 | 10-Aug | 0.943 | 10-Sep | 0.783 | 10-Oct | 0.390 | 10-Nov | 0.248 |
| 11-Apr |  | 11-May | 0.198 | 11-Jun | 1.390 | 11-Jul | 1.344 | 11-Aug | 0.952 | 11-Sep | 0.539 | 11-Oct | 0.289 | 11-Nov | 0.243 |
| 12-Apr |  | 12-May | 0.197 | 12-Jun | 1.476 | 12-Jul | 1.325 | 12-Aug | 1.080 | 12-Sep | 0.468 | 12-Oct | 0.295 | 12-Nov | 0.231 |
| 13-Apr | 0.107 | 13-May | 0.194 | 13-Jun | 1.451 | 13-Jul | 1.667 | 13-Aug | 0.955 | 13-Sep | 0.430 | 13-Oct | 0.295 | 13-Nov | 0.228 |
| 14-Apr | 0.105 | 14-May | 0.194 | 14-Jun | 1.546 | 14-Jul | 1.202 | 14-Aug | 1.021 | 14-Sep | 0.360 | 14-Oct | 0.440 | 14-Nov | 0.232 |
| 15-Apr | 0.101 | 15-May | 0.195 | 15-Jun | 1.449 | 15-Jul | 1.407 | 15-Aug | 0.968 | 15-Sep | 0.301 | 15-Oct | 0.362 | 15-Nov | 0.233 |
| 16-Apr | 0.103 | 16-May | 0.328 | 16-Jun | 1.240 | 16-Jul | 1.188 | 16-Aug | 1.020 | 16-Sep | 0.280 | 16-Oct | 0.294 | 16-Nov | 0.220 |
| 17-Apr | 0.106 | 17-May | 0.439 | 17-Jun | 1.046 | 17-Jul | 1.285 | 17-Aug | 1.317 | 17-Sep | 0.286 | 17-Oct | 0.223 | 17-Nov | 0.219 |
| 18-Apr | 0.113 | 18-May | 0.390 | 18-Jun | 0.878 | 18-Jul | 1.237 | 18-Aug | 1.227 | 18-Sep | 0.295 | 18-Oct | 0.241 | 18-Nov | 0.099 |
| 19-Apr | 0.121 | 19-May | 0.638 | 19-Jun | 0.780 | 19-Jul | 1.094 | 19-Aug | 0.938 | 19-Sep | 0.265 | 19-Oct | 0.283 | 19-Nov |  |
| 20-Apr | 0.117 | 20-May | 0.672 | 20-Jun | 0.770 | 20-Jul | 1.244 | 20-Aug | 0.978 | 20-Sep | 0.446 | 20-Oct | 0.283 | 20-Nov |  |
| 21-Apr | 0.116 | 21-May | 0.523 | 21-Jun | 0.672 | 21-Jul | 1.700 | 21-Aug | 0.899 | 21-Sep | 0.319 | 21-Oct | 0.269 | 21-Nov |  |
| 22-Apr | 0.117 | 22-May | 0.420 | 22-Jun | 0.563 | 22-Jul | 1.914 | 22-Aug | 0.902 | 22-Sep | 0.296 | 22-Oct | 0.263 | 22-Nov |  |
| 23-Apr | 0.121 | 23-May | 1.537 | 23-Jun | 0.541 | 23-Jul | 2.066 | 23-Aug | 0.991 | 23-Sep | 0.831 | 23-Oct | 0.266 | 23-Nov |  |
| 24-Apr | 0.128 | 24-May | 1.131 | 24-Jun | 0.600 | 24-Jul | 1.928 | 24-Aug | 1.063 | 24-Sep | 0.877 | 24-Oct | 0.290 | 24-Nov |  |
| 25-Apr | 0.131 | 25-May | 0.796 | 25-Jun | 0.870 | 25-Jul | 1.821 | 25-Aug | 1.078 | 25-Sep | 1.464 | 25-Oct | 0.305 | 25-Nov |  |
| 26-Apr | 0.134 | 26-May | 0.658 | 26-Jun | 1.145 | 26-Jul | 2.001 | 26-Aug | 1.113 | 26-Sep | 1.058 | 26-Oct | 0.304 | 26-Nov |  |
| 27-Apr | 0.134 | 27-May | 0.716 | 27-Jun | 1.200 | 27-Jul | 1.864 | 27-Aug | 0.839 | 27-Sep | 1.106 | 27-Oct | 0.301 | 27-Nov |  |
| 28-Apr | 0.149 | 28-May | 0.717 | 28-Jun | 0.807 | 28-Jul | 1.349 | 28-Aug | 0.899 | 28-Sep | 1.002 | 28-Oct | 0.284 | 28-Nov |  |
| 29-Apr | 0.145 | 29-May | 0.665 | 29-Jun | 0.700 | 29-Jul | 1.498 | 29-Aug | 0.643 | 29-Sep | 0.922 | 29-Oct | 0.271 | 29-Nov |  |
| 30-Apr | 0.142 | 30-May | 0.593 | 30-Jun | 0.854 | 30-Jul | 1.777 | 30-Aug | 0.622 | 30-Sep | 0.652 | 30-Oct | 0.257 | 30-Nov |  |
|  |  | 31-May | 0.633 |  |  | 31-Jul | 1.545 | 31-Aug | 0.636 |  |  | 31-Oct | 0.253 |  |  |
| 2007 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date | Flow (m³/s) | Date | Flow ( $\mathrm{m}^{3 / \mathrm{s}}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3 / \mathrm{s}}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) |
| 1-Apr |  | 1-May |  | 1-Jun | 0.922 | 1-Jul | 0.909 | 1-Aug | 0.973 | 1-Sep | 0.283 | 1-Oct | 0.083 | 1-Nov |  |
| 2-Apr |  | 2-May |  | 2-Jun | 1.279 | 2-Jul | 0.844 | 2-Aug | 0.945 | 2-Sep | 0.267 | 2-Oct | 0.083 | 2-Nov |  |
| 3-Apr |  | 3-May |  | 3-Jun | 3.048 | 3-Jul | 0.969 | 3-Aug | 1.073 | 3-Sep | 0.404 | 3-Oct | 0.080 | 3-Nov |  |
| 4-Apr |  | 4-May |  | 4-Jun | 5.930 | 4-Jul | 1.180 | 4-Aug | 1.112 | 4-Sep | 0.312 | 4-Oct | 0.085 | 4-Nov |  |
| 5-Apr |  | 5-May |  | 5-Jun | 3.726 | 5-Jul | 1.115 | 5-Aug | 1.025 | 5-Sep | 0.206 | 5-Oct | 0.076 | $5-\mathrm{Nov}$ |  |
| 6-Apr |  | 6-May |  | 6-Jun | 3.476 | 6-Jul | 0.947 | 6-Aug | 1.284 | 6-Sep | 0.163 | 6-Oct | 0.077 | 6-Nov |  |
| 7-Apr |  | 7-May |  | 7-Jun | 3.212 | 7-Jul | 0.880 | 7-Aug | 1.421 | 7-Sep | 0.154 | 7-Oct | 0.097 | 7-Nov |  |
| 8-Apr |  | 8-May |  | 8-Jun | 2.097 | 8-Jul | 0.903 | 8-Aug | 1.089 | 8-Sep | 0.146 | 8-Oct | 0.078 | 8-Nov |  |
| 9-Apr |  | 9-May | 0.560 | 9 -Jun | 1.662 | $9-\mathrm{Jul}$ | 1.055 | 9-Aug | 1.017 | 9-Sep | 0.251 | 9-Oct | 0.075 | $9-\mathrm{Nov}$ |  |
| 10-Apr |  | 10-May | 0.517 | 10-Jun | 1.569 | 10-Jul | 1.983 | 10-Aug | 0.904 | 10-Sep | 0.266 | 10-Oct | 0.076 | 10-Nov |  |
| 11-Apr |  | 11-May | 0.493 | 11-Jun | 1.026 | 11-Jul | 2.204 | 11-Aug | 0.865 | 11-Sep | 0.266 | 11-Oct | 0.073 | 11-Nov |  |
| 12-Apr |  | 12-May | 0.466 | 12-Jun | 0.842 | 12-Jul | 2.551 | 12-Aug | 1.041 | 12-Sep | 0.204 | 12-Oct | 0.071 | 12-Nov |  |
| 13-Apr |  | 13-May | 0.442 | 13-Jun | 0.781 | 13-Jul | 3.083 | 13-Aug | 0.872 | 13-Sep | 0.170 | 13-Oct | 0.075 | 13-Nov |  |
| 14-Apr |  | 14-May | 0.433 | 14-Jun | 0.808 | 14-Jul | 2.942 | 14-Aug | 0.858 | 14-Sep | 0.159 | 14-Oct | 0.093 | 14-Nov |  |
| 15-Apr |  | 15-May | 0.455 | 15-Jun | 0.935 | 15-Jul | 4.411 | 15-Aug | 1.008 | 15-Sep | 0.148 | 15-Oct | 0.100 | 15-Nov |  |
| 16-Apr |  | 16-May | 0.604 | 16-Jun | 0.996 | 16-Jul | 3.072 | 16-Aug | 1.518 | 16-Sep | 0.148 | 16-Oct | 0.081 | 16-Nov |  |
| 17-Apr |  | 17-May | 0.561 | 17-Jun | 1.329 | 17-Jul | 2.408 | 17-Aug | 1.323 | 17-Sep | 0.118 | 17-Oct | 0.080 | 17-Nov |  |
| 18-Apr |  | 18-May | 0.494 | 18-Jun | 1.076 | 18-Jul | 2.334 | 18-Aug | 1.180 | 18-Sep | 0.109 | 18-Oct | 0.071 | 18-Nov |  |
| 19-Apr |  | 19-May | 0.586 | 19-Jun | 0.883 | 19-Jul | 2.456 | 19-Aug | 0.593 | 19-Sep | 0.103 | 19-Oct | 0.076 | 19-Nov |  |
| 20-Apr |  | 20-May | 0.565 | 20-Jun | 0.921 | 20-Jul | 2.158 | 20-Aug | 0.607 | 20-Sep | 0.110 | 20-Oct | 0.072 | 20-Nov |  |
| 21-Apr |  | 21-May | 0.595 | 21-Jun | 0.954 | 21-Jul | 1.998 | 21-Aug | 0.547 | 21-Sep | 0.101 | 21-Oct | 0.071 | 21-Nov |  |
| 22-Apr |  | 22-May | 0.689 | 22-Jun | 0.819 | 22-Jul | 2.360 | 22-Aug | 0.394 | 22-Sep | 0.094 | 22-Oct | 0.077 | 22-Nov |  |
| 23-Apr |  | 23-May | 0.760 | 23-Jun | 0.731 | 23-Jul | 1.898 | 23-Aug | 0.370 | 23-Sep | 0.090 | 23-Oct | 0.113 | 23-Nov |  |
| 24-Apr |  | 24-May | 0.818 | 24-Jun | 0.672 | 24-Jul | 1.693 | 24-Aug | 0.412 | 24-Sep | 0.097 | 24-Oct | 0.186 | 24-Nov |  |
| 25-Apr |  | 25-May | 0.900 | 25-Jun | 0.627 | 25-Jul | 1.338 | 25-Aug | 0.506 | 25-Sep | 0.098 | 25-Oct | 0.110 | 25-Nov |  |
| 26-Apr |  | 26-May | 1.050 | 26-Jun | 0.599 | 26-Jul | 1.192 | 26-Aug | 0.320 | 26-Sep | 0.088 | 26-Oct | 0.101 | 26-Nov |  |
| 27-Apr |  | 27-May | 0.862 | 27-Jun | 0.777 | 27-Jul | 1.288 | 27-Aug | 0.241 | 27-Sep | 0.142 | 27-Oct | 0.095 | 27-Nov |  |
