# CAMERON LAKE

# INVESTIGATIVE STUDY REPORT

## FEBRUARY 1997

# Cameron Lake Investigative Study

## 1.0 Introduction

Cameron lake is a rather small shallow lake located in North-Western Minnesota within the Red River Valley Ecoregion. Cameron lake has a surface area of 224 acres, a maximum depth of 8.5 feet and a littoral area (which is the light penetration zone) that encompasses the entirety of the lake. The main water quality problem for Cameron lake seems to be the high levels of nutrients that end up in the water column which in turn cause severe algal blooms. These blooms form dense mats during the growing season and upon decay can cause odor, oxygen and in extreme cases potential human and animal health problems. As a result of the problems that exist, the recreational value which can include fishing, swimming and boating for Cameron lake is essentially zero. The water quality of Cameron Lake deteriorated to the point that the public beach, located on the northeast shore, was diked off from the rest of the lake and filled with city water.

The water quality that exists within Cameron lake has prompted area residents, more specifically the people of the city of Erskine to try to do something about it. In January of 1994, the city of Erskine wrote a letter to the Red Lake Watershed District requesting assistance in performing analysis of waters entering Cameron Lake.

The purpose of this report is to examine and compare the external loadings and the output yields of Cameron lake. This comparison will be used to determine whether the problems facing Cameron lake are internal or external.

## 2.0 Project Goal

The problems that exist within Cameron lake today are largely suspected to be caused by human activities which have occurred in the past. The former activity which is thought to have had the greatest influence on the present water quality was the creamery which deposited its' wastes into Cameron lake. With the build up of nutrient rich sediments over the years, phosphorus and nitrogen release from this internal source can be very significant.

The overall goal of this project was to attempt to quantify the amount of pollution that enters and exits Cameron Lake. This was done to assess whether implementation activities should be focused in the watershed or within the lake. From the data gathered by this study, suggestions will be made so as to attempt to improve the water quality of Cameron Lake.

## 3.0 Project Overview

Because of funding and other project commitments, sampling for the Cameron Lake Study did not begin until June 26th 1995. The samples were collected on a storm event related basis or essentially every time it rained enough to produce runoff to the lake. The discharge samples continued to be collected whenever a rain event warranted, until freeze-up. A local observer was used to contact the Watershed whenever any such event occurred. The final set of samples were collected on April 18th, 1996. These were collected to model and quantify a spring run-off event to the lake since this didn't take place in 1995. A summary of the water quality information is presented in table 1 below. (Parameter descriptions and abbreviations are located in Annex A).

## Table 1. CAMERON LAKE WATER QUALITY DATA

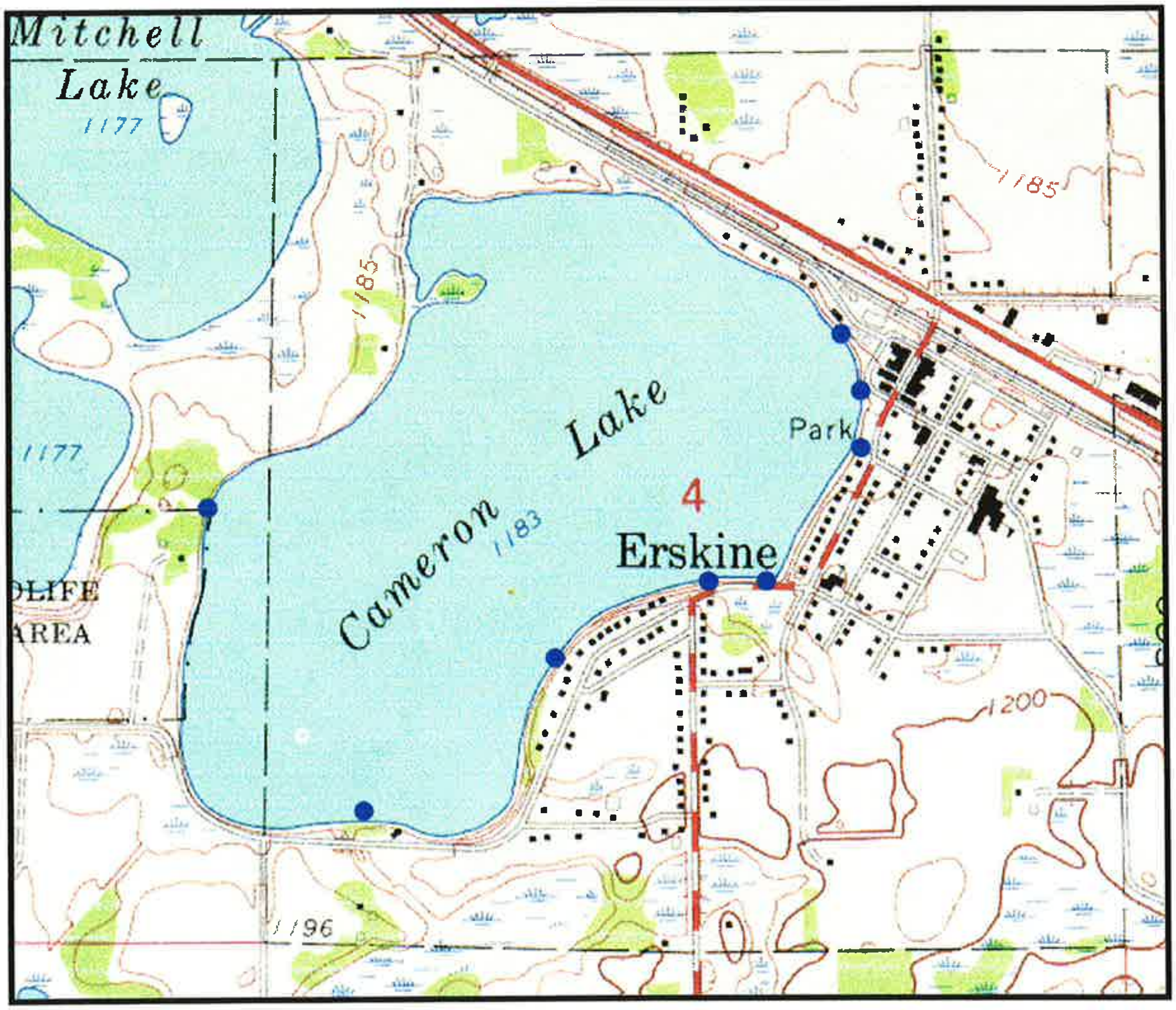
| Site | Date | H2O Temp. °C | Cond. mg/L | pH | D.O. mg/L | Alk. mg/L | Turb. NTU's | C.O.D. mg/L | NO3- + NO2- mg/L | TKN mg/L | OP mg/L | TP mg/L | Fecal MPN | TSS mg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SS1** | 6/26/95 | 24 | 450 | 9.6 | 8.2 | 221 | 16 | 57 | 0.024 | 4.28 | 0.01 | 0.18 | 504 | 9.1 |
| | 7/6/95 | | | | | | | NST | | | | | | |
| | 7/14/95 | 21 | 173 | 6.8 | 10.8 | N.T. | 51 | 59 | 0.27 | 1.08 | 0.01 | 0.14 | N.T. | 21 |
| | 9/6/96 | | | | | | | NST | | | | | | |
| | 9/29/96 | 16.1 | 136 | 8.55 | 10 | N.T. | 14 | 27 | 0.28 | 1.33 | 0.12 | 0.21 | N.T. | 15.6 |
| | 4/18/96 | | | | | | | NST | | | | | | |
| **SS2** | 6/26/95 | 23.2 | 430 | 8.37 | 11 | 140 | 7.4 | 42 | 0.039 | 1.67 | 0 | 0.13 | TNTC | 10.6 |
| | 7/6/95 | 18.4 | 403 | 6.92 | 5.1 | N.T. | 1.5 | 59 | 0.007 | 1.43 | 0.02 | 0.25 | 1000 | 7.7 |
| | 7/14/95 | 20.5 | 417 | 6.95 | 10 | N.T. | 2.9 | 68 | 0.01 | 1.6 | 0.01 | 0.15 | N.T. | 16.7 |
| | 9/6/96 | 21.1 | 359 | 9.5 | 6.2 | 159 | 11 | 57 | 0.094 | 1.34 | 0 | 0.25 | 110 | 24.3 |
| | 9/29/96 | 14.8 | 148 | 7 | 7 | N.T. | 9.3 | 23 | 0.46 | 0.69 | 0.21 | 0.34 | N.T. | 7.3 |
| | 4/18/96 | 2.5 | 153 | 8.05 | 9.2 | 80 | 1.6 | 3 | 0.2 | BDL | 0.05 | 0.09 | 0 | 14.6 |
| **SS3** | 6/26/95 | 23.8 | 450 | 9.62 | 10.2 | 238 | 13 | 40 | 0.001 | 2.92 | 0 | 0.03 | 95 | 12.2 |
| | 7/6/95 | 18.3 | 533 | 8.64 | 8.4 | N.T. | 4.5 | 45 | 0.077 | BDL | 0 | 0.08 | 283 | 7.6 |
| | 7/14/95 | 21 | 354 | 9.15 | 10.6 | N.T. | 3.6 | 40 | 0.13 | 1.96 | 0.02 | 0.15 | N.T. | 10.5 |
| | 9/6/96 | 21.1 | 354 | 9.51 | 4.9 | 157 | 8.9 | 40 | 0.139 | 0.58 | 0 | 0.11 | 910 | 15.7 |
| | 9/29/96 | 14.8 | 143 | 7.33 | 8 | N.T. | 3.9 | 17 | 0.14 | 1.23 | 0.2 | 0.26 | N.T. | 1 |
| | 4/18/96 | 10.3 | 364 | 7.9 | 9.5 | 200 | 8.5 | 24 | 0.37 | BDL | 0.18 | 0.38 | N.T. | 9.6 |
| **SS4** | 6/26/95 | 24.7 | 444 | 9.76 | 13.1 | 246 | 33 | 85 | 0.002 | 1.65 | 0.01 | 0.12 | 39 | 54 |
| | 7/6/95 | 18.4 | 596 | 7.6 | 8 | N.T. | 1.5 | 105 | 0.14 | 0.93 | 0.01 | 0.14 | 368 | 3 |
| | 7/14/95 | 22 | 627 | 7.29 | 10.9 | N.T. | 1.8 | 130 | 0.12 | 2.8 | 0.01 | 0.14 | N.T. | 76.7 |
| | 9/6/96 | 21 | 402 | 7.95 | 7.2 | 149 | 20 | 36 | 0.143 | 1.49 | 0.01 | 0.18 | 900 | 21.7 |
| | 9/29/96 | 14.2 | 190 | 7.43 | 7.2 | N.T. | 26 | 33 | 0.13 | 0.5 | 0.06 | 0.19 | N.T. | 15.9 |
| | 4/18/96 | 4.6 | 423 | 7.75 | 9.2 | 260 | 2 | 42 | 0.084 | BDL | 0.07 | 0.11 | 0 | 6.1 |
| **SS5** | 6/26/95 | | | | | | | NST | | | | | | |
| | 7/6/95 | 18.4 | 503 | 7.68 | 8.2 | N.T. | 1.7 | 34 | 0.039 | 1.33 | 0.01 | 0.1 | 321 | 2.7 |
| | 7/14/95 | 21 | 423 | 8.3 | 11.2 | N.T. | 3.2 | 49 | 0.022 | 1.59 | 0.01 | 0.12 | N.T. | 36.9 |
| | 9/6/96 | | | | | | | NST | | | | | | |
| | 9/29/96 | 15 | 125 | 7.53 | 8.8 | N.T. | 9.6 | 33 | 0.084 | 0.45 | 0.14 | 0.29 | N.T. | 24.7 |
| | 4/18/96 | 11.9 | 298 | 7.95 | 11.2 | 16 | 1.8 | 9 | 0.29 | BDL | 0.15 | 0.2 | 21 | 6.1 |
| **Inlet #1** | 6/26/95 | 21 | 600 | 7.77 | 2.5 | 337 | 17 | 41 | 0.001 | 1.57 | 0.01 | 0.09 | 704 | 10.1 |
| | 7/6/95 | 18.5 | 535 | 7.42 | 7.5 | N.T. | 5.8 | 60 | 0.007 | 1.66 | 0 | 0.07 | 247 | 3.9 |
| | 7/14/95 | 20 | 544 | 7.16 | 10.4 | N.T. | 7.8 | 58 | 0.003 | 1.92 | 0 | 0.14 | N.T. | 20 |
| | 9/6/96 | 18.2 | 636 | 7.47 | 2.3 | 257 | 19 | 39 | 0.001 | 1.41 | 0.01 | 0.17 | 820 | 15.4 |
| | 9/29/96 | 13.5 | 472 | 7.45 | 6 | N.T. | 6.7 | 40 | 0.18 | 0.71 | 0.05 | 0.1 | N.T. | 4.5 |
| | 4/18/96 | 4.5 | 380 | 7.53 | 7 | 220 | 2.4 | 21 | 0.16 | 0.54 | 0.04 | 0.05 | 0 | 6.2 |
| **Inlet #2** | 6/26/95 | | | | | | | NST | | | | | | |
| | 7/6/95 | 18.5 | 658 | 7.02 | 7.4 | N.T. | 1.5 | 57 | 0.001 | 0.02 | 0.01 | 0.15 | TNTC | 5.6 |
| | 7/14/95 | 20 | 526 | 7.14 | 10.4 | N.T. | 2.3 | 63 | BDL | 2.06 | 0.01 | 0.14 | N.T. | 15 |
| | 9/6/96 | | | | | | | NST | | | | | | |
| | 9/29/96 | 13.5 | 511 | 7.29 | 2.8 | N.T. | 4.6 | 37 | 0.36 | 0.92 | 0.58 | 0.67 | N.T. | 3 |
| | 4/18/96 | 3.7 | 303 | 7.72 | 7 | 160 | 3.5 | 15 | 0.14 | BDL | 0.16 | 0.29 | 0 | 10.1 |

| Site | Date | H2O Temp. °C | Cond. mg/L | pH | D.O. mg/L | Alk. mg/L | Turb. NTU's | C.O.D. mg/L | NO3- + NO2- mg/L | TKN mg/L | OP mg/L | TP mg/L | Fecal MPN | TSS mg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Outlet** | 6/26/95 | 24.7 | 490 | 9.45 | 8.2 | 244 | 12 | 44 | 0.006 | 2.21 | 0.01 | 0.07 | 49 | 20.7 |
|  | 7/6/95 | 18.7 | 470 | 8.67 | 8.1 | N.T. | 4.5 | 30 | BDL | 0.6 | 0 | 0.06 | 25 | 12.4 |
|  | 7/14/95 | 20 | 434 | 8.65 | 11.4 | N.T. | 5.3 | 42 | BDL | 2.22 | 0 | 0.07 | N.T. | 18 |
|  | 9/6/96 | 21.4 | 412 | 9.56 | 5.2 | 189 | 6 | 53 | 0.001 | 2.18 | 0 | 0.06 | 500 | 15.3 |
|  | 9/29/96 | 15.2 | 410 | 9.5 | 9.6 | N.T. | 4.1 | 56 | 0.009 | 1.63 | BDL | 0.04 | N.T. | 1.5 |
|  | 4/18/96 | 5.7 | 276 | 8.8 | 6 | 200 | 0.9 | 11 | 0.14 | 2.27 | BDL | 0.04 | 0 | 6.3 |

## 3.1 Site Selection

Site selection for this study was based on the goal stated above, which was to quantify the pollutant loads that were entering and exiting the lake. There was a total of five storm sewers and two natural inlets that discharged water to the lake. These were sampled to quantify the external loads entering the lake. There is only one outlet of the lake which was sampled to quantify the pollutant loads exiting the lake. Figure 1 shows the locations that were sampled. ● **= Sampling Locations**

**Figure 1. CAMERON LAKE SAMPLING LOCATIONS**



**Scale - 4.5 inches equals 1 mile.**

## 3.2 Flow Monitoring

A continuous flow recorder was installed on the main inlet channel on July 13th, 1995. The continuous monitoring information was also supplemented by manually stream gauging as many times as possible to obtain an accurate hydrograph. This information was then used to calculate the flows for the other sampling locations. A more detailed description of the flow quantification is included in section 5.2.

## 3.3 Water Quality Monitoring

The first set of samples were collected on June 26th, 1995 after a rain event of over one inch. Four more sets of samples were taken in 1995 concluding with a set taken on September 29th. An April 18th 1996 set was taken to represent a spring runoff event. Direct runoff to the lake was considered to be negligible. The following figure shows all of the sampling events and the corresponding rain events.

The RLWD used its' local observer within the city limits of Erskine to relay rainfall totals so we knew when a sampling trip was warranted. As you can see by figure 2, sampling after every rain event did not occur. Other project priorities or no confirmation about the event from our contact person account for this.

**Figure 2. Precipitation and Sampling Date Comparison**

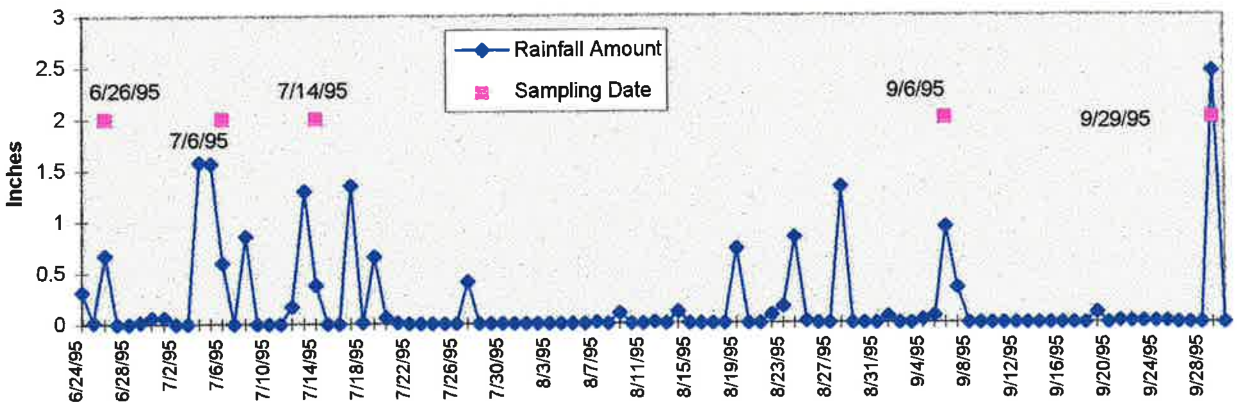


**Fig. 2. Comparison of rainfall amounts and sampling dates for the Cameron Lake monitoring period.**

The following chemical, biological and physical analyses were performed on the 5 storm sewer inlets, the two natural inlets, the lake and the outlet. These parameters were analyzed at the University of Minnesota Crookston's certified environmental testing laboratory. For explanations of the parameters, see annex A.

