

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**July 10 2006**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	3.40	0.06	0.3/95% (1)		
Total Solids		mg/l	135	149		500	10
Total Dissolved Solids		mg/l	133	149		500	10
Aluminum	Al	mg/l	0.242	0.232		0.05-0.2	0.005
Iron	Fe	mg/l	0.188	0.100		0.3	0.005
Copper	Cu	mg/l	0.010	0.004	1.3		0.002
Magnesium	Mg	mg/l	8.21	7.67			0.1
Calcium	Ca	mg/l	27.0	27.3			0.5
Sodium	Na	mg/l	3.94	4.16		20 (2)	0.1
Potassium	K	mg/l	0.98	1.13			0.1
Manganese	Mn	mg/l	0.007	0.004		0.05	0.002
Zinc	Zn	mg/l	<0.1	<0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/l	10.29	12.3			0.4
Sulfate	SO <sub>4</sub>	mg/l	20.1	37.0			15
Chloride	Cl <sup>-</sup>	mg/l	6.5	8.0		250	5
Phosphorus	P	mg/l	<0.05	0.26			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/l	0.3	2.7			
Total Hardness (3), (4), (5)		mg/l	97	98			
Total Alkalinity (3)		mg/l	78	70			
Carbonate Alkalinity (3)		mg/l	0	0			
Bi-Carbonate Alkalinity (3)		mg/l	84	77			
Non-Carbonate Hardness (3)		mg/l	18	29			
Chemical Oxygen Demand		mg/l	2.4	<2.0			2
Dissolved Oxygen		mg/l	9.8	9.4			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/l	<0.1	<0.1			0.1
Organic Nitrogen		mg/l	0.2	0.3			0.1
Nitrite Nitrogen	NO <sub>2</sub> -N	mg/l	<0.1	<0.1	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> -N	mg/l	0.50	0.44	10	10	0.1
Fluoride	F	mg/l	0.1	0.8	4		0.5
pH			8.47	7.71	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	213	219			
Temperature in °C.			23.6	23.5			

**Legend**

MCL: Maximum Contaminant Level  
 Sec.Std: Secondary Standard  
 NTU: Nephelometric Turbidity Unit  
 mg/l: Milligram Per Liter  
 MDL: Method Detection Limit  
 <: Less than  
 AE: Analytical Error  
 IV: Invalid Sample

**Notes:**

(1) Turbidity must not exceed 0.3 NTU in 95% of daily samples in any month  
 (2) EPA Guidance Level  
 (3) As Calcium Carbonate  
 mg/l is equivalent to part per million (ppm)  
 (4) By Titration  
 (5) Tap Water Hardness in Grains per Gallon **5.68 GPG**  
 (6) Reported results are below the low calibration standard but above the instrument detection limit.

Analyst: Brian Erown  
 Reviewed By: Mary Lynn Semegan

Sr. Analytical Chemist  
 Principal Chemist

Initial **B. B.**  
 Initial **M.L.S.**

Date: Oct 5, 2006  
 Date: Oct 26, 2006

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