## Sheep River Regional Utility Corporation

## 2023 Annual Waterworks Summary Report (Approval # 1242-03-00)

| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volume (m3)** | **WTP Raw** | Min | 1942 | 1068 | 1593 | 1612 | 1730 | 1206 | 1809 | 1698 | 1669 | 1602 | 1578 | 1621 |
| | | Avg | 2433 | 1873 | 1846 | 1816 | 2095 | 2197 | 2181 | 2931 | 1927 | 1805 | 1741 | 1806 |
| | | Max | 2808 | 2382 | 2061 | 2160 | 2850 | 2963 | 2650 | 3880 | 2577 | 2107 | 1991 | 2235 |
| | **WTP West Diamond Valley Treated** | Min | 569 | 574 | 595 | 591 | 638 | 774 | 781 | 799 | 753 | 620 | 636 | 625 |
| | | Avg | 606 | 607 | 631 | 635 | 822 | 961 | 944 | 1685 | 829 | 758 | 667 | 651 |
| | | Max | 649 | 662 | 680 | 704 | 1261 | 1514 | 1187 | 2433 | 1427 | 856 | 714 | 714 |
| | **WTP East Diamond Valley Treated** | Min | 1043 | 684 | 818 | 804 | 852 | 766 | 853 | 829 | 829 | 780 | 768 | 814 |
| | | Avg | 1427 | 822 | 837 | 837 | 960 | 995 | 973 | 928 | 869 | 819 | 821 | 856 |
| | | Max | 1607 | 1116 | 869 | 910 | 1062 | 1269 | 1119 | 1056 | 943 | 888 | 852 | 889 |
| **Free Cl Residual (mg/L)** | **WTP TV Treated** | Min | 0.92 | 0.99 | 0.98 | 0.94 | 0.89 | 0.91 | 0.82 | 0.85 | 0.93 | 0.85 | 0.85 | 0.90 |
| | | Avg | 1.06 | 1.12 | 1.08 | 1.05 | 1.02 | 1.06 | 1.02 | 0.98 | 1.04 | 0.94 | 0.95 | 0.99 |
| | | Max | 1.15 | 1.31 | 1.22 | 1.15 | 1.21 | 1.35 | 1.45 | 1.25 | 1.28 | 1.04 | 1.10 | 1.09 |
| | **WTP TV Treated SCADA** | Min | 0.92 | 0.99 | 0.94 | 0.93 | 0.84 | 0.83 | 0.69 | 0.83 | 0.85 | 0.79 | 0.79 | 0.92 |
| | | Max | 1.22 | 1.26 | 1.20 | 1.16 | 1.18 | 1.31 | 1.45 | 1.37 | 1.30 | 1.16 | 1.15 | 1.14 |
| **Turbidity (NTU)** | **WTP Raw** | Min | 0.23 | 0.22 | 0.19 | 0.21 | 0.33 | 0.27 | 0.31 | 0.39 | 0.32 | 0.26 | 0.16 | 0.16 |
| | | Avg | 0.26 | 0.30 | 0.22 | 0.25 | 0.55 | 0.42 | 0.59 | 0.51 | 0.42 | 0.35 | 0.29 | 0.20 |
| | | Max | 0.30 | 0.46 | 0.25 | 0.32 | 1.21 | 0.72 | 1.08 | 0.66 | 0.60 | 0.51 | 0.46 | 0.30 |
| | **WTP Raw SCADA** | Max | 6.532 | 0.414 | 0.404 | 0.365 | 0.978 | 1.995 | 1.340 | 8.231 | 0.631 | 1.100 | 0.555 | 0.262 |
| | **Filter #1 Effluent** | Min | 0.04 | 0.03 | 0.03 | 0.04 | 0.04 | 0.06 | 0.07 | 0.11 | 0.10 | 0.11 | 0.13 | 0.09 |
