

COMPREHENSIVE CHEMICAL ANALYSIS
CITY OF CHICAGO - DEPARTMENT OF WATER MANAGEMENT - BUREAU OF WATER SUPPLY
WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES
 LABORATORY ACCREDITATION NUMBER: 100228

1st Quarter

Sample Date	3/14/2018	3/14/2018	3/14/2018	3/13/2018	3/14/2018	3/14/2018	3/14/2018	3/14/2018	3/14/2018
LAB ID Nos.	18C1490	18C1491	18C1492	18C1453-58	18C1493	18C1494	18C1495	18C1459-63	18C1464-68

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT				
				1	2A	2B	3	4	5A	5B	6	7
				RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION	
					73rd Street	79th Street	SOUTH		North	Central	Central	North
TEMPERATURE		°C	00010	8	8	7	8	6	7	7	7	9
TURBIDITY	TT	N.T.U.	82079	5.0	0.10	0.10	0.20	2.00	0.10	0.10	0.20	0.15
THRESHOLD ODOR, STRAIGHT	*3	T.O.N	00086	1 Cc	1 Cc	2 Cc	1 Cc	2 Cc	1 Cc	1 Cc	1 Cc	1 Cc
THRESHOLD ODOR, DECHLORINATED	*3	T.O.N.		1 M	1 M	1 M	1 Mm	1 Mm	1 M	1 M	1 M	1 M
COLOR	*15	Pt.-Co. CU	00080	42	5	0	1	19	0	1	1	1
pH	*6.5-8.5	STD. Units	00040	8.2	7.8	7.8	7.9	8.2	7.9	7.9	7.9	7.9
FREE CHLORINE RESIDUAL		CL ₂ , mg/L	50064	ND	1.22	1.30	0.91	ND	1.14	1.12	0.99	0.98
SATURATION INDEX, LANGELIER		UNITS +/-		0.06	-0.45	-0.46	-0.34	ND	-0.36	-0.36	-0.28	-0.28
ALKALINITY, PHENOLPHTHALEIN		0	00415	0	0	0	0	0	0	0	0	0
ALKALINITY, TOTAL		CaCO ₃ , mg/L	00410	112	102	102	104	111	103	105	106	105
CONDUCTIVITY		uS/cm		312	310	308	313	311	309	309	315	315
BROMIDE		Br, mg/L	71870	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CHLORIDE	*250	Cl, mg/L	00940	14.4	15.1	15.8	15.2	14.4	14.9	14.9	15.7	15.5
FLUORIDE	4	F, mg/L	00951	0.18	0.75	0.81	0.81	0.14	0.69	0.70	0.72	0.71
SULFATE	*250	SO ₄ , mg/L	00945	23.1	27.6	27.3	27.9	23.1	26.0	25.1	26.6	26.8
HARDNESS		CaCO ₃ , mg/L	00900	140	140	141	141	141	140	141	140	140
CALCIUM		Ca, mg/L	00916	37.4	36.6	36.6	37.1	37.4	36.4	36.4	37.2	37.1
MAGNESIUM		Mg, mg/L	00927	12.8	12.3	12.3	12.5	12.8	12.3	12.3	12.5	12.5
POTASSIUM		K, mg/L	00937	1.34	1.21	1.24	1.27	1.36	1.23	1.20	1.24	1.25
SODIUM		Na, mg/L	00006	8.64	8.45	8.51	8.77	8.82	8.62	8.62	8.97	8.97
SOLIDS, TOTAL DISSOLVED (H)	*500	TDS, mg/L	00150	173	145	143	146	166	143	152	154	164
SOLIDS, TOTAL (H)		Tot. Sol., mg/L	00500	176	161	159	162	177	166	155	166	175
TOTAL ORGANIC CARBON		TOC, mg/L	00680	1.73	1.50	1.46	1.49	1.78	1.66	1.64	1.56	1.52
OXYGEN DEMAND, CHEMICAL		O, mg/L	00335	2.04	1.50	2.41	2.81	4.48	4.97	3.69	2.55	3.66
NITROGEN, AMMONIA		N, mg/L	00610	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
NITROGEN, NITRATE	10	N, mg/L	00620	0.389	0.382	0.373	0.382	0.422	0.369	0.372	0.387	0.376
NITROGEN, NITRITE	1	N, mg/L	00615	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ORTHOPHOSPHATE		PO ₄ , mg/L	00660	0.027	0.423	0.483	0.498	0.021	0.470	0.474	0.480	0.481
PHOSPHATE, TOTAL		PO ₄ , mg/L	00650	0.060	1.01	1.12	1.12	0.050	1.08	1.10	1.08	1.06
CYANIDE, TOTAL	200	CN, ug/L	00720	<12	<12	<12	<12	<12	<12	<12	<12	<12

