APPENDIX A

Toxicity testing conducted by PESC

Materials and Methods

Test Concentration Preparation

Reagent grade sodium sulphate (Na_2SO_4) purchased from Fisher Scientific was used for all the various toxicity tests. All test concentrations were based on the weight of sulphate (SO_4). The following concentration range of sulphate was used for all the toxicity tests at the low (50 mg/L $CaCO_3$ = soft), medium (100 mg/L $CaCO_3$ = medium), and hard water hardness (250 mg/L $CaCO_3$ = high): 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4). For each prepared test concentration, the appropriate amount sulphate was weighed and transferred to the dilution water and mixed vigorously using a magnetic spin bar in a large glass flask to allow for better homogenization within the water column. The water hardness values followed the hardness formulations described by the USEPA 1994a (EPA/600/R-94/024) referenced in Environment Canada's Biological Test Method EPS 1/RM/33 (Freshwater Amphipod *Hyalella azteca*). The recipe has a higher proportion of chloride to sulphate compared to other recipes commonly used (i.e. USEPA 1985: EPA/600/4-85/014, Short-Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms for Synthetic Laboratory Water Formulations) which is required for testing *Hyalella*. The three reconstituted water formulations used PESC deionized water adjusted to the appropriate water hardness by adding sodium bicarbonate ($NaHCO_3$), calcium sulphate ($CaSO_4$), calcium chloride ($CaCl_2$), magnesium sulphate ($MgSO_4$) and potassium chloride (KCl), each with a Ca/Mg ratio of approximately 5.3.

Tadpole Growth and Survival Test

Materials and methods were adapted from Environment Canada, Biological Test Methods: Acute Lethality Test Using Rainbow Trout, Report EPS 1/RM/9 July 1990, amended May 1996 and May 2007 and Environment Canada, Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout), EPS 1/RM/28 second edition, July 1998. (Note: Bull frog tadpoles were used as the test species.)

Tadpole 28-day growth and survival tests were conducted at PESC to determine the chronic toxicity of sulphate in low, medium and high water hardness to the pre-metamorphic underyearling Bull frog tadpole, *Rana catesbeiana*. Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each concentration had 3 replicates with 5 test organisms per replicate in 60 L of test solution. The static renewal tests were conducted in an environmental chamber at 22±2°C under a 16:8 light/dark photoperiod with 500 lux light intensity. Each Wednesday (once/week), the water quality parameters (pH, dissolved oxygen, temperature and conductivity) were measured from the old and freshly-prepared test solutions and the test solutions were 90% renewed. Self-priming and submersible pumps were used to siphon the old solutions and to add freshly-prepared solutions in the test vessels. The organisms were fed a single tablet of Nutrafin Max® (spirulina meal) per tadpole twice per week. Bull frog tadpole growth (wet weight) was recorded at beginning and end of the end of the exposure and cumulative mortality was recorded daily during the exposure.

***Hyalella* Growth and Survival Test**

Materials and methods followed the Standard Operating Procedure "*Hyalella azteca* Bioaccumulation and Toxicity Test Method using Imhoff Settling Cones" developed by U. Borgmann and W.P. Norwood at NWRI, Environment Canada.

Hyalella 28-day growth and survival tests were conducted at PESC to determine the chronic toxicity of sulphate in low, medium and high water hardness to the freshwater amphipod, *Hyalella azteca*. Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each concentration had 5 replicates with 15 test organisms per replicate in 1 L of test solution. The static non-renewal tests were conducted in an environmental chamber at 23±1°C under a 16:8 light/dark photoperiod with 500-1000 lux light intensity. Approximately 15 mL of clean control sediment (which was required a substrate for the *Hyalella*) was added to each 1 L polycarbonate Imhoff settling cone and each test container was then carefully filled with the appropriate overlying test concentration, being careful not to disturb the sediment layer. The test vessels were aerated and allowed to equilibrate overnight (Day -1).

Fifteen randomly selected *Hyalella* (healthy, 2 to 9 day old) were added to each of the five replicate Imhoff settling cones per concentration (Day 0). Water quality (pH, dissolved oxygen, temperature, conductivity and total ammonia) was measured periodically throughout the test in replicate A of each test concentration. The Imhoff settling cone test vessels were fed 2.5 mg of TetraMin™ in week 1, 2.5 mg two times in week 2, 2.5 mg three times in week 3 and 5 mg two times in week 4. Test vessels were aerated with oil-free air throughout test at a rate of 2-3 bubbles per second. At the conclusion of the bioassay (Day 28), the number of surviving test *Hyalella* were recorded and the survivors were transferred to pre-weighed aluminum weigh pans. The pans were oven dried for 24 hours at 60°C and the mean dry weights per *Hyalella* were recorded. Copper reference toxicant tests were conducted to insure that the organism sensitivity was within acceptable quality control warning chart limits.

***Lemna* Growth Inhibition Test**

Materials and methods followed Environment Canada, Biological Test Method: Test for Measuring the Inhibition of Growth Using the Freshwater Macrophyte *Lemna minor*, Report EPS 1/RM/37 March 1999.