- Total Phosphorus
- Orthophosphorus
- Nitrate + Nitrite
- Total Kjeldahl Nitrogen
- Chemical Oxygen Demand
- Turbidity
- pH
- Specific Conductance
- Total Suspended Solids
- Fecal Coliforms
- Dissolved Oxygen
- Temperature

Field measurements performed at the time of the sample collection as well as other observations include:

- Name of Collector
- Date
- Time
- Unusual characteristics observed at the site at the time of sample collection
- Air Temperature
- Water Temperature
- Field pH
- Field Specific Conductance
- Dissolved Oxygen
- Estimated Stream Flow

Samples were collected using a Kemmerer bottle where appropriate, or they were dipped using a beaker that was rinsed a minimum of three times with distilled water between sites and at least once with the water that was collected. The samples are then labeled, placed in a sterile water bag, transferred to a cooler and put on ice (kept at $4^{\circ}$C, 39.2°F) for transport to the laboratory. The samples were analyzed or prepared for analysis within the maximum regulated storage time allowed for each specific parameter. Quality Control and Assessment guidelines for the laboratory were strictly followed during the sample analysis.

## 3.4 Modeling Methods

The computer program **FLUX** was used to calculate tributary loads. **FLUX** is an interactive menu driven program, which consists of 5 unique methods for load estimation (Walker, 1986). The program uses daily stream volume and chemistry data, and is supported by the Army Corps of Engineers, Vicksburg, Mississippi.

The goal of the load estimation procedure is to minimize the error associated with the load estimate. This is accomplished by first estimating the load for each of the techniques and noting the variance associated with each estimate. The method with the lowest variance was chosen and estimates for each inlet and the outlet were determined. This method tended to be "Method 4, Regression First Order" (see page II-7, Walker 1986). This method assumes loading is proportional to some power of flow, the power determined by a regression relationship between concentration and flow.

The computer water quality program **BATHTUB** (Version 4.4) was used for predicting present and future in-lake concentrations, given actual and theoretical total phosphorus loads. The model predictions that are illustrated in the Trophic Status figures represent average concentrations during the ice-free season.

## 4.0 Limnological Concepts

Limnology is the study of lakes, and is the central idea of lake management. A basic understanding of limnological concepts is needed to understand why certain lake management measures are effective in improving water quality, and why other measures fail. This portion of the report presents some of the important limnological concepts and ideas, for the lay person.

### 4.1 The Limiting Nutrient Concept

The idea of nutrient limitation is basic to dry-land and aquatic biology. All plants using light as an energy source need nutrients and a source of carbon (often carbon dioxide) to grow. When a nutrient is present in quantities small enough to prevent or reduce plant growth it is considered the limiting nutrient. By limiting the amount of nutrients entering Cameron Lake, the quantity of plant biomass like algae, can in theory be reduced. The analogy is the use of  fertilizers by farmers to increase crop yields. Phosphorus and nitrogen are the two substances that generally limit plant growth in lakes, although light level may also limit plant growth. Therefore it is important to know the amount of nutrients per volume of water for various forms of phosphorus and nitrogen. The ratio of nitrogen to phosphorus is also important. Generally, lakes with inorganic nitrogen to inorganic phosphorus ratios exceeding approximately 7-10 are considered phosphorus limited (Walker, 1986). Lakes with a ratio less than 7 are considered nitrogen limited. The ratio for Cameron lake based on inflow and outflow concentrations was about 10 which would make it phosphorus limited. In reality, it is difficult to control the amount of nitrogen entering a lake. Nitrogen gas is a major component in the atmosphere and many blue-green algae can directly use or "fix" atmospheric nitrogen. For this reason, most lake management strategies concentrate on controlling the amount of phosphorus entering a lake.

### 4.2 Lake Morphometry

Lake morphometry describes the physical characteristics of a lake basin; the maximum depth, the average depth, the volume, the surface area and the length of shoreline. Physical characteristics are important because lake morphometry influences water quality and physical characteristics are used for input into the water quality model. Lakes that flush rapidly, or have large amounts of water entering compared to lake volume, generally have lower algae concentrations. Figure 3 shows a "bathymetric map" for Cameron Lake, while Table 2 shows the lake's morphometry data.

## Figure 3. Cameron Lake Bathymetric Map

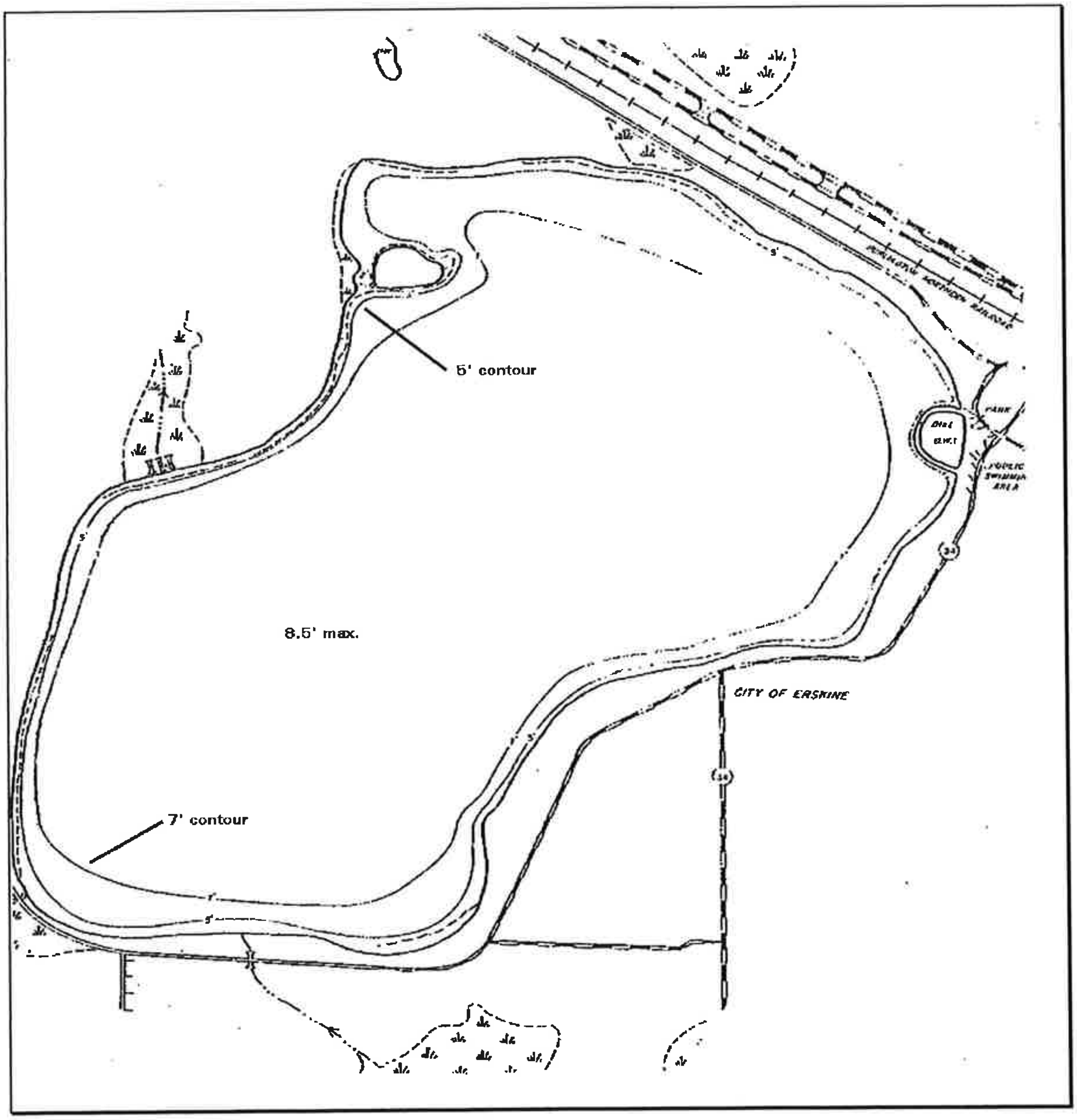


**Fig. 3. The contour lines indicate the associated depths of Cameron Lake. Maximum depth is 8.5 feet.**

**Table 2. Cameron Lake Morphometric Data**

| *Characteristic* | *Value* |
|---|---|
| Lake Length (miles) | .92 |
| Maximun Width (miles) | .62 |
| Shoreline Length (miles) | 2.74 |
| Maximum Depth (feet) | 8.5 |
| Mean Depth (feet) | 7.5 |
| Surface Area (acres) | 224 |
| Drainage Area (acres) | 1562 |
| Volume (acre feet) | 891.05 |
| Hydraulic Residence Time (years) | 2.09 |

## 4.3 Trophic Status

The trophic status of a lake is an index or measure of the potential for plant growth, amount of oxygen and a general estimate of nutrient availability (and hence plant growth) within a lake. It is an index of water quality. Lakes can be generally classified as, in order of increasing productivity (and presumably declining water quality):

- Oligotrophic - indicated by low plant productivity and high transparency, cold water fisheries
- Mesotrophic - appropriate for water based recreation but not cold water fisheries
- Eutrophic - indicated by high photosynthetic activity and low transparency, warm water fisheries
- Hypereutrophic - indicated by frequent algal blooms, extensive weed growth and fish kills due to low oxygen levels

Using historical data combined with the data collected from this study, Cameron lake can be classified as hypereutrophic. Figure 4 shows where Cameron Lake falls within Carlson's Trophic state index. This means Cameron Lake has the tendency for growing "large" amounts of plants and the water quality probably will not support a viable game fish population.

**Figure 4. Carlson's Trophic State Index for Lake Cameron**

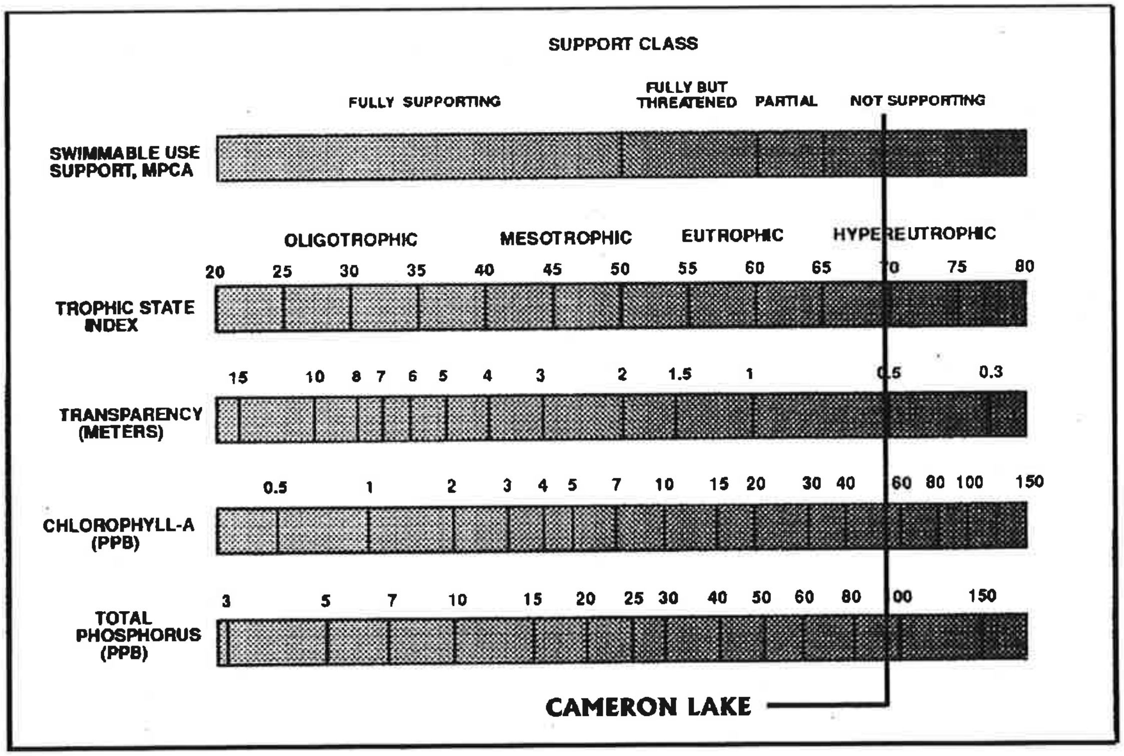
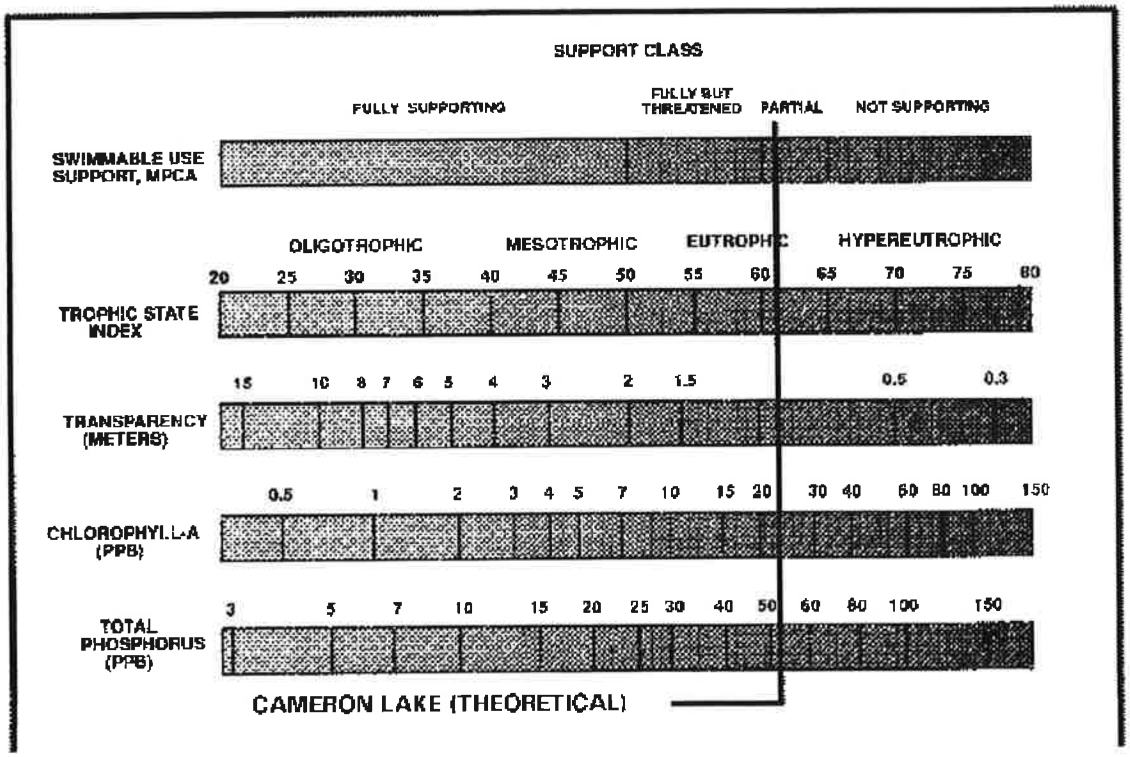


**Fig. 4. Illustration of the trophic state of Cameron Lake under the current water quality conditions. Cameron Lake is considered hypereutrophic and therefore, not supporting of swimmable use.**

The model that was used to estimate Cameron Lake's current condition was also run to obtain a theoretical trophic state. Figure 5 shows the lake's trophic state based on "cleaner" water entering the lake from the 5 storm sewers and the 2 inlets.

**Figure 5. Theoretical Trophic State for Cameron Lake**



As you can see, if the external loads to Cameron Lake can be improved, theoretically, the lake's response will move towards a partially supporting trophic status. The information used as input from the theoretical model was taken from the Minnesota Pollution Control Agency's Red River Valley ecoregion data for minimally impacted streams

## 4.4 The Nutrient Budget

Like a hydrologic budget which is an accounting of water, a nutrient is an accounting of the amount of weight, or mass of nutrients entering and leaving Cameron Lake. Often the term load is used. A load is the mass of a substance passing a specific location during some period of time. Loads are expressed in units of mass per time ( e.g. , lbs/year). Loads are estimated by considering the concentration of a substance in water and the amount of water; a load is the concentration times the flow. A high load may result from a high flow, but a low concentration. Or, a high load may result from a high concentration and a low flow. Concentration and flow are needed to calculate loads.

The concept of nutrient loading to a lake is key to understanding how a lake works. Generally, the lower the loading of nutrients like phosphorus and nitrogen, the less plant growth. The strategy of most lake management plans is to reduce nutrient loading. Management strategies for lakes generally concentrate on reducing the phosphorus load. This is because phosphorus is generally the limiting nutrient in lakes and is easier to control than nitrogen. As explained earlier in Section 4.1, the large atmospheric source of nitrogen and the ability of some algae to fix atmospheric nitrogen, makes control more difficult.

## 4.5 Water Quality Modeling

A water quality model is simply a mathematical representation of the processes occurring within a lake; a set of equations "packaged" together. Models may be simplistic or complex. Simple models generally treat a lake as a "box" and balance the nutrient load entering and leaving a lake. Algae "grow" in the box model, based on observations from other similar lakes or scientific theories. Complex models use equations to represent specific processes within a lake; like the growth and settling of algae. Often these equations are based on measurements made within the laboratory; biological, physical, chemical parametric determinations.

The power of water quality modeling is that it allows the prediction of water quality within Cameron Lake, under assumed conditions; ie., assumed nutrient loading if the incoming waters are improved. The theoretical trophic status, fig. 5, illustrates this point. Another example of this is, you would be able to evaluate the amount of phosphorus reduction needed from all or specific external inlets to attain a certain in-lake phosphorus concentration.

The water quality model **BATHTUB** (Version 4.4) was used to evaluate the information on trophic status for Cameron Lake. **BATHTUB** is a model distributed and supported by the U.S. Army Corps of Engineers, Waterways Experiment Station. The model was developed specifically for reservoir application, but is generally appropriate for use on Cameron Lake.

# 5.0 Monitoring Results

## 5.1 Climate

An understanding of climatic conditions is important in the assessment of water quality. Generally more rain means more runoff. The lake's response (such as algae growth) to different amounts of runoff often can differ. The nearest climatological monitoring location is the Fosston station. Figure 6 shows how our sampling year compared with the long term average for precipitation. The July total was the only amount that deviated much from the long term averages. This would mean that in our sampling year more runoff and thus more nutrient loading may have occurred in July than had in the past.

