



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

Sample Dates: 02/13/2018 02/13/2018 02/13/2018 02/13/2018 02/13/2018 02/13/2018 02/13/2018 02/13/2018

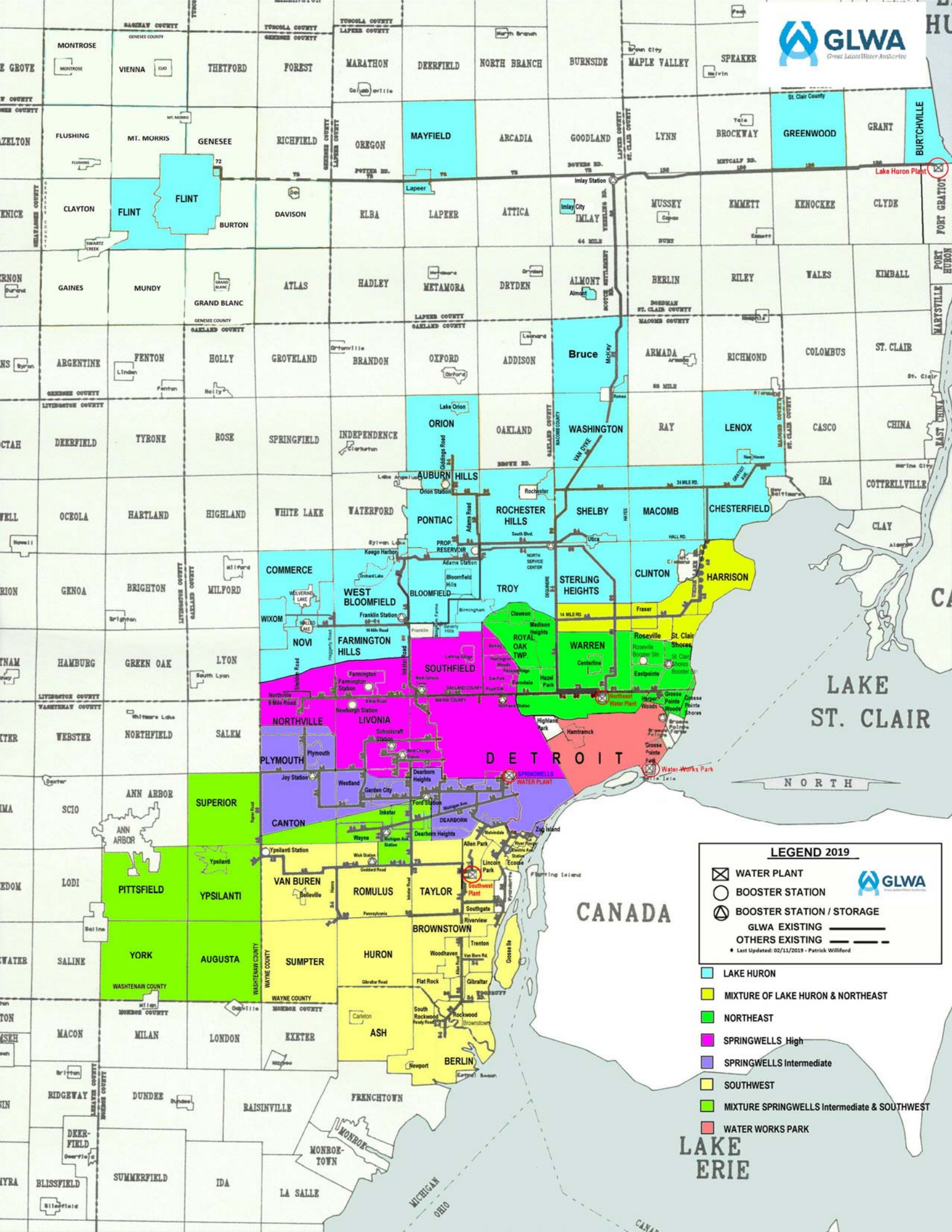
Parameter	Formula	Units	Lake Huron		Southwest		Belle Isle	Water Works Park	Northeast	Springwells	MCL	Sec.Std	MDL
			Raw	Tap	Raw	Tap	Raw	Tap	Tap	Tap			
Turbidity		NTU	0.52	0.06	2.40	0.04	3.70	0.06	0.07	0.09	0.3/95% (1)		
Total Solids		mg/L	127	135	155	161	131	140	141	139		500	10
Total Dissolved Solids		mg/L	120	127	155	158	137	137	142	136		500	10
Aluminum	Al	mg/L	0.080	0.105	0.172	0.103	0.190	0.093	0.103	0.079		0.05-0.2	0.005
Iron	Fe	mg/L	0.010	< 0.005	0.061	< 0.005	0.055	< 0.005	0.005	0.014		0.3	0.005
Copper	Cu	mg/L	0.007	< 0.005	0.008	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.3 (AL)	1.0	0.002
Magnesium	Mg	mg/L	7.75	7.90	8.15	8.35	8.10	7.88	7.88	7.90			0.5
Calcium	Ca	mg/L	29.0	28.9	32.5	34.0	30.0	30.4	29.6	29.7			0.1
Sodium	Na	mg/L	5.34	5.36	8.64	9.72	6.94	7.35	6.83	6.93		20 (2)	0.1
Potassium	K	mg/L	0.96	0.95	1.27	1.31	1.22	1.01	0.98	0.99			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	2.5	2.8	2.7	2.9	2.4	2.6	2.6	2.6			0.4
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	16.8	20.1	19.1	27.2	17.1	22.0	24.8	21.5		250	
Chloride	Cl <sup>-</sup>	mg/L	7.4	8.4	12.9	15.3	9.9	11.4	11.4	11.4		250	5
Phosphorus	P	mg/L	< 0.05	0.40	< 0.05	0.33	< 0.05	0.40	0.35	0.37			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	1.0	5.7	2.1	12.1	1.7	7.4	7.2	7.3			
Total Hardness (3), (4), (5)		mg/L	104	100	114	116	106	104	106	104			
Total Alkalinity (3)		mg/L	82	72	88	78	88	74	74	78			
Carbonate Alkalinity (3)		mg/L	0	0	0	0	0	0	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	81	72	87	78	87	74	74	78			
Non-Carbonate Hardness (3)		mg/L	22	28	26	38	18	30	32	26			
Chemical Oxygen Demand		mg/L	4.9	2.5	3.3	2.5	4.1	2.1	2.5	3.3			2
Dissolved Oxygen		mg/L	13.0	13.5	12.9	13.1	13.0	14.0	13.5	13.4			
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	0.27	0.25	1.01	1.00	0.29	0.31	0.28	0.28	10		0.1
Fluoride	F <sup>-</sup>	mg/L	0.08	0.77	0.09	0.73	0.08	0.63	0.58	0.61	4.0	2.0	0.5
pH			8.20	7.40	7.91	7.11	8.00	7.30	7.31	7.33		6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	190	196	134	242	207	209	212	212			
Temperature		°C	0.0	7.8	2.1	1.6	0.1	4.0	6.2	2.5			

<b>Legend</b>	<b>Notes:</b>
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
IV: Invalid Sample	detection limit.






Reporting Analyst: **Raupach**  
 Reviewed By: **Williford**









Chemist  
 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**