

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Southwest Plant
04/07/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	9.52	0.16	0.3/95% (1)		
Total Solids		mg/L	182	181		500	10
Total Dissolved Solids		mg/L	158	157		500	10
Aluminum	Al	mg/L	0.393	0.239		0.05-0.2	0.005
Iron	Fe	mg/L	0.417	< 0.050		0.3	0.005
Copper	Cu	mg/L	< 0.005	0.010	1.3		0.002
Magnesium	Mg	mg/L	8.38	8.12			0.5
Calcium	Ca	mg/L	30.1	29.6			0.1
Sodium	Na	mg/L	7.62	7.84		20 (2)	0.1
Potassium	K	mg/L	1.13	1.07			0.1
Manganese	Mn	mg/L	0.005	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	0.7	0.9			0.4
Sulfate	SO ₄ ²⁻	mg/L	19.1	24.2			
Chloride	Cl ⁻	mg/L	12.5	15.0		250	5
Phosphorus	P	mg/L	< 0.05	0.40			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.9	5.9			
Total Hardness (3), (4), (5)		mg/L	120	121			
Total Alkalinity (3)		mg/L	84	86			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	84	86			
Non-Carbonate Hardness (3)		mg/L	36	35			
Chemical Oxygen Demand		mg/L	< 2.0	< 2.0			2
Dissolved Oxygen		mg/L	IV	IV			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	0.2	< 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	0.97	1.03	10	10	0.1
Fluoride	F ⁻	mg/L	0.17	0.87	4		0.5
pH			7.94	7.46	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	268	278			
Temperature		°C	13	12			

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 7.02 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: 06/13/2013
Date: 06/13/2013

Sue McCormick
Detroit Water & Sewerage Department

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Water Works Park Plant
04/07/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	3.10	0.06	0.3/95% (1)		
Total Solids		mg/L	153	163		500	10
Total Dissolved Solids		mg/L	135	130		500	10
Aluminum	Al	mg/L	0.239	0.224		0.05-0.2	0.005
Iron	Fe	mg/L	0.056	0.088		0.3	0.005
Copper	Cu	mg/L	0.007	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.70	7.74			0.5
Calcium	Ca	mg/L	25.6	25.9			0.1
Sodium	Na	mg/L	4.96	5.95		20 (2)	0.1
Potassium	K	mg/L	1.02	0.92			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	0.0	0.5			0.4
Sulfate	SO ₄ ²⁻	mg/L	16.6	31.2			
Chloride	Cl ⁻	mg/L	7.0	10.0		250	5
Phosphorus	P	mg/L	< 0.05	0.29			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.0	7.2			
Total Hardness (3), (4), (5)		mg/L	105	105			
Total Alkalinity (3)		mg/L	67	83			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	67	83			
Non-Carbonate Hardness (3)		mg/L	38	22			
Chemical Oxygen Demand		mg/L	8.8	2.0			2
Dissolved Oxygen		mg/L	IV	IV			
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	0.36	0.38	10	10	0.1
Fluoride	F ⁻	mg/L	0.12	0.68	4		0.5
pH			8.12	7.36	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	224	231			
Temperature		°C	12	13			

Legend	Notes:
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