| 28-Apr |  | 28-May | 0.739 | 28-Jun | 0.932 | 28-Jul | 1.321 | 28-Aug | 0.246 | 28-Sep | 0.089 | 28-Oct | 0.090 | 28-Nov |  |
| 29-Apr |  | 29-May | 0.742 | 29-Jun | 0.908 | 29-Jul | 1.172 | 29-Aug | 1.320 | 29-Sep | 0.086 | 29-Oct | 0.085 | 29-Nov |  |
| 30-Apr |  | 30-May | 0.905 | 30-Jun | 0.937 | 30-Jul | 0.925 | 30-Aug | 0.639 | 30-Sep | 0.085 | 30-Oct | 0.078 | 30-Nov |  |
|  |  | 31-May | 0.831 |  |  | 31-Jul | 0.935 | 31-Aug | 0.356 |  |  | 31-Oct | 0.076 |  |  |


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| Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) |
| 1-Apr |  | 1-May | 0.031 | 1-Jun | 0.137 | 1-Jul | 0.322 | 1-Aug | 0.169 | 1-Sep | 0.146 | 1-Oct | 0.064 | 1-Nov | 0.023 |
| 2-Apr |  | 2-May | 0.035 | 2-Jun | 0.130 | 2-Jul | 0.459 | 2-Aug | 0.220 | 2-Sep | 0.140 | 2-Oct | 0.076 | 2-Nov | 0.035 |
| 3-Apr |  | 3-May | 0.039 | 3-Jun | 0.109 | 3-Jul | 0.372 | 3-Aug | 0.200 | 3-Sep | 0.106 | 3-Oct | 0.061 | 3-Nov | 0.027 |
| 4-Apr |  | 4-May | 0.040 | 4-Jun | 0.086 | 4-Jul | 0.289 | 4-Aug | 0.246 | 4-Sep | 0.095 | 4-Oct | 0.058 | 4-Nov | 0.024 |
| 5-Apr |  | 5-May | 0.044 | 5-Jun | 0.079 | 5-Jul | 0.381 | 5-Aug | 0.332 | 5-Sep | 0.106 | $5-O c t$ | 0.057 | 5-Nov | 0.025 |
| 6-Apr |  | 6-May | 0.048 | 6-Jun | 0.077 | 6-Jul | 0.345 | 6-Aug | 0.484 | 6-Sep | 0.098 | 6-Oct | 0.051 | 6-Nov | 0.024 |
| 7-Apr |  | 7-May | 0.049 | 7-Jun | 0.075 | 7-Jul | 0.207 | 7-Aug | 0.467 | 7-Sep | 0.092 | 7-Oct | 0.049 | 7-Nov | 0.025 |
| 8-Apr |  | 8-May | 0.052 | 8-Jun | 0.066 | 8-Jul | 0.173 | 8-Aug | 0.441 | 8-Sep | 0.146 | 8-Oct | 0.045 | 8-Nov | 0.027 |
| 9-Apr |  | 9-May | 0.056 | 9 -Jun | 0.063 | 9-Jul | 0.149 | 9-Aug | 0.534 | 9-Sep | 0.093 | $9-\mathrm{Oct}$ | 0.042 | $9-\mathrm{Nov}$ | 0.026 |
| 10-Apr |  | 10-May | 0.063 | 10-Jun | 0.062 | 10-Jul | 0.122 | 10-Aug | 0.764 | 10-Sep | 0.122 | 10-Oct | 0.039 | 10-Nov | 0.022 |
| 11-Apr |  | 11-May | 0.068 | 11-Jun | 0.073 | 11-Jul | 0.137 | 11-Aug | 0.562 | 11-Sep | 0.663 | 11-Oct | 0.037 | 11-Nov | 0.025 |
| 12-Apr |  | 12-May | 0.064 | 12-Jun | 0.084 | 12-Jul | 0.167 | 12-Aug | 0.760 | 12-Sep | 0.156 | 12-Oct | 0.036 | 12-Nov | 0.036 |
| 13-Apr |  | 13-May | 0.067 | 13-Jun | 0.067 | 13-Jul | 0.156 | 13-Aug | 0.485 | 13-Sep | 0.111 | 13-Oct | 0.034 | 13-Nov | 0.025 |
| 14-Apr |  | 14-May | 0.066 | 14-Jun | 0.061 | 14-Jul | 0.144 | 14-Aug | 0.702 | 14-Sep | 0.133 | 14-Oct | 0.032 | 14-Nov | 0.024 |
| 15-Apr |  | 15-May | 0.568 | 15-Jun | 0.064 | 15-Jul | 0.145 | 15-Aug | 0.740 | 15-Sep | 0.458 | 15-Oct | 0.030 | 15-Nov | 0.021 |
| 16-Apr | 0.027 | 16-May | 0.465 | 16-Jun | 0.064 | 16-Jul | 0.154 | 16-Aug | 0.687 | 16-Sep | 0.439 | 16-Oct | 0.029 | 16-Nov | 0.019 |
| 17-Apr | 0.027 | 17-May | 0.433 | 17-Jun | 0.067 | 17-Jul | 0.158 | 17-Aug | 0.606 | 17-Sep | 0.351 | 17-Oct | 0.030 | 17-Nov | 0.018 |
| 18-Apr | 0.023 | 18-May | 0.359 | 18-Jun | 0.065 | 18-Jul | 0.133 | 18-Aug | 0.403 | 18-Sep | 0.253 | 18-Oct | 0.026 | 18-Nov | 0.017 |
| 19-Apr | 0.020 | 19-May | 0.223 | 19-Jun | 0.065 | 19-Jul | 0.108 | 19-Aug | 0.364 | 19-Sep | 0.252 | 19-Oct | 0.025 | 19-Nov | 0.016 |
| 20-Apr | 0.019 | 20-May | 0.173 | 20-Jun | 0.067 | 20-Jul | 0.232 | 20-Aug | 2.000 | 20-Sep | 0.197 | 20-Oct | 0.028 | 20-Nov | 0.015 |
| 21-Apr | 0.019 | 21-May | 0.137 | 21-Jun | 0.126 | 21-Jul | 0.200 | 21-Aug | 0.790 | 21-Sep | 0.161 | 21-Oct | 0.025 | 21-Nov | 0.014 |
| 22-Apr | 0.020 | 22-May | 0.128 | 22-Jun | 0.163 | 22-Jul | 0.145 | 22-Aug | 0.642 | 22-Sep | 0.105 | 22-Oct | 0.036 | 22-Nov | 0.013 |
| 23-Apr | 0.022 | 23-May | 0.139 | 23-Jun | 0.094 | 23-Jul | 0.159 | 23-Aug | 1.740 | 23-Sep | 0.091 | 23-Oct | 0.028 | 23-Nov | 0.013 |
| 24-Apr | 0.021 | 24-May | 0.144 | 24-Jun | 0.100 | 24-Jul | 0.169 | 24-Aug | 1.428 | 24-Sep | 0.078 | 24-Oct | 0.027 | 24-Nov | 0.013 |
| 25-Apr | 0.021 | 25-May | 0.270 | 25-Jun | 0.084 | 25-Jul | 0.195 | 25-Aug | 0.616 | 25-Sep | 0.067 | 25-Oct | 0.025 | 25-Nov | 0.012 |
| 26-Apr | 0.023 | 26-May | 0.302 | 26-Jun | 0.077 | 26-Jul | 0.242 | 26-Aug | 0.410 | 26-Sep | 0.073 | 26-Oct | 0.025 | 26-Nov | 0.011 |
| 27-Apr | 0.029 | 27-May | 0.154 | 27-Jun | 0.099 | 27-Jul | 0.223 | 27-Aug | 0.441 | 27-Sep | 0.081 | 27-Oct | 0.024 | 27-Nov | 0.011 |
| 28-Apr | 0.035 | 28-May | 0.143 | 28-Jun | 0.164 | 28-Jul | 0.216 | 28-Aug | 0.514 | 28-Sep | 0.059 | 28-Oct | 0.024 | 28-Nov | 0.011 |
| 29-Apr | 0.031 | 29-May | 0.129 | 29-Jun | 0.152 | 29-Jul | 0.368 | 29-Aug | 0.294 | 29-Sep | 0.063 | 29-Oct | 0.023 | 29-Nov | 0.011 |
| 30-Apr | 0.030 | 30-May | 0.130 | 30-Jun | 0.186 | 30-Jul | 0.192 | 30-Aug | 0.233 | 30-Sep | 0.062 | 30-Oct | 0.020 | 30-Nov | 0.013 |
|  |  | 31-May | 0.129 |  |  | 31-Jul | 0.132 | 31-Aug | 0.191 |  |  | 31-Oct | 0.022 |  |  |

Appendix 3.2-5
Summary of Daily Flow: GG4a


Appendix 3.2-6
Summary of Daily Flow: TC2

| 2006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Date | Flow (m3/s) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow (m3/s) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow (m3/s) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow (m3/s) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) |
| 1-Apr |  | 1-May | 0.087 | 1-Jun | 1.535 | 1-Jul | 0.757 | 1-Aug | 0.697 | 1-Sep | 0.528 | 1-Oct | 0.252 | 1-Nov | 0.038 |
| 2-Apr |  | 2-May | 0.079 | 2-Jun | 2.906 | 2-Jul | 0.887 | 2-Aug | 0.576 | 2-Sep | 0.478 | 2-Oct | 0.177 | 2-Nov | 0.038 |
| 3-Apr |  | 3-May | 0.075 | 3-Jun | 3.200 | 3-Jul | 1.036 | 3-Aug | 0.493 | 3-Sep | 0.485 | 3 -Oct | 0.139 | 3-Nov | 0.037 |
| 4-Apr |  | 4-May | 0.082 | 4-Jun | 1.442 | 4 -Jul | 1.159 | 4-Aug | 0.455 | 4-Sep | 0.570 | 4-Oct | 0.120 | 4-Nov | 0.035 |
| 5-Apr |  | 5-May | 0.112 | 5 -Jun | 1.168 | 5 -Jul | 1.380 | 5-Aug | 0.681 | 5-Sep | 0.498 | 5-Oct | 0.119 | $5-\mathrm{Nov}$ | 0.032 |
| 6-Apr |  | 6 -May | 0.166 | 6 -Jun | 0.937 | 6 -Jul | 1.752 | 6 -Aug | 0.557 | 6-Sep | 0.352 | 6 -Oct | 0.098 | 6 -Nov | 0.032 |
| 7-Apr |  | 7-May | 0.170 | 7-Jun | 0.837 | 7-Jul | 1.200 | 7-Aug | 0.604 | 7-Sep | 0.373 | 7-Oct | 0.082 | 7-Nov | 0.033 |
| 8 -Apr |  | 8-May | 0.126 | 8-Jun | 0.974 | 8 -Jul | 1.005 | 8-Aug | 0.667 | 8 -Sep | 0.547 | 8-Oct | 0.069 | 8 -Nov | 0.035 |
| $9-\mathrm{Apr}$ |  | 9-May | 0.112 | $9-J u n$ | 1.141 | 9 9-Jul | 1.015 | 9-Aug | 0.587 | 9-Sep | 0.416 | 9-Oct | 0.082 | $9-\mathrm{Nov}$ | 0.032 |
| 10-Apr |  | 10-May | 0.105 | 10-Jun | 1.330 | 10-Jul | 0.891 | 10-Aug | 0.543 | 10-Sep | 0.371 | 10-Oct | 0.155 | 10-Nov | 0.032 |
