

CHEMICAL DATA - Analytes tested for in a lab, 2009 - MVTL, New Ulm

RR1 - Primary Lower Redwood River at Redwood CR17 near Redwood Falls - Non-impacted stream/Western Corn Belt Plains

STORET CODE - S001-679

| FLOW TYPE | SAMP TYPE | DATE | TIME | LAB SAMPLE ID # | TSS MG/L | TSVS MG/L | TKN MG/L | N-NO2+NO3 MG/L | P-PO4 MG/L | TP MG/L | E.COLI /100mL | TURBIDITY NTU | Sulfate MG/L | Chloride MG/L | Ammonia | Hardness - |
|---------------|-----------|-----------|-------|-----------------|----------|-----------|----------|----------------|------------|---------|---------------|---------------|--------------|---------------|---------|------------|
| | | | | | | | | | | | | | | | | CaCO3 MG/L |
| Base Flow | Grab | 1/21/2009 | 10:15 | 09-A2056 | 5 | <2 | 1.9 | 4.74 | 1.13^ | 1.30^ | | 5 | 591^ | 145 | 0.43 | 726 |
| Base Flow | Grab | 2/24/2009 | 10:45 | 09-A5988 | 6 | 3 | 1.4 | 4.62 | 1.01^ | 1.040 | | 7 | 436^ | 106 | 1.02 | 634 |
| Base Flow | Grab | 3/16/2009 | 8:45 | 09-A8289 | 36 | 7* | 2.0 | 2.65 | 0.671 | 0.803 | | 26 | 220 | 44 | <0.16 | 370 |
| Snowmelt/tile | Grab | 3/24/2009 | 8:30 | 09-A9612 | 576 | 400 | | 6.12 | 0.526 | 1.220 | | 400 | | | | |
| Base Flow | Grab | 4/8/2009 | 8:45 | 09-A12459 | 41 | 7 | 1.4 | 4.32 | 0.344 | 0.441^ | | 33 | 374^ | 47.2 | <0.16 | 606 |
| Base Flow | dup | 4/8/2009 | 8:46 | 09-A12461 | 49 | 8 | | 4.44 | 0.326 | 0.426^ | 47.3* | 34 | | | | |
| Base Flow | Grab | 4/23/2009 | 8:30 | 09-A15841 | 45 | 7 | 1.3 | 4.71 | 0.259^ | 0.353^ | | 34 | | | | |
| Base Flow | dup | 4/23/2009 | 8:31 | 09-A15827 | 43 | 9 | | 4.76 | 0.258^ | 0.353^ | 14.8* | 31 | | | | |
| Base Flow | Grab | 5/1/2009 | 9:35 | 09-A17725 | 61 | 8 | 1.6 | 4.60 | 0.222^ | 0.332^ | | 18* | 382^ | 43.7 | <0.16 | 613 |
| Base Flow | Grab | 5/1/2009 | 9:36 | 09-A17734 | | | | | | | 34.1 | | | | | |
| Base Flow | Grab | 5/7/2009 | 8:45 | 09-A18914 | 20 | 3 | 1.4 | 3.99 | 0.239^ | 0.324^ | | 13 | | | | |
| Base Flow | dup | 5/7/2009 | 8:46 | 09-A18915 | 18 | 5 | | 3.93 | 0.232^ | 0.316^ | 18.1* | 12 | | | | |
| Base Flow | Grab | 5/27/2009 | 8:45 | 09-A22497 | 18 | 6 | 1.6 | 2.58 | 0.338^ | 0.421^ | | 13 | | | | |
| Base Flow | Grab | 5/27/2009 | 8:46 | 09-A22493 | | | | | | | 104.6* | | | | | |
| Base Flow | Grab | 6/2/2009 | 9:15 | 09-A23460 | 24 | 3 | 1.5 | 2.23 | 0.394^ | 0.467^ | | 13 | 429^ | 85.8 | <0.16 | 667 |
