



231 W. Michigan, P.O. Box 2046, Milwaukee, WI 53201-2046

(414) 221-2345

November 17, 1997

Ms. Lois Cashell, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

*Sent copy to  
Mary Gansberg  
11/20/97  
TB*

**RE: Pine Hydroelectric Project - FERC No. 2486-010  
Article 408 - Water Quality Monitoring Report**

Dear Ms. Cashell:

Wisconsin Electric is hereby filing one original and eight additional copies of the results of the water quality monitoring conducted at the Pine Project during May, June, July, August, September, and October, 1997.

The Commission issued a new license on December 19, 1995 for the above project and by order dated September 25, 1996 approved and modified Wisconsin Electric's water quality monitoring plan. The monitoring plan assures that the Pine Plant's discharge meets Wisconsin's water quality standards for temperature, dissolved oxygen (DO) and pH. The applicable standards are as follows:

|                     |                        |
|---------------------|------------------------|
| Maximum Temperature | 89°F (31.7°C);         |
| DO                  | 5.0 mg/l at all times; |
| pH                  | between 6.0 and 9.0.   |

The attached table and supporting appendices document 100% compliance with these standards.

In addition, it should be noted that data recovery from our monitoring instruments (Hydrolab Recorder - Water Quality Multiprobe Logger) was 99.4 % for the entire six month period. Most of the missing data was attributed to delays in deploying the instrument on May 1st.

A diskette containing the raw data and accompanying explanation sheet is submitted to Mr. Thomas Thuemler, for the Wisconsin DNR's use.

Enclosed is a proof of service to the agencies listed on the copy list.

Please call me at (414) 221-2413, if you have questions regarding this filing.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rita L. Hayen', written over a white background.

Rita L. Hayen, P.E.  
Project Manager, Hydro Licensing

cc: Mr. Tom Thuemler, WDNR (with diskette)  
✓ Mr. Jim Fossum, USFWS

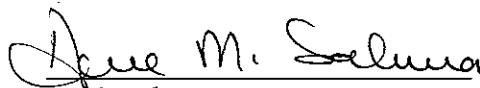
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## Certificate of Service

I hereby certify that I have this day served the foregoing document upon all entities specified in the order to issue license to be consulted on matters related to the Commission filing. Service was done pursuant to Rule 2010 of FERC's Rules of Practice and Procedure 18 CFR, Section 385.2010

Dated this day Monday, November 17, 1997.



Annie Salmona  
Hydro Licensing  
Wisconsin Electric Power Co.

Annie Salmona  
Wisconsin Electric Power Co.  
333 W. Everett Street  
Milwaukee, WI 53203  
(414) 221-4151



## Pine Tailrace Station 1997 Hydro Data Summary

### Temperature (Degrees C)

| Month | Number of Observations | Mean | Maximum | Minimum |
|-------|------------------------|------|---------|---------|
| 5     | 723                    | 10.5 | 15.5    | 5.4     |
| 6     | 719                    | 19.5 | 24.8    | 15.2    |
| 7     | 739                    | 21.2 | 25.3    | 16.5    |
| 8     | 744                    | 19.1 | 24.1    | 15.1    |
| 9     | 720                    | 15.6 | 18.3    | 13.2    |
| 10    | 744                    | 8.7  | 15.6    | 1.8     |

### Dissolved Oxygen (PPM)

| Month | Number of Observations | Mean | Maximum | Minimum |
|-------|------------------------|------|---------|---------|
| 5     | 723                    | 10.4 | 12.4    | 8.4     |
| 6     | 719                    | 7.9  | 9.2     | 6.8     |
| 7     | 739                    | 7.3  | 8.6     | 6.2     |
| 8     | 744                    | 7.5  | 9.2     | 6.4     |
| 9     | 720                    | 9.3  | 10.0    | 8.3     |
| 10    | 744                    | 10.5 | 12.9    | 8.1     |

### Dissolved Oxygen (% Saturation)

| Month | Number of Observations | Mean | Maximum | Minimum |
|-------|------------------------|------|---------|---------|
| 5     | 723                    | 95.9 | 102.8   | 86.0    |
| 6     | 719                    | 88.1 | 96.5    | 75.7    |
| 7     | 739                    | 84.0 | 95.3    | 71.7    |
| 8     | 744                    | 82.1 | 94.9    | 70.5    |
| 9     | 720                    | 94.9 | 99.4    | 82.7    |
| 10    | 744                    | 90.0 | 97.7    | 77.5    |

### pH (Standard Units)

| Month | Number of Observations |  | Maximum | Minimum |
|-------|------------------------|--|---------|---------|
| 5     | 723                    |  | 8.1     | 7.4     |
| 6     | 719                    |  | 8.4     | 7.7     |
| 7     | 739                    |  | 8.4     | 7.6     |
| 8     | 744                    |  | 8.2     | 7.7     |
| 9     | 720                    |  | 8.2     | 7.7     |
| 10    | 744                    |  | 8.2     | 7.6     |



## Wisconsin Electric Power Company - Pine Hydro Plant Vertical Profile Data

Vertical profile measurements were taken through the ice on February 25, 1997. Four test holes were drilled in front of the tainter gates and a calibrated lead line was used to locate the deepest hole (~39'). Measurements were taken at one meter intervals from the surface to the bottom. A second meter was also used to verify the dissolved oxygen measurements.

| Depth (M)<br>(Meters) | Temperature (C)<br>Degrees C | Dissolved<br>Oxygen (mg/l) | Conductivity<br>uS/cm | pH<br>(S.U.) |
|-----------------------|------------------------------|----------------------------|-----------------------|--------------|
| 0                     | 0.1                          | 13.5                       | 189                   | 7.6          |
| 1                     | 0.1                          | 13.4                       | 197                   | 7.6          |
| 2                     | 0.2                          | 13.3                       | 198                   | 7.6          |
| 3                     | 0.2                          | 13.4                       | 201                   | 7.6          |
| 4                     | 0.1                          | 13.4                       | 193                   | 7.6          |
| 5                     | 0.2                          | 13.0                       | 188                   | 7.7          |
| 6                     | 0.1                          | 13.1                       | 210                   | 7.7          |
| 7                     | 0.2                          | 13.0                       | 204                   | 7.7          |
| 8                     | 0.3                          | 12.8                       | 201                   | 7.7          |
| 9                     | 0.3                          | 12.5                       | 205                   | 7.7          |
| 10                    | 0.5                          | 10.9                       | 193                   | 7.6          |
| 10.1                  | 0.6                          | 10.6                       | 210                   | 7.6          |





PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 1   | 05/01/97 | 2000 | 7.70                     | 7.46          | 11.60                        | 100.3                            |
| 2   | 05/01/97 | 2100 | 7.82                     | 7.47          | 11.53                        | 100.4                            |
| 3   | 05/01/97 | 2200 | 8.08                     | 7.47          | 11.45                        | 100.2                            |
| 4   | 05/02/97 | 2300 | 8.26                     | 7.50          | 11.43                        | 100.0                            |
| 5   | 05/02/97 | 100  | 8.43                     | 7.49          | 11.36                        | 100.3                            |
| 6   | 05/02/97 | 300  | 8.51                     | 7.49          | 11.29                        | 99.6                             |
| 7   | 05/02/97 | 500  | 8.48                     | 7.48          | 11.27                        | 99.3                             |
| 8   | 05/02/97 | 700  | 8.39                     | 7.47          | 11.26                        | 99.0                             |
| 9   | 05/02/97 | 900  | 8.30                     | 7.47          | 11.25                        | 98.6                             |
| 10  | 05/02/97 | 1100 | 8.21                     | 7.46          | 11.23                        | 98.3                             |
| 11  | 05/02/97 | 1300 | 8.13                     | 7.45          | 11.22                        | 98.0                             |
| 12  | 05/02/97 | 1500 | 8.07                     | 7.45          | 11.22                        | 98.5                             |
| 13  | 05/02/97 | 1700 | 8.00                     | 7.45          | 11.29                        | 98.5                             |
| 14  | 05/02/97 | 1900 | 8.00                     | 7.45          | 11.30                        | 98.5                             |
| 15  | 05/02/97 | 1100 | 7.86                     | 7.44          | 11.34                        | 98.4                             |
| 16  | 05/02/97 | 1200 | 7.79                     | 7.44          | 11.37                        | 98.5                             |
| 17  | 05/02/97 | 1300 | 7.70                     | 7.44          | 11.41                        | 98.7                             |
| 18  | 05/02/97 | 1400 | 7.68                     | 7.43          | 11.41                        | 98.7                             |
| 19  | 05/02/97 | 1500 | 7.65                     | 7.43          | 11.45                        | 99.0                             |
| 20  | 05/02/97 | 1600 | 7.65                     | 7.43          | 11.45                        | 99.0                             |
| 21  | 05/02/97 | 1700 | 7.65                     | 7.43          | 11.45                        | 99.0                             |
| 22  | 05/02/97 | 1800 | 7.65                     | 7.43          | 11.51                        | 99.2                             |
| 23  | 05/02/97 | 1900 | 7.68                     | 7.44          | 11.57                        | 99.3                             |
| 24  | 05/02/97 | 1800 | 7.61                     | 7.44          | 11.54                        | 99.3                             |
| 25  | 05/02/97 | 2000 | 7.59                     | 7.45          | 11.53                        | 99.3                             |
| 26  | 05/02/97 | 2100 | 7.62                     | 7.44          | 11.53                        | 99.3                             |
| 27  | 05/02/97 | 2200 | 7.61                     | 7.44          | 11.52                        | 99.4                             |
| 28  | 05/02/97 | 2300 | 7.62                     | 7.45          | 11.48                        | 99.4                             |
| 29  | 05/03/97 | 100  | 7.62                     | 7.45          | 11.48                        | 99.4                             |
| 30  | 05/03/97 | 200  | 7.69                     | 7.47          | 11.45                        | 99.0                             |
| 31  | 05/03/97 | 300  | 7.70                     | 7.47          | 11.45                        | 99.0                             |
| 32  | 05/03/97 | 400  | 7.71                     | 7.46          | 11.44                        | 98.9                             |
| 33  | 05/03/97 | 500  | 7.67                     | 7.46          | 11.44                        | 98.9                             |
| 34  | 05/03/97 | 600  | 7.65                     | 7.47          | 11.45                        | 98.8                             |
| 35  | 05/03/97 | 700  | 7.61                     | 7.47          | 11.45                        | 98.8                             |
| 36  | 05/03/97 | 800  | 7.62                     | 7.47          | 11.45                        | 98.8                             |
| 37  | 05/03/97 | 900  | 7.63                     | 7.48          | 11.47                        | 98.8                             |
| 38  | 05/03/97 | 1000 | 7.63                     | 7.48          | 11.44                        | 98.8                             |
| 39  | 05/03/97 | 1100 | 7.62                     | 7.47          | 11.44                        | 98.8                             |
| 40  | 05/03/97 | 1200 | 7.62                     | 7.45          | 11.43                        | 98.8                             |
| 41  | 05/03/97 | 1300 | 7.62                     | 7.45          | 11.43                        | 98.8                             |
| 42  | 05/03/97 | 1400 | 7.62                     | 7.44          | 11.43                        | 98.8                             |
| 43  | 05/03/97 | 1500 | 7.62                     | 7.44          | 11.47                        | 98.8                             |
| 44  | 05/03/97 | 1600 | 7.62                     | 7.44          | 11.48                        | 98.8                             |
| 45  | 05/03/97 | 1700 | 7.62                     | 7.45          | 11.45                        | 98.8                             |
| 46  | 05/03/97 | 1800 | 7.62                     | 7.45          | 11.46                        | 98.8                             |
| 47  | 05/03/97 | 1900 | 7.62                     | 7.46          | 11.44                        | 98.8                             |
| 48  | 05/03/97 | 2000 | 7.62                     | 7.46          | 11.39                        | 98.8                             |
| 49  | 05/03/97 | 2100 | 7.62                     | 7.47          | 11.37                        | 98.8                             |
| 50  | 05/03/97 | 2200 | 7.62                     | 7.47          | 11.37                        | 98.8                             |
| 51  | 05/03/97 | 2300 | 7.62                     | 7.48          | 11.37                        | 98.8                             |
| 52  | 05/04/97 | 100  | 7.62                     | 7.50          | 11.32                        | 98.8                             |
| 53  | 05/04/97 | 200  | 7.62                     | 7.50          | 11.26                        | 98.8                             |
| 54  | 05/04/97 | 300  | 7.62                     | 7.51          | 11.19                        | 98.8                             |
| 55  | 05/04/97 | 400  | 7.62                     | 7.51          | 11.15                        | 98.8                             |
| 56  | 05/04/97 | 500  | 7.62                     | 7.52          | 11.14                        | 98.8                             |
| 57  | 05/04/97 | 600  | 7.62                     | 7.52          | 11.10                        | 98.8                             |
| 58  | 05/04/97 | 700  | 7.62                     | 7.52          | 11.06                        | 98.8                             |
| 59  | 05/04/97 | 800  | 7.62                     | 7.51          | 11.05                        | 98.8                             |
| 60  | 05/04/97 | 900  | 7.62                     | 7.51          | 11.08                        | 98.8                             |
| 61  | 05/04/97 | 1000 | 7.62                     | 7.51          | 11.07                        | 98.8                             |
| 62  | 05/04/97 | 1100 | 7.62                     | 7.51          | 11.08                        | 98.8                             |
| 63  | 05/04/97 | 1200 | 7.62                     | 7.50          | 11.13                        | 98.8                             |
| 64  | 05/04/97 | 1300 | 7.62                     | 7.50          | 11.14                        | 98.8                             |
| 65  | 05/04/97 | 1400 | 7.62                     | 7.51          | 11.12                        | 98.8                             |
| 66  | 05/04/97 | 1500 | 7.62                     | 7.51          | 11.12                        | 98.8                             |
| 67  | 05/04/97 | 1600 | 7.62                     | 7.50          | 11.19                        | 98.8                             |
| 68  | 05/04/97 | 1700 | 7.62                     | 7.50          | 11.24                        | 98.8                             |
| 69  | 05/04/97 | 1800 | 7.62                     | 7.51          | 11.32                        | 98.8                             |
| 70  | 05/04/97 | 1900 | 7.62                     | 7.51          | 11.31                        | 98.8                             |
| 71  | 05/04/97 | 2000 | 7.62                     | 7.54          | 11.26                        | 98.8                             |
| 72  | 05/04/97 | 2100 | 7.62                     | 7.54          | 11.22                        | 98.8                             |
| 73  | 05/04/97 | 2200 | 7.62                     | 7.54          | 11.14                        | 98.8                             |
| 74  | 05/04/97 | 2300 | 7.62                     | 7.54          | 11.12                        | 98.8                             |
| 75  | 05/04/97 | 2200 | 7.62                     | 7.54          | 11.12                        | 98.8                             |

| OBS | DATE     | HOUR | TEMP.<br>(C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|---------------|---------------|------------------------------|----------------------------------|
| 76  | 05/04/97 | 2300 | 9.74          | 7.55          | 11.07                        | 100.5                            |
| 77  | 05/05/97 | 9    | 9.92          | 7.55          | 11.03                        | 100.4                            |
| 78  | 05/05/97 | 100  | 9.92          | 7.57          | 10.98                        | 100.4                            |
| 79  | 05/05/97 | 200  | 10.05         | 7.57          | 10.84                        | 100.4                            |
| 80  | 05/05/97 | 400  | 10.05         | 7.56          | 10.87                        | 100.4                            |
| 81  | 05/05/97 | 500  | 10.04         | 7.56          | 10.86                        | 99.4                             |
| 82  | 05/05/97 | 600  | 9.96          | 7.55          | 10.82                        | 98.9                             |
| 83  | 05/05/97 | 700  | 9.96          | 7.55          | 10.79                        | 98.8                             |
| 84  | 05/05/97 | 800  | 9.92          | 7.55          | 10.75                        | 98.3                             |
| 85  | 05/05/97 | 900  | 9.86          | 7.55          | 10.73                        | 98.1                             |
| 86  | 05/05/97 | 1000 | 9.81          | 7.54          | 10.72                        | 97.5                             |
| 87  | 05/05/97 | 1100 | 9.88          | 7.55          | 10.72                        | 97.5                             |
| 88  | 05/05/97 | 1200 | 10.04         | 7.55          | 10.71                        | 98.0                             |
| 89  | 05/05/97 | 1300 | 10.10         | 7.55          | 10.68                        | 97.9                             |
| 90  | 05/05/97 | 1400 | 10.10         | 7.55          | 10.67                        | 98.0                             |
| 91  | 05/05/97 | 1500 | 10.20         | 7.55          | 10.67                        | 98.0                             |
| 92  | 05/05/97 | 1600 | 10.27         | 7.55          | 10.68                        | 98.2                             |
| 93  | 05/05/97 | 1700 | 10.35         | 7.55          | 10.69                        | 98.2                             |
| 94  | 05/05/97 | 1800 | 10.42         | 7.55          | 10.67                        | 97.7                             |
| 95  | 05/05/97 | 1900 | 10.45         | 7.55          | 10.67                        | 97.7                             |
| 96  | 05/05/97 | 2000 | 10.45         | 7.55          | 10.62                        | 97.3                             |
| 97  | 05/05/97 | 2100 | 10.09         | 7.55          | 10.62                        | 97.2                             |
| 98  | 05/05/97 | 2200 | 10.14         | 7.55          | 10.60                        | 97.2                             |
| 99  | 05/05/97 | 2300 | 10.28         | 7.57          | 10.60                        | 97.2                             |
| 100 | 05/05/97 | 0    | 10.45         | 7.59          | 10.58                        | 97.9                             |
| 101 | 05/05/97 | 9    | 10.45         | 7.59          | 10.58                        | 97.8                             |
| 102 | 05/05/97 | 100  | 10.45         | 7.59          | 10.54                        | 97.5                             |
| 103 | 05/05/97 | 200  | 10.45         | 7.59          | 10.49                        | 97.5                             |
| 104 | 05/05/97 | 300  | 10.45         | 7.59          | 10.49                        | 97.5                             |
| 105 | 05/05/97 | 400  | 10.45         | 7.59          | 10.49                        | 97.5                             |
| 106 | 05/05/97 | 500  | 10.45         | 7.59          | 10.49                        | 97.5                             |
| 107 | 05/05/97 | 600  | 10.45         | 7.59          | 10.49                        | 97.5                             |
| 108 | 05/05/97 | 700  | 10.45         | 7.59          | 10.53                        | 97.2                             |
| 109 | 05/05/97 | 800  | 10.45         | 7.59          | 10.53                        | 97.2                             |
| 110 | 05/05/97 | 900  | 10.45         | 7.59          | 10.51                        | 97.1                             |
| 111 | 05/05/97 | 1000 | 10.45         | 7.59          | 10.51                        | 97.1                             |
| 112 | 05/05/97 | 1100 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 113 | 05/05/97 | 1200 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 114 | 05/05/97 | 1300 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 115 | 05/05/97 | 1400 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 116 | 05/05/97 | 1500 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 117 | 05/05/97 | 1600 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 118 | 05/05/97 | 1700 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 119 | 05/05/97 | 1800 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 120 | 05/05/97 | 1900 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 121 | 05/05/97 | 2000 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 122 | 05/05/97 | 2100 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 123 | 05/05/97 | 2200 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 124 | 05/05/97 | 2300 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 125 | 05/05/97 | 0    | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 126 | 05/05/97 | 100  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 127 | 05/05/97 | 200  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 128 | 05/05/97 | 300  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 129 | 05/05/97 | 400  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 130 | 05/05/97 | 500  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 131 | 05/05/97 | 600  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 132 | 05/05/97 | 700  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 133 | 05/05/97 | 800  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 134 | 05/05/97 | 900  | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 135 | 05/05/97 | 1000 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 136 | 05/05/97 | 1100 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 137 | 05/05/97 | 1200 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 138 | 05/05/97 | 1300 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 139 | 05/05/97 | 1400 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 140 | 05/05/97 | 1500 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 141 | 05/05/97 | 1600 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 142 | 05/05/97 | 1700 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 143 | 05/05/97 | 1800 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 144 | 05/05/97 | 1900 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 145 | 05/05/97 | 2000 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 146 | 05/05/97 | 2100 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 147 | 05/05/97 | 2200 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 148 | 05/05/97 | 2300 | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 149 | 05/05/97 | 0    | 10.45         | 7.59          | 10.53                        | 97.4                             |
| 150 | 05/05/97 | 100  | 10.45         | 7.59          | 10.53                        | 97.4                             |

7/10/01

PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 151 | 05/08/97 | 200  | 10.68                    | 7.67          | 10.60                        | 98.5                             |
| 152 | 05/08/97 | 300  | 10.68                    | 7.65          | 10.55                        | 98.0                             |
| 153 | 05/08/97 | 400  | 10.73                    | 7.67          | 10.54                        | 98.0                             |
| 154 | 05/08/97 | 500  | 10.78                    | 7.68          | 10.49                        | 97.6                             |
| 155 | 05/08/97 | 600  | 10.79                    | 7.68          | 10.47                        | 97.5                             |
| 156 | 05/08/97 | 700  | 10.81                    | 7.69          | 10.43                        | 97.1                             |
| 157 | 05/08/97 | 800  | 10.83                    | 7.69          | 10.42                        | 97.1                             |
| 158 | 05/08/97 | 900  | 10.88                    | 7.70          | 10.40                        | 97.1                             |
| 159 | 05/08/97 | 1000 | 10.99                    | 7.72          | 10.39                        | 97.2                             |
| 160 | 05/08/97 | 1100 | 11.07                    | 7.73          | 10.36                        | 97.1                             |
| 161 | 05/08/97 | 1200 | 11.17                    | 7.74          | 10.41                        | 97.3                             |
| 162 | 05/08/97 | 1300 | 11.24                    | 7.74          | 10.40                        | 97.3                             |
| 163 | 05/08/97 | 1400 | 11.29                    | 7.74          | 10.34                        | 97.3                             |
| 164 | 05/08/97 | 1500 | 11.32                    | 7.73          | 10.35                        | 97.6                             |
| 165 | 05/08/97 | 1600 | 11.37                    | 7.72          | 10.32                        | 97.4                             |
| 166 | 05/08/97 | 1700 | 11.35                    | 7.72          | 10.31                        | 97.3                             |
| 167 | 05/08/97 | 1800 | 11.35                    | 7.72          | 10.29                        | 97.1                             |
| 168 | 05/08/97 | 1900 | 11.32                    | 7.73          | 10.27                        | 97.0                             |
| 169 | 05/08/97 | 2000 | 11.32                    | 7.73          | 10.27                        | 97.0                             |
| 170 | 05/08/97 | 2100 | 11.32                    | 7.74          | 10.24                        | 96.8                             |
| 171 | 05/08/97 | 2200 | 11.32                    | 7.74          | 10.22                        | 96.8                             |
| 172 | 05/08/97 | 2300 | 11.35                    | 7.75          | 10.18                        | 96.4                             |
| 173 | 05/09/97 | 0    | 11.57                    | 7.75          | 10.17                        | 96.4                             |
| 174 | 05/09/97 | 100  | 11.53                    | 7.74          | 10.15                        | 96.2                             |
| 175 | 05/09/97 | 200  | 11.52                    | 7.75          | 10.16                        | 96.2                             |
| 176 | 05/09/97 | 300  | 11.50                    | 7.76          | 10.15                        | 96.1                             |
| 177 | 05/09/97 | 400  | 11.50                    | 7.76          | 10.12                        | 95.8                             |
| 178 | 05/09/97 | 500  | 11.50                    | 7.77          | 10.12                        | 95.8                             |
| 179 | 05/09/97 | 600  | 11.50                    | 7.77          | 10.11                        | 95.8                             |
| 180 | 05/09/97 | 700  | 11.48                    | 7.77          | 10.10                        | 95.7                             |
| 181 | 05/09/97 | 800  | 11.43                    | 7.77          | 10.09                        | 95.5                             |
| 182 | 05/09/97 | 900  | 11.34                    | 7.78          | 10.09                        | 95.2                             |
| 183 | 05/09/97 | 1000 | 11.32                    | 7.78          | 10.10                        | 95.2                             |
| 184 | 05/09/97 | 1100 | 11.30                    | 7.78          | 10.12                        | 95.4                             |
| 185 | 05/09/97 | 1200 | 11.24                    | 7.78          | 10.15                        | 95.4                             |
| 186 | 05/09/97 | 1300 | 11.22                    | 7.79          | 10.18                        | 95.4                             |
| 187 | 05/09/97 | 1400 | 11.16                    | 7.79          | 10.18                        | 95.6                             |
| 188 | 05/09/97 | 1500 | 11.11                    | 7.79          | 10.19                        | 95.6                             |
| 189 | 05/09/97 | 1600 | 11.06                    | 7.78          | 10.20                        | 95.5                             |
| 190 | 05/09/97 | 1700 | 11.09                    | 7.77          | 10.19                        | 95.3                             |
| 191 | 05/09/97 | 1800 | 10.92                    | 7.77          | 10.20                        | 95.1                             |
| 192 | 05/09/97 | 1900 | 10.84                    | 7.76          | 10.20                        | 95.1                             |
| 193 | 05/09/97 | 2000 | 10.71                    | 7.75          | 10.21                        | 94.5                             |
| 194 | 05/09/97 | 2100 | 10.61                    | 7.74          | 10.23                        | 94.5                             |
| 195 | 05/09/97 | 2200 | 10.48                    | 7.75          | 10.28                        | 95.6                             |
| 196 | 05/09/97 | 2300 | 10.37                    | 7.75          | 10.31                        | 95.6                             |
| 197 | 05/10/97 | 0    | 10.30                    | 7.75          | 10.32                        | 95.6                             |
| 198 | 05/10/97 | 100  | 10.22                    | 7.75          | 10.32                        | 95.6                             |
| 199 | 05/10/97 | 200  | 10.14                    | 7.75          | 10.37                        | 95.4                             |
| 200 | 05/10/97 | 300  | 10.05                    | 7.76          | 10.37                        | 94.9                             |
| 201 | 05/10/97 | 400  | 9.97                     | 7.75          | 10.42                        | 95.2                             |
| 202 | 05/10/97 | 500  | 9.87                     | 7.77          | 10.46                        | 95.3                             |
| 203 | 05/10/97 | 600  | 9.79                     | 7.78          | 10.51                        | 95.3                             |
| 204 | 05/10/97 | 700  | 9.74                     | 7.79          | 10.54                        | 95.8                             |
| 205 | 05/10/97 | 800  | 9.64                     | 7.81          | 10.51                        | 95.8                             |
| 206 | 05/10/97 | 900  | 9.56                     | 7.82          | 10.60                        | 95.5                             |
| 207 | 05/10/97 | 1000 | 9.56                     | 7.82          | 10.60                        | 95.5                             |
| 208 | 05/10/97 | 1100 | 9.59                     | 7.82          | 10.62                        | 95.2                             |
| 209 | 05/10/97 | 1200 | 9.64                     | 7.82          | 10.62                        | 95.4                             |
| 210 | 05/10/97 | 1300 | 9.81                     | 7.83          | 10.62                        | 95.9                             |
| 211 | 05/10/97 | 1400 | 10.14                    | 7.83          | 10.62                        | 97.4                             |
| 212 | 05/10/97 | 1500 | 10.12                    | 7.83          | 10.59                        | 97.1                             |
| 213 | 05/10/97 | 1600 | 10.20                    | 7.82          | 10.58                        | 97.1                             |
| 214 | 05/10/97 | 1700 | 10.14                    | 7.80          | 10.58                        | 97.1                             |
| 215 | 05/10/97 | 1800 | 10.28                    | 7.79          | 10.58                        | 97.1                             |
| 216 | 05/10/97 | 1900 | 10.17                    | 7.79          | 10.57                        | 97.0                             |
| 217 | 05/10/97 | 2000 | 10.28                    | 7.77          | 10.58                        | 97.0                             |
| 218 | 05/10/97 | 2100 | 10.09                    | 7.78          | 10.58                        | 95.9                             |
| 219 | 05/10/97 | 2200 | 9.84                     | 7.80          | 10.66                        | 97.4                             |
| 220 | 05/10/97 | 2300 | 9.74                     | 7.79          | 10.72                        | 97.4                             |
| 221 | 05/11/97 | 0    | 9.64                     | 7.78          | 10.73                        | 97.4                             |
| 222 | 05/11/97 | 100  | 9.77                     | 7.79          | 10.62                        | 97.5                             |
| 223 | 05/11/97 | 200  | 9.97                     | 7.80          | 10.62                        | 97.5                             |
| 224 | 05/11/97 | 300  | 10.02                    | 7.81          | 10.62                        | 96.8                             |
| 225 | 05/11/97 | 400  | 10.09                    | 7.82          | 10.69                        | 97.0                             |

| OBS | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 226 | 05/11/97 | 500  | 10.09                    | 7.82          | 10.56                        | 96.7                             |
| 227 | 05/11/97 | 509  | 10.15                    | 7.83          | 10.59                        | 96.9                             |
| 228 | 05/11/97 | 508  | 10.15                    | 7.84          | 10.63                        | 97.4                             |
| 229 | 05/11/97 | 509  | 10.22                    | 7.84          | 10.59                        | 97.4                             |
| 230 | 05/11/97 | 1000 | 10.40                    | 7.84          | 10.47                        | 96.6                             |
| 231 | 05/11/97 | 1200 | 10.66                    | 7.85          | 10.33                        | 95.6                             |
| 232 | 05/11/97 | 1300 | 10.55                    | 7.84          | 10.32                        | 95.5                             |
| 233 | 05/11/97 | 1400 | 10.99                    | 7.85          | 10.42                        | 95.5                             |
| 234 | 05/11/97 | 1500 | 11.37                    | 7.87          | 10.20                        | 95.3                             |
| 235 | 05/11/97 | 1700 | 11.57                    | 7.86          | 10.20                        | 95.3                             |
| 236 | 05/11/97 | 1800 | 11.12                    | 7.83          | 10.28                        | 96.4                             |
| 237 | 05/11/97 | 1900 | 11.11                    | 7.83          | 10.27                        | 96.4                             |
| 238 | 05/11/97 | 2000 | 11.06                    | 7.83          | 10.26                        | 96.1                             |
| 239 | 05/11/97 | 2100 | 11.02                    | 7.83          | 10.25                        | 96.1                             |
| 240 | 05/11/97 | 2200 | 11.01                    | 7.83          | 10.22                        | 95.8                             |
| 241 | 05/11/97 | 2300 | 11.01                    | 7.83          | 10.22                        | 95.8                             |
| 242 | 05/11/97 | 2400 | 10.99                    | 7.83          | 10.19                        | 95.5                             |
| 243 | 05/11/97 | 2500 | 10.99                    | 7.85          | 10.13                        | 94.4                             |
| 244 | 05/11/97 | 300  | 10.99                    | 7.85          | 10.11                        | 94.4                             |
| 245 | 05/11/97 | 500  | 10.88                    | 7.85          | 10.08                        | 94.1                             |
| 246 | 05/11/97 | 500  | 10.83                    | 7.86          | 10.09                        | 94.1                             |
| 247 | 05/11/97 | 500  | 10.73                    | 7.88          | 10.09                        | 93.9                             |
| 248 | 05/11/97 | 500  | 10.68                    | 7.88          | 10.15                        | 94.5                             |
| 249 | 05/11/97 | 1000 | 10.48                    | 7.88          | 10.15                        | 93.9                             |
| 250 | 05/11/97 | 1100 | 10.43                    | 7.88          | 10.13                        | 93.5                             |
| 251 | 05/11/97 | 1200 | 10.32                    | 7.88          | 10.13                        | 93.5                             |
| 252 | 05/11/97 | 1300 | 10.27                    | 7.89          | 10.16                        | 93.6                             |
| 253 | 05/11/97 | 1400 | 10.23                    | 7.89          | 10.15                        | 93.5                             |
| 254 | 05/11/97 | 1500 | 10.09                    | 7.89          | 10.08                        | 92.8                             |
| 255 | 05/11/97 | 1600 | 10.08                    | 7.87          | 10.09                        | 92.8                             |
| 256 | 05/11/97 | 1700 | 10.08                    | 7.87          | 10.11                        | 92.6                             |
| 257 | 05/11/97 | 1800 | 10.02                    | 7.85          | 10.11                        | 92.6                             |
| 258 | 05/11/97 | 1900 | 9.92                     | 7.85          | 10.12                        | 92.4                             |
| 259 | 05/11/97 | 2000 | 9.79                     | 7.84          | 10.14                        | 92.3                             |
| 260 | 05/11/97 | 2100 | 9.69                     | 7.84          | 10.23                        | 92.8                             |
| 261 | 05/11/97 | 2200 | 9.65                     | 7.83          | 10.25                        | 92.8                             |
| 262 | 05/11/97 | 2300 | 9.59                     | 7.84          | 10.25                        | 92.8                             |
| 263 | 05/11/97 | 2400 | 9.43                     | 7.84          | 10.33                        | 92.8                             |
| 264 | 05/11/97 | 2500 | 9.27                     | 7.84          | 10.32                        | 92.7                             |
| 265 | 05/11/97 | 300  | 9.15                     | 7.84          | 10.29                        | 92.3                             |
| 266 | 05/11/97 | 400  | 8.99                     | 7.85          | 10.34                        | 92.3                             |
| 267 | 05/11/97 | 500  | 8.80                     | 7.86          | 10.39                        | 92.8                             |
| 268 | 05/11/97 | 700  | 8.84                     | 7.87          | 10.43                        | 93.1                             |
| 269 | 05/11/97 | 800  | 8.66                     | 7.89          | 10.48                        | 93.2                             |
| 270 | 05/11/97 | 900  | 8.43                     | 7.89          | 10.53                        | 93.2                             |
| 271 | 05/11/97 | 1000 | 8.21                     | 7.92          | 10.58                        | 93.5                             |
| 272 | 05/11/97 | 1100 | 8.45                     | 7.92          | 10.61                        | 93.5                             |
| 273 | 05/11/97 | 1200 | 8.21                     | 7.94          | 10.75                        | 93.9                             |
| 274 | 05/11/97 | 1300 | 8.08                     | 7.93          | 10.79                        | 93.8                             |
| 275 | 05/11/97 | 1400 | 7.97                     | 7.92          | 10.84                        | 94.0                             |
| 276 | 05/11/97 | 1500 | 7.77                     | 7.89          | 10.85                        | 94.0                             |
| 277 | 05/11/97 | 1600 | 7.76                     | 7.89          | 10.85                        | 94.0                             |
| 278 | 05/11/97 | 1700 | 7.77                     | 7.89          | 10.85                        | 94.0                             |
| 279 | 05/11/97 | 1800 | 7.54                     | 7.87          | 10.95                        | 94.3                             |
| 280 | 05/11/97 | 1900 | 7.58                     | 7.87          | 10.95                        | 94.4                             |
| 281 | 05/11/97 | 2000 | 7.58                     | 7.87          | 10.95                        | 94.4                             |
| 282 | 05/11/97 | 2100 | 7.58                     | 7.87          | 10.95                        | 94.4                             |
| 283 | 05/11/97 | 2200 | 7.55                     | 7.88          | 11.01                        | 94.8                             |
| 284 | 05/11/97 | 2300 | 7.55                     | 7.88          | 11.03                        | 95.1                             |
| 285 | 05/11/97 | 300  | 7.62                     | 7.90          | 11.11                        | 95.7                             |
| 286 | 05/11/97 | 400  | 7.64                     | 7.92          | 11.11                        | 95.7                             |
| 287 | 05/11/97 | 500  | 7.61                     | 7.94          | 11.04                        | 95.3                             |
| 288 | 05/11/97 | 700  |                          |               |                              |                                  |
| 289 | 05/11/97 |      |                          |               |                              |                                  |
| 290 | 05/11/97 |      |                          |               |                              |                                  |
| 291 | 05/11/97 |      |                          |               |                              |                                  |
| 292 | 05/11/97 |      |                          |               |                              |                                  |
| 293 | 05/11/97 |      |                          |               |                              |                                  |
| 294 | 05/11/97 |      |                          |               |                              |                                  |
| 295 | 05/11/97 |      |                          |               |                              |                                  |
| 296 | 05/11/97 |      |                          |               |                              |                                  |
| 297 | 05/11/97 |      |                          |               |                              |                                  |
| 298 | 05/11/97 |      |                          |               |                              |                                  |
| 299 | 05/11/97 |      |                          |               |                              |                                  |
| 300 | 05/11/97 |      |                          |               |                              |                                  |

FA0001

PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 301 | 05/14/97 | 800  | 7.59                     | 7.96          | 11.05                        | 95.3                             |
| 302 | 05/14/97 | 900  | 7.57                     | 7.95          | 11.04                        | 95.2                             |
| 303 | 05/14/97 | 1000 | 7.56                     | 7.96          | 11.03                        | 95.1                             |
| 304 | 05/14/97 | 1100 | 7.53                     | 7.95          | 11.04                        | 95.0                             |
| 305 | 05/14/97 | 1200 | 7.52                     | 7.96          | 11.01                        | 94.8                             |
| 306 | 05/14/97 | 1300 | 7.47                     | 7.96          | 11.03                        | 94.9                             |
| 307 | 05/14/97 | 1400 | 7.41                     | 7.96          | 11.06                        | 95.0                             |
| 308 | 05/14/97 | 1500 | 7.34                     | 7.95          | 11.06                        | 94.9                             |
| 309 | 05/14/97 | 1600 | 7.28                     | 7.93          | 11.09                        | 94.8                             |
| 310 | 05/14/97 | 1700 | 7.28                     | 7.91          | 11.07                        | 94.5                             |
| 311 | 05/14/97 | 1800 | 7.34                     | 7.89          | 11.07                        | 94.9                             |
| 312 | 05/14/97 | 1900 | 7.38                     | 7.88          | 11.08                        | 95.1                             |
| 313 | 05/14/97 | 2000 | 7.36                     | 7.88          | 11.08                        | 95.1                             |
| 314 | 05/14/97 | 2100 | 7.41                     | 7.88          | 11.05                        | 95.1                             |
| 315 | 05/14/97 | 2200 | 7.46                     | 7.88          | 11.05                        | 95.1                             |
| 316 | 05/14/97 | 2300 | 7.41                     | 7.89          | 11.09                        | 95.3                             |
| 317 | 05/15/97 | 0    | 7.38                     | 7.89          | 11.13                        | 95.5                             |
| 318 | 05/15/97 | 100  | 7.34                     | 7.89          | 11.13                        | 95.5                             |
| 319 | 05/15/97 | 200  | 7.34                     | 7.89          | 11.13                        | 95.5                             |
| 320 | 05/15/97 | 300  | 7.33                     | 7.89          | 11.12                        | 95.5                             |
| 321 | 05/15/97 | 400  | 7.31                     | 7.89          | 11.12                        | 95.5                             |
| 322 | 05/15/97 | 500  | 7.30                     | 7.90          | 11.10                        | 95.0                             |
| 323 | 05/15/97 | 600  | 7.31                     | 7.91          | 11.07                        | 94.8                             |
| 324 | 05/15/97 | 700  | 7.28                     | 7.92          | 11.10                        | 95.1                             |
| 325 | 05/15/97 | 800  | 7.30                     | 7.93          | 11.11                        | 95.2                             |
| 326 | 05/15/97 | 900  | 7.33                     | 7.94          | 11.12                        | 95.3                             |
| 327 | 05/15/97 | 1000 | 7.35                     | 7.95          | 11.10                        | 95.1                             |
| 328 | 05/15/97 | 1100 | 7.36                     | 7.95          | 11.10                        | 95.1                             |
| 329 | 05/15/97 | 1200 | 7.36                     | 7.95          | 11.10                        | 95.1                             |
| 330 | 05/15/97 | 1300 | 7.36                     | 7.95          | 11.10                        | 95.1                             |
| 331 | 05/15/97 | 1400 | 7.28                     | 8.04          | 11.42                        | 97.8                             |
| 332 | 05/15/97 | 1500 | 7.28                     | 8.03          | 11.37                        | 97.4                             |
| 333 | 05/15/97 | 1600 | 7.28                     | 8.02          | 11.39                        | 97.5                             |
| 334 | 05/15/97 | 1700 | 7.26                     | 8.02          | 11.35                        | 97.1                             |
| 335 | 05/15/97 | 1800 | 7.19                     | 8.01          | 11.37                        | 97.1                             |
| 336 | 05/15/97 | 1900 | 7.12                     | 8.01          | 11.41                        | 97.5                             |
| 337 | 05/15/97 | 2000 | 7.04                     | 8.00          | 11.42                        | 97.7                             |
| 338 | 05/15/97 | 2100 | 6.99                     | 8.00          | 11.43                        | 97.9                             |
| 339 | 05/15/97 | 2200 | 6.92                     | 8.00          | 11.52                        | 97.9                             |
| 340 | 05/15/97 | 2300 | 6.89                     | 8.00          | 11.55                        | 97.8                             |
| 341 | 05/16/97 | 0    | 6.94                     | 8.00          | 11.52                        | 97.8                             |
| 342 | 05/16/97 | 100  | 7.04                     | 8.02          | 11.52                        | 98.1                             |
| 343 | 05/16/97 | 200  | 7.09                     | 8.02          | 11.53                        | 98.2                             |
| 344 | 05/16/97 | 300  | 7.10                     | 8.02          | 11.53                        | 98.2                             |
| 345 | 05/16/97 | 400  | 7.10                     | 8.02          | 11.53                        | 98.2                             |
| 346 | 05/16/97 | 500  | 7.12                     | 8.02          | 11.53                        | 98.2                             |
| 347 | 05/16/97 | 600  | 7.12                     | 8.02          | 11.53                        | 98.2                             |
| 348 | 05/16/97 | 700  | 7.15                     | 8.03          | 11.57                        | 98.5                             |
| 349 | 05/16/97 | 800  | 7.14                     | 8.02          | 11.57                        | 98.7                             |
| 350 | 05/16/97 | 900  | 7.14                     | 8.02          | 11.59                        | 98.9                             |
| 351 | 05/16/97 | 1000 | 7.15                     | 8.02          | 11.59                        | 98.9                             |
| 352 | 05/16/97 | 1100 | 7.15                     | 8.02          | 11.59                        | 98.9                             |
| 353 | 05/16/97 | 1200 | 7.10                     | 8.01          | 11.50                        | 98.6                             |
| 354 | 05/16/97 | 1300 | 6.99                     | 8.01          | 11.51                        | 98.6                             |
| 355 | 05/16/97 | 1400 | 6.91                     | 8.01          | 11.62                        | 98.6                             |
| 356 | 05/16/97 | 1500 | 6.77                     | 8.00          | 11.62                        | 98.2                             |
| 357 | 05/16/97 | 1600 | 6.63                     | 7.98          | 11.62                        | 98.2                             |
| 358 | 05/16/97 | 1700 | 6.54                     | 7.98          | 11.68                        | 98.4                             |
| 359 | 05/16/97 | 1800 | 6.45                     | 7.98          | 11.72                        | 98.7                             |
| 360 | 05/16/97 | 1900 | 6.35                     | 7.98          | 11.82                        | 98.9                             |
| 361 | 05/16/97 | 2000 | 6.20                     | 7.98          | 11.85                        | 98.9                             |
| 362 | 05/16/97 | 2100 | 6.08                     | 7.97          | 11.87                        | 98.7                             |
| 363 | 05/16/97 | 2200 | 6.08                     | 7.97          | 11.87                        | 98.7                             |
| 364 | 05/16/97 | 2300 | 6.03                     | 7.97          | 11.92                        | 98.7                             |
| 365 | 05/17/97 | 0    | 5.92                     | 7.98          | 12.03                        | 99.5                             |
| 366 | 05/17/97 | 100  | 5.92                     | 7.98          | 12.03                        | 99.5                             |
| 367 | 05/17/97 | 200  | 5.82                     | 7.97          | 12.06                        | 99.5                             |
| 368 | 05/17/97 | 300  | 5.78                     | 7.97          | 12.06                        | 99.5                             |
| 369 | 05/17/97 | 400  | 5.68                     | 7.97          | 12.10                        | 99.5                             |
| 370 | 05/17/97 | 500  | 5.55                     | 7.97          | 12.15                        | 99.4                             |
| 371 | 05/17/97 | 600  | 5.47                     | 7.97          | 12.19                        | 99.4                             |
| 372 | 05/17/97 | 700  | 5.40                     | 7.96          | 12.20                        | 99.6                             |
| 373 | 05/17/97 | 800  | 5.37                     | 7.96          | 12.25                        | 99.6                             |
| 374 | 05/17/97 | 900  | 5.34                     | 7.94          | 12.25                        | 100.0                            |
| 375 | 05/17/97 | 1000 | 5.52                     | 7.94          | 12.24                        | 100.2                            |

| OBS | DATE     | HOUR | TEMP:<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 376 | 05/17/97 | 1200 | 5.59                     | 7.93          | 12.24                        | 100.4                            |
| 377 | 05/17/97 | 1300 | 5.50                     | 7.93          | 12.26                        | 100.5                            |
| 378 | 05/17/97 | 1400 | 5.49                     | 7.93          | 12.34                        | 100.6                            |
| 379 | 05/17/97 | 1500 | 5.44                     | 7.92          | 12.37                        | 101.0                            |
| 380 | 05/17/97 | 1600 | 5.33                     | 7.92          | 12.38                        | 101.0                            |
| 381 | 05/17/97 | 1700 | 5.03                     | 7.92          | 12.38                        | 101.0                            |
| 382 | 05/17/97 | 1800 | 6.41                     | 7.92          | 12.26                        | 101.9                            |
| 383 | 05/17/97 | 1900 | 6.56                     | 7.93          | 12.26                        | 102.8                            |
| 384 | 05/17/97 | 2000 | 6.35                     | 7.93          | 12.25                        | 102.5                            |
| 385 | 05/17/97 | 2100 | 6.44                     | 7.94          | 12.75                        | 98.8                             |
| 386 | 05/17/97 | 2200 | 6.59                     | 7.94          | 11.70                        | 98.7                             |
| 387 | 05/17/97 | 2300 | 6.71                     | 7.95          | 11.69                        | 98.6                             |
| 388 | 05/18/97 | 0    | 6.84                     | 7.95          | 11.60                        | 98.5                             |
| 389 | 05/18/97 | 100  | 7.07                     | 7.95          | 11.52                        | 98.5                             |
| 390 | 05/18/97 | 200  | 7.37                     | 7.95          | 11.52                        | 98.5                             |
| 391 | 05/18/97 | 300  | 7.37                     | 7.95          | 11.40                        | 98.3                             |
| 392 | 05/18/97 | 400  | 7.72                     | 7.95          | 11.30                        | 98.3                             |
| 393 | 05/18/97 | 500  | 7.69                     | 7.95          | 11.26                        | 98.3                             |
| 394 | 05/18/97 | 600  | 7.69                     | 7.95          | 11.17                        | 98.1                             |
| 395 | 05/18/97 | 700  | 7.69                     | 7.95          | 11.15                        | 98.1                             |
| 396 | 05/18/97 | 800  | 7.69                     | 7.94          | 11.15                        | 98.1                             |
| 397 | 05/18/97 | 900  | 7.69                     | 7.94          | 11.14                        | 98.1                             |
| 398 | 05/18/97 | 1000 | 7.58                     | 7.94          | 11.14                        | 98.1                             |
| 399 | 05/18/97 | 1100 | 7.58                     | 7.94          | 11.10                        | 98.1                             |
| 400 | 05/18/97 | 1200 | 7.72                     | 7.92          | 11.08                        | 98.1                             |
| 401 | 05/18/97 | 1300 | 7.72                     | 7.92          | 11.08                        | 98.1                             |
| 402 | 05/18/97 | 1400 | 7.72                     | 7.92          | 11.00                        | 98.1                             |
| 403 | 05/18/97 | 1500 | 7.72                     | 7.92          | 11.00                        | 98.1                             |
| 404 | 05/18/97 | 1600 | 7.69                     | 7.90          | 11.00                        | 98.1                             |
| 405 | 05/18/97 | 1700 | 7.69                     | 7.90          | 11.00                        | 98.1                             |
| 406 | 05/18/97 | 1800 | 7.69                     | 7.90          | 10.97                        | 98.1                             |
| 407 | 05/18/97 | 1900 | 7.69                     | 7.90          | 10.95                        | 98.1                             |
| 408 | 05/18/97 | 2000 | 7.69                     | 7.90          | 10.94                        | 98.1                             |
| 409 | 05/18/97 | 2100 | 7.89                     | 7.89          | 10.92                        | 98.1                             |
| 410 | 05/18/97 | 2200 | 8.07                     | 7.89          | 10.87                        | 98.0                             |
| 411 | 05/18/97 | 2300 | 8.10                     | 7.89          | 10.87                        | 98.0                             |
| 412 | 05/18/97 | 0    | 8.15                     | 7.89          | 10.88                        | 98.0                             |
| 413 | 05/18/97 | 100  | 8.20                     | 7.89          | 10.88                        | 98.0                             |
| 414 | 05/18/97 | 200  | 8.22                     | 7.89          | 10.90                        | 98.0                             |
| 415 | 05/18/97 | 300  | 8.22                     | 7.89          | 10.89                        | 98.0                             |
| 416 | 05/18/97 | 400  | 8.20                     | 7.88          | 10.87                        | 98.0                             |
| 417 | 05/18/97 | 500  | 8.20                     | 7.88          | 10.87                        | 98.0                             |
| 418 | 05/18/97 | 600  | 8.18                     | 7.88          | 10.85                        | 98.0                             |
| 419 | 05/18/97 | 700  | 8.18                     | 7.88          | 10.85                        | 98.0                             |
| 420 | 05/18/97 | 800  | 8.12                     | 7.88          | 10.85                        | 98.0                             |
| 421 | 05/18/97 | 900  | 8.12                     | 7.88          | 10.85                        | 98.0                             |
| 422 | 05/18/97 | 1000 | 8.13                     | 7.84          | 10.97                        | 98.0                             |
| 423 | 05/18/97 | 1100 | 8.25                     | 7.84          | 11.73                        | 98.0                             |
| 424 | 05/18/97 | 1200 | 8.25                     | 7.83          | 11.50                        | 100.8                            |
| 425 | 05/18/97 | 1300 | 8.27                     | 7.84          | 11.29                        | 100.8                            |
| 426 | 05/18/97 | 1400 | 8.33                     | 7.87          | 11.29                        | 100.8                            |
| 427 | 05/18/97 | 1500 | 8.38                     | 7.87          | 11.41                        | 100.8                            |
| 428 | 05/18/97 | 1600 | 8.45                     | 7.87          | 11.41                        | 100.8                            |
| 429 | 05/18/97 | 1700 | 8.53                     | 7.85          | 11.42                        | 100.8                            |
| 430 | 05/18/97 | 1800 | 8.54                     | 7.85          | 11.45                        | 101.1                            |
| 431 | 05/18/97 | 1900 | 8.59                     | 7.83          | 11.45                        | 101.1                            |
| 432 | 05/18/97 | 2000 | 8.61                     | 7.84          | 11.50                        | 101.1                            |
| 433 | 05/18/97 | 2100 | 8.68                     | 7.85          | 11.46                        | 101.1                            |
| 434 | 05/18/97 | 2200 | 8.68                     | 7.85          | 11.48                        | 101.1                            |
| 435 | 05/18/97 | 2300 | 8.77                     | 7.85          | 11.48                        | 101.1                            |
| 436 | 05/18/97 | 0    | 8.99                     | 7.86          | 11.45                        | 101.1                            |
| 437 | 05/20/97 | 100  | 9.00                     | 7.86          | 11.40                        | 101.1                            |
| 438 | 05/20/97 | 200  | 9.00                     | 7.87          | 11.34                        | 101.1                            |
| 439 | 05/20/97 | 300  | 9.15                     | 7.88          | 11.28                        | 101.1                            |
| 440 | 05/20/97 | 400  | 9.15                     | 7.88          | 11.28                        | 101.1                            |
| 441 | 05/20/97 | 500  | 9.13                     | 7.87          | 11.21                        | 100.8                            |
| 442 | 05/20/97 | 600  | 9.04                     | 7.87          | 11.25                        | 100.8                            |
| 443 | 05/20/97 | 700  | 9.04                     | 7.87          | 11.24                        | 100.8                            |
| 444 | 05/20/97 | 800  | 9.09                     | 7.87          | 11.24                        | 100.8                            |
| 445 | 05/20/97 | 900  | 9.04                     | 7.87          | 11.24                        | 100.8                            |
| 446 | 05/20/97 | 1000 | 9.02                     | 7.87          | 11.24                        | 100.8                            |
| 447 | 05/20/97 | 1100 | 9.02                     | 7.88          | 11.24                        | 100.8                            |
| 448 | 05/20/97 | 1200 | 9.04                     | 7.88          | 11.32                        | 100.8                            |
| 449 | 05/20/97 | 1300 | 9.00                     | 7.88          | 11.32                        | 100.8                            |
| 450 | 05/20/97 | 1400 | 8.97                     | 7.87          | 11.32                        | 100.8                            |

PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP.<br>(DEGREE<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|-------------------------|---------------|------------------------------|----------------------------------|
| 451 | 05/20/97 | 1500 | 8.86                    | 7.84          | 11.35                        | 101.0                            |
| 452 | 05/20/97 | 1500 | 8.82                    | 7.84          | 11.45                        | 101.6                            |
| 453 | 05/20/97 | 1700 | 8.81                    | 7.83          | 11.04                        | 98.1                             |
| 454 | 05/20/97 | 1800 | 8.76                    | 7.83          | 11.07                        | 98.3                             |
| 455 | 05/20/97 | 1900 | 8.77                    | 7.84          | 11.11                        | 98.4                             |
| 456 | 05/20/97 | 2000 | 8.74                    | 7.84          | 11.11                        | 98.6                             |
| 457 | 05/20/97 | 2100 | 8.74                    | 7.85          | 11.08                        | 98.3                             |
| 458 | 05/20/97 | 2200 | 8.84                    | 7.85          | 11.05                        | 98.3                             |
| 459 | 05/21/97 | 2300 | 8.91                    | 7.85          | 11.04                        | 98.3                             |
| 460 | 05/21/97 | 0    | 8.95                    | 7.85          | 10.93                        | 97.7                             |
| 461 | 05/21/97 | 100  | 8.17                    | 7.87          | 10.83                        | 97.5                             |
| 462 | 05/21/97 | 200  | 8.26                    | 7.88          | 10.82                        | 97.5                             |
| 463 | 05/21/97 | 300  | 8.32                    | 7.88          | 10.92                        | 98.1                             |
| 464 | 05/21/97 | 400  | 8.33                    | 7.89          | 10.85                        | 97.9                             |
| 465 | 05/21/97 | 500  | 8.35                    | 7.89          | 10.85                        | 97.7                             |
| 466 | 05/21/97 | 600  | 8.35                    | 7.88          | 10.86                        | 97.8                             |
| 467 | 05/21/97 | 700  | 8.28                    | 7.88          | 10.86                        | 97.6                             |
| 468 | 05/21/97 | 800  | 8.32                    | 7.91          | 10.87                        | 97.7                             |
| 469 | 05/21/97 | 900  | 8.32                    | 7.91          | 10.89                        | 97.7                             |
| 470 | 05/21/97 | 1000 | 8.40                    | 7.93          | 10.88                        | 98.1                             |
| 471 | 05/21/97 | 1100 | 8.40                    | 7.93          | 10.88                        | 98.1                             |
| 472 | 05/21/97 | 1200 | 8.38                    | 7.97          | 10.85                        | 98.3                             |
| 473 | 05/21/97 | 1300 | 8.63                    | 7.95          | 10.86                        | 98.2                             |
| 474 | 05/21/97 | 1400 | 8.63                    | 7.88          | 10.84                        | 98.2                             |
| 475 | 05/21/97 | 1500 | 8.63                    | 7.85          | 10.86                        | 98.5                             |
| 476 | 05/21/97 | 1600 | 8.63                    | 7.84          | 10.86                        | 98.5                             |
| 477 | 05/21/97 | 1700 | 8.94                    | 7.84          | 10.81                        | 98.1                             |
| 478 | 05/21/97 | 1800 | 8.97                    | 7.83          | 10.81                        | 98.1                             |
| 479 | 05/21/97 | 1900 | 8.28                    | 7.85          | 10.78                        | 98.4                             |
| 480 | 05/21/97 | 2000 | 8.38                    | 7.85          | 10.78                        | 98.4                             |
| 481 | 05/21/97 | 2100 | 8.38                    | 7.85          | 10.78                        | 98.4                             |
| 482 | 05/21/97 | 2200 | 8.45                    | 7.86          | 10.70                        | 98.8                             |
| 483 | 05/21/97 | 2300 | 8.41                    | 7.86          | 10.70                        | 98.8                             |
| 484 | 05/22/97 | 0    | 8.38                    | 7.85          | 10.63                        | 98.0                             |
| 485 | 05/22/97 | 100  | 8.38                    | 7.85          | 10.63                        | 98.0                             |
| 486 | 05/22/97 | 200  | 8.41                    | 7.85          | 10.66                        | 98.1                             |
| 487 | 05/22/97 | 300  | 8.41                    | 7.85          | 10.64                        | 98.1                             |
| 488 | 05/22/97 | 400  | 8.45                    | 7.85          | 10.45                        | 96.6                             |
| 489 | 05/22/97 | 500  | 8.45                    | 7.85          | 10.45                        | 96.6                             |
| 490 | 05/22/97 | 600  | 8.48                    | 7.84          | 10.45                        | 96.6                             |
| 491 | 05/22/97 | 700  | 8.45                    | 7.84          | 10.49                        | 96.9                             |
| 492 | 05/22/97 | 800  | 8.51                    | 7.85          | 10.54                        | 97.4                             |
| 493 | 05/22/97 | 900  | 8.51                    | 7.85          | 10.55                        | 97.4                             |
| 494 | 05/22/97 | 1000 | 8.51                    | 7.85          | 10.55                        | 97.4                             |
| 495 | 05/22/97 | 1100 | 8.53                    | 7.85          | 10.54                        | 97.4                             |
| 496 | 05/22/97 | 1200 | 8.53                    | 7.85          | 10.54                        | 97.4                             |
| 497 | 05/22/97 | 1300 | 8.59                    | 7.85          | 10.80                        | 101.2                            |
| 498 | 05/22/97 | 1400 | 8.59                    | 7.85          | 10.80                        | 101.2                            |
| 499 | 05/22/97 | 1500 | 8.43                    | 7.82          | 10.83                        | 100.0                            |
| 500 | 05/22/97 | 1600 | 8.34                    | 7.79          | 10.84                        | 99.8                             |
| 501 | 05/22/97 | 1700 | 8.34                    | 7.82          | 10.78                        | 99.6                             |
| 502 | 05/22/97 | 1800 | 8.34                    | 7.82          | 10.68                        | 100.0                            |
| 503 | 05/22/97 | 1900 | 8.34                    | 7.82          | 10.68                        | 100.0                            |
| 504 | 05/22/97 | 2000 | 8.34                    | 7.82          | 10.68                        | 100.0                            |
| 505 | 05/22/97 | 2100 | 8.32                    | 7.82          | 10.65                        | 100.0                            |
| 506 | 05/22/97 | 2200 | 8.32                    | 7.82          | 10.65                        | 100.0                            |
| 507 | 05/22/97 | 2300 | 8.32                    | 7.82          | 10.65                        | 100.0                            |
| 508 | 05/23/97 | 0    | 8.22                    | 7.81          | 10.51                        | 99.4                             |
| 509 | 05/23/97 | 100  | 8.22                    | 7.81          | 10.52                        | 99.4                             |
| 510 | 05/23/97 | 200  | 8.22                    | 7.82          | 10.53                        | 99.7                             |
| 511 | 05/23/97 | 300  | 8.22                    | 7.82          | 10.53                        | 99.7                             |
| 512 | 05/23/97 | 400  | 8.22                    | 7.84          | 10.44                        | 98.4                             |
| 513 | 05/23/97 | 500  | 8.40                    | 7.85          | 10.41                        | 98.3                             |
| 514 | 05/23/97 | 600  | 8.50                    | 7.85          | 10.33                        | 97.8                             |
| 515 | 05/23/97 | 700  | 8.50                    | 7.85          | 10.33                        | 97.8                             |
| 516 | 05/23/97 | 800  | 8.46                    | 7.85          | 10.33                        | 97.7                             |
| 517 | 05/23/97 | 900  | 8.46                    | 7.85          | 10.32                        | 97.7                             |
| 518 | 05/23/97 | 1000 | 8.46                    | 7.85          | 10.46                        | 98.0                             |
| 519 | 05/23/97 | 1100 | 8.46                    | 7.85          | 10.46                        | 98.0                             |
| 520 | 05/23/97 | 1200 | 8.59                    | 8.05          | 10.47                        | 99.5                             |
| 521 | 05/23/97 | 1300 | 8.04                    | 7.91          | 10.44                        | 100.1                            |
| 522 | 05/23/97 | 1400 | 8.63                    | 7.91          | 10.25                        | 99.5                             |
| 523 | 05/23/97 | 1500 | 8.61                    | 7.90          | 10.22                        | 97.2                             |
| 524 | 05/23/97 | 1600 | 8.78                    | 7.90          | 10.20                        | 98.4                             |
| 525 | 05/23/97 | 1700 | 8.09                    | 7.89          | 10.00                        | 98.1                             |

PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|-------------------------|---------------|------------------------------|----------------------------------|
| 526 | 05/23/97 | 1800 | 12.76                   | 7.88          | 10.04                        | 97.8                             |
| 527 | 05/23/97 | 1900 | 12.83                   | 7.88          | 9.98                         | 97.9                             |
| 528 | 05/23/97 | 2000 | 12.70                   | 7.87          | 9.95                         | 98.0                             |
| 529 | 05/23/97 | 2100 | 12.61                   | 7.87          | 9.89                         | 98.1                             |
| 530 | 05/23/97 | 2200 | 12.61                   | 7.88          | 9.76                         | 98.1                             |
| 531 | 05/23/97 | 2300 | 12.76                   | 7.88          | 9.76                         | 98.1                             |
| 532 | 05/24/97 | 100  | 12.91                   | 7.89          | 9.66                         | 97.4                             |
| 533 | 05/24/97 | 100  | 12.99                   | 7.89          | 9.72                         | 97.4                             |
| 534 | 05/24/97 | 200  | 12.98                   | 7.90          | 9.65                         | 97.2                             |
| 535 | 05/24/97 | 300  | 13.03                   | 7.90          | 9.62                         | 97.2                             |
| 536 | 05/24/97 | 400  | 13.03                   | 7.89          | 9.62                         | 97.2                             |
| 537 | 05/24/97 | 500  | 13.12                   | 7.89          | 9.55                         | 97.2                             |
| 538 | 05/24/97 | 600  | 13.17                   | 7.90          | 9.55                         | 97.2                             |
| 539 | 05/24/97 | 700  | 13.19                   | 7.89          | 9.40                         | 96.5                             |
| 540 | 05/24/97 | 800  | 13.17                   | 7.88          | 9.36                         | 96.0                             |
| 541 | 05/24/97 | 900  | 13.11                   | 7.87          | 9.36                         | 96.0                             |
| 542 | 05/24/97 | 1000 | 13.08                   | 7.87          | 9.36                         | 96.0                             |
| 543 | 05/24/97 | 1100 | 13.08                   | 7.88          | 9.36                         | 96.0                             |
| 544 | 05/24/97 | 1200 | 13.08                   | 7.88          | 9.36                         | 96.0                             |
| 545 | 05/24/97 | 1300 | 13.04                   | 7.88          | 9.36                         | 96.0                             |
| 546 | 05/24/97 | 1400 | 12.96                   | 7.85          | 9.36                         | 96.0                             |
| 547 | 05/24/97 | 1500 | 12.96                   | 7.85          | 9.36                         | 96.0                             |
| 548 | 05/24/97 | 1600 | 12.93                   | 7.85          | 9.36                         | 96.0                             |
| 549 | 05/24/97 | 1700 | 12.91                   | 7.87          | 9.36                         | 96.0                             |
| 550 | 05/24/97 | 1800 | 12.91                   | 7.83          | 9.36                         | 96.0                             |
| 551 | 05/24/97 | 1900 | 12.91                   | 7.83          | 9.36                         | 96.0                             |
| 552 | 05/24/97 | 2000 | 12.89                   | 7.82          | 9.36                         | 96.0                             |
| 553 | 05/24/97 | 2100 | 12.85                   | 7.82          | 9.36                         | 96.0                             |
| 554 | 05/24/97 | 2200 | 12.85                   | 7.82          | 9.36                         | 96.0                             |
| 555 | 05/24/97 | 2300 | 12.93                   | 7.83          | 9.36                         | 96.0                             |
| 556 | 05/25/97 | 100  | 13.01                   | 7.84          | 9.41                         | 96.2                             |
| 557 | 05/25/97 | 100  | 13.04                   | 7.84          | 9.48                         | 96.2                             |
| 558 | 05/25/97 | 200  | 13.04                   | 7.83          | 9.48                         | 96.2                             |
| 559 | 05/25/97 | 300  | 13.06                   | 7.83          | 9.47                         | 96.2                             |
| 560 | 05/25/97 | 400  | 13.01                   | 7.86          | 9.47                         | 96.2                             |
| 561 | 05/25/97 | 500  | 12.94                   | 7.86          | 9.47                         | 96.2                             |
| 562 | 05/25/97 | 600  | 12.86                   | 7.86          | 9.50                         | 96.2                             |
| 563 | 05/25/97 | 700  | 12.79                   | 7.85          | 9.50                         | 96.2                             |
| 564 | 05/25/97 | 800  | 12.76                   | 7.88          | 9.74                         | 96.8                             |
| 565 | 05/25/97 | 900  | 12.76                   | 7.97          | 9.85                         | 96.7                             |
| 566 | 05/25/97 | 1000 | 12.78                   | 8.03          | 9.97                         | 96.7                             |
| 567 | 05/25/97 | 1100 | 12.63                   | 8.03          | 9.97                         | 96.7                             |
| 568 | 05/25/97 | 1200 | 12.52                   | 8.02          | 9.86                         | 96.7                             |
| 569 | 05/25/97 | 1300 | 12.50                   | 7.96          | 9.91                         | 96.7                             |
| 570 | 05/25/97 | 1400 | 12.50                   | 7.85          | 9.79                         | 96.0                             |
| 571 | 05/25/97 | 1500 | 12.60                   | 7.85          | 9.79                         | 96.0                             |
| 572 | 05/25/97 | 1600 | 12.70                   | 7.84          | 9.64                         | 95.8                             |
| 573 | 05/25/97 | 1700 | 12.73                   | 7.84          | 9.42                         | 95.6                             |
| 574 | 05/25/97 | 1800 | 12.89                   | 7.85          | 9.41                         | 95.6                             |
| 575 | 05/25/97 | 1900 | 13.03                   | 7.85          | 9.33                         | 95.4                             |
| 576 | 05/25/97 | 2000 | 13.12                   | 7.85          | 9.33                         | 95.4                             |
| 577 | 05/25/97 | 2100 | 13.21                   | 7.86          | 9.45                         | 95.7                             |
| 578 | 05/25/97 | 2200 | 13.46                   | 7.88          | 9.37                         | 95.4                             |
| 579 | 05/25/97 | 2300 | 13.62                   | 7.89          | 9.32                         | 95.4                             |
| 580 | 05/26/97 | 100  | 13.70                   | 7.90          | 9.39                         | 95.4                             |
| 581 | 05/26/97 | 100  | 13.72                   | 7.89          | 9.36                         | 95.4                             |
| 582 | 05/26/97 | 200  | 13.72                   | 7.89          | 9.26                         | 95.1                             |
| 583 | 05/26/97 | 300  | 13.72                   | 7.89          | 9.22                         | 95.1                             |
| 584 | 05/26/97 | 400  | 13.70                   | 7.91          | 9.25                         | 95.1                             |
| 585 | 05/26/97 | 500  | 13.70                   | 7.91          | 9.22                         | 95.1                             |
| 586 | 05/26/97 | 600  | 13.72                   | 7.91          | 9.14                         | 94.9                             |
| 587 | 05/26/97 | 700  | 13.67                   | 7.92          | 9.46                         | 95.8                             |
| 588 | 05/26/97 | 800  | 13.60                   | 7.95          | 9.46                         | 95.8                             |
| 589 | 05/26/97 | 900  | 13.49                   | 8.04          | 9.61                         | 95.1                             |
| 590 | 05/26/97 | 1000 | 13.21                   | 8.10          | 9.75                         | 95.9                             |
| 591 | 05/26/97 | 1100 | 12.91                   | 8.09          | 9.84                         | 96.1                             |
| 592 | 05/26/97 | 1200 | 12.81                   | 8.04          | 9.88                         | 96.1                             |
| 593 | 05/26/97 | 1300 | 12.81                   | 7.99          | 9.88                         | 96.1                             |
| 594 | 05/26/97 | 1400 | 12.81                   | 7.86          | 9.88                         | 96.1                             |
| 595 | 05/26/97 | 1500 | 12.81                   | 7.86          | 9.73                         | 95.8                             |
| 596 | 05/26/97 | 1600 | 12.84                   | 7.85          | 9.38                         | 94.9                             |
| 597 | 05/26/97 | 1700 | 13.11                   | 7.85          | 9.24                         | 90.7                             |
| 598 | 05/26/97 | 1800 | 13.36                   | 7.85          | 9.15                         | 90.3                             |
| 599 | 05/26/97 | 1900 | 13.42                   | 7.87          | 9.14                         | 90.3                             |
| 600 | 05/26/97 | 2000 | 13.62                   | 7.85          | 9.14                         | 90.3                             |



PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP. (DEGREES C.) | PH (U.S.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|-----|----------|------|--------------------|-----------|------------------------|-------------------------------|
| 601 | 05/26/97 | 2100 | 13.80              | 7.90      | 9.10                   | 90.7                          |
| 602 | 05/26/97 | 2200 | 13.92              | 7.81      | 9.09                   | 90.2                          |
| 603 | 05/26/97 | 2300 | 14.02              | 7.79      | 9.11                   | 91.2                          |
| 604 | 05/27/97 | 1900 | 14.12              | 7.92      | 9.04                   | 90.7                          |
| 605 | 05/27/97 | 2000 | 14.15              | 7.93      | 8.89                   | 90.6                          |
| 606 | 05/27/97 | 2100 | 14.23              | 7.94      | 8.89                   | 89.4                          |
| 607 | 05/27/97 | 2200 | 14.25              | 7.97      | 8.94                   | 91.0                          |
| 608 | 05/27/97 | 2300 | 14.27              | 7.97      | 8.91                   | 89.7                          |
| 609 | 05/27/97 | 0000 | 14.20              | 7.96      | 9.00                   | 90.0                          |
| 610 | 05/27/97 | 0100 | 14.18              | 7.98      | 9.12                   | 91.6                          |
| 611 | 05/27/97 | 0200 | 14.11              | 8.02      | 9.21                   | 92.5                          |
| 612 | 05/27/97 | 0300 | 14.13              | 8.07      | 9.37                   | 94.1                          |
| 613 | 05/27/97 | 0400 | 14.07              | 8.10      | 9.47                   | 94.9                          |
| 614 | 05/27/97 | 0500 | 13.70              | 8.04      | 9.65                   | 95.9                          |
| 615 | 05/27/97 | 0600 | 13.44              | 8.02      | 9.62                   | 95.1                          |
| 616 | 05/27/97 | 0700 | 13.29              | 7.97      | 9.58                   | 94.4                          |
| 617 | 05/27/97 | 0800 | 13.14              | 7.87      | 9.58                   | 94.1                          |
| 618 | 05/27/97 | 0900 | 13.14              | 7.86      | 9.38                   | 91.5                          |
| 619 | 05/27/97 | 1000 | 13.11              | 7.86      | 9.27                   | 91.1                          |
| 620 | 05/27/97 | 1100 | 13.21              | 7.86      | 9.16                   | 90.1                          |
| 621 | 05/27/97 | 1200 | 13.27              | 7.86      | 9.17                   | 90.3                          |
| 622 | 05/27/97 | 1300 | 13.21              | 7.86      | 9.07                   | 89.7                          |
| 623 | 05/27/97 | 1400 | 13.34              | 7.86      | 9.10                   | 89.7                          |
| 624 | 05/27/97 | 1500 | 13.47              | 7.85      | 9.07                   | 89.7                          |
| 625 | 05/27/97 | 1600 | 13.77              | 7.86      | 9.00                   | 89.6                          |
| 626 | 05/27/97 | 1700 | 14.17              | 7.87      | 8.97                   | 89.6                          |
| 627 | 05/28/97 | 2300 | 14.75              | 7.88      | 8.80                   | 89.1                          |
| 628 | 05/28/97 | 0000 | 14.81              | 7.88      | 8.78                   | 89.1                          |
| 629 | 05/28/97 | 0100 | 14.88              | 7.92      | 8.81                   | 89.2                          |
| 630 | 05/28/97 | 0200 | 14.81              | 7.92      | 8.72                   | 89.2                          |
| 631 | 05/28/97 | 0300 | 15.06              | 7.94      | 8.75                   | 89.7                          |
| 632 | 05/28/97 | 0400 | 15.08              | 7.94      | 8.64                   | 88.6                          |
| 633 | 05/28/97 | 0500 | 15.05              | 7.94      | 8.76                   | 89.8                          |
| 634 | 05/28/97 | 0600 | 14.98              | 7.94      | 8.72                   | 89.6                          |
| 635 | 05/28/97 | 0700 | 14.89              | 7.94      | 8.87                   | 90.2                          |
| 636 | 05/28/97 | 0800 | 14.89              | 7.97      | 8.82                   | 90.1                          |
| 637 | 05/28/97 | 0900 | 14.85              | 7.97      | 8.83                   | 90.1                          |
| 638 | 05/28/97 | 1000 | 14.81              | 7.97      | 8.83                   | 90.1                          |
| 639 | 05/28/97 | 1100 | 14.63              | 7.94      | 8.81                   | 89.3                          |
| 640 | 05/28/97 | 1200 | 14.44              | 7.91      | 8.72                   | 88.7                          |
| 641 | 05/28/97 | 1300 | 14.08              | 7.88      | 8.61                   | 88.1                          |
| 642 | 05/28/97 | 1400 | 13.82              | 7.88      | 8.51                   | 87.7                          |
| 643 | 05/28/97 | 1500 | 13.77              | 7.87      | 8.46                   | 87.3                          |
| 644 | 05/28/97 | 1600 | 13.92              | 7.87      | 8.39                   | 86.9                          |
| 645 | 05/28/97 | 1700 | 14.02              | 7.88      | 8.32                   | 86.7                          |
| 646 | 05/28/97 | 1800 | 14.14              | 7.88      | 8.22                   | 86.1                          |
| 647 | 05/28/97 | 1900 | 14.28              | 7.88      | 8.12                   | 85.7                          |
| 648 | 05/28/97 | 2000 | 14.52              | 7.88      | 8.02                   | 85.3                          |
| 649 | 05/28/97 | 2100 | 14.73              | 7.85      | 8.09                   | 85.7                          |
| 650 | 05/28/97 | 2200 | 14.83              | 7.85      | 8.17                   | 86.1                          |
| 651 | 05/28/97 | 2300 | 14.83              | 7.88      | 8.25                   | 86.5                          |
| 652 | 05/29/97 | 0000 | 15.12              | 7.91      | 8.48                   | 87.7                          |
| 653 | 05/29/97 | 0100 | 15.15              | 7.91      | 8.48                   | 87.7                          |
| 654 | 05/29/97 | 0200 | 15.12              | 7.91      | 8.48                   | 87.7                          |
| 655 | 05/29/97 | 0300 | 15.03              | 7.94      | 8.47                   | 87.3                          |
| 656 | 05/29/97 | 0400 | 15.03              | 7.94      | 8.45                   | 87.1                          |
| 657 | 05/29/97 | 0500 | 15.03              | 7.94      | 8.45                   | 87.1                          |
| 658 | 05/29/97 | 0600 | 15.03              | 7.95      | 8.42                   | 86.9                          |
| 659 | 05/29/97 | 0700 | 15.03              | 7.95      | 8.42                   | 86.9                          |
| 660 | 05/29/97 | 0800 | 15.03              | 7.95      | 8.42                   | 86.9                          |
| 661 | 05/29/97 | 0900 | 15.03              | 7.95      | 8.42                   | 86.9                          |
| 662 | 05/29/97 | 1000 | 15.03              | 7.95      | 8.42                   | 86.9                          |
| 663 | 05/29/97 | 1100 | 15.03              | 7.95      | 8.42                   | 86.9                          |
| 664 | 05/29/97 | 1200 | 15.11              | 7.92      | 8.42                   | 87.1                          |
| 665 | 05/29/97 | 1300 | 14.91              | 7.90      | 8.42                   | 86.9                          |
| 666 | 05/29/97 | 1400 | 14.71              | 7.89      | 8.48                   | 87.1                          |
| 667 | 05/29/97 | 1500 | 14.55              | 7.89      | 8.48                   | 87.1                          |
| 668 | 05/29/97 | 1600 | 14.55              | 7.94      | 8.94                   | 89.3                          |
| 669 | 05/29/97 | 1700 | 14.55              | 7.95      | 8.97                   | 89.3                          |
| 670 | 05/29/97 | 1800 | 14.57              | 7.95      | 8.97                   | 89.3                          |
| 671 | 05/29/97 | 1900 | 14.60              | 7.95      | 8.97                   | 89.3                          |
| 672 | 05/29/97 | 2000 | 14.58              | 7.95      | 8.97                   | 89.3                          |
| 673 | 05/29/97 | 2100 | 14.60              | 7.95      | 8.97                   | 89.3                          |
| 674 | 05/29/97 | 2200 | 14.60              | 7.95      | 8.97                   | 89.3                          |
| 675 | 05/29/97 | 2300 | 14.60              | 7.97      | 8.98                   | 89.5                          |

| OBS | DATE     | HOUR | TEMP<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|-------------------------|---------------|------------------------------|----------------------------------|
| 676 | 05/30/97 | 0    | 14.57                   | 7.97          | 8.99                         | 89.5                             |
| 677 | 05/30/97 | 100  | 14.55                   | 7.96          | 8.97                         | 89.2                             |
| 678 | 05/30/97 | 200  | 14.53                   | 7.95          | 8.95                         | 89.1                             |
| 679 | 05/30/97 | 300  | 14.50                   | 7.93          | 8.92                         | 88.9                             |
| 680 | 05/30/97 | 400  | 14.48                   | 7.92          | 8.90                         | 88.8                             |
| 681 | 05/30/97 | 500  | 14.45                   | 7.91          | 8.88                         | 88.7                             |
| 682 | 05/30/97 | 600  | 14.43                   | 7.90          | 8.86                         | 88.6                             |
| 683 | 05/30/97 | 700  | 14.41                   | 7.89          | 8.84                         | 88.5                             |
| 684 | 05/30/97 | 800  | 14.47                   | 7.97          | 8.99                         | 89.4                             |
| 685 | 05/30/97 | 900  | 14.55                   | 7.97          | 8.98                         | 89.4                             |
| 686 | 05/30/97 | 1000 | 14.55                   | 7.95          | 8.98                         | 89.4                             |
| 687 | 05/30/97 | 1100 | 14.53                   | 7.93          | 8.96                         | 89.3                             |
| 688 | 05/30/97 | 1200 | 14.50                   | 7.92          | 8.94                         | 89.2                             |
| 689 | 05/30/97 | 1300 | 14.48                   | 7.91          | 8.92                         | 89.1                             |
| 690 | 05/30/97 | 1400 | 14.45                   | 7.90          | 8.90                         | 89.0                             |
| 691 | 05/30/97 | 1500 | 14.43                   | 7.89          | 8.88                         | 88.9                             |
| 692 | 05/30/97 | 1600 | 14.41                   | 7.88          | 8.86                         | 88.8                             |
| 693 | 05/30/97 | 1700 | 14.38                   | 7.87          | 8.84                         | 88.7                             |
| 694 | 05/30/97 | 1800 | 14.35                   | 7.86          | 8.82                         | 88.6                             |
| 695 | 05/30/97 | 1900 | 14.33                   | 7.85          | 8.80                         | 88.5                             |
| 696 | 05/30/97 | 2000 | 14.30                   | 7.84          | 8.78                         | 88.4                             |
| 697 | 05/30/97 | 2100 | 14.27                   | 7.83          | 8.76                         | 88.3                             |
| 698 | 05/30/97 | 2200 | 14.25                   | 7.82          | 8.74                         | 88.2                             |
| 699 | 05/30/97 | 2300 | 14.23                   | 7.81          | 8.72                         | 88.1                             |
| 700 | 05/31/97 | 0    | 14.20                   | 7.80          | 8.70                         | 88.0                             |
| 701 | 05/31/97 | 100  | 14.18                   | 7.79          | 8.68                         | 87.9                             |
| 702 | 05/31/97 | 200  | 14.15                   | 7.78          | 8.66                         | 87.8                             |
| 703 | 05/31/97 | 300  | 14.13                   | 7.77          | 8.64                         | 87.7                             |
| 704 | 05/31/97 | 400  | 14.10                   | 7.76          | 8.62                         | 87.6                             |
| 705 | 05/31/97 | 500  | 14.08                   | 7.75          | 8.60                         | 87.5                             |
| 706 | 05/31/97 | 600  | 14.05                   | 7.74          | 8.58                         | 87.4                             |
| 707 | 05/31/97 | 700  | 14.03                   | 7.73          | 8.56                         | 87.3                             |
| 708 | 05/31/97 | 800  | 14.00                   | 7.72          | 8.54                         | 87.2                             |
| 709 | 05/31/97 | 900  | 13.98                   | 7.71          | 8.52                         | 87.1                             |
| 710 | 05/31/97 | 1000 | 13.95                   | 7.70          | 8.50                         | 87.0                             |
| 711 | 05/31/97 | 1100 | 13.93                   | 7.69          | 8.48                         | 86.9                             |
| 712 | 05/31/97 | 1200 | 13.90                   | 7.68          | 8.46                         | 86.8                             |
| 713 | 05/31/97 | 1300 | 13.88                   | 7.67          | 8.44                         | 86.7                             |
| 714 | 05/31/97 | 1400 | 13.85                   | 7.66          | 8.42                         | 86.6                             |
| 715 | 05/31/97 | 1500 | 13.83                   | 7.65          | 8.40                         | 86.5                             |
| 716 | 05/31/97 | 1600 | 13.80                   | 7.64          | 8.38                         | 86.4                             |
| 717 | 05/31/97 | 1700 | 13.78                   | 7.63          | 8.36                         | 86.3                             |
| 718 | 05/31/97 | 1800 | 13.75                   | 7.62          | 8.34                         | 86.2                             |
| 719 | 05/31/97 | 1900 | 13.73                   | 7.61          | 8.32                         | 86.1                             |
| 720 | 05/31/97 | 2000 | 13.70                   | 7.60          | 8.30                         | 86.0                             |
| 721 | 05/31/97 | 2100 | 13.68                   | 7.59          | 8.28                         | 85.9                             |
| 722 | 05/31/97 | 2200 | 13.65                   | 7.58          | 8.26                         | 85.8                             |
| 723 | 05/31/97 | 2300 | 13.63                   | 7.57          | 8.24                         | 85.7                             |
| 724 | 06/01/97 | 0    | 13.60                   | 7.56          | 8.22                         | 85.6                             |
| 725 | 06/01/97 | 100  | 13.58                   | 7.55          | 8.20                         | 85.5                             |
| 726 | 06/01/97 | 200  | 13.55                   | 7.54          | 8.18                         | 85.4                             |
| 727 | 06/01/97 | 300  | 13.53                   | 7.53          | 8.16                         | 85.3                             |
| 728 | 06/01/97 | 400  | 13.50                   | 7.52          | 8.14                         | 85.2                             |
| 729 | 06/01/97 | 500  | 13.48                   | 7.51          | 8.12                         | 85.1                             |
| 730 | 06/01/97 | 600  | 13.45                   | 7.50          | 8.10                         | 85.0                             |
| 731 | 06/01/97 | 700  | 13.43                   | 7.49          | 8.08                         | 84.9                             |
| 732 | 06/01/97 | 800  | 13.40                   | 7.48          | 8.06                         | 84.8                             |
| 733 | 06/01/97 | 900  | 13.38                   | 7.47          | 8.04                         | 84.7                             |
| 734 | 06/01/97 | 1000 | 13.35                   | 7.46          | 8.02                         | 84.6                             |
| 735 | 06/01/97 | 1100 | 13.33                   | 7.45          | 8.00                         | 84.5                             |
| 736 | 06/01/97 | 1200 | 13.30                   | 7.44          | 7.98                         | 84.4                             |
| 737 | 06/01/97 | 1300 | 13.28                   | 7.43          | 7.96                         | 84.3                             |
| 738 | 06/01/97 | 1400 | 13.25                   | 7.42          | 7.94                         | 84.2                             |
| 739 | 06/01/97 | 1500 | 13.23                   | 7.41          | 7.92                         | 84.1                             |
| 740 | 06/01/97 | 1600 | 13.20                   | 7.40          | 7.90                         | 84.0                             |
| 741 | 06/01/97 | 1700 | 13.18                   | 7.39          | 7.88                         | 83.9                             |
| 742 | 06/01/97 | 1800 | 13.15                   | 7.38          | 7.86                         | 83.8                             |
| 743 | 06/01/97 | 1900 | 13.13                   | 7.37          | 7.84                         | 83.7                             |
| 744 | 06/01/97 | 2000 | 13.10                   | 7.36          | 7.82                         | 83.6                             |
| 745 | 06/01/97 | 2100 | 13.08                   | 7.35          | 7.80                         | 83.5                             |
| 746 | 06/01/97 | 2200 | 13.05                   | 7.34          | 7.78                         | 83.4                             |
| 747 | 06/01/97 | 2300 | 13.03                   | 7.33          | 7.76                         | 83.3                             |
| 748 | 06/02/97 | 0    | 13.00                   | 7.32          | 7.74                         | 83.2                             |
| 749 | 06/02/97 | 100  | 12.98                   | 7.31          | 7.72                         | 83.1                             |
| 750 | 06/02/97 | 200  | 12.95                   | 7.30          | 7.70                         | 83.0                             |

FA0001

PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 751 | 06/02/97 | 300  | 18.21                    | 8.05          | 8.38                         | 90.1                             |
| 752 | 06/02/97 | 400  | 18.14                    | 8.04          | 8.32                         | 89.5                             |
| 753 | 06/02/97 | 500  | 17.87                    | 8.02          | 8.47                         | 90.3                             |
| 754 | 06/02/97 | 600  | 17.82                    | 8.01          | 8.45                         | 90.3                             |
| 755 | 06/02/97 | 700  | 17.99                    | 8.02          | 8.43                         | 90.3                             |
| 756 | 06/02/97 | 800  | 17.99                    | 8.01          | 8.46                         | 90.3                             |
| 757 | 06/02/97 | 900  | 17.99                    | 8.00          | 8.61                         | 92.2                             |
| 758 | 06/02/97 | 1000 | 17.82                    | 7.97          | 8.61                         | 92.2                             |
| 759 | 06/02/97 | 1100 | 17.82                    | 7.95          | 8.49                         | 90.2                             |
| 760 | 06/02/97 | 1200 | 17.11                    | 7.91          | 8.53                         | 89.8                             |
| 761 | 06/02/97 | 1300 | 18.97                    | 7.90          | 8.45                         | 89.8                             |
| 762 | 06/02/97 | 1400 | 18.93                    | 7.91          | 8.77                         | 91.1                             |
| 763 | 06/02/97 | 1500 | 18.76                    | 7.88          | 8.75                         | 91.1                             |
| 764 | 06/02/97 | 1600 | 18.76                    | 7.88          | 8.77                         | 91.1                             |
| 765 | 06/02/97 | 1700 | 16.95                    | 7.77          | 8.76                         | 91.9                             |
| 766 | 06/02/97 | 1800 | 17.81                    | 7.92          | 8.76                         | 92.8                             |
| 767 | 06/02/97 | 1900 | 17.81                    | 7.92          | 8.74                         | 92.8                             |
| 768 | 06/02/97 | 2000 | 17.88                    | 7.93          | 8.72                         | 92.8                             |
| 769 | 06/02/97 | 2100 | 18.03                    | 7.95          | 8.67                         | 93.0                             |
| 770 | 06/02/97 | 2200 | 18.03                    | 7.95          | 8.67                         | 93.0                             |
| 771 | 06/02/97 | 2300 | 18.03                    | 7.99          | 8.66                         | 93.0                             |
| 772 | 06/03/97 | 0    | 18.89                    | 7.99          | 8.66                         | 94.1                             |
| 773 | 06/03/97 | 100  | 18.71                    | 7.99          | 8.63                         | 93.7                             |
| 774 | 06/03/97 | 200  | 18.74                    | 8.00          | 8.63                         | 93.8                             |
| 775 | 06/03/97 | 300  | 18.74                    | 8.01          | 8.59                         | 93.4                             |
| 776 | 06/03/97 | 400  | 18.74                    | 8.02          | 8.59                         | 93.4                             |
| 777 | 06/03/97 | 500  | 18.90                    | 8.02          | 8.52                         | 93.0                             |
| 778 | 06/03/97 | 600  | 18.93                    | 8.02          | 8.52                         | 93.0                             |
| 779 | 06/03/97 | 700  | 18.93                    | 8.04          | 8.51                         | 92.9                             |
| 780 | 06/03/97 | 800  | 18.88                    | 8.05          | 8.51                         | 92.9                             |
| 781 | 06/03/97 | 900  | 18.88                    | 8.08          | 8.54                         | 93.2                             |
| 782 | 06/03/97 | 1000 | 18.90                    | 8.07          | 8.54                         | 93.2                             |
| 783 | 06/03/97 | 1100 | 18.62                    | 8.08          | 8.55                         | 93.3                             |
| 784 | 06/03/97 | 1200 | 18.73                    | 8.01          | 8.52                         | 93.2                             |
| 785 | 06/03/97 | 1300 | 18.17                    | 7.96          | 8.30                         | 92.8                             |
| 786 | 06/03/97 | 1400 | 18.10                    | 7.94          | 8.24                         | 92.4                             |
| 787 | 06/03/97 | 1500 | 18.00                    | 7.93          | 8.24                         | 92.4                             |
| 788 | 06/03/97 | 1600 | 18.02                    | 7.95          | 8.45                         | 93.5                             |
| 789 | 06/03/97 | 1700 | 18.23                    | 7.95          | 8.52                         | 93.5                             |
| 790 | 06/03/97 | 1800 | 18.48                    | 7.96          | 8.53                         | 93.5                             |
| 791 | 06/03/97 | 1900 | 18.62                    | 7.98          | 8.52                         | 93.4                             |
| 792 | 06/03/97 | 2000 | 18.84                    | 7.98          | 8.48                         | 93.4                             |
| 793 | 06/03/97 | 2100 | 19.03                    | 7.98          | 8.44                         | 93.3                             |
| 794 | 06/03/97 | 2200 | 19.12                    | 8.00          | 8.44                         | 93.3                             |
| 795 | 06/03/97 | 2300 | 19.16                    | 8.00          | 8.51                         | 93.5                             |
| 796 | 06/04/97 | 0    | 19.19                    | 8.01          | 8.52                         | 93.5                             |
| 797 | 06/04/97 | 100  | 19.22                    | 8.03          | 8.51                         | 93.5                             |
| 798 | 06/04/97 | 200  | 19.17                    | 8.03          | 8.52                         | 93.6                             |
| 799 | 06/04/97 | 300  | 19.17                    | 8.03          | 8.48                         | 93.6                             |
| 800 | 06/04/97 | 400  | 19.10                    | 8.02          | 8.46                         | 93.4                             |
| 801 | 06/04/97 | 500  | 18.95                    | 8.02          | 8.45                         | 93.4                             |
| 802 | 06/04/97 | 600  | 18.95                    | 8.03          | 8.45                         | 93.4                             |
| 803 | 06/04/97 | 700  | 18.95                    | 8.04          | 8.47                         | 93.5                             |
| 804 | 06/04/97 | 800  | 18.91                    | 8.05          | 8.47                         | 93.5                             |
| 805 | 06/04/97 | 900  | 18.95                    | 8.05          | 8.43                         | 93.4                             |
| 806 | 06/04/97 | 1000 | 18.95                    | 8.07          | 8.43                         | 93.4                             |
| 807 | 06/04/97 | 1100 | 19.14                    | 8.09          | 8.46                         | 93.7                             |
| 808 | 06/04/97 | 1200 | 19.21                    | 8.08          | 8.46                         | 93.7                             |
| 809 | 06/04/97 | 1300 | 19.19                    | 8.07          | 8.45                         | 93.7                             |
| 810 | 06/04/97 | 1400 | 19.10                    | 8.04          | 8.41                         | 93.4                             |
| 811 | 06/04/97 | 1500 | 18.90                    | 8.05          | 8.41                         | 93.4                             |
| 812 | 06/04/97 | 1600 | 18.90                    | 8.00          | 8.41                         | 93.4                             |
| 813 | 06/04/97 | 1700 | 18.58                    | 8.00          | 8.40                         | 93.2                             |
| 814 | 06/04/97 | 1800 | 18.58                    | 7.99          | 8.41                         | 93.2                             |
| 815 | 06/04/97 | 1900 | 19.03                    | 8.08          | 8.43                         | 93.4                             |
| 816 | 06/04/97 | 2000 | 19.37                    | 8.05          | 8.39                         | 93.4                             |
| 817 | 06/04/97 | 2100 | 19.57                    | 8.07          | 8.38                         | 93.4                             |
| 818 | 06/04/97 | 2200 | 19.59                    | 8.08          | 8.35                         | 93.3                             |
| 819 | 06/04/97 | 2300 | 19.47                    | 8.07          | 8.35                         | 93.3                             |
| 820 | 06/05/97 | 0    | 19.40                    | 8.07          | 8.30                         | 93.1                             |
| 821 | 06/05/97 | 100  | 19.27                    | 8.05          | 8.26                         | 92.7                             |
| 822 | 06/05/97 | 200  | 19.12                    | 8.04          | 8.28                         | 92.7                             |
| 823 | 06/05/97 | 300  | 19.10                    | 8.04          | 8.27                         | 92.7                             |
| 824 | 06/05/97 | 400  | 18.93                    | 8.02          | 8.23                         | 92.4                             |
| 825 | 06/05/97 | 500  | 18.86                    | 8.01          | 8.20                         | 92.4                             |

| OBS | DATE     | HOUR | TEMP<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|-------------------------|---------------|------------------------------|----------------------------------|
| 826 | 06/05/97 | 600  | 18.77                   | 8.02          | 8.19                         | 89.1                             |
| 827 | 06/05/97 | 700  | 18.79                   | 8.03          | 8.24                         | 89.3                             |
| 828 | 06/05/97 | 800  | 18.77                   | 8.03          | 8.17                         | 88.8                             |
| 829 | 06/05/97 | 900  | 18.72                   | 8.02          | 8.21                         | 89.3                             |
| 830 | 06/05/97 | 1000 | 18.74                   | 8.02          | 8.18                         | 89.3                             |
| 831 | 06/05/97 | 1100 | 18.73                   | 8.02          | 8.18                         | 89.3                             |
| 832 | 06/05/97 | 1200 | 18.56                   | 7.86          | 7.65                         | 86.7                             |
| 833 | 06/05/97 | 1300 | 18.43                   | 7.85          | 7.60                         | 84.4                             |
| 834 | 06/05/97 | 1400 | 18.37                   | 7.85          | 7.84                         | 85.2                             |
| 835 | 06/05/97 | 1500 | 18.34                   | 7.85          | 7.90                         | 85.7                             |
| 836 | 06/05/97 | 1600 | 18.17                   | 7.82          | 7.88                         | 84.9                             |
| 837 | 06/05/97 | 1700 | 18.05                   | 7.82          | 7.85                         | 84.5                             |
| 838 | 06/05/97 | 1800 | 18.05                   | 7.82          | 7.85                         | 84.5                             |
| 839 | 06/05/97 | 1900 | 18.05                   | 7.82          | 7.85                         | 84.5                             |
| 840 | 06/05/97 | 2000 | 18.13                   | 7.85          | 7.92                         | 85.6                             |
| 841 | 06/05/97 | 2100 | 18.13                   | 7.85          | 7.92                         | 85.6                             |
| 842 | 06/05/97 | 2200 | 18.13                   | 7.85          | 7.92                         | 85.6                             |
| 843 | 06/05/97 | 2300 | 18.17                   | 7.87          | 7.99                         | 86.1                             |
| 844 | 06/05/97 | 0    | 18.20                   | 7.87          | 7.77                         | 85.1                             |
| 845 | 06/05/97 | 100  | 18.17                   | 7.87          | 7.77                         | 85.1                             |
| 846 | 06/05/97 | 200  | 18.08                   | 7.87          | 7.77                         | 85.1                             |
| 847 | 06/05/97 | 300  | 18.03                   | 7.89          | 7.92                         | 85.2                             |
| 848 | 06/05/97 | 400  | 17.98                   | 7.89          | 7.92                         | 85.2                             |
| 849 | 06/05/97 | 500  | 17.86                   | 7.89          | 7.92                         | 85.2                             |
| 850 | 06/05/97 | 600  | 17.86                   | 7.89          | 7.92                         | 85.2                             |
| 851 | 06/05/97 | 700  | 17.78                   | 7.91          | 7.94                         | 85.3                             |
| 852 | 06/05/97 | 800  | 17.68                   | 7.92          | 7.94                         | 85.3                             |
| 853 | 06/05/97 | 900  | 17.59                   | 7.91          | 7.97                         | 85.4                             |
| 854 | 06/05/97 | 1000 | 17.50                   | 7.91          | 7.97                         | 85.4                             |
| 855 | 06/05/97 | 1100 | 17.43                   | 7.90          | 7.97                         | 85.4                             |
| 856 | 06/05/97 | 1200 | 17.38                   | 7.91          | 7.97                         | 85.4                             |
| 857 | 06/05/97 | 1300 | 17.32                   | 7.91          | 8.07                         | 85.0                             |
| 858 | 06/05/97 | 1400 | 17.21                   | 7.89          | 8.12                         | 85.0                             |
| 859 | 06/05/97 | 1500 | 17.10                   | 7.89          | 8.12                         | 85.0                             |
| 860 | 06/05/97 | 1600 | 16.98                   | 7.89          | 8.17                         | 85.2                             |
| 861 | 06/05/97 | 1700 | 16.99                   | 7.89          | 8.17                         | 85.2                             |
| 862 | 06/05/97 | 1800 | 16.93                   | 7.88          | 8.14                         | 85.1                             |
| 863 | 06/05/97 | 1900 | 16.85                   | 7.87          | 8.14                         | 85.1                             |
| 864 | 06/05/97 | 2000 | 16.89                   | 7.87          | 8.11                         | 85.0                             |
| 865 | 06/05/97 | 2100 | 17.23                   | 7.83          | 8.11                         | 85.0                             |
| 866 | 06/05/97 | 2200 | 17.22                   | 7.83          | 8.29                         | 85.1                             |
| 867 | 06/05/97 | 2300 | 17.40                   | 7.85          | 8.29                         | 85.1                             |
| 868 | 06/05/97 | 0    | 17.47                   | 7.87          | 8.32                         | 85.2                             |
| 869 | 06/05/97 | 100  | 17.64                   | 7.89          | 8.33                         | 85.2                             |
| 870 | 06/05/97 | 200  | 17.62                   | 7.89          | 8.33                         | 85.2                             |
| 871 | 06/05/97 | 300  | 17.62                   | 7.89          | 8.33                         | 85.2                             |
| 872 | 06/05/97 | 400  | 17.62                   | 7.89          | 8.33                         | 85.2                             |
| 873 | 06/05/97 | 500  | 17.57                   | 7.88          | 8.35                         | 85.2                             |
| 874 | 06/05/97 | 600  | 17.47                   | 7.87          | 8.30                         | 85.2                             |
| 875 | 06/05/97 | 700  | 17.32                   | 7.86          | 8.31                         | 85.2                             |
| 876 | 06/05/97 | 800  | 17.28                   | 7.86          | 8.31                         | 85.2                             |
| 877 | 06/05/97 | 900  | 17.20                   | 7.85          | 8.28                         | 85.1                             |
| 878 | 06/05/97 | 1000 | 17.13                   | 7.85          | 8.28                         | 85.1                             |
| 879 | 06/05/97 | 1100 | 17.03                   | 7.85          | 8.28                         | 85.1                             |
| 880 | 06/05/97 | 1200 | 16.96                   | 7.80          | 8.30                         | 85.1                             |
| 881 | 06/05/97 | 1300 | 16.93                   | 7.80          | 8.30                         | 85.1                             |
| 882 | 06/05/97 | 1400 | 16.94                   | 7.80          | 8.18                         | 85.0                             |
| 883 | 06/05/97 | 1500 | 16.86                   | 7.79          | 8.25                         | 85.0                             |
| 884 | 06/05/97 | 1600 | 16.86                   | 7.79          | 8.25                         | 85.0                             |
| 885 | 06/05/97 | 1700 | 16.77                   | 7.79          | 8.29                         | 85.0                             |
| 886 | 06/05/97 | 1800 | 16.77                   | 7.79          | 8.29                         | 85.0                             |
| 887 | 06/05/97 | 1900 | 16.77                   | 7.80          | 8.27                         | 85.0                             |
| 888 | 06/05/97 | 2000 | 16.89                   | 7.81          | 8.39                         | 85.4                             |
| 889 | 06/05/97 | 2100 | 16.99                   | 7.81          | 8.41                         | 85.8                             |
| 890 | 06/05/97 | 2200 | 17.20                   | 7.82          | 8.45                         | 86.8                             |
| 891 | 06/05/97 | 2300 | 17.33                   | 7.83          | 8.50                         | 87.3                             |
| 892 | 06/05/97 | 0    | 17.42                   | 7.84          | 8.58                         | 88.1                             |
| 893 | 06/05/97 | 100  | 17.49                   | 7.85          | 8.64                         | 88.9                             |
| 894 | 06/05/97 | 200  | 17.47                   | 7.85          | 8.68                         | 89.4                             |
| 895 | 06/05/97 | 300  | 17.47                   | 7.87          | 8.68                         | 89.4                             |
| 896 | 06/05/97 | 400  | 17.44                   | 7.86          | 8.37                         | 88.1                             |
| 897 | 06/05/97 | 500  | 17.35                   | 7.86          | 8.37                         | 88.1                             |
| 898 | 06/05/97 | 600  | 17.28                   | 7.84          | 8.30                         | 88.2                             |
| 899 | 06/05/97 | 700  | 17.21                   | 7.83          | 8.30                         | 88.1                             |
| 900 | 06/05/97 | 800  | 17.16                   | 7.80          | 8.18                         | 86.5                             |

5/4/00

PINE 1997 TAILRACE DATA

| OBS | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-----|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 901 | 06/08/97 | 1000 | 17.10                    | 7.81          | 3.4                          | 88.2                             |
| 902 | 06/08/97 | 1100 | 16.89                    | 7.79          | 3.4                          | 87.7                             |
| 903 | 06/08/97 | 1200 | 16.52                    | 7.77          | 3.5                          | 87.7                             |
| 904 | 06/08/97 | 1300 | 16.49                    | 7.76          | 3.6                          | 87.7                             |
| 905 | 06/08/97 | 1400 | 16.40                    | 7.77          | 3.6                          | 87.7                             |
| 906 | 06/08/97 | 1500 | 16.44                    | 7.77          | 3.6                          | 87.7                             |
| 907 | 06/08/97 | 1600 | 16.44                    | 7.77          | 3.6                          | 87.7                             |
| 908 | 06/08/97 | 1700 | 16.44                    | 7.77          | 3.6                          | 87.7                             |
| 909 | 06/08/97 | 1800 | 16.57                    | 7.79          | 3.8                          | 87.6                             |
| 910 | 06/08/97 | 1900 | 16.91                    | 7.82          | 4.0                          | 88.0                             |
| 911 | 06/08/97 | 2000 | 17.08                    | 7.85          | 4.3                          | 88.0                             |
| 912 | 06/08/97 | 2100 | 17.81                    | 7.87          | 5.0                          | 89.1                             |
| 913 | 06/08/97 | 2200 | 18.15                    | 7.89          | 5.8                          | 91.2                             |
| 914 | 06/08/97 | 2300 | 18.44                    | 7.89          | 6.57                         | 93.2                             |
| 915 | 06/09/97 | 0    | 18.53                    | 7.89          | 6.57                         | 93.2                             |
| 916 | 06/09/97 | 100  | 18.53                    | 7.91          | 6.12                         | 88.0                             |
| 917 | 06/09/97 | 200  | 18.53                    | 7.91          | 6.22                         | 88.0                             |
| 918 | 06/09/97 | 300  | 18.57                    | 7.88          | 6.19                         | 88.0                             |
| 919 | 06/09/97 | 400  | 18.57                    | 7.88          | 6.20                         | 88.0                             |
| 920 | 06/09/97 | 500  | 18.20                    | 7.87          | 6.16                         | 88.0                             |
| 921 | 06/09/97 | 600  | 18.20                    | 7.86          | 6.17                         | 88.0                             |
| 922 | 06/09/97 | 700  | 18.20                    | 7.86          | 6.17                         | 88.0                             |
| 923 | 06/09/97 | 800  | 18.25                    | 7.87          | 6.22                         | 88.0                             |
| 924 | 06/09/97 | 900  | 18.25                    | 7.88          | 6.16                         | 88.0                             |
| 925 | 06/09/97 | 1000 | 18.27                    | 7.88          | 6.16                         | 88.0                             |
| 926 | 06/09/97 | 1100 | 18.36                    | 7.84          | 6.29                         | 90.0                             |
| 927 | 06/09/97 | 1200 | 18.57                    | 7.83          | 6.29                         | 90.0                             |
| 928 | 06/09/97 | 1300 | 18.78                    | 7.82          | 6.25                         | 89.5                             |
| 929 | 06/09/97 | 1400 | 18.82                    | 7.82          | 6.20                         | 88.0                             |
| 930 | 06/09/97 | 1500 | 18.85                    | 7.82          | 6.18                         | 88.0                             |
| 931 | 06/09/97 | 1600 | 18.91                    | 7.82          | 6.25                         | 89.5                             |
| 932 | 06/09/97 | 1700 | 18.19                    | 7.82          | 6.24                         | 89.2                             |
| 933 | 06/09/97 | 1800 | 18.46                    | 7.83          | 6.29                         | 90.2                             |
| 934 | 06/09/97 | 1900 | 18.55                    | 7.85          | 6.27                         | 90.2                             |
| 935 | 06/09/97 | 2000 | 18.05                    | 7.85          | 6.24                         | 89.0                             |
| 936 | 06/09/97 | 2100 | 18.25                    | 7.85          | 6.42                         | 92.0                             |
| 937 | 06/09/97 | 2200 | 19.25                    | 7.87          | 6.71                         | 92.0                             |
| 938 | 06/09/97 | 2300 | 19.84                    | 7.87          | 7.14                         | 90.5                             |
| 939 | 06/10/97 | 0    | 19.70                    | 7.88          | 8.06                         | 89.4                             |
| 940 | 06/10/97 | 100  | 19.82                    | 7.89          | 7.99                         | 89.4                             |
| 941 | 06/10/97 | 200  | 19.81                    | 7.89          | 8.06                         | 89.4                             |
| 942 | 06/10/97 | 300  | 19.84                    | 7.88          | 7.96                         | 88.5                             |
| 943 | 06/10/97 | 400  | 19.66                    | 7.87          | 7.93                         | 88.5                             |
| 944 | 06/10/97 | 500  | 19.66                    | 7.86          | 7.90                         | 88.5                             |
| 945 | 06/10/97 | 600  | 19.65                    | 7.86          | 7.87                         | 88.5                             |
| 946 | 06/10/97 | 700  | 19.65                    | 7.86          | 7.87                         | 88.5                             |
| 947 | 06/10/97 | 800  | 19.60                    | 7.87          | 7.87                         | 88.5                             |
| 948 | 06/10/97 | 900  | 19.84                    | 7.90          | 7.92                         | 88.5                             |
| 949 | 06/10/97 | 1000 | 19.84                    | 7.90          | 7.95                         | 88.5                             |
| 950 | 06/10/97 | 1100 | 19.81                    | 7.88          | 7.86                         | 88.1                             |
| 951 | 06/10/97 | 1200 | 19.00                    | 7.87          | 7.85                         | 88.1                             |
| 952 | 06/10/97 | 1300 | 19.00                    | 7.86          | 7.85                         | 88.1                             |
| 953 | 06/10/97 | 1400 | 19.00                    | 7.85          | 7.85                         | 88.1                             |
| 954 | 06/10/97 | 1500 | 19.52                    | 7.85          | 7.85                         | 88.1                             |
| 955 | 06/10/97 | 1600 | 19.52                    | 7.85          | 7.85                         | 88.1                             |
| 956 | 06/10/97 | 1700 | 19.51                    | 7.85          | 7.84                         | 87.7                             |
| 957 | 06/10/97 | 1800 | 19.51                    | 7.85          | 7.84                         | 87.7                             |
| 958 | 06/10/97 | 1900 | 20.19                    | 7.85          | 7.85                         | 88.3                             |
| 959 | 06/10/97 | 2000 | 20.61                    | 7.88          | 7.87                         | 88.0                             |
| 960 | 06/10/97 | 2100 | 20.61                    | 7.88          | 7.94                         | 89.0                             |
| 961 | 06/10/97 | 2200 | 20.61                    | 7.88          | 7.85                         | 88.0                             |
| 962 | 06/10/97 | 2300 | 20.65                    | 7.89          | 7.85                         | 88.0                             |
| 963 | 06/11/97 | 0    | 20.65                    | 7.89          | 7.70                         | 87.4                             |
| 964 | 06/11/97 | 100  | 20.65                    | 7.88          | 7.70                         | 87.4                             |
| 965 | 06/11/97 | 200  | 20.89                    | 7.89          | 7.71                         | 87.6                             |
| 966 | 06/11/97 | 300  | 20.89                    | 7.89          | 7.63                         | 87.0                             |
| 967 | 06/11/97 | 400  | 20.85                    | 7.90          | 7.59                         | 86.7                             |
| 968 | 06/11/97 | 500  | 20.75                    | 7.89          | 7.41                         | 84.7                             |
| 969 | 06/11/97 | 600  | 20.75                    | 7.89          | 7.38                         | 84.7                             |
| 970 | 06/11/97 | 700  | 20.65                    | 7.88          | 7.68                         | 87.2                             |
| 971 | 06/11/97 | 800  | 20.65                    | 7.88          | 7.72                         | 87.6                             |
| 972 | 06/11/97 | 900  | 20.62                    | 7.87          | 7.72                         | 88.0                             |
| 973 | 06/11/97 | 1000 | 20.62                    | 7.88          | 7.76                         | 88.0                             |
| 974 | 06/11/97 | 1100 | 20.68                    | 7.88          | 7.97                         | 90.6                             |
| 975 | 06/11/97 | 1200 | 20.78                    | 7.90          | 7.91                         | 90.2                             |

