

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Southwest Plant
07/11/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	7.47	0.05	0.3/95% (1)		
Total Solids		mg/L	179	177		500	10
Total Dissolved Solids		mg/L	152	145		500	10
Aluminum	Al	mg/L	0.680	0.139		0.05-0.2	0.005
Iron	Fe	mg/L	0.140	0.132		0.3	0.005
Copper	Cu	mg/L	0.041	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.79	8.29			0.5
Calcium	Ca	mg/L	27.6	27.6			0.1
Sodium	Na	mg/L	5.62	5.85		20 (2)	0.1
Potassium	K	mg/L	0.93	0.94			0.1
Manganese	Mn	mg/L	0.004	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	0.3	0.4			0.4
Sulfate	SO ₄ ²⁻	mg/L	18.4	23.7			
Chloride	Cl ⁻	mg/L	9.5	11.0		250	5
Phosphorus	P	mg/L	< 0.05	0.30			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.2	7.5			
Total Hardness (3), (4), (5)		mg/L	108	114			
Total Alkalinity (3)		mg/L	79	86			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	79	86			
Non-Carbonate Hardness (3)		mg/L	29	28			
Chemical Oxygen Demand		mg/L	4.0	3.6			2
Dissolved Oxygen		mg/L	7.5	9.6			
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	0.38	0.44	10	10	0.1
Fluoride	F ⁻	mg/L	0.14	0.65	4		0.5
pH			8.13	7.36	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	224	231			
Temperature		°C	25.1	21.9			

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 6.61 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
07/11/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	1.44	0.11	0.3/95% (1)		
Total Solids		mg/L	190	164		500	10
Total Dissolved Solids		mg/L	152	161		500	10
Aluminum	Al	mg/L	0.252	0.373		0.05-0.2	0.005
Iron	Fe	mg/L	0.452	0.218		0.3	0.005
Copper	Cu	mg/L	< 0.005	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	8.18	8.05			0.5
Calcium	Ca	mg/L	26.6	26.8			0.1
Sodium	Na	mg/L	5.74	5.91		20 (2)	0.1
Potassium	K	mg/L	0.88	0.87			0.1
Manganese	Mn	mg/L	0.004	< 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	15.8	31.2			
Chloride	Cl ⁻	mg/L	9.0	13.5		250	5
Phosphorus	P	mg/L	< 0.05	0.19			0.05
Free Carbon Dioxide	CO ₂	mg/L	9.3	7.8			
Total Hardness (3), (4), (5)		mg/L	105	102			
Total Alkalinity (3)		mg/L	64	87			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	64	87			
Non-Carbonate Hardness (3)		mg/L	41	15			
Chemical Oxygen Demand		mg/L	< 2.0	< 2.0			2
Dissolved Oxygen		mg/L	6.6	9.6			
Ammonia Nitrogen	NH ₃ -N	mg/L	0.2	< 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	0.42	10	10	0.1
Fluoride	F ⁻	mg/L	0.10	0.63	4		0.5
pH			7.14	7.35	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	221	233			
Temperature		°C	26.14	25			

Legend	Notes:
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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)
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< : Less than	(5) Tap Water Hardness in Grains per Gallon 5.92 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
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Date: 10/29/2013
Date: 10/30/2013

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