

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Southwest Plant
08/13/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	1.60	0.08	0.3/95% (1)		
Total Solids		mg/L	138	151		500	10
Total Dissolved Solids		mg/L	135	157		500	10
Aluminum	Al	mg/L	2.698	3.031		0.05-0.2	0.005
Iron	Fe	mg/L	0.246	0.176		0.3	0.005
Copper	Cu	mg/L	0.037	0.006	1.3		0.002
Magnesium	Mg	mg/L	8.51	8.00			0.5
Calcium	Ca	mg/L	34.3	34.2			0.1
Sodium	Na	mg/L	5.75	6.35		20 (2)	0.1
Potassium	K	mg/L	0.93	0.92			0.1
Manganese	Mn	mg/L	0.003	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	0.4	0.5			0.4
Sulfate	SO ₄ ²⁻	mg/L	16.0	23.5			
Chloride	Cl ⁻	mg/L	9.0	10.5		250	5
Phosphorus	P	mg/L	< 0.05	0.39			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.8	3.4			
Total Hardness (3), (4), (5)		mg/L	101	104			
Total Alkalinity (3)		mg/L	85	74			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	85	74			
Non-Carbonate Hardness (3)		mg/L	16	30			
Chemical Oxygen Demand		mg/L	3.2	6.4			2
Dissolved Oxygen		mg/L	6.9	7.1			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	< 0.1	< 0.1			0.1
Nitrite Nitrogen	NO ₂ ⁻ -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO ₃ ⁻ -N	mg/L	0.29	0.37	10	10	0.1
Fluoride	F ⁻	mg/L	0.00	0.00	4		0.5
pH			7.98	7.64	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	220	228			
Temperature		°C	23	23.2			

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 6.03 GPG
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.**
Initial **P. W.**

Date: 10/07/2013
Date: 10/14/2013

Sue McCormick
Detroit Water & Sewerage Department

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Water Works Park Plant
08/13/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	0.38	0.10	0.3/95% (1)		
Total Solids		mg/L	138	156		500	10
Total Dissolved Solids		mg/L	141	159		500	10
Aluminum	Al	mg/L	0.297	0.307		0.05-0.2	0.005
Iron	Fe	mg/L	0.251	0.054		0.3	0.005
Copper	Cu	mg/L	0.007	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.85	7.94			0.5
Calcium	Ca	mg/L	26.1	27.0			0.1
Sodium	Na	mg/L	4.99	5.16		20 (2)	0.1
Potassium	K	mg/L	0.87	0.85			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 ₂	mg/L	0.5	0.7			0.4
Sulfate	SO ₄ ²⁻	mg/L	14.5	31.2			
Chloride	Cl ⁻	mg/L	8.5	9.7		250	5
Phosphorus	P	mg/L	< 0.05	0.24			0.05
Free Carbon Dioxide	CO ₂	mg/L	11.6	6.9			
Total Hardness (3), (4), (5)		mg/L	99	101			
Total Alkalinity (3)		mg/L	86	79			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	86	79			
Non-Carbonate Hardness (3)		mg/L	13	22			
Chemical Oxygen Demand		mg/L	6.8	4.4			2
Dissolved Oxygen		mg/L	6.7	8.9			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	< 0.1	< 0.1			0.1
Nitrite Nitrogen	NO ₂ ⁻ -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO ₃ ⁻ -N	mg/L	0.26	0.27	10	10	0.1
Fluoride	F ⁻	mg/L	0.00	0.00	4		0.5
pH			7.17	7.36	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	214	225			
Temperature		°C	24.7	24			

Legend	Notes:
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Sec.Std: Secondary Standard	(2) EPA Guidance Level
NTU: Nephelometric Turbidity Unit	(3) As Calcium Carbonate
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