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 975  | 06/11/97 | 1300 | 20.80                    | 7.89          | 7.86                         | 89.6                             |
| 976  | 06/11/97 | 1400 | 20.61                    | 7.84          | 7.92                         | 89.5                             |
| 977  | 06/11/97 | 1500 | 20.42                    | 7.83          | 7.46                         | 84.4                             |
| 978  | 06/11/97 | 1600 | 20.28                    | 7.82          | 7.51                         | 84.7                             |
| 979  | 06/11/97 | 1700 | 20.19                    | 7.81          | 7.47                         | 84.3                             |
| 980  | 06/11/97 | 1800 | 21.01                    | 7.87          | 7.97                         | 86.7                             |
| 981  | 06/11/97 | 1900 | 21.22                    | 7.88          | 7.41                         | 85.2                             |
| 982  | 06/11/97 | 2000 | 21.21                    | 7.87          | 7.40                         | 85.2                             |
| 983  | 06/11/97 | 2100 | 21.31                    | 7.88          | 7.42                         | 85.6                             |
| 984  | 06/11/97 | 2200 | 21.25                    | 7.88          | 7.45                         | 85.6                             |
| 985  | 06/11/97 | 2300 | 21.28                    | 7.88          | 7.44                         | 85.5                             |
| 986  | 06/12/97 | 0    | 21.01                    | 7.85          | 7.37                         | 84.4                             |
| 987  | 06/12/97 | 100  | 20.92                    | 7.85          | 7.49                         | 84.7                             |
| 988  | 06/12/97 | 200  | 20.87                    | 7.85          | 7.39                         | 84.4                             |
| 989  | 06/12/97 | 300  | 20.78                    | 7.85          | 7.39                         | 84.2                             |
| 990  | 06/12/97 | 400  | 20.63                    | 7.83          | 7.41                         | 84.1                             |
| 991  | 06/12/97 | 500  | 20.61                    | 7.82          | 7.32                         | 83.1                             |
| 992  | 06/12/97 | 600  | 20.54                    | 7.83          | 7.34                         | 83.7                             |
| 993  | 06/12/97 | 700  | 20.52                    | 7.84          | 7.38                         | 83.7                             |
| 994  | 06/12/97 | 800  | 20.52                    | 7.84          | 7.38                         | 83.7                             |
| 995  | 06/12/97 | 900  | 20.52                    | 7.86          | 7.30                         | 83.5                             |
| 996  | 06/12/97 | 1000 | 20.57                    | 7.86          | 7.76                         | 88.1                             |
| 997  | 06/12/97 | 1100 | 20.66                    | 7.86          | 7.78                         | 88.5                             |
| 998  | 06/12/97 | 1200 | 20.64                    | 7.85          | 7.80                         | 88.7                             |
| 999  | 06/12/97 | 1300 | 20.56                    | 7.84          | 7.75                         | 88.0                             |
| 1000 | 06/12/97 | 1400 | 20.56                    | 7.84          | 7.65                         | 86.8                             |
| 1001 | 06/12/97 | 1500 | 20.56                    | 7.84          | 7.56                         | 85.5                             |
| 1002 | 06/12/97 | 1600 | 20.52                    | 7.81          | 7.05                         | 80.7                             |
| 1003 | 06/12/97 | 1700 | 20.08                    | 7.80          | 7.28                         | 82.5                             |
| 1004 | 06/12/97 | 1800 | 21.09                    | 7.89          | 7.11                         | 82.5                             |
| 1005 | 06/12/97 | 1900 | 21.68                    | 7.90          | 7.21                         | 83.6                             |
| 1006 | 06/12/97 | 2000 | 21.83                    | 7.91          | 7.20                         | 83.6                             |
| 1007 | 06/12/97 | 2100 | 21.10                    | 7.87          | 7.05                         | 80.9                             |
| 1008 | 06/12/97 | 2200 | 20.70                    | 7.84          | 7.11                         | 81.0                             |
| 1009 | 06/12/97 | 2300 | 20.71                    | 7.84          | 7.12                         | 81.1                             |
| 1010 | 06/13/97 | 0    | 20.66                    | 7.84          | 6.95                         | 79.5                             |
| 1011 | 06/13/97 | 100  | 20.70                    | 7.86          | 6.92                         | 79.5                             |
| 1012 | 06/13/97 | 200  | 20.84                    | 7.86          | 7.04                         | 80.2                             |
| 1013 | 06/13/97 | 300  | 21.01                    | 7.88          | 7.04                         | 80.2                             |
| 1014 | 06/13/97 | 400  | 21.15                    | 7.90          | 6.95                         | 79.7                             |
| 1015 | 06/13/97 | 500  | 21.10                    | 7.90          | 7.01                         | 80.5                             |
| 1016 | 06/13/97 | 600  | 21.10                    | 7.90          | 7.07                         | 81.1                             |
| 1017 | 06/13/97 | 700  | 20.89                    | 7.89          | 7.08                         | 80.7                             |
| 1018 | 06/13/97 | 800  | 20.77                    | 7.90          | 7.28                         | 82.2                             |
| 1019 | 06/13/97 | 900  | 20.62                    | 7.87          | 7.42                         | 83.7                             |
| 1020 | 06/13/97 | 1000 | 20.57                    | 7.84          | 7.36                         | 83.5                             |
| 1021 | 06/13/97 | 1100 | 20.56                    | 7.82          | 7.36                         | 83.5                             |
| 1022 | 06/13/97 | 1200 | 20.61                    | 7.83          | 7.31                         | 83.0                             |
| 1023 | 06/13/97 | 1300 | 20.61                    | 7.87          | 7.24                         | 83.0                             |
| 1024 | 06/13/97 | 1400 | 21.40                    | 7.91          | 7.33                         | 84.6                             |
| 1025 | 06/13/97 | 1500 | 22.06                    | 7.98          | 6.98                         | 81.6                             |
| 1026 | 06/13/97 | 1600 | 22.25                    | 8.00          | 6.84                         | 80.0                             |
| 1027 | 06/13/97 | 1700 | 22.25                    | 8.00          | 6.84                         | 80.0                             |
| 1028 | 06/13/97 | 1800 | 22.25                    | 8.00          | 6.84                         | 80.0                             |
| 1029 | 06/13/97 | 1900 | 22.16                    | 8.01          | 6.91                         | 80.2                             |
| 1030 | 06/13/97 | 2000 | 21.90                    | 7.98          | 7.15                         | 82.3                             |
| 1031 | 06/13/97 | 2100 | 21.59                    | 7.96          | 7.10                         | 81.7                             |
| 1032 | 06/13/97 | 2200 | 21.19                    | 7.92          | 7.09                         | 81.7                             |
| 1033 | 06/13/97 | 2300 | 21.06                    | 7.90          | 6.98                         | 80.2                             |
| 1034 | 06/14/97 | 0    | 20.87                    | 7.89          | 7.01                         | 80.0                             |
| 1035 | 06/14/97 | 100  | 20.78                    | 7.89          | 7.10                         | 80.9                             |
| 1036 | 06/14/97 | 200  | 20.61                    | 7.88          | 7.08                         | 80.9                             |
| 1037 | 06/14/97 | 300  | 20.49                    | 7.87          | 7.08                         | 80.2                             |
| 1038 | 06/14/97 | 400  | 20.45                    | 7.88          | 7.13                         | 80.6                             |
| 1039 | 06/14/97 | 500  | 20.33                    | 7.88          | 7.22                         | 81.6                             |
| 1040 | 06/14/97 | 600  | 20.21                    | 7.87          | 7.37                         | 83.1                             |
| 1041 | 06/14/97 | 700  | 20.15                    | 7.87          | 7.50                         | 83.1                             |
| 1042 | 06/14/97 | 800  | 20.14                    | 7.88          | 7.59                         | 83.1                             |
| 1043 | 06/14/97 | 900  | 20.19                    | 7.88          | 7.67                         | 83.6                             |
| 1044 | 06/14/97 | 1000 | 20.05                    | 7.80          | 7.57                         | 82.8                             |
| 1045 | 06/14/97 | 1100 | 20.00                    | 7.80          | 7.57                         | 82.8                             |
| 1046 | 06/14/97 | 1200 | 20.14                    | 7.82          | 7.30                         | 81.5                             |
| 1047 | 06/14/97 | 1300 | 20.14                    | 7.82          | 7.24                         | 81.5                             |
| 1048 | 06/14/97 | 1400 | 20.22                    | 7.84          | 7.19                         | 82.1                             |
| 1049 | 06/14/97 | 1500 | 19.98                    | 7.85          | 7.24                         | 81.1                             |

140001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 1091 | 06/14/97 | 1900 | 20.10                    | 7.85          | 7.03                         | 79.0                             |
| 1092 | 06/14/97 | 1700 | 20.52                    | 7.89          | 7.11                         | 80.1                             |
| 1093 | 06/14/97 | 1800 | 20.47                    | 7.89          | 7.08                         | 80.1                             |
| 1094 | 06/14/97 | 1900 | 20.63                    | 7.91          | 7.35                         | 83.1                             |
| 1095 | 06/14/97 | 2000 | 20.40                    | 7.91          | 7.28                         | 82.4                             |
| 1096 | 06/14/97 | 2100 | 19.98                    | 7.89          | 7.25                         | 82.4                             |
| 1097 | 06/14/97 | 2200 | 19.98                    | 7.88          | 7.27                         | 81.1                             |
| 1098 | 06/14/97 | 2300 | 19.70                    | 7.88          | 7.18                         | 80.1                             |
| 1099 | 06/15/97 | 0    | 19.84                    | 7.89          | 7.11                         | 79.5                             |
| 1080 | 06/15/97 | 100  | 19.81                    | 7.89          | 7.08                         | 80.1                             |
| 1081 | 06/15/97 | 200  | 19.84                    | 7.92          | 7.17                         | 80.7                             |
| 1082 | 06/15/97 | 300  | 19.86                    | 7.93          | 7.21                         | 80.7                             |
| 1083 | 06/15/97 | 400  | 19.87                    | 7.93          | 7.24                         | 80.7                             |
| 1084 | 06/15/97 | 500  | 19.87                    | 7.92          | 7.24                         | 80.2                             |
| 1085 | 06/15/97 | 600  | 19.86                    | 7.92          | 7.20                         | 80.2                             |
| 1086 | 06/15/97 | 700  | 19.84                    | 7.92          | 7.26                         | 80.2                             |
| 1087 | 06/15/97 | 800  | 19.84                    | 7.92          | 7.31                         | 81.4                             |
| 1088 | 06/15/97 | 900  | 19.83                    | 7.94          | 7.48                         | 83.2                             |
| 1089 | 06/15/97 | 1000 | 19.83                    | 7.94          | 7.48                         | 83.2                             |
| 1090 | 06/15/97 | 1100 | 19.41                    | 7.92          | 7.38                         | 81.9                             |
| 1091 | 06/15/97 | 1200 | 19.23                    | 7.90          | 7.50                         | 82.9                             |
| 1092 | 06/15/97 | 1300 | 19.06                    | 7.87          | 7.49                         | 82.9                             |
| 1093 | 06/15/97 | 1400 | 19.04                    | 7.85          | 7.57                         | 82.1                             |
| 1094 | 06/15/97 | 1500 | 19.11                    | 7.87          | 7.61                         | 82.1                             |
| 1095 | 06/15/97 | 1600 | 19.04                    | 7.87          | 7.67                         | 81.7                             |
| 1096 | 06/15/97 | 1700 | 19.11                    | 7.87          | 7.87                         | 81.7                             |
| 1097 | 06/15/97 | 1800 | 18.87                    | 7.85          | 7.93                         | 80.7                             |
| 1098 | 06/15/97 | 1900 | 18.87                    | 7.85          | 7.93                         | 81.2                             |
| 1099 | 06/15/97 | 2000 | 18.87                    | 7.85          | 7.45                         | 81.2                             |
| 1079 | 06/15/97 | 1700 | 18.81                    | 7.81          | 7.21                         | 78.7                             |
| 1078 | 06/15/97 | 1800 | 18.45                    | 7.81          | 7.21                         | 78.7                             |
| 1077 | 06/15/97 | 1900 | 18.41                    | 7.79          | 7.20                         | 78.1                             |
| 1076 | 06/15/97 | 2000 | 18.41                    | 7.79          | 7.19                         | 78.1                             |
| 1075 | 06/15/97 | 2100 | 18.29                    | 7.77          | 7.12                         | 77.2                             |
| 1081 | 06/15/97 | 2200 | 18.59                    | 7.79          | 6.99                         | 76.2                             |
| 1082 | 06/15/97 | 2300 | 18.51                    | 7.78          | 6.94                         | 75.7                             |
| 1083 | 06/16/97 | 0    | 18.43                    | 7.78          | 7.12                         | 77.4                             |
| 1084 | 06/16/97 | 100  | 18.32                    | 7.78          | 7.10                         | 77.4                             |
| 1085 | 06/16/97 | 200  | 18.22                    | 7.79          | 7.22                         | 78.4                             |
| 1086 | 06/16/97 | 300  | 18.18                    | 7.79          | 7.13                         | 77.7                             |
| 1087 | 06/16/97 | 400  | 18.18                    | 7.81          | 7.08                         | 77.6                             |
| 1088 | 06/16/97 | 500  | 18.07                    | 7.82          | 7.13                         | 77.6                             |
| 1089 | 06/16/97 | 600  | 18.01                    | 7.82          | 7.12                         | 76.8                             |
| 1090 | 06/16/97 | 700  | 17.95                    | 7.82          | 7.13                         | 76.8                             |
| 1091 | 06/16/97 | 800  | 17.76                    | 7.80          | 7.28                         | 78.3                             |
| 1092 | 06/16/97 | 900  | 17.76                    | 7.78          | 7.54                         | 80.8                             |
| 1093 | 06/16/97 | 1000 | 17.84                    | 7.79          | 7.45                         | 80.2                             |
| 1094 | 06/16/97 | 1100 | 17.83                    | 7.77          | 7.45                         | 80.2                             |
| 1095 | 06/16/97 | 1200 | 17.81                    | 7.77          | 7.42                         | 81.3                             |
| 1096 | 06/16/97 | 1300 | 17.81                    | 7.77          | 7.42                         | 81.3                             |
| 1097 | 06/16/97 | 1400 | 17.79                    | 7.78          | 7.47                         | 80.6                             |
| 1098 | 06/16/97 | 1500 | 17.52                    | 7.76          | 7.47                         | 80.6                             |
| 1099 | 06/16/97 | 1600 | 17.52                    | 7.75          | 7.38                         | 78.8                             |
| 1099 | 06/16/97 | 1700 | 17.30                    | 7.73          | 7.40                         | 78.6                             |
| 1099 | 06/16/97 | 1800 | 17.44                    | 7.74          | 7.48                         | 79.5                             |
| 1100 | 06/16/97 | 1900 | 17.44                    | 7.75          | 7.48                         | 79.5                             |
| 1101 | 06/16/97 | 2000 | 17.44                    | 7.75          | 7.52                         | 81.2                             |
| 1102 | 06/16/97 | 2100 | 17.44                    | 7.76          | 7.52                         | 81.2                             |
| 1103 | 06/16/97 | 2200 | 17.44                    | 7.76          | 7.52                         | 81.2                             |
| 1104 | 06/16/97 | 2300 | 17.44                    | 7.76          | 7.52                         | 81.2                             |
| 1105 | 06/16/97 | 0    | 16.86                    | 7.73          | 7.75                         | 81.9                             |
| 1106 | 06/16/97 | 2300 | 16.77                    | 7.74          | 7.80                         | 82.7                             |
| 1107 | 06/17/97 | 0    | 16.67                    | 7.74          | 7.86                         | 82.7                             |
| 1108 | 06/17/97 | 100  | 16.57                    | 7.74          | 7.90                         | 82.7                             |
| 1109 | 06/17/97 | 200  | 16.50                    | 7.75          | 7.89                         | 82.7                             |
| 1110 | 06/17/97 | 300  | 16.43                    | 7.74          | 7.89                         | 82.7                             |
| 1111 | 06/17/97 | 400  | 16.36                    | 7.74          | 7.97                         | 83.2                             |
| 1112 | 06/17/97 | 500  | 16.36                    | 7.74          | 7.97                         | 83.2                             |
| 1113 | 06/17/97 | 600  | 16.08                    | 7.72          | 7.95                         | 82.8                             |
| 1114 | 06/17/97 | 700  | 15.98                    | 7.72          | 7.95                         | 82.8                             |
| 1115 | 06/17/97 | 800  | 15.83                    | 7.73          | 7.83                         | 81.1                             |
| 1116 | 06/17/97 | 900  | 15.83                    | 7.73          | 7.91                         | 81.7                             |
| 1117 | 06/17/97 | 1000 | 15.60                    | 7.73          | 8.11                         | 83.5                             |
| 1118 | 06/17/97 | 1100 | 15.43                    | 7.72          | 8.29                         | 85.1                             |
| 1119 | 06/17/97 | 1200 | 15.43                    | 7.72          | 8.43                         | 86.4                             |
| 1120 | 06/17/97 | 1300 | 15.43                    | 7.72          | 8.43                         | 86.4                             |
| 1121 | 06/17/97 | 1400 | 15.43                    | 7.72          | 8.43                         | 86.4                             |
| 1122 | 06/17/97 | 1500 | 15.25                    | 7.71          | 8.51                         | 87.3                             |
| 1123 | 06/17/97 | 1600 | 15.20                    | 7.71          | 8.58                         | 87.3                             |
| 1124 | 06/17/97 | 1700 | 15.20                    | 7.71          | 8.64                         | 87.8                             |
| 1125 | 06/17/97 | 1800 | 15.37                    | 7.72          | 8.64                         | 88.2                             |
| 1125 | 06/17/97 | 1900 | 15.64                    | 7.72          | 8.59                         | 88.2                             |

| OBS  | DATE     | HOUR | TEMP (C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-----------|---------|------------------------|-------------------------------|
| 1126 | 06/17/97 | 1900 | 15.97     | 7.73    | 8.65                   | 89.1                          |
| 1127 | 06/17/97 | 2000 | 15.97     | 7.73    | 8.62                   | 88.1                          |
| 1128 | 06/17/97 | 2100 | 16.16     | 7.73    | 8.62                   | 88.1                          |
| 1129 | 06/17/97 | 2200 | 16.32     | 7.74    | 8.62                   | 88.4                          |
| 1130 | 06/17/97 | 2300 | 16.39     | 7.74    | 8.62                   | 88.4                          |
| 1131 | 06/18/97 | 0    | 16.44     | 7.74    | 8.62                   | 88.4                          |
| 1132 | 06/18/97 | 100  | 16.49     | 7.72    | 8.62                   | 88.4                          |
| 1133 | 06/18/97 | 200  | 16.46     | 7.72    | 8.47                   | 88.1                          |
| 1134 | 06/18/97 | 300  | 16.40     | 7.71    | 8.49                   | 88.4                          |
| 1135 | 06/18/97 | 400  | 16.30     | 7.70    | 8.49                   | 88.1                          |
| 1136 | 06/18/97 | 500  | 16.30     | 7.76    | 8.33                   | 87.7                          |
| 1137 | 06/18/97 | 600  | 16.23     | 7.69    | 8.29                   | 87.5                          |
| 1138 | 06/18/97 | 700  | 16.18     | 7.69    | 8.29                   | 87.5                          |
| 1139 | 06/18/97 | 800  | 16.18     | 7.68    | 8.29                   | 87.5                          |
| 1140 | 06/18/97 | 900  | 16.13     | 7.68    | 8.33                   | 88.0                          |
| 1141 | 06/18/97 | 1000 | 16.12     | 7.68    | 8.33                   | 88.0                          |
| 1142 | 06/18/97 | 1100 | 16.12     | 7.68    | 8.40                   | 88.1                          |
| 1143 | 06/18/97 | 1200 | 16.08     | 7.68    | 8.46                   | 88.1                          |
| 1144 | 06/18/97 | 1300 | 16.02     | 7.67    | 8.46                   | 88.1                          |
| 1145 | 06/18/97 | 1400 | 15.97     | 7.67    | 8.50                   | 88.7                          |
| 1146 | 06/18/97 | 1500 | 15.92     | 7.67    | 8.50                   | 88.7                          |
| 1147 | 06/18/97 | 1600 | 15.87     | 7.67    | 8.50                   | 88.7                          |
| 1148 | 06/18/97 | 1700 | 15.82     | 7.67    | 8.50                   | 88.7                          |
| 1149 | 06/18/97 | 1800 | 15.80     | 7.66    | 8.50                   | 88.7                          |
| 1150 | 06/18/97 | 1900 | 15.72     | 7.67    | 8.50                   | 88.6                          |
| 1151 | 06/18/97 | 2000 | 15.67     | 7.66    | 8.50                   | 88.2                          |
| 1152 | 06/18/97 | 2100 | 15.63     | 7.66    | 8.50                   | 88.2                          |
| 1153 | 06/18/97 | 2200 | 15.59     | 7.66    | 8.50                   | 88.2                          |
| 1154 | 06/18/97 | 2300 | 15.54     | 7.66    | 8.50                   | 88.2                          |
| 1155 | 06/19/97 | 0    | 15.44     | 7.66    | 8.50                   | 88.2                          |
| 1156 | 06/19/97 | 100  | 15.44     | 7.66    | 8.50                   | 88.2                          |
| 1157 | 06/19/97 | 200  | 15.42     | 7.66    | 8.50                   | 88.2                          |
| 1158 | 06/19/97 | 300  | 15.40     | 7.66    | 8.48                   | 88.0                          |
| 1159 | 06/19/97 | 400  | 15.40     | 7.66    | 8.44                   | 88.0                          |
| 1160 | 06/19/97 | 500  | 15.37     | 7.66    | 8.45                   | 88.1                          |
| 1161 | 06/19/97 | 600  | 15.34     | 7.67    | 8.45                   | 88.1                          |
| 1162 | 06/19/97 | 700  | 15.29     | 7.67    | 8.44                   | 88.1                          |
| 1163 | 06/19/97 | 800  | 15.23     | 7.66    | 8.44                   | 88.1                          |
| 1164 | 06/19/97 | 900  | 15.19     | 7.66    | 8.44                   | 88.0                          |
| 1165 | 06/19/97 | 1000 | 15.15     | 7.66    | 8.47                   | 88.0                          |
| 1166 | 06/19/97 | 1100 | 15.13     | 7.67    | 8.47                   | 87.9                          |
| 1167 | 06/19/97 | 1200 | 15.02     | 7.65    | 8.47                   | 87.9                          |
| 1168 | 06/19/97 | 1300 | 15.00     | 7.65    | 8.55                   | 89.7                          |
| 1169 | 06/19/97 | 1400 | 15.00     | 7.65    | 8.51                   | 89.7                          |
| 1170 | 06/19/97 | 1500 | 15.00     | 7.68    | 8.51                   | 89.7                          |
| 1171 | 06/19/97 | 1600 | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1172 | 06/19/97 | 1700 | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1173 | 06/19/97 | 1800 | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1174 | 06/19/97 | 1900 | 15.00     | 7.70    | 8.51                   | 89.7                          |
| 1175 | 06/19/97 | 2000 | 15.00     | 7.70    | 8.51                   | 89.7                          |
| 1176 | 06/19/97 | 2100 | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1177 | 06/19/97 | 2200 | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1178 | 06/19/97 | 2300 | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1179 | 06/20/97 | 0    | 15.04     | 7.71    | 8.51                   | 89.7                          |
| 1180 | 06/20/97 | 100  | 15.07     | 7.70    | 8.51                   | 89.7                          |
| 1181 | 06/20/97 | 200  | 15.05     | 7.71    | 8.51                   | 89.7                          |
| 1182 | 06/20/97 | 300  | 15.05     | 7.71    | 8.51                   | 89.7                          |
| 1183 | 06/20/97 | 400  | 15.01     | 7.71    | 8.51                   | 89.7                          |
| 1184 | 06/20/97 | 500  | 15.01     | 7.71    | 8.51                   | 89.7                          |
| 1185 | 06/20/97 | 600  | 15.04     | 7.71    | 8.51                   | 89.7                          |
| 1186 | 06/20/97 | 700  | 15.02     | 7.71    | 8.51                   | 89.7                          |
| 1187 | 06/20/97 | 800  | 15.02     | 7.71    | 8.51                   | 89.7                          |
| 1188 | 06/20/97 | 900  | 15.00     | 7.71    | 8.51                   | 89.7                          |
| 1189 | 06/20/97 | 1000 | 15.00     | 7.70    | 8.51                   | 89.7                          |
| 1190 | 06/20/97 | 1100 | 15.02     | 7.70    | 8.51                   | 89.7                          |
| 1191 | 06/20/97 | 1200 | 15.03     | 7.70    | 8.51                   | 89.7                          |
| 1192 | 06/20/97 | 1300 | 15.03     | 7.69    | 8.51                   | 89.7                          |
| 1193 | 06/20/97 | 1400 | 15.03     | 7.69    | 8.51                   | 89.7                          |
| 1194 | 06/20/97 | 1500 | 15.03     | 7.69    | 8.51                   | 89.7                          |
| 1195 | 06/20/97 | 1600 | 15.03     | 7.69    | 8.51                   | 89.7                          |
| 1196 | 06/20/97 | 1700 | 15.04     | 7.69    | 8.51                   | 89.7                          |
| 1197 | 06/20/97 | 1800 | 17.15     | 7.70    | 8.98                   | 95.3                          |
| 1198 | 06/20/97 | 1900 | 17.15     | 7.70    | 8.98                   | 95.3                          |
| 1199 | 06/20/97 | 2000 | 16.89     | 7.71    | 8.98                   | 94.8                          |
| 1200 | 06/20/97 | 2100 | 16.77     | 7.71    | 8.98                   | 94.8                          |



PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 1201 | 06/20/97 | 2200 | 16.77                    | 7.71          | 8.97                         | 94.7                             |
| 1202 | 06/20/97 | 2300 | 16.81                    | 7.72          | 8.95                         | 93.6                             |
| 1203 | 06/21/97 | 0    | 16.84                    | 7.72          | 8.86                         | 93.6                             |
| 1204 | 06/21/97 | 100  | 16.81                    | 7.72          | 8.85                         | 93.6                             |
| 1205 | 06/21/97 | 200  | 16.89                    | 7.71          | 8.80                         | 93.0                             |
| 1206 | 06/21/97 | 300  | 16.96                    | 7.72          | 8.77                         | 92.8                             |
| 1207 | 06/21/97 | 400  | 16.96                    | 7.71          | 8.76                         | 92.8                             |
| 1208 | 06/21/97 | 500  | 16.99                    | 7.70          | 8.71                         | 92.4                             |
| 1209 | 06/21/97 | 600  | 16.92                    | 7.70          | 8.70                         | 92.4                             |
| 1210 | 06/21/97 | 700  | 16.98                    | 7.69          | 8.70                         | 92.4                             |
| 1211 | 06/21/97 | 800  | 16.96                    | 7.68          | 8.68                         | 91.9                             |
| 1212 | 06/21/97 | 900  | 16.96                    | 7.68          | 8.68                         | 91.9                             |
| 1213 | 06/21/97 | 1000 | 16.96                    | 7.68          | 8.68                         | 91.9                             |
| 1214 | 06/21/97 | 1100 | 17.06                    | 7.68          | 8.68                         | 92.1                             |
| 1215 | 06/21/97 | 1200 | 17.13                    | 7.68          | 8.67                         | 92.1                             |
| 1216 | 06/21/97 | 1300 | 17.32                    | 7.67          | 8.64                         | 92.2                             |
| 1217 | 06/21/97 | 1400 | 17.59                    | 7.67          | 8.66                         | 92.2                             |
| 1218 | 06/21/97 | 1500 | 18.01                    | 7.67          | 8.66                         | 92.2                             |
| 1219 | 06/21/97 | 1600 | 18.30                    | 7.68          | 8.65                         | 92.2                             |
| 1220 | 06/21/97 | 1700 | 18.42                    | 7.68          | 8.67                         | 92.2                             |
| 1221 | 06/21/97 | 1800 | 18.61                    | 7.68          | 8.65                         | 92.2                             |
| 1222 | 06/21/97 | 1900 | 18.61                    | 7.68          | 8.65                         | 92.2                             |
| 1223 | 06/21/97 | 2000 | 18.64                    | 7.69          | 8.64                         | 92.2                             |
| 1224 | 06/21/97 | 2100 | 18.47                    | 7.68          | 8.60                         | 91.8                             |
| 1225 | 06/21/97 | 2200 | 18.32                    | 7.68          | 8.52                         | 91.8                             |
| 1226 | 06/21/97 | 2300 | 18.29                    | 7.68          | 8.50                         | 91.8                             |
| 1227 | 06/22/97 | 0    | 18.35                    | 7.69          | 8.49                         | 91.8                             |
| 1228 | 06/22/97 | 100  | 18.34                    | 7.70          | 8.50                         | 92.0                             |
| 1229 | 06/22/97 | 200  | 18.32                    | 7.69          | 8.46                         | 91.6                             |
| 1230 | 06/22/97 | 300  | 18.29                    | 7.68          | 8.44                         | 91.5                             |
| 1231 | 06/22/97 | 400  | 18.29                    | 7.68          | 8.41                         | 91.5                             |
| 1232 | 06/22/97 | 500  | 18.27                    | 7.68          | 8.39                         | 91.3                             |
| 1233 | 06/22/97 | 600  | 18.23                    | 7.68          | 8.38                         | 91.1                             |
| 1234 | 06/22/97 | 700  | 18.25                    | 7.68          | 8.38                         | 91.1                             |
| 1235 | 06/22/97 | 800  | 18.27                    | 7.68          | 8.38                         | 91.1                             |
| 1236 | 06/22/97 | 900  | 18.27                    | 7.68          | 8.38                         | 91.1                             |
| 1237 | 06/22/97 | 1000 | 18.27                    | 7.68          | 8.38                         | 91.1                             |
| 1238 | 06/22/97 | 1100 | 18.27                    | 7.68          | 8.38                         | 91.1                             |
| 1239 | 06/22/97 | 1200 | 19.30                    | 7.69          | 8.33                         | 92.0                             |
| 1240 | 06/22/97 | 1300 | 19.31                    | 7.69          | 8.33                         | 92.0                             |
| 1241 | 06/22/97 | 1400 | 19.68                    | 7.70          | 8.35                         | 93.9                             |
| 1242 | 06/22/97 | 1500 | 19.99                    | 7.70          | 8.34                         | 93.9                             |
| 1243 | 06/22/97 | 1600 | 19.99                    | 7.70          | 8.37                         | 93.9                             |
| 1244 | 06/22/97 | 1700 | 20.23                    | 7.70          | 8.39                         | 94.0                             |
| 1245 | 06/22/97 | 1800 | 20.13                    | 7.70          | 8.37                         | 94.0                             |
| 1246 | 06/22/97 | 1900 | 20.04                    | 7.70          | 8.36                         | 94.2                             |
| 1247 | 06/22/97 | 2000 | 19.71                    | 7.69          | 8.33                         | 93.7                             |
| 1248 | 06/22/97 | 2100 | 19.57                    | 7.69          | 8.29                         | 92.6                             |
| 1249 | 06/22/97 | 2200 | 19.52                    | 7.70          | 8.30                         | 92.6                             |
| 1250 | 06/22/97 | 2300 | 19.52                    | 7.71          | 8.28                         | 92.4                             |
| 1251 | 06/23/97 | 0    | 19.56                    | 7.71          | 8.25                         | 92.4                             |
| 1252 | 06/23/97 | 100  | 19.57                    | 7.71          | 8.25                         | 92.4                             |
| 1253 | 06/23/97 | 200  | 19.57                    | 7.71          | 8.25                         | 92.4                             |
| 1254 | 06/23/97 | 300  | 19.57                    | 7.71          | 8.25                         | 92.4                             |
| 1255 | 06/23/97 | 400  | 19.81                    | 7.71          | 8.13                         | 91.1                             |
| 1256 | 06/23/97 | 500  | 19.86                    | 7.72          | 8.01                         | 90.1                             |
| 1257 | 06/23/97 | 600  | 20.06                    | 7.73          | 8.04                         | 90.7                             |
| 1258 | 06/23/97 | 700  | 20.08                    | 7.73          | 8.02                         | 90.6                             |
| 1259 | 06/23/97 | 800  | 20.04                    | 7.72          | 8.00                         | 90.5                             |
| 1260 | 06/23/97 | 900  | 20.04                    | 7.72          | 8.00                         | 90.5                             |
| 1261 | 06/23/97 | 1000 | 19.75                    | 7.73          | 8.02                         | 90.2                             |
| 1262 | 06/23/97 | 1100 | 19.56                    | 7.68          | 8.11                         | 90.5                             |
| 1263 | 06/23/97 | 1200 | 19.56                    | 7.68          | 8.03                         | 90.2                             |
| 1264 | 06/23/97 | 1300 | 19.82                    | 7.69          | 8.03                         | 90.5                             |
| 1265 | 06/23/97 | 1400 | 19.85                    | 7.70          | 8.05                         | 90.6                             |
| 1266 | 06/23/97 | 1500 | 20.23                    | 7.71          | 7.97                         | 90.2                             |
| 1267 | 06/23/97 | 1600 | 20.71                    | 7.72          | 7.95                         | 91.0                             |
| 1268 | 06/23/97 | 1700 | 20.71                    | 7.72          | 7.95                         | 91.0                             |
| 1269 | 06/23/97 | 1800 | 21.57                    | 7.74          | 7.94                         | 92.3                             |
| 1270 | 06/23/97 | 1900 | 22.07                    | 7.77          | 7.86                         | 92.3                             |
| 1271 | 06/23/97 | 2000 | 22.08                    | 7.77          | 7.86                         | 92.3                             |
| 1272 | 06/23/97 | 2100 | 21.92                    | 7.76          | 7.84                         | 91.8                             |
| 1273 | 06/23/97 | 2200 | 21.89                    | 7.76          | 7.83                         | 91.6                             |
| 1274 | 06/23/97 | 2300 | 21.73                    | 7.77          | 7.76                         | 90.5                             |
| 1275 | 06/24/97 | 0    | 21.60                    | 7.77          | 7.84                         | 91.1                             |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (U.S.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|-----------|------------------------|-------------------------------|
| 1276 | 06/24/97 | 100  | 21.69             | 7.78      | 7.80                   | 90.9                          |
| 1277 | 06/24/97 | 300  | 21.69             | 7.77      | 7.77                   | 90.4                          |
| 1278 | 06/24/97 | 400  | 21.69             | 7.77      | 7.74                   | 90.0                          |
| 1279 | 06/24/97 | 500  | 21.69             | 7.77      | 7.72                   | 89.9                          |
| 1280 | 06/24/97 | 600  | 21.69             | 7.77      | 7.67                   | 89.4                          |
| 1281 | 06/24/97 | 700  | 21.69             | 7.77      | 7.67                   | 89.4                          |
| 1282 | 06/24/97 | 800  | 21.69             | 7.80      | 7.65                   | 89.2                          |
| 1283 | 06/24/97 | 900  | 22.08             | 7.81      | 7.55                   | 88.2                          |
| 1284 | 06/24/97 | 1000 | 22.23             | 7.82      | 7.57                   | 88.9                          |
| 1285 | 06/24/97 | 1100 | 22.39             | 7.81      | 7.54                   | 89.1                          |
| 1286 | 06/24/97 | 1200 | 22.64             | 7.77      | 7.54                   | 89.1                          |
| 1287 | 06/24/97 | 1300 | 22.64             | 7.77      | 7.54                   | 89.1                          |
| 1288 | 06/24/97 | 1400 | 22.08             | 7.77      | 7.52                   | 88.9                          |
| 1289 | 06/24/97 | 1500 | 22.08             | 7.76      | 7.52                   | 88.9                          |
| 1290 | 06/24/97 | 1600 | 22.74             | 7.76      | 7.49                   | 89.0                          |
| 1291 | 06/24/97 | 1700 | 22.35             | 7.76      | 7.49                   | 89.0                          |
| 1292 | 06/24/97 | 1800 | 22.26             | 7.75      | 7.56                   | 89.4                          |
| 1293 | 06/24/97 | 1900 | 22.39             | 7.75      | 7.51                   | 88.7                          |
| 1294 | 06/24/97 | 2000 | 22.21             | 7.74      | 7.55                   | 88.8                          |
| 1295 | 06/24/97 | 2100 | 22.14             | 7.74      | 7.54                   | 88.8                          |
| 1296 | 06/24/97 | 2200 | 22.89             | 7.77      | 7.54                   | 88.8                          |
| 1297 | 06/24/97 | 2300 | 22.01             | 7.77      | 7.50                   | 88.6                          |
| 1298 | 06/25/97 | 2400 | 22.36             | 7.76      | 7.45                   | 88.9                          |
| 1299 | 06/25/97 | 2500 | 22.70             | 7.83      | 7.37                   | 89.3                          |
| 1300 | 06/25/97 | 100  | 22.72             | 7.85      | 7.35                   | 89.0                          |
| 1301 | 06/25/97 | 200  | 23.59             | 7.84      | 7.31                   | 88.2                          |
| 1302 | 06/25/97 | 300  | 23.63             | 7.84      | 7.29                   | 88.1                          |
| 1303 | 06/25/97 | 400  | 23.63             | 7.84      | 7.29                   | 88.1                          |
| 1304 | 06/25/97 | 500  | 23.48             | 7.84      | 7.29                   | 88.0                          |
| 1305 | 06/25/97 | 600  | 23.38             | 7.85      | 7.29                   | 88.0                          |
| 1306 | 06/25/97 | 700  | 23.28             | 7.85      | 7.49                   | 90.1                          |
| 1307 | 06/25/97 | 800  | 23.47             | 7.89      | 7.55                   | 90.1                          |
| 1308 | 06/25/97 | 900  | 23.56             | 7.92      | 7.55                   | 91.2                          |
| 1309 | 06/25/97 | 1000 | 23.65             | 7.89      | 7.22                   | 87.3                          |
| 1310 | 06/25/97 | 1100 | 23.65             | 7.86      | 7.29                   | 88.0                          |
| 1311 | 06/25/97 | 1200 | 23.28             | 7.95      | 6.94                   | 85.4                          |
| 1312 | 06/25/97 | 1300 | 23.21             | 7.92      | 7.31                   | 88.8                          |
| 1313 | 06/25/97 | 1400 | 23.21             | 7.91      | 7.32                   | 88.8                          |
| 1314 | 06/25/97 | 1500 | 23.63             | 7.90      | 7.32                   | 88.8                          |
| 1315 | 06/25/97 | 1600 | 24.18             | 7.89      | 7.42                   | 91.4                          |
| 1316 | 06/25/97 | 1700 | 24.18             | 7.89      | 7.29                   | 89.1                          |
| 1317 | 06/25/97 | 1800 | 24.21             | 7.89      | 7.29                   | 89.1                          |
| 1318 | 06/25/97 | 1900 | 24.18             | 7.89      | 7.28                   | 88.9                          |
| 1319 | 06/25/97 | 2000 | 23.96             | 7.87      | 7.31                   | 88.8                          |
| 1320 | 06/25/97 | 2100 | 23.54             | 7.84      | 7.32                   | 88.8                          |
| 1321 | 06/25/97 | 2200 | 23.47             | 7.84      | 7.32                   | 88.8                          |
| 1322 | 06/25/97 | 2300 | 23.34             | 7.84      | 7.32                   | 88.7                          |
| 1323 | 06/25/97 | 2400 | 23.34             | 7.86      | 7.51                   | 90.3                          |
| 1324 | 06/25/97 | 100  | 23.30             | 7.86      | 7.48                   | 89.7                          |
| 1325 | 06/25/97 | 200  | 23.30             | 7.88      | 7.47                   | 89.8                          |
| 1326 | 06/25/97 | 300  | 23.28             | 7.87      | 7.45                   | 89.6                          |
| 1327 | 06/25/97 | 400  | 23.28             | 7.87      | 7.45                   | 89.6                          |
| 1328 | 06/25/97 | 500  | 23.12             | 7.87      | 7.42                   | 89.1                          |
| 1329 | 06/25/97 | 600  | 23.09             | 7.87      | 7.42                   | 89.1                          |
| 1330 | 06/25/97 | 700  | 23.09             | 7.90      | 7.44                   | 89.9                          |
| 1331 | 06/25/97 | 800  | 23.06             | 7.92      | 7.47                   | 89.9                          |
| 1332 | 06/25/97 | 900  | 23.50             | 7.91      | 7.47                   | 91.5                          |
| 1333 | 06/25/97 | 1000 | 23.35             | 7.92      | 7.10                   | 88.5                          |
| 1334 | 06/25/97 | 1100 | 23.14             | 8.01      | 6.98                   | 85.5                          |
| 1335 | 06/25/97 | 1200 | 23.07             | 7.98      | 7.98                   | 91.9                          |
| 1336 | 06/25/97 | 1300 | 23.19             | 7.98      | 7.93                   | 91.9                          |
| 1337 | 06/25/97 | 1400 | 23.76             | 7.95      | 7.77                   | 89.5                          |
| 1338 | 06/25/97 | 1500 | 23.83             | 7.92      | 7.14                   | 86.6                          |
| 1339 | 06/25/97 | 1600 | 23.85             | 7.90      | 7.14                   | 86.6                          |
| 1340 | 06/25/97 | 1700 | 23.90             | 7.93      | 7.24                   | 88.0                          |
| 1341 | 06/25/97 | 1800 | 23.87             | 7.93      | 7.11                   | 86.0                          |
| 1342 | 06/25/97 | 1900 | 23.77             | 7.91      | 7.09                   | 85.5                          |
| 1343 | 06/25/97 | 2000 | 23.50             | 7.90      | 7.11                   | 85.5                          |
| 1344 | 06/25/97 | 2100 | 23.05             | 7.89      | 7.10                   | 84.9                          |
| 1345 | 06/26/97 | 2300 | 22.98             | 7.89      | 7.08                   | 84.1                          |
| 1346 | 06/27/97 | 100  | 22.94             | 7.87      | 7.08                   | 84.1                          |
| 1347 | 06/27/97 | 200  | 22.98             | 7.89      | 7.04                   | 84.1                          |
| 1348 | 06/27/97 | 300  | 22.94             | 7.88      | 7.03                   | 83.9                          |
| 1349 | 06/27/97 | 400  | 22.94             | 7.88      | 7.03                   | 83.9                          |

FW0001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 1351 | 06/27/97 | 400  | 22.87                    | 7.89          | 5.85                         | 81.6                             |
| 1352 | 06/27/97 | 500  | 22.78                    | 7.90          | 7.00                         | 83.3                             |
| 1353 | 06/27/97 | 600  | 22.71                    | 7.91          | 6.99                         | 83.2                             |
| 1354 | 06/27/97 | 700  | 22.65                    | 7.95          | 7.01                         | 83.2                             |
| 1355 | 06/27/97 | 800  | 22.68                    | 7.98          | 7.03                         | 83.4                             |
| 1356 | 06/27/97 | 900  | 22.71                    | 7.99          | 7.46                         | 88.7                             |
| 1357 | 06/27/97 | 1000 | 22.91                    | 8.01          | 7.43                         | 88.6                             |
| 1358 | 06/27/97 | 1100 | 23.14                    | 8.04          | 7.40                         | 88.6                             |
| 1359 | 06/27/97 | 1200 | 23.41                    | 8.01          | 7.40                         | 89.1                             |
| 1360 | 06/27/97 | 1300 | 23.68                    | 8.04          | 7.42                         | 89.1                             |
| 1361 | 06/27/97 | 1400 | 23.95                    | 8.02          | 7.50                         | 89.6                             |
| 1362 | 06/27/97 | 1500 | 23.95                    | 8.02          | 7.58                         | 90.7                             |
| 1363 | 06/27/97 | 1600 | 23.92                    | 8.03          | 7.61                         | 91.3                             |
| 1364 | 06/27/97 | 1700 | 23.23                    | 8.03          | 7.61                         | 91.3                             |
| 1365 | 06/27/97 | 1800 | 23.21                    | 8.01          | 7.56                         | 90.9                             |
| 1366 | 06/27/97 | 1900 | 23.12                    | 8.01          | 7.59                         | 90.9                             |
| 1367 | 06/27/97 | 2000 | 23.16                    | 8.01          | 7.58                         | 90.8                             |
| 1368 | 06/27/97 | 2100 | 22.89                    | 8.04          | 7.36                         | 87.7                             |
| 1369 | 06/27/97 | 2200 | 22.89                    | 8.04          | 7.34                         | 87.6                             |
| 1370 | 06/27/97 | 2300 | 22.89                    | 8.04          | 7.35                         | 87.7                             |
| 1371 | 06/28/97 | 0    | 22.72                    | 8.03          | 7.47                         | 89.2                             |
| 1372 | 06/28/97 | 100  | 22.92                    | 8.04          | 7.57                         | 89.2                             |
| 1373 | 06/28/97 | 200  | 22.89                    | 8.03          | 7.38                         | 87.9                             |
| 1374 | 06/28/97 | 300  | 22.91                    | 8.04          | 7.34                         | 87.6                             |
| 1375 | 06/28/97 | 400  | 22.89                    | 8.04          | 7.36                         | 87.7                             |
| 1376 | 06/28/97 | 500  | 22.89                    | 8.04          | 7.33                         | 87.7                             |
| 1377 | 06/28/97 | 600  | 22.72                    | 8.05          | 7.30                         | 87.0                             |
| 1378 | 06/28/97 | 700  | 22.72                    | 8.05          | 7.42                         | 88.1                             |
| 1379 | 06/28/97 | 800  | 22.72                    | 8.05          | 7.41                         | 88.1                             |
| 1380 | 06/28/97 | 900  | 22.92                    | 8.19          | 7.41                         | 88.7                             |
| 1381 | 06/28/97 | 1000 | 23.14                    | 8.21          | 7.41                         | 88.7                             |
| 1382 | 06/28/97 | 1100 | 23.43                    | 8.21          | 7.39                         | 89.0                             |
| 1383 | 06/28/97 | 1200 | 23.45                    | 8.21          | 7.32                         | 88.1                             |
| 1384 | 06/28/97 | 1300 | 23.62                    | 8.10          | 7.32                         | 88.4                             |
| 1385 | 06/28/97 | 1400 | 23.62                    | 8.10          | 7.32                         | 88.4                             |
| 1386 | 06/28/97 | 1500 | 23.62                    | 8.08          | 7.28                         | 87.7                             |
| 1387 | 06/28/97 | 1600 | 23.62                    | 8.08          | 7.26                         | 86.6                             |
| 1388 | 06/28/97 | 1700 | 22.95                    | 8.06          | 7.25                         | 86.7                             |
| 1389 | 06/28/97 | 1800 | 23.05                    | 8.06          | 7.24                         | 86.6                             |
| 1390 | 06/28/97 | 1900 | 23.08                    | 8.07          | 7.27                         | 87.4                             |
| 1391 | 06/28/97 | 2000 | 23.28                    | 8.09          | 7.28                         | 87.4                             |
| 1392 | 06/28/97 | 2100 | 23.43                    | 8.09          | 7.29                         | 87.4                             |
| 1393 | 06/28/97 | 2200 | 23.62                    | 8.10          | 7.24                         | 86.7                             |
| 1394 | 06/28/97 | 2300 | 23.62                    | 8.09          | 7.24                         | 86.7                             |
| 1395 | 06/29/97 | 0    | 23.45                    | 8.09          | 7.24                         | 86.7                             |
| 1396 | 06/29/97 | 100  | 23.32                    | 8.08          | 7.20                         | 86.6                             |
| 1397 | 06/29/97 | 200  | 23.32                    | 8.08          | 7.20                         | 86.6                             |
| 1398 | 06/29/97 | 300  | 23.32                    | 8.08          | 7.22                         | 86.6                             |
| 1399 | 06/29/97 | 400  | 23.32                    | 8.08          | 7.22                         | 86.6                             |
| 1400 | 06/29/97 | 500  | 23.48                    | 8.10          | 7.21                         | 86.5                             |
| 1401 | 06/29/97 | 600  | 23.48                    | 8.13          | 7.25                         | 87.5                             |
| 1402 | 06/29/97 | 700  | 23.62                    | 8.14          | 7.22                         | 86.8                             |
| 1403 | 06/29/97 | 800  | 23.62                    | 8.14          | 7.22                         | 86.8                             |
| 1404 | 06/29/97 | 900  | 23.70                    | 8.15          | 7.40                         | 88.3                             |
| 1405 | 06/29/97 | 1000 | 23.70                    | 8.15          | 7.35                         | 88.3                             |
| 1406 | 06/29/97 | 1100 | 23.88                    | 8.17          | 7.32                         | 88.0                             |
| 1407 | 06/29/97 | 1200 | 24.10                    | 8.19          | 7.31                         | 88.0                             |
| 1408 | 06/29/97 | 1300 | 24.23                    | 8.26          | 7.31                         | 89.4                             |
| 1409 | 06/29/97 | 1400 | 24.43                    | 8.28          | 7.30                         | 89.1                             |
| 1410 | 06/29/97 | 1500 | 24.73                    | 8.28          | 7.29                         | 89.1                             |
| 1411 | 06/29/97 | 1600 | 24.49                    | 8.21          | 7.27                         | 88.7                             |
| 1412 | 06/29/97 | 1700 | 24.30                    | 8.19          | 7.24                         | 88.5                             |
| 1413 | 06/29/97 | 1800 | 24.60                    | 8.19          | 7.22                         | 88.9                             |
| 1414 | 06/29/97 | 1900 | 24.82                    | 8.18          | 7.18                         | 88.9                             |
| 1415 | 06/29/97 | 2000 | 24.67                    | 8.18          | 7.18                         | 88.9                             |
| 1416 | 06/29/97 | 2100 | 24.53                    | 8.15          | 7.15                         | 88.1                             |
| 1417 | 06/29/97 | 2200 | 24.43                    | 8.15          | 7.15                         | 88.1                             |
| 1418 | 06/29/97 | 2300 | 24.19                    | 8.13          | 7.12                         | 87.5                             |
| 1419 | 06/30/97 | 0    | 24.14                    | 8.12          | 7.12                         | 87.5                             |
| 1420 | 06/30/97 | 100  | 24.25                    | 8.14          | 7.19                         | 87.9                             |
| 1421 | 06/30/97 | 200  | 24.25                    | 8.15          | 7.19                         | 87.9                             |
| 1422 | 06/30/97 | 300  | 24.27                    | 8.15          | 7.19                         | 87.9                             |
| 1423 | 06/30/97 | 400  | 24.27                    | 8.15          | 7.19                         | 87.9                             |
| 1424 | 06/30/97 | 500  | 24.16                    | 8.15          | 7.02                         | 85.7                             |
| 1425 | 06/30/97 | 600  | 24.10                    | 8.15          | 7.00                         | 85.4                             |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|---------|------------------------|-------------------------------|
| 1426 | 06/30/97 | 700  | 24.07             | 8.88    | 7.10                   | 86.6                          |
| 1427 | 06/30/97 | 800  | 23.95             | 8.88    | 7.07                   | 85.5                          |
| 1428 | 06/30/97 | 900  | 24.03             | 8.88    | 7.10                   | 86.0                          |
| 1429 | 06/30/97 | 1000 | 23.88             | 8.88    | 7.08                   | 85.7                          |
| 1430 | 06/30/97 | 1100 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1431 | 06/30/97 | 1200 | 23.81             | 8.88    | 7.12                   | 86.4                          |
| 1432 | 06/30/97 | 1300 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1433 | 06/30/97 | 1400 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1434 | 06/30/97 | 1500 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1435 | 06/30/97 | 1600 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1436 | 06/30/97 | 1700 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1437 | 06/30/97 | 1800 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1438 | 06/30/97 | 1900 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1439 | 06/30/97 | 2000 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1440 | 06/30/97 | 2100 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1441 | 06/30/97 | 2200 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1442 | 06/30/97 | 2300 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1443 | 07/01/97 | 0    | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1444 | 07/01/97 | 100  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1445 | 07/01/97 | 200  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1446 | 07/01/97 | 300  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1447 | 07/01/97 | 400  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1448 | 07/01/97 | 500  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1449 | 07/01/97 | 600  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1450 | 07/01/97 | 700  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1451 | 07/01/97 | 800  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1452 | 07/01/97 | 900  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1453 | 07/01/97 | 1000 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1454 | 07/01/97 | 1100 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1455 | 07/01/97 | 1200 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1456 | 07/01/97 | 1300 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1457 | 07/01/97 | 1400 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1458 | 07/01/97 | 1500 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1459 | 07/01/97 | 1600 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1460 | 07/01/97 | 1700 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1461 | 07/01/97 | 1800 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1462 | 07/01/97 | 1900 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1463 | 07/01/97 | 2000 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1464 | 07/01/97 | 2100 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1465 | 07/01/97 | 2200 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1466 | 07/01/97 | 2300 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1467 | 07/02/97 | 0    | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1468 | 07/02/97 | 100  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1469 | 07/02/97 | 200  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1470 | 07/02/97 | 300  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1471 | 07/02/97 | 400  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1472 | 07/02/97 | 500  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1473 | 07/02/97 | 600  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1474 | 07/02/97 | 700  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1475 | 07/02/97 | 800  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1476 | 07/02/97 | 900  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1477 | 07/02/97 | 1000 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1478 | 07/02/97 | 1100 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1479 | 07/02/97 | 1200 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1480 | 07/02/97 | 1300 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1481 | 07/02/97 | 1400 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1482 | 07/02/97 | 1500 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1483 | 07/02/97 | 1600 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1484 | 07/02/97 | 1700 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1485 | 07/02/97 | 1800 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1486 | 07/02/97 | 1900 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1487 | 07/02/97 | 2000 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1488 | 07/02/97 | 2100 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1489 | 07/02/97 | 2200 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1490 | 07/02/97 | 2300 | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1491 | 07/03/97 | 0    | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1492 | 07/03/97 | 100  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1493 | 07/03/97 | 200  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1494 | 07/03/97 | 300  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1495 | 07/03/97 | 400  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1496 | 07/03/97 | 500  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1497 | 07/03/97 | 600  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1498 | 07/03/97 | 700  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1499 | 07/03/97 | 800  | 23.82             | 8.88    | 7.12                   | 86.4                          |
| 1500 | 07/03/97 | 900  | 23.82             | 8.88    | 7.12                   | 86.4                          |

