



**WATER QUALITY LABORATORY
INORGANIC ANALYSES
PERIOD OF 01/01/2011 TO 12/31/2011
Griffith Treatment Plant Finished Water**

Parameter	MCL ¹	Units ²	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	Max	Min	Quant Limit ³	# of Tests
Aggressive Index Number		Units	11	11	11	11	11	--	11	12	10	11	11	11	11	12	10	-	11
Alkalinity, Bicarbonate		mg/L	62	48	39	49	46	--	66	80	47	46	53	60	54	80	39	-	11
Alkalinity, Carbonate		mg/L	0	0	0	0	0	--	0	0	0	0	0	0	0	0	0	-	11
Alkalinity, Hydroxyl		mg/L	0	0	0	0	0	--	0	0	0	0	0	0	0	0	0	-	11
Alkalinity, Phenolphthalein		mg/L	0	0	0	0	0	--	0	0	0	0	0	0	0	0	0	-	11
Alkalinity, Total		mg/L	62	48	39	49	46	--	66	80	47	46	53	60	54	80	39	-	11
Bromate	10 P	µg/L	BQL *	BQL *	BQL *	BQL *	BQL *	BQL *	BQL *	6 *	5 *	BQL *	BQL *	BQL *	BQL	6	BQL	5	36
Bromide		mg/L	0.02	0.03	0.02	0.01	0.01	--	0.01	0.02	BQL	BQL	0.01	0.02	0.01	0.03	BQL	0.01	11
Carbon Dioxide		mg/L	3	5	2	4	4	--	4	3	6	5	5	5	4	6	2	-	11
Chloride	250.0 S	mg/L	44.1	133.0	49.9	50.7	39.9	--	45.0	50.9	31.3	35.4	31.5	36.5	49.8	133.0	31.3	5.0	11
Chlorine, Free		mg/L	0.0 *	0.1 *	0.1 *	3.0 *	3.3 *	--	0.3 *	0.2 *	0.2 *	0.1 *	0.1 *	0.0 *	0.7	3.3	0.0	0.0	33
Chlorine, Total		mg/L	3.3 *	3.2 *	3.4 *	3.3 *	3.6 *	--	3.0 *	3.5 *	3.4 *	3.1 *	3.3 *	3.1 *	3.2	3.6	2.3	0.0	33
Color	15 S	Units	1	1	0	1	1	--	0	1	0	0	1	0	1	1	0	0	11
Cyanide (as free cyanide)	0.2 P	mg/L	--	--	--	--	--	--	--	--	--	BQL	--	--	BQL	BQL	BQL	0.025	1
Dissolved Oxygen		mg/L	22.0	19.1	21.1	16.5	16.6	--	--	18.1	13.0	16.4	19.4	18.0	18.0	22.0	13.0	0.0	10
Fluoride	4.0/2.0 P/S	mg/L	0.7	0.6	0.7	0.7	0.7	--	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.6	0.2	11
Hardness, Calcium		mg/L	63	72	42	45	41	--	59	74	35	47	42	71	54	74	35	-	11
Hardness, Total		mg/L	98	113	61	75	55	--	82	99	55	64	65	96	78	113	55	-	11
Methylene Blue Activated Substances	0.5 S	mg/L	--	--	--	--	--	--	BQL	--	--	--	--	--	BQL	BQL	BQL	0.05	1
N, Ammonia (Ammonia as N)		mg/L	0.84 *	--	0.75 *	BQL *	BQL *	--	0.65 *	0.89 *	0.77 *	0.80 *	0.78 *	0.78 *	0.63	0.92	BQL	0.20	30
N, Nitrate (Nitrate as N)	10 P	mg/L	2.1	1.2	0.9	0.7	0.5	--	1.1	1.0	1.5	1.2	1.1	1.4	1.2	2.1	0.5	0.2	11
N, Nitrite (Nitrite as N)	1 P	mg/L	0.01	0.06	0.02	BQL	BQL	--	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.06	BQL	0.01	11
pH	6.5-8.5 S	Units	7.6	7.3	7.5	7.4	7.4	--	7.5	7.8	7.2	7.3	7.3	7.4	7.4	7.8	7.2	-	11
Phosphate as Phosphorous		mg/L	0.34	0.37	0.36	0.34	0.31	--	0.28	0.32	0.29	0.32	0.33	0.32	0.33	0.37	0.28	0.10	11
Solids, Total		mg/L	219	373	173	178	172	--	197	229	169	156	162	217	204	373	156	1	11
Solids, Total Dissolved	500 S	mg/L	218	329	162	180	148	--	184	233	126	147	159	180	188	329	126	1	11
Solids, Total Suspended		mg/L	BQL	BQL	BQL	BQL	BQL	--	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	1	11
Specific Conductivity		µmhos/cm	379	653	316	320	281	--	344	429	247	255	--	319	354	653	247	0	10
Sulfate	250.0 S	mg/L	37.1	32.0	18.1	20.9	16.5	--	25.2	35.3	20.2	20.6	18.5	34.1	25.3	37.1	16.5	5.0	11
Taste		Units	4	2	2	3	2	--	2	2	2	2	2	3	2	4	2	1	11
Temperature		°C	11.1	11.1	14.0	16.2	18.1	--	23.5	26.2	22.2	20.5	18.2	17.1	18.0	26.2	11.1	-	11
Threshold Odor Number	3 S	Units	6	3	4	7	4	--	1	3	5	3	3	3	4	7	1	0	11
Total Organic Carbon		mg/L	3.1	2.6	2.2	2.7	2.4	--	2.4	2.2	2.4	2.7	3.2	2.5	2.6	3.2	2.2	0.5	11
Turbidity	≤ 5 P	NTU	0.05	0.05	0.05	0.20	0.05	--	0.10	0.10	0.05	0.05	0.05	0.05	0.07	0.20	0.05	0.00	11

