

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**November 13, 2012**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	9.94	0.30	0.3/95% (1)		
Total Solids		mg/L	159	153		500	10
Total Dissolved Solids		mg/L	104	107		500	10
Aluminum	Al	mg/L	0.272	0.137		0.05-0.2	0.005
Iron	Fe	mg/L	0.496	0.150		0.3	0.005
Copper	Cu	mg/L	0.038	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.49	7.32			0.5
Calcium	Ca	mg/L	29.4	28.0			0.1
Sodium	Na	mg/L	5.52	5.35		20 (2)	0.1
Potassium	K	mg/L	1.05	0.97			0.1
Manganese	Mn	mg/L	0.004	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/L	0.7	1.0			0.4
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	18.1	24.2			
Chloride	Cl <sup>-</sup>	mg/L	9.0	10.5		250	5
Phosphorus	P	mg/L	< 0.05	0.18			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	4.3	14.1			
Total Hardness (3), (4), (5)		mg/L	106	102			
Total Alkalinity (3)		mg/L	102	93			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	102	93			
Non-Carbonate Hardness (3)		mg/L	4	9			
Chemical Oxygen Demand		mg/L	16.0	12.0			2
Dissolved Oxygen		mg/L	11.2	11.5			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	0.4	0.6			0.1
Nitrite Nitrogen	NO <sub>2</sub> <sup>-</sup> -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> <sup>-</sup> -N	mg/L	0.30	0.26	10	10	0.1
Fluoride	F <sup>-</sup>	mg/L	0.14	0.80	4		0.5
pH			7.67	7.12	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	232	236			
Temperature		°C	8.4	9.4			

Legend	Notes:
MCL: Maximum Contaminant Level	(1) Turbidity must not exceed 0.3 NTU in 95% of daily samples in any month
Sec.Std: Secondary Standard	(2) EPA Guidance Level
NTU: Nephelometric Turbidity Unit	(3) As Calcium Carbonate
mg/l: Milligram Per Liter	mg/l is equivalent to part per million (ppm)
MDL: Method Detection Limit	(4) By Titration
< : Less than	(5) Tap Water Hardness in Grains per Gallon <b>5.92 GPG</b>
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

Analyst: Brian Brown

Reviewed By: Patrick Williford

Sr. Analytical Chemist

Principal Chemist

Initial

**B. B.**

Date: Feb 22, 2013

Initial

**P. W.**

Date: 03/20/2013

**Sue McCormick**

**Detroit Water & Sewerage Department**