Lemna 7-day growth inhibition tests were conducted at the Saskatchewan Research Council Laboratory to determine the chronic toxicity of sulphate in low, medium and high water hardness to the freshwater macrophyte, *Lemna minor*. Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations, followed by a nutrient spike (APHA medium) addition. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each concentration had 4 replicates with 2 three-frond plants per replicate in 150 mL of test solution. The static non-renewal tests measured frond increase (total fronds per replicate minus starting inoculum) and dry weight (total weight of all plants per replicate after drying) which were recorded after 7 days at 25±2°C. A nickel reference toxicant test was conducted to insure that the organism sensitivity was within acceptable quality control warning chart limits.

Fathead Minnow Growth and Survival Test

Materials and methods followed Environment Canada, Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows, Report EPS 1/RM/22, February 1992, amended September 2008.

Fathead minnow 7-day growth and survival tests were conducted at the HydroQual Laboratories Ltd. in Calgary, Alberta to determine the chronic toxicity of sulphate in low, medium and high water hardness to the freshwater minnow, *Pimephales promelas*. Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each concentration had 4 replicates with 10 test organisms per replicate in 500 mL of test solution. The static renewal tests were conducted in an environmental chamber at 25±1°C under a 16:8 light/dark photoperiod with ≤ 500 lux light intensity. Water quality (pH, dissolved oxygen, temperature and conductivity) were measured daily throughout the test in each test concentration. The test solutions were replenished 50% daily and the test organisms were fed twice daily with new hatched brine shrimp. A sodium chloride reference toxicant tests was conducted to insure that the organism sensitivity was within acceptable quality control warning chart limits.

Rainbow Trout Early Life Stage Survival Test

Materials and methods were adapted from Environment Canada, Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout), EPS 1/RM/28 second edition, July 1998. (Note: Rainbow trout eyed eggs were used as the early life stage.)

Rainbow trout early life stage 21-day survival tests were conducted at PESC to determine chronic toxicity of sulphate in low, medium and high water hardness to the early life stages of Rainbow trout, *Oncorhynchus mykiss.* Rainbow trout eyed eggs were obtained from the Fraser Valley Trout Hatchery (via Freshwater Fisheries Society of BC). Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each test concentration and the control had 3 replicates with 30 eyed eggs per replicate in 2 L of test solution. The static renewal tests were conducted in an environmental chamber at 14±1°C under a 16:8 light/dark photoperiod with ≤ 100 lux light intensity. Over a 21 day hatch out period data was collected on survival for the eyed eggs exposed in the test concentrations and the controls. Each Monday, Wednesday and Friday the water quality parameters (pH, dissolved oxygen, temperature and conductivity) were measured from the old and freshly-prepared test solutions, biological observations were recorded and test solutions were 80% renewed. Self-priming and submersible pumps were used to siphon old solutions and to add freshly-prepared solutions in the test vessels. Developing trout lay relatively undisturbed during these activities, as they were suspended in the solutions inside incubation units constructed from 800-mL tri-pour beakers which hung from the lids of the test vessels (lids had extra holes away from the incubation units to accommodate pump hoses and water quality metre probes). Gentle aeration with oil-free air through 1 mL disposable serological pipettes, positioned within the central standpipe of the incubation unit, allowed for a continuous upwelling current of solution to first wash over the eggs and then exit through slits cut in the sides of the unit.

The early life stage was designed to focus on the sensitive transitional periods from embryo development at the eyed stage through hatching, alevin development and yolk conversion, surfacing or swim-up behaviour. At day 21 the test was terminated once the trout were close to reaching the swim-up stage as the yolk-sac is converted (the belly has buttoned-up). At this point, nonviability, which includes dead eggs/embryos or alevins (hatchlings) was recorded in the test concentrations and controls.

Freshwater Mussel Growth and Survival Test

Materials and methods were adapted from ASTM International Standard Guide for Conducting Laboratory Tests with Freshwater Mussels, Designation: E2455-06 p. 35-41, April 2006 and from Environment Canada, Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout), EPS 1/RM/28 second edition, July 1998. (Note: freshwater mussels were used as the test species.)

Freshwater mussel 28-day survival tests were conducted at PESC to determine chronic toxicity of sulphate in low, medium and high water hardness to the freshwater mussel, *Elliptio complanata.* Mussels were obtained from the Aquarium du Québec. Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each test concentration and the control had 3 mussels in first and second replicate and 4 mussels in the third replicate for a total of 10 mussels per test concentration in 2 L of test solution. The static renewal tests were conducted in an environmental chamber at 20±2°C under a 16:8 light/dark photoperiod with 500 lux light intensity. Each Monday, Wednesday and Friday the water quality parameters (pH, dissolved oxygen, temperature and conductivity) were measured from the old and freshly-prepared test solutions, biological observations were recorded and test solutions were 100% renewed. Self-priming and submersible pumps were used to siphon the old solutions and to add freshly-prepared solutions in the test vessels. The organisms were fed 1 mL of Kent® Marine PhytoPlex (cultured phytoplankton) per mussel three times per week. Mussel growth (wet weight) was recorded at beginning and end of the end of the exposure and cumulative mortality was recorded daily during the exposure.