| | | Avg | 0.05 | 0.04 | 0.04 | 0.05 | 0.09 | 0.08 | 0.16 | 0.16 | 0.12 | 0.14 | 0.14 | 0.11 |
| | | Max | 0.06 | 0.06 | 0.06 | 0.06 | 0.13 | 0.12 | 0.20 | 0.21 | 0.17 | 0.19 | 0.15 | 0.18 |
| | **Filter #2 Effluent** | Min | 0.05 | 0.02 | 0.02 | 0.05 | 0.04 | 0.06 | 0.15 | 0.12 | 0.12 | 0.10 | 0.12 | 0.09 |
| | | Avg | 0.07 | 0.03 | 0.02 | 0.07 | 0.08 | 0.10 | 0.18 | 0.17 | 0.15 | 0.14 | 0.14 | 0.12 |
| | | Max | 0.11 | 0.07 | 0.03 | 0.11 | 0.13 | 0.15 | 0.24 | 0.24 | 0.19 | 0.19 | 0.26 | 0.17 |
| | **Filter #3 Effluent** | Min | 0.05 | 0.03 | 0.03 | 0.05 | 0.04 | 0.08 | 0.08 | 0.10 | 0.10 | 0.12 | 0.09 | 0.10 |
| | | Avg | 0.06 | 0.05 | 0.04 | 0.06 | 0.06 | 0.09 | 0.14 | 0.16 | 0.14 | 0.14 | 0.14 | 0.12 |
| | | Max | 0.07 | 0.09 | 0.09 | 0.07 | 0.08 | 0.11 | 0.20 | 0.21 | 0.19 | 0.17 | 0.20 | 0.17 |
| | **Filter #1 Effluent SCADA** | Max | 0.151 | 0.151 | 0.151 | 0.131 | 0.292 | 0.209 | 0.240 | 0.281 | 0.208 | 0.235 | 0.289 | 0.248 |
| | **Cumulative Exceed Time (minutes)** | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Filter #2 Effluent SCADA** | Max | 0.141 | 0.114 | 0.105 | 0.117 | 0.228 | 0.216 | 0.242 | 0.234 | 0.223 | 0.206 | 0.213 | 0.201 |
| | **Cumulative Exceed Time (minutes)** | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Filter #3 Effluent SCADA** | Max | 0.203 | 0.138 | 0.141 | 0.104 | 0.270 | 0.231 | 0.261 | 0.282 | 0.199 | 0.232 | 0.189 | 0.194 |
| | **Cumulative Exceed Time (minutes)** | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **WTP TV Treated** | Min | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.06 | 0.09 | 0.11 | 0.10 | 0.12 | 0.13 | 0.08 |
| | | Avg | 0.06 | 0.05 | 0.05 | 0.05 | 0.07 | 0.09 | 0.15 | 0.15 | 0.13 | 0.13 | 0.14 | 0.11 |
| | | Max | 0.08 | 0.07 | 0.07 | 0.06 | 0.17 | 0.15 | 0.19 | 0.20 | 0.16 | 0.16 | 0.15 | 0.14 |
| **pH** | **WTP Raw** | Min | 7.67 | 7.77 | 7.80 | 7.84 | 8.17 | 7.99 | 8.16 | 8.07 | 7.93 | 7.79 | 7.96 | 7.65 |
| | | Avg | 7.93 | 7.95 | 7.93 | 8.04 | 8.29 | 8.10 | 8.29 | 8.22 | 8.21 | 8.13 | 8.20 | 8.06 |
| | | Max | 8.10 | 8.08 | 8.05 | 8.20 | 8.40 | 8.28 | 8.41 | 8.29 | 8.32 | 8.37 | 8.43 | 8.33 |
