



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: 09/13/2017 09/13/2017 09/13/2017 09/13/2017 09/13/2017 09/13/2017 09/13/2017 09/13/2017

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	0.58	0.06	2.80	0.05	2.10	0.10	0.06	0.05	0.3/95% (1)		
Total Solids		mg/L	132	144	86	142	110	134	147	145		500	10
Total Dissolved Solids		mg/L	131	140	133	145	133	138	137	151		500	10
Aluminum	Al	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005		0.05-0.2	0.005
Iron	Fe	mg/L	< 0.005	< 0.005	0.103	< 0.005	0.078	< 0.005	< 0.005	< 0.005		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	0.002
Magnesium	Mg	mg/L	7.10	7.25	7.78	7.45	7.33	6.95	7.23	7.43			0.5
Calcium	Ca	mg/L	24.9	24.6	24.6	25.0	26.6	25.4	24.5	24.8			0.1
Sodium	Na	mg/L	3.89	3.92	4.14	3.99	4.41	3.95	3.94	3.98		20 (2)	0.1
Potassium	K	mg/L	0.83	0.99	0.84	0.93	0.87	0.84	0.88	1.09			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	0.8	0.9	0.7	0.7	0.8	0.9	0.8	0.8			0.4
Sulfate	SO ₄ ²⁻	mg/L	17.1	20.7	17.8	24.7	17.1	23.4	23.7	24.6		250	
Chloride	Cl ⁻	mg/L	7.4	9.4	7.9	9.9	7.9	9.4	9.4	9.4		250	5
Phosphorus	P	mg/L	< 0.05	0.33	< 0.05	0.20	< 0.05	0.27	0.30	0.30			0.05
Free Carbon Dioxide	CO ₂	mg/L	1.3	9.3	0.4	11.1	0.9	7.9	8.6	11.3			
Total Hardness (3), (4), (5)		mg/L	98	100	120	106	102	102	100	112			
Total Alkalinity (3)		mg/L	82	74	82	70	80	72	70	76			
Carbonate Alkalinity (3)		mg/L	0	0	0	0	0	0	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	82	74	79	70	79	72	70	76			
Non-Carbonate Hardness (3)		mg/L	16	26	38	36	22	30	30	36			
Chemical Oxygen Demand		mg/L	4.9	4.9	4.9	5.3	5.7	5.3	5.3	6.1			2
Dissolved Oxygen		mg/L	8.6	9.1	9.2	9.1	9.5	10.3	9.6	9.6			
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	0.30	0.29	0.23	0.22	0.25	0.26	0.27	0.25	10		0.1
Fluoride	F ⁻	mg/L	0.11	0.91	0.11	0.81	0.10	0.88	0.68	0.67	4.0	2.0	0.5
pH			8.11	7.20	8.62	7.10	8.25	7.26	7.21	7.13		6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	220	225	225	231	220	228	229	229			
Temperature		°C	21.1	21.1	19.4	19.8	21.9	20.4	19.8	19.9			

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) Tap Water Hardness in Grains per Gallon multiply value by 0.058 (Grains/Gallon)/(mg/L)
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

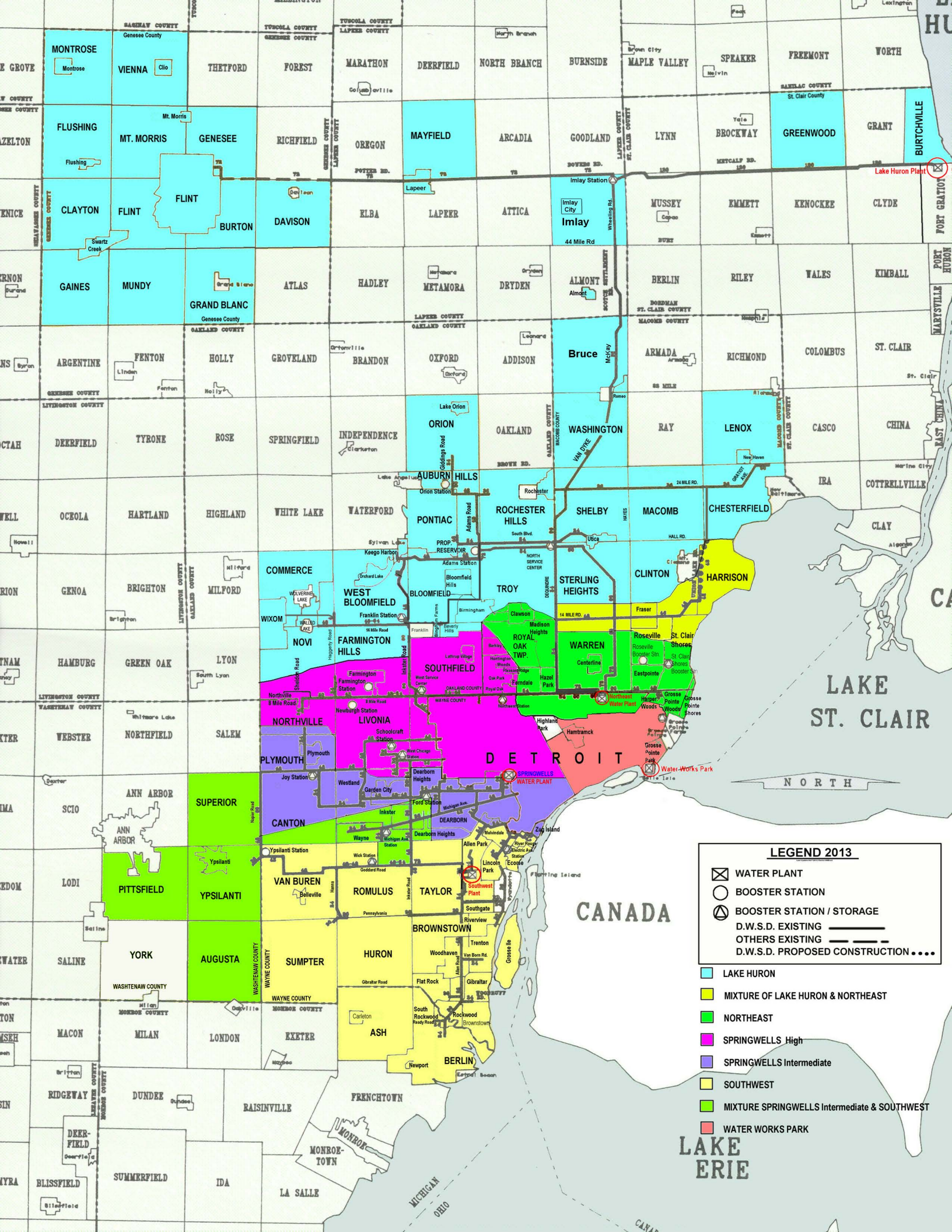
Analyst: Raupach & Brown
 Reviewed By: Patrick Williford

Chemist-I
 Management Professional - Ops.

Initials: **B. B.**
 Initials: **P. W.**

Date: 11/15/2017
 Date: 01/26/2018

Great Lakes Water Authority



LEGEND 2013

- ☒ WATER PLANT
- BOOSTER STATION
- ⊕ BOOSTER STATION / STORAGE
- D.W.S.D. EXISTING
- - - OTHERS EXISTING
- ⋯ D.W.S.D. PROPOSED CONSTRUCTION

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

LAKE ERIE

NORTH

CANADA

MICHIGAN OHIO