| 11-Apr |  | 11-May | 0.101 | 11-Jun | 1.595 | 11-Jul | 0.696 | 11-Aug | 0.545 | 11-Sep | 0.249 | 11-Oct | 0.111 | 11-Nov | 0.028 |
| 12-Apr |  | 12-May | 0.096 | 12-Jun | 1.686 | 12-Jul | 0.699 | 12-Aug | 0.790 | 12-Sep | 0.202 | 12-Oct | 0.126 | 12-Nov | 0.026 |
| 13-Apr | 0.047 | 13-May | 0.089 | 13-Jun | 1.507 | 13-Jul | 0.980 | 13-Aug | 0.737 | 13-Sep | 0.163 | 13-Oct | 0.114 | 13-Nov | 0.025 |
| 14-Apr | 0.047 | 14-May | 0.085 | 14-Jun | 1.634 | 14-Jul | 0.731 | 14-Aug | 0.706 | 14-Sep | 0.131 | 14-Oct | 0.188 | 14-Nov | 0.026 |
| 15-Apr | 0.058 | 15-May | 0.089 | 15-Jun | 1.419 | 15-Jul | 0.873 | 15-Aug | 0.579 | 15-Sep | 0.091 | 15-Oct | 0.180 | 15-Nov | 0.028 |
| 16-Apr | 0.045 | 16-May | 0.210 | 16-Jun | 1.182 | 16-Jul | 0.708 | 16-Aug | 0.526 | 16-Sep | 0.072 | 16-Oct | 0.149 | 16-Nov | 0.024 |
| 17-Apr | 0.039 | 17-May | 0.656 | 17-Jun | 1.023 | 17-Jul | 0.755 | 17-Aug | 0.740 | 17-Sep | 0.071 | 17-Oct | 0.100 | 17-Nov | 0.022 |
| 18-Apr | 0.041 | 18-May | 0.619 | 18-Jun | 0.849 | 18-Jul | 0.744 | 18-Aug | 0.748 | 18-Sep | 0.085 | 18-Oct | 0.085 | 18-Nov |  |
| 19-Apr | 0.050 | 19-May | 1.042 | 19-Jun | 0.717 | 19-Jul | 0.652 | 19-Aug | 0.535 | 19-Sep | 0.070 | 19-Oct | 0.099 | 19-Nov |  |
| 20-Apr | 0.048 | 20-May | 1.259 | 20-Jun | 0.714 | 20-Jul | 0.695 | 20-Aug | 0.489 | 20-Sep | 0.297 | 20-Oct | 0.081 | 20-Nov |  |
| 21-Apr | 0.046 | 21-May | 1.036 | 21-Jun | 0.615 | 21-Jul | 1.114 | 21-Aug | 0.525 | 21-Sep | 0.238 | 21-Oct | 0.068 | 21-Nov |  |
| 22-Apr | 0.045 | 22-May | 0.823 | 22-Jun | 0.503 | 22-Jul | 1.669 | 22-Aug | 0.457 | 22-Sep | 0.242 | 22-Oct | 0.063 | 22-Nov |  |
| 23-Apr | 0.046 | 23-May | 2.938 | 23-Jun | 0.443 | 23-Jul | 1.783 | 23-Aug | 0.449 | 23-Sep | 1.100 | 23-Oct | 0.059 | 23-Nov |  |
| 24-Apr | 0.053 | 24-May | 2.142 | 24-Jun | 0.491 | 24-Jul | 1.630 | 24-Aug | 0.568 | 24-Sep | 0.854 | $24-\mathrm{Oct}$ | 0.083 | 24-Nov |  |
| 25-Apr | 0.059 | 25-May | 1.558 | 25-Jun | 0.680 | 25-Jul | 1.448 | 25-Aug | 0.629 | 25-Sep | 0.872 | 25-Oct | 0.081 | 25-Nov |  |
| 26-Apr | 0.063 | 26-May | 1.229 | 26-Jun | 0.984 | 26-Jul | 1.337 | 26-Aug | 0.658 | 26-Sep | 0.772 | 26-Oct | 0.082 | 26-Nov |  |
| 27-Apr | 0.068 | 27-May | 1.181 | 27-Jun | 1.059 | 27-Jul | 1.059 | 27-Aug | 0.499 | 27-Sep | 0.843 | 27-Oct | 0.064 | 27-Nov |  |
| 28-Apr | 0.083 | 28-May | 1.204 | 28-Jun | 0.766 | 28-Jul | 0.738 | 28-Aug | 0.527 | 28-Sep | 0.796 | 28-Oct | 0.056 | 28-Nov |  |
| 29-Apr | 0.096 | 29-May | 1.107 | 29-Jun | 0.556 | 29-Jul | 0.851 | 29-Aug | 0.333 | 29-Sep | 0.651 | 29-Oct | 0.054 | 29-Nov |  |
| 30-Apr | 0.093 | 30-May | 0.960 | 30-Jun | 0.596 | 30-Jul | 0.965 | 30-Aug | 0.377 | 30-Sep | 0.439 | 30-Oct | 0.050 | 30-Nov |  |
|  |  | 31-May | 1.049 |  |  | 31-Jul | 0.875 | 31-Aug | 0.353 |  |  | 31-Oct | 0.041 |  |  |
| 2007 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date | Flow (m3/s) | Date | Flow (m3/s) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} \mathrm{~s}$ ) |
| 1-Apr |  | 1-May |  | 1-Jun | 2.161 | 1-Jul | 1.844 | 1-Aug | 1.022 | 1-Sep | 0.865 | 1-Oct | 0.244 | 1-Nov |  |
| 2-Apr |  | 2-May |  | 2-Jun | 2.928 | 2-Jul | 1.563 | 2-Aug | 1.137 | 2-Sep | 0.721 | 2-Oct | 0.241 | 2-Nov |  |
| 3-Apr |  | 3-May |  | 3-Jun | 4.029 | 3-Jul | 1.576 | 3-Aug | 1.391 | 3-Sep | 0.814 | 3-Oct | 0.232 | $3-\mathrm{Nov}$ |  |
| 4-Apr |  | 4-May |  | 4-Jun | 7.783 | 4-Jul | 1.816 | 4-Aug | 1.468 | 4-Sep | 0.973 | 4-Oct | 0.246 | 4-Nov |  |
| 5-Apr |  | 5 -May |  | 5-Jun | 7.501 | 5 -Jul | 1.751 | 5-Aug | 1.383 | 5-Sep | 0.867 | $5-\mathrm{Oct}$ | 0.235 | $5-\mathrm{Nov}$ |  |
| 6-Apr |  | 6 -May |  | 6 -Jun | 9.558 | 6 -Jul | 1.492 | 6-Aug | 1.560 | 6-Sep | 0.693 | 6 -Oct | 0.237 | 6 -Nov |  |
| 7-Apr |  | 7-May |  | 7-Jun | 7.251 | 7-Jul | 1.269 | 7-Aug | 1.929 | 7-Sep | 0.572 | 7-Oct | 0.390 | 7-Nov |  |
| 8-Apr |  | 8 -May |  | 8 -Jun | 3.885 | 8 -Jul | 1.249 | 8-Aug | 1.280 | 8-Sep | 0.478 | 8 -Oct | 0.369 | 8 -Nov |  |
| $9-\mathrm{Apr}$ |  | 9-May | 0.611 | 9 -Jun | 2.918 | 9 9-Jul | 1.525 | 9-Aug | 1.164 | 9-Sep | 0.667 | 9-Oct | 0.320 | $9-\mathrm{Nov}$ |  |
| 10-Apr |  | 10-May | 0.550 | 10-Jun | 3.024 | 10-Jul | 3.655 | 10-Aug | 1.048 | 10-Sep | 0.918 | 10-Oct | 0.295 | 10-Nov |  |
| 11-Apr |  | 11-May | 0.519 | 11-Jun | 2.199 | 11-Jul | 3.869 | 11-Aug | 0.935 | 11-Sep | 0.995 | 11-Oct | 0.296 | 11-Nov |  |
| 12-Apr |  | 12-May | 0.496 | 12-Jun | 1.679 | 12-Jul | 3.426 | 12-Aug | 1.488 | 12-Sep | 0.712 | 12-Oct | 0.283 | 12-Nov |  |
| 13-Apr |  | 13-May | 0.488 | 13-Jun | 1.515 | 13-Jul | 3.950 | 13-Aug | 1.151 | 13-Sep | 0.516 | 13-Oct | 0.268 | 13-Nov |  |
| 14-Apr |  | 14-May | 0.516 | 14-Jun | 1.667 | 14-Jul | 4.125 | 14-Aug | 0.885 | 14-Sep | 0.428 | 14-Oct | 0.311 | 14-Nov |  |
| 15-Apr |  | 15-May | 0.586 | 15-Jun | 2.159 | 15-Jul | 5.504 | 15-Aug | 0.960 | 15-Sep | 0.390 | 15-Oct | 0.414 | 15-Nov |  |
| 16-Apr |  | 16-May | 0.957 | 16-Jun | 2.480 | 16-Jul | 3.191 | 16-Aug | 1.461 | 16-Sep | 0.403 | 16-Oct | 0.423 | 16-Nov |  |
| 17-Apr |  | 17-May | 0.955 | 17-Jun | 2.941 | 17-Jul | 2.107 | 17-Aug | 2.372 | 17-Sep | 0.329 | 17-Oct | 0.420 | 17-Nov |  |
| 18-Apr |  | 18-May | 0.832 | 18-Jun | 2.541 | 18-Jul | 2.100 | 18-Aug | 2.623 | 18-Sep | 0.280 | 18-Oct | 0.371 | 18-Nov |  |
| 19-Apr |  | 19-May | 0.937 | 19-Jun | 1.651 | 19-Jul | 2.498 | 19-Aug | 1.274 | 19-Sep | 0.246 | 19-Oct | 0.357 | 19-Nov |  |
| 20-Apr |  | 20-May | 0.963 | 20-Jun | 1.663 | 20-Jul | 2.013 | 20-Aug | 1.142 | 20-Sep | 0.247 | 20-Oct | 0.324 | 20-Nov |  |
| 21-Apr |  | 21-May | 0.992 | 21-Jun | 2.085 | 21-Jul | 1.888 | 21-Aug | 1.056 | 21-Sep | 0.259 | 21-Oct | 0.291 | 21-Nov |  |
| 22-Apr |  | 22-May | 1.150 | 22-Jun | 1.653 | 22-Jul | 2.165 | 22-Aug | 0.892 | 22-Sep | 0.249 | 22-Oct | 0.309 | 22-Nov |  |
| 23-Apr |  | 23-May | 1.448 | 23-Jun | 1.466 | 23-Jul | 1.766 | 23-Aug | 0.812 | 23-Sep | 0.234 | 23-Oct | 0.471 | 23-Nov |  |
| 24-Apr |  | 24-May | 1.679 | 24-Jun | 1.320 | 24-Jul | 1.380 | 24-Aug | 0.847 | 24-Sep | 0.220 | 24-Oct | 0.936 | 24-Nov |  |
| 25-Apr |  | 25-May | 1.957 | 25-Jun | 1.246 | 25-Jul | 1.178 | 25-Aug | 1.022 | 25-Sep | 0.246 | 25-Oct | 0.779 | 25-Nov |  |
| 26-Apr |  | 26-May | 2.491 | 26-Jun | 1.213 | 26-Jul | 1.272 | 26-Aug | 0.729 | 26-Sep | 0.246 | 26-Oct | 0.604 | 26-Nov |  |
| 27-Apr |  | 27-May | 2.082 | 27-Jun | 1.572 | 27-Jul | 1.444 | 27-Aug | 0.594 | 27-Sep | 0.338 | 27-Oct | 0.518 | 27-Nov |  |
| 28-Apr |  | 28-May | 1.484 | 28-Jun | 1.951 | 28-Jul | 1.501 | 28-Aug | 0.528 | 28-Sep | 0.322 | 28-Oct | 0.465 | 28-Nov |  |