| | **WTP TV Treated** | Min | 7.81 | 7.71 | 7.77 | 7.79 | 7.95 | 7.80 | 7.83 | 7.85 | 7.86 | 7.80 | 7.88 | 7.82 |
| | | Avg | 7.93 | 7.89 | 7.87 | 7.94 | 8.03 | 7.94 | 8.05 | 8.03 | 8.03 | 8.03 | 8.13 | 8.07 |
| | | Max | 8.08 | 8.05 | 8.01 | 8.08 | 8.15 | 8.10 | 8.24 | 8.10 | 8.15 | 8.24 | 8.37 | 8.31 |
| **Temperature ($^0$C)** | **WTP Raw** | Min | 1.4 | 1.3 | 1.4 | 1.5 | 7.0 | 16.3 | 18.4 | 18.0 | 12.9 | 5.9 | 2.0 | 1.1 |
| | | Avg | 1.9 | 1.7 | 1.9 | 3.1 | 12.6 | 17.5 | 19.4 | 19.5 | 15.9 | 10.5 | 4.2 | 1.6 |
| | | Max | 2.4 | 2.7 | 3.6 | 6.1 | 16.6 | 18.9 | 20.5 | 20.5 | 18.2 | 12.5 | 6.9 | 2.5 |
| | **WTP TV Treated** | Min | 2.2 | 2.4 | 2.0 | 2.6 | 7.6 | 16.9 | 18.9 | 18.6 | 14.0 | 7.2 | 3.7 | 2.3 |
| | | Avg | 2.9 | 2.9 | 2.6 | 4.1 | 13.2 | 18.0 | 19.9 | 20.0 | 16.6 | 11.7 | 5.7 | 3.1 |
| | | Max | 3.5 | 3.6 | 2.9 | 7.9 | 17.3 | 19.2 | 20.9 | 21.0 | 18.7 | 13.6 | 8.4 | 4.5 |
| | **4 Log Virus CT Required (pH & Temp Factor)** | Min | 12 | 12 | 12 | 8 | 4 | 4 | 4 | 4 | 4 | 6 | 8 | 12 |
| | | Avg | 12 | 12 | 12 | 12 | 6 | 4 | 4 | 4 | 4 | 6 | 10 | 12 |
| | | Max | 12 | 12 | 12 | 12 | 8 | 4 | 4 | 4 | 6 | 8 | 12 | 12 |
| | **Calculated Virus CT Actual** | Min | 86.8 | 116.3 | 120.0 | 132.1 | 79.3 | 83.9 | 75.7 | 51.0 | 114.0 | 111.4 | 115.1 | 129.7 |
| | | Avg | 143.0 | 196.2 | 208.4 | 205.1 | 155.8 | 145.1 | 137.5 | 92.1 | 169.2 | 160.2 | 165.4 | 178.8 |
| | | Max | 193.4 | 247.9 | 251.5 | 243.9 | 218.7 | 196.9 | 181.9 | 173.8 | 206.0 | 193.9 | 226.2 | 224.9 |
| | **Calculated Virus CT Perf Ratio** | Min | 7.2 | 9.7 | 10.0 | 11.0 | 13.2 | 21.0 | 18.9 | 12.8 | 23.6 | 17.1 | 10.1 | 10.8 |
| | | Avg | 11.9 | 16.4 | 17.4 | 17.6 | 25.7 | 36.6 | 34.4 | 23.0 | 38.9 | 25.6 | 17.8 | 14.9 |
| | | Max | 16.1 | 20.7 | 21.0 | 26.4 | 41.6 | 49.2 | 45.5 | 43.5 | 49.1 | 32.3 | 26.7 | 18.7 |
| **UV Reactor #1** | **Dosage (mJ/cm2)** | Min | 42.9 | 58.1 | 56.0 | 58.1 | 67.0 | 68.8 | 107.2 | 87.7 | 96.1 | 93.4 | 0.0 | 90.7 |
| | **Dosage (mJ/cm2)** | Avg | 88.2 | 111.1 | 111.1 | 114.3 | 132.8 | 182.7 | 199.1 | 171.3 | 199.1 | 197.4 | 189.6 | 232.9 |
| | **Flowrate (L/s)** | Max | 21.0 | 20.9 | 21.1 | 21.2 | 21.7 | 24.6 | 23.2 | 24.9 | 23.4 | 25.1 | 21.6 | 22.5 |