**Figure 6. Precipitation Comparison**

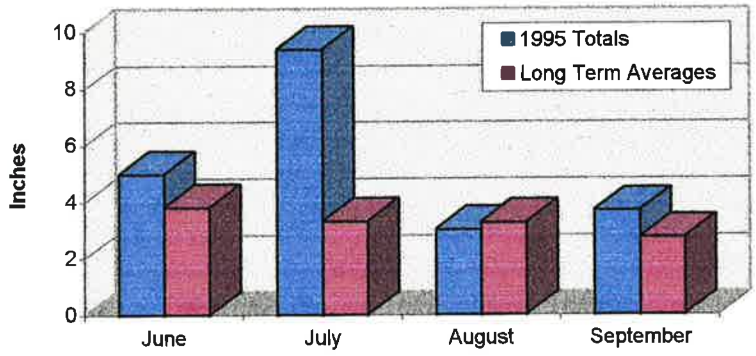


**Fig. 6. Rainfall amounts for the monitoring period were very similar to the long term averages with the exception being July of 1995. Precipitation records from the Fosston Climatological Station were used for this comparison.**

## 5.2 Hydrology

Climatic factors influence the amount of runoff reaching Cameron Lake. This runoff carries nutrients which can lead to algae growth. Therefore, the quantification of the waters entering Cameron Lake becomes very important in predicting the lake's water quality response. Table 3 shows the individual inflow source watershed area, their contributed volume and their overall percentage of the total volume of water for the study.

The water quantity locations for the study had to correspond with the water quality sites (please refer to the map in section 3.1). The main inlet, which is located on the southwestern end of the lake was selected for the installation of continuous flow monitoring equipment. We monitored the flow from July to October 1995. Spring runoff samples were taken in 1996, the flow was physically measured at the main inlet at this time. Flow monitoring was done using a Stevens recorder. A flow rating curve was developed for the site using both field measurements and theoretical culvert hydraulics. The recorded inflow stage and the stage versus discharge rating curve were used to generate an inflow hydrograph at the monitored site. We determined the flow in each ungauged subwatershed based upon the ratio of ungauged watershed area to the watershed area at the gauged site. We also adjusted the flow for expected variations in runoff due to urban conditions. We calculated a virtual watershed area (CN=70) which would have equivalent runoff to the actual ungauged site which contained rural (CN=70) and urban (CN=81) areas. The virtual watershed area was used in the flow relationship of the gauged and ungauged sites since the gauged site was predominately rural. The following equations were used in this determination.

$$\text{Virtual Ungauged Area} = (\text{Actual rural area} + \text{Urban area}\ (1.35))$$

$$\text{Ungauged Flow} = \text{gauged flow} \left[ \frac{\text{virtual ungaged area}}{\text{gaged area}} \right]$$

The outflow hydrograph for the lake was based upon an outlet rating curve and lake levels. Lake levels were measured by the Watershed District staff and additional observers. The outlet rating curve was developed using both field measurements of flow and theoretical culvert hydraulics. Annex B show the rating curves for the primary inlet and the lake outlet. It also contains the hydrographs for all of the sites that were monitored. Table 3 provides a breakdown of Cameron Lake's hydrologic budget.

## Table 3. Hydrologic Budgets for Cameron Lake

| **Surface Inflow** | **Watershed Area (acres)** | **1995 Sampling Year** | |
|---|---|---|---|
| | | **Volume (acre/feet)** | **Percent** |
| Storm Sewer #1 | 1.73 | .83 | 0.1 |
| Storm Sewer #2 | 32.81 | 15.66 | 2.5 |
| Storm Sewer #3 | 269.28 | 128.58 | 20.8 |
| Storm Sewer #4 | 581.85 | 277.7 | 44.9 |
| Storm Sewer #5 | 31.23 | 14.91 | 2.4 |
| Inlet #1 | 266.24 | 127.13 | 20.6 |
| Inlet #2 | 112 | 72.21 | 8.6 |
| | | 637.02 | |
| **Total Inflow** | | 798.56 | 100 |
| | | | |
| Outlet | 224 | 92.49 | 100 |
| | | | |
| **Total Outflow** | | 92.49 | 100 |

**Table 3. Input from each of the subwatershed areas is illustrated in the table. Volume is the amount of runoff water from each subwatershed that drains into Cameron Lake.**

## 5.3 Mass Loads Entering Cameron Lake

The following discussion concentrates on the overall loads that entered Cameron Lake. The information about nutrient loads (especially phosphorus) allows the prioritization of subwatersheds with respect to restoration activities and helps gain an understanding of how the various tributaries might be influencing the water quality of the lake.

### 5.3.1 Phosphorus

Cameron Lake is extremely effective at retaining phosphorus that enters the lake. Total phosphorus retention by Cameron Lake during our study exceeded 97%. As shown by figure 7, the largest contributor to the overall phosphorus load is storm sewer #4 (SS4), contributing almost 35% of the total load.

**Figure 7. Phosphorus Loading**

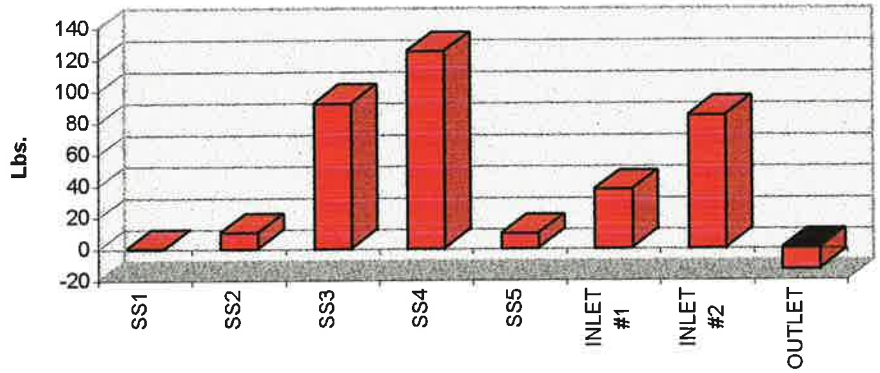


**Fig. 7. SS4 contributes 35% of the total phosphorous load entering Cameron Lake.**

This becomes an important consideration when prioritizing watershed management activities. A closer examination of the watershed area would be appropriate for the next step in the possible implementation measures used to improve the inflow waters.

A large portion of the total phosphorus load enters Cameron Lake as orthophosphate phosphorus. Orthophosphate is the most biologically usable form of phosphorus. Orthophosphate made up over 50% of the inflow total phosphorus on average. It was as high as 83.5% of the inflow for the inlet #2 location. Figure 8 shows the average levels of total phosphorus compared to that of orthophosphorus loading.

**Figure 8. Phosphorus Comparison**

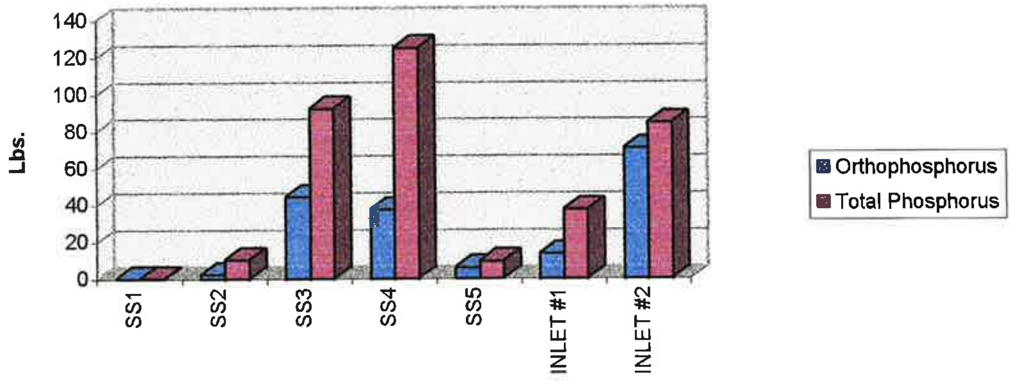


**Fig. 8. Orthophorous makes up a large portion of the total phosphorous load that enters Cameron Lake. Over 80% of the phosphorous load entering via inlet 2 is in the form of orthophosphorous.**

# 6.0 Conclusions and Recommendations for Future Implementation and Monitoring

The theoretical trophic status of Cameron Lake that was presented earlier was an example of how phosphorus load reductions might enhance the water quality within Cameron Lake.

The Minnesota Pollution Control Agency has used an ecoregion concept to allow comparison of water quality data (Hieskary et.al). Figure 9 shows where Cameron Lake is located within the Red River Valley ecoregion.

**Figure 9. Ecoregions of Minnesota**

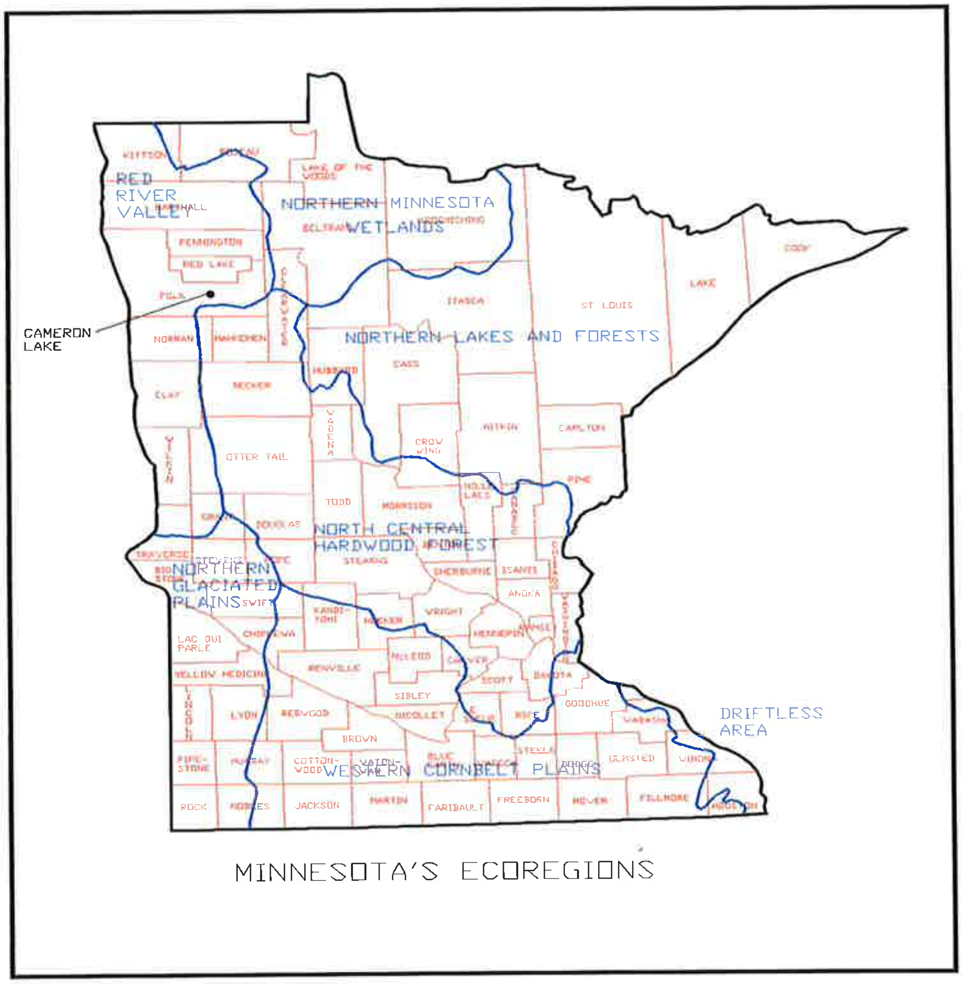


**Fig. 9. Lake Cameron is located in the Red River Valley Ecoregion. Ecoregions are areas that have been grouped according to similar environmental factors such as habitat structure, flow regimes, chemical variables and other factors.**

Average levels for minimally impacted stream concentrations for total phosphorus within this ecoregion are 100 ug/l (ppb, see annex A). This value was used because it was the most realistically attainable figure for the area. Figure 10 shows the actual average concentrations of the tributaries compared to the theoretical value that was used

## Figure 10. Ecoregion Total Phosphorous Comparison

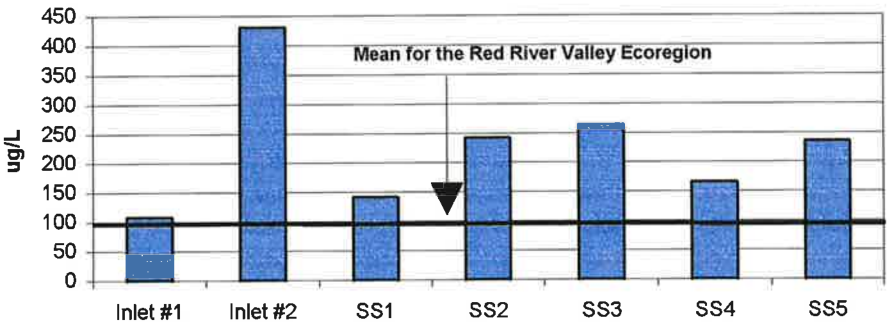


**Fig. 10. Each of the subwatersheds that drain into Cameron Lake exceed the Red River Valley ecoregion average for total phosphorous.**

The graph illustrates the fact that most of the tributaries exceed the ecoregion average by a substantial amount. It might be feasible that in some of the subwatersheds the average total phosphorus concentration could be reduced beyond the mean for the ecoregion. This would mean, in theory the water quality within Cameron Lake would be enhanced by every improvement that was made within the tributary waters. The concentration data shown here was used to calculate the overall phosphorus loadings that were presented earlier.

## 6.1 Critical Loading

Over the years scientists have attempted various approaches to predict what load of a nutrient would become critical. The critical level or load ($L_c$), if exceeded, would lead from an oligotrophic ("cleaner") state to a eutrophic ("less clean") state.

There has been an evolution of methods by which to estimate critical loading values. Vollenweider (1976) presented one of the most current commonly used equations, which seems widely applicable to define the annual critical loading.

$$L_c = (10 \text{ to } 20) \text{ x } q_s (1 + \sqrt{\bar{z} / q_s})$$

In the equation, $q_s$ is the so-called hydraulic load, which is calculated by dividing the total discharge of water into the lake by the lake area. $\bar{z}$ is the mean lake depth and 10 to 20 is a constant range based on scientific empiricism. Entering the Cameron Lake data into this equation, we come up with a critical phosphorus load range of 20.5 to 41 kilograms (45.19 to 90.39 lbs.). Converting the FLUX loading results to kilograms we come up with 162.8 kilograms (358.91 lbs.) of phosphorus that is being input to the lake. This figure is nearly 4 times greater than the upper most range calculated as the critical load for Cameron Lake. So, based on the collected and theoretical results, if the loading from the tributaries was reduced below the critical loading level, Cameron Lake would respond in moving towards a more supporting trophic state.

## 6.2 Bathtub Modeling Analysis

The collected results of the study were input into the BATHTUB model and the results are depicted in figure 7 in section 5.3. A theoretical scenario was also run through the model and the results were illustrated in Figure 8 of section 5.3. That is the advantage of modeling, you can suggest a reasonble trophic state for Cameron Lake and you can adjust the model to achieve it. Also, based on the adjustments you can tell whether it is a realistically attainable goal.

The model can also be very valuable, if activities to enhance the water quality of Cameron Lake are implemented in the future. The future monitoring results that would be collected to document the changes in water quality could be input into the model to predict any future improvements to lake water quality.

## 6.3 Best Management Practices

Best Management Practices (BMP's) are practices that have been designed to reduce or prevent pollutants from urban and rural nonpoint sources to a level compatible with water quality goals. Figure 11 (EPA 1988) depicts various urban pollutant sources that may impact a waterbody. In small watersheds, these sources may be the primary contributors of pollutants. In larger watersheds, factors such as agricultural runoff start to play a bigger role.

**Figure 11. Best Management Practices**

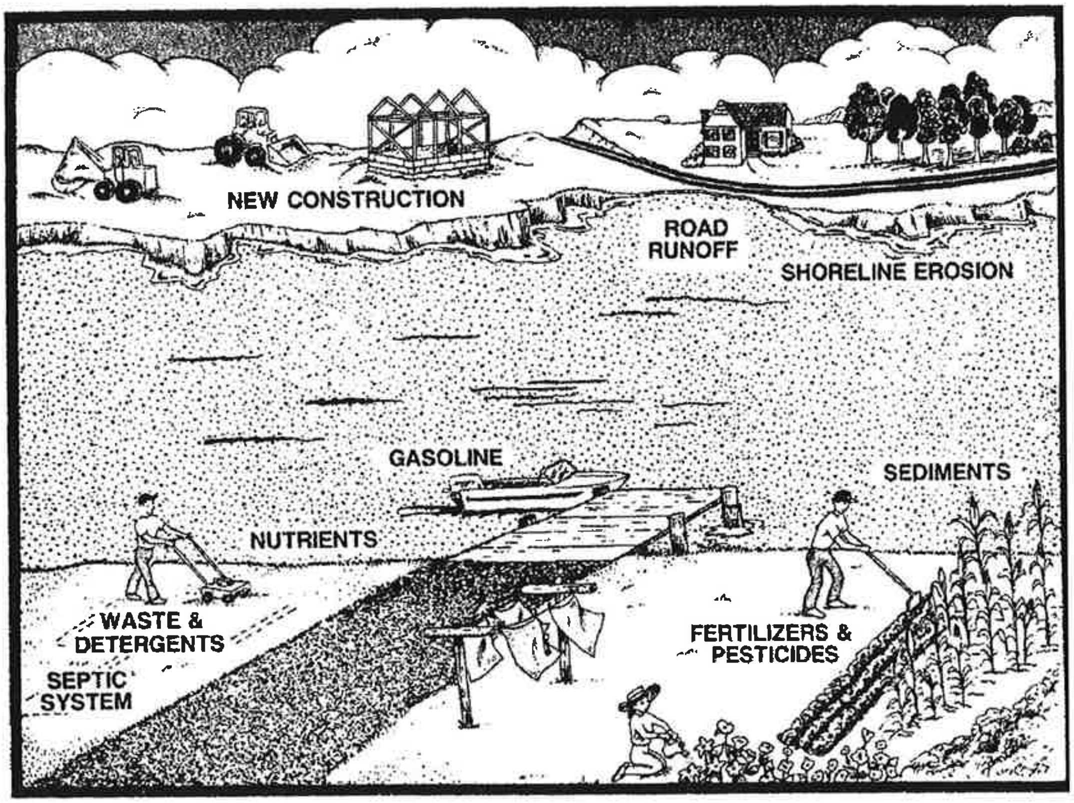


**Fig. 11. Various activities impact watersheds. BMP's can help to reduce detrimental effects of activities in shore areas.**

The Cameron Lake watershed consists of 209 urban acres and 1,379 rural acres. The ratio of watershed to lake surface area is approximately 7:1. A combination of urban and rural BMP's would probably provide the biggest benefit to increased water quality. Table 4 lists various BMP's that could be utilized in the Cameron Lake watershed.