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

R - Data rejected

Cyanide - LFM Did not meet QC Criteria

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1st Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date	3/14/2018	3/14/2018	3/14/2018	3/13/2018	3/14/2018	3/14/2018	3/14/2018	3/14/2018	3/14/2018			
				LAB ID Nos.	18C1490	18C1491	18C1492	18C1453-58	18C1493	18C1494	18C1495	18C1459-63	18C1464-68			
				SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT								
				1	2A	2B	3	4	5A	5B	6	7				
RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION									
	73rd Street	79th Street	SOUTH		North	Central	Central	North								
ALUMINUM	*50-200	Al, µg/L	01105	151	41.4	39.9	38.1	59.2	50.0	53.1	48.6	43.9				
ANTIMONY	6	Sb, µg/L	01268	<1	<1	<1	<1	<1	<1	<1	<1	<1				
ARSENIC	10	As, µg/L	01002	<1	<1	<1	<1	<1	<1	<1	<1	<1				
BARIIUM	2000	Ba, µg/L	01007	21.2	19.6	19.4	19.2	20.6	19.6	19.5	19.5	19.3				
BERYLLIUM	4	Be, µg/L	01012	<1	<1	<1	<1	<1	<1	<1	<1	<1				
BORON		B, µg/L	01022	25.6	25.3	25.3	25.2	25.1	25.3	24.5	25.2	25.0				
CADMIUM	5	Cd, µg/L	01027	<1	<1	<1	<1	<1	<1	<1	<1	<1				
CHROMIUM	100	Cr, µg/L	01034	1.40	1.73	1.63	1.95	1.43	1.68	1.01	1.74	1.64				
COBALT		Co, µg/L	01037	<1	<1	<1	<1	<1	<1	<1	<1	<1				
COPPER	**1300	Cu, µg/L	01042	1.50	<1	<1	2.12	<1	<1	<1	<1	<1				
IRON	*300	Fe, µg/L	00031	170	<1	<1	3.78	56.4	<1	<1	2.10	5.23				
LEAD	**15.0	Pb, µg/L	01051	<1	<1	<1	1.47	<1	<1	<1	<1	<1				
LITHIUM ***		Li, µg/L	01132	3.58	3.14	3.14	3.20	3.34	3.17	3.12	3.18	3.18				
MANGANESE	*50	Mn, µg/L	01055	4.34	<1	<1	<1	1.45	<1	<1	<1	<1				
MERCURY	2	Hg, µg/L	71900	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
MOLYBDENUM		Mo, µg/L	01062	1.01	<1	<1	1.03	<1	<1	<1	<1	1.01				
NICKEL		Ni, µg/L	01067	1.73	1.32	1.22	1.66	1.56	1.16	1.16	1.65	1.80				
SELENIUM	50	Se, µg/L	01147	<1	<1	<1	<1	<1	<1	<1	<1	<1				
SILICON		Si, µg/L	01142	1412	1236	1242	1265	1093	1120	1114	1154	1159				
SILVER	*100	Ag, µg/L	01077	<1	<1	<1	<1	<1	<1	<1	<1	<1				
STRONTIUM		Sr, µg/L	01082	116	115	114	121	116	114	115	124	129				
THALLIUM	2	Tl, µg/L	01059	<1	<1	<1	<1	<1	<1	<1	<1	<1				
TITANIUM		Ti, µg/L	01152	3.03	1.34	1.45	1.48	1.16	1.38	1.37	1.46	1.54				
VANADIUM		V, µg/L	00985	3.06	<1	<1	<1	4.91	<1	<1	<1	<1				
ZINC	*5000	Zn, µg/L	01092	<1	<1	<1	15.2	<1	<1	<1	13.8	13.4				

* Federal Primary/Secondary MCLs

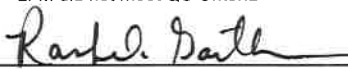
** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

