



WATER OPERATING SERVICES  
 WATER QUALITY  
 10100 EAST JEFFERSON AVENUE  
 DETROIT, MICHIGAN 48214  
 PHONE: 313-926-8102 / 313-926-8127

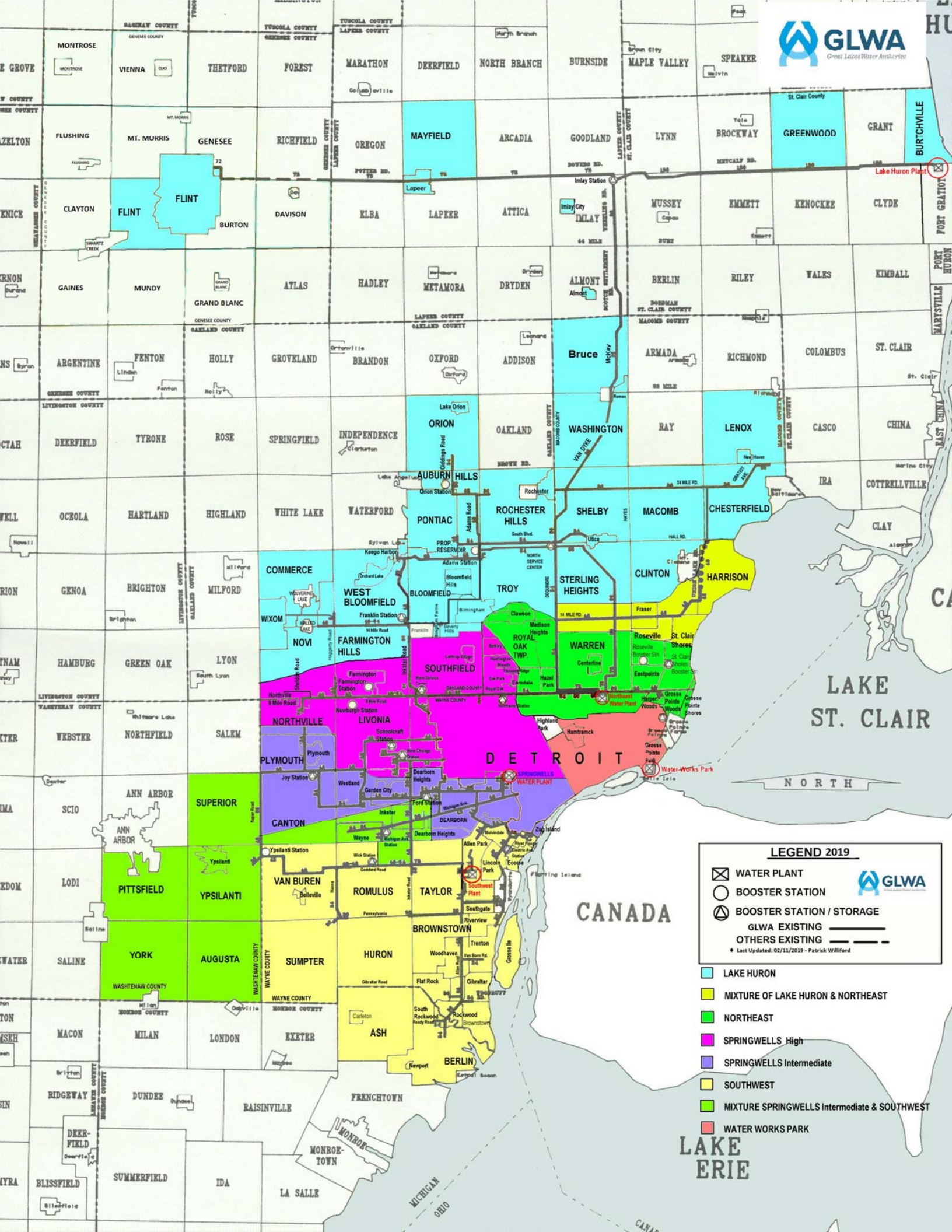
### GLWA Water Treatment Plants' - Mineral Reports

