

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**May 10, 2005**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	8.30	0.07	0.3/95% (1)		
Total Solids		mg/l	111	108		500	10
Total Dissolved Solids		mg/l	102	107		500	10
Aluminum	Al	mg/l	0.660	0.240		0.05-0.2	0.005
Iron	Fe	mg/l	0.678	0.057		0.3	0.005
Copper	Cu	mg/l	0.018	0.006	1.3		0.002
Magnesium	Mg	mg/l	13.47	14.62			0.1
Calcium	Ca	mg/l	22.6	26.0			0.5
Sodium	Na	mg/l	5.22	4.83		20 (2)	0.1
Potassium	K	mg/l	1.20	0.89			0.1
Manganese	Mn	mg/l	0.009	<0.002		0.05	0.002
Zinc	Zn	mg/l	<0.1	<0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/l	15.69	18.1			0.4
Sulfate	SO <sub>4</sub>	mg/l	28.3	34.4			15
Chloride	Cl <sup>-</sup>	mg/l	8.2	9.5		250	5
Phosphorus	P	mg/l	<0.05	0.31			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/l	1.0	2.1			
Total Hardness (3), (4), (5)		mg/l	110	111			
Total Alkalinity (3)		mg/l	83	81			
Carbonate Alkalinity (3)		mg/l	0	0			
Bi-Carbonate Alkalinity (3)		mg/l	83	81			
Non-Carbonate Hardness (3)		mg/l	27	30			
Chemical Oxygen Demand		mg/l	4.7	3.5			2
Dissolved Oxygen		mg/l	10.3	10.3			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/l	<0.1	<0.1			0.1
Organic Nitrogen		mg/l	0.1	<0.1			0.1
Nitrite Nitrogen	NO <sub>2</sub> -N	mg/l	<0.01	<0.01	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> -N	mg/l	0.61	0.61	10	10	0.1
Fluoride	F	mg/l	0.12 *	0.9	4		0.5
pH			8.11	7.89	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	327	336			
Temperature in °C.			12.4	12.3			

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>6.44 GPG</b>
EF: Equipment Failure	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

Analyst: Brian Brown

Sr. Analytical Chemist

Initial **B. B.**

Date: July 1, 2005

Reviewed By: Bahi Habib, P.E. Chemical Engineer

Initial **B. H.**

Date: July 5, 2005

**Victor M. Mercado, Director**  
**Detroit Water & Sewerage Department**