| Base Flow | Grab | 6/2/2009 | 9:16 | 09-A23468 | | | | | | | 127.4* | | | | | |
| Storm Flow | Grab | 6/8/2009 | 8:05 | 09-A24378 | 34 | 7 | 1.4 | 3.03 | 0.405^ | 0.589^ | | 27 | 499^ | 125 | <0.16 | |
| Storm Flow | Grab | 6/11/2009 | 8:30 | 09-A25422 | 51 | 7 | 1.7 | 7.32 | 0.354^ | 0.485^ | | 33 | | | | |
| Storm Flow | Grab | 6/15/2009 | 8:30 | 09-A25871 | 53 | 10 | 2.0 | 6.36 | 0.315^* | 0.441^ | | 28 | | | | |
| Storm Flow | dup | 6/15/2009 | 8:31 | 09-A25863 | 38 | 6 | | 6.51 | 0.340^* | 0.428^ | | 27 | | | | |
| Storm Flow | Grab | 6/18/2009 | 8:00 | 09-A26778 | 69 | 12 | | 5.03 | 0.359^ | 0.551^ | | 41 | | | | |
| Storm Flow | Grab | 6/18/2009 | 8:00 | 09-A26772 | | | | | | | 517.2* | | | | | |
| Storm Flow | Grab | 6/26/2009 | 7:45 | 09-A28226 | 63 | 10 | 1.2 | 4.73 | 0.465^ | 0.616^ | | 42 | | | | |
| Base Flow | Grab | 7/9/2009 | 8:20 | 09-A30462 | 52 | 8 | 1.3 | 1.42 | 0.541^ | 0.655^ | | 41 | 405^ | 69.9 | <0.16 | 610 |
| Base Flow | dup | 7/9/2009 | 8:21 | 09-A30459 | 53 | 7 | | 1.44 | 0.550^ | 0.657^ | 435.2* | 40 | | | | |
| Base Flow | Grab | 7/15/2009 | 8:10 | 09-A31422 | 86 | 14 | 1.6 | 3.74 | 0.515^ | 0.702^ | | 64 | | | | |
| Base Flow | Grab | 7/30/2009 | 8:50 | 09-A34421 | 40 | 11 | 1.0 | 0.21 | 0.541^ | 0.682^ | | 23 | | | | |
| Base Flow | Grab | 8/4/2009 | 8:15 | 09-A35126 | 42 | 8 | 1.3 | 0.49 | 0.510^ | 0.662^ | | 33 | 491^ | 159 | <0.16 | 622 |
| Base Flow | Grab | 8/10/2009 | 12:20 | 09-A36172 | 59 | 18 | 1.7 | <0.2 | 0.390^ | 0.689^ | | 38 | | | | |
| Base Flow | Grab | 8/21/2009 | 7:35 | 09-A39358 | 40 | 11 | 0.9 | <0.2 | 0.442^ | 0.560^ | | 29 | | | | |
| Base Flow | Grab | 8/26/2009 | 8:40 | 09-A39970 | 53 | 14 | 1.3 | <0.2 | 0.372^ | 0.573^ | | 40 | | | | |
| Base Flow | Grab | 9/3/2009 | 7:45 | 09-A41339 | 54 | 15 | 1.4 | <0.2 | 0.356^ | 0.564^ | | 40 | 600^ | 141 | <0.16 | 707 |
| Base Flow | dup | 9/3/2009 | 7:46 | 09-A41338 | 53 | 14 | | <0.2 | 0.362^ | 0.531^ | | 39 | | | | |
| Base Flow | Grab | 9/16/2009 | 8:10 | 09-A43276 | 19 | 6 | 1.4 | <0.2 | 0.403^ | 0.583^ | | 35 | | | | |
| Base Flow | Grab | 9/16/2009 | 8:10 | 09-A43253 | | | | | | | 160.7* | | | | | |
| Base Flow | Grab | 9/24/2009 | 7:55 | 09-A44701 | 42 | 11 | 1.2 | <0.2 | 0.478^ | 0.694^ | | 34 | | | | |