***Lithium - LFM did not meet QC Criteria


 CHIEF WATER CHEMIST


 DIRECTOR OF LABORATORIES


 MANAGER OF WATER QUALITY


 DEPUTY COMMISSIONER

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2nd Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date	5/25/2018	5/24/2018	5/24/2018	5/29/18-5/31/18	5/24/2018	5/24/2018	5/24/2018	5/23/18-5/29/18	5/23/2018			
				LAB ID Nos.	18C3172	18C3148	18C3149	18C3250 - 18C3255	18C3142	18C3143	18C3144	18C3109 - 3111, 18C3256-3257	18C3112 - 18C3116			
								SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT				
				1		2A	2B	3	4	5A	5B	6	7			
RAW LAKE		OUTLETS		***DISTRIBUTION		RAW LAKE		OUTLETS		***DISTRIBUTION						
		73rd Street	79th Street	SOUTH				North	Central	Central	North					
TEMPERATURE		°C	00010	13	13	13	14	12	12	12	13	15				
TURBIDITY	TT	N.T.U.	82079	0.60	0.20	0.05	0.45	0.70	0.05	0.05	0.10	0.08				
THRESHOLD ODOR, STRAIGHT	*3	T.O.N	00086	1 M	1 Cc	1 E	1 E	1 M	1 Cc	1 E	1 Cc	1 E				
THRESHOLD ODOR, DECHLORINATED	*3	T.O.N.		1 M	1 M	1 E	1 M	1 M	1 M	1 E	1 M	1 E				
COLOR	*15	Pt.-Co. CU	00080	<15	<15	<15	<15	<15	<15	<15	<15	<15				
pH	*6.5-8.5	STD. Units	00040	8.2	7.8	7.8	7.9	8.2	7.9	7.9	7.9	7.9				
FREE CHLORINE RESIDUAL		CL ₂ , mg/L	50064	ND	1.39	1.34	0.89	ND	1.39	1.37	0.99	0.88				
SATURATION INDEX, LANGELEIER		UNITS +/-		0.13	-0.31	-0.31	-0.20	0.11	-0.26	-0.27	-0.21	-0.16				
ALKALINITY, PHENOLPHTHALEIN		0	00415	0	0	0	0	0	0	0	0	0				
ALKALINITY, TOTAL		CaCO ₃ , mg/L	00410	106	100	100	100	106	100	100	101	101				
CONDUCTIVITY		uS/cm		289	298	298	297	298	305	304	301	307				
BROMIDE (Sampled 6-25-18)		Br, mg/L	71870	<0.1	<0.1	<0.1	H	<0.1	<0.1	<0.1	H	H				
CHLORIDE (Sampled 6-25-18)	*250	Cl, mg/L	00940	14.5	17.3	17.2	H	13.9	16.5	16.9	H	H				
FLUORIDE	4	F, mg/L	00951	0.14	0.83	0.79	0.80	0.14	0.73	0.73	0.74	0.73				
SULFATE (Sampled 6-25-18)	*250	SO ₄ , mg/L	00945	21.4	25.8	25.4	H	22.3	26.1	25.8	H	H				
HARDNESS		CaCO ₃ , mg/L	00900	140	140	141	140	140	140	140	140	140				
CALCIUM		Ca, mg/L	00916	35.7	34.9	35.0	35.1	35.8	35.0	35.1	35.0	35.0				
MAGNESIUM		Mg, mg/L	00927	12.4	12.1	12.2	12.2	12.4	12.2	12.2	12.1	12.1				
POTASSIUM		K, mg/L	00937	1.17	1.28	1.27	1.29	1.21	1.29	1.32	1.29	1.29				
SODIUM		Na, mg/L	00006	8.69	8.85	8.81	8.68	9.42	9.59	9.60	9.13	9.33				
SOLIDS, TOTAL DISSOLVED	*500	TDS, mg/L	00150	157	155	153	161	155	158	156	157	159				
SOLIDS, TOTAL		Tot. Sol., mg/L	00500	167	157	154	168	167	179	161	162	167				
TOTAL ORGANIC CARBON (H)		TOC, mg/L	00680	1.90	1.64	1.67	1.58	1.88	1.56	1.60	1.63	1.65				
OXYGEN DEMAND, CHEMICAL		O, mg/L	00335	7.11	6.43	6.32	6.55	6.44	4.95	5.61	6.69	5.64				
NITROGEN, AMMONIA		N, mg/L	00610	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
NITROGEN, NITRATE (Sampled 6-25-18)	10	N, mg/L	00620	0.536	0.517	0.503	H	0.426	0.582	0.579	H	H				
NITROGEN, NITRITE (Sampled 6-25-18)	1	N, mg/L	00615	<0.1	<0.1	<0.1	H	<0.1	<0.1	<0.1	H	H				
ORTHOPHOSPHATE		PO ₄ , mg/L	00660	<0.01	0.525	0.446	0.515	0.011	0.518	0.521	0.532	0.534				
PHOSPHATE, TOTAL		PO ₄ , mg/L	00650	0.038	1.21	1.02	1.17	0.076	1.18	1.19	1.18	1.22				
CYANIDE, TOTAL	200	CN, ug/L	00720	<12	<12	<12	<12	<12	<12	<12	<12	<12				