| 29-Apr |  | 29-May | 1.497 | 29-Jun | 2.150 | 29-Jul | 1.508 | 29-Aug | 1.778 | 29-Sep | 0.285 | 29-Oct | 0.427 | 29-Nov |  |
| 30-Apr |  | 30-May | 1.974 | 30-Jun | 2.289 | 30-Jul | 1.217 | 30-Aug | 1.577 | 30-Sep | 0.259 | 30-Oct | 0.376 | 30-Nov |  |
|  |  | 31-May | 1.981 |  |  | 31-Jul | 1.114 | 31-Aug | 1.069 |  |  | 31-Oct | 0.352 |  |  |
| 2008 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} / \mathrm{s}$ ) | Date | Flow ( $\mathrm{m}^{3} \mathrm{~s}$ ) |
| 1-Apr |  | 1-May | 0.025 | 1-Jun | 0.907 | 1-Jul | 1.106 | 1-Aug | 0.132 | 1-Sep | 0.092 | 1-Oct | 0.140 | 1-Nov | 0.010 |
| 2-Apr |  | 2-May | 0.034 | 2-Jun | 0.890 | 2-Jul | 2.080 | 2-Aug | 0.140 | 2-Sep | 0.079 | 2-Oct | 0.151 | 2-Nov | 0.030 |
| 3-Apr |  | 3-May | 0.046 | 3-Jun | 0.706 | 3 -Jul | 1.851 | 3-Aug | 0.138 | 3-Sep | 0.065 | 3-Oct | 0.097 | $3-\mathrm{Nov}$ | 0.056 |
| 4-Apr |  | 4-May | 0.057 | 4-Jun | 0.509 | 4-Jul | 1.351 | 4-Aug | 0.181 | 4-Sep | 0.052 | 4-Oct | 0.069 | 4-Nov | 0.047 |
| 5-Apr |  | 5-May | 0.069 | 5 -Jun | 0.354 | 5 -Jul | 1.411 | 5-Aug | 0.248 | 5-Sep | 0.061 | 5 -Oct | 0.057 | 5-Nov | 0.034 |
| 6-Apr |  | 6 -May | 0.089 | 6 -Jun | 0.254 | 6 -Jul | 1.497 | 6-Aug | 0.413 | 6-Sep | 0.056 | 6-Oct | 0.036 | 6-Nov | 0.025 |
| 7-Apr |  | 7-May | 0.089 | 7-Jun | 0.234 | 7-Jul | 0.703 | 7-Aug | 0.490 | 7-Sep | 0.051 | 7-Oct | 0.030 | 7-Nov | 0.021 |
| 8-Apr |  | 8 -May | 0.083 | 8 -Jun | 0.177 | 8 -Jul | 0.404 | 8-Aug | 0.400 | 8-Sep | 0.100 | 8 -Oct | 0.023 | 8 -Nov | 0.025 |
| $9-\mathrm{Apr}$ |  | 9-May | 0.097 | 9 -Jun | 0.136 | 9 -Jul | 0.318 | 9-Aug | 0.577 | 9-Sep | 0.057 | 9-Oct | 0.018 | 9-Nov | 0.032 |
| 10-Apr |  | 10-May | 0.124 | 10-Jun | 0.111 | 10-Jul | 0.224 | 10-Aug | 0.886 | 10-Sep | 0.069 | 10-Oct | 0.014 | 10-Nov | 0.029 |
| 11-Apr |  | 11-May | 0.147 | 11-Jun | 0.129 | 11-Jul | 0.183 | 11-Aug | 0.576 | 11-Sep | 0.250 | 11-Oct | 0.012 | 11-Nov | 0.028 |
| 12-Apr |  | 12-May | 0.128 | 12-Jun | 0.243 | 12-Jul | 0.281 | 12-Aug | 0.629 | 12-Sep | 0.162 | 12-Oct | 0.014 | 12-Nov | 0.050 |
| 13-Apr |  | 13-May | 0.117 | 13-Jun | 0.223 | 13-Jul | 0.356 | 13-Aug | 0.440 | 13-Sep | 0.081 | 13-Oct | 0.018 | 13-Nov | 0.043 |
| 14-Apr |  | 14-May | 0.108 | 14-Jun | 0.168 | 14-Jul | 0.339 | 14-Aug | 0.558 | 14-Sep | 0.062 | 14-Oct | 0.017 | 14-Nov | 0.032 |
| 15-Apr |  | 15-May | 0.429 | 15-Jun | 0.178 | 15-Jul | 0.315 | 15-Aug | 0.862 | 15-Sep | 0.261 | 15-Oct | 0.013 | 15-Nov | 0.024 |
| 16-Apr | 0.007 | 16-May | 1.032 | 16-Jun | 0.190 | 16-Jul | 0.353 | 16-Aug | 1.053 | 16-Sep | 0.246 | 16-Oct | 0.012 | 16-Nov | 0.020 |
| 17-Apr | 0.008 | 17-May | 1.158 | 17-Jun | 0.212 | 17-Jul | 0.369 | 17-Aug | 0.875 | 17-Sep | 0.228 | 17-Oct | 0.011 | 17-Nov | 0.019 |
| 18-Apr | 0.007 | 18-May | 1.098 | 18-Jun | 0.202 | 18-Jul | 0.306 | 18-Aug | 0.527 | 18-Sep | 0.146 | 18-Oct | 0.010 | 18-Nov | 0.016 |
| 19-Apr | 0.006 | 19-May | 0.702 | 19-Jun | 0.160 | 19-Jul | 0.237 | 19-Aug | 0.350 | 19-Sep | 0.128 | 19-Oct | 0.008 | 19-Nov | 0.013 |
| 20-Apr | 0.006 | 20-May | 1.707 | 20-Jun | 0.170 | 20-Jul | 0.360 | 20-Aug | 1.897 | 20-Sep | 0.101 | 20-Oct | 0.009 | 20-Nov | 0.009 |
| 21-Apr | 0.004 | 21-May | 1.490 | 21-Jun | 0.420 | 21-Jul | 0.351 | 21-Aug | 0.811 | 21-Sep | 0.074 | 21-Oct | 0.008 | 21-Nov | 0.008 |
| 22-Apr | 0.004 | 22-May | 0.765 | 22-Jun | 0.715 | 22-Jul | 0.228 | 22-Aug | 0.425 | 22-Sep | 0.042 | 22-Oct | 0.023 | 22-Nov | 0.008 |
| 23-Apr | 0.004 | 23-May | 0.632 | 23-Jun | 0.374 | 23-Jul | 0.186 | 23-Aug | 0.893 | 23-Sep | 0.029 | 23-Oct | 0.046 | 23-Nov | 0.007 |
| 24-Apr | 0.004 | 24-May | 0.639 | 24-Jun | 0.325 | 24-Jul | 0.184 | 24-Aug | 0.944 | 24-Sep | 0.022 | 24-Oct | 0.041 | 24-Nov | 0.007 |
| 25-Apr | 0.004 | 25-May | 0.746 | 25-Jun | 0.264 | 25-Jul | 0.195 | 25-Aug | 0.419 | 25-Sep | 0.018 | 25-Oct | 0.029 | 25-Nov | 0.007 |
| 26-Apr | 0.004 | 26-May | 0.956 | 26-Jun | 0.186 | 26-Jul | 0.271 | 26-Aug | 0.244 | 26-Sep | 0.018 | 26-Oct | 0.020 | 26-Nov | 0.006 |
| 27-Apr | 0.008 | 27-May | 1.097 | 27-Jun | 0.216 | 27-Jul | 0.344 | 27-Aug | 0.219 | 27-Sep | 0.037 | 27-Oct | 0.015 | 27-Nov | 0.006 |
| 28-Apr | 0.014 | 28-May | 1.360 | 28-Jun | 0.443 | 28-Jul | 0.289 | 28-Aug | 0.223 | 28-Sep | 0.024 | 28-Oct | 0.013 | 28-Nov | 0.006 |
| 29-Apr | 0.017 | 29-May | 1.298 | 29-Jun | 0.509 | 29-Jul | 0.528 | 29-Aug | 0.150 | 29-Sep | 0.078 | 29-Oct | 0.011 | 29-Nov | 0.005 |
| 30-Apr | 0.020 | 30-May | 1.074 | 30-Jun | 0.644 | 30-Jul | 0.288 | 30-Aug | 0.132 | 30-Sep | 0.146 | 30-Oct | 0.009 | 30-Nov | 0.008 |
|  |  | 31-May | 0.878 |  |  | 31-Jul | 0.180 | 31-Aug | 0.129 |  |  | 31-Oct | 0.009 |  |  |


| Date | Manual Flow <br> Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 16-Jan-06 | 9.5 |  |  |  |
| 18-Jan-06 | 12.1 |  |  |  |
| 20-Jan-06 | 8.2 |  |  |  |
| 22-Jan-06 | 8.2 |  |  |  |
| 24-Jan-06 | 7.3 |  |  |  |
| 26-Jan-06 | 8.2 |  |  |  |
| 28-Jan-06 | 6.7 |  |  |  |
| 1-Feb-06 | 7.7 |  |  |  |
| 3-Feb-06 | 5.0 |  |  |  |
| 5-Feb-06 | 4.5 |  |  |  |
| 7-Feb-06 | 5.2 |  |  |  |
| 13-Feb-06 | 5.7 |  |  |  |
| 20-Feb-06 | 5.7 |  |  |  |
| 7-Mar-06 | 7.0 |  |  |  |
| 16-Mar-06 | 3.5 |  |  |  |
| 22-Mar-06 | 5.6 |  |  |  |
| 29-Mar-06 | 4.5 |  |  |  |
| 20-Apr-06 | 1.2 |  |  |  |
| 24-Apr-06 | 1.5 |  |  |  |
| 3-May-06 | 4.2 |  |  |  |
| 12-May-06 | 3.2 |  |  |  |
| 19-May-06 | 3.2 |  |  |  |
| 25-May-06 | 3.4 |  |  |  |
| 29-May-06 | 2.0 |  |  |  |
| 8-Jun-06 | 5.6 |  |  |  |
| 27-Jun-06 |  |  | 8.2 |  |
| 28-Jun-06 |  |  | 8.2 |  |
| 29-Jun-06 |  |  | 8.3 |  |
| 30-Jun-06 |  |  | 8.4 |  |
| 1-Jul-06 |  |  | 8.5 |  |
| 2-Jul-06 |  |  | 8.6 |  |
| 3-Jul-06 |  |  | 8.7 |  |
| 4-Jul-06 |  |  | 8.8 |  |
| 5-Jul-06 |  |  | 9.0 |  |
| 6-Jul-06 |  |  | 9.2 |  |
| 7-Jul-06 |  |  | 9.2 |  |
| 8-Jul-06 |  |  | 9.4 |  |
| 9 9-Jul-06 |  |  | 9.6 |  |
| 10-Jul-06 |  |  | 9.7 |  |
| 11-Jul-06 |  |  | 9.8 |  |
| 12-Jul-06 |  |  | 9.9 |  |
| 13-Jul-06 |  |  | 9.9 |  |
| 14-Jul-06 |  |  | 10.0 |  |
| 15-Jul-06 |  |  | 10.1 |  |
| 16-Jul-06 |  |  | 10.2 |  |
| 17-Jul-06 |  |  | 10.4 |  |
| 18-Jul-06 |  |  | 10.5 |  |
| 19-Jul-06 |  |  | 10.6 |  |
| 20-Jul-06 |  |  | 10.7 |  |
| 21-Jul-06 |  |  | 10.8 |  |
| 22-Jul-06 |  |  | 10.9 |  |
| 23-Jul-06 |  |  | 11.0 |  |
| 24-Jul-06 |  |  | 11.0 |  |
| 25-Jul-06 |  |  | 11.1 |  |
| 26-Jul-06 |  |  | 11.1 |  |
| 27-Jul-06 |  |  | 11.1 |  |
| 28-Jul-06 |  |  | 11.2 |  |
| 29-Jul-06 |  |  | 11.2 |  |
| 30-Jul-06 |  |  | 11.2 |  |
| 31-Jul-06 |  |  | 11.2 |  |
