



WATER OPERATING SERVICES
 WATER QUALITY
 10100 EAST JEFFERSON AVENUE
 DETROIT, MICHIGAN 48214
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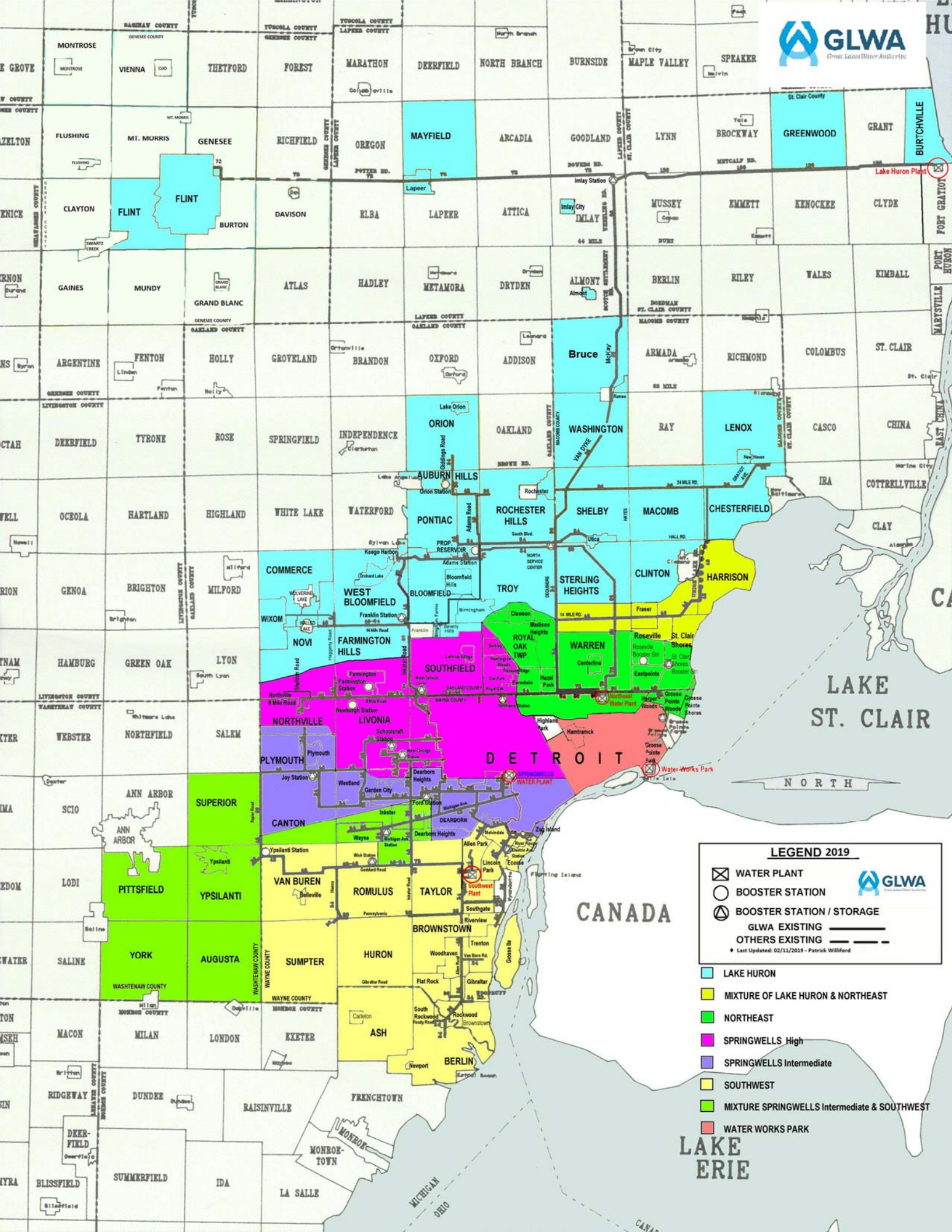
GLWA Water Treatment Plants' - Mineral Reports

Sample Dates: 08/14/2019 08/14/2019 08/14/2019 08/14/2019 08/14/2019 08/14/2019 08/14/2019 08/14/2019