FM001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 1501 | 07/03/97 | 1000 | 21.69                    | 7.70          | 7.10                         | 82.8                             |
| 1503 | 07/03/97 | 1100 | 21.60                    | 7.70          | 7.09                         | 82.6                             |
| 1504 | 07/03/97 | 1300 | 21.48                    | 7.69          | 7.11                         | 82.6                             |
| 1505 | 07/03/97 | 1400 | 21.39                    | 7.68          | 7.12                         | 82.6                             |
| 1506 | 07/03/97 | 1500 | 21.29                    | 7.68          | 7.10                         | 82.4                             |
| 1507 | 07/03/97 | 1600 | 21.18                    | 7.66          | 7.09                         | 81.9                             |
| 1508 | 07/03/97 | 1700 | 21.04                    | 7.66          | 7.06                         | 81.4                             |
| 1509 | 07/03/97 | 1800 | 20.92                    | 7.62          | 7.00                         | 80.7                             |
| 1510 | 07/03/97 | 1900 | 20.72                    | 7.59          | 6.95                         | 79.5                             |
| 1511 | 07/03/97 | 2000 | 20.50                    | 7.57          | 6.90                         | 78.4                             |
| 1512 | 07/03/97 | 2100 | 20.35                    | 7.58          | 6.91                         | 78.4                             |
| 1513 | 07/03/97 | 2200 | 20.07                    | 7.56          | 6.84                         | 76.9                             |
| 1514 | 07/03/97 | 2300 | 19.97                    | 7.58          | 6.84                         | 76.9                             |
| 1515 | 07/04/97 | 0    | 19.76                    | 7.58          | 6.84                         | 76.9                             |
| 1516 | 07/04/97 | 100  | 19.53                    | 7.57          | 6.84                         | 76.9                             |
| 1517 | 07/04/97 | 200  | 19.50                    | 7.57          | 6.84                         | 76.9                             |
| 1518 | 07/04/97 | 300  | 19.35                    | 7.57          | 6.84                         | 76.9                             |
| 1519 | 07/04/97 | 400  | 19.24                    | 7.55          | 6.84                         | 76.9                             |
| 1520 | 07/04/97 | 500  | 19.05                    | 7.56          | 6.84                         | 76.9                             |
| 1521 | 07/04/97 | 600  | 18.92                    | 7.56          | 6.84                         | 76.9                             |
| 1522 | 07/04/97 | 700  | 18.72                    | 7.57          | 6.84                         | 76.9                             |
| 1523 | 07/04/97 | 800  | 18.68                    | 7.57          | 6.84                         | 76.9                             |
| 1524 | 07/04/97 | 900  | 18.59                    | 7.60          | 6.84                         | 76.9                             |
| 1525 | 07/04/97 | 1000 | 18.53                    | 7.61          | 6.84                         | 76.9                             |
| 1526 | 07/04/97 | 1100 | 18.52                    | 7.61          | 6.84                         | 76.9                             |
| 1527 | 07/04/97 | 1200 | 18.75                    | 7.64          | 6.84                         | 76.9                             |
| 1528 | 07/04/97 | 1300 | 18.99                    | 7.64          | 6.84                         | 76.9                             |
| 1529 | 07/04/97 | 1400 | 19.18                    | 7.64          | 6.84                         | 76.9                             |
| 1530 | 07/04/97 | 1500 | 19.30                    | 7.64          | 6.84                         | 76.9                             |
| 1531 | 07/04/97 | 1600 | 19.49                    | 7.64          | 6.84                         | 76.9                             |
| 1532 | 07/04/97 | 1700 | 19.50                    | 7.64          | 6.84                         | 76.9                             |
| 1533 | 07/04/97 | 1800 | 19.43                    | 7.64          | 6.84                         | 76.9                             |
| 1534 | 07/04/97 | 1900 | 19.28                    | 7.64          | 6.84                         | 76.9                             |
| 1535 | 07/04/97 | 2000 | 18.92                    | 7.65          | 6.84                         | 76.9                             |
| 1536 | 07/04/97 | 2100 | 18.50                    | 7.65          | 6.84                         | 76.9                             |
| 1537 | 07/04/97 | 2200 | 18.28                    | 7.65          | 6.84                         | 76.9                             |
| 1538 | 07/04/97 | 2300 | 18.18                    | 7.58          | 6.84                         | 76.9                             |
| 1539 | 07/05/97 | 0    | 18.13                    | 7.59          | 6.84                         | 76.9                             |
| 1540 | 07/05/97 | 100  | 18.16                    | 7.62          | 6.84                         | 76.9                             |
| 1541 | 07/05/97 | 200  | 18.15                    | 7.61          | 6.84                         | 76.9                             |
| 1542 | 07/05/97 | 300  | 18.11                    | 7.61          | 6.84                         | 76.9                             |
| 1543 | 07/05/97 | 400  | 18.04                    | 7.62          | 6.84                         | 76.9                             |
| 1544 | 07/05/97 | 500  | 18.01                    | 7.61          | 6.84                         | 76.9                             |
| 1545 | 07/05/97 | 600  | 17.97                    | 7.61          | 6.84                         | 76.9                             |
| 1546 | 07/05/97 | 700  | 17.87                    | 7.65          | 6.84                         | 76.9                             |
| 1547 | 07/05/97 | 800  | 17.85                    | 7.69          | 6.84                         | 76.9                             |
| 1548 | 07/05/97 | 900  | 17.97                    | 7.71          | 6.84                         | 76.9                             |
| 1549 | 07/05/97 | 1000 | 18.16                    | 7.73          | 6.84                         | 76.9                             |
| 1550 | 07/05/97 | 1100 | 18.32                    | 7.71          | 6.84                         | 76.9                             |
| 1551 | 07/05/97 | 1200 | 18.47                    | 7.71          | 6.84                         | 76.9                             |
| 1552 | 07/05/97 | 1300 | 18.62                    | 7.66          | 6.84                         | 76.9                             |
| 1553 | 07/05/97 | 1400 | 18.68                    | 7.68          | 6.84                         | 76.9                             |
| 1554 | 07/05/97 | 1500 | 18.71                    | 7.65          | 6.84                         | 76.9                             |
| 1555 | 07/05/97 | 1600 | 18.85                    | 7.63          | 6.84                         | 76.9                             |
| 1556 | 07/05/97 | 1700 | 18.87                    | 7.62          | 6.84                         | 76.9                             |
| 1557 | 07/05/97 | 1800 | 18.71                    | 7.67          | 6.84                         | 76.9                             |
| 1558 | 07/05/97 | 1900 | 18.56                    | 7.68          | 6.84                         | 76.9                             |
| 1559 | 07/05/97 | 2000 | 18.47                    | 7.68          | 6.84                         | 76.9                             |
| 1560 | 07/05/97 | 2100 | 18.30                    | 7.67          | 6.84                         | 76.9                             |
| 1561 | 07/05/97 | 2200 | 18.30                    | 7.65          | 6.84                         | 76.9                             |
| 1562 | 07/05/97 | 2300 | 18.18                    | 7.60          | 6.84                         | 76.9                             |
| 1563 | 07/05/97 | 0    | 18.25                    | 7.70          | 6.84                         | 76.9                             |
| 1564 | 07/05/97 | 100  | 18.23                    | 7.71          | 6.84                         | 76.9                             |
| 1565 | 07/05/97 | 200  | 18.11                    | 7.66          | 6.84                         | 76.9                             |
| 1566 | 07/05/97 | 300  | 18.11                    | 7.62          | 6.84                         | 76.9                             |
| 1567 | 07/05/97 | 400  | 18.03                    | 7.65          | 6.84                         | 76.9                             |
| 1568 | 07/05/97 | 500  | 18.06                    | 7.66          | 6.84                         | 76.9                             |
| 1569 | 07/05/97 | 600  | 18.15                    | 7.66          | 6.84                         | 76.9                             |
| 1570 | 07/05/97 | 700  | 18.18                    | 7.66          | 6.84                         | 76.9                             |
| 1571 | 07/05/97 | 800  | 18.18                    | 7.66          | 6.84                         | 76.9                             |
| 1572 | 07/05/97 | 900  | 18.26                    | 7.70          | 6.84                         | 76.9                             |
| 1573 | 07/05/97 | 1000 | 18.38                    | 7.70          | 6.84                         | 76.9                             |
| 1574 | 07/05/97 | 1100 | 18.47                    | 7.73          | 6.84                         | 76.9                             |
| 1575 | 07/05/97 | 1200 | 18.57                    | 7.74          | 6.84                         | 76.9                             |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (S. U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|------------|------------------------|-------------------------------|
| 1576 | 07/06/97 | 1300 | 18.61             | 7.70       | 7.92                   | 86.9                          |
| 1577 | 07/06/97 | 1400 | 18.74             | 7.79       | 7.95                   | 87.2                          |
| 1578 | 07/06/97 | 1500 | 18.88             | 7.69       | 7.90                   | 87.0                          |
| 1579 | 07/06/97 | 1600 | 18.99             | 7.67       | 7.85                   | 87.0                          |
| 1580 | 07/06/97 | 1700 | 18.99             | 7.70       | 7.91                   | 87.4                          |
| 1581 | 07/06/97 | 1800 | 18.81             | 7.68       | 7.91                   | 87.3                          |
| 1582 | 07/06/97 | 1900 | 18.66             | 7.67       | 7.91                   | 86.6                          |
| 1583 | 07/06/97 | 2000 | 18.58             | 7.65       | 7.94                   | 86.8                          |
| 1584 | 07/06/97 | 2100 | 18.38             | 7.65       | 7.93                   | 86.8                          |
| 1585 | 07/06/97 | 2200 | 18.21             | 7.65       | 7.93                   | 86.8                          |
| 1586 | 07/06/97 | 2300 | 18.11             | 7.65       | 7.93                   | 86.8                          |
| 1587 | 07/07/97 | 100  | 18.17             | 7.62       | 7.92                   | 86.8                          |
| 1588 | 07/07/97 | 200  | 17.97             | 7.62       | 7.92                   | 86.8                          |
| 1589 | 07/07/97 | 300  | 17.91             | 7.62       | 7.89                   | 86.8                          |
| 1590 | 07/07/97 | 400  | 17.84             | 7.61       | 7.88                   | 86.8                          |
| 1591 | 07/07/97 | 500  | 17.80             | 7.59       | 7.88                   | 86.8                          |
| 1592 | 07/07/97 | 600  | 17.75             | 7.58       | 7.90                   | 86.8                          |
| 1593 | 07/07/97 | 700  | 17.68             | 7.56       | 7.86                   | 86.8                          |
| 1594 | 07/07/97 | 800  | 17.62             | 7.71       | 7.86                   | 86.8                          |
| 1595 | 07/07/97 | 900  | 17.55             | 7.80       | 7.84                   | 86.8                          |
| 1596 | 07/07/97 | 1000 | 17.47             | 7.84       | 7.84                   | 86.8                          |
| 1597 | 07/07/97 | 1100 | 17.38             | 7.85       | 7.84                   | 86.8                          |
| 1598 | 07/07/97 | 1200 | 18.08             | 7.74       | 7.80                   | 86.8                          |
| 1599 | 07/07/97 | 1300 | 18.16             | 7.80       | 7.82                   | 86.8                          |
| 1600 | 07/07/97 | 1400 | 18.32             | 7.84       | 7.84                   | 86.8                          |
| 1601 | 07/07/97 | 1500 | 18.45             | 7.85       | 7.84                   | 86.8                          |
| 1602 | 07/07/97 | 1600 | 18.53             | 7.75       | 7.84                   | 86.8                          |
| 1603 | 07/07/97 | 1700 | 18.62             | 7.75       | 7.84                   | 86.8                          |
| 1604 | 07/07/97 | 1800 | 18.65             | 7.75       | 7.84                   | 86.8                          |
| 1605 | 07/07/97 | 1900 | 18.65             | 7.75       | 7.84                   | 86.8                          |
| 1606 | 07/07/97 | 2000 | 17.33             | 7.61       | 7.80                   | 86.8                          |
| 1607 | 07/07/97 | 2100 | 17.19             | 7.60       | 7.81                   | 86.8                          |
| 1608 | 07/07/97 | 2200 | 17.28             | 7.60       | 7.81                   | 86.8                          |
| 1609 | 07/07/97 | 2300 | 17.24             | 7.62       | 7.82                   | 86.8                          |
| 1610 | 07/08/97 | 100  | 17.24             | 7.62       | 7.82                   | 86.8                          |
| 1611 | 07/08/97 | 200  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1612 | 07/08/97 | 300  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1613 | 07/08/97 | 400  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1614 | 07/08/97 | 500  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1615 | 07/08/97 | 600  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1616 | 07/08/97 | 700  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1617 | 07/08/97 | 800  | 17.23             | 7.62       | 7.82                   | 86.8                          |
| 1618 | 07/08/97 | 900  | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1619 | 07/08/97 | 1000 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1620 | 07/08/97 | 1100 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1621 | 07/08/97 | 1200 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1622 | 07/08/97 | 1300 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1623 | 07/08/97 | 1400 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1624 | 07/08/97 | 1500 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1625 | 07/08/97 | 1600 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1626 | 07/08/97 | 1700 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1627 | 07/08/97 | 1800 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1628 | 07/08/97 | 1900 | 17.16             | 7.67       | 7.82                   | 86.8                          |
| 1629 | 07/08/97 | 2000 | 16.95             | 7.67       | 7.82                   | 86.8                          |
| 1630 | 07/08/97 | 2100 | 16.84             | 7.66       | 7.82                   | 86.8                          |
| 1631 | 07/08/97 | 2200 | 16.82             | 7.66       | 7.82                   | 86.8                          |
| 1632 | 07/08/97 | 2300 | 16.82             | 7.67       | 7.82                   | 86.8                          |
| 1633 | 07/08/97 | 100  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1634 | 07/08/97 | 200  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1635 | 07/08/97 | 300  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1636 | 07/08/97 | 400  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1637 | 07/08/97 | 500  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1638 | 07/08/97 | 600  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1639 | 07/08/97 | 700  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1640 | 07/08/97 | 800  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1641 | 07/08/97 | 900  | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1642 | 07/08/97 | 1000 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1643 | 07/08/97 | 1100 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1644 | 07/08/97 | 1200 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1645 | 07/08/97 | 1300 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1646 | 07/08/97 | 1400 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1647 | 07/08/97 | 1500 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1648 | 07/08/97 | 1600 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1649 | 07/08/97 | 1700 | 16.99             | 7.67       | 7.82                   | 86.8                          |
| 1650 | 07/08/97 | 1800 | 16.99             | 7.67       | 7.82                   | 86.8                          |

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 1651 | 07/09/97 | 1600 | 17.04                    | 7.68          | 8.08                         | 85.8                             |
| 1652 | 07/09/97 | 1700 | 17.02                    | 7.68          | 8.20                         | 87.0                             |
| 1653 | 07/09/97 | 1800 | 16.85                    | 7.69          | 8.26                         | 86.8                             |
| 1654 | 07/09/97 | 1900 | 16.85                    | 7.71          | 8.35                         | 87.9                             |
| 1655 | 07/09/97 | 2000 | 16.85                    | 7.72          | 8.34                         | 88.2                             |
| 1656 | 07/09/97 | 2100 | 17.04                    | 7.75          | 8.44                         | 89.6                             |
| 1657 | 07/09/97 | 2200 | 17.31                    | 7.77          | 8.56                         | 91.4                             |
| 1658 | 07/10/97 | 2300 | 17.58                    | 7.77          | 8.43                         | 90.4                             |
| 1659 | 07/10/97 | 0    | 17.88                    | 7.76          | 8.33                         | 90.4                             |
| 1660 | 07/10/97 | 100  | 17.88                    | 7.76          | 8.33                         | 90.4                             |
| 1661 | 07/10/97 | 200  | 17.88                    | 7.76          | 8.33                         | 90.4                             |
| 1662 | 07/10/97 | 300  | 17.88                    | 7.76          | 8.33                         | 90.4                             |
| 1663 | 07/10/97 | 400  | 17.88                    | 7.76          | 8.33                         | 90.4                             |
| 1664 | 07/10/97 | 500  | 17.72                    | 7.78          | 8.31                         | 89.4                             |
| 1665 | 07/10/97 | 600  | 17.62                    | 7.77          | 8.30                         | 89.1                             |
| 1666 | 07/10/97 | 700  | 17.58                    | 7.77          | 8.33                         | 89.1                             |
| 1667 | 07/10/97 | 800  | 17.57                    | 7.81          | 8.34                         | 89.4                             |
| 1668 | 07/10/97 | 900  | 17.57                    | 7.81          | 8.31                         | 89.4                             |
| 1669 | 07/10/97 | 1000 | 17.72                    | 7.80          | 8.30                         | 89.5                             |
| 1670 | 07/10/97 | 1100 | 17.85                    | 7.80          | 8.27                         | 89.5                             |
| 1671 | 07/10/97 | 1200 | 17.95                    | 7.74          | 8.26                         | 89.5                             |
| 1672 | 07/10/97 | 1300 | 18.05                    | 7.74          | 8.26                         | 89.5                             |
| 1673 | 07/10/97 | 1400 | 18.17                    | 7.64          | 8.21                         | 88.5                             |
| 1674 | 07/10/97 | 1500 | 18.16                    | 7.65          | 8.24                         | 89.5                             |
| 1675 | 07/10/97 | 1600 | 18.54                    | 7.65          | 8.28                         | 90.7                             |
| 1676 | 07/10/97 | 1700 | 18.21                    | 7.63          | 8.25                         | 90.1                             |
| 1677 | 07/10/97 | 1800 | 17.96                    | 7.63          | 8.21                         | 89.5                             |
| 1678 | 07/10/97 | 1900 | 17.96                    | 7.78          | 8.21                         | 89.5                             |
| 1679 | 07/10/97 | 2000 | 18.15                    | 7.84          | 8.24                         | 89.5                             |
| 1680 | 07/10/97 | 2100 | 18.45                    | 7.72          | 8.22                         | 89.0                             |
| 1681 | 07/10/97 | 2200 | 18.73                    | 7.73          | 8.22                         | 90.3                             |
| 1682 | 07/11/97 | 2300 | 19.14                    | 7.81          | 8.19                         | 90.7                             |
| 1683 | 07/11/97 | 0    | 19.23                    | 7.76          | 8.12                         | 90.1                             |
| 1684 | 07/11/97 | 100  | 19.23                    | 7.83          | 8.09                         | 89.2                             |
| 1685 | 07/11/97 | 200  | 19.12                    | 7.80          | 8.05                         | 89.2                             |
| 1686 | 07/11/97 | 300  | 19.05                    | 7.80          | 8.00                         | 88.9                             |
| 1687 | 07/11/97 | 400  | 19.02                    | 7.81          | 8.00                         | 88.9                             |
| 1688 | 07/11/97 | 500  | 19.02                    | 7.81          | 8.01                         | 88.4                             |
| 1689 | 07/11/97 | 600  | 19.05                    | 7.85          | 7.83                         | 87.0                             |
| 1690 | 07/11/97 | 700  | 18.99                    | 7.90          | 7.88                         | 87.0                             |
| 1691 | 07/11/97 | 800  | 19.00                    | 7.97          | 7.91                         | 87.4                             |
| 1692 | 07/11/97 | 900  | 19.08                    | 7.96          | 7.88                         | 87.1                             |
| 1693 | 07/11/97 | 1000 | 19.23                    | 8.01          | 7.87                         | 87.1                             |
| 1694 | 07/11/97 | 1100 | 19.38                    | 8.00          | 7.83                         | 86.8                             |
| 1695 | 07/11/97 | 1200 | 19.69                    | 7.93          | 7.87                         | 86.8                             |
| 1696 | 07/11/97 | 1300 | 19.83                    | 7.80          | 7.87                         | 86.4                             |
| 1697 | 07/11/97 | 1400 | 19.83                    | 7.78          | 7.83                         | 86.4                             |
| 1698 | 07/11/97 | 1500 | 19.71                    | 7.72          | 7.83                         | 87.1                             |
| 1699 | 07/11/97 | 1600 | 19.71                    | 7.71          | 7.78                         | 87.1                             |
| 1700 | 07/11/97 | 1700 | 19.56                    | 7.74          | 7.83                         | 87.4                             |
| 1701 | 07/11/97 | 1800 | 19.45                    | 7.75          | 7.83                         | 87.1                             |
| 1702 | 07/11/97 | 1900 | 19.63                    | 7.73          | 7.81                         | 86.8                             |
| 1703 | 07/11/97 | 2000 | 19.94                    | 7.77          | 7.81                         | 86.8                             |
| 1704 | 07/11/97 | 2100 | 20.22                    | 7.74          | 7.93                         | 86.8                             |
| 1705 | 07/11/97 | 2200 | 20.37                    | 7.77          | 7.93                         | 86.8                             |
| 1706 | 07/11/97 | 2300 | 20.64                    | 7.79          | 7.86                         | 86.8                             |
| 1707 | 07/12/97 | 0    | 20.65                    | 7.81          | 7.73                         | 86.8                             |
| 1708 | 07/12/97 | 100  | 20.65                    | 7.83          | 7.73                         | 86.8                             |
| 1709 | 07/12/97 | 200  | 20.65                    | 7.82          | 7.72                         | 86.8                             |
| 1710 | 07/12/97 | 300  | 20.71                    | 7.82          | 7.77                         | 86.8                             |
| 1711 | 07/12/97 | 400  | 20.60                    | 7.85          | 7.77                         | 86.8                             |
| 1712 | 07/12/97 | 500  | 20.71                    | 8.04          | 7.96                         | 86.8                             |
| 1713 | 07/12/97 | 600  | 20.78                    | 8.02          | 7.95                         | 86.8                             |
| 1714 | 07/12/97 | 700  | 20.78                    | 8.02          | 7.95                         | 86.8                             |
| 1715 | 07/12/97 | 800  | 20.86                    | 7.93          | 7.95                         | 86.8                             |
| 1716 | 07/12/97 | 900  | 20.86                    | 7.93          | 7.95                         | 86.8                             |
| 1717 | 07/12/97 | 1000 | 21.09                    | 7.91          | 7.99                         | 87.7                             |
| 1718 | 07/12/97 | 1100 | 21.06                    | 7.92          | 7.94                         | 87.9                             |
| 1719 | 07/12/97 | 1200 | 21.11                    | 7.88          | 7.90                         | 87.9                             |
| 1720 | 07/12/97 | 1300 | 21.11                    | 7.88          | 7.90                         | 87.9                             |
| 1721 | 07/12/97 | 1400 | 21.11                    | 7.88          | 7.90                         | 87.9                             |
| 1722 | 07/12/97 | 1500 | 21.16                    | 7.83          | 7.95                         | 86.8                             |
| 1723 | 07/12/97 | 1600 | 21.34                    | 7.79          | 7.91                         | 86.8                             |
| 1724 | 07/12/97 | 1700 | 22.12                    | 7.84          | 7.92                         | 87.3                             |
| 1725 | 07/12/97 | 2200 | 21.94                    | 7.82          | 7.93                         | 88.1                             |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|---------|------------------------|-------------------------------|
| 1726 | 07/12/97 | 2300 | 22.26             | 7.85    | 7.52                   | 88.6                          |
| 1727 | 07/12/97 | 9    | 22.44             | 7.85    | 7.44                   | 88.0                          |
| 1728 | 07/12/97 | 100  | 22.46             | 7.85    | 7.40                   | 87.5                          |
| 1729 | 07/12/97 | 200  | 22.44             | 7.85    | 7.40                   | 87.5                          |
| 1730 | 07/12/97 | 300  | 22.44             | 7.82    | 7.38                   | 87.2                          |
| 1731 | 07/12/97 | 400  | 22.25             | 7.81    | 7.58                   | 89.1                          |
| 1732 | 07/12/97 | 500  | 22.25             | 7.81    | 7.42                   | 87.4                          |
| 1733 | 07/12/97 | 600  | 22.35             | 7.86    | 7.49                   | 88.3                          |
| 1734 | 07/12/97 | 700  | 22.28             | 7.85    | 7.48                   | 88.1                          |
| 1735 | 07/12/97 | 800  | 22.28             | 7.90    | 7.42                   | 87.4                          |
| 1736 | 07/12/97 | 900  | 22.32             | 7.94    | 7.37                   | 87.0                          |
| 1737 | 07/12/97 | 1000 | 22.32             | 8.05    | 7.36                   | 86.8                          |
| 1738 | 07/12/97 | 1100 | 22.37             | 8.02    | 7.28                   | 86.7                          |
| 1739 | 07/12/97 | 1200 | 22.66             | 8.00    | 7.31                   | 86.7                          |
| 1740 | 07/12/97 | 1300 | 22.96             | 7.97    | 7.29                   | 87.0                          |
| 1741 | 07/12/97 | 1400 | 23.20             | 7.99    | 7.31                   | 87.7                          |
| 1742 | 07/12/97 | 1500 | 23.69             | 8.00    | 7.25                   | 87.7                          |
| 1743 | 07/12/97 | 1600 | 23.92             | 7.92    | 7.16                   | 87.1                          |
| 1744 | 07/12/97 | 1700 | 24.07             | 7.88    | 7.17                   | 87.1                          |
| 1745 | 07/12/97 | 1800 | 23.96             | 7.88    | 7.14                   | 86.9                          |
| 1746 | 07/12/97 | 1900 | 23.74             | 7.84    | 7.16                   | 86.9                          |
| 1747 | 07/12/97 | 2000 | 23.61             | 7.84    | 7.11                   | 85.9                          |
| 1748 | 07/12/97 | 2100 | 23.60             | 7.82    | 7.10                   | 85.7                          |
| 1749 | 07/12/97 | 2200 | 23.60             | 7.82    | 7.12                   | 85.7                          |
| 1750 | 07/12/97 | 2300 | 23.69             | 7.83    | 7.14                   | 86.4                          |
| 1751 | 07/12/97 | 0    | 23.74             | 7.83    | 7.14                   | 86.4                          |
| 1752 | 07/12/97 | 100  | 23.91             | 7.84    | 7.05                   | 86.2                          |
| 1753 | 07/12/97 | 200  | 23.52             | 7.83    | 7.02                   | 85.7                          |
| 1754 | 07/12/97 | 300  | 23.96             | 7.83    | 7.20                   | 87.6                          |
| 1755 | 07/12/97 | 400  | 24.51             | 7.90    | 7.17                   | 86.6                          |
| 1756 | 07/12/97 | 500  | 24.07             | 7.88    | 7.11                   | 86.5                          |
| 1757 | 07/12/97 | 600  | 23.69             | 7.86    | 7.15                   | 86.5                          |
| 1758 | 07/12/97 | 700  | 23.83             | 8.03    | 7.23                   | 87.7                          |
| 1759 | 07/12/97 | 800  | 23.98             | 8.03    | 7.24                   | 87.4                          |
| 1760 | 07/12/97 | 900  | 23.83             | 8.03    | 7.16                   | 86.6                          |
| 1761 | 07/12/97 | 1000 | 24.11             | 8.01    | 7.23                   | 87.9                          |
| 1762 | 07/12/97 | 1100 | 24.24             | 8.02    | 7.19                   | 87.9                          |
| 1763 | 07/12/97 | 1200 | 24.42             | 8.00    | 7.18                   | 88.1                          |
| 1764 | 07/12/97 | 1300 | 24.77             | 7.93    | 7.10                   | 87.7                          |
| 1765 | 07/12/97 | 1400 | 24.90             | 7.92    | 6.98                   | 86.4                          |
| 1766 | 07/12/97 | 1500 | 25.16             | 7.95    | 7.06                   | 87.1                          |
| 1767 | 07/12/97 | 1600 | 25.14             | 7.95    | 7.04                   | 86.8                          |
| 1768 | 07/12/97 | 1700 | 24.77             | 7.90    | 7.03                   | 86.2                          |
| 1769 | 07/12/97 | 1800 | 24.71             | 7.87    | 6.95                   | 86.2                          |
| 1770 | 07/12/97 | 1900 | 24.97             | 7.87    | 6.95                   | 86.6                          |
| 1771 | 07/12/97 | 2000 | 24.97             | 7.87    | 6.95                   | 86.6                          |
| 1772 | 07/12/97 | 2100 | 24.68             | 7.86    | 6.95                   | 85.2                          |
| 1773 | 07/12/97 | 2200 | 24.40             | 7.83    | 6.94                   | 85.2                          |
| 1774 | 07/12/97 | 2300 | 24.22             | 7.83    | 6.78                   | 82.8                          |
| 1775 | 07/12/97 | 0    | 24.16             | 7.83    | 6.81                   | 82.2                          |
| 1776 | 07/12/97 | 100  | 24.22             | 7.84    | 6.85                   | 82.4                          |
| 1777 | 07/12/97 | 200  | 24.22             | 7.84    | 6.85                   | 82.4                          |
| 1778 | 07/12/97 | 300  | 24.22             | 7.84    | 6.85                   | 82.4                          |
| 1779 | 07/12/97 | 400  | 24.22             | 7.86    | 6.82                   | 82.3                          |
| 1780 | 07/12/97 | 500  | 24.16             | 7.89    | 6.73                   | 81.3                          |
| 1781 | 07/12/97 | 600  | 24.00             | 7.92    | 6.68                   | 81.3                          |
| 1782 | 07/12/97 | 700  | 24.00             | 8.10    | 6.80                   | 82.8                          |
| 1783 | 07/12/97 | 800  | 24.00             | 8.10    | 6.82                   | 82.8                          |
| 1784 | 07/12/97 | 900  | 24.18             | 8.19    | 6.82                   | 83.1                          |
| 1785 | 07/12/97 | 1000 | 24.29             | 8.20    | 6.85                   | 83.4                          |
| 1786 | 07/12/97 | 1100 | 24.42             | 8.20    | 6.84                   | 83.4                          |
| 1787 | 07/12/97 | 1200 | 24.55             | 8.12    | 6.83                   | 83.0                          |
| 1788 | 07/12/97 | 1300 | 24.66             | 8.06    | 6.81                   | 82.9                          |
| 1789 | 07/12/97 | 1400 | 24.92             | 8.05    | 6.81                   | 84.3                          |
| 1790 | 07/12/97 | 1500 | 25.05             | 7.99    | 6.81                   | 84.3                          |
| 1791 | 07/12/97 | 1600 | 25.18             | 8.07    | 6.85                   | 85.1                          |
| 1792 | 07/12/97 | 1700 | 25.29             | 8.09    | 6.85                   | 85.1                          |
| 1793 | 07/12/97 | 1800 | 25.29             | 8.04    | 6.85                   | 85.1                          |
| 1794 | 07/12/97 | 1900 | 25.14             | 8.04    | 6.85                   | 85.1                          |
| 1795 | 07/12/97 | 2000 | 24.88             | 7.90    | 6.84                   | 84.6                          |
| 1796 | 07/12/97 | 2100 | 24.46             | 7.86    | 6.84                   | 84.0                          |
| 1797 | 07/12/97 | 2200 | 24.16             | 7.84    | 6.81                   | 83.2                          |
| 1798 | 07/12/97 | 2300 | 24.05             | 7.83    | 6.79                   | 82.1                          |
| 1799 | 07/12/97 | 9    | 24.14             | 7.83    | 6.77                   | 82.1                          |
| 1800 | 07/12/97 | 100  | 24.14             | 7.84    | 6.77                   | 82.1                          |



PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP. (DEGREE C.) | PH (S. U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|------------|------------------------|-------------------------------|
| 1801 | 07/16/97 | 200  | 24.16             | 7.83       | 6.76                   | 82.6                          |
| 1802 | 07/16/97 | 300  | 24.13             | 7.82       | 6.75                   | 82.5                          |
| 1803 | 07/16/97 | 400  | 24.05             | 7.84       | 6.75                   | 82.4                          |
| 1804 | 07/16/97 | 500  | 24.03             | 7.87       | 6.74                   | 82.1                          |
| 1805 | 07/16/97 | 600  | 24.00             | 7.86       | 6.75                   | 82.2                          |
| 1806 | 07/16/97 | 700  | 24.05             | 7.91       | 6.87                   | 82.0                          |
| 1807 | 07/16/97 | 800  | 24.27             | 8.05       | 6.87                   | 84.1                          |
| 1808 | 07/16/97 | 900  | 24.22             | 7.92       | 6.68                   | 81.7                          |
| 1809 | 07/16/97 | 1000 | 24.33             | 8.04       | 6.72                   | 82.2                          |
| 1810 | 07/16/97 | 1100 | 24.43             | 8.02       | 6.74                   | 82.5                          |
| 1811 | 07/16/97 | 1200 | 24.44             | 8.04       | 6.74                   | 82.5                          |
| 1812 | 07/16/97 | 1300 | 24.44             | 8.04       | 6.74                   | 82.5                          |
| 1813 | 07/16/97 | 1400 | 24.44             | 8.04       | 6.74                   | 82.5                          |
| 1814 | 07/16/97 | 1500 | 24.13             | 7.91       | 6.65                   | 81.2                          |
| 1815 | 07/16/97 | 1600 | 23.61             | 7.85       | 6.62                   | 80.0                          |
| 1816 | 07/16/97 | 1700 | 23.56             | 7.85       | 6.62                   | 79.9                          |
| 1817 | 07/16/97 | 1800 | 23.54             | 7.85       | 6.66                   | 80.4                          |
| 1818 | 07/16/97 | 1900 | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1819 | 07/16/97 | 2000 | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1820 | 07/16/97 | 2100 | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1821 | 07/16/97 | 2200 | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1822 | 07/16/97 | 2300 | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1823 | 07/16/97 | 0    | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1824 | 07/17/97 | 100  | 23.52             | 7.87       | 6.64                   | 80.2                          |
| 1825 | 07/17/97 | 200  | 23.36             | 7.89       | 6.70                   | 80.5                          |
| 1826 | 07/17/97 | 300  | 23.35             | 7.89       | 6.69                   | 80.5                          |
| 1827 | 07/17/97 | 400  | 23.25             | 7.89       | 6.69                   | 80.5                          |
| 1828 | 07/17/97 | 500  | 23.18             | 7.89       | 6.69                   | 80.5                          |
| 1829 | 07/17/97 | 600  | 23.14             | 7.89       | 6.69                   | 80.5                          |
| 1830 | 07/17/97 | 700  | 23.09             | 7.93       | 6.78                   | 81.2                          |
| 1831 | 07/17/97 | 800  | 23.09             | 7.93       | 6.78                   | 81.2                          |
| 1832 | 07/17/97 | 900  | 23.18             | 8.05       | 6.91                   | 82.2                          |
| 1833 | 07/17/97 | 1000 | 23.40             | 8.09       | 6.86                   | 82.2                          |
| 1834 | 07/17/97 | 1100 | 23.52             | 8.02       | 6.81                   | 82.2                          |
| 1835 | 07/17/97 | 1200 | 23.52             | 8.02       | 6.81                   | 82.2                          |
| 1836 | 07/17/97 | 1300 | 23.52             | 8.02       | 6.81                   | 82.2                          |
| 1837 | 07/17/97 | 1400 | 23.52             | 8.02       | 6.81                   | 82.2                          |
| 1838 | 07/17/97 | 1500 | 23.52             | 8.02       | 6.81                   | 82.2                          |
| 1839 | 07/17/97 | 1600 | 23.52             | 8.02       | 6.81                   | 82.2                          |
| 1840 | 07/17/97 | 1700 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1841 | 07/17/97 | 1800 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1842 | 07/17/97 | 1900 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1843 | 07/17/97 | 2000 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1844 | 07/17/97 | 2100 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1845 | 07/17/97 | 2200 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1846 | 07/17/97 | 2300 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1847 | 07/18/97 | 0    | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1848 | 07/18/97 | 100  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1849 | 07/18/97 | 200  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1850 | 07/18/97 | 300  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1851 | 07/18/97 | 400  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1852 | 07/18/97 | 500  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1853 | 07/18/97 | 600  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1854 | 07/18/97 | 700  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1855 | 07/18/97 | 800  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1856 | 07/18/97 | 900  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1857 | 07/18/97 | 1000 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1858 | 07/18/97 | 1100 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1859 | 07/18/97 | 1200 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1860 | 07/18/97 | 1300 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1861 | 07/18/97 | 1400 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1862 | 07/18/97 | 1500 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1863 | 07/18/97 | 1600 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1864 | 07/18/97 | 1700 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1865 | 07/18/97 | 1800 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1866 | 07/18/97 | 1900 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1867 | 07/18/97 | 2000 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1868 | 07/18/97 | 2100 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1869 | 07/18/97 | 2200 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1870 | 07/18/97 | 2300 | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1871 | 07/19/97 | 0    | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1872 | 07/19/97 | 100  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1873 | 07/19/97 | 200  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1874 | 07/19/97 | 300  | 23.45             | 8.02       | 6.81                   | 82.2                          |
| 1875 | 07/19/97 | 400  | 23.45             | 8.02       | 6.81                   | 82.2                          |

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------|------------------------------|----------------------------------|
| 1876 | 07/19/97 | 500  | 23.56                    | 8.21    | 7.16                         | 86.6                             |
| 1877 | 07/19/97 | 500  | 23.38                    | 8.20    | 7.12                         | 86.0                             |
| 1878 | 07/19/97 | 700  | 23.37                    | 8.20    | 7.11                         | 85.9                             |
| 1879 | 07/19/97 | 800  | 23.32                    | 8.19    | 7.08                         | 85.5                             |
| 1880 | 07/19/97 | 900  | 23.21                    | 8.17    | 7.03                         | 84.4                             |
| 1881 | 07/19/97 | 1000 | 23.18                    | 8.16    | 7.02                         | 84.2                             |
| 1882 | 07/19/97 | 1100 | 22.96                    | 8.11    | 7.03                         | 84.1                             |
| 1883 | 07/19/97 | 1200 | 22.74                    | 8.11    | 7.01                         | 83.5                             |
| 1884 | 07/19/97 | 1300 | 22.64                    | 8.13    | 7.00                         | 83.2                             |
| 1885 | 07/19/97 | 1400 | 22.56                    | 8.12    | 6.92                         | 82.1                             |
| 1886 | 07/19/97 | 1500 | 22.55                    | 8.12    | 7.01                         | 82.1                             |
| 1887 | 07/19/97 | 1600 | 22.65                    | 8.15    | 7.07                         | 82.4                             |
| 1888 | 07/19/97 | 1700 | 22.65                    | 8.16    | 7.08                         | 82.7                             |
| 1889 | 07/19/97 | 1800 | 22.45                    | 8.13    | 7.05                         | 82.4                             |
| 1890 | 07/19/97 | 1900 | 22.40                    | 8.13    | 6.97                         | 82.4                             |
| 1891 | 07/19/97 | 2000 | 22.31                    | 8.13    | 7.03                         | 83.4                             |
| 1892 | 07/19/97 | 2100 | 22.37                    | 8.13    | 7.06                         | 83.4                             |
| 1893 | 07/19/97 | 2200 | 22.53                    | 8.15    | 7.11                         | 84.1                             |
| 1894 | 07/19/97 | 2300 | 22.76                    | 8.18    | 7.15                         | 84.7                             |
| 1895 | 07/20/97 | 0    | 22.94                    | 8.20    | 7.16                         | 84.4                             |
| 1896 | 07/20/97 | 100  | 22.96                    | 8.20    | 7.16                         | 84.4                             |
| 1897 | 07/20/97 | 200  | 22.96                    | 8.20    | 7.11                         | 85.0                             |
| 1898 | 07/20/97 | 300  | 22.92                    | 8.20    | 7.20                         | 86.0                             |
| 1899 | 07/20/97 | 400  | 22.83                    | 8.20    | 7.13                         | 85.0                             |
| 1900 | 07/20/97 | 500  | 22.71                    | 8.19    | 7.17                         | 85.3                             |
| 1901 | 07/20/97 | 600  | 22.85                    | 8.19    | 7.08                         | 84.1                             |
| 1902 | 07/20/97 | 700  | 22.85                    | 8.18    | 7.06                         | 83.7                             |
| 1903 | 07/20/97 | 800  | 22.85                    | 8.18    | 7.18                         | 84.7                             |
| 1904 | 07/20/97 | 900  | 22.44                    | 8.17    | 7.08                         | 83.3                             |
| 1905 | 07/20/97 | 1000 | 22.44                    | 8.17    | 7.08                         | 83.3                             |
| 1906 | 07/20/97 | 1100 | 22.46                    | 8.17    | 7.12                         | 84.5                             |
| 1907 | 07/20/97 | 1200 | 22.45                    | 8.19    | 7.13                         | 84.5                             |
| 1908 | 07/20/97 | 1300 | 22.61                    | 8.21    | 7.07                         | 83.6                             |
| 1909 | 07/20/97 | 1400 | 22.52                    | 8.21    | 7.05                         | 83.6                             |
| 1910 | 07/20/97 | 1500 | 22.10                    | 8.24    | 7.09                         | 84.3                             |
| 1911 | 07/20/97 | 1600 | 22.21                    | 8.25    | 7.15                         | 84.9                             |
| 1912 | 07/20/97 | 1700 | 22.01                    | 8.22    | 7.25                         | 84.4                             |
| 1913 | 07/20/97 | 1800 | 22.91                    | 8.22    | 7.03                         | 84.4                             |
| 1914 | 07/20/97 | 1900 | 22.60                    | 8.20    | 7.04                         | 83.6                             |
| 1915 | 07/20/97 | 2000 | 22.44                    | 8.18    | 7.07                         | 83.6                             |
| 1916 | 07/20/97 | 2100 | 22.46                    | 8.20    | 7.07                         | 83.6                             |
| 1917 | 07/20/97 | 2200 | 22.73                    | 8.18    | 7.06                         | 83.7                             |
| 1918 | 07/20/97 | 2300 | 22.96                    | 8.21    | 7.12                         | 84.7                             |
| 1919 | 07/21/97 | 0    | 22.96                    | 8.21    | 7.15                         | 84.9                             |
| 1920 | 07/21/97 | 100  | 22.71                    | 8.21    | 7.16                         | 84.9                             |
| 1921 | 07/21/97 | 200  | 22.71                    | 8.21    | 7.14                         | 84.9                             |
| 1922 | 07/21/97 | 300  | 22.44                    | 8.21    | 7.14                         | 84.4                             |
| 1923 | 07/21/97 | 400  | 22.23                    | 8.18    | 7.13                         | 84.4                             |
| 1924 | 07/21/97 | 500  | 22.12                    | 8.17    | 7.12                         | 84.4                             |
| 1925 | 07/21/97 | 600  | 22.03                    | 8.16    | 7.12                         | 84.8                             |
| 1926 | 07/21/97 | 700  | 22.08                    | 8.19    | 7.19                         | 84.8                             |
| 1927 | 07/21/97 | 800  | 22.05                    | 8.20    | 7.09                         | 84.1                             |
| 1928 | 07/21/97 | 900  | 22.22                    | 8.22    | 7.08                         | 84.1                             |
| 1929 | 07/21/97 | 1000 | 22.94                    | 8.20    | 7.17                         | 84.2                             |
| 1930 | 07/21/97 | 1100 | 22.11                    | 8.19    | 7.17                         | 83.1                             |
| 1931 | 07/21/97 | 1200 | 21.82                    | 8.19    | 7.04                         | 83.1                             |
| 1932 | 07/21/97 | 1300 | 21.76                    | 8.19    | 7.11                         | 83.1                             |
| 1933 | 07/21/97 | 1400 | 21.67                    | 8.18    | 7.07                         | 82.4                             |
| 1934 | 07/21/97 | 1500 | 21.66                    | 8.17    | 7.13                         | 82.4                             |
| 1935 | 07/21/97 | 1600 | 21.77                    | 8.17    | 7.17                         | 82.4                             |
| 1936 | 07/21/97 | 1700 | 21.54                    | 8.17    | 7.01                         | 81.5                             |
| 1937 | 07/21/97 | 1800 | 21.51                    | 8.15    | 7.01                         | 81.5                             |
| 1938 | 07/21/97 | 1900 | 21.43                    | 8.15    | 7.02                         | 81.5                             |
| 1939 | 07/21/97 | 2000 | 21.48                    | 8.16    | 6.99                         | 81.3                             |
| 1940 | 07/21/97 | 2100 | 21.55                    | 8.16    | 6.89                         | 80.2                             |
| 1941 | 07/21/97 | 2200 | 21.59                    | 8.17    | 6.95                         | 80.2                             |
| 1942 | 07/22/97 | 0    | 21.55                    | 8.19    | 7.05                         | 81.6                             |
| 1943 | 07/22/97 | 100  | 21.48                    | 8.18    | 7.05                         | 82.0                             |
| 1944 | 07/22/97 | 200  | 21.45                    | 8.18    | 6.95                         | 80.6                             |
| 1945 | 07/22/97 | 300  | 21.34                    | 8.18    | 6.94                         | 80.6                             |
| 1946 | 07/22/97 | 400  | 21.25                    | 8.18    | 6.94                         | 80.7                             |
| 1947 | 07/22/97 | 500  | 21.20                    | 8.18    | 6.98                         | 80.7                             |
| 1948 | 07/22/97 | 600  | 21.07                    | 8.16    | 7.02                         | 81.1                             |
| 1949 | 07/22/97 | 700  | 21.02                    | 8.15    | 6.99                         | 80.9                             |
| 1950 | 07/22/97 | 800  | 21.02                    | 8.15    | 6.99                         | 80.9                             |

FM0001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP. (DEGREES C.) | PH (S. U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|--------------------|------------|------------------------|-------------------------------|
| 1951 | 07/22/97 | 800  | 20.97              | 8.17       | 6.95                   | 80.0                          |
| 1952 | 07/22/97 | 900  | 20.93              | 8.19       | 7.08                   | 81.8                          |
| 1953 | 07/22/97 | 1000 | 20.93              | 8.21       | 7.13                   | 82.0                          |
| 1954 | 07/22/97 | 1100 | 20.95              | 8.26       | 7.12                   | 82.0                          |
| 1955 | 07/22/97 | 1200 | 20.81              | 8.24       | 7.11                   | 81.5                          |
| 1956 | 07/22/97 | 1300 | 20.64              | 8.23       | 7.15                   | 81.7                          |
| 1957 | 07/22/97 | 1400 | 20.50              | 8.21       | 7.01                   | 79.9                          |
| 1958 | 07/22/97 | 1500 | 20.34              | 8.20       | 6.97                   | 79.3                          |
| 1959 | 07/22/97 | 1600 | 20.36              | 8.20       | 7.03                   | 79.9                          |
| 1960 | 07/22/97 | 1700 | 20.37              | 8.18       | 6.93                   | 78.8                          |
| 1961 | 07/22/97 | 1800 | 20.37              | 8.18       | 6.94                   | 78.5                          |
| 1962 | 07/22/97 | 1900 | 20.35              | 8.19       | 6.94                   | 78.5                          |
| 1963 | 07/22/97 | 2000 | 20.35              | 8.19       | 6.94                   | 78.5                          |
| 1964 | 07/22/97 | 2100 | 20.32              | 8.19       | 6.93                   | 79.0                          |
| 1965 | 07/22/97 | 2200 | 20.93              | 8.19       | 6.93                   | 79.5                          |
| 1966 | 07/22/97 | 2300 | 20.95              | 8.20       | 6.85                   | 79.8                          |
| 1967 | 07/23/97 | 0    | 20.97              | 8.19       | 6.85                   | 79.2                          |
| 1968 | 07/23/97 | 100  | 20.97              | 8.19       | 6.85                   | 78.9                          |
| 1969 | 07/23/97 | 200  | 20.95              | 8.20       | 6.96                   | 80.0                          |
| 1970 | 07/23/97 | 300  | 20.95              | 8.21       | 6.96                   | 80.0                          |
| 1971 | 07/23/97 | 400  | 20.92              | 8.20       | 6.95                   | 80.0                          |
| 1972 | 07/23/97 | 500  | 20.85              | 8.20       | 6.95                   | 80.0                          |
| 1973 | 07/23/97 | 600  | 20.85              | 8.20       | 6.95                   | 80.0                          |
| 1974 | 07/23/97 | 700  | 20.71              | 8.19       | 6.92                   | 79.9                          |
| 1975 | 07/23/97 | 800  | 20.67              | 8.20       | 6.95                   | 79.5                          |
| 1976 | 07/23/97 | 900  | 20.65              | 8.20       | 7.09                   | 81.5                          |
| 1977 | 07/23/97 | 1000 | 20.65              | 8.21       | 7.08                   | 80.5                          |
| 1978 | 07/23/97 | 1100 | 20.55              | 8.24       | 7.07                   | 80.0                          |
| 1979 | 07/23/97 | 1200 | 20.51              | 8.24       | 7.02                   | 80.1                          |
| 1980 | 07/23/97 | 1300 | 20.48              | 8.25       | 7.02                   | 80.1                          |
| 1981 | 07/23/97 | 1400 | 20.39              | 8.24       | 7.05                   | 80.5                          |
| 1982 | 07/23/97 | 1500 | 20.27              | 8.23       | 7.01                   | 80.5                          |
| 1983 | 07/23/97 | 1600 | 20.15              | 8.22       | 7.08                   | 80.2                          |
| 1984 | 07/23/97 | 1700 | 20.15              | 8.22       | 7.02                   | 79.9                          |
| 1985 | 07/23/97 | 1800 | 20.15              | 8.22       | 6.97                   | 79.5                          |
| 1986 | 07/23/97 | 1900 | 20.15              | 8.22       | 6.90                   | 78.1                          |
| 1987 | 07/23/97 | 2000 | 20.16              | 8.21       | 6.91                   | 78.1                          |
| 1988 | 07/23/97 | 2100 | 20.27              | 8.21       | 6.89                   | 78.2                          |
| 1989 | 07/23/97 | 2200 | 20.48              | 8.21       | 6.90                   | 78.6                          |
| 1990 | 07/23/97 | 2300 | 20.58              | 8.22       | 6.97                   | 79.6                          |
| 1991 | 07/24/97 | 0    | 20.58              | 8.22       | 6.97                   | 79.6                          |
| 1992 | 07/24/97 | 100  | 20.58              | 8.23       | 7.12                   | 81.3                          |
| 1993 | 07/24/97 | 200  | 20.58              | 8.22       | 7.24                   | 82.5                          |
| 1994 | 07/24/97 | 300  | 20.50              | 8.22       | 7.21                   | 82.2                          |
| 1995 | 07/24/97 | 400  | 20.49              | 8.21       | 7.22                   | 82.2                          |
| 1996 | 07/24/97 | 500  | 20.34              | 8.21       | 7.12                   | 81.0                          |
| 1997 | 07/24/97 | 600  | 20.29              | 8.21       | 7.25                   | 82.1                          |
| 1998 | 07/24/97 | 700  | 20.27              | 8.22       | 7.25                   | 82.1                          |
| 1999 | 07/24/97 | 800  | 20.26              | 8.22       | 7.21                   | 81.9                          |
| 2000 | 07/24/97 | 900  | 20.26              | 8.22       | 7.21                   | 81.9                          |
| 2001 | 07/24/97 | 1000 | 20.26              | 8.22       | 7.18                   | 81.5                          |
| 2002 | 07/24/97 | 1100 | 20.64              | 8.23       | 7.25                   | 82.5                          |
| 2003 | 07/24/97 | 1200 | 20.64              | 8.23       | 7.35                   | 84.0                          |
| 2004 | 07/24/97 | 1300 | 20.55              | 8.23       | 7.24                   | 82.7                          |
| 2005 | 07/24/97 | 1400 | 20.55              | 8.23       | 7.09                   | 81.1                          |
| 2006 | 07/24/97 | 1500 | 20.36              | 8.22       | 7.12                   | 81.2                          |
| 2007 | 07/24/97 | 1600 | 20.36              | 8.22       | 7.14                   | 80.8                          |
| 2008 | 07/24/97 | 1700 | 20.34              | 8.23       | 7.12                   | 81.1                          |
| 2009 | 07/24/97 | 1800 | 20.34              | 8.23       | 7.17                   | 81.7                          |
| 2010 | 07/24/97 | 1900 | 20.37              | 8.24       | 7.17                   | 81.9                          |
| 2011 | 07/24/97 | 2000 | 20.46              | 8.24       | 7.15                   | 81.7                          |
| 2012 | 07/24/97 | 2100 | 20.55              | 8.24       | 7.01                   | 79.9                          |
| 2013 | 07/24/97 | 2200 | 20.67              | 8.26       | 7.10                   | 81.0                          |
| 2014 | 07/24/97 | 2300 | 20.85              | 8.27       | 7.07                   | 80.7                          |
| 2015 | 07/25/97 | 0    | 20.95              | 8.29       | 7.11                   | 81.1                          |
| 2016 | 07/25/97 | 100  | 20.85              | 8.29       | 7.13                   | 81.8                          |
| 2017 | 07/25/97 | 200  | 20.85              | 8.29       | 7.13                   | 82.0                          |
| 2018 | 07/25/97 | 300  | 21.13              | 8.29       | 7.11                   | 82.1                          |
| 2019 | 07/25/97 | 400  | 21.15              | 8.29       | 7.02                   | 81.0                          |
| 2020 | 07/25/97 | 500  | 21.09              | 8.28       | 6.91                   | 79.7                          |
| 2021 | 07/25/97 | 600  | 21.00              | 8.28       | 7.00                   | 80.6                          |
| 2022 | 07/25/97 | 700  | 21.02              | 8.28       | 7.12                   | 81.9                          |
| 2023 | 07/25/97 | 800  | 21.02              | 8.28       | 7.04                   | 81.1                          |
| 2024 | 07/25/97 | 900  | 21.04              | 8.28       | 6.95                   | 80.0                          |
| 2025 | 07/25/97 | 1000 | 21.04              | 8.29       | 6.95                   | 80.0                          |

| OBS  | DATE     | HOUR | TEMP. (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|--------------------|---------|------------------------|-------------------------------|
| 2026 | 07/25/97 | 1100 | 21.06              | 8.29    | 6.85                   | 79.0                          |
| 2027 | 07/25/97 | 1200 | 21.07              | 8.28    | 6.95                   | 80.6                          |
| 2028 | 07/25/97 | 1300 | 20.95              | 8.24    | 6.99                   | 80.9                          |
| 2029 | 07/25/97 | 1400 | 20.85              | 8.22    | 6.99                   | 79.9                          |
| 2030 | 07/25/97 | 1500 | 20.90              | 8.22    | 6.86                   | 78.2                          |
| 2031 | 07/25/97 | 1600 | 20.37              | 8.18    | 6.74                   | 76.6                          |
| 2032 | 07/25/97 | 1700 | 20.15              | 8.15    | 6.87                   | 77.8                          |
| 2033 | 07/25/97 | 1800 | 20.11              | 8.15    | 6.76                   | 76.4                          |
| 2034 | 07/25/97 | 1900 | 20.10              | 8.14    | 6.83                   | 77.2                          |
| 2035 | 07/25/97 | 2000 | 20.16              | 8.14    | 6.85                   | 78.0                          |
| 2036 | 07/25/97 | 2100 | 20.12              | 8.15    | 6.96                   | 79.0                          |
| 2037 | 07/25/97 | 2200 | 20.39              | 8.16    | 6.99                   | 79.5                          |
| 2038 | 07/25/97 | 2300 | 20.39              | 8.16    | 7.09                   | 80.7                          |
| 2039 | 07/26/97 | 0    | 20.41              | 8.17    | 7.11                   | 80.9                          |
| 2040 | 07/26/97 | 100  | 20.48              | 8.17    | 7.06                   | 80.4                          |
| 2041 | 07/26/97 | 200  | 20.51              | 8.17    | 7.11                   | 81.1                          |
| 2042 | 07/26/97 | 300  | 20.57              | 8.18    | 7.11                   | 80.8                          |
| 2043 | 07/26/97 | 400  | 20.58              | 8.18    | 7.08                   | 80.8                          |
| 2044 | 07/26/97 | 500  | 20.58              | 8.18    | 7.12                   | 81.5                          |
| 2045 | 07/26/97 | 600  | 20.58              | 8.18    | 7.23                   | 82.2                          |
| 2046 | 07/26/97 | 700  | 20.58              | 8.18    | 7.23                   | 82.2                          |
| 2047 | 07/26/97 | 800  | 20.58              | 8.18    | 7.32                   | 83.5                          |
| 2048 | 07/26/97 | 900  | 20.55              | 8.19    | 7.34                   | 83.7                          |
| 2049 | 07/26/97 | 1000 | 20.55              | 8.20    | 7.31                   | 83.5                          |
| 2050 | 07/26/97 | 1100 | 20.60              | 8.20    | 7.39                   | 84.4                          |
| 2051 | 07/26/97 | 1200 | 20.59              | 8.21    | 7.38                   | 84.4                          |
| 2052 | 07/26/97 | 1300 | 20.59              | 8.22    | 7.45                   | 85.5                          |
| 2053 | 07/26/97 | 1400 | 20.59              | 8.22    | 7.44                   | 85.3                          |
| 2054 | 07/26/97 | 1500 | 20.59              | 8.22    | 7.04                   | 80.7                          |
| 2055 | 07/26/97 | 1600 | 20.59              | 8.16    | 7.14                   | 81.6                          |
| 2056 | 07/26/97 | 1700 | 20.59              | 8.16    | 7.05                   | 80.7                          |
| 2057 | 07/26/97 | 1800 | 21.57              | 8.19    | 7.01                   | 81.7                          |
| 2058 | 07/26/97 | 1900 | 21.67              | 8.20    | 6.97                   | 81.3                          |
| 2059 | 07/26/97 | 2000 | 21.54              | 8.20    | 7.04                   | 82.0                          |
| 2060 | 07/26/97 | 2100 | 21.54              | 8.19    | 6.99                   | 81.0                          |
| 2061 | 07/26/97 | 2200 | 21.15              | 8.19    | 7.02                   | 81.0                          |
| 2062 | 07/26/97 | 2300 | 21.15              | 8.19    | 6.94                   | 80.1                          |
| 2063 | 07/26/97 | 0    | 21.15              | 8.21    | 7.03                   | 81.2                          |
| 2064 | 07/27/97 | 100  | 21.18              | 8.21    | 6.96                   | 80.4                          |
| 2065 | 07/27/97 | 200  | 21.20              | 8.21    | 7.04                   | 81.4                          |
| 2066 | 07/27/97 | 300  | 21.20              | 8.22    | 7.04                   | 81.4                          |
| 2067 | 07/27/97 | 400  | 21.27              | 8.23    | 7.03                   | 81.4                          |
| 2068 | 07/27/97 | 500  | 21.32              | 8.23    | 7.07                   | 81.2                          |
| 2069 | 07/27/97 | 600  | 21.32              | 8.23    | 7.07                   | 81.2                          |
| 2070 | 07/27/97 | 700  | 21.35              | 8.24    | 7.17                   | 83.0                          |
| 2071 | 07/27/97 | 800  | 21.27              | 8.25    | 7.17                   | 83.0                          |
| 2072 | 07/27/97 | 900  | 21.27              | 8.25    | 7.19                   | 83.2                          |
| 2073 | 07/27/97 | 1000 | 21.59              | 8.24    | 7.17                   | 83.1                          |
| 2074 | 07/27/97 | 1100 | 21.73              | 8.24    | 7.10                   | 82.7                          |
| 2075 | 07/27/97 | 1200 | 21.84              | 8.24    | 7.04                   | 82.1                          |
| 2076 | 07/27/97 | 1300 | 21.88              | 8.23    | 6.98                   | 82.5                          |
| 2077 | 07/27/97 | 1400 | 21.88              | 8.23    | 6.95                   | 82.1                          |
| 2078 | 07/27/97 | 1500 | 22.15              | 8.23    | 6.95                   | 82.1                          |
| 2079 | 07/27/97 | 1600 | 22.15              | 8.23    | 6.86                   | 81.4                          |
| 2080 | 07/27/97 | 1700 | 22.44              | 8.22    | 6.90                   | 81.7                          |
| 2081 | 07/27/97 | 1800 | 22.44              | 8.22    | 6.82                   | 80.8                          |
| 2082 | 07/27/97 | 1900 | 22.37              | 8.23    | 6.81                   | 80.5                          |
| 2083 | 07/27/97 | 2000 | 22.42              | 8.22    | 6.81                   | 80.6                          |
| 2084 | 07/27/97 | 2100 | 22.49              | 8.23    | 6.75                   | 80.0                          |
| 2085 | 07/27/97 | 2200 | 22.64              | 8.23    | 6.72                   | 80.0                          |
| 2086 | 07/27/97 | 2300 | 22.64              | 8.23    | 6.77                   | 80.4                          |
| 2087 | 07/28/97 | 0    | 22.58              | 8.22    | 6.81                   | 80.0                          |
| 2088 | 07/28/97 | 100  | 22.74              | 8.22    | 6.74                   | 80.0                          |
| 2089 | 07/28/97 | 200  | 22.74              | 8.24    | 6.45                   | 76.8                          |
| 2090 | 07/28/97 | 300  | 22.71              | 8.25    | 6.45                   | 77.2                          |
| 2091 | 07/28/97 | 400  | 22.53              | 8.26    | 6.65                   | 79.1                          |
| 2092 | 07/28/97 | 500  | 22.53              | 8.26    | 6.67                   | 79.1                          |
| 2093 | 07/28/97 | 600  | 22.49              | 8.25    | 6.63                   | 78.6                          |
| 2094 | 07/28/97 | 700  | 22.49              | 8.25    | 6.63                   | 78.6                          |
| 2095 | 07/28/97 | 800  | 22.33              | 8.25    | 6.80                   | 81.1                          |
| 2096 | 07/28/97 | 900  | 22.44              | 8.28    | 7.37                   | 87.1                          |
| 2097 | 07/28/97 | 1000 | 22.58              | 8.28    | 7.49                   | 88.7                          |
| 2098 | 07/28/97 | 1100 | 22.74              | 8.30    | 7.62                   | 89.4                          |
| 2099 | 07/28/97 | 1200 | 22.94              | 8.30    | 7.62                   | 89.4                          |
| 2100 | 07/28/97 | 1300 | 23                 | 8.31    | 7.45                   | 88.6                          |