**Table 4. BEST MANAGEMENT PRACTICES**

| **Agriculture** | **Silviculture** |
|---|---|
| Conservation Tillage | Ground Cover Maintenance |
| Contour Farming | Road and Skid Trail Management |
| Contour Stripcropping | Riparian Zone Management |
| Integrated Pest Management | Pesticide/Herbicide Management |
| Range and Pasture Management | **Construction** |
| Crop Rotation | Nonvegetative Soil Stabilization |
| Terraces | Disturbed Area Limits |
| Animal Waste Management | Surface Roughening |
| Fertilized Management | **Multicategory** |
| Livestock Exclusion | Streamside Management Zones |
| **Urban** | Grassed Waterways |
| Porous Pavements | Interception or Diversion Practices |
| Flood Storage | Streambank Stabilization |
| Street Cleaning | Vegetative Stabilization |
|  | Detention/Sedimentation Basins |

## 6.4 Recommendations for the Future

This study was of limited duration compared to a typical water quality diagnostic study. A typical study would have consisted of a more agressive sampling protocol covering several years. However, the goal of the study was to ascertain whether the water quality problems facing Cameron Lake were internal or external. Since the flows of the tributaries were mostly intermittent, the sampling scheme for this study was adequate to make this determination.

The Cameron Lake study focus did not take into account land use characteristics of each subwatershed. The next recommended course of action should be to determine these land use characteristics. This would enable more appropriate Best Management Practices to be implemented within each respective subwatershed. It would also be recommended that a future monitoring plan be developed to gage the effectiveness of these practices.

# ANNEX A

## DISSOLVED OXYGEN

REASONS FOR MEASUREMENT:

Dissolved oxygen (DO) is important because 1) adequate DO concentrations are needed for the growth and reproduction of fish and other aquatic life; 2) DO plays an important role in the chemistry and natural degradation of pollutants in a water body; 3) reduced DO concentrations can lead to taste and odor problems in water; and 4) DO concentrations in ground water yields information on recharge/discharge relationships, potential nitrate formation, and the chemical stability of a discharging water well.

CONSIDERATIONS:

DO concentrations generally exhibit a distinct diurnal cycle in waters having significant algae or aquatic plant growth. Daytime photosynthetic activity produces oxygen in excess of plant respiration requirements, raising the water body DO. At night, plant respiration continues and lowers DO concentrations. The most critical diurnal time period for minimum DO concentrations normally occurs in the pre-dawn hours. In addition, long term temporal variations occur seasonally and yearly due to temperature and precipitation changes.

DO levels vary spatially as well as temporally. Spatial variation in lakes depends on a variety of factors including lake morphometry, water characteristics, and inflows/outflows. Anaerobic conditions at the sediment-water interface result in the release of nutrients from the sediments to the water column as well as limiting the use of these areas by aquatic life. Variability in streams is dependent on factors such as light intensity, temperature, hydrological condition (pools, riffles, runs) tributary inputs, and pollution sources. These factors should be considered when designing a monitoring program and evaluating DO data at different sampling sites and over time.

## pH

REASON FOR MEASUREMENT:

pH is a term used to express the intensity of the acid or alkaline condition of a solution (Sawyer and McCarty 1978). pH impacts and is impacted by chemical and biological systems of natural waters. The degree of dissociation of weak acids and bases is affected by changes in pH. The toxicity, reactivity, and solubility of many compounds is affected by the degree of dissociation. For example, the amount of un-ionized ammonia in water is determined by pH interacting with temperature and ammonia concentrations (State of Washington 1988).

# ANNEX A

## TOTAL KJELDAHL NITROGEN

REASON FOR MEASUREMENT:

Total Kjeldahl nitrogen (TKN) provides a measure of the free-ammonia and organic nitrogen in water (USEPA 1979). TKN concentrations may be used in project analyses; however, it is more commonly used as an intermediate value to calculate the concentrations of other forms of nitrogen. The total amount of nitrogen in water is usually considered to be the sum of the TKN and nitrate+nitrite nitrogen concentrations. Organic nitrogen concentrations are calculated by subtracting the ammonia nitrogen concentration from the TKN concentration.

The total amount of nitrogen present is used to compute phosphorous:nitrogen ratios for lakes to document which nutrient is probably limiting algae growth. Organic nitrogen concentrations are useful primarily in indicating the presence of organic pollutant sources.

CONSIDERATIONS:

TKN concentrations are dependent on biological activity and the sources of the pollution. Given a certain pollutant load, TKN will tend to decrease with time as ammonia nitrogen is converted to nitrite and nitrate nitrogen. Factors to consider when evaluating the nitrogen compounds include type of pollutant source, source location, water characteristics (temperature, dissolved oxygen, depth, velocity), season, and bacterial activity.

## TOTAL ALKALINITY

REASON FOR MEASUREMENT:

The alkalinity (Alk.) of a water is a measure of its capacity to neutralize acids. Although many materials may contribute to the alkalinity of water, most of the alkalinity in natural water is caused by the presence of hydroxides, carbonates, and bicarbonates. Because these substances act as buffers to resist changes in pH, alkalinity can also be viewed as a measure of a water's buffering capacity (Sawyer and McCarty 1978). Alkalinity impacts and is impacted by chemical and biological systems of natural waters.

CONSIDERATIONS:

Alkalinity can be expressed in several ways. Its expression is dependent on the purpose of the measurement and the methods used in determining the measurement. Total alkalinity is of primary interest in Clean Water Partnership (CWP) projects. Total alkalinity provides a measure of the combined alkalinity attributable to the hydroxide, carbonate, and bicarbonate in the water (Sawyer and McCarty 1979). Carbonates and bicarbonates are common to most waters because carbonate minerals are abundant in nature, whereas the presence of hydroxides is usually due to water treatment or contamination (Lind 1979). As stated above, these materials usually

# ANNEX A

CONSIDERATIONS:

pH is affected by various environmental factors. A few of these factors include changes in production and respiration rates of aquatic plants and animals, type of water body, and physical watershed characteristics. Care in sampling and analysis is needed to provide consistency in the measurements over time and location of sampling. Environmental factors affecting pH should be considered when interpreting data.

## TEMPERATURE

REASON FOR MEASUREMENT:

Water temperature affects aquatic productivity, lake stratification, and water chemistry. Temperature extremes are especially important in determining productivity of aquatic life from algae to fish. Temperature combined with lake morphometry and other physical or climatic factors affects the mixing characteristics of lakes. Temperature affects water chemistry, including the levels of DO and un-ionized ammonia.

CONSIDERATIONS:

Temperature varies spatially and temporally. Stream temperatures will vary due to air temperature, water sources, water velocity and depth, and streambank cover. Lake temperatures will vary due to air temperature, water sources, depth, and mixing characteristics of the lake. These factors should always be considered in sampling site selection and data interpretation.

## TOTAL SUSPENDED SOLIDS

REASON FOR MEASUREMENT:

Total suspended solids (TSS) is a direct measurement of the concentration of suspended particulates, inorganic and organic, in water. Particulate matter directly affects aquatic environments by decreasing light availability, interfering with the filter feeding mechanism of aquatic animals, and covering bottom habitats. Other pollutants are also often adsorbed on to the particulate matter. These pollutants include nutrients, pesticides, other organics, bacteria, and metals.

CONSIDERATIONS:

TSS concentrations vary with physical factors such as soil and land cover characteristics, quantity of runoff, and stream flows. Changes in these factors over time and space must be considered in sampling site and frequency selection and resulting data interpretation. Mass loading calculations, using TSS concentrations and corresponding stream flows, are important in evaluating the magnitude of particulate sources.

# ANNEX A

## TOTAL PHOSPHOROUS

REASON FOR MEASUREMENT:

Phosphorous is present in the environment in several forms. The analysis for total phosphorous (TP) provides a measure of the total concentration of phosphorous present in a water sample. Only a portion of the TP is readily available for use in algae growth; however, TP does give an indication of the total amount of phosphorous contained in the various forms of phosphorous. TP is also used in many eutrophication models.

CONSIDERATIONS:

TP concentrations are affected by biological, chemical, and physical activity, as well as the various inputs described above. Variations in concentration caused by these things can be expected spatially and temporally. These changes must be considered in sampling site and frequency selection and resulting data interpretation. Mass loading calculations at stream sites, using TP concentrations and corresponding stream flows, are important in evaluating the magnitude of phosphorous sources.

## ORTHOPHOSPHOROUS (Soluable Reactive Phosphorous - Dissolved Inorganic Phosphorous)

REASON FOR MEASUREMENT:

Soluable reactive phosphorous consists of the dissolved, inorganic phosphorous in the water. Soluable reactive phosphorous is usually measured as orthophosphorous (OP). It is the only phosphorous compound readily available for use by algae or other aquatic plants. As such, it provides a measure of the phosphorous immediately available for plant growth. Particulate, inorganic phosphorous and organic phosphorous can be transformed for the use by plants, but the rates are dependent on various factors. The amount of particulate, inorganic phosphorous and organic phosphorous present can be determined by subtracting the OP concentration from the TP concentration.

CONSIDERATIONS:

The considerations for sampling and data interpretation described for TP should be followed for OP.

contribute all of the alkalinity in natural waters. Hydroxide, carbonate, and bicarbonate alkalinities are affected by pH, temperature, and algae production and respiration rates. Total alkalinity, on the other hand, remains about the same. It is affected by background soil and water characteristics, and water inputs to the system. These factors should be considered when interpreting data.

## NITRITE PLUS NITRATE NITROGEN

REASON FOR MEASUREMENT:

Nitrate and nitrite ($NO_3$ +$NO_2$-N) are inorganic forms of nitrogen present in the environment. They are formed through the oxidation of $NH_3$-N by nitrifying bacteria (nitrification). They are converted to other nitrogen forms by denitrification and plant uptake. While nitrate is one of the primary forms of nitrogen used by plants for growth, the greatest pollution concern is high nitrate concentrations in drinking water which can result in methomoglobinemia ("blue baby syndrome"). The primary concern for high nitrate levels is found in ground water. Nitrite concentrations are generally small in natural waters and, therefore, not a major concern for individual analysis. For this reason, laboratory analysis of these is combined as nitrite plus nitrate nitrogen.

CONSIDERATIONS:

$NO_3$ +$NO_2$-N concentrations vary seasonally with biological activity and nutrient inputs. The factors affecting concentration variations are the same as described above for TKN. These factors should be considered when evaluating sampling results.

## FECAL COLIFORM BACTERIA

REASON FOR MEASUREMENT:

Fecal coliform bacteria are present in the intestines of all warm-blooded animals, including humans. Although these bacteria are not pathogenic, they indicate contamination from sewage, industrial wastes, feedlot runoff, and land runoff, and suggest the presence of disease-causing organisms. Specific pathogenic bacteria are not monitored because their densities are too variable and they are usually greatly outnumbered by other bacteria (USGS 1977).

CONSIDERATIONS:

The presence of fecal coliform bacteria in water is affected by several environmental factors, including sunlight, nutrient levels, temperature, amount and character of sediment, predation by other organisms, flow, and amount of runoff. The proximity of the sampling station to upstream pollution sources along with the environmental factors listed above will influence bacteria concentrations in water. These factors will vary spatially and temporally and, therefore, should be considered in sampling site selection and data interpretation (State of Washington 1988).

# ANNEX A

## CHEMICAL OXYGEN DEMAND

REASONS FOR MEASUREMENT:

Chemical Oxygen Demand (COD) is a measure of the oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by a strong chemical oxidant. It represents potential "consumption" of oxygen within the receiving water.

## CONDUCTIVITY

REASONS FOR MEASUREMENT:

Conductivity is a measurement of water's capacity for conveying electrical current and is directly related to the concentrations of ionized substances in the water. The ability to carry an electric current depends on the presence of ions, their total concentration, mobility, valence, and relative concentrations, and on the temperature of measurement. Solutions of most inorganic acids, bases, and salts are relatively good conductors. Conversely, molecules of organic compounds that do not dissociate in aqueous solution conduct a current very poorly, if at all.

CONSIDERATIONS:

Temperature of the solution affects the ionic velocity and, thus, conductivity. In unpolluted waters, conductance increases from 2% to 3% per degree Celcius. Since temperature is an integral part of conductivity, it must always be reported along with the conductivity.

## TURBIDITY

REASONS FOR MEASUREMENT:

Turbidity occurs in most surface waters as the result of suspended clay, silt, finely divided organic and inorganic matter, plankton and other microorganisms. Turbidity is a measure of an optical property of the water sample which results from the scattering and absorbing of light by the particulate matter present. The amount of turbidity registered is dependent on such variables as the size, shape and refractive indices of the particles. No direct relationship exists between the turbidity of a water sample and the weight concentration of the matter present, as is determined in the suspended solids test.

CONSIDERATIONS:

In many cases, a water's turbidity can be related to its bacteriological quality. It has been found that certain kinds of turbidity interfere with filtration and disenfection. This is a problem mainly for surface water supplies. Sample cells must be scratch-free and samples should be colorless and without air bubbles since these will intefere with turbidity measurements.