Parameter	Formula	Units	Sample Dates:												MCL	Sec.Std	RL/MDL
			11/13/2018		11/13/2018		11/13/2018		11/13/2018		11/13/2018		11/13/2018				
			Lake Huron		Southwest		Belle Isle		Water Works Park		Northeast		Springwells				
		Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap				
Turbidity		NTU	0.30	0.06	5.90	0.04	5.30	0.06	0.05	0.08	0.3/95% (1)						
Total Solids		mg/L	142	128	142	138	120	128	146	136				500	10		
Total Dissolved Solids		mg/L	133	124	156	138	121	127	165	222				500	10		
Aluminum	Al	mg/L	0.010	0.049	AE	0.031	AE	0.058	0.196	0.030				0.05-0.2	0.005		
Iron	Fe	mg/L	0.007	0.008	0.238	< 0.005	0.272	0.009	< 0.005	< 0.005				0.3	0.005		
Copper	Cu	mg/L	0.010	< 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	7.45	7.45	7.95	7.58	7.93	7.53	7.50	7.45					0.5		
Calcium	Ca	mg/L	27.6	27.6	28.1	28.7	28.1	28.3	28.5	28.4					0.1		
Sodium	Na	mg/L	4.73	4.73	AE	5.05	AE	4.95	6.14	6.42			20 (2)	0.1			
Potassium	K	mg/L	1.14	1.15	1.26	1.19	1.26	1.16	1.19	1.19					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 <sub>2</sub>	mg/L	2.0	2.3	2.0	2.1	2.2	2.4	2.2	2.3					0.4		
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	16.1	20.0	17.5	25.4	15.9	23.6	28.4	26.1				250			
Chloride	Cl <sup>-</sup>	mg/L	6.7	8.1	7.2	8.5	6.7	8.5	9.0	9.0			250	5			
Phosphorus	P	mg/L	< 0.05	0.35	< 0.05	0.40	< 0.05	0.35	0.31	0.49					0.05		
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	1.2	4.5	6.6	1.0	1.2	6.5	6.2	7.7							
Total Hardness (3), (4), (5)		mg/L	96	96	100	100	100	98	98	100							
Total Alkalinity (3)		mg/L	76	72	78	70	74	70	68	72							
Carbonate Alkalinity (3)		mg/L	0	0	0	0	0	0	0	0							
Bi-Carbonate Alkalinity (3)		mg/L	75	72	78	69	73	70	68	72							
Non-Carbonate Hardness (3)		mg/L	20	24	22	30	26	28	30	28							
Chemical Oxygen Demand		mg/L	3.9	< 2	4.1	2.8	4.6	4.6	< 2	2.5					2		
Dissolved Oxygen		mg/L	10.1	10.3	11.0	11.1	11.5	12.7	10.6	11.4							
Nitrite Nitrogen	NO <sub>2</sub> <sup>-</sup> - 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 <sub>3</sub> <sup>-</sup> - N	mg/L	0.28	0.26	0.28	0.31	0.26	0.27	0.25	0.26	10				0.1		
Fluoride	F <sup>-</sup>	mg/L	0.13	0.67	0.13	0.48	0.14	0.66	0.56	0.60	4.0		2.0	0.5			
pH			8.10	7.50	7.37	8.12	8.09	7.33	7.34	7.27			6.5-8.5				
Specific Conductance @ 25 °C.		micromhos	206	211	216	222	184	211	226	222							
Temperature		°C	7.3	10.8	7.4	7.6	6.3	10.0	11.4	9.0							






Legend	Notes:
MCL: Maximum Contaminant Level	(1) Turbidity must not exceed 0.3 NTU in 95% of samples in any month and always be < 1 NTU
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)
AL: Action Level	
MDL: Method Detection Limit	(4) By Titration
< : Less than	(5) Hardness in Grains per Gallon = 0.058 x (Hardness in mg/L)
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument detection limit.
IV: Invalid Sample	

Reporting Analyst: **Levoska-Khan-Wiley** 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**