TABLE 1

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2101 | 07/28/97 | 1400 | 23.39                    | 8.30          | 6.94                         | 83.7                             |
| 2102 | 07/28/97 | 1500 | 23.50                    | 8.29          | 6.67                         | 80.5                             |
| 2103 | 07/28/97 | 1600 | 23.61                    | 8.28          | 6.33                         | 80.3                             |
| 2104 | 07/28/97 | 1700 | 23.69                    | 8.28          | 6.03                         | 80.3                             |
| 2105 | 07/28/97 | 1800 | 23.70                    | 8.30          | 5.83                         | 79.9                             |
| 2106 | 07/28/97 | 1900 | 23.52                    | 8.30          | 5.62                         | 80.5                             |
| 2107 | 07/28/97 | 2000 | 23.28                    | 8.28          | 5.50                         | 78.5                             |
| 2108 | 07/28/97 | 2100 | 23.14                    | 8.27          | 5.50                         | 78.0                             |
| 2109 | 07/28/97 | 2200 | 22.87                    | 8.25          | 5.59                         | 78.0                             |
| 2110 | 07/28/97 | 2300 | 22.65                    | 8.24          | 5.59                         | 79.1                             |
| 2111 | 07/29/97 | 0    | 22.43                    | 8.24          | 5.59                         | 78.1                             |
| 2112 | 07/29/97 | 100  | 22.25                    | 8.23          | 5.59                         | 77.8                             |
| 2113 | 07/29/97 | 200  | 22.05                    | 8.23          | 5.59                         | 77.8                             |
| 2114 | 07/29/97 | 300  | 22.17                    | 8.23          | 5.53                         | 78.0                             |
| 2115 | 07/29/97 | 400  | 22.07                    | 8.23          | 5.53                         | 76.7                             |
| 2116 | 07/29/97 | 500  | 22.04                    | 8.23          | 5.48                         | 76.1                             |
| 2117 | 07/29/97 | 600  | 21.91                    | 8.23          | 5.55                         | 76.8                             |
| 2118 | 07/29/97 | 700  | 21.85                    | 8.24          | 5.09                         | 87.0                             |
| 2119 | 07/29/97 | 800  | 21.82                    | 8.24          | 5.07                         | 87.4                             |
| 2120 | 07/29/97 | 900  | 21.82                    | 8.24          | 5.07                         | 89.4                             |
| 2121 | 07/29/97 | 1000 | 21.82                    | 8.24          | 5.07                         | 90.4                             |
| 2122 | 07/29/97 | 1100 | 21.84                    | 8.23          | 5.07                         | 89.4                             |
| 2123 | 07/29/97 | 1200 | 21.87                    | 8.23          | 5.49                         | 89.4                             |
| 2124 | 07/29/97 | 1300 | 21.86                    | 8.23          | 5.78                         | 75.7                             |
| 2125 | 07/29/97 | 1400 | 21.57                    | 8.20          | 5.79                         | 79.1                             |
| 2126 | 07/29/97 | 1500 | 21.44                    | 8.21          | 5.78                         | 78.7                             |
| 2127 | 07/29/97 | 1600 | 21.48                    | 8.22          | 5.61                         | 76.8                             |
| 2128 | 07/29/97 | 1700 | 21.48                    | 8.22          | 5.30                         | 89.4                             |
| 2129 | 07/29/97 | 1800 | 21.48                    | 8.22          | 5.30                         | 73.5                             |
| 2130 | 07/29/97 | 1900 | 21.50                    | 8.24          | 5.30                         | 72.7                             |
| 2131 | 07/29/97 | 2000 | 21.48                    | 8.23          | 5.17                         | 71.7                             |
| 2132 | 07/29/97 | 2100 | 21.46                    | 8.24          | 5.25                         | 72.9                             |
| 2133 | 07/29/97 | 2200 | 21.71                    | 8.24          | 5.42                         | 72.4                             |
| 2134 | 07/29/97 | 2300 | 21.71                    | 8.24          | 5.42                         | 74.0                             |
| 2135 | 07/30/97 | 0    | 21.62                    | 8.24          | 5.42                         | 74.0                             |
| 2136 | 07/30/97 | 100  | 21.62                    | 8.24          | 5.31                         | 73.8                             |
| 2137 | 07/30/97 | 200  | 21.60                    | 8.26          | 5.30                         | 73.8                             |
| 2138 | 07/30/97 | 300  | 21.60                    | 8.26          | 5.35                         | 74.0                             |
| 2139 | 07/30/97 | 400  | 21.46                    | 8.26          | 5.34                         | 73.6                             |
| 2140 | 07/30/97 | 500  | 21.46                    | 8.27          | 5.49                         | 75.3                             |
| 2141 | 07/30/97 | 600  | 21.23                    | 8.26          | 5.43                         | 74.4                             |
| 2142 | 07/30/97 | 700  | 21.18                    | 8.27          | 5.20                         | 83.5                             |
| 2143 | 07/30/97 | 800  | 21.23                    | 8.27          | 5.06                         | 89.2                             |
| 2144 | 07/30/97 | 900  | 21.23                    | 8.27          | 5.06                         | 93.2                             |
| 2145 | 07/30/97 | 1000 | 21.23                    | 8.24          | 5.06                         | 93.4                             |
| 2146 | 07/30/97 | 1100 | 21.50                    | 8.24          | 5.06                         | 94.0                             |
| 2147 | 07/30/97 | 1200 | 21.50                    | 8.24          | 5.04                         | 94.0                             |
| 2148 | 07/30/97 | 1300 | 21.50                    | 8.25          | 5.04                         | 90.2                             |
| 2149 | 07/30/97 | 1400 | 21.65                    | 8.25          | 5.04                         | 84.5                             |
| 2150 | 07/30/97 | 1500 | 21.85                    | 8.25          | 5.04                         | 84.5                             |
| 2151 | 07/30/97 | 1600 | 21.85                    | 8.27          | 5.29                         | 83.5                             |
| 2152 | 07/30/97 | 1700 | 21.85                    | 8.28          | 5.27                         | 83.5                             |
| 2153 | 07/30/97 | 1800 | 21.85                    | 8.28          | 5.27                         | 84.3                             |
| 2154 | 07/30/97 | 1900 | 21.85                    | 8.28          | 5.27                         | 84.3                             |
| 2155 | 07/30/97 | 2000 | 21.19                    | 8.28          | 5.27                         | 85.3                             |
| 2156 | 07/30/97 | 2100 | 21.29                    | 8.28          | 5.27                         | 85.3                             |
| 2157 | 07/30/97 | 2200 | 21.29                    | 8.28          | 5.27                         | 85.0                             |
| 2158 | 07/30/97 | 2300 | 21.42                    | 8.28          | 5.27                         | 85.0                             |
| 2159 | 07/31/97 | 0    | 21.42                    | 8.28          | 5.27                         | 85.0                             |
| 2160 | 07/31/97 | 100  | 21.43                    | 8.28          | 5.27                         | 85.0                             |
| 2161 | 07/31/97 | 200  | 21.43                    | 8.28          | 5.27                         | 85.0                             |
| 2162 | 07/31/97 | 300  | 21.44                    | 8.28          | 5.27                         | 85.0                             |
| 2163 | 07/31/97 | 400  | 21.47                    | 8.28          | 5.27                         | 85.0                             |
| 2164 | 07/31/97 | 500  | 21.49                    | 8.28          | 5.27                         | 85.0                             |
| 2165 | 07/31/97 | 600  | 21.49                    | 8.28          | 5.27                         | 85.0                             |
| 2166 | 07/31/97 | 700  | 21.52                    | 8.28          | 5.27                         | 85.0                             |
| 2167 | 07/31/97 | 800  | 21.52                    | 8.28          | 5.27                         | 85.0                             |
| 2168 | 07/31/97 | 900  | 21.42                    | 8.28          | 5.27                         | 85.0                             |
| 2169 | 07/31/97 | 1000 | 21.43                    | 8.28          | 5.27                         | 85.0                             |
| 2170 | 07/31/97 | 1100 | 21.43                    | 8.28          | 5.27                         | 85.0                             |
| 2171 | 07/31/97 | 1200 | 21.43                    | 8.28          | 5.27                         | 85.0                             |
| 2172 | 07/31/97 | 1300 | 22.43                    | 8.28          | 5.27                         | 85.0                             |
| 2173 | 07/31/97 | 1400 | 22.73                    | 8.02          | 5.32                         | 85.7                             |
| 2174 | 07/31/97 | 1500 | 22.89                    | 8.02          | 5.32                         | 85.7                             |
| 2175 | 07/31/97 | 1600 | 22.46                    | 7.97          | 5.25                         | 84.9                             |

| OBS  | DATE     | HOUR | TEMP (C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-----------|---------|------------------------|-------------------------------|
| 2176 | 07/31/97 | 1800 | 22.27     | 7.94    | 7.39                   | 85.7                          |
| 2177 | 07/31/97 | 1900 | 22.00     | 7.92    | 7.39                   | 85.4                          |
| 2178 | 07/31/97 | 2000 | 21.91     | 7.92    | 7.31                   | 84.2                          |
| 2179 | 07/31/97 | 2100 | 21.56     | 7.87    | 7.35                   | 84.4                          |
| 2180 | 07/31/97 | 2200 | 21.42     | 7.89    | 7.34                   | 83.7                          |
| 2181 | 08/01/97 | 0    | 21.42     | 7.89    | 7.34                   | 83.7                          |
| 2182 | 08/01/97 | 100  | 21.56     | 7.89    | 7.32                   | 83.6                          |
| 2183 | 08/01/97 | 200  | 21.87     | 7.92    | 7.44                   | 84.2                          |
| 2184 | 08/01/97 | 300  | 21.87     | 7.94    | 7.44                   | 84.2                          |
| 2185 | 08/01/97 | 400  | 21.87     | 7.95    | 7.43                   | 84.4                          |
| 2186 | 08/01/97 | 500  | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2187 | 08/01/97 | 600  | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2188 | 08/01/97 | 700  | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2189 | 08/01/97 | 800  | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2190 | 08/01/97 | 900  | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2191 | 08/01/97 | 1000 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2192 | 08/01/97 | 1100 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2193 | 08/01/97 | 1200 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2194 | 08/01/97 | 1300 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2195 | 08/01/97 | 1400 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2196 | 08/01/97 | 1500 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2197 | 08/01/97 | 1600 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2198 | 08/01/97 | 1700 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2199 | 08/01/97 | 1800 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2200 | 08/01/97 | 1900 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2201 | 08/01/97 | 2000 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2202 | 08/01/97 | 2100 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2203 | 08/01/97 | 2200 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2204 | 08/01/97 | 2300 | 21.87     | 7.95    | 7.41                   | 84.4                          |
| 2205 | 08/02/97 | 0    | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2206 | 08/02/97 | 100  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2207 | 08/02/97 | 200  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2208 | 08/02/97 | 300  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2209 | 08/02/97 | 400  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2210 | 08/02/97 | 500  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2211 | 08/02/97 | 600  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2212 | 08/02/97 | 700  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2213 | 08/02/97 | 800  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2214 | 08/02/97 | 900  | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2215 | 08/02/97 | 1000 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2216 | 08/02/97 | 1100 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2217 | 08/02/97 | 1200 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2218 | 08/02/97 | 1300 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2219 | 08/02/97 | 1400 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2220 | 08/02/97 | 1500 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2221 | 08/02/97 | 1600 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2222 | 08/02/97 | 1700 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2223 | 08/02/97 | 1800 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2224 | 08/02/97 | 1900 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2225 | 08/02/97 | 2000 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2226 | 08/02/97 | 2100 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2227 | 08/02/97 | 2200 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2228 | 08/02/97 | 2300 | 21.84     | 7.88    | 7.11                   | 82.1                          |
| 2229 | 08/03/97 | 0    | 22.73     | 7.88    | 6.95                   | 81.5                          |
| 2230 | 08/03/97 | 100  | 22.71     | 7.88    | 6.95                   | 81.5                          |
| 2231 | 08/03/97 | 200  | 22.71     | 7.88    | 6.95                   | 81.5                          |
| 2232 | 08/03/97 | 300  | 22.77     | 7.89    | 6.95                   | 81.5                          |
| 2233 | 08/03/97 | 400  | 22.70     | 7.88    | 6.95                   | 81.5                          |
| 2234 | 08/03/97 | 500  | 22.86     | 7.86    | 6.95                   | 80.9                          |
| 2235 | 08/03/97 | 600  | 22.86     | 7.87    | 6.95                   | 80.9                          |
| 2236 | 08/03/97 | 700  | 22.55     | 7.87    | 6.95                   | 79.1                          |
| 2237 | 08/03/97 | 800  | 22.45     | 7.86    | 6.82                   | 79.1                          |
| 2238 | 08/03/97 | 900  | 22.45     | 7.86    | 6.82                   | 79.1                          |
| 2239 | 08/03/97 | 1000 | 22.25     | 7.83    | 6.84                   | 80.2                          |
| 2240 | 08/03/97 | 1100 | 22.25     | 7.83    | 6.84                   | 80.2                          |
| 2241 | 08/03/97 | 1200 | 22.25     | 7.83    | 6.84                   | 80.2                          |
| 2242 | 08/03/97 | 1300 | 22.25     | 7.83    | 6.84                   | 80.2                          |
| 2243 | 08/03/97 | 1400 | 22.34     | 7.87    | 6.88                   | 80.2                          |
| 2244 | 08/03/97 | 1500 | 22.48     | 7.85    | 6.88                   | 80.2                          |
| 2245 | 08/03/97 | 1600 | 22.46     | 7.80    | 6.74                   | 80.1                          |
| 2246 | 08/03/97 | 1700 | 22.43     | 7.82    | 6.79                   | 79.9                          |
| 2247 | 08/03/97 | 1800 | 22.37     | 7.82    | 6.59                   | 78.5                          |
| 2248 | 08/03/97 | 1900 | 22.30     | 7.80    | 6.62                   | 78.5                          |
| 2249 | 08/03/97 | 2000 | 22.36     | 7.81    | 6.67                   | 77.5                          |
| 2250 | 08/03/97 | 2100 | 22.36     | 7.81    | 6.67                   | 77.5                          |

FA001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2251 | 08/03/97 | 2100 | 22.39                    | 7.81          | 6.60                         | 76.7                             |
| 2252 | 08/03/97 | 2200 | 22.41                    | 7.84          | 6.64                         | 77.2                             |
| 2253 | 08/04/97 | 2300 | 22.46                    | 7.82          | 6.68                         | 77.4                             |
| 2254 | 08/04/97 | 0    | 22.45                    | 7.83          | 6.67                         | 77.7                             |
| 2255 | 08/04/97 | 100  | 22.41                    | 7.84          | 6.64                         | 77.5                             |
| 2256 | 08/04/97 | 200  | 22.34                    | 7.83          | 6.68                         | 77.1                             |
| 2257 | 08/04/97 | 300  | 22.34                    | 7.84          | 6.68                         | 77.6                             |
| 2258 | 08/04/97 | 400  | 22.27                    | 7.83          | 6.73                         | 78.0                             |
| 2259 | 08/04/97 | 500  | 22.30                    | 7.83          | 6.71                         | 77.9                             |
| 2260 | 08/04/97 | 700  | 22.32                    | 7.82          | 6.62                         | 76.9                             |
| 2261 | 08/04/97 | 800  | 22.42                    | 7.82          | 6.80                         | 79.9                             |
| 2262 | 08/04/97 | 900  | 22.48                    | 7.83          | 6.80                         | 79.2                             |
| 2263 | 08/04/97 | 1000 | 22.43                    | 7.87          | 6.70                         | 78.0                             |
| 2264 | 08/04/97 | 1100 | 22.43                    | 7.86          | 6.67                         | 78.0                             |
| 2265 | 08/04/97 | 1200 | 22.59                    | 7.85          | 6.78                         | 79.1                             |
| 2266 | 08/04/97 | 1300 | 22.66                    | 7.88          | 6.79                         | 79.3                             |
| 2267 | 08/04/97 | 1400 | 22.96                    | 7.86          | 6.67                         | 78.0                             |
| 2268 | 08/04/97 | 1500 | 22.96                    | 7.86          | 6.67                         | 78.0                             |
| 2269 | 08/04/97 | 1600 | 22.76                    | 7.87          | 6.70                         | 78.4                             |
| 2270 | 08/04/97 | 1700 | 22.67                    | 7.86          | 6.65                         | 77.6                             |
| 2271 | 08/04/97 | 1800 | 22.54                    | 7.86          | 6.70                         | 78.1                             |
| 2272 | 08/04/97 | 1900 | 22.43                    | 7.87          | 6.71                         | 78.1                             |
| 2273 | 08/04/97 | 2000 | 22.45                    | 7.85          | 6.71                         | 78.1                             |
| 2274 | 08/04/97 | 2100 | 22.37                    | 7.87          | 6.67                         | 77.6                             |
| 2275 | 08/04/97 | 2200 | 22.32                    | 7.85          | 6.59                         | 76.4                             |
| 2276 | 08/04/97 | 2300 | 22.29                    | 7.84          | 6.66                         | 76.0                             |
| 2277 | 08/05/97 | 0    | 22.09                    | 7.84          | 6.73                         | 77.8                             |
| 2278 | 08/05/97 | 100  | 21.91                    | 7.83          | 6.68                         | 75.8                             |
| 2279 | 08/05/97 | 200  | 21.82                    | 7.80          | 6.62                         | 75.9                             |
| 2280 | 08/05/97 | 300  | 21.59                    | 7.81          | 6.62                         | 75.7                             |
| 2281 | 08/05/97 | 400  | 21.43                    | 7.81          | 6.74                         | 77.0                             |
| 2282 | 08/05/97 | 500  | 21.52                    | 7.81          | 6.70                         | 76.4                             |
| 2283 | 08/05/97 | 600  | 21.33                    | 7.80          | 6.70                         | 76.3                             |
| 2284 | 08/05/97 | 700  | 21.24                    | 7.80          | 6.74                         | 76.6                             |
| 2285 | 08/05/97 | 800  | 21.32                    | 7.80          | 6.87                         | 76.2                             |
| 2286 | 08/05/97 | 900  | 21.31                    | 7.80          | 6.80                         | 77.7                             |
| 2287 | 08/05/97 | 1000 | 21.45                    | 7.80          | 6.80                         | 77.7                             |
| 2288 | 08/05/97 | 1100 | 21.68                    | 7.81          | 6.81                         | 76.9                             |
| 2289 | 08/05/97 | 1200 | 21.68                    | 7.80          | 6.72                         | 77.4                             |
| 2290 | 08/05/97 | 1300 | 21.98                    | 7.80          | 6.72                         | 77.3                             |
| 2291 | 08/05/97 | 1400 | 21.98                    | 7.80          | 6.71                         | 77.3                             |
| 2292 | 08/05/97 | 1500 | 21.93                    | 7.78          | 6.65                         | 76.6                             |
| 2293 | 08/05/97 | 1600 | 21.88                    | 7.78          | 6.70                         | 77.7                             |
| 2294 | 08/05/97 | 1700 | 21.78                    | 7.75          | 6.56                         | 76.0                             |
| 2295 | 08/05/97 | 1800 | 21.63                    | 7.73          | 6.56                         | 75.1                             |
| 2296 | 08/05/97 | 1900 | 21.29                    | 7.72          | 6.51                         | 74.1                             |
| 2297 | 08/05/97 | 2000 | 21.09                    | 7.67          | 6.56                         | 72.3                             |
| 2298 | 08/05/97 | 2100 | 20.91                    | 7.67          | 6.40                         | 72.3                             |
| 2299 | 08/05/97 | 2200 | 20.75                    | 7.67          | 6.49                         | 73.1                             |
| 2300 | 08/05/97 | 2300 | 20.73                    | 7.71          | 6.54                         | 73.6                             |
| 2301 | 08/06/97 | 0    | 20.54                    | 7.74          | 6.54                         | 73.6                             |
| 2302 | 08/06/97 | 100  | 20.64                    | 7.75          | 6.63                         | 75.0                             |
| 2303 | 08/06/97 | 200  | 20.59                    | 7.75          | 6.73                         | 75.6                             |
| 2304 | 08/06/97 | 300  | 20.52                    | 7.74          | 6.76                         | 75.7                             |
| 2305 | 08/06/97 | 400  | 20.47                    | 7.76          | 6.67                         | 74.7                             |
| 2306 | 08/06/97 | 500  | 20.42                    | 7.75          | 6.78                         | 75.9                             |
| 2307 | 08/06/97 | 600  | 20.38                    | 7.77          | 6.89                         | 77.0                             |
| 2308 | 08/06/97 | 700  | 20.35                    | 7.77          | 6.92                         | 77.4                             |
| 2309 | 08/06/97 | 800  | 20.50                    | 7.78          | 6.84                         | 77.7                             |
| 2310 | 08/06/97 | 900  | 20.64                    | 7.82          | 6.93                         | 77.8                             |
| 2311 | 08/06/97 | 1000 | 20.87                    | 7.79          | 6.77                         | 76.4                             |
| 2312 | 08/06/97 | 1100 | 21.08                    | 7.79          | 6.85                         | 77.6                             |
| 2313 | 08/06/97 | 1200 | 21.33                    | 7.82          | 6.82                         | 77.7                             |
| 2314 | 08/06/97 | 1300 | 21.68                    | 7.80          | 6.90                         | 79.0                             |
| 2315 | 08/06/97 | 1400 | 22.02                    | 7.81          | 6.94                         | 79.8                             |
| 2316 | 08/06/97 | 1500 | 22.14                    | 7.81          | 6.74                         | 78.0                             |
| 2317 | 08/06/97 | 1600 | 22.07                    | 7.78          | 6.58                         | 76.5                             |
| 2318 | 08/06/97 | 1700 | 21.89                    | 7.78          | 6.55                         | 76.5                             |
| 2319 | 08/06/97 | 1800 | 21.42                    | 7.72          | 6.56                         | 74.1                             |
| 2320 | 08/06/97 | 1900 | 20.98                    | 7.72          | 6.54                         | 73.4                             |
| 2321 | 08/06/97 | 2000 | 20.58                    | 7.73          | 6.54                         | 74.1                             |
| 2322 | 08/06/97 | 2100 | 20.28                    | 7.72          | 6.54                         | 74.1                             |
| 2323 | 08/06/97 | 2200 |                          |               |                              |                                  |
| 2324 | 08/06/97 | 2300 |                          |               |                              |                                  |

| OBS  | DATE     | HOUR | TEMP:<br>(DEGREE<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|-------------------------|---------------|------------------------------|----------------------------------|
| 2326 | 08/07/97 | 0    | 20.24                   | 7.75          | 6.59                         | 73.5                             |
| 2327 | 08/07/97 | 100  | 20.47                   | 7.76          | 6.54                         | 72.5                             |
| 2328 | 08/07/97 | 200  | 20.46                   | 7.76          | 6.54                         | 72.5                             |
| 2329 | 08/07/97 | 300  | 20.56                   | 7.75          | 6.61                         | 76.6                             |
| 2330 | 08/07/97 | 400  | 20.66                   | 7.75          | 6.60                         | 76.5                             |
| 2331 | 08/07/97 | 500  | 20.54                   | 7.76          | 6.85                         | 76.9                             |
| 2332 | 08/07/97 | 600  | 20.54                   | 7.76          | 6.90                         | 77.4                             |
| 2333 | 08/07/97 | 700  | 20.43                   | 7.78          | 7.00                         | 78.4                             |
| 2334 | 08/07/97 | 800  | 20.42                   | 7.77          | 7.18                         | 80.4                             |
| 2335 | 08/07/97 | 900  | 20.82                   | 7.78          | 7.07                         | 79.2                             |
| 2336 | 08/07/97 | 1000 | 20.82                   | 7.80          | 7.17                         | 80.2                             |
| 2337 | 08/07/97 | 1100 | 21.18                   | 7.82          | 7.20                         | 81.5                             |
| 2338 | 08/07/97 | 1200 | 21.18                   | 7.82          | 7.21                         | 81.5                             |
| 2339 | 08/07/97 | 1300 | 21.09                   | 7.88          | 7.12                         | 81.4                             |
| 2340 | 08/07/97 | 1400 | 22.32                   | 7.89          | 7.03                         | 81.6                             |
| 2341 | 08/07/97 | 1500 | 22.43                   | 7.91          | 7.01                         | 81.6                             |
| 2342 | 08/07/97 | 1600 | 22.43                   | 7.90          | 6.90                         | 80.3                             |
| 2343 | 08/07/97 | 1700 | 22.46                   | 7.90          | 6.88                         | 80.0                             |
| 2344 | 08/07/97 | 1800 | 22.52                   | 7.88          | 6.90                         | 80.0                             |
| 2345 | 08/07/97 | 1900 | 22.52                   | 7.88          | 6.82                         | 78.7                             |
| 2346 | 08/07/97 | 2000 | 21.54                   | 7.80          | 6.81                         | 77.8                             |
| 2347 | 08/07/97 | 2100 | 21.54                   | 7.78          | 6.81                         | 77.8                             |
| 2348 | 08/07/97 | 2200 | 21.22                   | 7.78          | 6.88                         | 78.2                             |
| 2349 | 08/07/97 | 2300 | 20.94                   | 7.76          | 6.79                         | 76.8                             |
| 2350 | 08/08/97 | 0    | 21.01                   | 7.77          | 6.88                         | 77.7                             |
| 2351 | 08/08/97 | 100  | 21.01                   | 7.78          | 6.93                         | 78.4                             |
| 2352 | 08/08/97 | 200  | 21.03                   | 7.78          | 6.92                         | 78.4                             |
| 2353 | 08/08/97 | 300  | 21.03                   | 7.80          | 6.92                         | 78.4                             |
| 2354 | 08/08/97 | 400  | 21.10                   | 7.81          | 6.86                         | 77.7                             |
| 2355 | 08/08/97 | 500  | 21.06                   | 7.79          | 6.86                         | 77.7                             |
| 2356 | 08/08/97 | 600  | 21.05                   | 7.79          | 6.92                         | 78.4                             |
| 2357 | 08/08/97 | 700  | 20.98                   | 7.79          | 7.00                         | 79.1                             |
| 2358 | 08/08/97 | 800  | 20.96                   | 7.80          | 7.00                         | 79.1                             |
| 2359 | 08/08/97 | 900  | 21.03                   | 7.82          | 7.14                         | 80.9                             |
| 2360 | 08/08/97 | 1000 | 21.03                   | 7.82          | 7.15                         | 81.1                             |
| 2361 | 08/08/97 | 1100 | 21.53                   | 7.87          | 7.09                         | 81.1                             |
| 2362 | 08/08/97 | 1200 | 21.53                   | 7.86          | 6.97                         | 80.4                             |
| 2363 | 08/08/97 | 1300 | 22.53                   | 7.91          | 6.97                         | 82.0                             |
| 2364 | 08/08/97 | 1400 | 22.53                   | 7.91          | 6.98                         | 81.4                             |
| 2365 | 08/08/97 | 1500 | 22.53                   | 7.91          | 6.98                         | 81.4                             |
| 2366 | 08/08/97 | 1600 | 22.53                   | 7.90          | 6.83                         | 79.7                             |
| 2367 | 08/08/97 | 1700 | 22.53                   | 7.86          | 6.79                         | 78.9                             |
| 2368 | 08/08/97 | 1800 | 22.53                   | 7.86          | 6.78                         | 78.9                             |
| 2369 | 08/08/97 | 1900 | 22.53                   | 7.86          | 6.82                         | 79.6                             |
| 2370 | 08/08/97 | 2000 | 22.53                   | 7.86          | 6.82                         | 79.6                             |
| 2371 | 08/08/97 | 2100 | 22.00                   | 7.85          | 6.82                         | 77.7                             |
| 2372 | 08/08/97 | 2200 | 22.00                   | 7.85          | 6.71                         | 77.7                             |
| 2373 | 08/08/97 | 2300 | 21.54                   | 7.88          | 6.82                         | 76.9                             |
| 2374 | 08/08/97 | 0    | 21.43                   | 7.88          | 6.82                         | 77.5                             |
| 2375 | 08/09/97 | 100  | 21.43                   | 7.91          | 7.11                         | 81.2                             |
| 2376 | 08/09/97 | 200  | 21.49                   | 7.89          | 7.14                         | 81.2                             |
| 2377 | 08/09/97 | 300  | 21.49                   | 7.90          | 7.09                         | 80.9                             |
| 2378 | 08/09/97 | 400  | 21.43                   | 7.90          | 7.09                         | 80.9                             |
| 2379 | 08/09/97 | 500  | 21.29                   | 7.87          | 7.09                         | 80.4                             |
| 2380 | 08/09/97 | 600  | 21.10                   | 7.87          | 7.09                         | 80.4                             |
| 2381 | 08/09/97 | 700  | 21.08                   | 7.85          | 7.12                         | 80.7                             |
| 2382 | 08/09/97 | 800  | 21.25                   | 7.86          | 7.17                         | 81.6                             |
| 2383 | 08/09/97 | 900  | 21.45                   | 7.89          | 7.19                         | 81.6                             |
| 2384 | 08/09/97 | 1000 | 21.72                   | 7.89          | 7.12                         | 81.1                             |
| 2385 | 08/09/97 | 1100 | 22.31                   | 7.91          | 7.16                         | 82.1                             |
| 2386 | 08/09/97 | 1200 | 22.31                   | 7.91          | 7.20                         | 82.2                             |
| 2387 | 08/09/97 | 1300 | 22.45                   | 7.97          | 7.11                         | 82.2                             |
| 2388 | 08/09/97 | 1400 | 22.12                   | 7.95          | 6.96                         | 80.5                             |
| 2389 | 08/09/97 | 1500 | 21.57                   | 7.85          | 6.92                         | 79.2                             |
| 2390 | 08/09/97 | 1600 | 21.38                   | 7.85          | 6.90                         | 78.9                             |
| 2391 | 08/09/97 | 1700 | 21.85                   | 7.89          | 6.83                         | 77.7                             |
| 2392 | 08/09/97 | 1800 | 22.43                   | 7.91          | 6.75                         | 77.5                             |
| 2393 | 08/09/97 | 1900 | 22.41                   | 7.95          | 6.67                         | 77.3                             |
| 2394 | 08/09/97 | 2000 | 22.07                   | 7.98          | 6.52                         | 76.0                             |
| 2395 | 08/09/97 | 2100 | 22.04                   | 7.98          | 6.50                         | 75.9                             |
| 2396 | 08/09/97 | 2200 | 22.04                   | 7.95          | 6.89                         | 79.6                             |
| 2397 | 08/10/97 | 100  | 22.04                   | 7.95          | 6.89                         | 79.6                             |
| 2398 | 08/10/97 | 200  | 22.04                   | 7.95          | 6.89                         | 79.6                             |
| 2399 | 08/10/97 | 300  | 22.04                   | 7.95          | 6.89                         | 79.6                             |
| 2400 | 08/10/97 | 400  | 22.04                   | 7.95          | 6.89                         | 79.6                             |

END



PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2401 | 08/10/97 | 300  | 22.16                    | 7.95          | 6.75                         | 78.2                             |
| 2402 | 08/10/97 | 400  | 22.27                    | 7.95          | 6.80                         | 78.3                             |
| 2403 | 08/10/97 | 500  | 22.30                    | 7.97          | 6.84                         | 79.3                             |
| 2404 | 08/10/97 | 600  | 22.21                    | 7.96          | 6.94                         | 80.4                             |
| 2405 | 08/10/97 | 700  | 22.18                    | 7.96          | 6.91                         | 80.6                             |
| 2406 | 08/10/97 | 800  | 22.17                    | 7.98          | 6.97                         | 80.6                             |
| 2407 | 08/10/97 | 900  | 22.25                    | 7.98          | 7.14                         | 82.3                             |
| 2408 | 08/10/97 | 1000 | 22.45                    | 8.01          | 7.05                         | 82.0                             |
| 2409 | 08/10/97 | 1100 | 22.52                    | 8.02          | 7.15                         | 83.4                             |
| 2410 | 08/10/97 | 1200 | 22.55                    | 8.03          | 7.05                         | 82.4                             |
| 2411 | 08/10/97 | 1300 | 22.68                    | 8.05          | 7.00                         | 81.8                             |
| 2412 | 08/10/97 | 1400 | 22.77                    | 8.05          | 6.98                         | 81.7                             |
| 2413 | 08/10/97 | 1500 | 22.75                    | 8.05          | 6.82                         | 81.7                             |
| 2414 | 08/10/97 | 1600 | 22.75                    | 8.06          | 6.82                         | 79.8                             |
| 2415 | 08/10/97 | 1700 | 22.75                    | 8.06          | 6.75                         | 79.4                             |
| 2416 | 08/10/97 | 1800 | 22.73                    | 8.06          | 6.75                         | 79.4                             |
| 2417 | 08/10/97 | 1900 | 22.55                    | 8.00          | 6.75                         | 79.4                             |
| 2418 | 08/10/97 | 2000 | 22.55                    | 8.03          | 6.75                         | 79.2                             |
| 2419 | 08/10/97 | 2100 | 22.55                    | 8.03          | 6.75                         | 78.4                             |
| 2420 | 08/10/97 | 2200 | 22.55                    | 8.03          | 6.75                         | 78.4                             |
| 2421 | 08/10/97 | 2300 | 21.98                    | 8.00          | 6.68                         | 77.0                             |
| 2422 | 08/11/97 | 0    | 21.89                    | 8.01          | 6.68                         | 77.0                             |
| 2423 | 08/11/97 | 100  | 21.72                    | 7.98          | 6.75                         | 77.9                             |
| 2424 | 08/11/97 | 200  | 21.72                    | 7.98          | 6.64                         | 76.2                             |
| 2425 | 08/11/97 | 300  | 21.57                    | 7.96          | 7.01                         | 80.2                             |
| 2426 | 08/11/97 | 400  | 21.50                    | 7.95          | 7.00                         | 80.0                             |
| 2427 | 08/11/97 | 500  | 21.45                    | 7.95          | 7.03                         | 80.2                             |
| 2428 | 08/11/97 | 600  | 21.35                    | 7.92          | 6.98                         | 79.6                             |
| 2429 | 08/11/97 | 700  | 21.32                    | 7.92          | 6.98                         | 80.7                             |
| 2430 | 08/11/97 | 800  | 21.22                    | 7.91          | 7.14                         | 81.2                             |
| 2431 | 08/11/97 | 900  | 21.25                    | 7.92          | 7.28                         | 82.8                             |
| 2432 | 08/11/97 | 1000 | 21.35                    | 7.93          | 7.31                         | 83.3                             |
| 2433 | 08/11/97 | 1100 | 21.40                    | 7.89          | 7.18                         | 81.9                             |
| 2434 | 08/11/97 | 1200 | 21.34                    | 7.86          | 7.14                         | 80.9                             |
| 2435 | 08/11/97 | 1300 | 21.19                    | 7.82          | 7.07                         | 80.0                             |
| 2436 | 08/11/97 | 1400 | 21.17                    | 7.85          | 7.10                         | 80.0                             |
| 2437 | 08/11/97 | 1500 | 21.19                    | 7.93          | 7.11                         | 80.4                             |
| 2438 | 08/11/97 | 1600 | 21.23                    | 7.95          | 7.06                         | 80.4                             |
| 2439 | 08/11/97 | 1700 | 21.73                    | 7.96          | 7.06                         | 81.0                             |
| 2440 | 08/11/97 | 1800 | 21.61                    | 7.97          | 7.05                         | 80.7                             |
| 2441 | 08/11/97 | 1900 | 21.42                    | 7.94          | 7.94                         | 79.1                             |
| 2442 | 08/11/97 | 2000 | 21.13                    | 7.94          | 6.94                         | 78.4                             |
| 2443 | 08/11/97 | 2100 | 20.87                    | 7.91          | 6.95                         | 78.4                             |
| 2444 | 08/11/97 | 2200 | 20.86                    | 7.88          | 6.92                         | 78.0                             |
| 2445 | 08/11/97 | 2300 | 20.66                    | 7.85          | 6.92                         | 77.3                             |
| 2446 | 08/12/97 | 0    | 20.63                    | 7.89          | 6.90                         | 77.5                             |
| 2447 | 08/12/97 | 100  | 20.63                    | 7.89          | 6.90                         | 77.5                             |
| 2448 | 08/12/97 | 200  | 20.63                    | 7.91          | 6.97                         | 78.3                             |
| 2449 | 08/12/97 | 300  | 20.66                    | 7.93          | 7.02                         | 78.9                             |
| 2450 | 08/12/97 | 400  | 20.58                    | 7.92          | 7.04                         | 79.2                             |
| 2451 | 08/12/97 | 500  | 20.55                    | 7.92          | 6.95                         | 78.0                             |
| 2452 | 08/12/97 | 600  | 20.52                    | 7.90          | 6.94                         | 77.7                             |
| 2453 | 08/12/97 | 700  | 20.42                    | 7.89          | 6.85                         | 77.1                             |
| 2454 | 08/12/97 | 800  | 20.45                    | 7.86          | 6.85                         | 78.0                             |
| 2455 | 08/12/97 | 900  | 20.29                    | 7.82          | 6.88                         | 76.9                             |
| 2456 | 08/12/97 | 1000 | 20.28                    | 7.83          | 6.86                         | 76.6                             |
| 2457 | 08/12/97 | 1100 | 20.03                    | 7.82          | 6.94                         | 77.1                             |
| 2458 | 08/12/97 | 1200 | 20.05                    | 7.83          | 6.85                         | 76.1                             |
| 2459 | 08/12/97 | 1300 | 20.07                    | 7.85          | 7.18                         | 79.8                             |
| 2460 | 08/12/97 | 1400 | 20.07                    | 7.85          | 7.18                         | 79.8                             |
| 2461 | 08/12/97 | 1500 | 20.07                    | 7.88          | 7.11                         | 79.0                             |
| 2462 | 08/12/97 | 1600 | 20.14                    | 7.88          | 7.11                         | 79.0                             |
| 2463 | 08/12/97 | 1700 | 20.14                    | 7.83          | 7.14                         | 79.5                             |
| 2464 | 08/12/97 | 1800 | 20.10                    | 7.83          | 7.09                         | 78.9                             |
| 2465 | 08/12/97 | 1900 | 20.16                    | 7.93          | 7.09                         | 78.9                             |
| 2466 | 08/12/97 | 2000 | 20.15                    | 7.91          | 6.93                         | 77.1                             |
| 2467 | 08/12/97 | 2100 | 20.05                    | 7.91          | 6.84                         | 76.1                             |
| 2468 | 08/12/97 | 2200 | 20.00                    | 7.88          | 6.85                         | 74.9                             |
| 2469 | 08/12/97 | 2300 | 19.95                    | 7.85          | 6.88                         | 75.3                             |
| 2470 | 08/13/97 | 0    | 19.95                    | 7.84          | 6.88                         | 75.4                             |
| 2471 | 08/13/97 | 100  | 19.88                    | 7.82          | 6.86                         | 75.9                             |
| 2472 | 08/13/97 | 200  | 19.85                    | 7.82          | 6.86                         | 75.9                             |
| 2473 | 08/13/97 | 300  | 19.83                    | 7.84          | 6.83                         | 75.6                             |
| 2474 | 08/13/97 | 400  | 19.77                    | 7.87          | 6.83                         | 75.6                             |
| 2475 | 08/13/97 | 500  | 19.74                    | 7.88          | 6.85                         | 75.6                             |

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2477 | 08/13/97 | 600  | 19.69                    | 7.89          | 6.88                         | 75.9                             |
| 2478 | 08/13/97 | 700  | 19.60                    | 7.82          | 7.21                         | 79.4                             |
| 2479 | 08/13/97 | 800  | 19.58                    | 7.85          | 7.35                         | 80.2                             |
| 2480 | 08/13/97 | 900  | 19.57                    | 7.88          | 7.30                         | 80.2                             |
| 2481 | 08/13/97 | 1000 | 19.72                    | 7.85          | 7.21                         | 79.4                             |
| 2482 | 08/13/97 | 1200 | 19.98                    | 7.92          | 7.12                         | 78.9                             |
| 2483 | 08/13/97 | 1300 | 20.31                    | 7.97          | 7.35                         | 81.8                             |
| 2484 | 08/13/97 | 1400 | 20.50                    | 7.99          | 6.90                         | 78.0                             |
| 2485 | 08/13/97 | 1500 | 20.59                    | 7.97          | 6.90                         | 78.0                             |
| 2486 | 08/13/97 | 1600 | 20.71                    | 7.99          | 6.88                         | 77.1                             |
| 2487 | 08/13/97 | 1700 | 20.77                    | 7.98          | 6.88                         | 77.1                             |
| 2488 | 08/13/97 | 1800 | 20.73                    | 7.98          | 6.87                         | 76.4                             |
| 2489 | 08/13/97 | 1900 | 20.68                    | 7.93          | 6.81                         | 76.4                             |
| 2490 | 08/13/97 | 2000 | 20.50                    | 7.92          | 6.73                         | 75.4                             |
| 2491 | 08/13/97 | 2100 | 20.31                    | 7.89          | 6.62                         | 73.9                             |
| 2492 | 08/13/97 | 2200 | 20.05                    | 7.83          | 6.52                         | 73.9                             |
| 2493 | 08/13/97 | 2300 | 19.77                    | 7.77          | 6.44                         | 71.1                             |
| 2494 | 08/14/97 | 0    | 19.55                    | 7.75          | 6.44                         | 71.1                             |
| 2495 | 08/14/97 | 100  | 19.36                    | 7.74          | 6.32                         | 70.4                             |
| 2496 | 08/14/97 | 200  | 19.20                    | 7.75          | 6.27                         | 71.4                             |
| 2497 | 08/14/97 | 300  | 19.07                    | 7.77          | 6.17                         | 71.7                             |
| 2498 | 08/14/97 | 400  | 19.01                    | 7.78          | 6.05                         | 71.2                             |
| 2499 | 08/14/97 | 500  | 18.96                    | 7.78          | 6.58                         | 71.6                             |
| 2500 | 08/14/97 | 600  | 18.96                    | 7.81          | 6.60                         | 71.7                             |
| 2501 | 08/14/97 | 700  | 18.89                    | 7.78          | 6.63                         | 72.0                             |
| 2502 | 08/14/97 | 800  | 18.84                    | 7.80          | 6.93                         | 72.0                             |
| 2503 | 08/14/97 | 900  | 18.88                    | 7.81          | 6.93                         | 72.2                             |
| 2504 | 08/14/97 | 1000 | 18.88                    | 7.80          | 7.15                         | 77.5                             |
| 2505 | 08/14/97 | 1100 | 18.85                    | 7.81          | 7.20                         | 75.8                             |
| 2506 | 08/14/97 | 1200 | 18.84                    | 7.79          | 7.19                         | 78.1                             |
| 2507 | 08/14/97 | 1300 | 18.76                    | 7.75          | 7.22                         | 78.2                             |
| 2508 | 08/14/97 | 1400 | 18.67                    | 7.75          | 7.10                         | 76.8                             |
| 2509 | 08/14/97 | 1500 | 18.58                    | 7.96          | 7.19                         | 77.7                             |
| 2510 | 08/14/97 | 1600 | 18.42                    | 7.93          | 7.37                         | 79.2                             |
| 2511 | 08/14/97 | 1700 | 18.31                    | 7.90          | 7.29                         | 78.7                             |
| 2512 | 08/14/97 | 1800 | 18.12                    | 7.87          | 7.19                         | 77.4                             |
| 2513 | 08/14/97 | 1900 | 17.94                    | 7.84          | 7.07                         | 75.8                             |
| 2514 | 08/14/97 | 2000 | 17.85                    | 7.82          | 7.01                         | 74.8                             |
| 2515 | 08/14/97 | 2100 | 17.76                    | 7.81          | 6.99                         | 74.4                             |
| 2516 | 08/14/97 | 2200 | 17.67                    | 7.78          | 6.97                         | 74.4                             |
| 2517 | 08/14/97 | 2300 | 17.64                    | 7.80          | 6.92                         | 73.0                             |
| 2518 | 08/15/97 | 100  | 17.63                    | 7.83          | 7.10                         | 74.6                             |
| 2519 | 08/15/97 | 200  | 17.60                    | 7.83          | 7.05                         | 74.6                             |
| 2520 | 08/15/97 | 300  | 17.60                    | 7.83          | 6.97                         | 74.8                             |
| 2521 | 08/15/97 | 400  | 17.60                    | 7.83          | 6.99                         | 74.2                             |
| 2522 | 08/15/97 | 500  | 17.63                    | 7.84          | 7.04                         | 74.2                             |
| 2523 | 08/15/97 | 600  | 17.65                    | 7.86          | 7.08                         | 75.2                             |
| 2524 | 08/15/97 | 700  | 17.71                    | 7.87          | 7.15                         | 76.0                             |
| 2525 | 08/15/97 | 800  | 17.82                    | 7.91          | 7.15                         | 76.2                             |
| 2526 | 08/15/97 | 900  | 17.88                    | 7.92          | 7.24                         | 77.1                             |
| 2527 | 08/15/97 | 1000 | 17.97                    | 7.92          | 7.16                         | 77.1                             |
| 2528 | 08/15/97 | 1100 | 18.07                    | 7.92          | 7.02                         | 75.0                             |
| 2529 | 08/15/97 | 1200 | 18.28                    | 7.94          | 7.01                         | 75.1                             |
| 2530 | 08/15/97 | 1300 | 18.60                    | 7.97          | 7.06                         | 76.0                             |
| 2531 | 08/15/97 | 1400 | 18.93                    | 7.97          | 7.11                         | 77.0                             |
| 2532 | 08/15/97 | 1500 | 19.29                    | 8.01          | 7.28                         | 79.4                             |
| 2533 | 08/15/97 | 1600 | 19.60                    | 8.04          | 7.30                         | 80.1                             |
| 2534 | 08/15/97 | 1700 | 19.90                    | 8.08          | 7.27                         | 80.1                             |
| 2535 | 08/15/97 | 1800 | 19.97                    | 8.08          | 7.33                         | 81.0                             |
| 2536 | 08/15/97 | 1900 | 19.95                    | 8.06          | 7.35                         | 81.0                             |
| 2537 | 08/15/97 | 2000 | 19.85                    | 8.06          | 7.28                         | 80.9                             |
| 2538 | 08/15/97 | 2100 | 19.05                    | 8.01          | 7.28                         | 79.1                             |
| 2539 | 08/15/97 | 2200 | 18.76                    | 7.97          | 7.27                         | 78.7                             |
| 2540 | 08/15/97 | 2300 | 18.61                    | 7.96          | 7.12                         | 77.5                             |
| 2541 | 08/16/97 | 0    | 18.45                    | 7.94          | 7.19                         | 77.5                             |
| 2542 | 08/16/97 | 100  | 18.35                    | 7.94          | 7.18                         | 77.5                             |
| 2543 | 08/16/97 | 200  | 18.33                    | 7.95          | 7.18                         | 77.5                             |
| 2544 | 08/16/97 | 300  | 18.35                    | 7.96          | 7.18                         | 77.5                             |
| 2545 | 08/16/97 | 400  | 18.50                    | 8.00          | 7.42                         | 80.4                             |
| 2546 | 08/16/97 | 500  | 18.67                    | 8.01          | 7.35                         | 79.7                             |
| 2547 | 08/16/97 | 600  | 18.79                    | 8.00          | 7.31                         | 79.2                             |
| 2548 | 08/16/97 | 700  | 18.62                    | 8.01          | 7.44                         | 81.0                             |
| 2549 | 08/16/97 | 800  | 18.91                    | 8.02          | 7.45                         | 81.0                             |
| 2550 | 08/16/97 | 900  | 18.91                    | 8.02          | 7.49                         | 81.8                             |

F40001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2551 | 08/16/97 | 900  | 19.07                    | 8.04          | 7.56                         | 82.7                             |
| 2552 | 08/16/97 | 1000 | 19.20                    | 8.07          | 7.57                         | 83.0                             |
| 2553 | 08/16/97 | 1100 | 19.45                    | 8.09          | 7.67                         | 83.5                             |
| 2554 | 08/16/97 | 1200 | 19.58                    | 8.10          | 7.66                         | 84.0                             |
| 2555 | 08/16/97 | 1300 | 19.71                    | 8.11          | 7.57                         | 84.4                             |
| 2556 | 08/16/97 | 1400 | 19.81                    | 8.11          | 7.61                         | 84.9                             |
| 2557 | 08/16/97 | 1500 | 19.95                    | 8.12          | 7.57                         | 85.0                             |
| 2558 | 08/16/97 | 1600 | 19.95                    | 8.12          | 7.64                         | 84.9                             |
| 2559 | 08/16/97 | 1700 | 19.90                    | 8.12          | 7.64                         | 84.9                             |
| 2560 | 08/16/97 | 1800 | 19.71                    | 8.11          | 7.72                         | 85.5                             |
| 2561 | 08/16/97 | 1900 | 19.27                    | 8.09          | 7.71                         | 84.7                             |
| 2562 | 08/16/97 | 2000 | 19.27                    | 8.09          | 7.71                         | 84.4                             |
| 2563 | 08/16/97 | 2100 | 19.03                    | 8.08          | 7.69                         | 83.4                             |
| 2564 | 08/16/97 | 2200 | 18.94                    | 8.07          | 7.62                         | 83.2                             |
| 2565 | 08/16/97 | 2300 | 18.94                    | 8.08          | 7.73                         | 84.2                             |
| 2566 | 08/17/97 | 100  | 18.94                    | 8.08          | 7.67                         | 83.6                             |
| 2567 | 08/17/97 | 200  | 18.96                    | 8.12          | 7.71                         | 84.0                             |
| 2568 | 08/17/97 | 300  | 18.96                    | 8.12          | 7.71                         | 84.0                             |
| 2569 | 08/17/97 | 400  | 18.94                    | 8.11          | 7.71                         | 84.4                             |
| 2570 | 08/17/97 | 500  | 18.94                    | 8.09          | 7.71                         | 84.4                             |
| 2571 | 08/17/97 | 600  | 18.94                    | 8.09          | 7.71                         | 84.4                             |
| 2572 | 08/17/97 | 700  | 18.88                    | 8.08          | 7.67                         | 83.3                             |
| 2573 | 08/17/97 | 800  | 18.79                    | 8.08          | 7.71                         | 84.0                             |
| 2574 | 08/17/97 | 900  | 18.77                    | 8.10          | 7.73                         | 84.0                             |
| 2575 | 08/17/97 | 1000 | 18.70                    | 8.09          | 7.72                         | 83.8                             |
| 2576 | 08/17/97 | 1100 | 18.64                    | 8.08          | 7.72                         | 83.5                             |
| 2577 | 08/17/97 | 1200 | 18.64                    | 8.08          | 7.73                         | 83.5                             |
| 2578 | 08/17/97 | 1300 | 18.46                    | 8.06          | 7.63                         | 82.2                             |
| 2579 | 08/17/97 | 1400 | 18.38                    | 8.04          | 7.60                         | 82.0                             |
| 2580 | 08/17/97 | 1500 | 18.28                    | 8.04          | 7.56                         | 81.4                             |
| 2581 | 08/17/97 | 1600 | 18.28                    | 8.04          | 7.56                         | 81.4                             |
| 2582 | 08/17/97 | 1700 | 18.29                    | 8.06          | 7.61                         | 81.9                             |
| 2583 | 08/17/97 | 1800 | 18.29                    | 8.06          | 7.70                         | 82.1                             |
| 2584 | 08/17/97 | 1900 | 18.15                    | 8.10          | 7.71                         | 82.4                             |
| 2585 | 08/17/97 | 2000 | 18.15                    | 8.10          | 7.75                         | 82.5                             |
| 2586 | 08/17/97 | 2100 | 18.09                    | 8.12          | 7.80                         | 82.5                             |
| 2587 | 08/17/97 | 2200 | 18.09                    | 8.12          | 7.97                         | 82.7                             |
| 2588 | 08/17/97 | 2300 | 18.09                    | 8.12          | 8.00                         | 82.7                             |
| 2589 | 08/18/97 | 100  | 18.05                    | 8.12          | 7.88                         | 82.4                             |
| 2590 | 08/18/97 | 200  | 17.98                    | 8.12          | 7.90                         | 82.4                             |
| 2591 | 08/18/97 | 300  | 17.95                    | 8.12          | 7.97                         | 82.4                             |
| 2592 | 08/18/97 | 400  | 17.93                    | 8.12          | 7.99                         | 82.4                             |
| 2593 | 08/18/97 | 500  | 17.41                    | 8.06          | 7.81                         | 81.4                             |
| 2594 | 08/18/97 | 600  | 17.41                    | 8.06          | 7.81                         | 81.4                             |
| 2595 | 08/18/97 | 700  | 17.56                    | 8.11          | 7.81                         | 81.4                             |
| 2596 | 08/18/97 | 800  | 17.23                    | 8.04          | 7.61                         | 80.1                             |
| 2597 | 08/18/97 | 900  | 17.21                    | 8.04          | 7.42                         | 78.1                             |
| 2598 | 08/18/97 | 1000 | 17.06                    | 8.04          | 7.45                         | 78.5                             |
| 2599 | 08/18/97 | 1100 | 17.06                    | 8.04          | 7.44                         | 78.5                             |
| 2600 | 08/18/97 | 1200 | 17.06                    | 8.03          | 7.34                         | 77.5                             |
| 2601 | 08/18/97 | 1300 | 17.25                    | 8.07          | 7.23                         | 76.1                             |
| 2602 | 08/18/97 | 1400 | 17.18                    | 8.04          | 6.93                         | 72.6                             |
| 2603 | 08/18/97 | 1500 | 17.24                    | 8.08          | 7.46                         | 78.6                             |
| 2604 | 08/18/97 | 1600 | 17.24                    | 8.08          | 7.52                         | 79.1                             |
| 2605 | 08/18/97 | 1700 | 17.23                    | 8.02          | 7.75                         | 81.6                             |
| 2606 | 08/18/97 | 1800 | 17.23                    | 8.05          | 7.82                         | 82.2                             |
| 2607 | 08/18/97 | 1900 | 17.05                    | 8.06          | 7.81                         | 82.2                             |
| 2608 | 08/18/97 | 2000 | 17.05                    | 8.06          | 7.89                         | 82.2                             |
| 2609 | 08/18/97 | 2100 | 16.99                    | 8.07          | 7.95                         | 82.2                             |
| 2610 | 08/18/97 | 2200 | 16.99                    | 8.07          | 8.01                         | 83.3                             |
| 2611 | 08/18/97 | 2300 | 16.95                    | 8.07          | 8.02                         | 83.4                             |
| 2612 | 08/19/97 | 0    | 17.04                    | 8.10          | 8.20                         | 86.0                             |
| 2613 | 08/19/97 | 100  | 17.04                    | 8.12          | 8.31                         | 87.2                             |
| 2614 | 08/19/97 | 200  | 17.02                    | 8.12          | 8.26                         | 86.9                             |
| 2615 | 08/19/97 | 300  | 17.02                    | 8.12          | 8.26                         | 86.9                             |
| 2616 | 08/19/97 | 400  | 17.01                    | 8.11          | 8.35                         | 87.5                             |
| 2617 | 08/19/97 | 500  | 16.99                    | 8.14          | 8.42                         | 88.1                             |
| 2618 | 08/19/97 | 600  | 16.99                    | 8.14          | 8.43                         | 88.1                             |
| 2619 | 08/19/97 | 700  | 16.89                    | 8.14          | 8.39                         | 87.7                             |
| 2620 | 08/19/97 | 800  | 16.89                    | 8.14          | 8.40                         | 87.9                             |
| 2621 | 08/19/97 | 900  | 16.92                    | 8.14          | 8.44                         | 88.4                             |
| 2622 | 08/19/97 | 1000 | 16.97                    | 8.14          | 8.44                         | 88.4                             |
| 2623 | 08/19/97 | 1100 | 16.94                    | 8.14          | 8.48                         | 88.7                             |
| 2624 | 08/19/97 | 1200 | 16.94                    | 8.14          | 8.48                         | 88.7                             |
| 2625 | 08/19/97 | 1300 | 16.94                    | 8.14          | 8.48                         | 88.7                             |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|---------|------------------------|-------------------------------|
| 2626 | 08/19/97 | 1200 | 16.82             | 8.13    | 8.42                   | 87.9                          |
| 2627 | 08/19/97 | 1300 | 16.76             | 8.10    | 8.32                   | 87.1                          |
| 2628 | 08/19/97 | 1400 | 16.60             | 8.08    | 8.37                   | 86.6                          |
| 2629 | 08/19/97 | 1500 | 16.43             | 8.07    | 8.44                   | 86.9                          |
| 2630 | 08/19/97 | 1600 | 16.43             | 8.07    | 8.48                   | 87.4                          |
| 2631 | 08/19/97 | 1700 | 16.43             | 8.06    | 8.26                   | 84.9                          |
| 2632 | 08/19/97 | 1800 | 16.57             | 8.07    | 8.26                   | 85.8                          |
| 2633 | 08/19/97 | 1900 | 16.57             | 8.06    | 8.26                   | 85.8                          |
| 2634 | 08/19/97 | 2000 | 16.06             | 8.10    | 8.27                   | 86.3                          |
| 2635 | 08/19/97 | 2100 | 17.18             | 8.12    | 8.34                   | 87.7                          |
| 2636 | 08/19/97 | 2200 | 17.29             | 8.14    | 8.37                   | 88.0                          |
| 2637 | 08/20/97 | 0    | 17.29             | 8.13    | 8.35                   | 88.0                          |
| 2638 | 08/20/97 | 100  | 17.28             | 8.13    | 8.35                   | 88.0                          |
| 2639 | 08/20/97 | 200  | 17.21             | 8.13    | 8.31                   | 87.4                          |
| 2640 | 08/20/97 | 300  | 17.16             | 8.13    | 8.31                   | 87.4                          |
| 2641 | 08/20/97 | 400  | 17.01             | 8.12    | 8.34                   | 87.7                          |
| 2642 | 08/20/97 | 500  | 17.01             | 8.12    | 8.34                   | 87.7                          |
| 2643 | 08/20/97 | 600  | 16.82             | 8.11    | 8.47                   | 88.6                          |
| 2644 | 08/20/97 | 700  | 16.82             | 8.11    | 8.48                   | 88.7                          |
| 2645 | 08/20/97 | 800  | 16.89             | 8.12    | 8.48                   | 88.7                          |
| 2646 | 08/20/97 | 900  | 16.89             | 8.12    | 8.41                   | 88.4                          |
| 2647 | 08/20/97 | 1000 | 16.89             | 8.12    | 8.41                   | 88.7                          |
| 2648 | 08/20/97 | 1100 | 16.89             | 8.12    | 8.41                   | 88.7                          |
| 2649 | 08/20/97 | 1200 | 16.89             | 8.12    | 8.41                   | 88.7                          |
| 2650 | 08/20/97 | 1300 | 16.80             | 8.08    | 8.16                   | 85.9                          |
| 2651 | 08/20/97 | 1400 | 16.76             | 8.05    | 8.27                   | 86.6                          |
| 2652 | 08/20/97 | 1500 | 16.68             | 8.02    | 8.30                   | 86.3                          |
| 2653 | 08/20/97 | 1600 | 16.68             | 8.01    | 8.30                   | 86.3                          |
| 2654 | 08/20/97 | 1700 | 16.68             | 8.01    | 8.30                   | 86.3                          |
| 2655 | 08/20/97 | 1800 | 16.68             | 8.01    | 8.30                   | 86.3                          |
| 2656 | 08/20/97 | 1900 | 16.68             | 8.01    | 8.30                   | 86.3                          |
| 2657 | 08/20/97 | 2000 | 16.68             | 8.01    | 8.30                   | 86.3                          |
| 2658 | 08/20/97 | 2100 | 16.70             | 8.00    | 8.31                   | 86.4                          |
| 2659 | 08/20/97 | 2200 | 16.72             | 8.00    | 8.31                   | 86.4                          |
| 2660 | 08/20/97 | 2300 | 16.72             | 8.00    | 8.31                   | 86.4                          |
| 2661 | 08/21/97 | 0    | 16.70             | 8.00    | 8.31                   | 86.4                          |
| 2662 | 08/21/97 | 100  | 16.70             | 8.00    | 8.31                   | 86.4                          |
| 2663 | 08/21/97 | 200  | 16.67             | 8.02    | 8.30                   | 86.3                          |
| 2664 | 08/21/97 | 300  | 16.62             | 8.01    | 8.08                   | 84.6                          |
| 2665 | 08/21/97 | 400  | 16.52             | 8.00    | 8.02                   | 83.1                          |
| 2666 | 08/21/97 | 500  | 16.45             | 8.00    | 8.03                   | 83.2                          |
| 2667 | 08/21/97 | 600  | 16.38             | 8.00    | 8.06                   | 83.5                          |
| 2668 | 08/21/97 | 700  | 16.38             | 8.00    | 8.07                   | 83.5                          |
| 2669 | 08/21/97 | 800  | 16.38             | 8.00    | 8.07                   | 83.5                          |
| 2670 | 08/21/97 | 900  | 16.31             | 7.98    | 8.03                   | 82.1                          |
| 2671 | 08/21/97 | 1000 | 16.26             | 7.98    | 8.03                   | 82.1                          |
| 2672 | 08/21/97 | 1100 | 16.23             | 7.97    | 7.96                   | 82.1                          |
| 2673 | 08/21/97 | 1200 | 16.23             | 7.97    | 7.96                   | 82.1                          |
| 2674 | 08/21/97 | 1300 | 16.35             | 7.97    | 8.02                   | 82.1                          |
| 2675 | 08/21/97 | 1400 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2676 | 08/21/97 | 1500 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2677 | 08/21/97 | 1600 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2678 | 08/21/97 | 1700 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2679 | 08/21/97 | 1800 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2680 | 08/21/97 | 1900 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2681 | 08/21/97 | 2000 | 16.43             | 7.98    | 8.03                   | 82.1                          |
| 2682 | 08/21/97 | 2100 | 16.31             | 7.97    | 8.04                   | 81.1                          |
| 2683 | 08/21/97 | 2200 | 16.26             | 7.96    | 8.04                   | 81.1                          |
| 2684 | 08/21/97 | 2300 | 16.09             | 7.95    | 8.09                   | 80.9                          |
| 2685 | 08/21/97 | 2400 | 15.98             | 7.95    | 8.10                   | 80.9                          |
| 2686 | 08/21/97 | 2500 | 15.98             | 7.95    | 8.10                   | 80.9                          |
| 2687 | 08/21/97 | 100  | 15.98             | 7.95    | 8.10                   | 80.9                          |
| 2688 | 08/21/97 | 200  | 15.94             | 8.01    | 8.18                   | 80.9                          |
| 2689 | 08/21/97 | 300  | 15.94             | 8.02    | 8.18                   | 80.9                          |
| 2690 | 08/21/97 | 400  | 15.86             | 8.03    | 8.27                   | 80.9                          |
| 2691 | 08/21/97 | 500  | 15.86             | 8.04    | 8.27                   | 80.9                          |
| 2692 | 08/21/97 | 600  | 15.86             | 8.04    | 8.27                   | 80.9                          |
| 2693 | 08/21/97 | 700  | 15.86             | 8.04    | 8.27                   | 80.9                          |
| 2694 | 08/21/97 | 800  | 15.74             | 8.04    | 8.27                   | 80.9                          |
| 2695 | 08/21/97 | 900  | 15.74             | 8.04    | 8.27                   | 80.9                          |
| 2696 | 08/21/97 | 1000 | 15.83             | 8.04    | 8.27                   | 80.9                          |
| 2697 | 08/21/97 | 1100 | 15.83             | 8.04    | 8.27                   | 80.9                          |
| 2698 | 08/21/97 | 1200 | 15.83             | 8.04    | 8.27                   | 80.9                          |
| 2699 | 08/21/97 | 1300 | 15.83             | 8.04    | 8.27                   | 80.9                          |
| 2700 | 08/21/97 | 1400 | 15.26             | 8.02    | 8.22                   | 80.9                          |