# ANNEX B

## Cameron Lake ss1 Flow (CFS)

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 0.01 | 08/19/95 | 0.00 | 10/12/95 | 0.00 | 12/05/95 | 0.00 | 01/28/96 | 0.00 | 03/22/96 | 0.00 |
| 06/27/95 | 0.01 | 08/20/95 | 0.00 | 10/13/95 | 0.00 | 12/06/95 | 0.00 | 01/29/96 | 0.00 | 03/23/96 | 0.00 |
| 06/28/95 | 0.01 | 08/21/95 | 0.00 | 10/14/95 | 0.00 | 12/07/95 | 0.00 | 01/30/96 | 0.00 | 03/24/96 | 0.00 |
| 06/29/95 | 0.01 | 08/22/95 | 0.00 | 10/15/95 | 0.00 | 12/08/95 | 0.00 | 01/31/96 | 0.00 | 03/25/96 | 0.00 |
| 06/30/95 | 0.01 | 08/23/95 | 0.00 | 10/16/95 | 0.00 | 12/09/95 | 0.00 | 02/01/96 | 0.00 | 03/26/96 | 0.00 |
| 07/01/95 | 0.01 | 08/24/95 | 0.00 | 10/17/95 | 0.00 | 12/10/95 | 0.00 | 02/02/96 | 0.00 | 03/27/96 | 0.00 |
| 07/02/95 | 0.01 | 08/25/95 | 0.00 | 10/18/95 | 0.00 | 12/11/95 | 0.00 | 02/03/96 | 0.00 | 03/28/96 | 0.00 |
| 07/03/95 | 0.01 | 08/26/95 | 0.00 | 10/19/95 | 0.00 | 12/12/95 | 0.00 | 02/04/96 | 0.00 | 03/29/96 | 0.00 |
| 07/04/95 | 0.01 | 08/27/95 | 0.00 | 10/20/95 | 0.00 | 12/13/95 | 0.00 | 02/05/96 | 0.00 | 03/30/96 | 0.00 |
| 07/05/95 | 0.01 | 08/28/95 | 0.00 | 10/21/95 | 0.00 | 12/14/95 | 0.00 | 02/06/96 | 0.00 | 03/31/96 | 0.00 |
| 07/06/95 | 0.01 | 08/29/95 | 0.00 | 10/22/95 | 0.00 | 12/15/95 | 0.00 | 02/07/96 | 0.00 | 04/01/96 | 0.00 |
| 07/07/95 | 0.01 | 08/30/95 | 0.00 | 10/23/95 | 0.00 | 12/16/95 | 0.00 | 02/08/96 | 0.00 | 04/02/96 | 0.00 |
| 07/08/95 | 0.01 | 08/31/95 | 0.00 | 10/24/95 | 0.00 | 12/17/95 | 0.00 | 02/09/96 | 0.00 | 04/03/96 | 0.00 |
| 07/09/95 | 0.01 | 09/01/95 | 0.00 | 10/25/95 | 0.00 | 12/18/95 | 0.00 | 02/10/96 | 0.00 | 04/04/96 | 0.00 |
| 07/10/95 | 0.01 | 09/02/95 | 0.00 | 10/26/95 | 0.00 | 12/19/95 | 0.00 | 02/11/96 | 0.00 | 04/05/96 | 0.00 |
| 07/11/95 | 0.01 | 09/03/95 | 0.00 | 10/27/95 | 0.00 | 12/20/95 | 0.00 | 02/12/96 | 0.00 | 04/06/96 | 0.00 |
| 07/12/95 | 0.01 | 09/04/95 | 0.00 | 10/28/95 | 0.00 | 12/21/95 | 0.00 | 02/13/96 | 0.00 | 04/07/96 | 0.00 |
| 07/13/95 | 0.01 | 09/05/95 | 0.00 | 10/29/95 | 0.00 | 12/22/95 | 0.00 | 02/14/96 | 0.00 | 04/08/96 | 0.00 |
| 07/14/95 | 0.01 | 09/06/95 | 0.00 | 10/30/95 | 0.00 | 12/23/95 | 0.00 | 02/15/96 | 0.00 | 04/09/96 | 0.00 |
| 07/15/95 | 0.01 | 09/07/95 | 0.00 | 10/31/95 | 0.00 | 12/24/95 | 0.00 | 02/16/96 | 0.00 | 04/10/96 | 0.00 |
| 07/16/95 | 0.01 | 09/08/95 | 0.00 | 11/01/95 | 0.00 | 12/25/95 | 0.00 | 02/17/96 | 0.00 | 04/11/96 | 0.00 |
| 07/17/95 | 0.01 | 09/09/95 | 0.00 | 11/02/95 | 0.00 | 12/26/95 | 0.00 | 02/18/96 | 0.00 | 04/12/96 | 0.00 |
| 07/18/95 | 0.01 | 09/10/95 | 0.00 | 11/03/95 | 0.00 | 12/27/95 | 0.00 | 02/19/96 | 0.00 | 04/13/96 | 0.00 |
| 07/19/95 | 0.01 | 09/11/95 | 0.00 | 11/04/95 | 0.00 | 12/28/95 | 0.00 | 02/20/96 | 0.00 | 04/14/96 | 0.00 |
| 07/20/95 | 0.01 | 09/12/95 | 0.00 | 11/05/95 | 0.00 | 12/29/95 | 0.00 | 02/21/96 | 0.00 | 04/15/96 | 0.00 |
| 07/21/95 | 0.01 | 09/13/95 | 0.00 | 11/06/95 | 0.00 | 12/30/95 | 0.00 | 02/22/96 | 0.00 | 04/16/96 | 0.00 |
| 07/22/95 | 0.00 | 09/14/95 | 0.00 | 11/07/95 | 0.00 | 12/31/95 | 0.00 | 02/23/96 | 0.00 | 04/17/96 | 0.00 |
| 07/23/95 | 0.00 | 09/15/95 | 0.00 | 11/08/95 | 0.00 | 01/01/96 | 0.00 | 02/24/96 | 0.00 | 04/18/96 | 0.04 |
| 07/24/95 | 0.00 | 09/16/95 | 0.00 | 11/09/95 | 0.00 | 01/02/96 | 0.00 | 02/25/96 | 0.00 | | |
| 07/25/95 | 0.01 | 09/17/95 | 0.00 | 11/10/95 | 0.00 | 01/03/96 | 0.00 | 02/26/96 | 0.00 | | |
| 07/26/95 | 0.01 | 09/18/95 | 0.00 | 11/11/95 | 0.00 | 01/04/96 | 0.00 | 02/27/96 | 0.00 | | |
| 07/27/95 | 0.01 | 09/19/95 | 0.00 | 11/12/95 | 0.00 | 01/05/96 | 0.00 | 02/28/96 | 0.00 | | |
| 07/28/95 | 0.01 | 09/20/95 | 0.00 | 11/13/95 | 0.00 | 01/06/96 | 0.00 | 02/29/96 | 0.00 | | |
| 07/29/95 | 0.01 | 09/21/95 | 0.00 | 11/14/95 | 0.00 | 01/07/96 | 0.00 | 03/01/96 | 0.00 | | |
| 07/30/95 | 0.00 | 09/22/95 | 0.00 | 11/15/95 | 0.00 | 01/08/96 | 0.00 | 03/02/96 | 0.00 | | |
| 07/31/95 | 0.00 | 09/23/95 | 0.00 | 11/16/95 | 0.00 | 01/09/96 | 0.00 | 03/03/96 | 0.00 | | |
| 08/01/95 | 0.00 | 09/24/95 | 0.00 | 11/17/95 | 0.00 | 01/10/96 | 0.00 | 03/04/96 | 0.00 | | |
| 08/02/95 | 0.01 | 09/25/95 | 0.00 | 11/18/95 | 0.00 | 01/11/96 | 0.00 | 03/05/96 | 0.00 | | |
| 08/03/95 | 0.01 | 09/26/95 | 0.00 | 11/19/95 | 0.00 | 01/12/96 | 0.00 | 03/06/96 | 0.00 | | |
| 08/04/95 | 0.00 | 09/27/95 | 0.00 | 11/20/95 | 0.00 | 01/13/96 | 0.00 | 03/07/96 | 0.00 | | |
| 08/05/95 | 0.00 | 09/28/95 | 0.00 | 11/21/95 | 0.00 | 01/14/96 | 0.00 | 03/08/96 | 0.00 | | |
| 08/06/95 | 0.00 | 09/29/95 | 0.00 | 11/22/95 | 0.00 | 01/15/96 | 0.00 | 03/09/96 | 0.00 | | |
| 08/07/95 | 0.00 | 09/30/95 | 0.00 | 11/23/95 | 0.00 | 01/16/96 | 0.00 | 03/10/96 | 0.00 | | |
| 08/08/95 | 0.00 | 10/01/95 | 0.00 | 11/24/95 | 0.00 | 01/17/96 | 0.00 | 03/11/96 | 0.00 | | |
| 08/09/95 | 0.00 | 10/02/95 | 0.00 | 11/25/95 | 0.00 | 01/18/96 | 0.00 | 03/12/96 | 0.00 | | |
| 08/10/95 | 0.00 | 10/03/95 | 0.00 | 11/26/95 | 0.00 | 01/19/96 | 0.00 | 03/13/96 | 0.00 | | |
| 08/11/95 | 0.00 | 10/04/95 | 0.00 | 11/27/95 | 0.00 | 01/20/96 | 0.00 | 03/14/96 | 0.00 | | |
| 08/12/95 | 0.00 | 10/05/95 | 0.00 | 11/28/95 | 0.00 | 01/21/96 | 0.00 | 03/15/96 | 0.00 | | |
| 08/13/95 | 0.00 | 10/06/95 | 0.00 | 11/29/95 | 0.00 | 01/22/96 | 0.00 | 03/16/96 | 0.00 | | |
| 08/14/95 | 0.00 | 10/07/95 | 0.00 | 11/30/95 | 0.00 | 01/23/96 | 0.00 | 03/17/96 | 0.00 | | |
| 08/15/95 | 0.00 | 10/08/95 | 0.00 | 12/01/95 | 0.00 | 01/24/96 | 0.00 | 03/18/96 | 0.00 | | |
| 08/16/95 | 0.00 | 10/09/95 | 0.00 | 12/02/95 | 0.00 | 01/25/96 | 0.00 | 03/19/96 | 0.00 | | |
| 08/17/95 | 0.00 | 10/10/95 | 0.00 | 12/03/95 | 0.00 | 01/26/96 | 0.00 | 03/20/96 | 0.00 | | |
| 08/18/95 | 0.00 | 10/11/95 | 0.00 | 12/04/95 | 0.00 | 01/27/96 | 0.00 | 03/21/96 | 0.00 | | |

Cameron Lake ss2 flow (CFS)

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 0.16 | 08/19/95 | 0.05 | 10/12/95 | 0.00 | 12/05/95 | 0.00 | 01/28/96 | 0.00 | 03/22/96 | 0.00 |
| 06/27/95 | 0.16 | 08/20/95 | 0.05 | 10/13/95 | 0.00 | 12/06/95 | 0.00 | 01/29/96 | 0.00 | 03/23/96 | 0.00 |
| 06/28/95 | 0.16 | 08/21/95 | 0.05 | 10/14/95 | 0.00 | 12/07/95 | 0.00 | 01/30/96 | 0.00 | 03/24/96 | 0.00 |
| 06/29/95 | 0.16 | 08/22/95 | 0.05 | 10/15/95 | 0.00 | 12/08/95 | 0.00 | 01/31/96 | 0.00 | 03/25/96 | 0.00 |
| 06/30/95 | 0.16 | 08/23/95 | 0.05 | 10/16/95 | 0.00 | 12/09/95 | 0.00 | 02/01/96 | 0.00 | 03/26/96 | 0.00 |
| 07/01/95 | 0.15 | 08/24/95 | 0.05 | 10/17/95 | 0.00 | 12/10/95 | 0.00 | 02/02/96 | 0.00 | 03/27/96 | 0.00 |
| 07/02/95 | 0.15 | 08/25/95 | 0.05 | 10/18/95 | 0.00 | 12/11/95 | 0.00 | 02/03/96 | 0.00 | 03/28/96 | 0.00 |
| 07/03/95 | 0.15 | 08/26/95 | 0.05 | 10/19/95 | 0.00 | 12/12/95 | 0.00 | 02/04/96 | 0.00 | 03/29/96 | 0.00 |
| 07/04/95 | 0.15 | 08/27/95 | 0.05 | 10/20/95 | 0.00 | 12/13/95 | 0.00 | 02/05/96 | 0.00 | 03/30/96 | 0.00 |
| 07/05/95 | 0.15 | 08/28/95 | 0.05 | 10/21/95 | 0.00 | 12/14/95 | 0.00 | 02/06/96 | 0.00 | 03/31/96 | 0.00 |
| 07/06/95 | 0.15 | 08/29/95 | 0.05 | 10/22/95 | 0.00 | 12/15/95 | 0.00 | 02/07/96 | 0.00 | 04/01/96 | 0.00 |
| 07/07/95 | 0.15 | 08/30/95 | 0.05 | 10/23/95 | 0.00 | 12/16/95 | 0.00 | 02/08/96 | 0.00 | 04/02/96 | 0.00 |
| 07/08/95 | 0.15 | 08/31/95 | 0.05 | 10/24/95 | 0.00 | 12/17/95 | 0.00 | 02/09/96 | 0.00 | 04/03/96 | 0.00 |
| 07/09/95 | 0.14 | 09/01/95 | 0.05 | 10/25/95 | 0.00 | 12/18/95 | 0.00 | 02/10/96 | 0.00 | 04/04/96 | 0.00 |
| 07/10/95 | 0.14 | 09/02/95 | 0.05 | 10/26/95 | 0.00 | 12/19/95 | 0.00 | 02/11/96 | 0.00 | 04/05/96 | 0.00 |
| 07/11/95 | 0.14 | 09/03/95 | 0.05 | 10/27/95 | 0.00 | 12/20/95 | 0.00 | 02/12/96 | 0.00 | 04/06/96 | 0.00 |
| 07/12/95 | 0.14 | 09/04/95 | 0.05 | 10/28/95 | 0.00 | 12/21/95 | 0.00 | 02/13/96 | 0.00 | 04/07/96 | 0.00 |
| 07/13/95 | 0.13 | 09/05/95 | 0.05 | 10/29/95 | 0.00 | 12/22/95 | 0.00 | 02/14/96 | 0.00 | 04/08/96 | 0.00 |
| 07/14/95 | 0.13 | 09/06/95 | 0.05 | 10/30/95 | 0.00 | 12/23/95 | 0.00 | 02/15/96 | 0.00 | 04/09/96 | 0.00 |
| 07/15/95 | 0.11 | 09/07/95 | 0.05 | 10/31/95 | 0.00 | 12/24/95 | 0.00 | 02/16/96 | 0.00 | 04/10/96 | 0.00 |
| 07/16/95 | 0.12 | 09/08/95 | 0.01 | 11/01/95 | 0.00 | 12/25/95 | 0.00 | 02/17/96 | 0.00 | 04/11/96 | 0.00 |
| 07/17/95 | 0.11 | 09/09/95 | 0.01 | 11/02/95 | 0.00 | 12/26/95 | 0.00 | 02/18/96 | 0.00 | 04/12/96 | 0.00 |
| 07/18/95 | 0.10 | 09/10/95 | 0.01 | 11/03/95 | 0.00 | 12/27/95 | 0.00 | 02/19/96 | 0.00 | 04/13/96 | 0.00 |
| 07/19/95 | 0.11 | 09/11/95 | 0.01 | 11/04/95 | 0.00 | 12/28/95 | 0.00 | 02/20/96 | 0.00 | 04/14/96 | 0.00 |
| 07/20/95 | 0.10 | 09/12/95 | 0.01 | 11/05/95 | 0.00 | 12/29/95 | 0.00 | 02/21/96 | 0.00 | 04/15/96 | 0.00 |
| 07/21/95 | 0.10 | 09/13/95 | 0.02 | 11/06/95 | 0.00 | 12/30/95 | 0.00 | 02/22/96 | 0.00 | 04/16/96 | 0.00 |
| 07/22/95 | 0.09 | 09/14/95 | 0.02 | 11/07/95 | 0.00 | 12/31/95 | 0.00 | 02/23/96 | 0.00 | 04/17/96 | 0.00 |
| 07/23/95 | 0.08 | 09/15/95 | 0.02 | 11/08/95 | 0.00 | 01/01/96 | 0.00 | 02/24/96 | 0.00 | 04/18/96 | 0.74 |
| 07/24/95 | 0.07 | 09/16/95 | 0.04 | 11/09/95 | 0.00 | 01/02/96 | 0.00 | 02/25/96 | 0.00 | | |
| 07/25/95 | 0.10 | 09/17/95 | 0.04 | 11/10/95 | 0.00 | 01/03/96 | 0.00 | 02/26/96 | 0.00 | | |
| 07/26/95 | 0.10 | 09/18/95 | 0.04 | 11/11/95 | 0.00 | 01/04/96 | 0.00 | 02/27/96 | 0.00 | | |
| 07/27/95 | 0.10 | 09/19/95 | 0.02 | 11/12/95 | 0.00 | 01/05/96 | 0.00 | 02/28/96 | 0.00 | | |
| 07/28/95 | 0.10 | 09/20/95 | 0.02 | 11/13/95 | 0.00 | 01/06/96 | 0.00 | 02/29/96 | 0.00 | | |
| 07/29/95 | 0.10 | 09/21/95 | 0.04 | 11/14/95 | 0.00 | 01/07/96 | 0.00 | 03/01/96 | 0.00 | | |
| 07/30/95 | 0.08 | 09/22/95 | 0.03 | 11/15/95 | 0.00 | 01/08/96 | 0.00 | 03/02/96 | 0.00 | | |
| 07/31/95 | 0.07 | 09/23/95 | 0.03 | 11/16/95 | 0.00 | 01/09/96 | 0.00 | 03/03/96 | 0.00 | | |
| 08/01/95 | 0.07 | 09/24/95 | 0.04 | 11/17/95 | 0.00 | 01/10/96 | 0.00 | 03/04/96 | 0.00 | | |
| 08/02/95 | 0.10 | 09/25/95 | 0.04 | 11/18/95 | 0.00 | 01/11/96 | 0.00 | 03/05/96 | 0.00 | | |
| 08/03/95 | 0.10 | 09/26/95 | 0.04 | 11/19/95 | 0.00 | 01/12/96 | 0.00 | 03/06/96 | 0.00 | | |
| 08/04/95 | 0.09 | 09/27/95 | 0.00 | 11/20/95 | 0.00 | 01/13/96 | 0.00 | 03/07/96 | 0.00 | | |
| 08/05/95 | 0.09 | 09/28/95 | 0.00 | 11/21/95 | 0.00 | 01/14/96 | 0.00 | 03/08/96 | 0.00 | | |
| 08/06/95 | 0.09 | 09/29/95 | 0.01 | 11/22/95 | 0.00 | 01/15/96 | 0.00 | 03/09/96 | 0.00 | | |
| 08/07/95 | 0.09 | 09/30/95 | 0.00 | 11/23/95 | 0.00 | 01/16/96 | 0.00 | 03/10/96 | 0.00 | | |
| 08/08/95 | 0.05 | 10/01/95 | 0.00 | 11/24/95 | 0.00 | 01/17/96 | 0.00 | 03/11/96 | 0.00 | | |
| 08/09/95 | 0.05 | 10/02/95 | 0.00 | 11/25/95 | 0.00 | 01/18/96 | 0.00 | 03/12/96 | 0.00 | | |
| 08/10/95 | 0.05 | 10/03/95 | 0.00 | 11/26/95 | 0.00 | 01/19/96 | 0.00 | 03/13/96 | 0.00 | | |
| 08/11/95 | 0.05 | 10/04/95 | 0.00 | 11/27/95 | 0.00 | 01/20/96 | 0.00 | 03/14/96 | 0.00 | | |
| 08/12/95 | 0.05 | 10/05/95 | 0.00 | 11/28/95 | 0.00 | 01/21/96 | 0.00 | 03/15/96 | 0.00 | | |
| 08/13/95 | 0.05 | 10/06/95 | 0.00 | 11/29/95 | 0.00 | 01/22/96 | 0.00 | 03/16/96 | 0.00 | | |
| 08/14/95 | 0.05 | 10/07/95 | 0.00 | 11/30/95 | 0.00 | 01/23/96 | 0.00 | 03/17/96 | 0.00 | | |
| 08/15/95 | 0.05 | 10/08/95 | 0.00 | 12/01/95 | 0.00 | 01/24/96 | 0.00 | 03/18/96 | 0.00 | | |
| 08/16/95 | 0.05 | 10/09/95 | 0.00 | 12/02/95 | 0.00 | 01/25/96 | 0.00 | 03/19/96 | 0.00 | | |
| 08/17/95 | 0.05 | 10/10/95 | 0.00 | 12/03/95 | 0.00 | 01/26/96 | 0.00 | 03/20/96 | 0.00 | | |
| 08/18/95 | 0.05 | 10/11/95 | 0.00 | 12/04/95 | 0.00 | 01/27/96 | 0.00 | 03/21/96 | 0.00 | | |

Cameron Lake ss3 Flow (CFS)