CHEMICAL DATA - Analytes tested for in a lab, 2009 - MVTL, New Ulm**RR1 - Primary Lower Redwood River at Redwood CR17 near Redwood Falls - Non-impacted stream/Western Corn Belt Plains****STORET CODE - S001-679**

| FLOW TYPE | SAMP TYPE | DATE | TIME | LAB SAMPLE ID # | TSS MG/L | TSVS MG/L | TKN MG/L | N-NO2+NO3 MG/L | P-PO4 MG/L | TP MG/L | E.COLI /100mL | TURBIDITY NTU | Sulfate MG/L | Chloride MG/L | Ammonia | Hardness - |
|------------|-----------|------------|-------|-----------------|----------|-----------|----------|----------------|------------|---------|---------------|---------------|--------------|---------------|---------|------------|
| | | | | | | | | | | | | | | | | CaCO3 MG/L |
| Storm Flow | Grab | 10/2/2009 | 7:35 | 09-A46106 | 50 | 10 | 1.0 | 0.89 | 0.737^ | 0.958^ | | 40 | 376^ | 93.7 | <0.16 | 451 |
| Storm Flow | Grab | 10/5/2009 | 9:40 | 09-A46186 | 47 | 10 | | 1.70 | 0.694^ | 0.837^ | | 50 | | | | |
| Storm Flow | Grab | 10/7/2009 | 8:35 | 09-A46941 | 93 | 17 | 2.0 | 2.84 | 0.851^ | 1.13^ | | 70 | | | | |
| Storm Flow | dup | 10/7/2009 | 8:35 | 09-A46943 | 67 | 13 | | 2.86 | 0.857^ | 1.09^ | | 71 | | | | |
| Storm Flow | Grab | 10/8/2009 | 9:10 | 09-A47259 | 103 | 16 | 1.6 | 4.90 | 0.794^ | 1.17^ | | 88 | | | | |
| Storm Flow | Grab | 10/12/2009 | 8:20 | 09-A47872 | 28 | 6 | 2.0 | 5.23 | 0.642^ | 0.751^ | | 20 | | | | |
| Storm Flow | dup | 10/12/2009 | 8:21 | 09-A47871 | 23 | 5 | | 5.24 | 0.646^ | 0.752^ | | 20 | | | | |
| Storm Flow | Grab | 10/22/2009 | 8:30 | 09-A50190 | 66 | 10 | 0.7 | 6.15 | 0.491^ | 0.607^ | | 54 | | | | |
| Base Flow | Grab | 11/10/2009 | 14:10 | 09-A53547 | 43 | 8 | 1.7 | 8.25 | 0.257^ | 0.361^ | | 31 | | | | |
| Base Flow | Grab | 11/23/2009 | 13:05 | 09-A55471 | 36 | 6 | 1.2 | 8.30 | 0.362 | 0.413^ | | 26 | | | | |
| Base Flow | Grab | 12/4/2009 | 10:15 | 09-A57143 | 8 | 2 | 1.3 | 8.18 | 0.277^ | 0.308^ | | 6.3 | 556^ | 66.4 | <0.16 | 844 |

^ Sample Diluted due to result above calibration or linear range

In CST, OK during winter, subtract 1 hr during daylight savings

* Sample Exceeded Holding Time

So, +1 hr from time noted for actual time in field.

CHEMICAL DATA - Analytes tested for in a lab, 2009 - MVTL, New Ulm**CC3 - Clear Creek in Seaforth - Non-impacted stream/Western Corn Belt Plains****STORET CODE - S002-311**