FM0007

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2701 | 08/22/97 | 1500 | 16.28                    | 8.01          | 16                           | 84.2                             |
| 2702 | 08/22/97 | 1500 | 16.29                    | 8.02          | 16                           | 84.2                             |
| 2703 | 08/22/97 | 1700 | 16.30                    | 8.03          | 17                           | 84.3                             |
| 2704 | 08/22/97 | 1800 | 16.30                    | 8.01          | 17                           | 84.3                             |
| 2705 | 08/22/97 | 2000 | 16.45                    | 8.00          | 22                           | 85.5                             |
| 2706 | 08/22/97 | 2100 | 16.35                    | 8.00          | 25                           | 85.5                             |
| 2707 | 08/22/97 | 2200 | 16.35                    | 7.99          | 22                           | 85.2                             |
| 2708 | 08/22/97 | 2300 | 16.09                    | 7.98          | 22                           | 82.2                             |
| 2709 | 08/23/97 | 0    | 15.49                    | 8.04          | 20                           | 82.2                             |
| 2710 | 08/23/97 | 100  | 15.49                    | 8.00          | 20                           | 82.2                             |
| 2711 | 08/23/97 | 200  | 15.98                    | 8.01          | 23                           | 84.4                             |
| 2712 | 08/23/97 | 300  | 15.98                    | 8.01          | 23                           | 84.4                             |
| 2713 | 08/23/97 | 400  | 15.98                    | 8.01          | 23                           | 84.4                             |
| 2714 | 08/23/97 | 500  | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2715 | 08/23/97 | 600  | 15.98                    | 8.03          | 25                           | 84.5                             |
| 2716 | 08/23/97 | 700  | 15.98                    | 8.03          | 25                           | 84.5                             |
| 2717 | 08/23/97 | 800  | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2718 | 08/23/97 | 900  | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2719 | 08/23/97 | 1000 | 15.05                    | 8.03          | 25                           | 84.5                             |
| 2720 | 08/23/97 | 1100 | 15.16                    | 8.00          | 25                           | 84.5                             |
| 2721 | 08/23/97 | 1200 | 15.36                    | 7.98          | 25                           | 84.5                             |
| 2722 | 08/23/97 | 1300 | 15.47                    | 7.98          | 25                           | 84.5                             |
| 2723 | 08/23/97 | 1400 | 16.43                    | 7.97          | 25                           | 84.5                             |
| 2724 | 08/23/97 | 1500 | 16.18                    | 7.95          | 25                           | 84.5                             |
| 2725 | 08/23/97 | 1600 | 16.18                    | 7.95          | 25                           | 84.5                             |
| 2726 | 08/23/97 | 1700 | 16.22                    | 7.95          | 25                           | 84.5                             |
| 2727 | 08/23/97 | 1800 | 16.22                    | 7.95          | 25                           | 84.5                             |
| 2728 | 08/23/97 | 1900 | 16.22                    | 7.95          | 25                           | 84.5                             |
| 2729 | 08/23/97 | 2000 | 16.22                    | 7.95          | 25                           | 84.5                             |
| 2730 | 08/23/97 | 2100 | 15.78                    | 7.96          | 25                           | 84.5                             |
| 2731 | 08/23/97 | 2200 | 15.81                    | 7.96          | 25                           | 84.5                             |
| 2732 | 08/23/97 | 2300 | 15.86                    | 7.97          | 25                           | 84.5                             |
| 2733 | 08/23/97 | 2300 | 15.86                    | 7.97          | 25                           | 84.5                             |
| 2734 | 08/23/97 | 0    | 15.89                    | 7.98          | 25                           | 84.5                             |
| 2735 | 08/24/97 | 100  | 15.89                    | 7.98          | 25                           | 84.5                             |
| 2736 | 08/24/97 | 200  | 15.93                    | 8.00          | 25                           | 84.5                             |
| 2737 | 08/24/97 | 300  | 15.93                    | 8.00          | 25                           | 84.5                             |
| 2738 | 08/24/97 | 400  | 15.96                    | 8.01          | 25                           | 84.5                             |
| 2739 | 08/24/97 | 500  | 15.96                    | 8.01          | 25                           | 84.5                             |
| 2740 | 08/24/97 | 600  | 15.98                    | 8.01          | 25                           | 84.5                             |
| 2741 | 08/24/97 | 700  | 15.98                    | 8.01          | 25                           | 84.5                             |
| 2742 | 08/24/97 | 800  | 15.98                    | 8.01          | 25                           | 84.5                             |
| 2743 | 08/24/97 | 900  | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2744 | 08/24/97 | 1000 | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2745 | 08/24/97 | 1100 | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2746 | 08/24/97 | 1200 | 15.98                    | 8.02          | 25                           | 84.5                             |
| 2747 | 08/24/97 | 1300 | 15.94                    | 8.01          | 25                           | 84.5                             |
| 2748 | 08/24/97 | 1400 | 15.94                    | 8.02          | 25                           | 84.5                             |
| 2749 | 08/24/97 | 1500 | 15.96                    | 8.02          | 25                           | 84.5                             |
| 2750 | 08/24/97 | 1600 | 15.96                    | 8.02          | 25                           | 84.5                             |
| 2751 | 08/24/97 | 1700 | 15.99                    | 8.01          | 25                           | 84.5                             |
| 2752 | 08/24/97 | 1800 | 15.99                    | 8.01          | 25                           | 84.5                             |
| 2753 | 08/24/97 | 1900 | 15.99                    | 8.01          | 25                           | 84.5                             |
| 2754 | 08/24/97 | 2000 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2755 | 08/24/97 | 2100 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2756 | 08/24/97 | 2200 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2757 | 08/24/97 | 2300 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2758 | 08/24/97 | 0    | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2759 | 08/24/97 | 100  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2760 | 08/24/97 | 200  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2761 | 08/24/97 | 300  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2762 | 08/24/97 | 400  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2763 | 08/24/97 | 500  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2764 | 08/24/97 | 600  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2765 | 08/24/97 | 700  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2766 | 08/24/97 | 800  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2767 | 08/24/97 | 900  | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2768 | 08/24/97 | 1000 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2769 | 08/24/97 | 1100 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2770 | 08/24/97 | 1200 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2771 | 08/24/97 | 1300 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2772 | 08/24/97 | 1400 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2773 | 08/24/97 | 1500 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2774 | 08/24/97 | 1600 | 15.99                    | 8.02          | 25                           | 84.5                             |
| 2775 | 08/24/97 | 1700 | 15.99                    | 8.02          | 25                           | 84.5                             |

| OBS  | DATE     | HOUR | TEMP. (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|--------------------|---------|------------------------|-------------------------------|
| 2776 | 08/25/97 | 1800 | 15.89              | 7.98    | 7.96                   | 81.5                          |
| 2777 | 08/25/97 | 1900 | 15.91              | 7.99    | 7.88                   | 80.7                          |
| 2778 | 08/25/97 | 2000 | 16.01              | 8.01    | 7.90                   | 81.0                          |
| 2779 | 08/25/97 | 2100 | 16.12              | 8.03    | 7.94                   | 81.2                          |
| 2780 | 08/25/97 | 2200 | 16.47              | 8.04    | 7.85                   | 81.3                          |
| 2781 | 08/25/97 | 2300 | 16.50              | 8.05    | 7.92                   | 81.5                          |
| 2782 | 08/26/97 | 0    | 16.67              | 8.06    | 7.93                   | 81.5                          |
| 2783 | 08/26/97 | 100  | 16.72              | 8.07    | 7.83                   | 80.1                          |
| 2784 | 08/26/97 | 200  | 16.79              | 8.08    | 7.68                   | 80.1                          |
| 2785 | 08/26/97 | 300  | 16.79              | 8.08    | 7.88                   | 82.0                          |
| 2786 | 08/26/97 | 400  | 16.82              | 8.08    | 7.95                   | 82.4                          |
| 2787 | 08/26/97 | 500  | 16.82              | 8.08    | 7.95                   | 82.4                          |
| 2788 | 08/26/97 | 600  | 16.82              | 8.08    | 7.95                   | 82.4                          |
| 2789 | 08/26/97 | 700  | 16.97              | 8.08    | 7.78                   | 81.5                          |
| 2790 | 08/26/97 | 800  | 16.95              | 8.08    | 7.89                   | 82.5                          |
| 2791 | 08/26/97 | 900  | 17.02              | 8.08    | 7.91                   | 82.8                          |
| 2792 | 08/26/97 | 1000 | 17.02              | 8.11    | 8.03                   | 84.1                          |
| 2793 | 08/26/97 | 1100 | 17.17              | 8.11    | 7.89                   | 83.7                          |
| 2794 | 08/26/97 | 1200 | 17.36              | 8.14    | 7.93                   | 83.7                          |
| 2795 | 08/26/97 | 1300 | 17.50              | 8.14    | 7.95                   | 84.4                          |
| 2796 | 08/26/97 | 1400 | 17.63              | 8.14    | 7.95                   | 84.4                          |
| 2797 | 08/26/97 | 1500 | 17.73              | 8.14    | 7.83                   | 83.4                          |
| 2798 | 08/26/97 | 1600 | 17.96              | 8.14    | 7.80                   | 82.9                          |
| 2799 | 08/26/97 | 1700 | 18.26              | 8.14    | 7.71                   | 81.7                          |
| 2800 | 08/26/97 | 1800 | 18.28              | 8.14    | 7.60                   | 81.7                          |
| 2801 | 08/26/97 | 1900 | 18.28              | 8.13    | 7.62                   | 81.7                          |
| 2802 | 08/26/97 | 2000 | 18.17              | 8.12    | 7.55                   | 81.5                          |
| 2803 | 08/26/97 | 2100 | 17.87              | 8.09    | 7.52                   | 80.3                          |
| 2804 | 08/26/97 | 2200 | 17.62              | 8.09    | 7.44                   | 79.0                          |
| 2805 | 08/26/97 | 2300 | 17.62              | 8.09    | 7.46                   | 79.2                          |
| 2806 | 08/27/97 | 0    | 17.70              | 8.11    | 7.52                   | 80.3                          |
| 2807 | 08/27/97 | 100  | 17.92              | 8.11    | 7.44                   | 79.0                          |
| 2808 | 08/27/97 | 200  | 18.10              | 8.11    | 7.61                   | 81.5                          |
| 2809 | 08/27/97 | 300  | 18.27              | 8.14    | 7.41                   | 79.2                          |
| 2810 | 08/27/97 | 400  | 18.05              | 8.14    | 7.41                   | 79.2                          |
| 2811 | 08/27/97 | 500  | 17.82              | 8.14    | 7.41                   | 79.2                          |
| 2812 | 08/27/97 | 600  | 17.82              | 8.14    | 7.41                   | 79.2                          |
| 2813 | 08/27/97 | 700  | 17.82              | 8.14    | 7.41                   | 79.2                          |
| 2814 | 08/27/97 | 800  | 17.82              | 8.14    | 7.41                   | 79.2                          |
| 2815 | 08/27/97 | 900  | 17.82              | 8.14    | 7.41                   | 79.2                          |
| 2816 | 08/27/97 | 1000 | 18.26              | 8.17    | 7.87                   | 82.4                          |
| 2817 | 08/27/97 | 1100 | 18.26              | 8.17    | 7.95                   | 82.5                          |
| 2818 | 08/27/97 | 1200 | 19.01              | 8.20    | 7.90                   | 86.2                          |
| 2819 | 08/27/97 | 1300 | 19.22              | 8.20    | 7.75                   | 85.6                          |
| 2820 | 08/27/97 | 1400 | 19.45              | 8.00    | 7.41                   | 82.5                          |
| 2821 | 08/27/97 | 1500 | 19.45              | 8.00    | 7.41                   | 82.5                          |
| 2822 | 08/27/97 | 1600 | 19.69              | 8.00    | 7.45                   | 82.7                          |
| 2823 | 08/27/97 | 1700 | 19.71              | 8.04    | 7.35                   | 82.4                          |
| 2824 | 08/27/97 | 1800 | 19.73              | 8.04    | 7.46                   | 82.4                          |
| 2825 | 08/27/97 | 1900 | 19.64              | 8.02    | 7.50                   | 82.4                          |
| 2826 | 08/27/97 | 2000 | 19.43              | 8.00    | 7.42                   | 82.4                          |
| 2827 | 08/27/97 | 2100 | 19.19              | 8.00    | 7.42                   | 82.4                          |
| 2828 | 08/27/97 | 2200 | 18.97              | 7.99    | 7.41                   | 82.4                          |
| 2829 | 08/27/97 | 2300 | 18.76              | 7.97    | 7.41                   | 82.4                          |
| 2830 | 08/28/97 | 0    | 18.66              | 7.98    | 7.42                   | 82.4                          |
| 2831 | 08/28/97 | 100  | 18.61              | 7.98    | 7.42                   | 82.4                          |
| 2832 | 08/28/97 | 200  | 18.51              | 7.97    | 7.40                   | 82.4                          |
| 2833 | 08/28/97 | 300  | 18.59              | 7.97    | 7.39                   | 82.4                          |
| 2834 | 08/28/97 | 400  | 18.56              | 7.97    | 7.41                   | 82.4                          |
| 2835 | 08/28/97 | 500  | 18.56              | 7.97    | 7.41                   | 82.4                          |
| 2836 | 08/28/97 | 600  | 18.54              | 7.97    | 7.41                   | 82.4                          |
| 2837 | 08/28/97 | 700  | 18.52              | 7.97    | 7.41                   | 82.4                          |
| 2838 | 08/28/97 | 800  | 18.50              | 7.98    | 7.40                   | 82.4                          |
| 2839 | 08/28/97 | 900  | 18.56              | 7.98    | 7.32                   | 82.4                          |
| 2840 | 08/28/97 | 1000 | 18.56              | 7.98    | 7.32                   | 82.4                          |
| 2841 | 08/28/97 | 1100 | 18.80              | 8.05    | 7.35                   | 81.4                          |
| 2842 | 08/28/97 | 1200 | 18.87              | 8.05    | 7.35                   | 81.4                          |
| 2843 | 08/28/97 | 1300 | 18.87              | 8.05    | 7.35                   | 81.4                          |
| 2844 | 08/28/97 | 1400 | 18.88              | 8.05    | 7.35                   | 81.4                          |
| 2845 | 08/28/97 | 1500 | 18.88              | 8.05    | 7.35                   | 81.4                          |
| 2846 | 08/28/97 | 1600 | 18.90              | 8.06    | 7.28                   | 80.0                          |
| 2847 | 08/28/97 | 1700 | 18.90              | 8.06    | 7.26                   | 80.0                          |
| 2848 | 08/28/97 | 1800 | 18.78              | 8.04    | 7.23                   | 80.0                          |
| 2849 | 08/28/97 | 1900 | 18.68              | 8.02    | 7.24                   | 80.0                          |
| 2850 | 08/28/97 | 2000 | 18.57              | 8.00    | 7.17                   | 80.0                          |

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 2851 | 08/28/97 | 2100 | 18.44                    | 8.00          | 8.16                         | 88.5                             |
| 2852 | 08/28/97 | 2200 | 18.26                    | 7.98          | 8.15                         | 88.4                             |
| 2853 | 08/28/97 | 2300 | 17.97                    | 7.98          | 8.14                         | 88.3                             |
| 2854 | 08/29/97 | 100  | 17.82                    | 7.99          | 8.14                         | 88.3                             |
| 2855 | 08/29/97 | 200  | 17.82                    | 7.99          | 8.14                         | 88.3                             |
| 2856 | 08/29/97 | 300  | 17.84                    | 8.00          | 8.25                         | 88.0                             |
| 2857 | 08/29/97 | 400  | 17.84                    | 8.00          | 8.25                         | 88.0                             |
| 2858 | 08/29/97 | 500  | 17.80                    | 8.01          | 8.24                         | 88.0                             |
| 2859 | 08/29/97 | 600  | 17.74                    | 8.02          | 8.24                         | 88.0                             |
| 2860 | 08/29/97 | 700  | 17.74                    | 8.02          | 8.24                         | 88.0                             |
| 2861 | 08/29/97 | 800  | 17.74                    | 8.02          | 8.24                         | 88.0                             |
| 2862 | 08/29/97 | 900  | 17.74                    | 8.02          | 8.24                         | 88.0                             |
| 2863 | 08/29/97 | 1000 | 17.82                    | 8.03          | 8.24                         | 88.2                             |
| 2864 | 08/29/97 | 1100 | 17.82                    | 8.03          | 8.24                         | 88.2                             |
| 2865 | 08/29/97 | 1200 | 17.82                    | 8.03          | 8.24                         | 88.2                             |
| 2866 | 08/29/97 | 1300 | 17.85                    | 8.00          | 8.26                         | 88.1                             |
| 2867 | 08/29/97 | 1400 | 17.86                    | 7.98          | 8.26                         | 88.1                             |
| 2868 | 08/29/97 | 1500 | 17.86                    | 7.98          | 8.26                         | 88.1                             |
| 2869 | 08/29/97 | 1600 | 17.86                    | 7.98          | 8.26                         | 88.1                             |
| 2870 | 08/29/97 | 1700 | 17.86                    | 7.98          | 8.26                         | 88.1                             |
| 2871 | 08/29/97 | 1800 | 17.86                    | 7.98          | 8.26                         | 88.1                             |
| 2872 | 08/29/97 | 1900 | 17.16                    | 7.96          | 8.24                         | 87.9                             |
| 2873 | 08/29/97 | 2000 | 17.02                    | 7.96          | 8.22                         | 87.9                             |
| 2874 | 08/29/97 | 2100 | 16.94                    | 7.96          | 8.22                         | 87.9                             |
| 2875 | 08/29/97 | 2200 | 16.94                    | 7.96          | 8.22                         | 87.9                             |
| 2876 | 08/29/97 | 2300 | 16.94                    | 7.96          | 8.22                         | 87.9                             |
| 2877 | 08/30/97 | 100  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2878 | 08/30/97 | 200  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2879 | 08/30/97 | 300  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2880 | 08/30/97 | 400  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2881 | 08/30/97 | 500  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2882 | 08/30/97 | 600  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2883 | 08/30/97 | 700  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2884 | 08/30/97 | 800  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2885 | 08/30/97 | 900  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2886 | 08/30/97 | 1000 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2887 | 08/30/97 | 1100 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2888 | 08/30/97 | 1200 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2889 | 08/30/97 | 1300 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2890 | 08/30/97 | 1400 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2891 | 08/30/97 | 1500 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2892 | 08/30/97 | 1600 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2893 | 08/30/97 | 1700 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2894 | 08/30/97 | 1800 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2895 | 08/30/97 | 1900 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2896 | 08/30/97 | 2000 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2897 | 08/30/97 | 2100 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2898 | 08/30/97 | 2200 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2899 | 08/30/97 | 2300 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2900 | 08/31/97 | 100  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2901 | 08/31/97 | 200  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2902 | 08/31/97 | 300  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2903 | 08/31/97 | 400  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2904 | 08/31/97 | 500  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2905 | 08/31/97 | 600  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2906 | 08/31/97 | 700  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2907 | 08/31/97 | 800  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2908 | 08/31/97 | 900  | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2909 | 08/31/97 | 1000 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2910 | 08/31/97 | 1100 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2911 | 08/31/97 | 1200 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2912 | 08/31/97 | 1300 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2913 | 08/31/97 | 1400 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2914 | 08/31/97 | 1500 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2915 | 08/31/97 | 1600 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2916 | 08/31/97 | 1700 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2917 | 08/31/97 | 1800 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2918 | 08/31/97 | 1900 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2919 | 08/31/97 | 2000 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2920 | 08/31/97 | 2100 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2921 | 08/31/97 | 2200 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2922 | 08/31/97 | 2300 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2923 | 08/31/97 | 2400 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2924 | 08/31/97 | 2500 | 16.85                    | 7.96          | 8.24                         | 88.4                             |
| 2925 | 08/31/97 | 2600 | 16.85                    | 7.96          | 8.24                         | 88.4                             |

PH0001

PINE 1997 LAKEFACE DATA

| OBS   | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-------|----------|------|--------------------------|---------|------------------------------|----------------------------------|
| 29226 | 09/01/97 | 0    | 16.40                    | 7.85    | 9.10                         | 94.5                             |
| 29228 | 09/01/97 | 100  | 16.45                    | 7.85    | 9.02                         | 94.4                             |
| 29229 | 09/01/97 | 200  | 16.47                    | 7.84    | 9.05                         | 94.1                             |
| 29230 | 09/01/97 | 300  | 16.47                    | 7.84    | 9.05                         | 94.1                             |
| 29231 | 09/01/97 | 400  | 16.40                    | 7.82    | 9.07                         | 93.8                             |
| 29232 | 09/01/97 | 500  | 16.40                    | 7.82    | 9.01                         | 93.5                             |
| 29233 | 09/01/97 | 600  | 16.36                    | 7.81    | 9.04                         | 93.8                             |
| 29234 | 09/01/97 | 700  | 16.38                    | 7.81    | 9.01                         | 93.6                             |
| 29235 | 09/01/97 | 800  | 16.38                    | 7.80    | 9.00                         | 93.6                             |
| 29236 | 09/01/97 | 1000 | 16.43                    | 7.80    | 9.02                         | 93.7                             |
| 29237 | 09/01/97 | 1100 | 16.42                    | 7.80    | 9.02                         | 93.7                             |
| 29238 | 09/01/97 | 1200 | 16.74                    | 7.79    | 9.01                         | 94.0                             |
| 29239 | 09/01/97 | 1300 | 17.04                    | 7.78    | 9.01                         | 94.0                             |
| 29240 | 09/01/97 | 1400 | 17.16                    | 7.78    | 9.02                         | 95.2                             |
| 29241 | 09/01/97 | 1500 | 17.21                    | 7.78    | 9.08                         | 95.4                             |
| 29242 | 09/01/97 | 1600 | 17.45                    | 7.78    | 9.08                         | 96.4                             |
| 29243 | 09/01/97 | 1700 | 17.57                    | 7.77    | 9.12                         | 97.0                             |
| 29244 | 09/01/97 | 1800 | 17.63                    | 7.77    | 9.05                         | 96.4                             |
| 29245 | 09/01/97 | 1900 | 17.40                    | 7.76    | 9.08                         | 96.3                             |
| 29246 | 09/01/97 | 2000 | 17.99                    | 7.77    | 9.04                         | 96.6                             |
| 29247 | 09/01/97 | 2100 | 17.99                    | 7.78    | 9.01                         | 96.8                             |
| 29248 | 09/01/97 | 2200 | 17.92                    | 7.78    | 8.96                         | 96.1                             |
| 29249 | 09/01/97 | 2300 | 17.97                    | 7.78    | 8.93                         | 96.1                             |
| 29250 | 09/02/97 | 0    | 17.99                    | 7.78    | 8.91                         | 95.6                             |
| 29251 | 09/02/97 | 100  | 17.99                    | 7.78    | 8.89                         | 95.6                             |
| 29252 | 09/02/97 | 200  | 17.92                    | 7.77    | 8.89                         | 95.3                             |
| 29253 | 09/02/97 | 300  | 17.94                    | 7.77    | 8.89                         | 95.3                             |
| 29254 | 09/02/97 | 400  | 17.97                    | 7.76    | 8.82                         | 94.6                             |
| 29255 | 09/02/97 | 500  | 18.01                    | 7.76    | 8.79                         | 94.3                             |
| 29256 | 09/02/97 | 600  | 17.96                    | 7.76    | 8.79                         | 94.3                             |
| 29257 | 09/02/97 | 700  | 17.94                    | 7.75    | 8.78                         | 94.1                             |
| 29258 | 09/02/97 | 800  | 17.94                    | 7.75    | 8.79                         | 94.2                             |
| 29259 | 09/02/97 | 900  | 17.92                    | 7.74    | 8.80                         | 94.2                             |
| 29260 | 09/02/97 | 1000 | 17.92                    | 7.74    | 8.79                         | 94.2                             |
| 29261 | 09/02/97 | 1100 | 17.99                    | 7.74    | 8.78                         | 94.2                             |
| 29262 | 09/02/97 | 1200 | 18.11                    | 7.75    | 8.78                         | 94.2                             |
| 29263 | 09/02/97 | 1300 | 18.16                    | 7.74    | 8.74                         | 94.1                             |
| 29264 | 09/02/97 | 1400 | 18.23                    | 7.74    | 8.76                         | 94.4                             |
| 29265 | 09/02/97 | 1500 | 18.35                    | 7.74    | 8.73                         | 94.4                             |
| 29266 | 09/02/97 | 1600 | 18.30                    | 7.74    | 8.79                         | 95.0                             |
| 29267 | 09/02/97 | 1700 | 18.20                    | 7.74    | 8.80                         | 95.1                             |
| 29268 | 09/02/97 | 1800 | 18.06                    | 7.74    | 8.81                         | 94.9                             |
| 29269 | 09/02/97 | 1900 | 17.96                    | 7.74    | 8.82                         | 94.5                             |
| 29270 | 09/02/97 | 2000 | 17.96                    | 7.74    | 8.82                         | 94.5                             |
| 29271 | 09/02/97 | 2100 | 17.92                    | 7.73    | 8.85                         | 94.5                             |
| 29272 | 09/02/97 | 2200 | 17.79                    | 7.73    | 8.83                         | 94.4                             |
| 29273 | 09/02/97 | 2300 | 17.72                    | 7.72    | 8.85                         | 94.4                             |
| 29274 | 09/03/97 | 0    | 17.67                    | 7.73    | 8.85                         | 94.4                             |
| 29275 | 09/03/97 | 100  | 17.63                    | 7.73    | 8.85                         | 94.4                             |
| 29276 | 09/03/97 | 200  | 17.58                    | 7.73    | 8.87                         | 94.4                             |
| 29277 | 09/03/97 | 300  | 17.58                    | 7.73    | 8.87                         | 94.4                             |
| 29278 | 09/03/97 | 400  | 17.45                    | 7.72    | 8.80                         | 93.5                             |
| 29279 | 09/03/97 | 500  | 17.45                    | 7.72    | 8.80                         | 93.5                             |
| 29280 | 09/03/97 | 600  | 17.40                    | 7.72    | 8.77                         | 93.0                             |
| 29281 | 09/03/97 | 700  | 17.31                    | 7.72    | 8.77                         | 92.9                             |
| 29282 | 09/03/97 | 800  | 17.23                    | 7.71    | 8.76                         | 92.6                             |
| 29283 | 09/03/97 | 900  | 17.12                    | 7.72    | 8.80                         | 92.6                             |
| 29284 | 09/03/97 | 1000 | 17.02                    | 7.72    | 8.79                         | 92.5                             |
| 29285 | 09/03/97 | 1100 | 16.95                    | 7.72    | 8.80                         | 92.5                             |
| 29286 | 09/03/97 | 1200 | 16.92                    | 7.71    | 8.80                         | 92.5                             |
| 29287 | 09/03/97 | 1300 | 16.92                    | 7.71    | 8.80                         | 92.5                             |
| 29288 | 09/03/97 | 1400 | 16.90                    | 7.72    | 8.80                         | 92.4                             |
| 29289 | 09/03/97 | 1500 | 16.82                    | 7.72    | 8.84                         | 92.4                             |
| 29290 | 09/03/97 | 1600 | 16.82                    | 7.72    | 8.84                         | 92.4                             |
| 29291 | 09/03/97 | 1700 | 16.97                    | 7.71    | 8.80                         | 92.4                             |
| 29292 | 09/03/97 | 1800 | 17.24                    | 7.72    | 8.81                         | 92.4                             |
| 29293 | 09/03/97 | 1900 | 17.02                    | 7.72    | 8.83                         | 92.4                             |
| 29294 | 09/03/97 | 2000 | 16.94                    | 7.71    | 8.83                         | 92.4                             |
| 29295 | 09/03/97 | 2100 | 16.99                    | 7.71    | 8.83                         | 92.2                             |
| 29296 | 09/03/97 | 2200 | 16.99                    | 7.71    | 8.85                         | 92.2                             |
| 29297 | 09/03/97 | 2300 | 16.94                    | 7.71    | 8.84                         | 92.2                             |
| 29298 | 09/04/97 | 0    | 16.92                    | 7.72    | 8.94                         | 92.9                             |
| 29299 | 09/04/97 | 100  | 16.90                    | 7.74    | 8.96                         | 93.0                             |
| 29300 | 09/04/97 | 200  | 16.85                    | 7.75    | 8.97                         | 93.4                             |

F40001



PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3001 | 09/04/97 | 300  | 16.74                    | 7.76          | 9.02                         | 94.3                             |
| 3002 | 09/04/97 | 400  | 16.58                    | 7.76          | 9.36                         | 93.5                             |
| 3003 | 09/04/97 | 500  | 16.53                    | 7.76          | 9.38                         | 93.5                             |
| 3004 | 09/04/97 | 600  | 16.44                    | 7.75          | 9.97                         | 93.2                             |
| 3005 | 09/04/97 | 700  | 16.31                    | 7.75          | 9.97                         | 93.0                             |
| 3006 | 09/04/97 | 800  | 16.23                    | 7.74          | 9.93                         | 92.4                             |
| 3007 | 09/04/97 | 900  | 16.15                    | 7.73          | 9.88                         | 91.9                             |
| 3008 | 09/04/97 | 1000 | 16.06                    | 7.72          | 9.88                         | 91.5                             |
| 3009 | 09/04/97 | 1100 | 16.04                    | 7.72          | 9.87                         | 91.4                             |
| 3010 | 09/04/97 | 1200 | 16.18                    | 7.74          | 9.85                         | 91.4                             |
| 3011 | 09/04/97 | 1300 | 16.44                    | 7.74          | 9.85                         | 92.3                             |
| 3012 | 09/04/97 | 1400 | 16.77                    | 7.74          | 9.85                         | 92.4                             |
| 3013 | 09/04/97 | 1500 | 16.82                    | 7.75          | 9.85                         | 92.4                             |
| 3014 | 09/04/97 | 1600 | 16.82                    | 7.75          | 9.85                         | 92.2                             |
| 3015 | 09/04/97 | 1700 | 16.82                    | 7.74          | 9.85                         | 92.7                             |
| 3016 | 09/04/97 | 1800 | 16.62                    | 7.73          | 9.90                         | 92.8                             |
| 3017 | 09/04/97 | 1900 | 16.47                    | 7.73          | 9.88                         | 92.8                             |
| 3018 | 09/04/97 | 2000 | 16.14                    | 7.73          | 9.93                         | 92.3                             |
| 3019 | 09/04/97 | 2100 | 16.46                    | 7.72          | 9.93                         | 92.5                             |
| 3020 | 09/04/97 | 2200 | 16.83                    | 7.72          | 9.93                         | 91.5                             |
| 3021 | 09/04/97 | 2300 | 16.83                    | 7.72          | 9.91                         | 91.5                             |
| 3022 | 09/05/97 | 0    | 16.89                    | 7.72          | 9.91                         | 91.6                             |
| 3023 | 09/05/97 | 100  | 16.91                    | 7.75          | 9.95                         | 92.0                             |
| 3024 | 09/05/97 | 200  | 16.01                    | 7.75          | 9.95                         | 92.0                             |
| 3025 | 09/05/97 | 300  | 15.99                    | 7.76          | 9.92                         | 91.8                             |
| 3026 | 09/05/97 | 400  | 15.84                    | 7.76          | 9.92                         | 91.7                             |
| 3027 | 09/05/97 | 500  | 15.83                    | 7.76          | 9.93                         | 91.4                             |
| 3028 | 09/05/97 | 600  | 15.83                    | 7.76          | 9.91                         | 91.4                             |
| 3029 | 09/05/97 | 700  | 15.74                    | 7.76          | 9.93                         | 91.4                             |
| 3030 | 09/05/97 | 800  | 15.70                    | 7.76          | 9.93                         | 91.4                             |
| 3031 | 09/05/97 | 900  | 15.68                    | 7.76          | 9.93                         | 91.6                             |
| 3032 | 09/05/97 | 1000 | 15.68                    | 7.74          | 9.81                         | 90.0                             |
| 3033 | 09/05/97 | 1100 | 15.68                    | 7.74          | 9.82                         | 90.0                             |
| 3034 | 09/05/97 | 1200 | 15.54                    | 7.74          | 9.73                         | 89.0                             |
| 3035 | 09/05/97 | 1300 | 15.54                    | 7.74          | 9.74                         | 89.1                             |
| 3036 | 09/05/97 | 1400 | 15.52                    | 7.75          | 9.70                         | 88.9                             |
| 3037 | 09/05/97 | 1500 | 15.52                    | 7.75          | 9.70                         | 88.9                             |
| 3038 | 09/05/97 | 1600 | 15.52                    | 7.75          | 9.68                         | 88.9                             |
| 3039 | 09/05/97 | 1700 | 15.52                    | 7.75          | 9.68                         | 88.9                             |
| 3040 | 09/05/97 | 1800 | 15.43                    | 7.75          | 9.59                         | 87.4                             |
| 3041 | 09/05/97 | 1900 | 15.36                    | 7.75          | 9.59                         | 87.4                             |
| 3042 | 09/05/97 | 2000 | 15.31                    | 7.75          | 9.58                         | 87.3                             |
| 3043 | 09/05/97 | 2100 | 15.21                    | 7.75          | 9.58                         | 87.2                             |
| 3044 | 09/05/97 | 2200 | 15.21                    | 7.75          | 9.58                         | 87.2                             |
| 3045 | 09/05/97 | 2300 | 15.10                    | 7.75          | 9.57                         | 87.1                             |
| 3046 | 09/06/97 | 0    | 15.35                    | 7.76          | 9.56                         | 87.1                             |
| 3047 | 09/06/97 | 100  | 15.35                    | 7.76          | 9.56                         | 87.1                             |
| 3048 | 09/06/97 | 200  | 15.33                    | 7.76          | 9.56                         | 87.1                             |
| 3049 | 09/06/97 | 300  | 15.31                    | 7.76          | 9.57                         | 87.1                             |
| 3050 | 09/06/97 | 400  | 15.28                    | 7.76          | 9.57                         | 87.1                             |
| 3051 | 09/06/97 | 500  | 15.21                    | 7.76          | 9.58                         | 87.2                             |
| 3052 | 09/06/97 | 600  | 15.21                    | 7.76          | 9.58                         | 87.2                             |
| 3053 | 09/06/97 | 700  | 15.21                    | 7.76          | 9.58                         | 87.2                             |
| 3054 | 09/06/97 | 800  | 15.21                    | 7.76          | 9.58                         | 87.2                             |
| 3055 | 09/06/97 | 900  | 15.27                    | 7.76          | 9.57                         | 87.2                             |
| 3056 | 09/06/97 | 1000 | 15.36                    | 7.76          | 9.57                         | 87.4                             |
| 3057 | 09/06/97 | 1100 | 15.36                    | 7.76          | 9.56                         | 87.4                             |
| 3058 | 09/06/97 | 1200 | 15.30                    | 7.76          | 9.56                         | 87.4                             |
| 3059 | 09/06/97 | 1300 | 15.28                    | 7.76          | 9.56                         | 87.4                             |
| 3060 | 09/06/97 | 1400 | 15.28                    | 7.76          | 9.56                         | 87.4                             |
| 3061 | 09/06/97 | 1500 | 15.28                    | 7.76          | 9.56                         | 87.4                             |
| 3062 | 09/06/97 | 1600 | 15.28                    | 7.76          | 9.56                         | 87.4                             |
| 3063 | 09/06/97 | 1700 | 15.28                    | 7.76          | 9.56                         | 87.4                             |
| 3064 | 09/06/97 | 1800 | 15.65                    | 7.98          | 9.54                         | 97.7                             |
| 3065 | 09/06/97 | 1900 | 15.62                    | 7.97          | 9.54                         | 97.7                             |
| 3066 | 09/06/97 | 2000 | 15.62                    | 7.97          | 9.54                         | 97.4                             |
| 3067 | 09/06/97 | 2100 | 15.51                    | 7.97          | 9.55                         | 97.4                             |
| 3068 | 09/06/97 | 2200 | 15.48                    | 7.96          | 9.56                         | 97.7                             |
| 3069 | 09/06/97 | 2300 | 15.48                    | 7.96          | 9.56                         | 97.7                             |
| 3070 | 09/07/97 | 0    | 15.47                    | 7.97          | 9.57                         | 97.8                             |
| 3071 | 09/07/97 | 100  | 15.44                    | 7.97          | 9.57                         | 97.8                             |
| 3072 | 09/07/97 | 200  | 15.41                    | 7.97          | 9.62                         | 97.8                             |
| 3073 | 09/07/97 | 300  | 15.41                    | 7.97          | 9.62                         | 97.8                             |
| 3074 | 09/07/97 | 400  | 15.42                    | 7.97          | 9.60                         | 97.8                             |
| 3075 | 09/07/97 | 500  | 15.41                    | 7.97          | 9.58                         | 97.5                             |

| OBS  | DATE     | HOUR | TEMPERATURE<br>(DEGREES<br>C.) | PH (U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------------|---------|------------------------------|----------------------------------|
| 3076 | 09/07/97 | 600  | 15.41                          | 7.96    | 9.59                         | 97.6                             |
| 3077 | 09/07/97 | 700  | 15.41                          | 7.97    | 9.64                         | 97.8                             |
| 3078 | 09/07/97 | 800  | 15.41                          | 7.98    | 9.64                         | 97.8                             |
| 3079 | 09/07/97 | 900  | 15.44                          | 8.00    | 9.64                         | 97.8                             |
| 3080 | 09/07/97 | 1000 | 15.44                          | 8.01    | 9.64                         | 97.8                             |
| 3081 | 09/07/97 | 1100 | 15.44                          | 8.01    | 9.64                         | 97.8                             |
| 3082 | 09/07/97 | 1200 | 15.47                          | 8.01    | 9.64                         | 97.8                             |
| 3083 | 09/07/97 | 1300 | 15.47                          | 8.01    | 9.64                         | 97.8                             |
| 3084 | 09/07/97 | 1400 | 15.47                          | 8.02    | 9.64                         | 97.8                             |
| 3085 | 09/07/97 | 1500 | 15.48                          | 8.04    | 9.64                         | 97.8                             |
| 3086 | 09/07/97 | 1600 | 15.48                          | 8.01    | 9.64                         | 97.8                             |
| 3087 | 09/07/97 | 1700 | 15.48                          | 8.02    | 9.64                         | 97.8                             |
| 3088 | 09/07/97 | 1800 | 15.48                          | 8.00    | 9.64                         | 97.8                             |
| 3089 | 09/07/97 | 1900 | 15.48                          | 8.00    | 9.64                         | 97.8                             |
| 3090 | 09/07/97 | 2000 | 15.48                          | 8.00    | 9.64                         | 97.8                             |
| 3091 | 09/07/97 | 2100 | 15.48                          | 7.99    | 9.64                         | 97.8                             |
| 3092 | 09/07/97 | 2200 | 15.48                          | 7.99    | 9.64                         | 97.8                             |
| 3093 | 09/07/97 | 2300 | 15.48                          | 7.99    | 9.64                         | 97.8                             |
| 3094 | 09/08/97 | 100  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3095 | 09/08/97 | 200  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3096 | 09/08/97 | 300  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3097 | 09/08/97 | 400  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3098 | 09/08/97 | 500  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3099 | 09/08/97 | 600  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3100 | 09/08/97 | 700  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3101 | 09/08/97 | 800  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3102 | 09/08/97 | 900  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3103 | 09/08/97 | 1000 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3104 | 09/08/97 | 1100 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3105 | 09/08/97 | 1200 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3106 | 09/08/97 | 1300 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3107 | 09/08/97 | 1400 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3108 | 09/08/97 | 1500 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3109 | 09/08/97 | 1600 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3110 | 09/08/97 | 1700 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3111 | 09/08/97 | 1800 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3112 | 09/08/97 | 1900 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3113 | 09/08/97 | 2000 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3114 | 09/08/97 | 2100 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3115 | 09/08/97 | 2200 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3116 | 09/08/97 | 2300 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3117 | 09/09/97 | 100  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3118 | 09/09/97 | 200  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3119 | 09/09/97 | 300  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3120 | 09/09/97 | 400  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3121 | 09/09/97 | 500  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3122 | 09/09/97 | 600  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3123 | 09/09/97 | 700  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3124 | 09/09/97 | 800  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3125 | 09/09/97 | 900  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3126 | 09/09/97 | 1000 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3127 | 09/09/97 | 1100 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3128 | 09/09/97 | 1200 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3129 | 09/09/97 | 1300 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3130 | 09/09/97 | 1400 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3131 | 09/09/97 | 1500 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3132 | 09/09/97 | 1600 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3133 | 09/09/97 | 1700 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3134 | 09/09/97 | 1800 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3135 | 09/09/97 | 1900 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3136 | 09/09/97 | 2000 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3137 | 09/09/97 | 2100 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3138 | 09/09/97 | 2200 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3139 | 09/09/97 | 2300 | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3140 | 09/09/97 | 100  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3141 | 09/10/97 | 100  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3142 | 09/10/97 | 200  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3143 | 09/10/97 | 300  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3144 | 09/10/97 | 400  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3145 | 09/10/97 | 500  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3146 | 09/10/97 | 600  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3147 | 09/10/97 | 700  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3148 | 09/10/97 | 800  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3149 | 09/10/97 | 900  | 15.47                          | 7.99    | 9.64                         | 97.8                             |
| 3150 | 09/10/97 | 1000 | 15.47                          | 7.99    | 9.64                         | 97.8                             |

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PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3151 | 09/10/97 | 900  | 15.99                    | 8.07          | 9.47                         | 97.5                             |
| 3152 | 09/10/97 | 1000 | 16.04                    | 8.10          | 9.50                         | 97.9                             |
| 3153 | 09/10/97 | 1100 | 16.15                    | 8.12          | 9.54                         | 97.1                             |
| 3154 | 09/10/97 | 1200 | 16.06                    | 8.09          | 9.45                         | 97.4                             |
| 3155 | 09/10/97 | 1300 | 16.03                    | 8.10          | 9.51                         | 98.1                             |
| 3156 | 09/10/97 | 1400 | 16.13                    | 8.08          | 9.42                         | 97.6                             |
| 3157 | 09/10/97 | 1500 | 16.15                    | 8.09          | 9.45                         | 97.6                             |
| 3158 | 09/10/97 | 1600 | 16.16                    | 8.09          | 9.45                         | 97.6                             |
| 3159 | 09/10/97 | 1700 | 16.08                    | 8.09          | 9.38                         | 96.9                             |
| 3160 | 09/10/97 | 1800 | 16.00                    | 8.08          | 9.39                         | 96.9                             |
| 3161 | 09/10/97 | 1900 | 16.05                    | 8.08          | 9.41                         | 96.9                             |
| 3162 | 09/10/97 | 2000 | 16.09                    | 8.08          | 9.45                         | 96.9                             |
| 3163 | 09/10/97 | 2100 | 16.03                    | 8.07          | 9.42                         | 96.8                             |
| 3164 | 09/10/97 | 2200 | 16.03                    | 8.07          | 9.42                         | 96.8                             |
| 3165 | 09/10/97 | 2300 | 15.93                    | 8.07          | 9.42                         | 96.8                             |
| 3166 | 09/11/97 | 0    | 15.88                    | 8.07          | 9.44                         | 96.8                             |
| 3167 | 09/11/97 | 100  | 15.84                    | 8.07          | 9.44                         | 96.9                             |
| 3168 | 09/11/97 | 200  | 15.83                    | 8.07          | 9.41                         | 96.9                             |
| 3169 | 09/11/97 | 300  | 15.78                    | 8.07          | 9.43                         | 96.7                             |
| 3170 | 09/11/97 | 400  | 15.75                    | 8.07          | 9.41                         | 96.7                             |
| 3171 | 09/11/97 | 500  | 15.74                    | 8.07          | 9.44                         | 96.7                             |
| 3172 | 09/11/97 | 600  | 15.73                    | 8.07          | 9.44                         | 96.7                             |
| 3173 | 09/11/97 | 700  | 15.69                    | 8.08          | 9.50                         | 97.0                             |
| 3174 | 09/11/97 | 800  | 15.71                    | 8.08          | 9.51                         | 97.2                             |
| 3175 | 09/11/97 | 900  | 15.73                    | 8.09          | 9.54                         | 97.7                             |
| 3176 | 09/11/97 | 1000 | 15.76                    | 8.11          | 9.56                         | 98.4                             |
| 3177 | 09/11/97 | 1100 | 15.68                    | 8.10          | 9.50                         | 98.1                             |
| 3178 | 09/11/97 | 1200 | 15.62                    | 8.12          | 9.50                         | 98.1                             |
| 3179 | 09/11/97 | 1300 | 15.61                    | 8.13          | 9.54                         | 98.1                             |
| 3180 | 09/11/97 | 1400 | 15.73                    | 7.87          | 9.64                         | 99.4                             |
| 3181 | 09/11/97 | 1500 | 15.78                    | 7.88          | 9.60                         | 99.1                             |
| 3182 | 09/11/97 | 1600 | 15.76                    | 7.88          | 9.60                         | 99.0                             |
| 3183 | 09/11/97 | 1700 | 15.71                    | 7.87          | 9.58                         | 98.7                             |
| 3184 | 09/11/97 | 1800 | 15.68                    | 7.87          | 9.59                         | 98.7                             |
| 3185 | 09/11/97 | 1900 | 15.61                    | 7.87          | 9.57                         | 98.5                             |
| 3186 | 09/11/97 | 2000 | 15.65                    | 7.87          | 9.57                         | 98.5                             |
| 3187 | 09/11/97 | 2100 | 15.61                    | 7.86          | 9.59                         | 98.4                             |
| 3188 | 09/11/97 | 2200 | 15.51                    | 7.86          | 9.57                         | 98.2                             |
| 3189 | 09/11/97 | 2300 | 15.48                    | 7.86          | 9.59                         | 98.2                             |
| 3190 | 09/12/97 | 0    | 15.47                    | 7.85          | 9.61                         | 98.6                             |
| 3191 | 09/12/97 | 100  | 15.45                    | 7.85          | 9.65                         | 98.9                             |
| 3192 | 09/12/97 | 200  | 15.44                    | 7.85          | 9.62                         | 98.8                             |
| 3193 | 09/12/97 | 300  | 15.40                    | 7.85          | 9.62                         | 98.8                             |
| 3194 | 09/12/97 | 400  | 15.40                    | 7.85          | 9.62                         | 98.8                             |
| 3195 | 09/12/97 | 500  | 15.35                    | 7.84          | 9.65                         | 98.4                             |
| 3196 | 09/12/97 | 600  | 15.31                    | 7.84          | 9.65                         | 98.5                             |
| 3197 | 09/12/97 | 700  | 15.28                    | 7.85          | 9.65                         | 98.6                             |
| 3198 | 09/12/97 | 800  | 15.26                    | 7.85          | 9.67                         | 98.6                             |
| 3199 | 09/12/97 | 900  | 15.32                    | 7.87          | 9.71                         | 99.0                             |
| 3200 | 09/12/97 | 1000 | 15.41                    | 7.89          | 9.67                         | 99.0                             |
| 3201 | 09/12/97 | 1100 | 15.41                    | 7.90          | 9.67                         | 99.0                             |
| 3202 | 09/12/97 | 1200 | 15.37                    | 7.90          | 9.64                         | 98.7                             |
| 3203 | 09/12/97 | 1300 | 15.34                    | 7.90          | 9.62                         | 98.7                             |
| 3204 | 09/12/97 | 1400 | 15.41                    | 7.90          | 9.62                         | 98.7                             |
| 3205 | 09/12/97 | 1500 | 15.41                    | 7.90          | 9.62                         | 98.7                             |
| 3206 | 09/12/97 | 1600 | 15.36                    | 7.90          | 9.60                         | 98.2                             |
| 3207 | 09/12/97 | 1700 | 15.33                    | 7.90          | 9.57                         | 97.7                             |
| 3208 | 09/12/97 | 1800 | 15.33                    | 7.89          | 9.55                         | 97.7                             |
| 3209 | 09/12/97 | 1900 | 15.18                    | 7.90          | 9.60                         | 97.7                             |
| 3210 | 09/12/97 | 2000 | 15.11                    | 7.90          | 9.60                         | 97.7                             |
| 3211 | 09/12/97 | 2100 | 15.06                    | 7.88          | 9.62                         | 97.7                             |
| 3212 | 09/12/97 | 2200 | 15.06                    | 7.88          | 9.62                         | 97.7                             |
| 3213 | 09/12/97 | 2300 | 15.08                    | 7.88          | 9.65                         | 98.2                             |
| 3214 | 09/13/97 | 0    | 15.10                    | 7.88          | 9.65                         | 98.2                             |
| 3215 | 09/13/97 | 100  | 15.13                    | 7.87          | 9.61                         | 98.0                             |
| 3216 | 09/13/97 | 200  | 15.23                    | 7.87          | 9.61                         | 98.0                             |
| 3217 | 09/13/97 | 300  | 15.21                    | 7.87          | 9.62                         | 98.0                             |
| 3218 | 09/13/97 | 400  | 15.15                    | 7.87          | 9.64                         | 98.2                             |
| 3219 | 09/13/97 | 500  | 15.15                    | 7.86          | 9.67                         | 98.4                             |
| 3220 | 09/13/97 | 600  | 15.04                    | 7.86          | 9.67                         | 98.4                             |
| 3221 | 09/13/97 | 700  | 15.04                    | 7.86          | 9.71                         | 98.4                             |
| 3222 | 09/13/97 | 800  | 15.13                    | 7.88          | 9.72                         | 98.6                             |
| 3223 | 09/13/97 | 900  | 15.13                    | 7.88          | 9.72                         | 98.6                             |
| 3224 | 09/13/97 | 1000 | 15.24                    | 7.90          | 9.71                         | 98.9                             |
| 3225 | 09/13/97 | 1100 | 15.35                    | 7.95          | 9.69                         | 99.1                             |

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| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3226 | 09/13/97 | 1200 | 15.36                    | 7.95          | 9.66                         | 98.8                             |
| 3227 | 09/13/97 | 1300 | 15.41                    | 7.94          | 9.67                         | 98.6                             |
| 3228 | 09/13/97 | 1400 | 15.34                    | 7.94          | 9.65                         | 98.6                             |
| 3229 | 09/13/97 | 1500 | 15.24                    | 7.93          | 9.64                         | 98.6                             |
| 3230 | 09/13/97 | 1600 | 15.11                    | 7.92          | 9.64                         | 98.4                             |
| 3231 | 09/13/97 | 1700 | 15.04                    | 7.91          | 9.65                         | 98.1                             |
| 3232 | 09/13/97 | 1800 | 14.96                    | 7.91          | 9.67                         | 98.0                             |
| 3233 | 09/13/97 | 1900 | 15.08                    | 7.91          | 9.63                         | 97.8                             |
| 3234 | 09/13/97 | 2000 | 15.08                    | 7.89          | 9.63                         | 97.8                             |
| 3235 | 09/13/97 | 2100 | 15.08                    | 7.89          | 9.62                         | 97.8                             |
| 3236 | 09/13/97 | 2200 | 15.13                    | 7.89          | 9.62                         | 97.8                             |
| 3237 | 09/14/97 | 100  | 15.28                    | 7.91          | 9.62                         | 98.0                             |
| 3238 | 09/14/97 | 200  | 15.23                    | 7.91          | 9.61                         | 98.0                             |
| 3239 | 09/14/97 | 300  | 15.23                    | 7.92          | 9.63                         | 97.8                             |
| 3240 | 09/14/97 | 400  | 15.25                    | 7.92          | 9.63                         | 97.7                             |
| 3241 | 09/14/97 | 500  | 15.32                    | 7.92          | 9.62                         | 97.7                             |
| 3242 | 09/14/97 | 600  | 15.46                    | 7.89          | 9.62                         | 97.7                             |
| 3243 | 09/14/97 | 700  | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3244 | 09/14/97 | 800  | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3245 | 09/14/97 | 900  | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3246 | 09/14/97 | 1000 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3247 | 09/14/97 | 1100 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3248 | 09/14/97 | 1200 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3249 | 09/14/97 | 1300 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3250 | 09/14/97 | 1400 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3251 | 09/14/97 | 1500 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3252 | 09/14/97 | 1600 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3253 | 09/14/97 | 1700 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3254 | 09/14/97 | 1800 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3255 | 09/14/97 | 1900 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3256 | 09/14/97 | 2000 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3257 | 09/14/97 | 2100 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3258 | 09/14/97 | 2200 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3259 | 09/14/97 | 2300 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3260 | 09/14/97 | 2400 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3261 | 09/14/97 | 2500 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3262 | 09/14/97 | 2600 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3263 | 09/14/97 | 2700 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3264 | 09/14/97 | 2800 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3265 | 09/14/97 | 2900 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3266 | 09/14/97 | 3000 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3267 | 09/14/97 | 3100 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3268 | 09/14/97 | 3200 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3269 | 09/14/97 | 3300 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3270 | 09/14/97 | 3400 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3271 | 09/14/97 | 3500 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3272 | 09/14/97 | 3600 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3273 | 09/14/97 | 3700 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3274 | 09/14/97 | 3800 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3275 | 09/14/97 | 3900 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3276 | 09/14/97 | 4000 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3277 | 09/14/97 | 4100 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3278 | 09/14/97 | 4200 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3279 | 09/14/97 | 4300 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3280 | 09/14/97 | 4400 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3281 | 09/14/97 | 4500 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3282 | 09/14/97 | 4600 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3283 | 09/14/97 | 4700 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3284 | 09/14/97 | 4800 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3285 | 09/14/97 | 4900 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3286 | 09/14/97 | 5000 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3287 | 09/14/97 | 5100 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3288 | 09/14/97 | 5200 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3289 | 09/14/97 | 5300 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3290 | 09/14/97 | 5400 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3291 | 09/14/97 | 5500 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3292 | 09/14/97 | 5600 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3293 | 09/14/97 | 5700 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3294 | 09/14/97 | 5800 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3295 | 09/14/97 | 5900 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3296 | 09/14/97 | 6000 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3297 | 09/14/97 | 6100 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3298 | 09/14/97 | 6200 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3299 | 09/14/97 | 6300 | 15.44                    | 7.89          | 9.62                         | 97.7                             |
| 3300 | 09/14/97 | 6400 | 15.44                    | 7.89          | 9.62                         | 97.7                             |