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 1.31 | 08/19/95 | 0.41 | 10/12/95 | 0.01 | 12/05/95 | 0.00 | 01/28/96 | 0.00 | 03/22/96 | 0.00 |
| 06/27/95 | 1.30 | 08/20/95 | 0.41 | 10/13/95 | 0.01 | 12/06/95 | 0.00 | 01/29/96 | 0.00 | 03/23/96 | 0.00 |
| 06/28/95 | 1.29 | 08/21/95 | 0.41 | 10/14/95 | 0.01 | 12/07/95 | 0.00 | 01/30/96 | 0.00 | 03/24/96 | 0.00 |
| 06/29/95 | 1.28 | 08/22/95 | 0.42 | 10/15/95 | 0.00 | 12/08/95 | 0.00 | 01/31/96 | 0.00 | 03/25/96 | 0.00 |
| 06/30/95 | 1.27 | 08/23/95 | 0.40 | 10/16/95 | 0.00 | 12/09/95 | 0.00 | 02/01/96 | 0.00 | 03/26/96 | 0.00 |
| 07/01/95 | 1.26 | 08/24/95 | 0.41 | 10/17/95 | 0.00 | 12/10/95 | 0.00 | 02/02/96 | 0.00 | 03/27/96 | 0.00 |
| 07/02/95 | 1.25 | 08/25/95 | 0.40 | 10/18/95 | 0.00 | 12/11/95 | 0.00 | 02/03/96 | 0.00 | 03/28/96 | 0.00 |
| 07/03/95 | 1.24 | 08/26/95 | 0.41 | 10/19/95 | 0.00 | 12/12/95 | 0.00 | 02/04/96 | 0.00 | 03/29/96 | 0.00 |
| 07/04/95 | 1.23 | 08/27/95 | 0.41 | 10/20/95 | 0.00 | 12/13/95 | 0.00 | 02/05/96 | 0.00 | 03/30/96 | 0.00 |
| 07/05/95 | 1.22 | 08/28/95 | 0.41 | 10/21/95 | 0.00 | 12/14/95 | 0.00 | 02/06/96 | 0.00 | 03/31/96 | 0.00 |
| 07/06/95 | 1.21 | 08/29/95 | 0.42 | 10/22/95 | 0.00 | 12/15/95 | 0.00 | 02/07/96 | 0.00 | 04/01/96 | 0.00 |
| 07/07/95 | 1.20 | 08/30/95 | 0.42 | 10/23/95 | 0.00 | 12/16/95 | 0.00 | 02/08/96 | 0.00 | 04/02/96 | 0.00 |
| 07/08/95 | 1.19 | 08/31/95 | 0.42 | 10/24/95 | 0.00 | 12/17/95 | 0.00 | 02/09/96 | 0.00 | 04/03/96 | 0.00 |
| 07/09/95 | 1.18 | 09/01/95 | 0.42 | 10/25/95 | 0.00 | 12/18/95 | 0.00 | 02/10/96 | 0.00 | 04/04/96 | 0.00 |
| 07/10/95 | 1.17 | 09/02/95 | 0.43 | 10/26/95 | 0.00 | 12/19/95 | 0.00 | 02/11/96 | 0.00 | 04/05/96 | 0.00 |
| 07/11/95 | 1.16 | 09/03/95 | 0.43 | 10/27/95 | 0.01 | 12/20/95 | 0.00 | 02/12/96 | 0.00 | 04/06/96 | 0.00 |
| 07/12/95 | 1.15 | 09/04/95 | 0.40 | 10/28/95 | 0.00 | 12/21/95 | 0.00 | 02/13/96 | 0.00 | 04/07/96 | 0.00 |
| 07/13/95 | 1.09 | 09/05/95 | 0.41 | 10/29/95 | 0.00 | 12/22/95 | 0.00 | 02/14/96 | 0.00 | 04/08/96 | 0.00 |
| 07/14/95 | 1.06 | 09/06/95 | 0.40 | 10/30/95 | 0.00 | 12/23/95 | 0.00 | 02/15/96 | 0.00 | 04/09/96 | 0.00 |
| 07/15/95 | 0.91 | 09/07/95 | 0.40 | 10/31/95 | 0.00 | 12/24/95 | 0.00 | 02/16/96 | 0.00 | 04/10/96 | 0.00 |
| 07/16/95 | 0.98 | 09/08/95 | 0.10 | 11/01/95 | 0.00 | 12/25/95 | 0.00 | 02/17/96 | 0.00 | 04/11/96 | 0.00 |
| 07/17/95 | 0.91 | 09/09/95 | 0.10 | 11/02/95 | 0.00 | 12/26/95 | 0.00 | 02/18/96 | 0.00 | 04/12/96 | 0.00 |
| 07/18/95 | 0.83 | 09/10/95 | 0.10 | 11/03/95 | 0.00 | 12/27/95 | 0.00 | 02/19/96 | 0.00 | 04/13/96 | 0.00 |
| 07/19/95 | 0.89 | 09/11/95 | 0.10 | 11/04/95 | 0.00 | 12/28/95 | 0.00 | 02/20/96 | 0.00 | 04/14/96 | 0.00 |
| 07/20/95 | 0.83 | 09/12/95 | 0.10 | 11/05/95 | 0.00 | 12/29/95 | 0.00 | 02/21/96 | 0.00 | 04/15/96 | 0.00 |
| 07/21/95 | 0.82 | 09/13/95 | 0.20 | 11/06/95 | 0.00 | 12/30/95 | 0.00 | 02/22/96 | 0.00 | 04/16/96 | 0.00 |
| 07/22/95 | 0.72 | 09/14/95 | 0.20 | 11/07/95 | 0.00 | 12/31/95 | 0.00 | 02/23/96 | 0.00 | 04/17/96 | 0.00 |
| 07/23/95 | 0.65 | 09/15/95 | 0.15 | 11/08/95 | 0.00 | 01/01/96 | 0.00 | 02/24/96 | 0.00 | 04/18/96 | 6.07 |
| 07/24/95 | 0.61 | 09/16/95 | 0.30 | 11/09/95 | 0.00 | 01/02/96 | 0.00 | 02/25/96 | 0.00 | | |
| 07/25/95 | 0.85 | 09/17/95 | 0.30 | 11/10/95 | 0.00 | 01/03/96 | 0.00 | 02/26/96 | 0.00 | | |
| 07/26/95 | 0.83 | 09/18/95 | 0.30 | 11/11/95 | 0.00 | 01/04/96 | 0.00 | 02/27/96 | 0.00 | | |
| 07/27/95 | 0.83 | 09/19/95 | 0.20 | 11/12/95 | 0.00 | 01/05/96 | 0.00 | 02/28/96 | 0.00 | | |
| 07/28/95 | 0.81 | 09/20/95 | 0.20 | 11/13/95 | 0.00 | 01/06/96 | 0.00 | 02/29/96 | 0.00 | | |
| 07/29/95 | 0.79 | 09/21/95 | 0.30 | 11/14/95 | 0.00 | 01/07/96 | 0.00 | 03/01/96 | 0.00 | | |
| 07/30/95 | 0.65 | 09/22/95 | 0.25 | 11/15/95 | 0.00 | 01/08/96 | 0.00 | 03/02/96 | 0.00 | | |
| 07/31/95 | 0.61 | 09/23/95 | 0.25 | 11/16/95 | 0.00 | 01/09/96 | 0.00 | 03/03/96 | 0.00 | | |
| 08/01/95 | 0.61 | 09/24/95 | 0.30 | 11/17/95 | 0.00 | 01/10/96 | 0.00 | 03/04/96 | 0.00 | | |
| 08/02/95 | 0.79 | 09/25/95 | 0.30 | 11/18/95 | 0.00 | 01/11/96 | 0.00 | 03/05/96 | 0.00 | | |
| 08/03/95 | 0.79 | 09/26/95 | 0.30 | 11/19/95 | 0.00 | 01/12/96 | 0.00 | 03/06/96 | 0.00 | | |
| 08/04/95 | 0.73 | 09/27/95 | 0.00 | 11/20/95 | 0.00 | 01/13/96 | 0.00 | 03/07/96 | 0.00 | | |
| 08/05/95 | 0.75 | 09/28/95 | 0.00 | 11/21/95 | 0.00 | 01/14/96 | 0.00 | 03/08/96 | 0.00 | | |
| 08/06/95 | 0.73 | 09/29/95 | 0.10 | 11/22/95 | 0.00 | 01/15/96 | 0.00 | 03/09/96 | 0.00 | | |
| 08/07/95 | 0.72 | 09/30/95 | 0.00 | 11/23/95 | 0.00 | 01/16/96 | 0.00 | 03/10/96 | 0.00 | | |
| 08/08/95 | 0.42 | 10/01/95 | 0.00 | 11/24/95 | 0.00 | 01/17/96 | 0.00 | 03/11/96 | 0.00 | | |
| 08/09/95 | 0.41 | 10/02/95 | 0.00 | 11/25/95 | 0.00 | 01/18/96 | 0.00 | 03/12/96 | 0.00 | | |
| 08/10/95 | 0.38 | 10/03/95 | 0.00 | 11/26/95 | 0.00 | 01/19/96 | 0.00 | 03/13/96 | 0.00 | | |
| 08/11/95 | 0.40 | 10/04/95 | 0.00 | 11/27/95 | 0.00 | 01/20/96 | 0.00 | 03/14/96 | 0.00 | | |
| 08/12/95 | 0.39 | 10/05/95 | 0.00 | 11/28/95 | 0.00 | 01/21/96 | 0.00 | 03/15/96 | 0.00 | | |
| 08/13/95 | 0.40 | 10/06/95 | 0.00 | 11/29/95 | 0.00 | 01/22/96 | 0.00 | 03/16/96 | 0.00 | | |
| 08/14/95 | 0.41 | 10/07/95 | 0.00 | 11/30/95 | 0.00 | 01/23/96 | 0.00 | 03/17/96 | 0.00 | | |
| 08/15/95 | 0.40 | 10/08/95 | 0.00 | 12/01/95 | 0.00 | 01/24/96 | 0.00 | 03/18/96 | 0.00 | | |
| 08/16/95 | 0.41 | 10/09/95 | 0.00 | 12/02/95 | 0.00 | 01/25/96 | 0.00 | 03/19/96 | 0.00 | | |
| 08/17/95 | 0.41 | 10/10/95 | 0.01 | 12/03/95 | 0.00 | 01/26/96 | 0.00 | 03/20/96 | 0.00 | | |
| 08/18/95 | 0.39 | 10/11/95 | 0.01 | 12/04/95 | 0.00 | 01/27/96 | 0.00 | 03/21/96 | 0.00 | | |

Cameron Lake ss4 flow (CFS)

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 2.84 | 08/19/95 | 0.90 | 10/12/95 | 0.02 | 12/05/95 | 0.00 | 01/28/96 | 0.00 | 03/22/96 | 0.00 |
| 06/27/95 | 2.82 | 08/20/95 | 0.90 | 10/13/95 | 0.02 | 12/06/95 | 0.00 | 01/29/96 | 0.00 | 03/23/96 | 0.00 |
| 06/28/95 | 2.80 | 08/21/95 | 0.90 | 10/14/95 | 0.02 | 12/07/95 | 0.00 | 01/30/96 | 0.00 | 03/24/96 | 0.00 |
| 06/29/95 | 2.77 | 08/22/95 | 0.92 | 10/15/95 | 0.00 | 12/08/95 | 0.00 | 01/31/96 | 0.00 | 03/25/96 | 0.00 |
| 06/30/95 | 2.75 | 08/23/95 | 0.87 | 10/16/95 | 0.00 | 12/09/95 | 0.00 | 02/01/96 | 0.00 | 03/26/96 | 0.00 |
| 07/01/95 | 2.73 | 08/24/95 | 0.90 | 10/17/95 | 0.00 | 12/10/95 | 0.00 | 02/02/96 | 0.00 | 03/27/96 | 0.00 |
| 07/02/95 | 2.71 | 08/25/95 | 0.87 | 10/18/95 | 0.00 | 12/11/95 | 0.00 | 02/03/96 | 0.00 | 03/28/96 | 0.00 |
| 07/03/95 | 2.69 | 08/26/95 | 0.90 | 10/19/95 | 0.00 | 12/12/95 | 0.00 | 02/04/96 | 0.00 | 03/29/96 | 0.00 |
| 07/04/95 | 2.66 | 08/27/95 | 0.90 | 10/20/95 | 0.00 | 12/13/95 | 0.00 | 02/05/96 | 0.00 | 03/30/96 | 0.00 |
| 07/05/95 | 2.64 | 08/28/95 | 0.90 | 10/21/95 | 0.00 | 12/14/95 | 0.00 | 02/06/96 | 0.00 | 03/31/96 | 0.00 |
| 07/06/95 | 2.62 | 08/29/95 | 0.92 | 10/22/95 | 0.00 | 12/15/95 | 0.00 | 02/07/96 | 0.00 | 04/01/96 | 0.00 |
| 07/07/95 | 2.60 | 08/30/95 | 0.92 | 10/23/95 | 0.00 | 12/16/95 | 0.00 | 02/08/96 | 0.00 | 04/02/96 | 0.00 |
| 07/08/95 | 2.58 | 08/31/95 | 0.92 | 10/24/95 | 0.00 | 12/17/95 | 0.00 | 02/09/96 | 0.00 | 04/03/96 | 0.00 |
| 07/09/95 | 2.56 | 09/01/95 | 0.92 | 10/25/95 | 0.00 | 12/18/95 | 0.00 | 02/10/96 | 0.00 | 04/04/96 | 0.00 |
| 07/10/95 | 2.53 | 09/02/95 | 0.94 | 10/26/95 | 0.00 | 12/19/95 | 0.00 | 02/11/96 | 0.00 | 04/05/96 | 0.00 |
| 07/11/95 | 2.51 | 09/03/95 | 0.94 | 10/27/95 | 0.02 | 12/20/95 | 0.00 | 02/12/96 | 0.00 | 04/06/96 | 0.00 |
| 07/12/95 | 2.49 | 09/04/95 | 0.87 | 10/28/95 | 0.00 | 12/21/95 | 0.00 | 02/13/96 | 0.00 | 04/07/96 | 0.00 |
| 07/13/95 | 2.36 | 09/05/95 | 0.90 | 10/29/95 | 0.00 | 12/22/95 | 0.00 | 02/14/96 | 0.00 | 04/08/96 | 0.00 |
| 07/14/95 | 2.29 | 09/06/95 | 0.87 | 10/30/95 | 0.00 | 12/23/95 | 0.00 | 02/15/96 | 0.00 | 04/09/96 | 0.00 |
| 07/15/95 | 1.97 | 09/07/95 | 0.87 | 10/31/95 | 0.00 | 12/24/95 | 0.00 | 02/16/96 | 0.00 | 04/10/96 | 0.00 |
| 07/16/95 | 2.12 | 09/08/95 | 0.22 | 11/01/95 | 0.00 | 12/25/95 | 0.00 | 02/17/96 | 0.00 | 04/11/96 | 0.00 |
| 07/17/95 | 1.97 | 09/09/95 | 0.22 | 11/02/95 | 0.00 | 12/26/95 | 0.00 | 02/18/96 | 0.00 | 04/12/96 | 0.00 |
| 07/18/95 | 1.79 | 09/10/95 | 0.22 | 11/03/95 | 0.00 | 12/27/95 | 0.00 | 02/19/96 | 0.00 | 04/13/96 | 0.00 |
| 07/19/95 | 1.92 | 09/11/95 | 0.22 | 11/04/95 | 0.00 | 12/28/95 | 0.00 | 02/20/96 | 0.00 | 04/14/96 | 0.00 |
| 07/20/95 | 1.79 | 09/12/95 | 0.22 | 11/05/95 | 0.00 | 12/29/95 | 0.00 | 02/21/96 | 0.00 | 04/15/96 | 0.00 |
| 07/21/95 | 1.77 | 09/13/95 | 0.44 | 11/06/95 | 0.00 | 12/30/95 | 0.00 | 02/22/96 | 0.00 | 04/16/96 | 0.00 |
| 07/22/95 | 1.55 | 09/14/95 | 0.44 | 11/07/95 | 0.00 | 12/31/95 | 0.00 | 02/23/96 | 0.00 | 04/17/96 | 0.00 |
| 07/23/95 | 1.40 | 09/15/95 | 0.33 | 11/08/95 | 0.00 | 01/01/96 | 0.00 | 02/24/96 | 0.00 | 04/18/96 | 13.11 |
| 07/24/95 | 1.31 | 09/16/95 | 0.66 | 11/09/95 | 0.00 | 01/02/96 | 0.00 | 02/25/96 | 0.00 | | |
| 07/25/95 | 1.83 | 09/17/95 | 0.66 | 11/10/95 | 0.00 | 01/03/96 | 0.00 | 02/26/96 | 0.00 | | |
| 07/26/95 | 1.79 | 09/18/95 | 0.66 | 11/11/95 | 0.00 | 01/04/96 | 0.00 | 02/27/96 | 0.00 | | |
| 07/27/95 | 1.79 | 09/19/95 | 0.44 | 11/12/95 | 0.00 | 01/05/96 | 0.00 | 02/28/96 | 0.00 | | |
| 07/28/95 | 1.75 | 09/20/95 | 0.44 | 11/13/95 | 0.00 | 01/06/96 | 0.00 | 02/29/96 | 0.00 | | |
| 07/29/95 | 1.70 | 09/21/95 | 0.66 | 11/14/95 | 0.00 | 01/07/96 | 0.00 | 03/01/96 | 0.00 | | |
| 07/30/95 | 1.40 | 09/22/95 | 0.55 | 11/15/95 | 0.00 | 01/08/96 | 0.00 | 03/02/96 | 0.00 | | |
| 07/31/95 | 1.31 | 09/23/95 | 0.55 | 11/16/95 | 0.00 | 01/09/96 | 0.00 | 03/03/96 | 0.00 | | |
| 08/01/95 | 1.31 | 09/24/95 | 0.66 | 11/17/95 | 0.00 | 01/10/96 | 0.00 | 03/04/96 | 0.00 | | |
| 08/02/95 | 1.70 | 09/25/95 | 0.66 | 11/18/95 | 0.00 | 01/11/96 | 0.00 | 03/05/96 | 0.00 | | |
| 08/03/95 | 1.70 | 09/26/95 | 0.66 | 11/19/95 | 0.00 | 01/12/96 | 0.00 | 03/06/96 | 0.00 | | |
| 08/04/95 | 1.57 | 09/27/95 | 0.00 | 11/20/95 | 0.00 | 01/13/96 | 0.00 | 03/07/96 | 0.00 | | |
| 08/05/95 | 1.62 | 09/28/95 | 0.00 | 11/21/95 | 0.00 | 01/14/96 | 0.00 | 03/08/96 | 0.00 | | |
| 08/06/95 | 1.57 | 09/29/95 | 0.22 | 11/22/95 | 0.00 | 01/15/96 | 0.00 | 03/09/96 | 0.00 | | |
| 08/07/95 | 1.55 | 09/30/95 | 0.00 | 11/23/95 | 0.00 | 01/16/96 | 0.00 | 03/10/96 | 0.00 | | |
| 08/08/95 | 0.92 | 10/01/95 | 0.00 | 11/24/95 | 0.00 | 01/17/96 | 0.00 | 03/11/96 | 0.00 | | |
| 08/09/95 | 0.90 | 10/02/95 | 0.00 | 11/25/95 | 0.00 | 01/18/96 | 0.00 | 03/12/96 | 0.00 | | |
| 08/10/95 | 0.83 | 10/03/95 | 0.00 | 11/26/95 | 0.00 | 01/19/96 | 0.00 | 03/13/96 | 0.00 | | |
| 08/11/95 | 0.87 | 10/04/95 | 0.00 | 11/27/95 | 0.00 | 01/20/96 | 0.00 | 03/14/96 | 0.00 | | |
| 08/12/95 | 0.85 | 10/05/95 | 0.00 | 11/28/95 | 0.00 | 01/21/96 | 0.00 | 03/15/96 | 0.00 | | |
| 08/13/95 | 0.87 | 10/06/95 | 0.00 | 11/29/95 | 0.00 | 01/22/96 | 0.00 | 03/16/96 | 0.00 | | |
| 08/14/95 | 0.90 | 10/07/95 | 0.00 | 11/30/95 | 0.00 | 01/23/96 | 0.00 | 03/17/96 | 0.00 | | |
| 08/15/95 | 0.87 | 10/08/95 | 0.00 | 12/01/95 | 0.00 | 01/24/96 | 0.00 | 03/18/96 | 0.00 | | |
| 08/16/95 | 0.90 | 10/09/95 | 0.00 | 12/02/95 | 0.00 | 01/25/96 | 0.00 | 03/19/96 | 0.00 | | |
| 08/17/95 | 0.90 | 10/10/95 | 0.02 | 12/03/95 | 0.00 | 01/26/96 | 0.00 | 03/20/96 | 0.00 | | |
| 08/18/95 | 0.85 | 10/11/95 | 0.02 | 12/04/95 | 0.00 | 01/27/96 | 0.00 | 03/21/96 | 0.00 | | |