| 1-Aug-06 |  |  | 11.2 |  |
| 2-Aug-06 |  |  | 11.2 |  |
| 3-Aug-06 |  |  | 11.2 |  |
| 4-Aug-06 |  |  | 11.2 |  |
| 5-Aug-06 |  |  | 11.2 |  |
| 6-Aug-06 |  |  | 11.3 |  |
| 7-Aug-06 |  |  | 11.3 |  |
| 8-Aug-06 |  |  | 11.4 |  |
| 9-Aug-06 |  |  | 11.4 |  |
| Note: Italiciz | es indicate likley error | strument malfunction. |  | (contin |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 10-Aug-06 |  |  | 11.5 |  |
| 11-Aug-06 |  |  | 11.2 |  |
| 12-Aug-06 |  |  | 11.3 |  |
| 13-Aug-06 |  |  | 11.5 |  |
| 14-Aug-06 |  |  | 11.5 |  |
| 15-Aug-06 |  |  | 11.5 |  |
| 16-Aug-06 |  |  | 11.4 |  |
| 17-Aug-06 |  |  | 11.6 |  |
| 18-Aug-06 |  |  | 11.4 |  |
| 19-Aug-06 |  |  | 11.5 |  |
| 20-Aug-06 |  |  | 11.6 |  |
| 21-Aug-06 |  |  | 11.4 |  |
| 22-Aug-06 |  |  | 11.5 |  |
| 23-Aug-06 |  |  | 10.9 |  |
| 24-Aug-06 |  |  | 11.3 |  |
| 25-Aug-06 |  |  | 11.2 |  |
| 26-Aug-06 |  |  | 11.1 |  |
| 27-Aug-06 |  |  | 11.1 |  |
| 28-Aug-06 |  |  | 11.4 |  |
| 29-Aug-06 |  |  | 11.5 |  |
| 30-Aug-06 |  |  | 11.2 |  |
| 31-Aug-06 |  |  | 11.0 |  |
| 1-Sep-06 |  |  | 10.9 |  |
| 2-Sep-06 |  |  | 10.8 |  |
| 3-Sep-06 |  |  | 10.8 |  |
| 4-Sep-06 |  |  | 10.5 |  |
| 5-Sep-06 |  |  | 10.5 |  |
| 6-Sep-06 |  |  | 10.4 |  |
| 7-Sep-06 |  |  | 10.2 |  |
| 8-Sep-06 |  |  | 10.2 |  |
| 9-Sep-06 |  |  | 10.1 |  |
| 10-Sep-06 |  |  | 10.1 |  |
| 11-Sep-06 |  |  | 10.2 |  |
| 12-Sep-06 |  |  | 10.1 |  |
| 13-Sep-06 |  |  | 9.8 |  |
| 14-Sep-06 |  |  | 9.8 |  |
| 15-Sep-06 |  |  | 9.6 |  |
| 16-Sep-06 |  |  | 9.5 |  |
| 17-Sep-06 |  |  | 9.4 |  |
| 18-Sep-06 |  |  | 9.3 |  |
| 19-Sep-06 |  |  | 9.2 |  |
| 20-Sep-06 |  |  | 9.1 |  |
| 21-Sep-06 |  |  | 9.1 |  |
| 22-Sep-06 |  |  | 9.1 |  |
| 23-Sep-06 |  |  | 9.2 |  |
| 24-Sep-06 |  |  | 9.2 |  |
| 25-Sep-06 |  |  | 9.2 |  |
| 26-Sep-06 |  |  | 9.4 |  |
| 27-Sep-06 |  |  | 9.6 |  |
| 28-Sep-06 |  |  | 9.6 |  |
| 29-Sep-06 |  |  | 9.6 |  |
| 30-Sep-06 |  |  | 9.8 |  |
| 1-Oct-06 |  |  | 9.9 |  |
| 2-Oct-06 |  |  | 9.9 |  |
| 3-Oct-06 |  |  | 9.9 |  |
| 4-Oct-06 |  |  | 9.8 |  |
| 5-Oct-06 |  |  | 9.6 |  |
| 6-Oct-06 |  |  | 9.2 |  |
| 7-Oct-06 |  |  | 9.0 |  |
| 8-Oct-06 |  |  | 8.9 |  |
| 9-Oct-06 |  |  | 8.6 |  |
| 10-Oct-06 |  |  | 8.5 |  |
| 11-Oct-06 |  |  | 8.4 |  |
| 12-Oct-06 |  |  | 8.3 |  |
| 13-Oct-06 |  |  | 8.4 |  |
| 14-Oct-06 |  |  | 8.5 |  |
| 15-Oct-06 |  |  | 8.6 |  |
| 16-Oct-06 |  |  | 8.8 |  |
| 17-Oct-06 |  |  | 8.8 |  |
| Note: Italiciz | s indicate likley error | trument malfunction. |  | (conti |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 18-Oct-06 |  |  | 8.8 |  |
| 19-Oct-06 |  |  | 8.8 |  |
| 20-Oct-06 |  |  | 8.7 |  |
| 21-Oct-06 |  |  | 8.3 |  |
| 22-Oct-06 |  |  | 8.2 |  |
| 23-Oct-06 |  |  | 8.2 |  |
| 24-Oct-06 |  |  | 8.2 |  |
| 25-Oct-06 |  |  | 8.2 |  |
| 26-Oct-06 |  |  | 8.1 |  |
| 27-Oct-06 |  |  | 8.0 |  |
| 28-Oct-06 |  |  | 8.9 |  |
| 29-Oct-06 |  |  | 9.0 |  |
| 30-Oct-06 |  |  | 8.8 |  |
| 31-Oct-06 |  |  | 8.8 |  |
| 1-Nov-06 |  |  | 8.5 |  |
| 2-Nov-06 |  |  | 8.3 |  |
| 3-Nov-06 |  |  | 8.6 |  |
| 4-Nov-06 |  |  | 8.6 |  |
| 5-Nov-06 |  |  | 8.5 |  |
| 6-Nov-06 |  |  | 8.5 |  |
| 7-Nov-06 |  |  | 8.4 |  |
| 8-Nov-06 |  |  | 8.1 |  |
| 9-Nov-06 |  |  | 8.0 |  |
| 10-Nov-06 |  |  | 7.0 |  |
| 11-Nov-06 |  |  | 6.6 |  |
| 12-Nov-06 |  |  | 6.6 |  |
| 13-Nov-06 |  |  | 6.5 |  |
| 14-Nov-06 |  |  | 6.8 |  |
| 15-Nov-06 |  |  | 7.8 |  |
| 16-Nov-06 |  |  | 7.7 |  |
| 17-Nov-06 |  |  | 7.6 |  |
| 18-Nov-06 |  |  | 7.4 |  |
| 19-Nov-06 |  |  | 7.3 |  |
| 20-Nov-06 |  |  | 7.2 |  |
| 21-Nov-06 |  |  | 7.1 |  |
| 22-Nov-06 |  |  | 7.0 |  |
| 23-Nov-06 |  |  | 7.0 |  |
| 24-Nov-06 |  |  | 6.8 |  |
| 25-Nov-06 |  |  | 6.9 |  |
| 26-Nov-06 |  |  | 6.8 |  |
| 27-Nov-06 |  |  | 6.7 |  |
| 28-Nov-06 |  |  | 6.7 |  |
| 29-Nov-06 |  |  | 6.6 |  |
| 30-Nov-06 |  |  | 6.7 |  |
| 1-Dec-06 |  |  | 6.7 |  |
| 2-Dec-06 |  |  | 6.7 |  |
| 3-Dec-06 |  |  | 6.7 |  |
| 4-Dec-06 |  |  | 6.8 |  |
| 5-Dec-06 |  |  | 6.7 |  |
| 6-Dec-06 |  |  | 6.6 |  |
| 7-Dec-06 |  |  | 6.6 |  |
| 8-Dec-06 |  |  | 6.5 |  |
| 9-Dec-06 |  |  | 6.4 |  |
| 10-Dec-06 |  |  | 6.4 |  |
| 11-Dec-06 |  |  | 6.3 |  |
| 12-Dec-06 |  |  | 6.3 |  |
| 13-Dec-06 |  |  | 6.2 |  |
| 14-Dec-06 |  |  | 6.1 |  |
| 15-Dec-06 |  |  | 6.0 |  |
| 16-Dec-06 |  |  | 5.9 |  |
| 17-Dec-06 |  |  | 5.8 |  |
| 18-Dec-06 |  |  | 5.9 |  |
| 19-Dec-06 |  |  | 5.7 |  |
| 20-Dec-06 |  |  | 5.7 |  |
| 21-Dec-06 |  |  | 5.7 |  |
| 22-Dec-06 |  |  | 5.6 |  |
| 23-Dec-06 |  |  | 5.6 |  |
| 24-Dec-06 |  |  | 5.6 |  |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Flow Calculated <br> from Manual Stage <br> Measurement (L/s) Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: |
| 25-Dec-06 |  | 5.5 |  |
| 26-Dec-06 |  | 5.5 |  |
| 27-Dec-06 |  | 5.4 |  |
| 28-Dec-06 |  | 5.4 |  |
| 29-Dec-06 |  | 5.4 |  |
| 30-Dec-06 |  | 5.4 |  |
| 31-Dec-06 |  | 5.4 |  |
| 1-Jan-07 |  | 5.5 |  |
| 2-Jan-07 |  | 5.5 |  |
| 3-Jan-07 |  | 5.4 |  |
| 4-Jan-07 |  | 5.4 |  |
| 5-Jan-07 |  | 5.4 |  |
| 6-Jan-07 |  | 5.4 |  |
| 7-Jan-07 |  | 5.4 |  |
| 8-Jan-07 |  | 5.4 |  |
| 9-Jan-07 |  | 5.3 |  |
| 10-Jan-07 |  | 5.1 |  |
| 11-Jan-07 |  | 5.0 |  |
| 12-Jan-07 |  | 5.0 |  |
| 13-Jan-07 |  | 5.1 |  |
| 14-Jan-07 |  | 5.0 |  |
| 15-Jan-07 |  | 5.2 |  |
| 16-Jan-07 |  | 5.1 |  |
| 17-Jan-07 |  | 5.0 |  |
| 18-Jan-07 |  | 5.0 |  |
| 19-Jan-07 |  | 4.9 |  |
| 20-Jan-07 |  | 4.9 |  |
| 21-Jan-07 |  | 5.0 |  |
| 22-Jan-07 |  | 5.0 |  |
| 23-Jan-07 |  | 5.0 |  |
| 24-Jan-07 |  | 5.1 |  |
| 25-Jan-07 |  | 5.0 |  |
| 26-Jan-07 |  | 5.0 |  |
| 27-Jan-07 |  | 5.1 |  |
| 28-Jan-07 |  | 5.1 |  |
| 29-Jan-07 |  | 5.2 |  |
| 30-Jan-07 |  | 5.0 |  |
| 31-Jan-07 |  | 4.8 |  |
| 1-Feb-07 |  | 4.7 |  |
| 2-Feb-07 |  | 4.8 |  |
| 3-Feb-07 |  | 4.7 |  |
| 4-Feb-07 |  | 4.7 |  |
| 5-Feb-07 |  | 4.7 |  |
| 6-Feb-07 |  | 4.8 |  |
| 7-Feb-07 |  | 4.8 |  |
| 8-Feb-07 |  | 4.8 |  |
| 9-Feb-07 |  | 4.7 |  |
| 10-Feb-07 |  | 4.9 |  |
| 11-Feb-07 |  | 4.8 |  |
| 12-Feb-07 |  | 4.9 |  |
| 13-Feb-07 |  | 5.0 |  |
| 14-Feb-07 |  | 4.9 |  |
| 15-Feb-07 |  | 4.9 |  |
| 16-Feb-07 |  | 4.9 |  |
| 17-Feb-07 |  | 4.8 |  |
| 18-Feb-07 |  | 4.6 |  |
| 19-Feb-07 |  | 4.6 |  |
| 20-Feb-07 |  | 4.3 |  |
| 21-Feb-07 |  | 4.4 |  |
| 22-Feb-07 |  | 4.1 |  |
| 23-Feb-07 |  | 3.8 |  |
| 24-Feb-07 |  | 3.9 |  |
| 25-Feb-07 |  | 3.9 |  |
| 26-Feb-07 |  | 4.0 |  |
| 27-Feb-07 |  | 4.0 |  |
| 28-Feb-07 |  | 3.9 |  |
| 1-Mar-07 |  | 3.8 |  |
| 2-Mar-07 |  | 3.9 |  |