FM001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3301 | 09/16/97 | 1500 | 16.82                    | 7.99          | 9.18                         | 96.8                             |
| 3302 | 09/16/97 | 1500 | 16.82                    | 7.98          | 9.12                         | 96.3                             |
| 3303 | 09/16/97 | 1500 | 16.85                    | 7.97          | 9.13                         | 96.3                             |
| 3304 | 09/16/97 | 1500 | 16.85                    | 7.97          | 9.08                         | 96.1                             |
| 3305 | 09/16/97 | 1500 | 17.02                    | 7.95          | 9.07                         | 96.0                             |
| 3306 | 09/16/97 | 2000 | 17.02                    | 7.98          | 9.04                         | 95.8                             |
| 3307 | 09/16/97 | 2100 | 16.94                    | 7.98          | 9.06                         | 95.8                             |
| 3308 | 09/16/97 | 2200 | 16.82                    | 7.98          | 9.08                         | 95.8                             |
| 3309 | 09/16/97 | 2300 | 16.55                    | 7.96          | 8.97                         | 93.0                             |
| 3310 | 09/17/97 | 0    | 16.58                    | 7.97          | 9.11                         | 93.6                             |
| 3311 | 09/17/97 | 100  | 16.78                    | 7.98          | 9.11                         | 93.6                             |
| 3312 | 09/17/97 | 200  | 17.04                    | 7.98          | 9.06                         | 93.2                             |
| 3313 | 09/17/97 | 300  | 17.24                    | 8.01          | 9.03                         | 93.0                             |
| 3314 | 09/17/97 | 400  | 17.36                    | 8.01          | 9.00                         | 92.1                             |
| 3315 | 09/17/97 | 500  | 17.34                    | 8.01          | 9.01                         | 96.1                             |
| 3316 | 09/17/97 | 600  | 17.28                    | 8.00          | 9.02                         | 96.1                             |
| 3317 | 09/17/97 | 700  | 17.16                    | 8.01          | 9.03                         | 95.9                             |
| 3318 | 09/17/97 | 800  | 17.16                    | 8.03          | 8.98                         | 95.9                             |
| 3319 | 09/17/97 | 900  | 17.26                    | 8.03          | 8.98                         | 95.9                             |
| 3320 | 09/17/97 | 1000 | 17.40                    | 8.04          | 8.93                         | 95.7                             |
| 3321 | 09/17/97 | 1100 | 17.40                    | 8.04          | 8.93                         | 95.7                             |
| 3322 | 09/17/97 | 1200 | 17.50                    | 8.04          | 8.93                         | 95.7                             |
| 3323 | 09/17/97 | 1300 | 17.72                    | 8.06          | 9.04                         | 97.1                             |
| 3324 | 09/17/97 | 1400 | 18.09                    | 8.06          | 8.99                         | 97.1                             |
| 3325 | 09/17/97 | 1500 | 18.16                    | 8.06          | 8.78                         | 95.9                             |
| 3326 | 09/17/97 | 1600 | 18.08                    | 8.04          | 8.98                         | 96.2                             |
| 3327 | 09/17/97 | 1700 | 17.99                    | 8.04          | 8.98                         | 96.2                             |
| 3328 | 09/17/97 | 1800 | 17.99                    | 8.05          | 8.98                         | 96.2                             |
| 3329 | 09/17/97 | 1900 | 17.74                    | 8.05          | 8.95                         | 95.7                             |
| 3330 | 09/17/97 | 2000 | 17.41                    | 7.99          | 8.95                         | 95.7                             |
| 3331 | 09/17/97 | 2100 | 17.34                    | 8.00          | 9.12                         | 97.3                             |
| 3332 | 09/17/97 | 2200 | 17.21                    | 7.99          | 9.16                         | 97.4                             |
| 3333 | 09/17/97 | 2300 | 17.21                    | 7.99          | 9.15                         | 97.4                             |
| 3334 | 09/18/97 | 0    | 17.28                    | 8.00          | 9.18                         | 97.4                             |
| 3335 | 09/18/97 | 100  | 17.28                    | 8.00          | 9.18                         | 97.4                             |
| 3336 | 09/18/97 | 200  | 17.23                    | 8.00          | 9.15                         | 97.0                             |
| 3337 | 09/18/97 | 300  | 17.23                    | 8.00          | 9.14                         | 97.0                             |
| 3338 | 09/18/97 | 400  | 17.23                    | 8.00          | 9.14                         | 97.0                             |
| 3339 | 09/18/97 | 500  | 17.11                    | 8.00          | 9.15                         | 97.2                             |
| 3340 | 09/18/97 | 600  | 17.11                    | 8.00          | 9.15                         | 97.4                             |
| 3341 | 09/18/97 | 700  | 17.11                    | 8.00          | 9.15                         | 97.1                             |
| 3342 | 09/18/97 | 800  | 17.06                    | 7.99          | 9.15                         | 97.1                             |
| 3343 | 09/18/97 | 900  | 16.99                    | 8.00          | 9.14                         | 97.1                             |
| 3344 | 09/18/97 | 1000 | 16.99                    | 8.00          | 9.14                         | 97.1                             |
| 3345 | 09/18/97 | 1100 | 16.91                    | 8.03          | 9.14                         | 97.1                             |
| 3346 | 09/18/97 | 1200 | 16.91                    | 8.03          | 9.14                         | 97.1                             |
| 3347 | 09/18/97 | 1300 | 17.28                    | 8.04          | 9.25                         | 97.9                             |
| 3348 | 09/18/97 | 1400 | 17.28                    | 8.04          | 9.25                         | 97.9                             |
| 3349 | 09/18/97 | 1500 | 17.46                    | 8.05          | 9.14                         | 97.7                             |
| 3350 | 09/18/97 | 1600 | 17.46                    | 8.04          | 9.12                         | 97.6                             |
| 3351 | 09/18/97 | 1700 | 17.43                    | 8.03          | 9.14                         | 97.6                             |
| 3352 | 09/18/97 | 1800 | 17.07                    | 8.03          | 9.14                         | 97.6                             |
| 3353 | 09/18/97 | 1900 | 16.94                    | 8.01          | 9.14                         | 97.6                             |
| 3354 | 09/18/97 | 2000 | 16.80                    | 8.01          | 9.13                         | 97.6                             |
| 3355 | 09/18/97 | 2100 | 16.75                    | 8.01          | 9.17                         | 97.7                             |
| 3356 | 09/18/97 | 2200 | 16.85                    | 8.03          | 9.17                         | 97.7                             |
| 3357 | 09/18/97 | 2300 | 16.85                    | 8.03          | 9.20                         | 97.1                             |
| 3358 | 09/19/97 | 0    | 16.98                    | 8.03          | 9.17                         | 97.1                             |
| 3359 | 09/19/97 | 100  | 16.99                    | 8.03          | 9.14                         | 96.8                             |
| 3360 | 09/19/97 | 200  | 17.02                    | 8.03          | 9.15                         | 96.8                             |
| 3361 | 09/19/97 | 300  | 17.04                    | 8.03          | 9.15                         | 96.8                             |
| 3362 | 09/19/97 | 400  | 17.11                    | 8.03          | 9.14                         | 96.4                             |
| 3363 | 09/19/97 | 500  | 17.24                    | 8.02          | 9.14                         | 96.4                             |
| 3364 | 09/19/97 | 600  | 17.24                    | 8.02          | 9.14                         | 96.4                             |
| 3365 | 09/19/97 | 700  | 17.19                    | 8.02          | 9.14                         | 96.4                             |
| 3366 | 09/19/97 | 800  | 17.19                    | 8.03          | 9.14                         | 96.4                             |
| 3367 | 09/19/97 | 900  | 17.19                    | 8.03          | 9.14                         | 96.4                             |
| 3368 | 09/19/97 | 1000 | 17.11                    | 8.04          | 9.14                         | 96.4                             |
| 3369 | 09/19/97 | 1100 | 17.18                    | 8.06          | 9.14                         | 96.4                             |
| 3370 | 09/19/97 | 1200 | 17.23                    | 8.06          | 9.14                         | 96.4                             |
| 3371 | 09/19/97 | 1300 | 17.23                    | 8.06          | 9.14                         | 96.4                             |
| 3372 | 09/19/97 | 1400 | 17.21                    | 8.07          | 9.14                         | 96.4                             |
| 3373 | 09/19/97 | 1500 | 17.23                    | 8.07          | 9.14                         | 96.4                             |
| 3374 | 09/19/97 | 1600 | 17.23                    | 8.06          | 9.14                         | 96.4                             |
| 3375 | 09/19/97 | 1700 | 17.36                    | 8.06          | 9.14                         | 96.4                             |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (S. U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|------------|------------------------|-------------------------------|
| 3376 | 09/19/97 | 1800 | 17.40             | 8.06       | 8.69                   | 92.8                          |
| 3377 | 09/19/97 | 1900 | 17.38             | 8.04       | 8.67                   | 92.5                          |
| 3378 | 09/19/97 | 2000 | 17.40             | 8.04       | 8.67                   | 92.5                          |
| 3379 | 09/19/97 | 2100 | 17.34             | 8.04       | 8.66                   | 92.2                          |
| 3380 | 09/19/97 | 2200 | 17.26             | 8.03       | 8.65                   | 92.0                          |
| 3381 | 09/19/97 | 2300 | 17.23             | 8.03       | 8.72                   | 92.3                          |
| 3382 | 09/20/97 | 1000 | 17.23             | 8.02       | 8.81                   | 93.7                          |
| 3383 | 09/20/97 | 1100 | 17.19             | 8.02       | 8.75                   | 93.1                          |
| 3384 | 09/20/97 | 1200 | 17.18             | 8.02       | 8.81                   | 93.6                          |
| 3385 | 09/20/97 | 1300 | 17.14             | 8.02       | 8.81                   | 93.5                          |
| 3386 | 09/20/97 | 1400 | 17.14             | 8.02       | 8.80                   | 93.4                          |
| 3387 | 09/20/97 | 1500 | 17.11             | 8.02       | 8.80                   | 93.4                          |
| 3388 | 09/20/97 | 1600 | 17.06             | 8.02       | 8.80                   | 93.4                          |
| 3389 | 09/20/97 | 1700 | 17.01             | 8.02       | 8.80                   | 93.4                          |
| 3390 | 09/20/97 | 1800 | 16.94             | 8.04       | 8.80                   | 94.0                          |
| 3391 | 09/20/97 | 1900 | 16.94             | 8.05       | 8.93                   | 94.4                          |
| 3392 | 09/20/97 | 2000 | 16.87             | 8.05       | 8.93                   | 94.4                          |
| 3393 | 09/20/97 | 2100 | 16.85             | 8.05       | 8.97                   | 94.7                          |
| 3394 | 09/20/97 | 2200 | 16.85             | 8.05       | 8.97                   | 94.7                          |
| 3395 | 09/20/97 | 2300 | 16.80             | 8.05       | 8.97                   | 94.4                          |
| 3396 | 09/20/97 | 0000 | 16.82             | 8.05       | 8.95                   | 94.4                          |
| 3397 | 09/20/97 | 0100 | 16.82             | 8.05       | 8.95                   | 94.4                          |
| 3398 | 09/20/97 | 0200 | 16.75             | 8.05       | 8.97                   | 94.5                          |
| 3400 | 09/20/97 | 0300 | 16.75             | 8.04       | 8.97                   | 94.5                          |
| 3401 | 09/20/97 | 0400 | 16.62             | 8.04       | 8.97                   | 94.5                          |
| 3402 | 09/20/97 | 0500 | 16.52             | 8.04       | 8.97                   | 94.4                          |
| 3403 | 09/20/97 | 0600 | 16.40             | 8.03       | 8.97                   | 94.0                          |
| 3404 | 09/20/97 | 0700 | 16.40             | 8.03       | 8.97                   | 94.0                          |
| 3405 | 09/21/97 | 0000 | 16.21             | 8.02       | 8.97                   | 93.7                          |
| 3406 | 09/21/97 | 0100 | 16.12             | 8.02       | 8.97                   | 93.7                          |
| 3407 | 09/21/97 | 0200 | 16.02             | 8.03       | 8.97                   | 93.7                          |
| 3408 | 09/21/97 | 0300 | 15.95             | 8.03       | 8.97                   | 93.7                          |
| 3409 | 09/21/97 | 0400 | 15.88             | 8.03       | 8.97                   | 93.7                          |
| 3410 | 09/21/97 | 0500 | 15.88             | 8.04       | 8.99                   | 93.7                          |
| 3411 | 09/21/97 | 0600 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3412 | 09/21/97 | 0700 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3413 | 09/21/97 | 0800 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3414 | 09/21/97 | 0900 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3415 | 09/21/97 | 1000 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3416 | 09/21/97 | 1100 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3417 | 09/21/97 | 1200 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3418 | 09/21/97 | 1300 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3419 | 09/21/97 | 1400 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3420 | 09/21/97 | 1500 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3421 | 09/21/97 | 1600 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3422 | 09/21/97 | 1700 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3423 | 09/21/97 | 1800 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3424 | 09/21/97 | 1900 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3425 | 09/21/97 | 2000 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3426 | 09/21/97 | 2100 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3427 | 09/21/97 | 2200 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3428 | 09/21/97 | 2300 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3429 | 09/21/97 | 0000 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3430 | 09/21/97 | 0100 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3431 | 09/21/97 | 0200 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3432 | 09/21/97 | 0300 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3433 | 09/21/97 | 0400 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3434 | 09/21/97 | 0500 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3435 | 09/21/97 | 0600 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3436 | 09/21/97 | 0700 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3437 | 09/21/97 | 0800 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3438 | 09/21/97 | 0900 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3439 | 09/21/97 | 1000 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3440 | 09/21/97 | 1100 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3441 | 09/21/97 | 1200 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3442 | 09/21/97 | 1300 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3443 | 09/21/97 | 1400 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3444 | 09/21/97 | 1500 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3445 | 09/21/97 | 1600 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3446 | 09/21/97 | 1700 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3447 | 09/21/97 | 1800 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3448 | 09/21/97 | 1900 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3449 | 09/21/97 | 2000 | 15.81             | 8.04       | 8.99                   | 93.7                          |
| 3450 | 09/21/97 | 2100 | 15.81             | 8.04       | 8.99                   | 93.7                          |

11/03/97

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP:<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3451 | 09/22/97 | 2100 | 13.95                    | 8.03          | 9.38                         | 93.0                             |
| 3452 | 09/22/97 | 2200 | 13.83                    | 8.03          | 9.42                         | 93.4                             |
| 3453 | 09/22/97 | 2300 | 13.83                    | 8.03          | 9.47                         | 93.9                             |
| 3454 | 09/22/97 | 0    | 14.01                    | 8.03          | 9.47                         | 93.9                             |
| 3455 | 09/23/97 | 100  | 13.95                    | 8.03          | 9.48                         | 93.9                             |
| 3456 | 09/23/97 | 300  | 13.85                    | 8.03          | 9.48                         | 93.9                             |
| 3457 | 09/23/97 | 400  | 13.75                    | 8.03          | 9.53                         | 94.1                             |
| 3458 | 09/23/97 | 500  | 13.65                    | 8.03          | 9.56                         | 94.2                             |
| 3459 | 09/23/97 | 600  | 13.60                    | 8.03          | 9.56                         | 94.2                             |
| 3460 | 09/23/97 | 700  | 13.58                    | 8.03          | 9.54                         | 94.1                             |
| 3461 | 09/23/97 | 800  | 13.58                    | 8.03          | 9.54                         | 94.1                             |
| 3462 | 09/23/97 | 900  | 13.58                    | 8.03          | 9.54                         | 94.1                             |
| 3463 | 09/23/97 | 1000 | 13.56                    | 8.07          | 9.67                         | 95.2                             |
| 3464 | 09/23/97 | 1100 | 13.71                    | 8.07          | 9.66                         | 95.3                             |
| 3465 | 09/23/97 | 1200 | 13.71                    | 8.08          | 9.68                         | 95.4                             |
| 3466 | 09/23/97 | 1300 | 13.66                    | 8.08          | 9.61                         | 94.8                             |
| 3467 | 09/23/97 | 1400 | 13.83                    | 8.08          | 9.52                         | 94.8                             |
| 3468 | 09/23/97 | 1500 | 13.83                    | 8.08          | 9.52                         | 94.8                             |
| 3469 | 09/23/97 | 1600 | 13.83                    | 8.08          | 9.52                         | 94.8                             |
| 3470 | 09/23/97 | 1700 | 13.83                    | 8.08          | 9.52                         | 94.8                             |
| 3471 | 09/23/97 | 1800 | 13.83                    | 8.08          | 9.52                         | 94.8                             |
| 3472 | 09/23/97 | 1900 | 13.83                    | 8.08          | 9.52                         | 94.8                             |
| 3473 | 09/23/97 | 2000 | 13.85                    | 8.05          | 9.49                         | 94.0                             |
| 3474 | 09/23/97 | 2100 | 13.75                    | 8.05          | 9.54                         | 94.2                             |
| 3475 | 09/23/97 | 2200 | 13.63                    | 8.04          | 9.71                         | 95.6                             |
| 3476 | 09/23/97 | 2300 | 13.63                    | 8.03          | 9.77                         | 96.1                             |
| 3477 | 09/24/97 | 0    | 13.45                    | 8.03          | 9.91                         | 96.6                             |
| 3478 | 09/24/97 | 100  | 13.45                    | 8.03          | 9.91                         | 96.6                             |
| 3479 | 09/24/97 | 200  | 13.45                    | 8.03          | 9.84                         | 96.4                             |
| 3480 | 09/24/97 | 300  | 13.37                    | 8.03          | 9.84                         | 96.4                             |
| 3481 | 09/24/97 | 400  | 13.37                    | 8.03          | 9.84                         | 96.4                             |
| 3482 | 09/24/97 | 500  | 13.30                    | 8.03          | 9.85                         | 96.4                             |
| 3483 | 09/24/97 | 600  | 13.30                    | 8.03          | 9.84                         | 96.4                             |
| 3484 | 09/24/97 | 700  | 13.27                    | 8.03          | 9.82                         | 96.3                             |
| 3485 | 09/24/97 | 800  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3486 | 09/24/97 | 900  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3487 | 09/24/97 | 1000 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3488 | 09/24/97 | 1100 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3489 | 09/24/97 | 1200 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3490 | 09/24/97 | 1300 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3491 | 09/24/97 | 1400 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3492 | 09/24/97 | 1500 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3493 | 09/24/97 | 1600 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3494 | 09/24/97 | 1700 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3495 | 09/24/97 | 1800 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3496 | 09/24/97 | 1900 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3497 | 09/24/97 | 2000 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3498 | 09/24/97 | 2100 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3499 | 09/24/97 | 2200 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3500 | 09/24/97 | 2300 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3501 | 09/24/97 | 0    | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3502 | 09/24/97 | 100  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3503 | 09/24/97 | 200  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3504 | 09/24/97 | 300  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3505 | 09/24/97 | 400  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3506 | 09/24/97 | 500  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3507 | 09/24/97 | 600  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3508 | 09/24/97 | 700  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3509 | 09/24/97 | 800  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3510 | 09/24/97 | 900  | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3511 | 09/24/97 | 1000 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3512 | 09/24/97 | 1100 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3513 | 09/24/97 | 1200 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3514 | 09/24/97 | 1300 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3515 | 09/24/97 | 1400 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3516 | 09/24/97 | 1500 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3517 | 09/24/97 | 1600 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3518 | 09/24/97 | 1700 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3519 | 09/24/97 | 1800 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3520 | 09/24/97 | 1900 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3521 | 09/24/97 | 2000 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3522 | 09/24/97 | 2100 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3523 | 09/24/97 | 2200 | 13.18                    | 8.03          | 9.82                         | 96.3                             |
| 3524 | 09/24/97 | 2300 | 13.18                    | 8.03          | 9.82                         | 96.3                             |

| OBS   | DATE     | HOUR | TEMP (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|-------|----------|------|-------------------|---------|------------------------|-------------------------------|
| 35226 | 09/26/97 | 0    | 13.67             | 7.88    | 9.06                   | 88.3                          |
| 35227 | 09/26/97 | 100  | 13.65             | 7.89    | 9.07                   | 88.3                          |
| 35228 | 09/26/97 | 200  | 13.60             | 7.89    | 9.09                   | 88.4                          |
| 35229 | 09/26/97 | 300  | 13.55             | 7.89    | 9.10                   | 88.4                          |
| 35230 | 09/26/97 | 400  | 13.50             | 7.89    | 9.05                   | 87.7                          |
| 35231 | 09/26/97 | 500  | 13.45             | 7.89    | 9.05                   | 87.7                          |
| 35232 | 09/26/97 | 600  | 13.42             | 7.89    | 9.04                   | 87.6                          |
| 35233 | 09/26/97 | 700  | 13.37             | 7.90    | 9.06                   | 87.7                          |
| 35234 | 09/26/97 | 800  | 13.35             | 7.90    | 9.12                   | 88.2                          |
| 35235 | 09/26/97 | 900  | 13.49             | 7.92    | 9.14                   | 88.2                          |
| 35236 | 09/26/97 | 1000 | 13.64             | 8.00    | 9.30                   | 95.1                          |
| 35237 | 09/26/97 | 1100 | 13.64             | 8.00    | 9.30                   | 95.1                          |
| 35238 | 09/26/97 | 1200 | 13.64             | 8.00    | 9.30                   | 95.1                          |
| 35239 | 09/26/97 | 1300 | 13.64             | 8.00    | 9.30                   | 95.1                          |
| 35240 | 09/26/97 | 1400 | 13.90             | 8.07    | 9.31                   | 95.2                          |
| 35241 | 09/26/97 | 1500 | 13.90             | 8.07    | 9.31                   | 95.2                          |
| 35242 | 09/26/97 | 1600 | 13.75             | 8.08    | 9.28                   | 95.2                          |
| 35243 | 09/26/97 | 1700 | 13.72             | 8.07    | 9.29                   | 95.2                          |
| 35244 | 09/26/97 | 1800 | 13.72             | 8.04    | 9.29                   | 95.2                          |
| 35245 | 09/26/97 | 1900 | 13.72             | 8.03    | 9.28                   | 95.1                          |
| 35246 | 09/26/97 | 2000 | 13.72             | 8.03    | 9.28                   | 95.1                          |
| 35247 | 09/26/97 | 2100 | 13.72             | 8.04    | 9.27                   | 95.1                          |
| 35248 | 09/26/97 | 2200 | 13.15             | 8.05    | 9.27                   | 95.1                          |
| 35249 | 09/26/97 | 2300 | 13.15             | 8.05    | 9.27                   | 95.1                          |
| 35250 | 09/26/97 | 2400 | 13.15             | 8.04    | 9.24                   | 94.8                          |
| 35251 | 09/27/97 | 100  | 13.15             | 8.05    | 9.26                   | 95.0                          |
| 35252 | 09/27/97 | 200  | 13.20             | 8.05    | 9.26                   | 95.0                          |
| 35253 | 09/27/97 | 300  | 13.27             | 8.05    | 9.26                   | 95.0                          |
| 35254 | 09/27/97 | 400  | 13.27             | 8.04    | 9.26                   | 95.0                          |
| 35255 | 09/27/97 | 500  | 13.27             | 8.04    | 9.26                   | 95.0                          |
| 35256 | 09/27/97 | 600  | 13.22             | 8.04    | 9.24                   | 94.9                          |
| 35257 | 09/27/97 | 700  | 13.22             | 8.03    | 9.24                   | 94.9                          |
| 35258 | 09/27/97 | 800  | 13.25             | 8.05    | 9.25                   | 94.9                          |
| 35259 | 09/27/97 | 900  | 13.45             | 8.10    | 9.25                   | 95.2                          |
| 35260 | 09/27/97 | 1000 | 13.45             | 8.11    | 9.25                   | 95.2                          |
| 35261 | 09/27/97 | 1100 | 13.57             | 8.11    | 9.25                   | 95.2                          |
| 35262 | 09/27/97 | 1200 | 13.57             | 8.11    | 9.25                   | 95.2                          |
| 35263 | 09/27/97 | 1300 | 13.52             | 8.10    | 9.25                   | 95.2                          |
| 35264 | 09/27/97 | 1400 | 13.42             | 8.09    | 9.25                   | 95.2                          |
| 35265 | 09/27/97 | 1500 | 13.42             | 8.09    | 9.25                   | 95.2                          |
| 35266 | 09/27/97 | 1600 | 13.35             | 8.08    | 9.23                   | 95.1                          |
| 35267 | 09/27/97 | 1700 | 13.24             | 8.07    | 9.21                   | 94.8                          |
| 35268 | 09/27/97 | 1800 | 13.24             | 8.06    | 9.21                   | 94.8                          |
| 35269 | 09/27/97 | 1900 | 13.39             | 8.06    | 9.20                   | 94.7                          |
| 35270 | 09/27/97 | 2000 | 13.39             | 8.06    | 9.20                   | 94.7                          |
| 35271 | 09/27/97 | 2100 | 13.37             | 8.07    | 9.22                   | 94.8                          |
| 35272 | 09/27/97 | 2200 | 13.42             | 8.07    | 9.22                   | 94.8                          |
| 35273 | 09/27/97 | 2300 | 13.42             | 8.07    | 9.22                   | 94.8                          |
| 35274 | 09/28/97 | 100  | 13.47             | 8.07    | 9.23                   | 94.9                          |
| 35275 | 09/28/97 | 200  | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35276 | 09/28/97 | 300  | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35277 | 09/28/97 | 400  | 13.60             | 8.07    | 9.23                   | 94.9                          |
| 35278 | 09/28/97 | 500  | 13.60             | 8.07    | 9.23                   | 94.9                          |
| 35279 | 09/28/97 | 600  | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35280 | 09/28/97 | 700  | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35281 | 09/28/97 | 800  | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35282 | 09/28/97 | 900  | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35283 | 09/28/97 | 1000 | 13.67             | 8.07    | 9.23                   | 94.9                          |
| 35284 | 09/28/97 | 1100 | 14.08             | 8.12    | 9.24                   | 95.4                          |
| 35285 | 09/28/97 | 1200 | 14.08             | 8.12    | 9.24                   | 95.4                          |
| 35286 | 09/28/97 | 1300 | 14.21             | 8.15    | 9.27                   | 95.8                          |
| 35287 | 09/28/97 | 1400 | 14.21             | 8.15    | 9.27                   | 95.8                          |
| 35288 | 09/28/97 | 1500 | 14.86             | 8.16    | 9.24                   | 95.2                          |
| 35289 | 09/28/97 | 1600 | 14.86             | 8.15    | 9.24                   | 95.2                          |
| 35290 | 09/28/97 | 1700 | 14.88             | 8.15    | 9.24                   | 95.2                          |
| 35291 | 09/28/97 | 1800 | 14.88             | 8.13    | 9.24                   | 95.2                          |
| 35292 | 09/28/97 | 1900 | 14.72             | 8.11    | 9.23                   | 95.0                          |
| 35293 | 09/28/97 | 2000 | 14.48             | 8.08    | 9.24                   | 95.0                          |
| 35294 | 09/28/97 | 2100 | 14.31             | 8.09    | 9.22                   | 94.8                          |
| 35295 | 09/28/97 | 2200 | 14.28             | 8.09    | 9.22                   | 94.8                          |
| 35296 | 09/28/97 | 2300 | 14.28             | 8.10    | 9.22                   | 94.8                          |
| 35297 | 09/29/97 | 100  | 14.33             | 8.10    | 9.21                   | 94.9                          |
| 35298 | 09/29/97 | 200  | 14.33             | 8.09    | 9.21                   | 94.8                          |
| 35299 | 09/29/97 | 300  | 14.33             | 8.09    | 9.21                   | 94.8                          |
| 35300 | 09/29/97 | 400  | 14.33             | 8.09    | 9.21                   | 94.8                          |

140001



PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3601 | 09/29/97 | 300  | 14.40                    | 8.10          | 9.14                         | 90.4                             |
| 3602 | 09/29/97 | 400  | 14.38                    | 8.10          | 9.10                         | 90.1                             |
| 3603 | 09/29/97 | 500  | 14.32                    | 8.10          | 9.13                         | 90.0                             |
| 3604 | 09/29/97 | 600  | 14.32                    | 8.10          | 9.11                         | 90.0                             |
| 3605 | 09/29/97 | 700  | 14.22                    | 8.11          | 9.09                         | 89.7                             |
| 3606 | 09/29/97 | 800  | 14.27                    | 8.11          | 9.09                         | 89.7                             |
| 3607 | 09/29/97 | 900  | 14.37                    | 8.14          | 9.09                         | 90.0                             |
| 3608 | 09/29/97 | 1000 | 14.53                    | 8.16          | 9.08                         | 90.0                             |
| 3609 | 09/29/97 | 1100 | 14.62                    | 8.17          | 9.07                         | 89.8                             |
| 3610 | 09/29/97 | 1200 | 14.73                    | 8.19          | 9.07                         | 90.0                             |
| 3611 | 09/29/97 | 1300 | 14.87                    | 8.21          | 9.06                         | 90.0                             |
| 3612 | 09/29/97 | 1400 | 14.99                    | 8.21          | 9.05                         | 89.9                             |
| 3613 | 09/29/97 | 1500 | 14.97                    | 8.17          | 9.04                         | 89.4                             |
| 3614 | 09/29/97 | 1600 | 14.62                    | 8.17          | 9.01                         | 89.4                             |
| 3615 | 09/29/97 | 1700 | 14.58                    | 8.16          | 8.99                         | 89.4                             |
| 3616 | 09/29/97 | 1800 | 14.55                    | 8.15          | 8.95                         | 89.1                             |
| 3617 | 09/29/97 | 1900 | 14.50                    | 8.14          | 8.98                         | 89.1                             |
| 3618 | 09/29/97 | 2000 | 14.47                    | 8.13          | 8.90                         | 88.8                             |
| 3619 | 09/29/97 | 2100 | 14.40                    | 8.13          | 8.90                         | 88.8                             |
| 3620 | 09/29/97 | 2200 | 14.40                    | 8.13          | 8.90                         | 88.8                             |
| 3621 | 09/29/97 | 2300 | 14.40                    | 8.13          | 8.90                         | 88.8                             |
| 3622 | 09/30/97 | 0    | 14.35                    | 8.12          | 8.90                         | 88.8                             |
| 3623 | 09/30/97 | 100  | 14.35                    | 8.12          | 8.90                         | 88.8                             |
| 3624 | 09/30/97 | 200  | 14.32                    | 8.12          | 8.90                         | 88.8                             |
| 3625 | 09/30/97 | 300  | 14.23                    | 8.12          | 8.90                         | 88.8                             |
| 3626 | 09/30/97 | 400  | 14.18                    | 8.12          | 8.90                         | 88.8                             |
| 3627 | 09/30/97 | 500  | 14.18                    | 8.12          | 8.90                         | 88.8                             |
| 3628 | 09/30/97 | 600  | 14.10                    | 8.12          | 8.90                         | 88.8                             |
| 3629 | 09/30/97 | 700  | 14.07                    | 8.12          | 8.90                         | 88.8                             |
| 3630 | 09/30/97 | 800  | 14.03                    | 8.12          | 8.90                         | 88.8                             |
| 3631 | 09/30/97 | 900  | 14.03                    | 8.14          | 8.95                         | 89.0                             |
| 3632 | 09/30/97 | 1000 | 14.08                    | 8.14          | 8.92                         | 88.7                             |
| 3633 | 09/30/97 | 1100 | 14.08                    | 8.14          | 8.92                         | 88.7                             |
| 3634 | 09/30/97 | 1200 | 14.07                    | 8.14          | 8.92                         | 88.7                             |
| 3635 | 09/30/97 | 1300 | 14.05                    | 8.14          | 8.92                         | 88.7                             |
| 3636 | 09/30/97 | 1400 | 14.02                    | 8.14          | 8.92                         | 88.7                             |
| 3637 | 09/30/97 | 1500 | 13.98                    | 8.14          | 8.92                         | 88.7                             |
| 3638 | 09/30/97 | 1600 | 13.92                    | 8.13          | 8.92                         | 88.7                             |
| 3639 | 09/30/97 | 1700 | 13.92                    | 8.13          | 8.92                         | 88.7                             |
| 3640 | 09/30/97 | 1800 | 13.88                    | 8.12          | 8.92                         | 88.7                             |
| 3641 | 09/30/97 | 1900 | 13.80                    | 8.11          | 8.92                         | 88.7                             |
| 3642 | 09/30/97 | 2000 | 13.70                    | 8.11          | 8.92                         | 88.7                             |
| 3643 | 09/30/97 | 2100 | 13.49                    | 8.11          | 8.92                         | 88.7                             |
| 3644 | 09/30/97 | 2200 | 13.49                    | 8.11          | 8.92                         | 88.7                             |
| 3645 | 09/30/97 | 2300 | 13.27                    | 8.11          | 8.92                         | 88.7                             |
| 3646 | 10/01/97 | 0    | 13.17                    | 8.11          | 8.92                         | 88.7                             |
| 3647 | 10/01/97 | 100  | 13.17                    | 8.11          | 8.92                         | 88.7                             |
| 3648 | 10/01/97 | 200  | 12.97                    | 8.12          | 8.94                         | 89.0                             |
| 3649 | 10/01/97 | 300  | 12.97                    | 8.12          | 8.94                         | 89.0                             |
| 3650 | 10/01/97 | 400  | 12.81                    | 8.12          | 8.94                         | 89.0                             |
| 3651 | 10/01/97 | 500  | 12.82                    | 8.12          | 8.94                         | 89.0                             |
| 3652 | 10/01/97 | 600  | 12.81                    | 8.12          | 8.94                         | 89.0                             |
| 3653 | 10/01/97 | 700  | 12.66                    | 8.12          | 8.94                         | 89.0                             |
| 3654 | 10/01/97 | 800  | 12.55                    | 8.12          | 8.94                         | 89.0                             |
| 3655 | 10/01/97 | 900  | 12.53                    | 8.12          | 8.94                         | 89.0                             |
| 3656 | 10/01/97 | 1000 | 12.71                    | 8.12          | 8.94                         | 89.0                             |
| 3657 | 10/01/97 | 1100 | 12.71                    | 8.12          | 8.94                         | 89.0                             |
| 3658 | 10/01/97 | 1200 | 12.68                    | 8.12          | 8.94                         | 89.0                             |
| 3659 | 10/01/97 | 1300 | 12.64                    | 8.12          | 8.94                         | 89.0                             |
| 3660 | 10/01/97 | 1400 | 12.58                    | 8.12          | 8.94                         | 89.0                             |
| 3661 | 10/01/97 | 1500 | 12.58                    | 8.12          | 8.94                         | 89.0                             |
| 3662 | 10/01/97 | 1600 | 12.54                    | 8.12          | 8.94                         | 89.0                             |
| 3663 | 10/01/97 | 1700 | 12.54                    | 8.12          | 8.94                         | 89.0                             |
| 3664 | 10/01/97 | 1800 | 12.33                    | 8.12          | 8.94                         | 89.0                             |
| 3665 | 10/01/97 | 1900 | 12.10                    | 8.12          | 8.94                         | 89.0                             |
| 3666 | 10/01/97 | 2000 | 11.85                    | 8.12          | 8.94                         | 89.0                             |
| 3667 | 10/01/97 | 2100 | 11.85                    | 8.12          | 8.94                         | 89.0                             |
| 3668 | 10/01/97 | 2200 | 11.75                    | 8.12          | 8.94                         | 89.0                             |
| 3669 | 10/01/97 | 2300 | 11.74                    | 8.12          | 8.94                         | 89.0                             |
| 3670 | 10/02/97 | 0    | 11.70                    | 8.12          | 8.94                         | 89.0                             |
| 3671 | 10/02/97 | 100  | 11.64                    | 8.13          | 8.90                         | 88.9                             |
| 3672 | 10/02/97 | 200  | 11.60                    | 8.13          | 8.90                         | 88.9                             |
| 3673 | 10/02/97 | 300  | 11.65                    | 8.13          | 8.90                         | 88.9                             |
| 3674 | 10/02/97 | 400  | 11.70                    | 8.13          | 8.90                         | 88.9                             |
| 3675 | 10/02/97 | 500  | 11.64                    | 8.12          | 8.90                         | 88.9                             |

| OBS  | DATE     | HOUR | TEMP<br>(DEGREES<br>C.) | PH<br>(U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED<br>OXYGEN<br>% SATURATION |
|------|----------|------|-------------------------|------------|------------------------------|-------------------------------------|
| 3676 | 10/02/97 | 600  | 11.54                   | 8.13       | 9.57                         | 88.8                                |
| 3677 | 10/02/97 | 700  | 11.47                   | 8.13       | 9.57                         | 88.8                                |
| 3678 | 10/02/97 | 800  | 11.47                   | 8.13       | 9.57                         | 88.8                                |
| 3679 | 10/02/97 | 900  | 11.55                   | 8.14       | 9.58                         | 89.2                                |
| 3680 | 10/02/97 | 1000 | 11.59                   | 8.16       | 9.58                         | 89.5                                |
| 3681 | 10/02/97 | 1100 | 11.92                   | 8.17       | 9.52                         | 89.4                                |
| 3682 | 10/02/97 | 1200 | 12.08                   | 8.16       | 9.50                         | 89.4                                |
| 3683 | 10/02/97 | 1300 | 12.15                   | 8.01       | 9.24                         | 88.0                                |
| 3684 | 10/02/97 | 1400 | 12.46                   | 7.95       | 8.44                         | 80.0                                |
| 3685 | 10/02/97 | 1500 | 12.45                   | 7.95       | 8.44                         | 80.0                                |
| 3686 | 10/02/97 | 1600 | 12.35                   | 7.95       | 8.43                         | 79.4                                |
| 3687 | 10/02/97 | 1700 | 12.15                   | 7.95       | 8.39                         | 79.4                                |
| 3688 | 10/02/97 | 1800 | 11.93                   | 7.95       | 8.39                         | 78.6                                |
| 3689 | 10/02/97 | 1900 | 11.87                   | 7.95       | 8.48                         | 79.3                                |
| 3690 | 10/02/97 | 2000 | 11.88                   | 7.96       | 8.53                         | 79.7                                |
| 3691 | 10/02/97 | 2100 | 11.88                   | 7.96       | 8.50                         | 79.6                                |
| 3692 | 10/02/97 | 2200 | 12.02                   | 7.96       | 8.44                         | 79.0                                |
| 3693 | 10/02/97 | 2300 | 12.02                   | 7.96       | 8.44                         | 79.0                                |
| 3694 | 10/03/97 | 100  | 12.41                   | 7.95       | 8.37                         | 79.0                                |
| 3695 | 10/03/97 | 200  | 12.35                   | 7.95       | 8.30                         | 78.5                                |
| 3696 | 10/03/97 | 300  | 12.35                   | 7.95       | 8.29                         | 78.4                                |
| 3697 | 10/03/97 | 400  | 12.36                   | 7.95       | 8.26                         | 78.2                                |
| 3698 | 10/03/97 | 500  | 12.31                   | 7.95       | 8.26                         | 78.1                                |
| 3699 | 10/03/97 | 600  | 12.30                   | 7.94       | 8.27                         | 78.1                                |
| 3700 | 10/03/97 | 700  | 12.35                   | 7.94       | 8.27                         | 78.1                                |
| 3701 | 10/03/97 | 800  | 12.33                   | 7.95       | 8.20                         | 77.5                                |
| 3702 | 10/03/97 | 900  | 12.33                   | 7.95       | 8.21                         | 77.5                                |
| 3703 | 10/03/97 | 1000 | 12.33                   | 7.95       | 8.21                         | 77.5                                |
| 3704 | 10/03/97 | 1100 | 12.35                   | 7.95       | 8.22                         | 77.6                                |
| 3705 | 10/03/97 | 1200 | 12.35                   | 7.95       | 8.22                         | 77.6                                |
| 3706 | 10/03/97 | 1300 | 12.35                   | 7.95       | 8.22                         | 77.6                                |
| 3707 | 10/03/97 | 1400 | 12.18                   | 8.02       | 8.39                         | 79.3                                |
| 3708 | 10/03/97 | 1500 | 11.98                   | 8.00       | 8.45                         | 80.0                                |
| 3709 | 10/03/97 | 1600 | 11.83                   | 8.00       | 8.50                         | 80.4                                |
| 3710 | 10/03/97 | 1700 | 11.68                   | 8.00       | 8.48                         | 79.8                                |
| 3711 | 10/03/97 | 1800 | 11.55                   | 8.00       | 8.48                         | 78.5                                |
| 3712 | 10/03/97 | 1900 | 11.44                   | 7.98       | 8.47                         | 78.5                                |
| 3713 | 10/03/97 | 2000 | 11.44                   | 7.98       | 8.36                         | 77.9                                |
| 3714 | 10/03/97 | 2100 | 11.83                   | 7.98       | 8.37                         | 77.9                                |
| 3715 | 10/03/97 | 2200 | 11.82                   | 7.98       | 8.33                         | 78.1                                |
| 3716 | 10/03/97 | 2300 | 12.49                   | 7.98       | 8.28                         | 77.9                                |
| 3717 | 10/04/97 | 100  | 12.63                   | 7.95       | 8.21                         | 77.6                                |
| 3718 | 10/04/97 | 200  | 12.77                   | 7.95       | 8.16                         | 77.9                                |
| 3719 | 10/04/97 | 300  | 12.78                   | 7.95       | 8.15                         | 77.9                                |
| 3720 | 10/04/97 | 400  | 13.02                   | 7.95       | 8.15                         | 78.1                                |
| 3721 | 10/04/97 | 500  | 13.01                   | 7.95       | 8.16                         | 78.0                                |
| 3722 | 10/04/97 | 600  | 13.19                   | 7.99       | 8.16                         | 78.4                                |
| 3723 | 10/04/97 | 700  | 13.37                   | 8.01       | 8.13                         | 78.4                                |
| 3724 | 10/04/97 | 800  | 13.42                   | 8.01       | 8.07                         | 78.1                                |
| 3725 | 10/04/97 | 900  | 13.42                   | 8.02       | 8.09                         | 78.4                                |
| 3726 | 10/04/97 | 1000 | 13.45                   | 8.04       | 8.11                         | 78.6                                |
| 3727 | 10/04/97 | 1100 | 13.60                   | 8.04       | 8.10                         | 78.6                                |
| 3728 | 10/04/97 | 1200 | 13.60                   | 8.04       | 8.10                         | 78.6                                |
| 3729 | 10/04/97 | 1300 | 13.75                   | 8.05       | 8.12                         | 79.3                                |
| 3730 | 10/04/97 | 1400 | 13.82                   | 8.05       | 8.16                         | 79.3                                |
| 3731 | 10/04/97 | 1500 | 14.11                   | 8.05       | 8.16                         | 80.1                                |
| 3732 | 10/04/97 | 1600 | 14.12                   | 8.04       | 8.25                         | 81.2                                |
| 3733 | 10/04/97 | 1700 | 14.12                   | 8.04       | 8.25                         | 80.9                                |
| 3734 | 10/04/97 | 1800 | 14.20                   | 8.04       | 8.17                         | 80.5                                |
| 3735 | 10/04/97 | 1900 | 14.22                   | 8.04       | 8.19                         | 80.7                                |
| 3736 | 10/04/97 | 2000 | 14.11                   | 8.03       | 8.19                         | 80.7                                |
| 3737 | 10/04/97 | 2100 | 14.11                   | 8.03       | 8.19                         | 80.7                                |
| 3738 | 10/04/97 | 2200 | 14.12                   | 8.03       | 8.19                         | 80.7                                |
| 3739 | 10/04/97 | 2300 | 13.90                   | 8.02       | 8.19                         | 80.7                                |
| 3740 | 10/04/97 | 2400 | 13.93                   | 8.02       | 8.19                         | 80.7                                |
| 3741 | 10/04/97 | 2500 | 13.93                   | 8.01       | 8.19                         | 80.7                                |
| 3742 | 10/05/97 | 100  | 13.87                   | 8.00       | 8.19                         | 80.7                                |
| 3743 | 10/05/97 | 200  | 13.87                   | 8.00       | 8.19                         | 80.7                                |
| 3744 | 10/05/97 | 300  | 13.87                   | 8.00       | 8.19                         | 80.7                                |
| 3745 | 10/05/97 | 400  | 13.66                   | 7.99       | 8.19                         | 80.7                                |
| 3746 | 10/05/97 | 500  | 13.66                   | 7.99       | 8.19                         | 80.7                                |
| 3747 | 10/05/97 | 600  | 13.37                   | 7.99       | 8.19                         | 80.7                                |
| 3748 | 10/05/97 | 700  | 13.37                   | 7.99       | 8.19                         | 80.7                                |
| 3749 | 10/05/97 | 800  | 13.35                   | 8.00       | 8.19                         | 80.7                                |
| 3750 | 10/05/97 | 900  | 13.35                   | 8.00       | 8.19                         | 80.7                                |

140001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3751 | 10/05/97 | 900  | 13.40                    | 8.00          | 8.49                         | 82.30                            |
| 3752 | 10/05/97 | 1000 | 13.54                    | 8.02          | 8.44                         | 82.09                            |
| 3753 | 10/05/97 | 1100 | 13.64                    | 8.01          | 8.38                         | 81.97                            |
| 3754 | 10/05/97 | 1200 | 13.70                    | 8.02          | 8.38                         | 81.97                            |
| 3755 | 10/05/97 | 1300 | 13.95                    | 8.05          | 8.28                         | 81.50                            |
| 3756 | 10/05/97 | 1400 | 14.40                    | 8.05          | 8.28                         | 81.50                            |
| 3757 | 10/05/97 | 1500 | 14.60                    | 8.05          | 8.22                         | 81.33                            |
| 3758 | 10/05/97 | 1600 | 14.68                    | 8.05          | 8.17                         | 81.33                            |
| 3759 | 10/05/97 | 1700 | 14.68                    | 8.05          | 8.16                         | 81.33                            |
| 3760 | 10/05/97 | 1800 | 14.50                    | 8.04          | 8.17                         | 81.33                            |
| 3761 | 10/05/97 | 1900 | 14.43                    | 8.03          | 8.17                         | 81.33                            |
| 3762 | 10/05/97 | 2000 | 14.43                    | 8.03          | 8.28                         | 81.50                            |
| 3763 | 10/05/97 | 2100 | 14.25                    | 8.02          | 8.37                         | 81.50                            |
| 3764 | 10/05/97 | 2200 | 14.20                    | 8.02          | 8.37                         | 81.50                            |
| 3765 | 10/05/97 | 2300 | 14.10                    | 8.01          | 8.36                         | 81.50                            |
| 3766 | 10/05/97 | 0    | 14.10                    | 8.01          | 8.36                         | 81.50                            |
| 3767 | 10/05/97 | 100  | 14.03                    | 8.01          | 8.36                         | 81.50                            |
| 3768 | 10/05/97 | 200  | 13.98                    | 8.01          | 8.36                         | 81.50                            |
| 3769 | 10/05/97 | 300  | 13.98                    | 8.01          | 8.36                         | 81.50                            |
| 3770 | 10/05/97 | 400  | 13.98                    | 8.01          | 8.36                         | 81.50                            |
| 3771 | 10/05/97 | 500  | 13.70                    | 8.00          | 8.37                         | 81.50                            |
| 3772 | 10/05/97 | 600  | 13.70                    | 8.00          | 8.40                         | 81.50                            |
| 3773 | 10/05/97 | 700  | 13.67                    | 7.99          | 8.37                         | 81.50                            |
| 3774 | 10/05/97 | 800  | 13.67                    | 8.00          | 8.40                         | 81.50                            |
| 3775 | 10/05/97 | 900  | 13.72                    | 8.02          | 8.48                         | 82.17                            |
| 3776 | 10/05/97 | 1000 | 13.72                    | 8.02          | 8.48                         | 82.17                            |
| 3777 | 10/05/97 | 1100 | 13.89                    | 8.02          | 8.45                         | 82.17                            |
| 3778 | 10/05/97 | 1200 | 13.88                    | 8.03          | 8.45                         | 82.17                            |
| 3779 | 10/05/97 | 1300 | 13.88                    | 8.03          | 8.48                         | 82.17                            |
| 3780 | 10/05/97 | 1400 | 14.00                    | 8.03          | 8.48                         | 82.17                            |
| 3781 | 10/05/97 | 1500 | 13.93                    | 8.03          | 8.37                         | 82.00                            |
| 3782 | 10/05/97 | 1600 | 13.87                    | 8.02          | 8.36                         | 82.00                            |
| 3783 | 10/05/97 | 1700 | 13.85                    | 8.02          | 8.36                         | 82.00                            |
| 3784 | 10/05/97 | 1800 | 13.75                    | 8.01          | 8.35                         | 82.00                            |
| 3785 | 10/05/97 | 1900 | 13.65                    | 7.98          | 8.35                         | 82.00                            |
| 3786 | 10/05/97 | 2000 | 13.65                    | 7.98          | 8.35                         | 82.00                            |
| 3787 | 10/05/97 | 2100 | 13.32                    | 7.96          | 8.29                         | 81.22                            |
| 3788 | 10/05/97 | 2200 | 13.32                    | 7.96          | 8.40                         | 81.22                            |
| 3789 | 10/05/97 | 2300 | 13.40                    | 7.97          | 8.48                         | 81.22                            |
| 3790 | 10/05/97 | 0    | 13.40                    | 7.96          | 8.48                         | 81.22                            |
| 3791 | 10/05/97 | 100  | 13.25                    | 7.96          | 8.51                         | 82.20                            |
| 3792 | 10/05/97 | 200  | 13.25                    | 7.97          | 8.54                         | 82.20                            |
| 3793 | 10/05/97 | 300  | 13.42                    | 7.96          | 8.52                         | 82.20                            |
| 3794 | 10/05/97 | 400  | 13.42                    | 7.96          | 8.52                         | 82.20                            |
| 3795 | 10/05/97 | 500  | 13.14                    | 7.95          | 8.37                         | 81.50                            |
| 3796 | 10/05/97 | 600  | 12.96                    | 7.94          | 8.45                         | 81.50                            |
| 3797 | 10/05/97 | 700  | 12.94                    | 7.95          | 8.44                         | 81.50                            |
| 3798 | 10/05/97 | 800  | 12.92                    | 7.96          | 8.55                         | 82.20                            |
| 3799 | 10/05/97 | 900  | 12.92                    | 7.96          | 8.55                         | 82.20                            |
| 3800 | 10/05/97 | 1000 | 12.88                    | 7.96          | 8.57                         | 82.20                            |
| 3801 | 10/05/97 | 1100 | 12.88                    | 7.96          | 8.57                         | 82.20                            |
| 3802 | 10/05/97 | 1200 | 12.88                    | 7.96          | 8.57                         | 82.20                            |
| 3803 | 10/05/97 | 1300 | 12.88                    | 7.96          | 8.57                         | 82.20                            |
| 3804 | 10/05/97 | 1400 | 12.77                    | 7.95          | 8.51                         | 81.50                            |
| 3805 | 10/05/97 | 1500 | 12.76                    | 7.95          | 8.39                         | 80.22                            |
| 3806 | 10/05/97 | 1600 | 12.76                    | 7.94          | 8.42                         | 80.22                            |
| 3807 | 10/05/97 | 1700 | 12.71                    | 7.94          | 8.43                         | 80.22                            |
| 3808 | 10/05/97 | 1800 | 12.59                    | 7.93          | 8.37                         | 79.82                            |
| 3809 | 10/05/97 | 1900 | 12.64                    | 7.93          | 8.53                         | 82.20                            |
| 3810 | 10/05/97 | 2000 | 12.64                    | 7.93          | 8.53                         | 82.20                            |
| 3811 | 10/05/97 | 2100 | 12.66                    | 7.93          | 8.53                         | 82.20                            |
| 3812 | 10/05/97 | 2200 | 12.66                    | 7.93          | 8.53                         | 82.20                            |
| 3813 | 10/05/97 | 2300 | 12.68                    | 7.92          | 8.54                         | 82.20                            |
| 3814 | 10/05/97 | 0    | 12.72                    | 7.92          | 8.64                         | 82.20                            |
| 3815 | 10/05/97 | 100  | 12.82                    | 7.92          | 8.62                         | 82.20                            |
| 3816 | 10/05/97 | 200  | 12.84                    | 7.92          | 8.64                         | 82.20                            |
| 3817 | 10/05/97 | 300  | 12.87                    | 7.93          | 8.67                         | 82.20                            |
| 3818 | 10/05/97 | 400  | 12.92                    | 7.93          | 8.68                         | 82.20                            |
| 3819 | 10/05/97 | 500  | 12.92                    | 7.93          | 8.68                         | 82.20                            |
| 3820 | 10/05/97 | 600  | 12.97                    | 7.93          | 8.68                         | 82.20                            |
| 3821 | 10/05/97 | 700  | 12.97                    | 7.93          | 8.64                         | 82.20                            |
| 3822 | 10/05/97 | 800  | 13.02                    | 7.93          | 8.67                         | 82.20                            |
| 3823 | 10/05/97 | 900  | 13.04                    | 7.94          | 8.69                         | 82.20                            |
| 3824 | 10/05/97 | 1000 | 13.07                    | 7.94          | 8.71                         | 82.20                            |
| 3825 | 10/05/97 | 1100 | 13.14                    | 7.94          | 8.69                         | 82.20                            |

| OBS   | DATE     | HOUR | TEMP (DEGREES C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|-------|----------|------|-------------------|---------|------------------------|-------------------------------|
| 38226 | 10/08/97 | 1200 | 13.20             | 7.94    | 8.82                   | 85.0                          |
| 38227 | 10/08/97 | 1300 | 13.25             | 7.93    | 8.83                   | 85.2                          |
| 38228 | 10/08/97 | 1400 | 13.55             | 7.92    | 8.84                   | 85.4                          |
| 38229 | 10/08/97 | 1500 | 13.55             | 7.91    | 8.80                   | 85.1                          |
| 38230 | 10/08/97 | 1600 | 13.44             | 7.93    | 8.81                   | 85.1                          |
| 38231 | 10/08/97 | 1700 | 13.44             | 7.93    | 8.80                   | 85.1                          |
| 38232 | 10/08/97 | 1800 | 13.29             | 7.91    | 8.83                   | 85.3                          |
| 38233 | 10/08/97 | 1900 | 13.19             | 7.90    | 8.80                   | 84.8                          |
| 38234 | 10/08/97 | 2000 | 13.22             | 7.90    | 8.77                   | 84.8                          |
| 38235 | 10/08/97 | 2100 | 13.45             | 7.91    | 8.77                   | 85.2                          |
| 38236 | 10/08/97 | 2200 | 13.55             | 7.91    | 8.77                   | 85.2                          |
| 38237 | 10/08/97 | 2300 | 13.55             | 7.91    | 8.77                   | 85.2                          |
| 38238 | 10/09/97 | 100  | 13.13             | 7.92    | 8.74                   | 85.0                          |
| 38239 | 10/09/97 | 200  | 13.02             | 7.93    | 8.75                   | 85.0                          |
| 38240 | 10/09/97 | 300  | 14.02             | 7.93    | 8.53                   | 83.5                          |
| 38241 | 10/09/97 | 400  | 14.23             | 7.94    | 8.53                   | 84.6                          |
| 38242 | 10/09/97 | 500  | 14.57             | 7.94    | 8.49                   | 84.3                          |
| 38243 | 10/09/97 | 600  | 14.70             | 7.94    | 8.46                   | 84.3                          |
| 38244 | 10/09/97 | 700  | 14.95             | 7.94    | 8.46                   | 84.4                          |
| 38245 | 10/09/97 | 800  | 15.23             | 7.94    | 8.41                   | 84.4                          |
| 38246 | 10/09/97 | 900  | 15.23             | 7.93    | 8.54                   | 84.7                          |
| 38247 | 10/09/97 | 1000 | 15.53             | 7.97    | 8.54                   | 84.6                          |
| 38248 | 10/09/97 | 1100 | 15.53             | 7.97    | 8.35                   | 84.8                          |
| 38249 | 10/09/97 | 1200 | 15.53             | 7.96    | 8.32                   | 84.4                          |
| 38250 | 10/09/97 | 1300 | 15.48             | 7.95    | 8.30                   | 84.1                          |
| 38251 | 10/09/97 | 1400 | 15.48             | 7.95    | 8.30                   | 84.1                          |
| 38252 | 10/09/97 | 1500 | 15.35             | 7.95    | 8.25                   | 84.1                          |
| 38253 | 10/09/97 | 1600 | 15.35             | 7.95    | 8.25                   | 84.1                          |
| 38254 | 10/09/97 | 1700 | 15.29             | 7.95    | 8.04                   | 81.5                          |
| 38255 | 10/09/97 | 1800 | 15.19             | 7.94    | 8.02                   | 81.5                          |
| 38256 | 10/09/97 | 1900 | 15.09             | 7.94    | 8.97                   | 90.5                          |
| 38257 | 10/09/97 | 2000 | 14.95             | 7.93    | 8.97                   | 90.5                          |
| 38258 | 10/09/97 | 2100 | 14.81             | 7.93    | 8.91                   | 90.0                          |
| 38259 | 10/09/97 | 2200 | 14.81             | 7.93    | 8.91                   | 90.0                          |
| 38260 | 10/09/97 | 2300 | 14.81             | 7.93    | 8.91                   | 90.0                          |
| 38261 | 10/10/97 | 100  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38262 | 10/10/97 | 200  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38263 | 10/10/97 | 300  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38264 | 10/10/97 | 400  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38265 | 10/10/97 | 500  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38266 | 10/10/97 | 600  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38267 | 10/10/97 | 700  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38268 | 10/10/97 | 800  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38269 | 10/10/97 | 900  | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38270 | 10/10/97 | 1000 | 14.44             | 7.93    | 8.91                   | 90.0                          |
| 38271 | 10/10/97 | 1100 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38272 | 10/10/97 | 1200 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38273 | 10/10/97 | 1300 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38274 | 10/10/97 | 1400 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38275 | 10/10/97 | 1500 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38276 | 10/10/97 | 1600 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38277 | 10/10/97 | 1700 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38278 | 10/10/97 | 1800 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38279 | 10/10/97 | 1900 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38280 | 10/10/97 | 2000 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38281 | 10/10/97 | 2100 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38282 | 10/10/97 | 2200 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38283 | 10/10/97 | 2300 | 13.99             | 7.93    | 8.91                   | 90.0                          |
| 38284 | 10/11/97 | 100  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38285 | 10/11/97 | 200  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38286 | 10/11/97 | 300  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38287 | 10/11/97 | 400  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38288 | 10/11/97 | 500  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38289 | 10/11/97 | 600  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38290 | 10/11/97 | 700  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38291 | 10/11/97 | 800  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38292 | 10/11/97 | 900  | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38293 | 10/11/97 | 1000 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38294 | 10/11/97 | 1100 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38295 | 10/11/97 | 1200 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38296 | 10/11/97 | 1300 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38297 | 10/11/97 | 1400 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38298 | 10/11/97 | 1500 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38299 | 10/11/97 | 1600 | 12.80             | 7.80    | 9.30                   | 99.4                          |
| 38300 | 10/11/97 | 1700 | 12.80             | 7.80    | 9.30                   | 99.4                          |