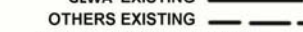
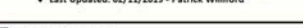
Parameter	Formula	Units	Lake Huron		Southwest		Belle Isle	Water Works Park	Northeast	Springwells	MCL	Sec.Std	RL/MDL
			Raw	Tap	Raw	Tap	Raw	Tap	Tap	Tap			
Turbidity		NTU	0.44	0.09	2.20	0.17	0.80	0.08	0.07	0.13	0.3/95% (1)		
Total Solids		mg/L	82	99	101	113	81	89	124	105		500	10
Total Dissolved Solids		mg/L	120	119	77	136	114	113	139	132		500	10
Aluminum	Al	mg/L	0.158	0.149	AE	0.108	0.037	AE	0.114	0.161		0.05-0.2	0.005
Iron	Fe	mg/L	0.047	0.021	0.121	0.048	0.068	0.038	0.037	0.050		0.3	0.005
Copper	Cu	mg/L	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.3 (AL)	1.0	0.005
Magnesium	Mg	mg/L	7.80	7.68	8.35	8.35	8.10	7.95	8.05	8.18			0.5
Calcium	Ca	mg/L	26.3	26.0	25.7	26.0	26.0	25.9	25.9	25.9			0.1
Sodium	Na	mg/L	5.25	5.21		5.49	5.42	5.46	6.78	6.67		20 (2)	0.1
Potassium	K	mg/L	0.98	0.94		1.00	0.90	0.92	1.01	0.96			0.1
Manganese	Mn	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002		0.05	0.002
Lead	Pb	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.015 (AL)		0.001
Zinc	Zn	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	1.3	1.9	1.7	2.0	1.7	2.0	1.9	1.9			0.4
Sulfate	SO ₄ ²⁻	mg/L	14.0	15.5	14.4	20.3	14.0	19.7	19.9	18.7		250	
Chloride	Cl ⁻	mg/L	7.3	9.3	7.6	10.5	7.9	9.9	10.8	10.5		250	5
Phosphorus	P	mg/L	< 0.05	AE	< 0.05	0.37	< 0.05	0.31	AE	0.17			0.05
Free Carbon Dioxide	CO ₂	mg/L	0.5	4.5	0.3	7.0	0.5	6.5	4.3	4.5			
Total Hardness (3), (4), (5)		mg/L	100	100	96	98	98	98	96	96			
Total Alkalinity (3)		mg/L	78	72	78	68	76	68	70	72			
Carbonate Alkalinity (3)		mg/L	0	0	0	0	0	0	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	76	72	74	68	74	68	70	72			
Non-Carbonate Hardness (3)		mg/L	22	28	18	30	22	30	26	24			
Chemical Oxygen Demand		mg/L	< 2	< 2	< 2	2.3	3.6	< 2	< 2	< 2			2
Dissolved Oxygen		mg/L	10.7	12.2	9.2	8.5	7.9	9.9	8.9	9.9			
Nitrite Nitrogen	NO ₂ ⁻ - N	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO ₃ ⁻ - N	mg/L	0.38	0.37	0.32	0.32	0.36	0.35	0.31	0.29	10		0.1
Fluoride	F ⁻	mg/L	0.09	0.74	0.14	0.81	0.12	0.76	0.59	0.64	4.0	2.0	0.5
pH			8.45	7.50	8.67	7.29	8.49	7.32	7.51	7.50		6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	205	207	205	211	203	208	214	215			
Temperature		°C	15.0	19.7	25.1	25.5	25.0	25.5	25.7	26.0			

Legend MCL: Maximum Contaminant Level Sec.Std: Secondary Standard NTU: Nephelometric Turbidity Unit mg/L: Milligram Per Liter AL: Action Level MDL: Method Detection Limit < : Less than AE: Analytical Error IV: Invalid Sample	Notes: (1) Turbidity must not exceed 0.3 NTU in 95% of samples in any month and always be < 1 NTU (2) EPA Guidance Level (3) As Calcium Carbonate mg/L is equivalent to part per million (ppm) (4) By Titration (5) Hardness in Grains per Gallon = 0.058 x (Hardness in mg/L) (6) Reported results are below the low calibration standard but above the instrument detection limit.
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Reporting Analyst: **Levoska & Khan** Chemist
 Reviewed By: **Williford** Management Professional - Operations
Great Lakes Water Authority



LEGEND 2019

-  WATER PLANT
-  BOOSTER STATION
-  BOOSTER STATION / STORAGE
-  GLWA EXISTING
-  OTHERS EXISTING

◆ Last Updated: 02/11/2019 - Patrick Williford

-  LAKE HURON
-  MIXTURE OF LAKE HURON & NORTHEAST
-  NORTHEAST
-  SPRINGWELLS High
-  SPRINGWELLS Intermediate
-  SOUTHWEST
-  MIXTURE SPRINGWELLS Intermediate & SOUTHWEST
-  WATER WORKS PARK

LAKE ERIE