| | **Cumulative Exceed (% Monthly Run Volume)** | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.012 | 0.0 |
| **UV Reactor #2** | **Dosage (mJ/cm2)** | Min | 47.3 | 48.4 | 50.7 | 50.4 | 51.6 | 54.9 | 87.6 | 0.0 | 106.2 | 104.5 | 0.0 | 100.2 |
| | **Dosage (mJ/cm2)** | Avg | 79.1 | 91.2 | 91.7 | 93.6 | 95.2 | 134.5 | 153.0 | 144.3 | 206.6 | 206.6 | 200.2 | 191.9 |
| | **Flowrate (L/s)** | Max | 25.0 | 25.6 | 23.5 | 25.2 | 26.1 | 26.7 | 26.7 | 27.6 | 26.6 | 26.6 | 26.8 | 26.4 |
| | **Cumulative Exceed (% Monthly Run Volume)** | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.015 | 0.000 | 0.000 | 0.012 | 0.0 |
| **UV Reactor #3** | **Dosage (mJ/cm2)** | Min | 43.5 | 42.8 | 43.8 | 43.2 | 42.2 | 0.0 | 51.8 | 37.2 | 44.6 | 95.9 | 131.8 | 0.0 |
| | **Dosage (mJ/cm2)** | Avg | 72.3 | 82.2 | 89.2 | 82.2 | 75.9 | 81.2 | 130.6 | 74.2 | 198.1 | 269.1 | 268.1 | 267.9 |
| | **Flowrate (L/s)** | Max | 19.4 | 20.4 | 22.4 | 21.6 | 22.0 | 22.6 | 24.5 | 24.8 | 22.5 | 23.3 | 23.6 | 23.4 |
| | **Cumulative Exceed (% Monthly Run Volume)** | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.031 | 0.000 | 0.064 | 0.000 | 0.000 | 0.000 | 0.003 |
| **Reactor UVT** | **% UVT** | Min | 97.0 | 97.5 | 97.4 | 98.0 | 97.1 | 96.9 | 93.5 | 95.7 | 95.7 | 95.2 | 96.7 | 96.4 |
| **Chlorine Dosage (mg/L)** | | Min | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 | 1.30 | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 |
| | | Avg | 1.40 | 1.40 | 1.40 | 1.40 | 1.43 | 1.37 | 1.48 | 1.43 | 1.40 | 1.40 | 1.40 | 1.40 |
| | | Max | 1.40 | 1.40 | 1.40 | 1.40 | 1.50 | 1.43 | 1.91 | 1.45 | 1.40 | 1.40 | 1.40 | 1.40 |
| | **Total Volume 1.0% Soln Used** | L | 11835 | 7923 | 8075 | 7718 | 10128 | 11422 | 12703 | 14771 | 9934 | 8833 | 8491 | 9224 |
| **IsoPAC Dosage (mg/L)** | | Min | 0.65 | 0.32 | 0.98 | 0.97 | 0.74 | 0.64 | 0.60 | 0.90 | 0.35 | 0.00 | 0.00 | 0.00 |
| | | Avg | 1.92 | 2.47 | 2.75 | 2.48 | 2.17 | 1.98 | 2.23 | 1.66 | 2.21 | 2.19 | 0.00 | 0.00 |
| | | Max | 4.33 | 4.63 | 5.24 | 4.62 | 4.34 | 4.32 | 4.64 | 3.94 | 4.74 | 3.93 | 0.00 | 0.00 |
| | **Total Amount Used** | kg | 143.5 | 123.8 | 157.2 | 135.5 | 140.3 | 124.9 | 149.1 | 144.8 | 128.5 | 81.6 | 0.00 | 0.00 |