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

R - Data rejected

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2nd Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date	5/25/2018	5/24/2018	5/24/2018	5/29/18-5/31/18	5/24/2018	5/24/2018	5/24/2018	5/23/18-5/29/18	5/23/2018			
				LAB ID Nos.	18C3172	18C3148	18C3149	18C3250 - 18C3255	18C3142	18C3143	18C3144	18C3109 - 3111, 18C3256-3257	18C3112 - 18C3116			
				SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT								
				1	2A	2B	3	4	5A	5B	6	7				
RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION									
	73rd Street	79th Street	SOUTH		North	Central	Central	North								
ALUMINUM	*50-200	Al, µg/L	01105	15.1	82.6	81.9	101	17.7	77.0	79.2	74.9	69.5				
ANTIMONY	6	Sb, µg/L	01268	<1	<1	<1	<1	<1	<1	<1	<1	<1				
ARSENIC	10	As, µg/L	01002	<1	<1	<1	<1	<1	<1	<1	<1	<1				
BARIUM	2000	Ba, µg/L	01007	21.3	20.2	20.0	20.1	21.2	20.3	20.3	20.0	20.0				
BERYLLIUM	4	Be, µg/L	01012	<1	<1	<1	<1	<1	<1	<1	<1	<1				
BORON		B, µg/L	01022	24.0	25.5	24.9	24.9	24.0	25.1	25.4	24.9	24.9				
CADMIUM	5	Cd, µg/L	01027	<1	<1	<1	<1	<1	<1	<1	<1	<1				
CHROMIUM	100	Cr, µg/L	01034	1.60	1.48	1.53	1.29	1.88	1.53	1.11	1.19	1.07				
COBALT		Co, µg/L	01037	<1	<1	<1	<1	<1	<1	<1	<1	<1				
COPPER	**1300	Cu, µg/L	01042	<1	<1	<1	<1	<1	<1	<1	1.00	0.80				
IRON	*300	Fe, µg/L	00031	16.0	<1	<1	6.69	19.4	<1	<1	3.41	5.90				
LEAD	**15.0	Pb, µg/L	01051	<1	<1	<1	<1	<1	<1	<1	<1	1.37				
LITHIUM ***		Li, µg/L	01132	2.89	2.76	2.75	2.80	2.80	2.83	4.90	2.79	2.79				
MANGANESE	*50	Mn, µg/L	01055	<1	<1	<1	<1	<1	<1	<1	<1	<1				
MERCURY	2	Hg, µg/L	71900	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				
MOLYBDENUM		Mo, µg/L	01062	<1	<1	<1	1.08	<1	1.00	<1	<1	<1				
NICKEL		Ni, µg/L	01067	1.79	1.77	1.77	1.76	1.80	1.74	1.74	1.77	1.77				
SELENIUM	50	Se, µg/L	01147	<1	<1	<1	<1	<1	<1	<1	<1	<1				
SILICON		Si, µg/L	01142	808	956	940	931	818	930	932	917	934				
SILVER	*100	Ag, µg/L	01077	<1	<1	<1	<1	<1	<1	<1	<1	<1				
STRONTIUM		Sr, µg/L	01082	124	124	121	126	124	123	124	124	124				
THALLIUM	2	Tl, µg/L	01059	<1	<1	<1	<1	<1	<1	<1	<1	<1				
TITANIUM		Ti, µg/L	01152	<1	1.48	1.27	1.39	<1	1.42	1.42	1.43	1.42				
VANADIUM		V, µg/L	00985	<1	<1	<1	<1	<1	<1	<1	<1	<1				
ZINC	*5000	Zn, µg/L	01092	<1	<1	<1	8.24	1.35	<1	1.84	14.9	47.6				

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

***Lithium - LFM did not meet QC Criteria

Roshelle Ball
CHIEF WATER CHEMIST

Hassan Akel
DIRECTOR OF LABORATORIES

Andrea R. White
MANAGER OF WATER QUALITY

DEPUTY COMMISSIONER