



US Army Corps  
of Engineers  
Baltimore District



## Washington Aqueduct

## U.S. ARMY Corps of Engineers

# Annual Report of Water Analysis 2007

Prepared by:

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A handwritten signature in black ink, dated April 4, 2008.

Approved by the Chief, Washington Aqueduct





WASHINGTON AQUEDUCT, US ARMY CORPS OF ENGINEERS  
ANNUAL REPORT OF WATER ANALYSIS (2007)

Potomac River Raw Water Supply

	Miscellaneous Physical Parameters										Inorganic Ions									Microorganisms						
	pH	ALKALINITY	CONDUCTIVITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	TEMPERATURE	TOTAL HARDNESS	TOTAL ORG. CARBON	TOTAL SOLIDS	TURBIDITY	TOTAL AMMONIA	BROMIDE	CHLORIDE	FLUORIDE	IODIDE	NITRATE	NITRITE	ORTHOPOSPHATE as PO4	PERCHLORATE	SULFATE	ALGAE COUNT	TOTAL COLIFORM	E. COLL	GIARDIA	CRYPTOSPORIDIUM	VIRUS
		ppm	uS/cm	ppm	ppm	F	ppm	ppm	ppm	NTU	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppb	ppm	org/mL	MPN/100mL	MPN/100mL	cysts/L	oocysts/L	MPN/100L
Jan	7.9	77	285	187	7	45	109	2.21	194	13	ND	ND	21	0.09	4.4	2.26	ND	0.09	ND	23	232	4093	184	ND	ND	10.6
Feb	8.2	92	366	222	5	39	132	2.58	227	17	0.05	ND	50	0.14	---	2.29	ND	0.12	ND	29	197	5999	41	ND	ND	---
Mar	7.4	62	270	141	21	50	88	3.07	162	26	0.07	ND	23	0.08	---	1.84	ND	0.08	ND	21	200	3697	136	ND	ND	---
Apr	7.7	70	293	181	14	55	96	3.09	195	46	ND	ND	19	0.08	4.7	1.65	0.02	0.33	ND	22	208	4286	326	ND	ND	---
May	7.9	97	338	173	13	69	126	2.39	186	5	ND	ND	24	0.10	---	1.61	ND	0.11	ND	30	156	3205	15	ND	ND	1.1
Jun	7.9	105	348	212	7	79	134	2.63	219	4	ND	ND	24	0.13	---	1.02	0.02	0.15	ND	33	184	8323	75	ND	ND	---
Jul	8.2	106	371	246	11	81	140	3.11	257	2	ND	ND	26	0.14	4.8	0.43	ND	0.05	ND	40	201	8915	6	ND	ND	---
Aug	8.2	100	394	226	3	80	145	3.53	229	4	0.05	ND	28	0.15	---	0.43	ND	0.13	1.8	51	299	8838	32	ND	ND	---
Sep	8.4	97	348	226	0	76	137	3.28	226	2	ND	ND	25	0.15	---	0.42	ND	0.33	ND	40	224	3337	30	ND	ND	3.5
Oct	8.3	109	423	243	1	68	152	4.24	244	2	ND	ND	31	0.16	5.0	0.42	ND	0.08	2.4	53	138	4678	92	ND	ND	---
Nov	8.3	121	423	237	0	54	166	3.40	237	1	ND	ND	29	0.13	---	1.14	ND	0.08	0.7	49	128	441	24	ND	ND	---
Dec	8.0	90	386	222	4	44	146	3.46	226	18	0.05	ND	34	0.13	---	1.99	ND	0.10	ND	36	363	2189	365	ND	ND	161.6
Avg	8.0	94	354	210	7	61	131	3.08	217	12	ND	ND	28	0.12	4.7	1.29	ND	0.14	ND	35	211	4833	111	ND	ND	44.2
Max	8.4	121	423	246	21	81	166	4.24	257	46	0.07	ND	50	0.16	5.0	2.29	0.02	0.33	2.4	53	363	8915	365	ND	ND	161.6
Min	7.4	62	270	141	0	39	88	2.21	162	1	ND	ND	19	0.08	4.4	0.42	ND	0.05	ND	21	128	441	6	ND	ND	1.1

