

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
06/11/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	2.46	0.14	0.3/95% (1)		
Total Solids		mg/L	143	150		500	10
Total Dissolved Solids		mg/L	144	132		500	10
Aluminum	Al	mg/L	0.187	0.139		0.05-0.2	0.005
Iron	Fe	mg/L	0.734	0.120		0.3	0.005
Copper	Cu	mg/L	0.044	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	8.83	8.16			0.5
Calcium	Ca	mg/L	28.2	27.6			0.1
Sodium	Na	mg/L	5.95	5.92		20 (2)	0.1
Potassium	K	mg/L	1.06	1.03			0.1
Manganese	Mn	mg/L	< 0.002	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/L	0.6	0.7			0.4
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	17.9	22.9			
Chloride	Cl <sup>-</sup>	mg/L	9.5	9.5		250	5
Phosphorus	P	mg/L	< 0.05	0.36			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	1.4	5.3			
Total Hardness (3), (4), (5)		mg/L	110	114			
Total Alkalinity (3)		mg/L	82	80			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	82	80			
Non-Carbonate Hardness (3)		mg/L	28	34			
Chemical Oxygen Demand		mg/L	6.4	2.4			2
Dissolved Oxygen		mg/L	8.7	8.9			
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> <sup>-</sup> -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> <sup>-</sup> -N	mg/L	0.65	0.58	10	10	0.1
Fluoride	F <sup>-</sup>	mg/L	0.11	0.74	4		0.5
pH			8.06	7.48	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	236	236			
Temperature		°C	18.1	17.9			

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>6.61 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 Sr. Analytical Chemist Initial **B. B.** Date: 09/25/2013  
Reviewed By: Patrick Williford Principal Chemist Initial **P. W.** Date: 09/25/2013

**Sue McCormick**  
**Detroit Water & Sewerage Department**

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Water Works Park Plant**  
**06/11/2013**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	4.60	0.08	0.3/95% (1)		
Total Solids		mg/L	139	129		500	10
Total Dissolved Solids		mg/L	128	134		500	10
Aluminum	Al	mg/L	0.179	0.182		0.05-0.2	0.005
Iron	Fe	mg/L	0.234	0.190		0.3	0.005
Copper	Cu	mg/L	< 0.005	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.76	7.91			0.5
Calcium	Ca	mg/L	26.2	25.3			0.1
Sodium	Na	mg/L	5.15	5.06		20 (2)	0.1
Potassium	K	mg/L	1.03	0.89			0.1
Manganese	Mn	mg/L	0.011	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/L	0.1	0.7			0.4
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	16.8	31.2			
Chloride	Cl <sup>-</sup>	mg/L	8.5	10.0		250	5
Phosphorus	P	mg/L	< 0.05	0.27			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	1.2	7.7			
Total Hardness (3), (4), (5)		mg/L	102	103			
Total Alkalinity (3)		mg/L	73	88			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	73	88			
Non-Carbonate Hardness (3)		mg/L	29	15			
Chemical Oxygen Demand		mg/L	3.6	3.2			2
Dissolved Oxygen		mg/L	8.7	11.1			
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> <sup>-</sup> -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> <sup>-</sup> -N	mg/L	0.37	0.38	10	10	0.1
Fluoride	F <sup>-</sup>	mg/L	0.09	0.72	4		0.5
pH			8.08	7.36	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	210	220			
Temperature		°C	19	19.1			

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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>5.97 GPG</b>
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

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