

# SAINT PAUL REGIONAL WATER SERVICES

## PHYSICAL AND CHEMICAL ANALYSIS OF WATER

### Jan. '14

All results are in parts per million & Samples Measured are Dissolved Ions

#### PHYSICAL WATER QUALITY

	Reporting Limit	EFFLUENT
Color (Color Units)	4	<4
Loss Ignition (ppm)	84	87
Non-Volatile Salts (ppm)	84	102
Temperature (°C)	0.02	4
Total Dissolved Solids (ppm)	56	189
Turbidity (NTU)	0.025	<0.025

#### CHEMICAL WATER QUALITY

	Reporting Limit	EFFLUENT
Alkalinity-Total (ppm as CaCO <sub>3</sub> )	0.40	58
Carbonate Hardness (ppm as CaCO <sub>3</sub> )	0.40	58
Dissolved Oxygen (ppm)	1.2	10.7
Hydrogen Ion-pH	0.04	8.93
Non-Carbonate Hardness (ppm)	0.40	36
Total Hardness (ppm as CaCO <sub>3</sub> )-EDTA method	0.40	95
Total Organic Carbon (ppm as C)	0.40	3.66

*Total Hardness (grains/Gal as CaCO<sub>3</sub>)-EDTA method is 5.56 grains/Gal*

#### CHEMICAL WATER QUALITY - INORGANIC NONMETALS

	Reporting Limit	EFFLUENT
Ammonia Nitrogen (ppm as N)	0.030	0.762
Chloride-Cl (ppm as Cl <sup>-1</sup> )	8	33
Chlorine Residual (ppm Cl as Cl <sub>2</sub> )	0.09	3.52
Fluoride-F (ppm as F <sup>-1</sup> )	0.08	1.01
Nitrate, Nitrite Nitrogen (ppm as N)	0.202	0.419
Sulfur-S (ppm as S)	2.7	4.0
Sulfide-S <sup>2-</sup> (ppm as S <sup>2-</sup> )	0.020	<0.020
Total Phosphorus-P (ppm as P)	0.020	<0.020
Total Nitrogen-N (ppm as N)	0.100	1.670

#### CHEMICAL WATER QUALITY - METALS

	Reporting Limit	EFFLUENT
Aluminum-Al (ppm as Al)	0.006	0.023
Arsenic-As (ppm as As)	0.006	<0.006
Cadmium-Cd (ppm as Cd)	0.003	<0.003
Calcium-Ca (ppm as Ca)	0.40	19
Copper-Cu (ppm as Cu)	0.050	<0.050
Hexavalent Chromium (ppm as Cr <sup>6+</sup> )	0.040	<0.040
Iron-Fe (ppm as Fe)	0.050	<0.050
Lead-Pb (ppm as Pb)	0.006	<0.006
Magnesium-Mg (ppm as Mg)	0.40	11
Manganese-Mn (ppm as Mn)	0.050	<0.050
Silicon-Si (ppm as Si)	0.84	5.59
Sodium-Na (ppm as Na)	0.079	19.70
Zinc-Zn (ppm as Zn)	0.050	<0.050