| 3-Mar-07 |  | 3.8 |  |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 4-Mar-07 |  |  | 3.7 |  |
| 5-Mar-07 |  |  | 3.8 |  |
| 6-Mar-07 |  |  | 3.9 |  |
| 7-Mar-07 |  |  | 3.8 |  |
| 8-Mar-07 |  |  | 3.4 |  |
| 9-Mar-07 |  |  | 2.9 |  |
| 10-Mar-07 |  |  | 2.6 |  |
| 11-Mar-07 |  |  | 2.8 |  |
| 12-Mar-07 |  |  | 3.1 |  |
| 13-Mar-07 |  |  | 3.0 |  |
| 14-Mar-07 |  |  | 2.7 |  |
| 15-Mar-07 |  |  | 2.3 |  |
| 16-Mar-07 |  |  | 2.0 |  |
| 17-Mar-07 |  |  | 2.1 |  |
| 18-Mar-07 |  |  | 1.9 |  |
| 19-Mar-07 |  |  | 1.7 |  |
| 20-Mar-07 |  |  | 1.7 |  |
| 21-Mar-07 |  |  | 1.9 |  |
| 22-Mar-07 |  |  | 1.9 |  |
| 23-Mar-07 |  |  | 2.1 |  |
| 24-Mar-07 |  |  | 2.0 |  |
| 25-Mar-07 |  |  | 1.7 |  |
| 26-Mar-07 |  |  | 1.4 |  |
| 27-Mar-07 |  |  | 1.4 |  |
| 28-Mar-07 |  |  | 1.4 |  |
| 29-Mar-07 |  |  | 1.4 |  |
| 30-Mar-07 |  |  | 1.2 |  |
| 31-Mar-07 |  |  | 1.2 |  |
| 1-Apr-07 |  |  | 1.2 |  |
| 2-Apr-07 |  |  | 1.1 |  |
| 3-Apr-07 |  |  | 1.0 |  |
| 4-Apr-07 |  |  | 1.1 |  |
| 5-Apr-07 |  |  | 1.2 |  |
| 6-Apr-07 |  |  | 1.2 |  |
| 7-Apr-07 |  |  | 1.1 |  |
| 8-Apr-07 |  |  | 0.8 |  |
| 9-Apr-07 |  |  | 0.4 |  |
| 10-Apr-07 |  |  | 0.4 |  |
| 11-Apr-07 |  |  | 1.0 |  |
| 12-Apr-07 |  |  | 1.1 |  |
| 13-Apr-07 |  |  | 1.2 |  |
| 14-Apr-07 |  |  | 1.2 |  |
| 15-Apr-07 |  |  | 1.3 |  |
| 16-Apr-07 |  |  | 1.1 |  |
| 17-Apr-07 |  |  | 1.0 |  |
| 18-Apr-07 |  |  | 1.0 |  |
| 19-Apr-07 |  |  | 1.0 |  |
| 20-Apr-07 |  |  | 1.0 |  |
| 21-Apr-07 |  |  | 0.9 |  |
| 22-Apr-07 |  |  | 0.8 |  |
| 23-Apr-07 |  |  | 0.8 |  |
| 24-Apr-07 |  |  | 0.9 |  |
| 25-Apr-07 |  |  | 0.7 |  |
| 26-Apr-07 |  |  | 0.7 |  |
| 27-Apr-07 |  |  | 0.6 |  |
| 28-Apr-07 |  |  | 0.7 |  |
| 29-Apr-07 |  |  | 0.6 |  |
| 30-Apr-07 |  |  | 0.6 |  |
| 1-May-07 |  |  | 0.6 |  |
| 2-May-07 |  |  | 0.5 |  |
| 3-May-07 |  |  | 0.8 |  |
| 4-May-07 |  |  | 1.0 |  |
| 5-May-07 |  |  | 1.1 |  |
| 6-May-07 |  |  | 1.6 |  |
| 7-May-07 |  |  | 1.7 |  |
| 8-May-07 |  |  | 1.4 |  |
| 9-May-07 |  |  | 1.7 |  |
| 10-May-07 |  |  | 1.7 |  |
| 11-May-07 |  |  | 1.7 |  |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 12-May-07 |  |  | 1.7 |  |
| 13-May-07 |  |  | 1.6 |  |
| 14-May-07 |  |  | 1.5 |  |
| 15-May-07 |  |  | 1.6 |  |
| 16-May-07 |  |  | 1.9 |  |
| 17-May-07 |  |  | 1.8 |  |
| 18-May-07 |  |  | 1.5 |  |
| 19-May-07 |  |  | 2.0 |  |
| 20-May-07 |  |  | 2.1 |  |
| 21-May-07 |  |  | 2.3 |  |
| 22-May-07 |  |  | 2.4 |  |
| 23-May-07 |  |  | 2.5 |  |
| 24-May-07 |  |  | 2.6 |  |
| 25-May-07 |  |  | 2.8 |  |
| 26-May-07 |  |  | 2.8 |  |
| 27-May-07 |  |  | 2.8 |  |
| 28-May-07 |  |  | 2.8 |  |
| 29-May-07 |  |  | 2.9 |  |
| 30-May-07 |  |  | 3.2 |  |
| 31-May-07 |  |  | 3.3 |  |
| 1-Jun-07 |  |  | 3.4 |  |
| 2-Jun-07 |  |  | 3.6 |  |
| 3-Jun-07 |  |  | 3.9 |  |
| 4-Jun-07 |  |  | 4.1 |  |
| 5-Jun-07 |  |  | 3.9 |  |
| 6-Jun-07 |  |  | 3.8 |  |
| 7-Jun-07 |  |  | 3.9 |  |
| 8-Jun-07 |  |  | 3.9 |  |
| 9-Jun-07 |  |  | 3.8 |  |
| 10-Jun-07 |  |  | 4.2 | 4.2 |
| 11-Jun-07 |  |  | 3.7 | 4.3 |
| 12-Jun-07 |  |  | 2.8 | 4.4 |
| 13-Jun-07 |  |  | 3.2 | 4.5 |
| 14-Jun-07 |  |  | 2.0 | 4.6 |
| 15-Jun-07 |  |  | 1.1 | 4.7 |
| 16-Jun-07 |  |  | 1.1 | 4.8 |
| 17-Jun-07 |  |  | 1.2 | 4.9 |
| 18-Jun-07 |  |  | 1.2 | 5.0 |
| 19-Jun-07 |  |  | 1.3 | 5.1 |
| 20-Jun-07 |  |  | 1.5 | 5.3 |
| 21-Jun-07 |  |  | 1.7 | 5.4 |
| 22-Jun-07 |  |  | 2.0 | 5.7 |
| 23-Jun-07 |  |  | 2.2 | 6.0 |
| 24-Jun-07 |  |  | 2.4 | 6.1 |
| 25-Jun-07 |  |  | 2.6 | 6.3 |
| 26-Jun-07 |  |  | 2.9 | 6.6 |
| 27-Jun-07 |  |  | 3.2 | 6.9 |
| 28-Jun-07 |  |  | 3.2 | 6.9 |
| 29-Jun-07 |  |  | 3.2 | 6.9 |
| 30-Jun-07 |  |  | 3.2 | 7.0 |
| 1-Jul-07 |  |  | 3.4 | 7.1 |
| 2-Jul-07 |  |  | 3.4 | 7.1 |
| 3-Jul-07 |  |  | 3.7 | 7.4 |
| 4-Jul-07 |  |  | 3.1 | 7.3 |
| 5-Jul-07 |  |  | 2.1 | 7.4 |
| 6-Jul-07 |  |  | 2.2 | 7.5 |
| 7-Jul-07 |  |  | 2.1 | 7.4 |
| 8-Jul-07 |  |  | 2.0 | 7.3 |
| 9-Jul-07 |  |  | 1.8 | 7.1 |
| 10-Jul-07 |  |  | 1.8 | 7.1 |
| 11-Jul-07 |  |  | 1.9 | 7.4 |
| 12-Jul-07 |  |  | 2.0 | 7.4 |
| 13-Jul-07 |  |  | 2.0 | 7.4 |
| 14-Jul-07 |  |  | 2.1 | 7.6 |
| 15-Jul-07 |  |  | 2.1 | 7.6 |
| 16-Jul-07 |  |  | 2.3 | 7.7 |
| 17-Jul-07 |  |  | 2.2 | 7.7 |
| 18-Jul-07 |  |  | 2.2 | 7.7 |
| 19-Jul-07 |  |  | 2.1 | 7.6 |
| Note: Italiciz | es indicate likley error | strument malfunction. |  | (contin |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Flow Calculated <br> from Manual Stage  <br> Measurement (L/s) Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: |
| 20-Jul-07 |  | 2.4 | 7.8 |
| 21-Jul-07 |  | 2.4 | 7.9 |
| 22-Jul-07 |  | 2.5 | 8.0 |
| 23-Jul-07 |  | 2.4 | 7.9 |
| 24-Jul-07 |  | 2.3 | 7.8 |
| 25-Jul-07 |  | 2.3 | 7.8 |
| 26-Jul-07 |  | 2.2 | 7.7 |
| 27-Jul-07 |  | 2.1 | 7.6 |
| 28-Jul-07 |  | 2.1 | 7.6 |
| 29-Jul-07 |  | 2.3 | 7.8 |
| 30-Jul-07 |  | 2.3 | 7.8 |
| 31-Jul-07 |  | 2.3 | 7.8 |
| 1-Aug-07 |  | 2.3 | 7.8 |
| 2-Aug-07 |  | 2.4 | 7.8 |
| 3-Aug-07 |  | 2.4 | 7.9 |
| 4-Aug-07 |  | 2.4 | 7.8 |
| 5-Aug-07 |  | 2.3 | 7.8 |
| 6-Aug-07 |  | 2.2 | 7.7 |
| 7-Aug-07 |  | 2.2 | 7.7 |
| 8-Aug-07 |  | 2.2 | 7.7 |
| 9-Aug-07 |  | 2.1 | 7.6 |
| 10-Aug-07 |  | 2.1 | 7.6 |
| 11-Aug-07 |  | 2.1 | 7.6 |
| 12-Aug-07 |  | 2.2 | 7.6 |
| 13-Aug-07 |  | 2.2 | 7.7 |
| 14-Aug-07 |  | 2.1 | 7.6 |
| 15-Aug-07 |  | 2.0 | 7.5 |
| 16-Aug-07 |  | 2.0 | 7.4 |
| 17-Aug-07 |  | 2.1 | 7.5 |
| 18-Aug-07 |  | 2.0 | 7.5 |
| 19-Aug-07 |  | 2.0 | 7.5 |
| 20-Aug-07 |  | 2.0 | 7.5 |
| 21-Aug-07 |  | 2.2 | 7.7 |
| 22-Aug-07 |  | 2.2 | 7.7 |
| 23-Aug-07 |  | 2.2 | 7.6 |
| 24-Aug-07 |  | 2.3 | 7.8 |
| 25-Aug-07 |  | 2.3 | 7.7 |
| 26-Aug-07 |  | 2.3 | 7.8 |
| 27-Aug-07 |  | 2.3 | 7.8 |
| 28-Aug-07 |  | 2.3 | 7.8 |
| 29-Aug-07 |  | 2.3 | 7.8 |
| 30-Aug-07 |  | 2.3 | 7.8 |
| 31-Aug-07 |  | 2.3 | 7.8 |
| 1-Sep-07 |  | 2.4 | 7.8 |
| 2-Sep-07 |  | 2.3 | 7.8 |
| 3-Sep-07 |  | 2.3 | 7.8 |
| 4-Sep-07 |  | 2.4 | 7.9 |
| 5-Sep-07 |  | 2.4 | 7.9 |
| 6-Sep-07 |  | 2.4 | 7.9 |
| 7-Sep-07 |  | 2.4 | 7.8 |
| 8-Sep-07 |  | 2.4 | 7.9 |
| 9-Sep-07 |  | 2.4 | 7.9 |
| 10-Sep-07 |  | 2.4 | 7.8 |
| 11-Sep-07 |  | 2.4 | 7.8 |
| 12-Sep-07 |  | 2.3 | 7.8 |
| 13-Sep-07 |  | 2.3 | 7.7 |
| 14-Sep-07 |  | 2.2 | 7.6 |
| 15-Sep-07 |  | 2.1 | 7.6 |
| 16-Sep-07 |  | 2.0 | 7.5 |
| 17-Sep-07 |  | 2.0 | 7.4 |
| 18-Sep-07 |  | 2.0 | 7.4 |
| 19-Sep-07 |  | 2.0 | 7.5 |
| 20-Sep-07 |  | 1.9 | 7.4 |
| 21-Sep-07 |  | 2.0 | 7.5 |
| 22-Sep-07 |  | 2.1 | 7.5 |
| 23-Sep-07 |  | 2.1 | 7.5 |
| 24-Sep-07 |  | 2.1 | 7.6 |
| 25-Sep-07 |  | 2.1 | 7.6 |

Note: Italicized values indicate likley error due to instrument malfunction.