| FLOW TYPE | SAMP TYPE | DATE | TIME | LAB SAMPLE ID # | TSS MG/L | TSVS MG/L | TKN MG/L | N-NO2+NO3 MG/L | P-PO4 MG/L | TP MG/L | E.COLI /100mL | TURBIDITY NTU | | | | |
|---------------|-----------|-----------|------|-----------------|----------|-----------|----------|----------------|------------|---------|---------------|---------------|--|--|--|--|
| | | | | | | | | | | | | | | | | |
| Snowmelt/tile | Grab | 3/24/2009 | 8:55 | 09-A9614 | 400 | 57 | | 10.00 | 0.498 | 1.040 | | 280 | | | | |
| Base Flow | Grab | 4/8/2009 | 9:15 | 09-A12462 | 6 | <2 | | 9.63 | 0.099 | 0.098 | 26.2* | 5 | | | | |
| Base Flow | Grab | 4/23/2009 | 9:00 | 09-A15828 | 25 | 6 | | 9.23 | 0.013 | 0.057 | 43.9 | 13 | | | | |
| Base Flow | Grab | 5/7/2009 | 9:15 | 09-A18916 | 21 | 4 | | 7.89 | 0.008 | 0.051 | 150.0* | 12 | | | | |
| Base Flow | Grab | 5/27/2009 | 9:25 | 09-A22487 | 15 | 2 | | 5.05 | 0.051 | 0.052 | 160.7* | 13 | | | | |
| Base Flow | Grab | 6/4/2009 | 8:25 | 09-A24055 | 30 | 6 | | 2.51 | 0.039 | 0.076 | 150.0* | 19 | | | | |
| Storm Flow | Grab | 6/15/2009 | 9:10 | 09-A25864 | 9 | 2 | | 11.50 | 0.042* | 0.042 | | 6.8 | | | | |
| Storm Flow | Grab | 6/18/2009 | 8:25 | 09-A26773 | 24 | 5 | | 13.60 | 0.110^ | 0.107 | 980.4* | 8 | | | | |
| Storm Flow | Grab | 6/25/2009 | 8:30 | 09-A27974 | 10 | 2 | | 9.29 | 0.060 | 0.056 | | 7.3 | | | | |
| Base Flow | Grab | 7/9/2009 | 8:50 | 09-A30456 | 7 | <2 | | 7.32 | 0.104 | 0.108 | 488.4* | 6.4 | | | | |
| Base Flow | Grab | 7/15/2009 | 8:40 | 09-A31417 | 7 | <2 | | 3.60 | 0.117 | 0.127 | | 7.9 | | | | |
| Base Flow | Grab | 8/4/2009 | 8:45 | 09-A35120 | 18 | 4 | <0.2 | | 0.135 | 0.157 | 27.2* | 17 | | | | |
| Base Flow | Grab | 8/26/2009 | 9:00 | 09-A39973 | 18 | 5 | | 0.28 | 0.216^ | 0.244^ | | 14 | | | | |
| Base Flow | Grab | 9/16/2009 | 8:40 | 09-A43243 | 13 | 3 | | 0.21 | 0.244^ | 0.289^ | 344.8* | 17 | | | | |
| Storm Flow | Grab | 10/7/2009 | 9:00 | 09-A46944 | 37 | 8 | | 11.20 | 0.200^ | 0.298^ | | 25 | | | | |

^ Sample Diluted due to result above calibration or linear range

* Sample Exceeded Holding Time

CHEMICAL DATA - Analytes tested for in a lab, 2009 - MVTL, New Ulm**TC4A - Three Mile Creek near Green Valley - Non-impacted stream/Western Corn Belt Plains****STORET CODE - S002-313**

| FLOW TYPE | SAMP TYPE | DATE | TIME | LAB SAMPLE ID # | TSS MG/L | TSVS MG/L | TKN MG/L | N-NO2+NO3 MG/L | P-PO4 MG/L | TP MG/L | E.COLI | TURBIDITY NTU |
|---------------|-----------|-----------|-------|-----------------|----------|-----------|----------|----------------|------------|---------|---------|---------------|
| Snowmelt/tile | Grab | 3/24/2009 | 9:45 | 09-A9613 | 247 | 35 | | 4.94 | 0.277 | 0.547 | | 140 |
| Base Flow | Grab | 4/8/2009 | 10:00 | 09-A12463 | 12 | 2 | | 4.67 | 0.064 | 0.075 | 3.1 | 9 |
| Base Flow | Grab | 4/23/2009 | 9:45 | 09-A15829 | 29 | 6 | | 4.33 | 0.028 | 0.065 | 25.9 | 19 |
| Base Flow | Grab | 5/7/2009 | 10:05 | 09-A18917 | 12 | 6 | | 2.88 | 0.016 | 0.049 | 34.5 | 12 |
| Base Flow | Grab | 5/27/2009 | 10:20 | 09-A22488 | 19 | 3 | | 1.44 | 0.055 | 0.059 | 12.7 | 18 |
| Base Flow | Grab | 6/4/2009 | 9:15 | 09-A24056 | 57 | 9 | | 1.31 | 0.083 | 0.084 | 62.0* | 39 |
| Storm Flow | Grab | 6/15/2009 | 10:00 | 09-A25865 | 43 | 7 | | 1.55 | 0.073 | 0.115 | | 36 |
| Storm Flow | Grab | 6/18/2009 | 9:30 | 09-A26774 | 55 | 10 | | 1.84 | 0.091 | 0.133 | 2419.6* | 28 |
| Storm Flow | Grab | 6/25/2009 | 9:15 | 09-A27975 | 37 | 6 | | 3.41 | 0.140 | 0.148 | | 31 |
| Base Flow | Grab | 7/9/2009 | 9:30 | 09-A30457 | 33 | 5 | | 1.69 | 0.111 | 0.144 | 1299.7* | 26 |
| Base Flow | Grab | 7/15/2009 | 9:15 | 09-A31418 | 36 | 6 | | 1.84 | 0.139 | 0.162 | | 37 |
| Base Flow | Grab | 8/4/2009 | 9:30 | 09-A35121 | 32 | 9 | | <0.2 | 0.064 | 0.111 | 16.9* | 29 |
| Base Flow | Grab | 8/26/2009 | 9:45 | 09-A39974 | 8 | 3 | | 0.24 | 0.049 | 0.058 | | 7.2 |
| Base Flow | Grab | 9/16/2009 | 9:20 | 09-A43244 | 7 | <2 | | <0.2 | 0.050 | 0.059 | 501.2* | 8.4 |
| Storm Flow | Grab | 10/7/2009 | 9:50 | 09-A46945 | 14 | 3 | | 1.92 | 0.129 | 0.167 | | 9.7 |