	Metals																												
	ALUMINUM	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CALCIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	LITHIUM	MAGNESIUM	MANGANESE	MERCURY	MOLYBDENUM	NICKEL	POTASSIUM	SELENIUM	SILVER	SODIUM	STRONTIUM	THALLIUM	THORIUM	URANIUM	VANADIUM	ZINC	
	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Jan	671	ND	0.5	28.9	ND	ND	31	0.6	ND	2.9	346	ND	1.3	7	31	ND	ND	1.6	2.1	ND	ND	14.0	107	ND	ND	ND	ND	1.0	2.7
Feb	354	ND	ND	31.0	ND	ND	37	ND	ND	1.6	113	ND	2.4	4	29	ND	0.8	1.7	---	ND	ND	---	191	ND	ND	ND	ND	1.0	2.6
Mar	687	ND	0.6	37.6	ND	ND	24	1.0	0.7	2.5	818	1.0	2.3	7	49	ND	ND	2.7	---	ND	ND	---	100	ND	ND	ND	1.2	5.4	
Apr	195	ND	ND	33.2	ND	ND	28	1.7	ND	1.2	137	ND	2.0	6	58	ND	0.6	1.6	2.0	ND	ND	9.3	149	ND	ND	ND	1.0	2.0	
May	144	ND	ND	40.3	ND	ND	36	ND	ND	2.2	191	0.5	2.0	9	57	ND	0.5	1.7	---	ND	ND	---	154	ND	ND	ND	0.9	3.1	
Jun	758	ND	0.9	52.7	ND	ND	37	0.9	0.7	3.7	605	0.7	3.3	10	150	ND	0.7	2.9	---	ND	ND	---	219	ND	ND	ND	1.6	5.0	
Jul	211	ND	0.8	47.5	ND	ND	36	ND	ND	2.3	121	ND	4.2	12	58	ND	1.6	2.2	2.9	ND	ND	15.0	249	ND	ND	ND	1.2	1.7	
Aug	198	ND	1.0	44.5	ND	ND	39	ND	ND	3.0	103	ND	3.3	12	127	ND	1.7	2.2	---	ND	ND	---	227	ND	ND	ND	1.5	2.0	
Sep	264	ND	1.1	40.7	ND	ND	36	ND	ND	2.0	80	ND	3.7	12	131	ND	1.6	1.9	---	ND	ND	---	210	ND	ND	ND	1.6	2.2	
Oct	351	ND	0.8	45.7	ND	ND	38	2.2	ND	1.7	47	ND	5.4	14	28	ND	1.9	1.9	4.3	ND	ND	23.0	272	ND	ND	ND	1.5	1.6	
Nov	2389	ND	0.7	63.8	ND	ND	48	1.4	ND	2.6	126	1.2	7.5	11	34	ND	1.9	3.0	---	ND	ND	---	311	ND	ND	ND	1.4	58.0	
Dec	382	ND	ND	39.7	ND	ND	43	ND	ND	2.0	70	ND	2.9	10	35	ND	1.3	2.1	---	ND	ND	---	238	ND	ND	ND	1.4	5.04	
Avg	550	ND	0.5	42.1	ND	ND	36	0.7	ND	2.3	230	ND	3.4	10	65	ND	1.0	2.1	2.8	ND	ND	15.3	202	ND	ND	ND	1.1	7.6	
Max	2389	ND	1.1	63.8	ND	ND	48	2.2	0.7	3.7	818	1.2	7.5	14	150	ND	1.9	3.0	4.3	ND	ND	23.0	311	ND	ND	ND	1.6	58.0	
Min	144	ND	ND	28.9	ND	ND	24	ND	ND	1.2	47	ND	1.3	4	28	ND	ND	1.6	2.0	ND	ND	9.3	100	ND	ND	ND	1.0	1.6	

ppb = Parts Per Billion

ppm = Parts Per Million

ND = Not Detected

"----" = No Analysis Required













**WASHINGTON AQUEDUCT, US ARMY CORPS OF ENGINEERS  
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EPA MCL*	Synthetic Organic Compounds														Miscellaneous					
	PENDIMETHALIN	PERMETHRIN	PENTACHLOROPHENOL	PHENANTHRENE	PICLORAM	PROPACHLOR	PYRENE	SIMAZINE	TERBACIL	TERBUTHYLAZINE	THIOBENCARB	TRIFLURALIN	TOXAPHENE	2,4,5-T	2,4,5-TP (SILVEX)	DIBROMOCHLOROPROPANE (DBCP)	ETHYLENE DIBROMIDE (EDB)	CYANIDE	DIOXIN	N-nitrosodimethylamine (NDMA)
	1		500				4					3		50	0.2	50	0.2	30		

**Dalecarlia Water Treatment Plant Finished Water**

	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppt	ppm	pg/L	ppt
Jan	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	ND	ND
Feb	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mar	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Apr	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
May	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Jun	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5
Aug	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sep	ND	ND	ND	ND	----	ND	ND	0.2	ND	ND	ND	ND	----	----	----	----	----	----	----
Oct	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2
Nov	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dec	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Avg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Max	ND	ND	ND	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	0.03	ND	2.5
Min	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

\*EPA MCL = Environmental Protection Agency's Maximum Contaminant Level for regulated parameters.

ppb = Parts Per Billion

ppm = Parts Per Million

ppt = Parts Per Trillion

ND = Not Detected

"----" = No Analysis Required

\*\* McMillan Water Treatment Plant was out of service November 1, 2007 through December 17, 2007

**McMillan Water Treatment Plant Finished Water**

Jan	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Feb	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Mar	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Apr	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
May	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Jun	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Jul	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4
Aug	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Sep	ND	ND	ND	ND	----	ND	ND	0.2	ND	ND	ND	ND	----	----	----	----	----	----	----
Oct	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nov**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dec	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Avg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Max	ND	ND	ND	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4
Min	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND