



City Of Brantford Water System

Treatment Operators Analysis

January 2021

| Source | Parameter | Units | MAC | AO/OG | Minimum | Maximum | Average |
|---------------|-------------------|-------|------|-------|---------|---------|---------|
| Grand River | Ammonia | mg/L | | | 0.24 | 0.57 | 0.35 |
| Brantford POE | Ammonia | mg/L | | | 0.25 | 0.55 | 0.38 |
| Grand River | True Colour | PtCo | | | 9.0 | 22.0 | 15.0 |
| Brantford POE | True Colour | PtCo | | 5 | 0.0 | 3.0 | 0.6 |
| Brantford POE | Aluminum | mg/L | | 0.100 | 0.028 | 0.109 | 0.072 |
| Grand River | UV254 | | | | 0.113 | 0.171 | 0.136 |
| Brantford POE | UV254 | | | | 0.050 | 0.062 | 0.057 |
| Brantford POE | Fluoride | mg/L | 1.50 | | 0.500 | 0.880 | 0.680 |
| Brantford POE | Free chlorine | mg/L | | | 0.10 | 0.10 | 0.10 |
| Brantford POE | Combined Chlorine | mg/L | 3.00 | | 2.50 | 2.80 | 2.62 |
| Brantford POE | Total Chlorine | mg/L | | | 2.60 | 2.90 | 2.72 |

MAC - Maximum Acceptable Concentration

AO/OG - Aesthetic Objective/Operational Guideline

Combined Chlorine - The concentration of residual chlorine that is combined with ammonia (NH₃), organic nitrogen, or both in water as chloramine, yet is still available to oxidize organic matter and act as a disinfectant. Combined chlorine can be accurately estimated as the difference between the measured total chlorine and measure or known free chlorine residual.



City Of Brantford Water System

SCADA Data - Monthly Averages

January 2021

| <i>Water Treatment Plant</i> | | | |
|------------------------------|-----------|-------|-----------------|
| Source | Parameter | Units | Monthly Average |
| Grand River | Flow Rate | ML/d | 32.65 |
| Brantford POE | Flow Rate | ML/d | 29.79 |

| | | | |
|---------------|-----------|-----|-------|
| Grand River | Turbidity | NTU | 3.16 |
| Filter 1 | Turbidity | NTU | 0.025 |
| Filter 2 | Turbidity | NTU | 0.023 |
| Filter 3 | Turbidity | NTU | 0.024 |
| Filter 4 | Turbidity | NTU | 0.025 |
| Filter 5 | Turbidity | NTU | 0.025 |
| Filter 6 | Turbidity | NTU | 0.032 |
| Filter 7 | Turbidity | NTU | 0.031 |
| Filter 8 | Turbidity | NTU | 0.027 |
| Brantford POE | Turbidity | NTU | 0.034 |

| | | | |
|--------------|-------------|--|------|
| CCC Effluent | Log Removal | | 8.49 |
|--------------|-------------|--|------|

| | | | |
|---------------|-------------------|------|------|
| Brantford POE | Combined Chlorine | mg/L | 2.63 |
|---------------|-------------------|------|------|

| | | | |
|---------------|----------|-----|-------|
| Brantford POE | Pressure | psi | 96.96 |
|---------------|----------|-----|-------|

| <i>Distribution System</i> | | | |
|----------------------------|----------------|-------|-----------------|
| Source | Parameter | Units | Monthly Average |
| Tollgate Reservoir | Total Chlorine | mg/L | 2.62 |
| Park Rd. Reservoir | Total Chlorine | mg/L | 2.59 |
| Northwest Reservoir | Total Chlorine | mg/L | 2.66 |

| | | | |
|---------------------|----------|-----|--------|
| Albion St. Booster | Pressure | psi | 90.89 |
| Tollgate Reservoir | Pressure | psi | 59.64 |
| Park Rd. Reservoir | Pressure | psi | 79.27 |
| Northwest Reservoir | Pressure | psi | 86.11 |
| Bell Lane | Pressure | psi | 50.60 |
| Fifth Ave | Pressure | psi | 103.17 |
| Lawren Harris | Pressure | psi | 65.20 |
| St. Andrews | Pressure | psi | 93.53 |
| Empy St. | Pressure | psi | 82.75 |

Definitions:

SCADA - Supervisory Control and Data Acquisition

CCC - Chlorine Contact Chambers

Log Removal – a shorthand term for log₁₀ removal, used in reference to the physical-chemical treatment of water to remove, kill, or inactivate pathogenic organisms.

Combined Chlorine - The concentration of residual chlorine that is combined with ammonia (NH₃), organic nitrogen, or both in water as chloramine, yet is still available to oxidize organic matter and act as a disinfectant. Combined chlorine can be accurately estimated as the difference between the measured total chlorine and measure or known free chlorine residual.