7/4/001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 3901 | 10/11/97 | 1500 | 12.09                    | 7.76          | 9.17                         | 86.8                             |
| 3902 | 10/11/97 | 1600 | 11.99                    | 7.75          | 9.23                         | 87.2                             |
| 3903 | 10/11/97 | 1700 | 11.80                    | 7.75          | 9.25                         | 86.0                             |
| 3904 | 10/11/97 | 1800 | 11.83                    | 7.75          | 9.23                         | 86.0                             |
| 3905 | 10/11/97 | 1900 | 11.81                    | 7.77          | 9.45                         | 87.9                             |
| 3906 | 10/11/97 | 2000 | 11.83                    | 7.79          | 9.45                         | 88.9                             |
| 3907 | 10/11/97 | 2100 | 11.91                    | 7.79          | 9.43                         | 88.4                             |
| 3908 | 10/11/97 | 2200 | 11.99                    | 7.79          | 9.47                         | 89.4                             |
| 3909 | 10/11/97 | 2300 | 12.04                    | 7.79          | 9.45                         | 89.4                             |
| 3910 | 10/12/97 | 0    | 12.09                    | 7.80          | 9.47                         | 89.7                             |
| 3911 | 10/12/97 | 100  | 12.18                    | 7.81          | 9.48                         | 89.5                             |
| 3912 | 10/12/97 | 200  | 12.24                    | 7.82          | 9.48                         | 90.0                             |
| 3913 | 10/12/97 | 300  | 12.24                    | 7.82          | 9.51                         | 90.3                             |
| 3914 | 10/12/97 | 400  | 12.26                    | 7.82          | 9.53                         | 90.5                             |
| 3915 | 10/12/97 | 500  | 12.26                    | 7.83          | 9.52                         | 90.4                             |
| 3916 | 10/12/97 | 600  | 12.26                    | 7.84          | 9.54                         | 90.7                             |
| 3917 | 10/12/97 | 700  | 12.26                    | 7.84          | 9.54                         | 90.7                             |
| 3918 | 10/12/97 | 800  | 12.25                    | 7.84          | 9.54                         | 90.7                             |
| 3919 | 10/12/97 | 900  | 12.31                    | 7.85          | 9.54                         | 90.7                             |
| 3920 | 10/12/97 | 1000 | 12.31                    | 7.85          | 9.50                         | 90.4                             |
| 3921 | 10/12/97 | 1100 | 12.33                    | 7.85          | 9.48                         | 90.4                             |
| 3922 | 10/12/97 | 1200 | 12.37                    | 7.85          | 9.48                         | 90.3                             |
| 3923 | 10/12/97 | 1300 | 12.37                    | 7.86          | 9.49                         | 90.4                             |
| 3924 | 10/12/97 | 1400 | 12.34                    | 7.86          | 9.35                         | 89.0                             |
| 3925 | 10/12/97 | 1500 | 12.36                    | 7.86          | 9.26                         | 88.2                             |
| 3926 | 10/12/97 | 1600 | 12.27                    | 7.84          | 9.16                         | 87.1                             |
| 3927 | 10/12/97 | 1700 | 12.24                    | 7.82          | 9.23                         | 87.6                             |
| 3928 | 10/12/97 | 1800 | 12.19                    | 7.82          | 9.29                         | 88.1                             |
| 3929 | 10/12/97 | 1900 | 12.21                    | 7.82          | 9.33                         | 88.6                             |
| 3930 | 10/12/97 | 2000 | 12.22                    | 7.82          | 9.43                         | 89.6                             |
| 3931 | 10/12/97 | 2100 | 12.32                    | 7.82          | 9.44                         | 89.9                             |
| 3932 | 10/12/97 | 2200 | 12.39                    | 7.83          | 9.41                         | 89.7                             |
| 3933 | 10/12/97 | 2300 | 12.46                    | 7.83          | 9.41                         | 89.7                             |
| 3934 | 10/13/97 | 0    | 12.47                    | 7.83          | 9.40                         | 89.7                             |
| 3935 | 10/13/97 | 100  | 12.52                    | 7.83          | 9.38                         | 89.9                             |
| 3936 | 10/13/97 | 200  | 12.57                    | 7.82          | 9.35                         | 89.9                             |
| 3937 | 10/13/97 | 300  | 12.60                    | 7.82          | 9.31                         | 89.9                             |
| 3938 | 10/13/97 | 400  | 12.60                    | 7.82          | 9.31                         | 89.9                             |
| 3939 | 10/13/97 | 500  | 12.69                    | 7.81          | 9.35                         | 89.9                             |
| 3940 | 10/13/97 | 600  | 12.69                    | 7.81          | 9.35                         | 89.9                             |
| 3941 | 10/13/97 | 700  | 12.79                    | 7.80          | 9.42                         | 90.4                             |
| 3942 | 10/13/97 | 800  | 12.79                    | 7.81          | 9.48                         | 91.1                             |
| 3943 | 10/13/97 | 900  | 12.92                    | 7.82          | 9.54                         | 91.8                             |
| 3944 | 10/13/97 | 1000 | 13.08                    | 7.84          | 9.58                         | 92.4                             |
| 3945 | 10/13/97 | 1100 | 13.23                    | 7.84          | 9.58                         | 92.4                             |
| 3946 | 10/13/97 | 1200 | 13.28                    | 7.85          | 9.50                         | 92.2                             |
| 3947 | 10/13/97 | 1300 | 13.31                    | 7.85          | 9.50                         | 92.2                             |
| 3948 | 10/13/97 | 1400 | 13.51                    | 7.87          | 9.43                         | 92.1                             |
| 3949 | 10/13/97 | 1500 | 13.51                    | 7.85          | 9.43                         | 92.1                             |
| 3950 | 10/13/97 | 1600 | 13.51                    | 7.84          | 9.43                         | 92.1                             |
| 3951 | 10/13/97 | 1700 | 13.50                    | 7.84          | 9.45                         | 92.1                             |
| 3952 | 10/13/97 | 1800 | 13.46                    | 7.84          | 9.47                         | 92.1                             |
| 3953 | 10/13/97 | 1900 | 13.46                    | 7.83          | 9.42                         | 92.0                             |
| 3954 | 10/13/97 | 2000 | 13.42                    | 7.81          | 9.40                         | 91.7                             |
| 3955 | 10/13/97 | 2100 | 13.40                    | 7.81          | 9.40                         | 91.6                             |
| 3956 | 10/13/97 | 2200 | 13.35                    | 7.80          | 9.37                         | 91.6                             |
| 3957 | 10/13/97 | 2300 | 13.27                    | 7.80          | 9.32                         | 91.6                             |
| 3958 | 10/14/97 | 0    | 13.27                    | 7.81          | 9.44                         | 91.7                             |
| 3959 | 10/14/97 | 100  | 13.18                    | 7.81          | 9.44                         | 91.7                             |
| 3960 | 10/14/97 | 200  | 13.10                    | 7.81          | 9.47                         | 91.7                             |
| 3961 | 10/14/97 | 300  | 13.04                    | 7.80          | 9.47                         | 91.5                             |
| 3962 | 10/14/97 | 400  | 12.94                    | 7.81          | 9.45                         | 91.2                             |
| 3963 | 10/14/97 | 500  | 12.87                    | 7.80          | 9.44                         | 91.1                             |
| 3964 | 10/14/97 | 600  | 12.79                    | 7.79          | 9.44                         | 90.8                             |
| 3965 | 10/14/97 | 700  | 12.69                    | 7.78          | 9.44                         | 90.3                             |
| 3966 | 10/14/97 | 800  | 12.57                    | 7.78          | 9.42                         | 90.2                             |
| 3967 | 10/14/97 | 900  | 12.44                    | 7.78          | 9.38                         | 89.5                             |
| 3968 | 10/14/97 | 1000 | 12.32                    | 7.78          | 9.18                         | 87.9                             |
| 3969 | 10/14/97 | 1100 | 12.27                    | 7.79          | 9.45                         | 89.4                             |
| 3970 | 10/14/97 | 1200 | 12.09                    | 7.81          | 9.51                         | 90.8                             |
| 3971 | 10/14/97 | 1300 | 11.91                    | 7.81          | 9.65                         | 91.8                             |
| 3972 | 10/14/97 | 1400 | 11.91                    | 7.82          | 9.66                         | 91.2                             |
| 3973 | 10/14/97 | 1500 | 11.83                    | 7.83          | 9.72                         | 91.4                             |
| 3974 | 10/14/97 | 1600 | 11.78                    | 7.83          | 9.72                         | 91.4                             |
| 3975 | 10/14/97 | 1700 | 11.71                    | 7.82          | 9.74                         | 91.4                             |

1997

| OBS  | DATE     | HOUR | TEMP. (DEGREES C.) | PH (U.S.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|--------------------|-----------|------------------------|-------------------------------|
| 3976 | 10/14/97 | 1800 | 11.58              | 7.82      | 9.79                   | 91.6                          |
| 3977 | 10/14/97 | 1900 | 11.34              | 7.83      | 9.88                   | 91.9                          |
| 3978 | 10/14/97 | 2000 | 11.14              | 7.81      | 9.95                   | 92.2                          |
| 3979 | 10/14/97 | 2100 | 10.89              | 7.80      | 10.02                  | 92.6                          |
| 3980 | 10/14/97 | 2200 | 10.71              | 7.80      | 10.12                  | 92.8                          |
| 3981 | 10/14/97 | 2300 | 10.55              | 7.81      | 10.21                  | 93.3                          |
| 3982 | 10/15/97 | 0    | 10.42              | 7.82      | 10.32                  | 94.0                          |
| 3983 | 10/15/97 | 100  | 10.30              | 7.81      | 10.37                  | 94.2                          |
| 3984 | 10/15/97 | 200  | 10.20              | 7.82      | 10.41                  | 94.4                          |
| 3985 | 10/15/97 | 300  | 10.10              | 7.82      | 10.47                  | 94.6                          |
| 3986 | 10/15/97 | 400  | 10.02              | 7.83      | 10.50                  | 94.7                          |
| 3987 | 10/15/97 | 500  | 9.91               | 7.83      | 10.56                  | 94.8                          |
| 3988 | 10/15/97 | 600  | 9.81               | 7.82      | 10.59                  | 94.9                          |
| 3989 | 10/15/97 | 700  | 9.73               | 7.82      | 10.62                  | 95.0                          |
| 3990 | 10/15/97 | 800  | 9.63               | 7.82      | 10.66                  | 95.2                          |
| 3991 | 10/15/97 | 900  | 9.51               | 7.82      | 10.67                  | 95.3                          |
| 3992 | 10/15/97 | 1000 | 9.38               | 7.82      | 10.68                  | 95.3                          |
| 3993 | 10/15/97 | 1100 | 9.25               | 7.81      | 10.67                  | 95.2                          |
| 3994 | 10/15/97 | 1200 | 9.13               | 7.81      | 10.62                  | 95.0                          |
| 3995 | 10/15/97 | 1300 | 9.00               | 7.82      | 10.60                  | 94.9                          |
| 3996 | 10/15/97 | 1400 | 8.88               | 7.82      | 10.58                  | 94.7                          |
| 3997 | 10/15/97 | 1500 | 8.75               | 7.82      | 10.56                  | 94.4                          |
| 3998 | 10/15/97 | 1600 | 8.60               | 7.82      | 10.53                  | 94.1                          |
| 3999 | 10/15/97 | 1700 | 8.42               | 7.81      | 10.50                  | 93.7                          |
| 4000 | 10/15/97 | 1800 | 8.22               | 7.81      | 10.47                  | 93.4                          |
| 4001 | 10/15/97 | 1900 | 8.04               | 7.80      | 10.43                  | 93.1                          |
| 4002 | 10/15/97 | 2000 | 7.89               | 7.80      | 10.38                  | 92.8                          |
| 4003 | 10/15/97 | 2100 | 7.71               | 7.80      | 10.35                  | 92.5                          |
| 4004 | 10/15/97 | 2200 | 7.51               | 7.80      | 10.31                  | 92.2                          |
| 4005 | 10/15/97 | 2300 | 7.30               | 7.79      | 10.27                  | 91.9                          |
| 4006 | 10/15/97 | 0    | 7.17               | 7.79      | 11.00                  | 96.1                          |
| 4007 | 10/15/97 | 100  | 7.04               | 7.80      | 11.00                  | 96.1                          |
| 4008 | 10/15/97 | 200  | 6.87               | 7.80      | 11.03                  | 96.3                          |
| 4009 | 10/15/97 | 300  | 6.74               | 7.80      | 11.03                  | 96.4                          |
| 4010 | 10/15/97 | 400  | 6.59               | 7.81      | 11.05                  | 96.6                          |
| 4011 | 10/15/97 | 500  | 6.45               | 7.81      | 11.05                  | 96.6                          |
| 4012 | 10/15/97 | 600  | 6.30               | 7.81      | 11.05                  | 96.6                          |
| 4013 | 10/15/97 | 700  | 6.15               | 7.81      | 11.05                  | 96.6                          |
| 4014 | 10/15/97 | 800  | 6.00               | 7.80      | 11.05                  | 96.6                          |
| 4015 | 10/15/97 | 900  | 5.85               | 7.79      | 11.05                  | 96.6                          |
| 4016 | 10/15/97 | 1000 | 5.69               | 7.79      | 11.06                  | 96.7                          |
| 4017 | 10/15/97 | 1100 | 5.55               | 7.79      | 11.05                  | 96.7                          |
| 4018 | 10/15/97 | 1200 | 5.41               | 7.78      | 11.03                  | 96.5                          |
| 4019 | 10/15/97 | 1300 | 5.28               | 7.78      | 11.04                  | 96.5                          |
| 4020 | 10/15/97 | 1400 | 5.14               | 7.78      | 11.06                  | 96.6                          |
| 4021 | 10/15/97 | 1500 | 5.00               | 7.78      | 11.07                  | 96.6                          |
| 4022 | 10/15/97 | 1600 | 4.85               | 7.77      | 11.11                  | 96.7                          |
| 4023 | 10/15/97 | 1700 | 4.70               | 7.77      | 11.19                  | 96.7                          |
| 4024 | 10/15/97 | 1800 | 4.55               | 7.77      | 11.22                  | 96.7                          |
| 4025 | 10/15/97 | 1900 | 4.40               | 7.78      | 11.23                  | 96.8                          |
| 4026 | 10/15/97 | 2000 | 4.25               | 7.77      | 11.23                  | 96.8                          |
| 4027 | 10/15/97 | 2100 | 4.10               | 7.78      | 11.23                  | 96.8                          |
| 4028 | 10/15/97 | 2200 | 3.95               | 7.77      | 11.23                  | 96.8                          |
| 4029 | 10/15/97 | 2300 | 3.80               | 7.77      | 11.25                  | 96.8                          |
| 4030 | 10/17/97 | 0    | 3.65               | 7.77      | 11.28                  | 96.7                          |
| 4031 | 10/17/97 | 100  | 3.50               | 7.78      | 11.20                  | 96.7                          |
| 4032 | 10/17/97 | 200  | 3.35               | 7.78      | 11.21                  | 96.7                          |
| 4033 | 10/17/97 | 300  | 3.20               | 7.78      | 11.21                  | 96.7                          |
| 4034 | 10/17/97 | 400  | 3.05               | 7.78      | 11.19                  | 96.6                          |
| 4035 | 10/17/97 | 500  | 2.90               | 7.77      | 11.18                  | 96.6                          |
| 4036 | 10/17/97 | 600  | 2.75               | 7.76      | 11.15                  | 96.5                          |
| 4037 | 10/17/97 | 700  | 2.60               | 7.76      | 11.15                  | 96.5                          |
| 4038 | 10/17/97 | 800  | 2.45               | 7.76      | 11.16                  | 96.5                          |
| 4039 | 10/17/97 | 900  | 2.30               | 7.77      | 11.15                  | 96.5                          |
| 4040 | 10/17/97 | 1000 | 2.15               | 7.76      | 11.13                  | 96.5                          |
| 4041 | 10/17/97 | 1100 | 2.00               | 7.76      | 11.10                  | 96.5                          |
| 4042 | 10/17/97 | 1200 | 1.85               | 7.76      | 11.10                  | 96.5                          |
| 4043 | 10/17/97 | 1300 | 1.70               | 7.76      | 11.18                  | 96.5                          |
| 4044 | 10/17/97 | 1400 | 1.55               | 7.76      | 11.05                  | 96.5                          |
| 4045 | 10/17/97 | 1500 | 1.40               | 7.76      | 11.09                  | 96.5                          |
| 4046 | 10/17/97 | 1600 | 1.25               | 7.75      | 11.09                  | 96.5                          |
| 4047 | 10/17/97 | 1700 | 1.10               | 7.75      | 11.13                  | 96.5                          |
| 4048 | 10/17/97 | 1800 | 0.95               | 7.75      | 11.14                  | 96.5                          |
| 4049 | 10/17/97 | 1900 | 0.80               | 7.74      | 11.14                  | 96.5                          |
| 4050 | 10/17/97 | 2000 | 0.65               | 7.74      | 11.13                  | 96.5                          |

FA001

PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 4051 | 10/17/97 | 2100 | 7.74                     | 7.75          | 11.10                        | 8                                |
| 4052 | 10/17/97 | 2200 | 7.74                     | 7.74          | 11.08                        | 8.7                              |
| 4053 | 10/17/97 | 2300 | 7.72                     | 7.75          | 11.12                        | 95.0                             |
| 4054 | 10/18/97 | 0    | 7.75                     | 7.75          | 11.12                        | 95.0                             |
| 4055 | 10/18/97 | 100  | 7.76                     | 7.75          | 11.23                        | 95.9                             |
| 4056 | 10/18/97 | 200  | 7.76                     | 7.76          | 11.26                        | 96.2                             |
| 4057 | 10/18/97 | 300  | 7.76                     | 7.78          | 11.30                        | 96.6                             |
| 4058 | 10/18/97 | 400  | 7.76                     | 7.78          | 11.31                        | 96.7                             |
| 4059 | 10/18/97 | 500  | 7.77                     | 7.79          | 11.31                        | 95.1                             |
| 4060 | 10/18/97 | 600  | 7.77                     | 7.79          | 11.15                        | 94.4                             |
| 4061 | 10/18/97 | 700  | 7.77                     | 7.80          | 11.04                        | 93.9                             |
| 4062 | 10/18/97 | 800  | 7.76                     | 7.80          | 10.99                        | 93.8                             |
| 4063 | 10/18/97 | 900  | 7.77                     | 7.80          | 10.97                        | 93.8                             |
| 4064 | 10/18/97 | 1000 | 7.85                     | 7.80          | 10.87                        | 93.1                             |
| 4065 | 10/18/97 | 1100 | 7.85                     | 7.80          | 10.90                        | 93.4                             |
| 4066 | 10/18/97 | 1200 | 7.99                     | 7.80          | 10.78                        | 92.7                             |
| 4067 | 10/18/97 | 1300 | 8.14                     | 7.81          | 10.85                        | 93.8                             |
| 4068 | 10/18/97 | 1400 | 8.25                     | 7.80          | 10.84                        | 93.8                             |
| 4069 | 10/18/97 | 1500 | 8.30                     | 7.81          | 10.86                        | 94.1                             |
| 4070 | 10/18/97 | 1600 | 8.30                     | 7.81          | 10.86                        | 94.1                             |
| 4071 | 10/18/97 | 1700 | 8.25                     | 7.78          | 11.18                        | 96.4                             |
| 4072 | 10/18/97 | 1800 | 8.15                     | 7.78          | 11.15                        | 96.3                             |
| 4073 | 10/18/97 | 1900 | 8.05                     | 7.77          | 11.06                        | 95.2                             |
| 4074 | 10/18/97 | 2000 | 7.94                     | 7.77          | 10.94                        | 93.6                             |
| 4075 | 10/18/97 | 2100 | 7.90                     | 7.78          | 10.91                        | 93.6                             |
| 4076 | 10/18/97 | 2200 | 7.84                     | 7.77          | 10.70                        | 91.8                             |
| 4077 | 10/18/97 | 2300 | 7.84                     | 7.77          | 10.82                        | 92.0                             |
| 4078 | 10/18/97 | 0    | 7.85                     | 7.77          | 10.86                        | 92.0                             |
| 4079 | 10/18/97 | 100  | 7.85                     | 7.77          | 10.88                        | 92.2                             |
| 4080 | 10/18/97 | 200  | 7.94                     | 7.77          | 10.88                        | 92.2                             |
| 4081 | 10/18/97 | 300  | 8.00                     | 7.79          | 10.85                        | 93.1                             |
| 4082 | 10/18/97 | 400  | 8.10                     | 7.79          | 10.85                        | 93.5                             |
| 4083 | 10/18/97 | 500  | 8.23                     | 7.82          | 10.88                        | 93.7                             |
| 4084 | 10/18/97 | 600  | 8.32                     | 7.84          | 10.86                        | 93.9                             |
| 4085 | 10/18/97 | 700  | 8.43                     | 7.85          | 10.88                        | 94.3                             |
| 4086 | 10/18/97 | 800  | 8.45                     | 7.85          | 10.83                        | 94.1                             |
| 4087 | 10/18/97 | 900  | 8.45                     | 7.85          | 10.85                        | 94.4                             |
| 4088 | 10/18/97 | 1000 | 8.40                     | 7.84          | 10.86                        | 94.4                             |
| 4089 | 10/18/97 | 1100 | 8.38                     | 7.84          | 10.80                        | 93.7                             |
| 4090 | 10/18/97 | 1200 | 8.40                     | 7.84          | 10.81                        | 94.0                             |
| 4091 | 10/18/97 | 1300 | 8.44                     | 7.85          | 10.83                        | 94.0                             |
| 4092 | 10/18/97 | 1400 | 8.44                     | 7.85          | 10.80                        | 93.8                             |
| 4093 | 10/18/97 | 1500 | 8.45                     | 7.85          | 10.80                        | 93.8                             |
| 4094 | 10/18/97 | 1600 | 8.45                     | 7.85          | 10.79                        | 93.8                             |
| 4095 | 10/18/97 | 1700 | 8.45                     | 7.85          | 10.79                        | 93.8                             |
| 4096 | 10/18/97 | 1800 | 8.45                     | 7.84          | 10.79                        | 93.8                             |
| 4097 | 10/18/97 | 1900 | 8.41                     | 7.84          | 10.80                        | 93.7                             |
| 4098 | 10/18/97 | 2000 | 8.36                     | 7.84          | 10.80                        | 93.7                             |
| 4099 | 10/18/97 | 2100 | 8.31                     | 7.84          | 10.81                        | 93.7                             |
| 4100 | 10/18/97 | 2200 | 8.25                     | 7.83          | 10.83                        | 93.6                             |
| 4101 | 10/18/97 | 2300 | 8.20                     | 7.83          | 10.85                        | 93.6                             |
| 4102 | 10/20/97 | 0    | 8.18                     | 7.82          | 10.80                        | 93.2                             |
| 4103 | 10/20/97 | 100  | 8.14                     | 7.82          | 10.78                        | 93.1                             |
| 4104 | 10/20/97 | 200  | 8.12                     | 7.82          | 10.80                        | 93.1                             |
| 4105 | 10/20/97 | 300  | 8.07                     | 7.82          | 10.79                        | 92.9                             |
| 4106 | 10/20/97 | 400  | 8.02                     | 7.81          | 10.77                        | 92.8                             |
| 4107 | 10/20/97 | 500  | 7.99                     | 7.81          | 10.74                        | 92.6                             |
| 4108 | 10/20/97 | 600  | 7.95                     | 7.83          | 10.75                        | 92.3                             |
| 4109 | 10/20/97 | 700  | 7.92                     | 7.83          | 10.62                        | 91.3                             |
| 4110 | 10/20/97 | 800  | 7.90                     | 7.83          | 10.58                        | 90.9                             |
| 4111 | 10/20/97 | 900  | 7.90                     | 7.83          | 10.58                        | 90.9                             |
| 4112 | 10/20/97 | 1000 | 7.87                     | 7.84          | 10.68                        | 90.9                             |
| 4113 | 10/20/97 | 1100 | 7.87                     | 7.84          | 10.77                        | 92.3                             |
| 4114 | 10/20/97 | 1200 | 7.89                     | 7.84          | 10.77                        | 92.3                             |
| 4115 | 10/20/97 | 1300 | 7.89                     | 7.84          | 10.77                        | 92.3                             |
| 4116 | 10/20/97 | 1400 | 7.94                     | 7.84          | 10.77                        | 92.3                             |
| 4117 | 10/20/97 | 1500 | 8.00                     | 7.84          | 10.76                        | 92.3                             |
| 4118 | 10/20/97 | 1600 | 8.03                     | 7.85          | 10.76                        | 92.3                             |
| 4119 | 10/20/97 | 1700 | 7.95                     | 7.85          | 10.78                        | 92.6                             |
| 4120 | 10/20/97 | 1800 | 7.95                     | 7.84          | 10.74                        | 91.7                             |
| 4121 | 10/20/97 | 1900 | 7.97                     | 7.84          | 10.69                        | 91.6                             |
| 4122 | 10/20/97 | 2000 | 7.82                     | 7.84          | 10.69                        | 91.5                             |
| 4123 | 10/20/97 | 2100 | 7.82                     | 7.84          | 10.71                        | 91.5                             |
| 4124 | 10/20/97 | 2200 | 7.67                     | 7.82          | 10.74                        | 91.6                             |
| 4125 | 10/20/97 | 2300 | 7.62                     | 7.83          | 10.75                        | 91.6                             |

| OBS  | DATE     | HOUR | TEMP. (C.) | PH (U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|------------|---------|------------------------|-------------------------------|
| 4126 | 10/21/97 | 0    | 7.58       | 7.83    | 10.95                  | 93.2                          |
| 4127 | 10/21/97 | 100  | 7.46       | 7.83    | 10.86                  | 92.3                          |
| 4128 | 10/21/97 | 200  | 7.31       | 7.83    | 10.84                  | 92.0                          |
| 4129 | 10/21/97 | 300  | 7.31       | 7.83    | 10.83                  | 92.0                          |
| 4130 | 10/21/97 | 400  | 7.29       | 7.84    | 10.93                  | 92.2                          |
| 4131 | 10/21/97 | 500  | 7.29       | 7.84    | 10.93                  | 92.2                          |
| 4132 | 10/21/97 | 600  | 7.16       | 7.85    | 10.93                  | 91.8                          |
| 4133 | 10/21/97 | 700  | 7.06       | 7.85    | 10.93                  | 91.8                          |
| 4134 | 10/21/97 | 800  | 6.95       | 7.85    | 10.89                  | 91.4                          |
| 4135 | 10/21/97 | 900  | 6.82       | 7.87    | 10.94                  | 91.6                          |
| 4136 | 10/21/97 | 1000 | 6.82       | 7.87    | 10.93                  | 91.6                          |
| 4137 | 10/21/97 | 1100 | 6.81       | 7.88    | 10.92                  | 91.5                          |
| 4138 | 10/21/97 | 1200 | 6.81       | 7.88    | 10.92                  | 91.5                          |
| 4139 | 10/21/97 | 1300 | 6.78       | 7.89    | 10.92                  | 91.5                          |
| 4140 | 10/21/97 | 1400 | 6.75       | 7.89    | 10.88                  | 91.3                          |
| 4141 | 10/21/97 | 1500 | 6.70       | 7.90    | 11.15                  | 93.0                          |
| 4142 | 10/21/97 | 1600 | 6.64       | 7.90    | 11.14                  | 92.8                          |
| 4143 | 10/21/97 | 1700 | 6.59       | 7.90    | 11.14                  | 92.8                          |
| 4144 | 10/21/97 | 1800 | 6.54       | 7.90    | 11.15                  | 92.9                          |
| 4145 | 10/21/97 | 1900 | 6.44       | 7.91    | 11.15                  | 92.9                          |
| 4146 | 10/21/97 | 2000 | 6.44       | 7.91    | 11.15                  | 92.9                          |
| 4147 | 10/21/97 | 2100 | 6.40       | 7.91    | 11.16                  | 92.9                          |
| 4148 | 10/21/97 | 2200 | 6.32       | 7.91    | 11.17                  | 92.9                          |
| 4149 | 10/21/97 | 2300 | 6.22       | 7.91    | 11.17                  | 92.9                          |
| 4150 | 10/22/97 | 0    | 6.24       | 7.89    | 11.16                  | 92.9                          |
| 4151 | 10/22/97 | 100  | 6.19       | 7.89    | 11.15                  | 92.9                          |
| 4152 | 10/22/97 | 200  | 6.15       | 7.88    | 11.15                  | 92.9                          |
| 4153 | 10/22/97 | 300  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4154 | 10/22/97 | 400  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4155 | 10/22/97 | 500  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4156 | 10/22/97 | 600  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4157 | 10/22/97 | 700  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4158 | 10/22/97 | 800  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4159 | 10/22/97 | 900  | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4160 | 10/22/97 | 1000 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4161 | 10/22/97 | 1100 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4162 | 10/22/97 | 1200 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4163 | 10/22/97 | 1300 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4164 | 10/22/97 | 1400 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4165 | 10/22/97 | 1500 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4166 | 10/22/97 | 1600 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4167 | 10/22/97 | 1700 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4168 | 10/22/97 | 1800 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4169 | 10/22/97 | 1900 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4170 | 10/22/97 | 2000 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4171 | 10/22/97 | 2100 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4172 | 10/22/97 | 2200 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4173 | 10/22/97 | 2300 | 6.14       | 7.88    | 11.15                  | 92.9                          |
| 4174 | 10/23/97 | 0    | 4.18       | 7.95    | 11.80                  | 92.1                          |
| 4175 | 10/23/97 | 100  | 4.18       | 7.95    | 11.82                  | 92.1                          |
| 4176 | 10/23/97 | 200  | 4.18       | 7.95    | 11.82                  | 92.1                          |
| 4177 | 10/23/97 | 300  | 4.04       | 7.95    | 11.84                  | 92.1                          |
| 4178 | 10/23/97 | 400  | 3.99       | 7.94    | 11.84                  | 92.1                          |
| 4179 | 10/23/97 | 500  | 3.99       | 7.95    | 11.87                  | 92.1                          |
| 4180 | 10/23/97 | 600  | 3.99       | 7.95    | 11.88                  | 92.1                          |
| 4181 | 10/23/97 | 700  | 3.62       | 7.95    | 12.04                  | 92.2                          |
| 4182 | 10/23/97 | 800  | 3.62       | 7.95    | 12.04                  | 92.2                          |
| 4183 | 10/23/97 | 900  | 3.51       | 7.95    | 12.05                  | 92.2                          |
| 4184 | 10/23/97 | 1000 | 3.48       | 7.94    | 12.05                  | 92.2                          |
| 4185 | 10/23/97 | 1100 | 3.44       | 7.74    | 12.07                  | 92.1                          |
| 4186 | 10/23/97 | 1200 | 3.49       | 7.75    | 11.98                  | 91.9                          |
| 4187 | 10/23/97 | 1300 | 3.54       | 7.76    | 11.98                  | 91.9                          |
| 4188 | 10/23/97 | 1400 | 3.61       | 7.78    | 11.94                  | 91.6                          |
| 4189 | 10/23/97 | 1500 | 3.66       | 7.77    | 11.89                  | 91.3                          |
| 4190 | 10/23/97 | 1600 | 3.66       | 7.77    | 11.89                  | 91.3                          |
| 4191 | 10/23/97 | 1700 | 3.58       | 7.78    | 11.87                  | 91.4                          |
| 4192 | 10/23/97 | 1800 | 3.54       | 7.77    | 12.05                  | 92.1                          |
| 4193 | 10/23/97 | 1900 | 3.51       | 7.77    | 12.05                  | 92.1                          |
| 4194 | 10/23/97 | 2000 | 3.44       | 7.78    | 12.08                  | 92.1                          |
| 4195 | 10/23/97 | 2100 | 3.29       | 7.77    | 12.12                  | 92.2                          |
| 4196 | 10/23/97 | 2200 | 3.24       | 7.78    | 12.12                  | 92.2                          |
| 4197 | 10/24/97 | 0    | 3.16       | 7.77    | 12.16                  | 92.2                          |
| 4198 | 10/24/97 | 100  | 3.17       | 7.78    | 12.16                  | 92.2                          |
| 4199 | 10/24/97 | 200  | 3.16       | 7.77    | 12.18                  | 92.2                          |
| 4200 | 10/24/97 | 300  | 3.16       | 7.77    | 12.18                  | 92.2                          |

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PINE 1997 TAILRACE DATA

| OBS   | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|-------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 42001 | 10/24/97 | 300  | 3.16                     | 7.77          | 12.21                        | 92.54                            |
| 42002 | 10/24/97 | 400  | 3.14                     | 7.77          | 12.21                        | 92.54                            |
| 42003 | 10/24/97 | 500  | 3.13                     | 7.77          | 12.21                        | 92.54                            |
| 42004 | 10/24/97 | 600  | 3.09                     | 7.77          | 12.21                        | 92.54                            |
| 42005 | 10/24/97 | 700  | 3.06                     | 7.78          | 12.50                        | 94.55                            |
| 42006 | 10/24/97 | 800  | 3.04                     | 7.78          | 12.45                        | 93.72                            |
| 42007 | 10/24/97 | 900  | 3.07                     | 7.79          | 12.46                        | 94.22                            |
| 42008 | 10/24/97 | 1000 | 3.09                     | 7.79          | 12.48                        | 94.15                            |
| 42009 | 10/24/97 | 1100 | 3.12                     | 7.79          | 12.57                        | 95.33                            |
| 42010 | 10/24/97 | 1200 | 3.17                     | 7.80          | 12.57                        | 95.00                            |
| 42011 | 10/24/97 | 1300 | 3.21                     | 7.80          | 12.54                        | 95.00                            |
| 42012 | 10/24/97 | 1400 | 3.19                     | 7.79          | 12.53                        | 95.00                            |
| 42013 | 10/24/97 | 1500 | 3.16                     | 7.80          | 12.53                        | 95.00                            |
| 42014 | 10/24/97 | 1600 | 3.16                     | 7.80          | 12.51                        | 94.88                            |
| 42015 | 10/24/97 | 1700 | 3.16                     | 7.80          | 12.51                        | 94.88                            |
| 42016 | 10/24/97 | 1800 | 3.14                     | 7.80          | 12.52                        | 94.88                            |
| 42017 | 10/24/97 | 1900 | 3.12                     | 7.80          | 12.52                        | 94.88                            |
| 42018 | 10/24/97 | 2000 | 3.12                     | 7.81          | 12.55                        | 95.00                            |
| 42019 | 10/24/97 | 2100 | 3.06                     | 7.81          | 12.55                        | 95.00                            |
| 42020 | 10/24/97 | 2200 | 3.01                     | 7.81          | 12.55                        | 95.00                            |
| 42021 | 10/24/97 | 2300 | 3.02                     | 7.80          | 12.50                        | 94.77                            |
| 42022 | 10/25/97 | 0    | 2.92                     | 7.81          | 12.69                        | 94.77                            |
| 42023 | 10/25/97 | 100  | 2.87                     | 7.80          | 12.63                        | 94.77                            |
| 42024 | 10/25/97 | 200  | 2.79                     | 7.80          | 12.63                        | 94.77                            |
| 42025 | 10/25/97 | 300  | 2.75                     | 7.80          | 12.63                        | 94.77                            |
| 42026 | 10/25/97 | 400  | 2.72                     | 7.80          | 12.66                        | 94.77                            |
| 42027 | 10/25/97 | 500  | 2.68                     | 7.81          | 12.66                        | 94.77                            |
| 42028 | 10/25/97 | 600  | 2.65                     | 7.81          | 12.68                        | 94.77                            |
| 42029 | 10/25/97 | 700  | 2.63                     | 7.81          | 12.68                        | 94.77                            |
| 42030 | 10/25/97 | 800  | 2.67                     | 7.81          | 12.68                        | 94.80                            |
| 42031 | 10/25/97 | 900  | 2.72                     | 7.81          | 12.69                        | 95.11                            |
| 42032 | 10/25/97 | 1000 | 2.75                     | 7.81          | 12.69                        | 95.11                            |
| 42033 | 10/25/97 | 1100 | 2.84                     | 7.81          | 12.69                        | 95.11                            |
| 42034 | 10/25/97 | 1200 | 2.90                     | 7.81          | 12.69                        | 95.11                            |
| 42035 | 10/25/97 | 1300 | 2.94                     | 7.81          | 12.69                        | 95.11                            |
| 42036 | 10/25/97 | 1400 | 2.97                     | 7.80          | 12.69                        | 95.11                            |
| 42037 | 10/25/97 | 1500 | 2.95                     | 7.80          | 12.65                        | 94.45                            |
| 42038 | 10/25/97 | 1600 | 2.95                     | 7.80          | 12.49                        | 94.11                            |
| 42039 | 10/25/97 | 1700 | 2.89                     | 7.80          | 12.50                        | 94.00                            |
| 42040 | 10/25/97 | 1800 | 2.89                     | 7.80          | 12.47                        | 93.88                            |
| 42041 | 10/25/97 | 1900 | 2.89                     | 7.80          | 12.47                        | 93.88                            |
| 42042 | 10/25/97 | 2000 | 2.89                     | 7.80          | 12.47                        | 93.88                            |
| 42043 | 10/25/97 | 2100 | 2.87                     | 7.80          | 12.47                        | 93.88                            |
| 42044 | 10/25/97 | 2200 | 2.84                     | 7.81          | 12.45                        | 93.55                            |
| 42045 | 10/25/97 | 2300 | 2.80                     | 7.81          | 12.45                        | 93.55                            |
| 42046 | 10/26/97 | 0    | 2.80                     | 7.81          | 12.45                        | 93.55                            |
| 42047 | 10/26/97 | 100  | 2.80                     | 7.81          | 12.45                        | 93.55                            |
| 42048 | 10/26/97 | 200  | 2.82                     | 7.81          | 12.45                        | 93.55                            |
| 42049 | 10/26/97 | 300  | 2.85                     | 7.81          | 12.51                        | 93.88                            |
| 42050 | 10/26/97 | 400  | 2.80                     | 7.81          | 12.51                        | 93.88                            |
| 42051 | 10/26/97 | 500  | 2.77                     | 7.81          | 12.51                        | 93.88                            |
| 42052 | 10/26/97 | 600  | 2.80                     | 7.82          | 12.53                        | 94.45                            |
| 42053 | 10/26/97 | 700  | 2.82                     | 7.82          | 12.53                        | 94.45                            |
| 42054 | 10/26/97 | 800  | 2.84                     | 7.82          | 12.51                        | 94.00                            |
| 42055 | 10/26/97 | 900  | 2.84                     | 7.82          | 12.51                        | 94.00                            |
| 42056 | 10/26/97 | 1000 | 2.84                     | 7.82          | 12.51                        | 94.00                            |
| 42057 | 10/26/97 | 1100 | 2.85                     | 7.81          | 12.52                        | 94.11                            |
| 42058 | 10/26/97 | 1200 | 2.87                     | 7.81          | 12.52                        | 94.11                            |
| 42059 | 10/26/97 | 1300 | 2.87                     | 7.81          | 12.51                        | 94.00                            |
| 42060 | 10/26/97 | 1400 | 2.87                     | 7.81          | 12.51                        | 94.00                            |
| 42061 | 10/26/97 | 1500 | 2.86                     | 7.80          | 12.52                        | 94.11                            |
| 42062 | 10/26/97 | 1600 | 2.85                     | 7.80          | 12.52                        | 94.11                            |
| 42063 | 10/26/97 | 1700 | 2.82                     | 7.81          | 12.51                        | 94.00                            |
| 42064 | 10/26/97 | 1800 | 2.77                     | 7.81          | 12.52                        | 93.77                            |
| 42065 | 10/26/97 | 1900 | 2.70                     | 7.82          | 12.57                        | 93.99                            |
| 42066 | 10/26/97 | 2000 | 2.62                     | 7.83          | 12.58                        | 93.99                            |
| 42067 | 10/26/97 | 2100 | 2.55                     | 7.83          | 12.58                        | 93.99                            |
| 42068 | 10/26/97 | 2200 | 2.55                     | 7.83          | 12.58                        | 93.99                            |
| 42069 | 10/26/97 | 2300 | 2.52                     | 7.83          | 12.58                        | 93.99                            |
| 42070 | 10/27/97 | 0    | 2.52                     | 7.83          | 12.58                        | 93.99                            |
| 42071 | 10/27/97 | 100  | 2.41                     | 7.83          | 12.60                        | 93.88                            |
| 42072 | 10/27/97 | 200  | 2.41                     | 7.83          | 12.60                        | 93.88                            |
| 42073 | 10/27/97 | 300  | 2.36                     | 7.84          | 12.62                        | 94.00                            |
| 42074 | 10/27/97 | 400  | 2.36                     | 7.84          | 12.73                        | 94.00                            |
| 42075 | 10/27/97 | 500  | 2.11                     | 7.85          | 12.78                        | 94.00                            |

| OBS  | DATE     | HOUR | TEMP (DEGREES C.) | PH (S. U.) | DISSOLVED OXYGEN (PPM) | DISSOLVED OXYGEN % SATURATION |
|------|----------|------|-------------------|------------|------------------------|-------------------------------|
| 4276 | 10/27/97 | 600  | 2.02              | 7.86       | 12.81                  | 94.1                          |
| 4277 | 10/27/97 | 700  | 1.92              | 7.86       | 12.81                  | 94.1                          |
| 4278 | 10/27/97 | 800  | 1.90              | 7.86       | 12.81                  | 94.1                          |
| 4279 | 10/27/97 | 900  | 1.85              | 7.86       | 12.81                  | 94.1                          |
| 4280 | 10/27/97 | 1000 | 1.82              | 7.86       | 12.81                  | 94.1                          |
| 4281 | 10/27/97 | 1100 | 1.85              | 7.87       | 12.81                  | 94.1                          |
| 4282 | 10/27/97 | 1200 | 1.92              | 7.87       | 12.81                  | 94.1                          |
| 4283 | 10/27/97 | 1300 | 1.99              | 7.88       | 12.81                  | 94.1                          |
| 4284 | 10/27/97 | 1400 | 2.09              | 7.87       | 12.81                  | 94.1                          |
| 4285 | 10/27/97 | 1500 | 2.16              | 7.86       | 12.81                  | 94.1                          |
| 4286 | 10/27/97 | 1600 | 2.21              | 7.87       | 12.81                  | 94.1                          |
| 4287 | 10/27/97 | 1700 | 2.26              | 7.87       | 12.81                  | 94.1                          |
| 4288 | 10/27/97 | 1800 | 2.31              | 7.87       | 12.81                  | 94.1                          |
| 4289 | 10/27/97 | 1900 | 2.36              | 7.87       | 12.81                  | 94.1                          |
| 4290 | 10/27/97 | 2000 | 2.41              | 7.87       | 12.81                  | 94.1                          |
| 4291 | 10/27/97 | 2100 | 2.46              | 7.87       | 12.81                  | 94.1                          |
| 4292 | 10/27/97 | 2200 | 2.51              | 7.87       | 12.81                  | 94.1                          |
| 4293 | 10/27/97 | 2300 | 2.56              | 7.86       | 12.81                  | 94.1                          |
| 4294 | 10/28/97 | 0    | 2.61              | 7.86       | 12.81                  | 94.1                          |
| 4295 | 10/28/97 | 100  | 2.66              | 7.86       | 12.81                  | 94.1                          |
| 4296 | 10/28/97 | 200  | 2.71              | 7.86       | 12.81                  | 94.1                          |
| 4297 | 10/28/97 | 300  | 2.76              | 7.86       | 12.81                  | 94.1                          |
| 4298 | 10/28/97 | 400  | 2.81              | 7.86       | 12.81                  | 94.1                          |
| 4299 | 10/28/97 | 500  | 2.86              | 7.86       | 12.81                  | 94.1                          |
| 4300 | 10/28/97 | 600  | 2.91              | 7.86       | 12.81                  | 94.1                          |
| 4301 | 10/28/97 | 700  | 2.96              | 7.86       | 12.81                  | 94.1                          |
| 4302 | 10/28/97 | 800  | 3.01              | 7.86       | 12.81                  | 94.1                          |
| 4303 | 10/28/97 | 900  | 3.06              | 7.86       | 12.81                  | 94.1                          |
| 4304 | 10/28/97 | 1000 | 3.11              | 7.86       | 12.81                  | 94.1                          |
| 4305 | 10/28/97 | 1100 | 3.16              | 7.86       | 12.81                  | 94.1                          |
| 4306 | 10/28/97 | 1200 | 3.21              | 7.86       | 12.81                  | 94.1                          |
| 4307 | 10/28/97 | 1300 | 3.26              | 7.86       | 12.81                  | 94.1                          |
| 4308 | 10/28/97 | 1400 | 3.31              | 7.86       | 12.81                  | 94.1                          |
| 4309 | 10/28/97 | 1500 | 3.36              | 7.86       | 12.81                  | 94.1                          |
| 4310 | 10/28/97 | 1600 | 3.41              | 7.86       | 12.81                  | 94.1                          |
| 4311 | 10/28/97 | 1700 | 3.46              | 7.86       | 12.81                  | 94.1                          |
| 4312 | 10/28/97 | 1800 | 3.51              | 7.86       | 12.81                  | 94.1                          |
| 4313 | 10/28/97 | 1900 | 3.56              | 7.86       | 12.81                  | 94.1                          |
| 4314 | 10/28/97 | 2000 | 3.61              | 7.86       | 12.81                  | 94.1                          |
| 4315 | 10/28/97 | 2100 | 3.66              | 7.86       | 12.81                  | 94.1                          |
| 4316 | 10/28/97 | 2200 | 3.71              | 7.86       | 12.81                  | 94.1                          |
| 4317 | 10/28/97 | 2300 | 3.76              | 7.86       | 12.81                  | 94.1                          |
| 4318 | 10/29/97 | 0    | 3.81              | 7.86       | 12.81                  | 94.1                          |
| 4319 | 10/29/97 | 100  | 3.86              | 7.86       | 12.81                  | 94.1                          |
| 4320 | 10/29/97 | 200  | 3.91              | 7.86       | 12.81                  | 94.1                          |
| 4321 | 10/29/97 | 300  | 3.96              | 7.86       | 12.81                  | 94.1                          |
| 4322 | 10/29/97 | 400  | 4.01              | 7.86       | 12.81                  | 94.1                          |
| 4323 | 10/29/97 | 500  | 4.06              | 7.86       | 12.81                  | 94.1                          |
| 4324 | 10/29/97 | 600  | 4.11              | 7.86       | 12.81                  | 94.1                          |
| 4325 | 10/29/97 | 700  | 4.16              | 7.86       | 12.81                  | 94.1                          |
| 4326 | 10/29/97 | 800  | 4.21              | 7.86       | 12.81                  | 94.1                          |
| 4327 | 10/29/97 | 900  | 4.26              | 7.86       | 12.81                  | 94.1                          |
| 4328 | 10/29/97 | 1000 | 4.31              | 7.86       | 12.81                  | 94.1                          |
| 4329 | 10/29/97 | 1100 | 4.36              | 7.86       | 12.81                  | 94.1                          |
| 4330 | 10/29/97 | 1200 | 4.41              | 7.86       | 12.81                  | 94.1                          |
| 4331 | 10/29/97 | 1300 | 4.46              | 7.86       | 12.81                  | 94.1                          |
| 4332 | 10/29/97 | 1400 | 4.51              | 7.86       | 12.81                  | 94.1                          |
| 4333 | 10/29/97 | 1500 | 4.56              | 7.86       | 12.81                  | 94.1                          |
| 4334 | 10/29/97 | 1600 | 4.61              | 7.86       | 12.81                  | 94.1                          |
| 4335 | 10/29/97 | 1700 | 4.66              | 7.86       | 12.81                  | 94.1                          |
| 4336 | 10/29/97 | 1800 | 4.71              | 7.86       | 12.81                  | 94.1                          |
| 4337 | 10/29/97 | 1900 | 4.76              | 7.86       | 12.81                  | 94.1                          |
| 4338 | 10/29/97 | 2000 | 4.81              | 7.86       | 12.81                  | 94.1                          |
| 4339 | 10/29/97 | 2100 | 4.86              | 7.86       | 12.81                  | 94.1                          |
| 4340 | 10/29/97 | 2200 | 4.91              | 7.86       | 12.81                  | 94.1                          |
| 4341 | 10/29/97 | 2300 | 4.96              | 7.86       | 12.81                  | 94.1                          |
| 4342 | 10/30/97 | 0    | 5.01              | 7.86       | 12.81                  | 94.1                          |
| 4343 | 10/30/97 | 100  | 5.06              | 7.86       | 12.81                  | 94.1                          |
| 4344 | 10/30/97 | 200  | 5.11              | 7.86       | 12.81                  | 94.1                          |
| 4345 | 10/30/97 | 300  | 5.16              | 7.86       | 12.81                  | 94.1                          |
| 4346 | 10/30/97 | 400  | 5.21              | 7.86       | 12.81                  | 94.1                          |
| 4347 | 10/30/97 | 500  | 5.26              | 7.86       | 12.81                  | 94.1                          |
| 4348 | 10/30/97 | 600  | 5.31              | 7.86       | 12.81                  | 94.1                          |
| 4349 | 10/30/97 | 700  | 5.36              | 7.86       | 12.81                  | 94.1                          |
| 4350 | 10/30/97 | 800  | 5.41              | 7.86       | 12.81                  | 94.1                          |

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PINE 1997 TAILRACE DATA

| OBS  | DATE     | HOUR | TEMP.<br>(DEGREES<br>C.) | PH (S.<br>U.) | DISSOLVED<br>OXYGEN<br>(PPM) | DISSOLVED OXYGEN<br>% SATURATION |
|------|----------|------|--------------------------|---------------|------------------------------|----------------------------------|
| 4351 | 10/30/97 | 900  | 2.50                     | 7.85          | 12.38                        | 92.1                             |
| 4352 | 10/30/97 | 1000 | 2.53                     | 7.85          | 12.41                        | 92.5                             |
| 4353 | 10/30/97 | 1100 | 2.50                     | 7.85          | 12.37                        | 92.3                             |
| 4354 | 10/30/97 | 1200 | 2.67                     | 7.84          | 12.35                        | 92.3                             |
| 4355 | 10/30/97 | 1300 | 2.74                     | 7.84          | 12.29                        | 92.1                             |
| 4356 | 10/30/97 | 1400 | 2.79                     | 7.85          | 12.30                        | 92.2                             |
| 4357 | 10/30/97 | 1500 | 2.84                     | 7.87          | 12.25                        | 92.0                             |
| 4358 | 10/30/97 | 1600 | 2.87                     | 7.87          | 12.25                        | 92.0                             |
| 4359 | 10/30/97 | 1700 | 2.87                     | 7.88          | 12.23                        | 92.0                             |
| 4360 | 10/30/97 | 1800 | 2.85                     | 7.89          | 12.15                        | 91.2                             |
| 4361 | 10/30/97 | 1900 | 2.85                     | 7.87          | 12.02                        | 90.4                             |
| 4362 | 10/30/97 | 2000 | 2.89                     | 7.86          | 12.08                        | 90.9                             |
| 4363 | 10/30/97 | 2100 | 2.90                     | 7.87          | 12.10                        | 91.1                             |
| 4364 | 10/30/97 | 2200 | 2.92                     | 7.88          | 12.09                        | 91.1                             |
| 4365 | 10/30/97 | 2300 | 2.92                     | 7.87          | 12.08                        | 91.0                             |
| 4366 | 10/31/97 | 0    | 2.95                     | 7.86          | 12.06                        | 90.8                             |
| 4367 | 10/31/97 | 100  | 2.97                     | 7.86          | 12.05                        | 90.8                             |
| 4368 | 10/31/97 | 200  | 2.98                     | 7.86          | 12.06                        | 90.8                             |
| 4369 | 10/31/97 | 300  | 2.92                     | 7.87          | 12.06                        | 90.8                             |
| 4370 | 10/31/97 | 400  | 2.93                     | 7.86          | 12.04                        | 90.7                             |
| 4371 | 10/31/97 | 500  | 2.93                     | 7.86          | 12.01                        | 90.4                             |
| 4372 | 10/31/97 | 600  | 2.90                     | 7.86          | 12.03                        | 90.6                             |
| 4373 | 10/31/97 | 700  | 2.89                     | 7.86          | 12.01                        | 90.3                             |
| 4374 | 10/31/97 | 800  | 2.89                     | 7.85          | 12.01                        | 90.3                             |
| 4375 | 10/31/97 | 900  | 2.94                     | 7.85          | 12.00                        | 90.4                             |
| 4376 | 10/31/97 | 1000 | 2.99                     | 7.85          | 12.02                        | 90.7                             |
| 4377 | 10/31/97 | 1100 | 3.04                     | 7.85          | 12.03                        | 90.8                             |
| 4378 | 10/31/97 | 1200 | 3.12                     | 7.85          | 12.00                        | 90.8                             |
| 4379 | 10/31/97 | 1300 | 3.17                     | 7.85          | 12.02                        | 91.1                             |
| 4380 | 10/31/97 | 1400 | 3.28                     | 7.85          | 12.22                        | 92.7                             |
| 4381 | 10/31/97 | 1500 | 3.34                     | 7.85          | 12.18                        | 92.7                             |
| 4382 | 10/31/97 | 1600 | 3.44                     | 7.85          | 11.88                        | 90.7                             |
| 4383 | 10/31/97 | 1700 | 3.53                     | 7.85          | 12.11                        | 92.7                             |
| 4384 | 10/31/97 | 1800 | 3.68                     | 7.86          | 12.14                        | 93.0                             |
| 4385 | 10/31/97 | 1900 | 3.85                     | 7.87          | 12.01                        | 92.7                             |
| 4386 | 10/31/97 | 2000 | 4.00                     | 7.87          | 11.81                        | 91.7                             |
| 4387 | 10/31/97 | 2100 | 4.23                     | 7.87          | 11.77                        | 91.5                             |
| 4388 | 10/31/97 | 2200 | 4.47                     | 7.87          | 11.77                        | 91.5                             |
| 4389 | 10/31/97 | 2300 | 4.18                     | 7.87          | 11.75                        | 91.4                             |