Cameron Lake ss5 Flow (CFS)

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 0.15 | 08/19/95 | 0.05 | 10/12/95 | 0.00 | 12/05/95 | 0.00 | 01/28/96 | 0.00 | 03/22/96 |
| 06/27/95 | 0.15 | 08/20/95 | 0.05 | 10/13/95 | 0.00 | 12/06/95 | 0.00 | 01/29/96 | 0.00 | 03/23/96 |
| 06/28/95 | 0.15 | 08/21/95 | 0.05 | 10/14/95 | 0.00 | 12/07/95 | 0.00 | 01/30/96 | 0.00 | 03/24/96 |
| 06/29/95 | 0.15 | 08/22/95 | 0.05 | 10/15/95 | 0.00 | 12/08/95 | 0.00 | 01/31/96 | 0.00 | 03/25/96 |
| 06/30/95 | 0.15 | 08/23/95 | 0.05 | 10/16/95 | 0.00 | 12/09/95 | 0.00 | 02/01/96 | 0.00 | 03/26/96 |
| 07/01/95 | 0.15 | 08/24/95 | 0.05 | 10/17/95 | 0.00 | 12/10/95 | 0.00 | 02/02/96 | 0.00 | 03/27/96 |
| 07/02/95 | 0.15 | 08/25/95 | 0.05 | 10/18/95 | 0.00 | 12/11/95 | 0.00 | 02/03/96 | 0.00 | 03/28/96 |
| 07/03/95 | 0.14 | 08/26/95 | 0.05 | 10/19/95 | 0.00 | 12/12/95 | 0.00 | 02/04/96 | 0.00 | 03/29/96 |
| 07/04/95 | 0.14 | 08/27/95 | 0.05 | 10/20/95 | 0.00 | 12/13/95 | 0.00 | 02/05/96 | 0.00 | 03/30/96 |
| 07/05/95 | 0.14 | 08/28/95 | 0.05 | 10/21/95 | 0.00 | 12/14/95 | 0.00 | 02/06/96 | 0.00 | 03/31/96 |
| 07/06/95 | 0.14 | 08/29/95 | 0.05 | 10/22/95 | 0.00 | 12/15/95 | 0.00 | 02/07/96 | 0.00 | 04/01/96 |
| 07/07/95 | 0.14 | 08/30/95 | 0.05 | 10/23/95 | 0.00 | 12/16/95 | 0.00 | 02/08/96 | 0.00 | 04/02/96 |
| 07/08/95 | 0.14 | 08/31/95 | 0.05 | 10/24/95 | 0.00 | 12/17/95 | 0.00 | 02/09/96 | 0.00 | 04/03/96 |
| 07/09/95 | 0.14 | 09/01/95 | 0.05 | 10/25/95 | 0.00 | 12/18/95 | 0.00 | 02/10/96 | 0.00 | 04/04/96 |
| 07/10/95 | 0.14 | 09/02/95 | 0.05 | 10/26/95 | 0.00 | 12/19/95 | 0.00 | 02/11/96 | 0.00 | 04/05/96 |
| 07/11/95 | 0.13 | 09/03/95 | 0.05 | 10/27/95 | 0.00 | 12/20/95 | 0.00 | 02/12/96 | 0.00 | 04/06/96 |
| 07/12/95 | 0.13 | 09/04/95 | 0.05 | 10/28/95 | 0.00 | 12/21/95 | 0.00 | 02/13/96 | 0.00 | 04/07/96 |
| 07/13/95 | 0.13 | 09/05/95 | 0.05 | 10/29/95 | 0.00 | 12/22/95 | 0.00 | 02/14/96 | 0.00 | 04/08/96 |
| 07/14/95 | 0.12 | 09/06/95 | 0.05 | 10/30/95 | 0.00 | 12/23/95 | 0.00 | 02/15/96 | 0.00 | 04/09/96 |
| 07/15/95 | 0.11 | 09/07/95 | 0.05 | 10/31/95 | 0.00 | 12/24/95 | 0.00 | 02/16/96 | 0.00 | 04/10/96 |
| 07/16/95 | 0.11 | 09/08/95 | 0.01 | 11/01/95 | 0.00 | 12/25/95 | 0.00 | 02/17/96 | 0.00 | 04/11/96 |
| 07/17/95 | 0.11 | 09/09/95 | 0.01 | 11/02/95 | 0.00 | 12/26/95 | 0.00 | 02/18/96 | 0.00 | 04/12/96 |
| 07/18/95 | 0.10 | 09/10/95 | 0.01 | 11/03/95 | 0.00 | 12/27/95 | 0.00 | 02/19/96 | 0.00 | 04/13/96 |
| 07/19/95 | 0.10 | 09/11/95 | 0.01 | 11/04/95 | 0.00 | 12/28/95 | 0.00 | 02/20/96 | 0.00 | 04/14/96 |
| 07/20/95 | 0.10 | 09/12/95 | 0.01 | 11/05/95 | 0.00 | 12/29/95 | 0.00 | 02/21/96 | 0.00 | 04/15/96 |
| 07/21/95 | 0.10 | 09/13/95 | 0.02 | 11/06/95 | 0.00 | 12/30/95 | 0.00 | 02/22/96 | 0.00 | 04/16/96 |
| 07/22/95 | 0.08 | 09/14/95 | 0.02 | 11/07/95 | 0.00 | 12/31/95 | 0.00 | 02/23/96 | 0.00 | 04/17/96 |
| 07/23/95 | 0.08 | 09/15/95 | 0.02 | 11/08/95 | 0.00 | 01/01/96 | 0.00 | 02/24/96 | 0.00 | 04/18/96 |
| 07/24/95 | 0.07 | 09/16/95 | 0.04 | 11/09/95 | 0.00 | 01/02/96 | 0.00 | 02/25/96 | 0.00 | |
| 07/25/95 | 0.10 | 09/17/95 | 0.04 | 11/10/95 | 0.00 | 01/03/96 | 0.00 | 02/26/96 | 0.00 | |
| 07/26/95 | 0.10 | 09/18/95 | 0.04 | 11/11/95 | 0.00 | 01/04/96 | 0.00 | 02/27/96 | 0.00 | |
| 07/27/95 | 0.10 | 09/19/95 | 0.02 | 11/12/95 | 0.00 | 01/05/96 | 0.00 | 02/28/96 | 0.00 | |
| 07/28/95 | 0.09 | 09/20/95 | 0.02 | 11/13/95 | 0.00 | 01/06/96 | 0.00 | 02/29/96 | 0.00 | |
| 07/29/95 | 0.09 | 09/21/95 | 0.04 | 11/14/95 | 0.00 | 01/07/96 | 0.00 | 03/01/96 | 0.00 | |
| 07/30/95 | 0.08 | 09/22/95 | 0.03 | 11/15/95 | 0.00 | 01/08/96 | 0.00 | 03/02/96 | 0.00 | |
| 07/31/95 | 0.07 | 09/23/95 | 0.03 | 11/16/95 | 0.00 | 01/09/96 | 0.00 | 03/03/96 | 0.00 | |
| 08/01/95 | 0.07 | 09/24/95 | 0.04 | 11/17/95 | 0.00 | 01/10/96 | 0.00 | 03/04/96 | 0.00 | |
| 08/02/95 | 0.09 | 09/25/95 | 0.04 | 11/18/95 | 0.00 | 01/11/96 | 0.00 | 03/05/96 | 0.00 | |
| 08/03/95 | 0.09 | 09/26/95 | 0.04 | 11/19/95 | 0.00 | 01/12/96 | 0.00 | 03/06/96 | 0.00 | |
| 08/04/95 | 0.08 | 09/27/95 | 0.00 | 11/20/95 | 0.00 | 01/13/96 | 0.00 | 03/07/96 | 0.00 | |
| 08/05/95 | 0.09 | 09/28/95 | 0.00 | 11/21/95 | 0.00 | 01/14/96 | 0.00 | 03/08/96 | 0.00 | |
| 08/06/95 | 0.08 | 09/29/95 | 0.01 | 11/22/95 | 0.00 | 01/15/96 | 0.00 | 03/09/96 | 0.00 | |
| 08/07/95 | 0.08 | 09/30/95 | 0.00 | 11/23/95 | 0.00 | 01/16/96 | 0.00 | 03/10/96 | 0.00 | |
| 08/08/95 | 0.05 | 10/01/95 | 0.00 | 11/24/95 | 0.00 | 01/17/96 | 0.00 | 03/11/96 | 0.00 | |
| 08/09/95 | 0.05 | 10/02/95 | 0.00 | 11/25/95 | 0.00 | 01/18/96 | 0.00 | 03/12/96 | 0.00 | |
| 08/10/95 | 0.04 | 10/03/95 | 0.00 | 11/26/95 | 0.00 | 01/19/96 | 0.00 | 03/13/96 | 0.00 | |
| 08/11/95 | 0.05 | 10/04/95 | 0.00 | 11/27/95 | 0.00 | 01/20/96 | 0.00 | 03/14/96 | 0.00 | |
| 08/12/95 | 0.05 | 10/05/95 | 0.00 | 11/28/95 | 0.00 | 01/21/96 | 0.00 | 03/15/96 | 0.00 | |
| 08/13/95 | 0.05 | 10/06/95 | 0.00 | 11/29/95 | 0.00 | 01/22/96 | 0.00 | 03/16/96 | 0.00 | |
| 08/14/95 | 0.05 | 10/07/95 | 0.00 | 11/30/95 | 0.00 | 01/23/96 | 0.00 | 03/17/96 | 0.00 | |
| 08/15/95 | 0.05 | 10/08/95 | 0.00 | 12/01/95 | 0.00 | 01/24/96 | 0.00 | 03/18/96 | 0.00 | |
| 08/16/95 | 0.05 | 10/09/95 | 0.00 | 12/02/95 | 0.00 | 01/25/96 | 0.00 | 03/19/96 | 0.00 | |
| 08/17/95 | 0.05 | 10/10/95 | 0.00 | 12/03/95 | 0.00 | 01/26/96 | 0.00 | 03/20/96 | 0.00 | |
| 08/18/95 | 0.05 | 10/11/95 | 0.00 | 12/04/95 | 0.00 | 01/27/96 | 0.00 | 03/21/96 | 0.00 | |

**Cameron Lake inlet1 Flow (CFS)**

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 1.3 | 08/19/95 | 0.41 | 10/12/95 | 0.01 | 12/05/95 | 0 | 01/28/96 | 0 | 03/22/96 | 0 |
| 06/27/95 | 1.29 | 08/20/95 | 0.41 | 10/13/95 | 0.01 | 12/06/95 | 0 | 01/29/96 | 0 | 03/23/96 | 0 |
| 06/28/95 | 1.28 | 08/21/95 | 0.41 | 10/14/95 | 0.01 | 12/07/95 | 0 | 01/30/96 | 0 | 03/24/96 | 0 |
| 06/29/95 | 1.27 | 08/22/95 | 0.42 | 10/15/95 | 0 | 12/08/95 | 0 | 01/31/96 | 0 | 03/25/96 | 0 |
| 06/30/95 | 1.26 | 08/23/95 | 0.4 | 10/16/95 | 0 | 12/09/95 | 0 | 02/01/96 | 0 | 03/26/96 | 0 |
| 07/01/95 | 1.25 | 08/24/95 | 0.41 | 10/17/95 | 0 | 12/10/95 | 0 | 02/02/96 | 0 | 03/27/96 | 0 |
| 07/02/95 | 1.24 | 08/25/95 | 0.4 | 10/18/95 | 0 | 12/11/95 | 0 | 02/03/96 | 0 | 03/28/96 | 0 |
| 07/03/95 | 1.23 | 08/26/95 | 0.41 | 10/19/95 | 0 | 12/12/95 | 0 | 02/04/96 | 0 | 03/29/96 | 0 |
| 07/04/95 | 1.22 | 08/27/95 | 0.41 | 10/20/95 | 0 | 12/13/95 | 0 | 02/05/96 | 0 | 03/30/96 | 0 |
| 07/05/95 | 1.21 | 08/28/95 | 0.41 | 10/21/95 | 0 | 12/14/95 | 0 | 02/06/96 | 0 | 03/31/96 | 0 |
| 07/06/95 | 1.2 | 08/29/95 | 0.42 | 10/22/95 | 0 | 12/15/95 |  | 02/07/96 | 0 | 04/01/96 | 0 |
| 07/07/95 | 1.19 | 08/30/95 | 0.42 | 10/23/95 | 0 | 12/16/95 | 0 | 02/08/96 | 0 | 04/02/96 | 0 |
| 07/08/95 | 1.18 | 08/31/95 | 0.42 | 10/24/95 | 0 | 12/17/95 | 0 | 02/09/96 | 0 | 04/03/96 | 0 |
| 07/09/95 | 1.17 | 09/01/95 | 0.42 | 10/25/95 | 0 | 12/18/95 | 0 | 02/10/96 | 0 | 04/04/96 | 0 |
| 07/10/95 | 1.16 | 09/02/95 | 0.43 | 10/26/95 | 0 | 12/19/95 | 0 | 02/11/96 | 0 | 04/05/96 | 0 |
| 07/11/95 | 1.15 | 09/03/95 | 0.43 | 10/27/95 | 0.01 | 12/20/95 | 0 | 02/12/96 | 0 | 04/06/96 | 0 |
| 07/12/95 | 1.14 | 09/04/95 | 0.4 | 10/28/95 | 0 | 12/21/95 | 0 | 02/13/96 | 0 | 04/07/96 | 0 |
| 07/13/95 | 1.08 | 09/05/95 | 0.41 | 10/29/95 | 0 | 12/22/95 | 0 | 02/14/96 | 0 | 04/08/96 | 0 |
| 07/14/95 | 1.05 | 09/06/95 | 0.4 | 10/30/95 | 0 | 12/23/95 | 0 | 02/15/96 | 0 | 04/09/96 | 0 |
| 07/15/95 | 0.9 | 09/07/95 | 0.4 | 10/31/95 | 0 | 12/24/95 | 0 | 02/16/96 | 0 | 04/10/96 | 0 |
| 07/16/95 | 0.97 | 09/08/95 | 0.1 | 11/01/95 | 0 | 12/25/95 | 0 | 02/17/96 | 0 | 04/11/96 | 0 |
| 07/17/95 | 0.9 | 09/09/95 | 0.1 | 11/02/95 | 0 | 12/26/95 | 0 | 02/18/96 | 0 | 04/12/96 | 0 |
| 07/18/95 | 0.82 | 09/10/95 | 0.1 | 11/03/95 | 0 | 12/27/95 | 0 | 02/19/96 | 0 | 04/13/96 | 0 |
| 07/19/95 | 0.88 | 09/11/95 | 0.1 | 11/04/95 | 0 | 12/28/95 | 0 | 02/20/96 | 0 | 04/14/96 | 0 |
| 07/20/95 | 0.82 | 09/12/95 | 0.1 | 11/05/95 | 0 | 12/29/95 | 0 | 02/21/96 | 0 | 04/15/96 | 0 |
| 07/21/95 | 0.81 | 09/13/95 | 0.2 | 11/06/95 | 0 | 12/30/95 | 0 | 02/22/96 | 0 | 04/16/96 | 0 |
| 07/22/95 | 0.71 | 09/14/95 | 0.2 | 11/07/95 | 0 | 12/31/95 | 0 | 02/23/96 | 0 | 04/17/96 | 0 |
| 07/23/95 | 0.64 | 09/15/95 | 0.15 | 11/08/95 | 0 | 01/01/96 | 0 | 02/24/96 | 0 | 04/18/96 | 6 |
| 07/24/95 | 0.6 | 09/16/95 | 0.3 | 11/09/95 | 0 | 01/02/96 | 0 | 02/25/96 | 0 |  |  |
| 07/25/95 | 0.84 | 09/17/95 | 0.3 | 11/10/95 | 0 | 01/03/96 | 0 | 02/26/96 | 0 |  |  |
| 07/26/95 | 0.82 | 09/18/95 | 0.3 | 11/11/95 | 0 | 01/04/96 | 0 | 02/27/96 | 0 |  |  |
| 07/27/95 | 0.82 | 09/19/95 | 0.2 | 11/12/95 | 0 | 01/05/96 | 0 | 02/28/96 | 0 |  |  |
| 07/28/95 | 0.8 | 09/20/95 | 0.2 | 11/13/95 | 0 | 01/06/96 | 0 | 02/29/96 | 0 |  |  |
| 07/29/95 | 0.78 | 09/21/95 | 0.3 | 11/14/95 | 0 | 01/07/96 | 0 | 03/01/96 | 0 |  |  |
| 07/30/95 | 0.64 | 09/22/95 | 0.25 | 11/15/95 | 0 | 01/08/96 | 0 | 03/02/96 | 0 |  |  |
| 07/31/95 | 0.6 | 09/23/95 | 0.25 | 11/16/95 | 0 | 01/09/96 | 0 | 03/03/96 | 0 |  |  |
| 08/01/95 | 0.6 | 09/24/95 | 0.3 | 11/17/95 | 0 | 01/10/96 | 0 | 03/04/96 | 0 |  |  |
| 08/02/95 | 0.78 | 09/25/95 | 0.3 | 11/18/95 | 0 | 01/11/96 | 0 | 03/05/96 | 0 |  |  |
| 08/03/95 | 0.78 | 09/26/95 | 0.3 | 11/19/95 | 0 | 01/12/96 | 0 | 03/06/96 | 0 |  |  |
| 08/04/95 | 0.72 | 09/27/95 | 0 | 11/20/95 | 0 | 01/13/96 | 0 | 03/07/96 | 0 |  |  |
| 08/05/95 | 0.74 | 09/28/95 | 0 | 11/21/95 | 0 | 01/14/96 | 0 | 03/08/96 | 0 |  |  |
| 08/06/95 | 0.72 | 09/29/95 | 0.1 | 11/22/95 | 0 | 01/15/96 | 0 | 03/09/96 | 0 |  |  |
| 08/07/95 | 0.71 | 09/30/95 | 0 | 11/23/95 | 0 | 01/16/96 | 0 | 03/10/96 | 0 |  |  |
| 08/08/95 | 0.42 | 10/01/95 | 0 | 11/24/95 | 0 | 01/17/96 | 0 | 03/11/96 | 0 |  |  |
| 08/09/95 | 0.41 | 10/02/95 | 0 | 11/25/95 | 0 | 01/18/96 | 0 | 03/12/96 | 0 |  |  |
| 08/10/95 | 0.38 | 10/03/95 | 0 | 11/26/95 | 0 | 01/19/96 | 0 | 03/13/96 | 0 |  |  |
| 08/11/95 | 0.4 | 10/04/95 | 0 | 11/27/95 | 0 | 01/20/96 | 0 | 03/14/96 | 0 |  |  |
| 08/12/95 | 0.39 | 10/05/95 | 0 | 11/28/95 | 0 | 01/21/96 | 0 | 03/15/96 | 0 |  |  |
| 08/13/95 | 0.4 | 10/06/95 | 0 | 11/29/95 | 0 | 01/22/96 | 0 | 03/16/96 | 0 |  |  |
| 08/14/95 | 0.41 | 10/07/95 | 0 | 11/30/95 | 0 | 01/23/96 | 0 | 03/17/96 | 0 |  |  |
| 08/15/95 | 0.4 | 10/08/95 | 0 | 12/01/95 | 0 | 01/24/96 | 0 | 03/18/96 | 0 |  |  |
| 08/16/95 | 0.41 | 10/09/95 | 0 | 12/02/95 | 0 | 01/25/96 | 0 | 03/19/96 | 0 |  |  |
| 08/17/95 | 0.41 | 10/10/95 | 0.01 | 12/03/95 | 0 | 01/26/96 | 0 | 03/20/96 | 0 |  |  |
| 08/18/95 | 0.39 | 10/11/95 | 0.01 | 12/04/95 | 0 | 01/27/96 | 0 | 03/21/96 | 0 |  |  |

