

Detroit Water and Sewerage Department
Water Quality Division
Laboratory Analysis of Water Samples Collected at
Southwest Plant
10/08/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	3.56	0.06	0.3/95% (1)		
Total Solids		mg/L	150	152		500	10
Total Dissolved Solids		mg/L	141	140		500	10
Aluminum	Al	mg/L	0.076	0.146		0.05-0.2	0.005
Iron	Fe	mg/L	0.054	0.173		0.3	0.005
Copper	Cu	mg/L	0.015	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.96	7.93			0.5
Calcium	Ca	mg/L	27.1	26.3			0.1
Sodium	Na	mg/L	5.09	4.99		20 (2)	0.1
Potassium	K	mg/L	0.95	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	1.1	1.1			0.4
Sulfate	SO ₄ ²⁻	mg/L	18.4	21.1			
Chloride	Cl ⁻	mg/L	9.0	10.5		250	5
Phosphorus	P	mg/L	< 0.05	0.29			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.6	8.2			
Total Hardness (3), (4), (5)		mg/L	105	103			
Total Alkalinity (3)		mg/L	83	82			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	83	82			
Non-Carbonate Hardness (3)		mg/L	22	21			
Chemical Oxygen Demand		mg/L	3.2	< 2.0			2
Dissolved Oxygen		mg/L	7.2	7.1			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	0.1	0.2			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	0.37	10	10	0.1
Fluoride	F ⁻	mg/L	0.12	0.65	4		0.5
pH			8.00	7.30	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	225	226			
Temperature		°C	20.2	20.7			

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 5.97 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: 11/26/2013
Date: 12/04/2013

Sue McCormick
Detroit Water & Sewerage Department

Detroit Water and Sewerage Department
Water Quality Division
Laboratory Analysis of Water Samples Collected at
Water Works Park Plant
10/08/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	1.20	0.10	0.3/95% (1)		
Total Solids		mg/L	152	158		500	10
Total Dissolved Solids		mg/L	161	143		500	10
Aluminum	Al	mg/L	< 0.050	0.237		0.05-0.2	0.005
Iron	Fe	mg/L	0.220	0.362		0.3	0.005
Copper	Cu	mg/L	< 0.005	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.33	7.58			0.5
Calcium	Ca	mg/L	27.0	26.5			0.1
Sodium	Na	mg/L	4.75	5.06		20 (2)	0.1
Potassium	K	mg/L	0.91	0.93			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	0.9	0.7			0.4
Sulfate	SO ₄ ²⁻	mg/L	18.4	31.2			
Chloride	Cl ⁻	mg/L	9.5	10.5		250	5
Phosphorus	P	mg/L	< 0.05	0.26			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.8	7.2			
Total Hardness (3), (4), (5)		mg/L	104	102			
Total Alkalinity (3)		mg/L	82	72			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	82	72			
Non-Carbonate Hardness (3)		mg/L	22	30			
Chemical Oxygen Demand		mg/L	3.2	< 2.0			2
Dissolved Oxygen		mg/L	6.4	8.7			
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	0.32	0.34	10	10	0.1
Fluoride	F ⁻	mg/L	0.09	0.72	4		0.5
pH			7.96	7.30	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	224	231			
Temperature		°C	21.8	21.5			

Legend	Notes:
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