(continued)

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 26-Sep-07 |  |  | 2.0 | 7.5 |
| 27-Sep-07 |  |  | 2.1 | 7.5 |
| 28-Sep-07 |  |  | 2.2 | 7.7 |
| 29-Sep-07 |  |  | 2.2 | 7.7 |
| 30-Sep-07 |  |  | 2.2 | 7.6 |
| 1-Oct-07 |  |  | 2.1 | 7.6 |
| 2-Oct-07 |  |  | 2.1 | 7.6 |
| 3-Oct-07 |  |  | 2.1 | 7.6 |
| 4-Oct-07 |  |  | 2.6 | 8.1 |
| 5-Oct-07 |  |  | 2.8 | 8.2 |
| 6-Oct-07 |  |  | 2.8 | 8.3 |
| 7-Oct-07 |  |  | 3.1 | 8.6 |
| 8-Oct-07 |  |  | 3.0 | 8.4 |
| 9-Oct-07 |  |  | 2.9 | 8.4 |
| 10-Oct-07 |  |  | 2.9 | 8.4 |
| 11-Oct-07 |  |  | 2.8 | 8.3 |
| 12-Oct-07 |  |  | 2.8 | 8.3 |
| 13-Oct-07 |  |  | 2.8 | 8.3 |
| 14-Oct-07 |  |  | 2.7 | 8.2 |
| 15-Oct-07 |  |  | 2.8 | 8.2 |
| 16-Oct-07 |  |  | 2.7 | 8.2 |
| 17-Oct-07 |  |  | 2.3 | 7.8 |
| 18-Oct-07 |  |  | 1.5 | 8.2 |
| 19-Oct-07 |  |  | 1.5 | 8.2 |
| 20-Oct-07 |  |  | 1.5 | 8.2 |
| 21-Oct-07 |  |  | 1.5 | 8.2 |
| 22-Oct-07 |  |  | 1.4 | 8.2 |
| 23-Oct-07 |  |  | 1.1 | 7.8 |
| 24-Oct-07 |  |  | 1.3 | 8.0 |
| 25-Oct-07 |  |  | 1.2 | 7.9 |
| 26-Oct-07 |  |  | 1.2 | 7.9 |
| 27-Oct-07 |  |  | 1.2 | 7.9 |
| 28-Oct-07 |  |  | 1.2 | 7.9 |
| 29-Oct-07 |  |  | 1.2 | 7.9 |
| 30-Oct-07 |  |  | 1.0 | 7.7 |
| 31-Oct-07 |  |  | 0.7 | 7.4 |
| 1-Nov-07 |  |  | 2.0 | 8.7 |
| 2-Nov-07 |  |  | 2.1 | 8.8 |
| 3-Nov-07 |  |  | 2.0 | 8.7 |
| 4-Nov-07 |  |  | 1.9 | 8.7 |
| 5-Nov-07 |  |  | 1.8 | 8.5 |
| 6-Nov-07 |  |  | 2.0 | 8.7 |
| 7-Nov-07 |  |  | 2.0 | 8.7 |
| 8-Nov-07 |  |  | 2.0 | 8.7 |
| 9-Nov-07 |  |  | 2.1 | 8.8 |
| 10-Nov-07 |  |  | 2.0 | 8.7 |
| 11-Nov-07 |  |  | 2.0 | 8.7 |
| 12-Nov-07 |  |  | 1.8 | 8.6 |
| 13-Nov-07 |  |  | 1.8 | 8.5 |
| 14-Nov-07 |  |  | 1.8 | 8.5 |
| 15-Nov-07 |  |  | 1.7 | 8.4 |
| 16-Nov-07 |  |  | 1.7 | 8.4 |
| 17-Nov-07 |  |  | 1.7 | 8.4 |
| 18-Nov-07 |  |  | 1.6 | 8.3 |
| 19-Nov-07 |  |  | 1.7 | 8.4 |
| 20-Nov-07 |  |  | 1.7 | 8.4 |
| 21-Nov-07 |  | 8.3 | 1.6 | 8.3 |
| 22-Nov-07 |  |  | 1.6 | 8.3 |
| 23-Nov-07 |  |  | 1.6 | 8.3 |
| 24-Nov-07 |  |  | 1.6 | 8.3 |
| 25-Nov-07 |  |  | 1.5 | 8.2 |
| 26-Nov-07 |  |  | 1.5 | 8.2 |
| 27-Nov-07 |  |  | 1.4 | 8.1 |
| 28-Nov-07 |  |  | 1.4 | 8.1 |
| 29-Nov-07 |  |  | 1.5 | 8.2 |
| 30-Nov-07 |  |  | 1.5 | 8.2 |
| 1-Dec-07 |  |  | 1.5 | 8.2 |
| 2-Dec-07 |  |  | 1.4 | 8.1 |
| 3-Dec-07 |  |  | 1.2 | 7.9 |
| Note: Italiciz | es indicate likley error | trument malfunction. |  | (contin |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 4-Dec-07 |  |  | 1.0 | 7.7 |
| 5-Dec-07 |  |  | 1.1 | 7.8 |
| 6-Dec-07 |  |  | 1.2 | 7.9 |
| 7-Dec-07 |  |  | 1.1 | 7.8 |
| 8-Dec-07 |  |  | 1.1 | 7.6 |
| 9-Dec-07 |  |  | 1.2 | 7.4 |
| 10-Dec-07 |  |  | 1.1 | 7.2 |
| 11-Dec-07 |  |  | 1.3 | 7.0 |
| 12-Dec-07 |  |  | 1.5 | 6.8 |
| 13-Dec-07 |  |  | 1.7 | 6.6 |
| 14-Dec-07 |  |  | 1.7 | 6.4 |
| 15-Dec-07 |  |  | 1.8 | 6.2 |
| 16-Dec-07 |  |  | 1.6 | 6.0 |
| 17-Dec-07 |  |  | 1.1 | 6.0 |
| 18-Dec-07 |  | 6.0 | 1.0 | 5.9 |
| 19-Dec-07 |  |  | 1.0 | 5.9 |
| 20-Dec-07 |  |  | 0.9 | 5.8 |
| 21-Dec-07 |  |  | 0.9 | 5.8 |
| 22-Dec-07 |  |  | 0.9 | 5.9 |
| 23-Dec-07 |  |  | 1.1 | 6.0 |
| 24-Dec-07 |  |  | 1.2 | 6.1 |
| 25-Dec-07 |  |  | 0.9 | 5.8 |
| 26-Dec-07 |  |  | 1.0 | 5.9 |
| 27-Dec-07 |  |  | 1.0 | 5.9 |
| 28-Dec-07 |  |  | 1.0 | 6.0 |
| 29-Dec-07 |  |  | 1.3 | 6.2 |
| 30-Dec-07 |  |  | 1.3 | 6.2 |
| 31-Dec-07 |  |  | 1.4 | 6.3 |
| 1-Jan-08 |  |  | 0.9 | 5.8 |
| 2-Jan-08 |  |  | 0.9 | 5.9 |
| 3-Jan-08 |  |  | 1.0 | 5.9 |
| 4-Jan-08 |  |  | 3.4 | 5.7 |
| 5-Jan-08 |  |  | 5.7 |  |
| 6-Jan-08 |  |  | 5.8 |  |
| 7-Jan-08 |  |  | 5.8 |  |
| 8-Jan-08 |  |  | 5.8 |  |
| 9-Jan-08 |  |  | 5.8 |  |
| 10-Jan-08 |  |  | 5.8 |  |
| 11-Jan-08 |  |  | 5.7 |  |
| 12-Jan-08 |  |  | 5.7 |  |
| 13-Jan-08 |  |  | 5.7 |  |
| 14-Jan-08 |  |  | 5.6 |  |
| 15-Jan-08 |  |  | 5.6 |  |
| 16-Jan-08 |  |  | 5.6 |  |
| 17-Jan-08 |  | 5.5 | 5.6 |  |
| 18-Jan-08 |  |  | 5.6 |  |
| 19-Jan-08 |  |  | 5.5 |  |
| 20-Jan-08 |  |  | 5.5 |  |
| 21-Jan-08 |  |  | 5.5 |  |
| 22-Jan-08 |  |  | 5.5 |  |
| 23-Jan-08 |  |  | 5.4 |  |
| 24-Jan-08 |  |  | 5.4 |  |
| 25-Jan-08 |  |  | 5.4 |  |
| 26-Jan-08 |  |  | 5.4 |  |
| 27-Jan-08 |  |  | 5.3 |  |
| 28-Jan-08 |  |  | 5.2 |  |
| 29-Jan-08 |  |  | 5.2 |  |
| 30-Jan-08 |  |  | 5.2 |  |
| 31-Jan-08 |  |  | 5.2 |  |
| 1-Feb-08 |  |  | 5.2 |  |
| 2-Feb-08 |  |  | 5.2 |  |
| 3-Feb-08 |  |  | 5.2 |  |
| 4-Feb-08 |  |  | 5.1 |  |
| 5-Feb-08 |  |  | 5.2 |  |
| 6-Feb-08 |  |  | 5.1 |  |
| 7-Feb-08 |  |  | 5.1 |  |
| 8-Feb-08 |  |  | 5.1 |  |
| 9-Feb-08 |  |  | 5.0 |  |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 10-Feb-08 |  |  | 5.0 |  |
| 11-Feb-08 |  |  | 5.0 |  |
| 12-Feb-08 |  |  | 5.1 |  |
| 13-Feb-08 |  |  | 5.0 |  |
| 14-Feb-08 |  |  | 5.0 |  |
| 15-Feb-08 |  |  | 5.0 |  |
| 16-Feb-08 |  |  | 5.0 |  |
| 17-Feb-08 |  |  | 5.0 |  |
| 18-Feb-08 |  | 5.0 | 5.0 |  |
| 19-Feb-08 |  |  | 4.9 |  |
| 20-Feb-08 |  |  | 4.9 |  |
| 21-Feb-08 |  |  | 4.9 |  |
| 22-Feb-08 |  |  | 4.9 |  |
| 23-Feb-08 |  |  | 4.9 |  |
| 24-Feb-08 |  |  | 4.9 |  |
| 25-Feb-08 |  |  | 4.9 |  |
| 26-Feb-08 |  |  | 4.9 |  |
| 27-Feb-08 |  |  | 4.9 |  |
| 28-Feb-08 |  |  | 4.8 |  |
| 29-Feb-08 |  |  | 4.9 |  |
| 1-Mar-08 |  |  | 5.1 |  |
| 2-Mar-08 |  |  | 5.5 |  |
| 3-Mar-08 |  |  | 5.6 |  |
| 4-Mar-08 |  |  | 5.5 |  |
| 5-Mar-08 |  |  | 5.5 |  |
| 6-Mar-08 |  |  | 5.5 |  |
| 7-Mar-08 |  |  | 5.5 |  |
| 8-Mar-08 |  |  | 5.5 |  |
| 9-Mar-08 |  |  | 5.5 |  |
| 10-Mar-08 |  |  | 5.5 |  |
| 11-Mar-08 |  |  | 5.5 |  |
| 12-Mar-08 |  |  | 5.5 |  |
| 13-Mar-08 |  |  | 5.5 |  |
| 14-Mar-08 |  |  | 5.5 |  |
| 15-Mar-08 |  |  | 5.5 |  |
| 16-Mar-08 |  |  | 5.5 |  |
| 17-Mar-08 |  | 4.5 | 5.0 |  |
| 18-Mar-08 |  |  | 4.7 |  |
| 19-Mar-08 |  |  | 4.7 |  |
| 20-Mar-08 |  |  | 4.7 |  |
| 21-Mar-08 |  |  | 4.7 |  |
| 22-Mar-08 |  |  | 4.7 |  |
| 23-Mar-08 |  |  | 4.7 |  |
| 24-Mar-08 |  |  | 4.6 |  |
| 25-Mar-08 |  |  | 4.6 |  |
| 26-Mar-08 |  |  | 4.6 |  |
| 27-Mar-08 |  |  | 4.6 |  |
| 28-Mar-08 |  |  | 4.6 |  |
| 29-Mar-08 |  |  | 4.6 |  |
| 30-Mar-08 |  |  | 4.6 |  |
| 31-Mar-08 |  |  | 4.6 |  |
| 1-Apr-08 |  |  | 4.6 |  |
| 2-Apr-08 |  |  | 4.6 |  |
| 3-Apr-08 |  |  | 4.6 |  |
| 4-Apr-08 |  |  | 4.6 |  |
| 5-Apr-08 |  |  | 4.6 |  |
| 6-Apr-08 |  |  | 4.6 |  |
| 7-Apr-08 |  |  | 4.5 |  |
| 8-Apr-08 |  |  | 4.5 |  |
| 9-Apr-08 |  |  | 4.5 |  |
| 10-Apr-08 |  |  | 4.5 |  |
| 11-Apr-08 |  |  | 4.5 |  |
| 12-Apr-08 |  |  | 4.5 |  |
| 13-Apr-08 |  |  | 4.5 |  |
| 14-Apr-08 |  |  | 4.5 |  |
| 15-Apr-08 |  |  | 4.5 |  |
| 16-Apr-08 |  |  | 4.5 |  |
| 17-Apr-08 |  |  | 4.4 |  |
| 18-Apr-08 |  |  | 4.4 |  |
| Note: Italiciz | es indicate likley error | trument malfunction. |  | (contin |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 19-Apr-08 |  |  | 4.4 |  |
| 20-Apr-08 |  |  | 4.4 |  |
| 21-Apr-08 |  | 4.1 | 4.4 |  |
| 22-Apr-08 |  |  | 4.4 |  |
| 23-Apr-08 |  |  | 4.4 |  |
| 24-Apr-08 |  |  | 4.3 |  |
| 25-Apr-08 |  |  | 4.3 |  |
| 26-Apr-08 |  |  | 4.3 |  |
| 27-Apr-08 |  |  | 4.3 |  |
| 28-Apr-08 |  |  | 4.3 |  |
| 29-Apr-08 |  |  | 4.3 |  |
| 30-Apr-08 |  |  | 4.3 |  |
| 1-May-08 |  |  | 4.3 |  |
| 2-May-08 |  |  | 4.3 |  |
| 3-May-08 |  |  | 4.3 |  |
| 4-May-08 |  |  | 4.3 |  |
| 5-May-08 |  |  | 4.3 |  |
| 6-May-08 |  |  | 4.3 |  |
| 7-May-08 |  |  | 4.2 |  |
| 8-May-08 |  |  | 4.3 |  |
| 9-May-08 |  |  | 4.3 |  |
| 10-May-08 |  |  | 4.3 |  |
| 11-May-08 |  |  | 4.3 |  |