**Cameron Lake inlet2 Flow (CFS)**

| Date | Flow | Date | Flow | Date | Flow | Date | Flow | Date | Flow |
|---|---|---|---|---|---|---|---|---|---|
| 06/26/95 | 0.74 | 10/14/95 | 0.01 | 12/07/95 | 0 | 01/30/96 | 0 | 03/24/96 | 0 |
| 06/27/95 | 0.73 | 10/15/95 | 0.00 | 12/08/95 | 0 | 01/31/96 | 0 | 03/25/96 | 0 |
| 06/28/95 | 0.73 | 10/16/95 | 0.00 | 12/09/95 | 0 | 02/01/96 | 0 | 03/26/96 | 0 |
| 06/29/95 | 0.72 | 10/17/95 | 0.00 | 12/10/95 | 0 | 02/02/96 | 0 | 03/27/96 | 0 |
| 06/30/95 | 0.72 | 10/18/95 | 0.00 | 12/11/95 | 0 | 02/03/96 | 0 | 03/28/96 | 0 |
| 07/01/95 | 0.71 | 10/19/95 | 0.00 | 12/12/95 | 0 | 02/04/96 | 0 | 03/29/96 | 0 |
| 07/02/95 | 0.70 | 10/20/95 | 0.00 | 12/13/95 | 0 | 02/05/96 | 0 | 03/30/96 | 0 |
| 07/03/95 | 0.70 | 10/21/95 | 0.00 | 12/14/95 | 0 | 02/06/96 | 0 | 03/31/96 | 0 |
| 07/04/95 | 0.69 | 10/22/95 | 0.00 | 12/15/95 | 0 | 02/07/96 | 0 | 04/01/96 | 0 |
| 07/05/95 | 0.69 | 10/23/95 | 0.00 | 12/16/95 | 0 | 02/08/96 | 0 | 04/02/96 | 0 |
| 07/06/95 | 0.68 | 10/24/95 | 0.00 | 12/17/95 | 0 | 02/09/96 | 0 | 04/03/96 | 0 |
| 07/07/95 | 0.68 | 10/25/95 | 0.00 | 12/18/95 | 0 | 02/10/96 | 0 | 04/04/96 | 0 |
| 07/08/95 | 0.67 | 10/26/95 | 0.00 | 12/19/95 | 0 | 02/11/96 | 0 | 04/05/96 | 0 |
| 07/09/95 | 0.66 | 10/27/95 | 0.01 | 12/20/95 | 0 | 02/12/96 | 0 | 04/06/96 | 0 |
| 07/10/95 | 0.66 | 10/28/95 | 0.00 | 12/21/95 | 0 | 02/13/96 | 0 | 04/07/96 | 0 |
| 07/11/95 | 0.65 | 10/29/95 | 0.00 | 12/22/95 | 0 | 02/14/96 | 0 | 04/08/96 | 0 |
| 07/12/95 | 0.65 | 10/30/95 | 0.00 | 12/23/95 | 0 | 02/15/96 | 0 | 04/09/96 | 0 |
| 07/13/95 | 0.61 | 10/31/95 | 0.00 | 12/24/95 | 0 | 02/16/96 | 0 | 04/10/96 | 0 |
| 07/14/95 | 0.60 | 11/01/95 | 0.00 | 12/25/95 | 0 | 02/17/96 | 0 | 04/11/96 | 0 |
| 07/15/95 | 0.51 | 11/02/95 | 0.00 | 12/26/95 | 0 | 02/18/96 | 0 | 04/12/96 | 0 |
| 07/16/95 | 0.55 | 11/03/95 | 0 | 12/27/95 | 0 | 02/19/96 | 0 | 04/13/96 | 0 |
| 07/17/95 | 0.51 | 11/04/95 | 0 | 12/28/95 | 0 | 02/20/96 | 0 | 04/14/96 | 0 |
| 07/18/95 | 0.47 | 11/05/95 | 0 | 12/29/95 | 0 | 02/21/96 | 0 | 04/15/96 | 0 |
| 07/19/95 | 0.50 | 11/06/95 | 0 | 12/30/95 | 0 | 02/22/96 | 0 | 04/16/96 | 0 |
| 07/20/95 | 0.47 | 11/07/95 | 0 | 12/31/95 | 0 | 02/23/96 | 0 | 04/17/96 | 0 |
| 07/21/95 | 0.46 | 11/08/95 | 0 | 01/01/96 | 0 | 02/24/96 | 0 | 04/18/96 | 3.41 |
| 07/22/95 | 0.40 | 11/09/95 | 0 | 01/02/96 | 0 | 02/25/96 | 0 | | |
| 07/23/95 | 0.36 | 11/10/95 | 0 | 01/03/96 | 0 | 02/26/96 | 0 | | |
| 07/24/95 | 0.34 | 11/11/95 | 0 | 01/04/96 | 0 | 02/27/96 | 0 | | |
| 07/25/95 | 0.48 | 11/12/95 | 0 | 01/05/96 | 0 | 02/28/96 | 0 | | |
| 07/26/95 | 0.47 | 11/13/95 | 0 | 01/06/96 | 0 | 02/29/96 | 0 | | |
| 07/27/95 | 0.47 | 11/14/95 | 0 | 01/07/96 | 0 | 03/01/96 | 0 | | |
| 07/28/95 | 0.45 | 11/15/95 | 0 | 01/08/96 | 0 | 03/02/96 | 0 | | |
| 07/29/95 | 0.44 | 11/16/95 | 0 | 01/09/96 | 0 | 03/03/96 | 0 | | |
| 07/30/95 | 0.36 | 11/17/95 | 0 | 01/10/96 | 0 | 03/04/96 | 0 | | |
| 07/31/95 | 0.34 | 11/18/95 | 0 | 01/11/96 | 0 | 03/05/96 | 0 | | |
| 08/01/95 | 0.34 | 11/19/95 | 0 | 01/12/96 | 0 | 03/06/96 | 0 | | |
| 08/02/95 | 0.44 | 11/20/95 | 0 | 01/13/96 | 0 | 03/07/96 | 0 | | |
| 08/03/95 | 0.44 | 11/21/95 | 0 | 01/14/96 | 0 | 03/08/96 | 0 | | |
| 08/04/95 | 0.41 | 11/22/95 | 0 | 01/15/96 | 0 | 03/09/96 | 0 | | |
| 08/05/95 | 0.42 | 11/23/95 | 0 | 01/16/96 | 0 | 03/10/96 | 0 | | |
| 08/06/95 | 0.41 | 11/24/95 | 0 | 01/17/96 | 0 | 03/11/96 | 0 | | |
| 08/07/95 | 0.40 | 11/25/95 | 0 | 01/18/96 | 0 | 03/12/96 | 0 | | |
| 08/08/95 | 0.24 | 11/26/95 | 0 | 01/19/96 | 0 | 03/13/96 | 0 | | |
| 08/09/95 | 0.23 | 11/27/95 | 0 | 01/20/96 | 0 | 03/14/96 | 0 | | |
| 08/10/95 | 0.22 | 11/28/95 | 0 | 01/21/96 | 0 | 03/15/96 | 0 | | |
| 08/11/95 | 0.23 | 11/29/95 | 0 | 01/22/96 | 0 | 03/16/96 | 0 | | |
| 08/12/95 | 0.22 | 11/30/95 | 0 | 01/23/96 | 0 | 03/17/96 | 0 | | |
| 08/13/95 | 0.23 | 12/01/95 | 0 | 01/24/96 | 0 | 03/18/96 | 0 | | |
| 08/14/95 | 0.23 | 12/02/95 | 0 | 01/25/96 | 0 | 03/19/96 | 0 | | |
| 08/15/95 | 0.23 | 12/03/95 | 0 | 01/26/96 | 0 | 03/20/96 | 0 | | |
| 08/16/95 | 0.23 | 12/04/95 | 0 | 01/27/96 | 0 | 03/21/96 | 0 | | |
| 08/17/95 | 0.23 | 12/05/95 | 0 | 01/28/96 | 0 | 03/22/96 | 0 | | |
| 08/18/95 | 0.22 | 12/06/96 | 0 | 01/29/96 | 0 | 03/23/96 | 0 | | |

## Cameron Lake Outlet Flow (CFS)

| Date | Flow |
|---|---|
| 06/26/95 | 0.42 |
| 06/27/95 | 0.45 |
| 06/28/95 | 0.48 |
| 06/29/95 | 0.51 |
| 06/30/95 | 0.54 |
| 07/01/95 | 0.57 |
| 07/02/95 | 0.6 |
| 07/03/95 | 0.64 |
| 07/04/95 | 0.67 |
| 07/05/95 | 0.7 |
| 07/06/95 | 0.74 |
| 07/07/95 | 0.77 |
| 07/08/95 | 0.8 |
| 07/09/95 | 0.85 |
| 07/10/95 | 0.92 |
| 07/11/95 | 1.05 |
| 07/12/95 | 1.18 |
| 07/13/95 | 1.31 |
| 07/14/95 | 1.43 |
| 07/15/95 | 1.37 |
| 07/16/95 | 1.31 |
| 07/17/95 | 1.26 |
| 07/18/95 | 1.2 |
| 07/19/95 | 1.14 |
| 07/20/95 | 1.08 |
| 07/21/95 | 1.02 |
| 07/22/95 | 0.97 |
| 07/23/95 | 0.91 |
| 07/24/95 | 0.85 |
| 07/25/95 | 0.79 |
| 07/26/95 | 0.73 |
| 07/27/95 | 0.68 |
| 07/28/95 | 0.62 |
| 07/29/95 | 0.56 |
| 07/30/95 | 0.5 |
| 07/31/95 | 0.44 |
| 08/01/95 | 0.39 |
| 08/02/95 | 0.32 |
| 08/03/95 | 0.31 |
| 08/04/95 | 0.29 |
| 08/05/95 | 0.28 |
| 08/06/95 | 0.26 |
| 08/07/95 | 0.25 |
| 08/08/95 | 0.24 |
| 08/09/95 | 0.22 |
| 08/10/95 | 0.21 |
| 08/11/95 | 0.19 |
| 08/12/95 | 0.18 |
| 08/13/95 | 0.17 |
| 08/14/95 | 0.15 |
| 08/15/95 | 0.14 |
| 08/16/95 | 0.13 |
| 08/17/95 | 0.11 |
| 08/18/95 | 0.1 |
| 08/19/95 | 0.08 |
| 08/20/95 | 0.07 |
| 08/21/95 | 0.06 |
| 08/22/95 | 0.04 |
| 08/23/95 | 0.03 |
| 08/24/95 | 0.01 |
| 08/25/95 | 0 |
| 08/26/95 | 0.009 |
| 08/27/95 | 0.018 |
| 08/28/95 | 0.028 |
| 08/29/95 | 0.037 |
| 08/30/95 | 0.046 |
| 08/31/95 | 0.055 |
| 09/01/95 | 0.064 |
| 09/02/95 | 0.073 |
| 09/03/95 | 0.083 |
| 09/04/95 | 0.092 |
| 09/05/95 | 0.1 |
| 09/06/95 | 0.11 |
| 09/07/95 | 0.11 |
| 09/08/95 | 0.11 |
| 09/09/95 | 0.11 |
| 09/10/95 | 0.11 |
| 09/11/95 | 0.11 |
| 09/12/95 | 0.11 |
| 09/13/95 | 0.11 |
| 09/14/95 | 0.11 |
| 09/15/95 | 0.11 |
| 09/16/95 | 0.11 |
| 09/17/95 | 0.11 |
| 09/18/95 | 0.11 |
| 09/19/95 | 0.12 |
| 09/20/95 | 0.12 |
| 09/21/95 | 0.12 |
| 09/22/95 | 0.12 |
| 09/23/95 | 0.12 |
| 09/24/95 | 0.12 |
| 09/25/95 | 0.12 |
| 09/26/95 | 0.12 |
| 09/27/95 | 0.12 |
| 09/28/95 | 0.12 |
| 09/29/95 | 0.12 |
| 09/30/95 | 0.13 |
| 10/01/95 | 0.14 |
| 10/02/95 | 0.15 |
| 10/03/95 | 0.16 |
| 10/04/95 | 0.17 |
| 10/05/95 | 0.17 |
| 10/06/95 | 0.17 |
| 10/07/95 | 0.18 |
| 10/08/95 | 0.18 |
| 10/09/95 | 0.18 |
| 10/10/95 | 0.18 |
| 10/11/95 | 0.18 |
| 10/12/95 | 0.19 |
| 10/13/95 | 0.19 |
| 10/14/95 | 0.19 |
| 10/15/95 | 0.19 |
| 10/16/95 | 0.19 |
| 10/17/95 | 0.2 |
| 10/18/95 | 0.2 |
| 10/19/95 | 0.2 |
| 10/20/95 | 0.2 |
| 10/21/95 | 0.2 |
| 10/22/95 | 0.21 |
| 10/23/95 | 0.21 |
| 10/24/95 | 0.21 |
| 10/25/95 | 0.22 |
| 10/26/95 | 0.22 |
| 10/27/95 | 0.22 |
| 10/28/95 | 0.22 |
| 10/29/95 | 0.22 |
| 10/30/95 | 0.22 |
| 10/31/95 | 0.23 |
| 11/01/95 | 0.23 |
| 11/02/95 | 0.23 |
| 11/03/95 | 0 |
| 11/04/95 | 0 |
| 11/05/95 | 0 |
| 11/06/95 | 0 |
| 11/07/95 | 0 |
| 11/08/95 | 0 |
| 11/09/95 | 0 |
| 11/10/95 | 0 |
| 11/11/95 | 0 |
| 11/12/95 | 0 |
| 11/13/95 | 0 |
| 11/14/95 | 0 |
| 11/15/95 | 0 |
| 11/16/95 | 0 |
| 11/17/95 | 0 |
| 11/18/95 | 0 |
| 11/19/95 | 0 |
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| 11/21/95 | 0 |
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| 11/25/95 | 0 |
| 11/26/95 | 0 |
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| 11/28/95 | 0 |
| 11/29/95 | 0 |
| 11/30/95 | 0 |
| 12/01/95 | 0 |
| 12/02/95 | 0 |
| 12/03/95 | 0 |
| 12/04/95 | 0 |
| 12/05/95 | 0 |
| 12/06/95 | 0 |
| 12/07/95 | 0 |
| 12/08/95 | 0 |
| 12/09/95 | 0 |
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| 12/30/95 | 0 |
| 12/31/95 | 0 |
| 01/01/96 | 0 |
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| 01/06/96 | 0 |
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| 01/09/96 | 0 |
| 01/10/96 | 0 |
| 01/11/96 | 0 |
| 01/12/96 | 0 |
| 01/13/96 | 0 |
| 01/14/96 | 0 |
| 01/15/96 | 0 |
| 01/16/96 | 0 |
| 01/17/96 | 0 |
| 01/18/96 | 0 |
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| 01/20/96 | 0 |
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| 01/24/96 | 0 |
| 01/25/96 | 0 |
| 01/26/96 | 0 |
| 01/27/96 | 0 |
| 01/28/96 | 0 |
| 01/29/96 | 0 |
| 01/30/96 | 0 |
| 01/31/96 | 0 |
| 02/01/96 | 0 |
| 02/02/96 | 0 |
| 02/03/96 | 0 |
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| 02/05/96 | 0 |
| 02/06/96 | 0 |
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| 02/08/96 | 0 |
| 02/09/96 | 0 |
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| 02/11/96 | 0 |
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| 02/24/96 | 0 |
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| 02/26/96 | 0 |
| 02/27/96 | 0 |
| 02/28/96 | 0 |
| 02/29/96 | 0 |
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| 03/02/96 | 0 |
| 03/03/96 | 0 |
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| 03/05/96 | 0 |
| 03/06/96 | 0 |
| 03/07/96 | 0 |
| 03/08/96 | 0 |
| 03/09/96 | 0 |
| 03/10/96 | 0 |
| 03/11/96 | 0 |
| 03/12/96 | 0 |
| 03/13/96 | 0 |
| 03/14/96 | 0 |
| 03/15/96 | 0 |
| 03/16/96 | 0 |
| 03/17/96 | 0 |
| 03/18/96 | 0 |
| 03/19/96 | 0 |
| 03/20/96 | 0 |
| 03/21/96 | 0 |
| 03/22/96 | 0 |
| 03/23/96 | 0 |
| 03/24/96 | 0 |
| 03/25/96 | 0 |
| 03/26/96 | 0 |
| 03/27/96 | 0 |
| 03/28/96 | 0 |
| 03/29/96 | 0 |
| 03/30/96 | 0 |
| 03/31/96 | 0 |
| 04/01/96 | 0 |
| 04/02/96 | 0 |
| 04/03/96 | 0 |
| 04/04/96 | 0 |
| 04/05/96 | 0 |
| 04/06/96 | 0 |
| 04/07/96 | 0 |
| 04/08/96 | 0 |
| 04/09/96 | 0 |
| 04/10/96 | 0 |
| 04/11/96 | 0 |
| 04/12/96 | 0 |
| 04/13/96 | 0 |
| 04/14/96 | 0 |
| 04/15/96 | 0 |
| 04/16/96 | 0 |
| 04/17/96 | 0 |
| 04/18/96 | 2.48 |