* = Monthly result composed from an average of parameter results for Griffith Treatment Plant finished water points of entry to distribution system.

BQL = The lowest quantitation limit of all analyses for the particular parameter, Below Quantitation Limit.

¹ Environmental Protection Agency/Virginia Department of Health established levels for drinking water at points of entry to the water distribution system

P=Primary-enforceable, S=Secondary-non-enforceable, AL=Action Level on specific taps, MCL=Maximum Contaminant Level.

² mg/L = milligrams per liter, µg/L = micrograms per liter, µmhos/cm = micromhos per centimeter, NTU = Nephelometric Turbidity Units

³ Quant Limit = Quantitation Limit = lowest level of measurement



**WATER QUALITY LABORATORY
METAL ANALYSES
PERIOD OF 01/01/2011 TO 12/31/2011
Griffith Treatment Plant Finished Water**

Parameter	MCL ¹	Units ²	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	Max	Min	Quant Limit ³	# of Tests
Aluminum	50-200 S	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	25.0	4
Antimony	6 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	2.0	4
Arsenic	10 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	2.0	4
Barium	2000 P	µg/L	28.2	--	--	26.4	--	--	33.7	--	--	BQL	--	--	BQL	33.7	BQL	25.0	4
Beryllium	4 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	2.0	4
Cadmium	5 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	2.0	4
Calcium		mg/L	28.9	--	--	20.7	--	--	23.1	--	--	17.6	--	--	22.6	28.9	17.6	1.0	4
Chromium	100 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	5.0	4
Copper	1300 AL	µg/L	BQL	BQL	BQL	BQL	BQL	--	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	25.0	11
Iron	300 S	µg/L	BQL	BQL	BQL	BQL	BQL	--	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	25.0	11
Lead	15 AL	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	2.0	4
Magnesium		mg/L	6.6	--	--	5.6	--	--	5.5	--	--	4.3	--	--	5.5	6.6	4.3	1.0	4
Manganese	50 S	µg/L	BQL	BQL	BQL	BQL	BQL	--	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	25.0	11
Mercury	2 P	µg/L	BQL	--	--	--	BQL	--	BQL	--	--	--	--	--	BQL	BQL	BQL	0.50	3
Nickel	100 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	5.0	4
Potassium		mg/L	5.2	--	--	3.2	--	--	4.5	--	--	4.3	--	--	4.3	5.2	3.2	1.0	4
Selenium	50 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	5.0	4
Silicon		mg/L	4.2	--	--	3.3	--	--	3.7	--	--	3.5	--	--	3.7	4.2	3.3	1.0	4
Silver	100 S	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	5.0	4
Sodium		mg/L	30.8	67.1	29.0	32.7	28.0	--	34.3	39.5	25.8	24.9	24.1	25.2	32.9	67.1	24.1	1.0	11
Thallium	2 P	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	2.0	4
Zinc	5000 S	µg/L	BQL	--	--	BQL	--	--	BQL	--	--	BQL	--	--	BQL	BQL	BQL	25.0	4

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