^ Sample Diluted due to result above calibration or linear range

* Sample Exceeded Holding Time

CHEMICAL DATA - Analytes tested for in a lab, 2009 - MVTL, New Ulm**RRUS - Redwood River at Russell - Non-impacted stream/Western Corn Belt Plains****STORET CODE - S000-696**

| FLOW TYPE | SAMP TYPE | DATE | TIME | LAB SAMPLE ID # | TSS MG/L | TSVS MG/L | TKN MG/L | N-NO2+NO3 MG/L | P-PO4 MG/L | TP MG/L | E.COLI | TURB NTU |
|------------|-----------|-----------|-------|-----------------|----------|-----------|----------|----------------|------------|---------|--------|----------|
| Base Flow | Grab | 4/8/2009 | 11:30 | 09-A12464 | 11 | 4 | | 1.48 | 0.029 | 0.086 | 6.2 | 13 |
| Base Flow | Grab | 4/23/2009 | 11:20 | 09-A15830 | 5 | 5 | | 1.41 | 0.009 | 0.029 | 16 | 5 |
| Base Flow | Grab | 5/7/2009 | 11:20 | 09-A18918 | 6 | <2 | | 1.17 | 0.007 | 0.031 | 34.5 | 5 |
| Base Flow | Grab | 5/27/2009 | 11:45 | 09-A22489 | 2 | <2 | | 0.75 | 0.023 | 0.029 | 77.6 | 3 |
| Base Flow | Grab | 6/4/2009 | 10:45 | 09-A24057 | 3 | <2 | | 0.40 | 0.019 | 0.038 | 53.7 | 2.3 |
| Base Flow | Grab | 6/15/2009 | 11:15 | 09-A25866 | <2 | <2 | | 0.92 | 0.036 | 0.039 | | 6.6 |
| Storm Flow | Grab | 6/18/2009 | 10:45 | 09-A26775 | 27 | 6 | | 5.63 | 0.074 | 0.090 | 1413.6 | 16 |
| Storm Flow | Grab | 6/25/2009 | 10:15 | 09-A27976 | 25 | 4 | | 2.75 | 0.106 | 0.123 | | 16 |
| Storm Flow | Grab | 7/9/2009 | 10:45 | 09-A30458 | 51 | 6 | | 3.17 | 0.144 | 0.195 | 980.4 | 38 |
| Base Flow | Grab | 7/15/2009 | 10:05 | 09-A31419 | 20 | 7 | | 2.31 | 0.140 | 0.160 | | 21 |
| Base Flow | Grab | 8/4/2009 | 10:45 | 09-A35122 | 6 | 2 | | <0.2 | 0.068 | 0.061 | 72.8 | 4.3 |
| Base Flow | Grab | 9/16/2009 | 10:50 | 09-A43245 | 8 | 4 | | <0.2 | 0.047 | 0.035 | 235.9 | 3.6 |
| Base Flow | Grab | 10/7/2009 | 10:30 | 09-A46946 | 13 | <2 | | 0.79 | 0.054 | 0.096 | | 7.6 |

^ Sample Diluted due to result above calibration or linear range

* Sample Exceeded Holding Time