| 12-May-08 |  |  | 4.3 |  |
| 13-May-08 |  |  | 4.3 |  |
| 14-May-08 |  |  | 4.3 |  |
| 15-May-08 |  |  | 5.0 |  |
| 16-May-08 |  |  | 5.5 |  |
| 17-May-08 |  |  | 5.4 |  |
| 18-May-08 |  |  | 5.3 |  |
| 19-May-08 |  |  | 4.8 |  |
| 20-May-08 |  |  | 4.8 |  |
| 21-May-08 |  | 4.5 | 4.7 |  |
| 22-May-08 |  |  | 4.7 |  |
| 23-May-08 |  |  | 4.8 |  |
| 24-May-08 |  |  | 4.7 |  |
| 25-May-08 |  |  | 4.8 |  |
| 26-May-08 |  |  | 4.8 |  |
| 27-May-08 |  |  | 4.8 |  |
| 28-May-08 |  |  | 4.9 |  |
| 29-May-08 |  |  | 5.0 |  |
| 30-May-08 |  |  | 5.1 |  |
| 31-May-08 |  |  | 5.2 |  |
| 1-Jun-08 |  |  | 5.3 |  |
| 2-Jun-08 |  |  | 5.4 |  |
| 3-Jun-08 |  |  | 5.5 |  |
| 4-Jun-08 |  |  | 5.6 |  |
| 5-Jun-08 |  |  | 5.7 |  |
| 6-Jun-08 |  |  | 5.7 |  |
| 7-Jun-08 |  |  | 5.8 |  |
| 8-Jun-08 |  |  | 5.9 |  |
| 9-Jun-08 |  |  | 6.0 |  |
| 10-Jun-08 |  |  | 6.2 |  |
| 11-Jun-08 |  |  | 6.3 |  |
| 12-Jun-08 |  |  | 6.4 |  |
| 13-Jun-08 |  |  | 6.5 |  |
| 14-Jun-08 |  |  | 6.6 |  |
| 15-Jun-08 |  |  | 6.7 |  |
| 16-Jun-08 |  | 7.1 | 6.8 |  |
| 17-Jun-08 |  |  | 6.9 |  |
| 18-Jun-08 |  |  | 7.0 |  |
| 19-Jun-08 |  |  | 7.1 |  |
| 20-Jun-08 |  |  | 7.2 |  |
| 21-Jun-08 |  |  | 7.3 |  |
| 22-Jun-08 |  |  | 7.5 |  |
| 23-Jun-08 |  |  | 7.6 |  |
| 24-Jun-08 |  |  | 7.6 |  |
| 25-Jun-08 |  |  | 7.7 |  |
| 26-Jun-08 |  |  | 7.7 |  |
| Note: Italiciz | es indicate likley error | trument malfunction. |  | (contin |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 27-Jun-08 |  |  | 7.8 |  |
| 28-Jun-08 |  |  | 7.8 |  |
| 29-Jun-08 |  |  | 7.9 |  |
| 30-Jun-08 |  |  | 7.9 |  |
| 1-Jul-08 |  |  | 8.0 |  |
| 2-Jul-08 |  |  | 8.1 |  |
| 3-Jul-08 |  |  | 8.1 |  |
| 4-Jul-08 |  |  | 8.1 |  |
| 5-Jul-08 |  |  | 8.2 |  |
| 6-Jul-08 |  |  | 8.4 |  |
| 7-Jul-08 |  |  | 8.5 |  |
| 8-Jul-08 |  |  | 8.4 |  |
| 9-Jul-08 |  |  | 8.5 |  |
| 10-Jul-08 |  |  | 8.5 |  |
| 11-Jul-08 |  |  | 8.5 |  |
| 12-Jul-08 |  |  | 8.6 |  |
| 13-Jul-08 |  | 9.7 | 8.8 |  |
| 14-Jul-08 |  |  | 8.8 |  |
| 15-Jul-08 |  |  | 8.9 |  |
| 16-Jul-08 |  |  | 9.0 |  |
| 17-Jul-08 |  |  | 9.0 |  |
| 18-Jul-08 |  |  | 9.1 |  |
| 19-Jul-08 |  |  | 9.3 |  |
| 20-Jul-08 |  |  | 9.5 |  |
| 21-Jul-08 |  |  | 9.6 |  |
| 22-Jul-08 |  |  | 9.6 |  |
| 23-Jul-08 |  |  | 10.0 |  |
| 24-Jul-08 |  |  | 10.5 |  |
| 25-Jul-08 |  |  | 10.7 |  |
| 26-Jul-08 |  |  | 10.7 |  |
| 27-Jul-08 |  |  | 10.7 |  |
| 28-Jul-08 |  |  | 10.8 |  |
| 29-Jul-08 |  |  | 10.8 |  |
| 30-Jul-08 |  |  | 10.8 |  |
| 31-Jul-08 |  |  | 10.9 |  |
| 1-Aug-08 |  |  | 10.9 |  |
| 2-Aug-08 |  |  | 10.9 |  |
| 3-Aug-08 |  |  | 11.0 |  |
| 4-Aug-08 |  |  | 11.0 |  |
| 5-Aug-08 |  |  | 11.0 |  |
| 6-Aug-08 |  |  | 11.1 |  |
| 7-Aug-08 |  |  | 11.2 |  |
| 8-Aug-08 |  |  | 11.2 |  |
| 9-Aug-08 |  |  | 11.2 |  |
| 10-Aug-08 |  |  | 11.3 |  |
| 11-Aug-08 |  |  | 11.2 |  |
| 12-Aug-08 |  |  | 11.3 |  |
| 13-Aug-08 |  |  | 11.3 |  |
| 14-Aug-08 |  |  | 11.3 |  |
| 15-Aug-08 |  |  | 11.4 |  |
| 16-Aug-08 |  |  | 11.5 |  |
| 17-Aug-08 |  | 11.9 | 11.5 |  |
| 18-Aug-08 |  |  | 11.6 |  |
| 19-Aug-08 |  |  | 11.6 |  |
| 20-Aug-08 |  |  | 11.8 |  |
| 21-Aug-08 |  |  | 11.7 |  |
| 22-Aug-08 |  |  | 11.7 |  |
| 23-Aug-08 |  |  | 11.9 |  |
| 24-Aug-08 |  |  | 12.0 |  |
| 25-Aug-08 |  |  | 12.0 |  |
| 26-Aug-08 |  |  | 12.1 |  |
| 27-Aug-08 |  |  | 12.2 |  |
| 28-Aug-08 |  |  | 12.3 |  |
| 29-Aug-08 |  |  | 12.4 |  |
| 30-Aug-08 |  |  | 12.4 |  |
| 31-Aug-08 |  |  | 12.4 |  |
| 1-Sep-08 |  |  | 12.5 |  |
| 2-Sep-08 |  |  | 12.5 |  |
| 3-Sep-08 |  |  | 12.5 |  |

Summary of Daily Flow: A1 (continued)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 4-Sep-08 |  |  | 12.4 |  |
| 5-Sep-08 |  |  | 12.4 |  |
| 6-Sep-08 |  |  | 12.3 |  |
| 7-Sep-08 |  |  | 12.2 |  |
| 8-Sep-08 |  |  | 12.3 |  |
| 9-Sep-08 |  |  | 12.2 |  |
| 10-Sep-08 |  |  | 12.2 |  |
| 11-Sep-08 |  |  | 12.3 |  |
| 12-Sep-08 |  |  | 12.2 |  |
| 13-Sep-08 |  |  | 12.2 |  |
| 14-Sep-08 |  |  | 12.2 |  |
| 15-Sep-08 |  | 11.9 | 12.1 |  |
| 16-Sep-08 |  |  | 12.1 |  |
| 17-Sep-08 |  |  | 12.1 |  |
| 18-Sep-08 |  |  | 12.1 |  |
| 19-Sep-08 |  |  | 12.1 |  |
| 20-Sep-08 |  |  | 12.1 |  |
| 21-Sep-08 |  |  | 12.1 |  |
| 22-Sep-08 |  |  | 12.0 |  |
| 23-Sep-08 |  |  | 12.0 |  |
| 24-Sep-08 |  |  | 12.0 |  |
| 25-Sep-08 |  |  | 11.9 |  |
| 26-Sep-08 |  |  | 11.7 |  |
| 27-Sep-08 |  |  | 11.4 |  |
| 28-Sep-08 |  |  | 11.2 |  |
| 29-Sep-08 |  |  | 11.0 |  |
| 30-Sep-08 |  |  | 11.0 |  |
| 1-Oct-08 |  |  | 10.9 |  |
| 2-Oct-08 |  |  | 11.0 |  |
| 3-Oct-08 |  |  | 11.0 |  |
| 4-Oct-08 |  |  | 11.3 |  |
| 5-Oct-08 |  |  | 11.4 |  |
| 6-Oct-08 |  |  | 11.4 |  |
| 7-Oct-08 |  |  | 11.4 |  |
| 8-Oct-08 |  |  | 11.3 |  |
| 9-Oct-08 |  |  | 11.2 |  |
| 10-Oct-08 |  |  | 11.2 |  |
| 11-Oct-08 |  |  | 11.1 |  |
| 12-Oct-08 |  |  | 11.0 |  |
| 13-Oct-08 |  |  | 10.9 |  |
| 14-Oct-08 |  |  | 10.8 |  |
| 15-Oct-08 |  |  | 10.8 |  |
| 16-Oct-08 |  |  | 10.8 |  |
| 17-Oct-08 |  |  | 10.7 |  |
| 18-Oct-08 |  |  | 10.6 |  |
| 19-Oct-08 |  |  | 10.6 |  |
| 20-Oct-08 |  |  | 10.5 |  |
| 21-Oct-08 |  |  | 10.3 |  |
| 22-Oct-08 |  |  | 10.4 |  |
| 23-Oct-08 |  |  | 10.2 |  |
| 24-Oct-08 |  |  | 10.2 |  |
| 25-Oct-08 |  | 9.7 | 10.0 |  |
| 26-Oct-08 |  |  |  |  |
| 27-Oct-08 |  |  |  |  |
| 28-Oct-08 |  |  |  |  |
| 29-Oct-08 |  |  |  |  |
| 30-Oct-08 |  |  |  |  |
| 31-Oct-08 |  |  |  |  |
| 1-Nov-08 |  |  |  |  |
| 2-Nov-08 |  |  |  |  |
| 3-Nov-08 |  |  |  |  |
| 4-Nov-08 |  |  |  |  |
| 5-Nov-08 |  |  |  |  |
| 6-Nov-08 |  |  |  |  |
| 7-Nov-08 |  |  |  |  |
| 8-Nov-08 |  |  |  |  |
| 9-Nov-08 |  |  |  |  |
| 10-Nov-08 |  |  |  |  |
| 11-Nov-08 |  |  |  |  |
| Note: Italiciz | es indicate likley error | rument malfunction. |  | (conti |

Summary of Daily Flow: A1 (completed)

| Date | Manual Flow Measurement (L/s) | Flow Calculated from Manual Stage Reading (L/s) | Flow Calculated from Automated Stage Readings (L/s) | Estimated Flow (L/s) |
| :---: | :---: | :---: | :---: | :---: |
| 12-Nov-08 |  |  |  |  |
| 13-Nov-08 |  |  |  |  |
| 14-Nov-08 |  |  |  |  |
| 15-Nov-08 |  |  |  |  |
| 16-Nov-08 |  |  |  |  |
| 17-Nov-08 |  |  |  |  |
| 18-Nov-08 |  |  |  |  |
| 19-Nov-08 |  |  |  |  |
| 20-Nov-08 |  |  |  |  |
| 21-Nov-08 |  |  |  |  |
| 22-Nov-08 |  |  |  |  |
| 23-Nov-08 |  |  |  |  |
| 24-Nov-08 |  |  |  |  |
| 25-Nov-08 |  |  |  |  |
| 26-Nov-08 |  |  |  |  |
| 27-Nov-08 |  | 8.3 |  |  |
| 28-Nov-08 |  |  |  |  |
| 29-Nov-08 |  |  |  |  |
| 30-Nov-08 |  |  |  |  |
| 1-Dec-08 |  |  |  |  |
| 2-Dec-08 |  |  |  |  |
| 3-Dec-08 |  |  |  |  |
| 4-Dec-08 |  |  |  |  |
| 5-Dec-08 |  |  |  |  |
| 6-Dec-08 |  |  |  |  |
| 7-Dec-08 |  |  |  |  |
| 8-Dec-08 |  |  |  |  |
| 9-Dec-08 |  |  |  |  |
| 10-Dec-08 |  |  |  |  |
| 11-Dec-08 |  |  |  |  |
| 12-Dec-08 |  |  |  |  |
| 13-Dec-08 |  |  |  |  |
| 14-Dec-08 |  |  |  |  |
| 15-Dec-08 |  |  |  |  |
| 16-Dec-08 |  |  |  |  |
| 17-Dec-08 |  |  |  |  |
| 18-Dec-08 |  |  |  |  |
| 19-Dec-08 |  | 6.5 |  |  |
| 20-Dec-08 |  |  |  |  |
| 21-Dec-08 |  |  |  |  |
| 22-Dec-08 |  |  |  |  |
| 23-Dec-08 |  |  |  |  |
| 24-Dec-08 |  |  |  |  |
| 25-Dec-08 |  |  |  |  |
| 26-Dec-08 |  |  |  |  |
| 27-Dec-08 |  |  |  |  |
| 28-Dec-08 |  |  |  |  |
| 29-Dec-08 |  |  |  |  |
| 30-Dec-08 |  |  |  |  |
| 31-Dec-08 |  |  |  |  |

Note: Italicized values indicate likley error due to instrument malfunction.