Chinook Trout Early Life Stage Survival Test

Materials and methods were adapted from Environment Canada, Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout), EPS 1/RM/28 second edition, July 1998. (Note: Chinook eyed eggs were used as the early life stage.)

Chinook early life stage 28-day survival tests were conducted at PESC to determine chronic toxicity of sulphate in low, medium and high water hardness to the early life stages of Chinook salmon, *Oncorhynchus tshawytscha*. Chinook eyed eggs were obtained from the Chilliwack Federal Hatchery. Reconstituted PESC deionized water at 50 mg/L, 100 mg/L and 250 mg/L hardness was used as the control water and the diluent for the test concentrations. The following nominal concentrations were tested for sulphate: 0 (control), 125, 250, 500, 1000 and 2000 mg/L (as SO_4).

Each test concentration and the control had 3 replicates with 30 eyed eggs per replicate in 2 L of test solution. The static renewal tests were conducted in an environmental chamber at 11±1°C under a 16:8 light/dark photoperiod with ≤ 100 lux light intensity. Over a 28 day hatch out period data was collected on survival for the eyed eggs exposed in the test concentrations and the controls. Each Monday, Wednesday and Friday the water quality parameters (pH, dissolved oxygen, temperature and conductivity) were measured from the old and freshly-prepared test solutions, biological observations were recorded and test solutions were 80% renewed. Self-priming and submersible pumps were used to siphon old solutions and to add freshly-prepared solutions in the test vessels. Developing Chinook lay relatively undisturbed during these activities, as they were suspended in the solutions inside incubation units constructed from 800-mL tri-pour beakers which hung from the lids of the test vessels (lids had extra holes away from the incubation units to accommodate pump hoses and water quality metre probes). Gentle aeration with oil-free air through 1 mL disposable serological pipettes, positioned within the central standpipe of the incubation unit, allowed for a continuous upwelling current of solution to first wash over the eggs and then exit through slits cut in the sides of the unit.

The early life stage was designed to focus on the sensitive transitional periods from embryo development at the eyed stage through hatching, alevin development and yolk conversion, surfacing or swim-up behaviour. At day 28 the test was terminated once the Chinook were close to reaching the swim-up stage as the yolk-sac is converted (the belly has buttoned-up). At this point, nonviability, which includes dead eggs/embryos or alevins (hatchlings) was recorded in the test concentrations and controls.

Summary of Control Mortalities for PESC studies

Species	Soft water	Medium water	Hard water
Hyalella	13%	11%	5%
Bullfrog Tadpole	0%	20%	0%
Fathead Minnow	3%	0%	0%
Lemna	0%	0%	0%
Rainbow Trout Eyed Egg	27%	20%	11%
Chinook Eyed Egg	1%	1%	1%
Freshwater Mussels	10%	10%	0%

Sulphate and Hardness Chemical Analysis

Chemistry sub-samples from the water column were taken for each toxicity test from each replicate concentration as a single pooled sub-sample at T = 0 (start) and T = end (final). The sub-samples were analyzed at the PESC Chemistry Laboratory for sulphate (ICA) and total hardness (ICP extractable). Other chemistry parameters analyzed were:

- Total Alkalinity
- Chloride, Fluoride, Bromide, Nitrate and Nitrite
- pH
- Filterable Residue & Total Residue
- Specific Conductance
- Turbidity
- Total Hardness

- Metals: - ICP: Total (extractable)
  - ICPMS: Total (extractable)
- Total Inorganic Carbon
- Total Organic Carbon
- Ammonia
- Total Phosphorous

PESC Water Chemistry Data tables

1) Chinook eyed-egg hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	141	149	142	150	142	148	144	146	143	146	144	146	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	61	63	62	62	57	64	58	59	61	61	59	58	0.5	mg/L
	Fluoride (F)	< 0.01	0.05	0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	200	188	336	336	466	449	695	699	1180	1250	2160	2180	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.38	8.39	8.4	8.39	8.39	8.39	8.4	8.36	8.39	8.34	8.38	8.32	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	548	555	704	750	878	928	1240	1290	2100	2030	3530	3500	10	mg/L
***Residue, Total**															
	Solids, Total	540	533	711	737	894	918	1270	1260	2000	2020	3430	3460	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	806	851	1060	1110	1300	1360	1810	1850	2770	2820	4620	4730	2	uS/cm
***Turbidity**															
	Turbidity	0.14	0.12	0.15	0.12	0.15	0.12	0.2	0.21	0.19	0.27	0.29	0.24	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.06	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.07	0.07	0.12	0.12	< 0.05	< 0.05	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	0.001	0.002	< 0.001	0.002	< 0.001	0.002	< 0.001	0.001	< 0.001	0.002	0.001	0.002	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	60.8	63.1	62	62.5	60.6	62.6	61.4	61	61	63.8	61.1	62	0.1	mg/L

	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	0.005	< 0.005	0.008	< 0.005	0.007	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	27.9	29	28.1	28.8	27.8	27.8	27.3	26.5	26.8	27.8	25.7	26.7	0.1	mg/L
	Manganese (Mn)	< 0.001	0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.003	0.002	0.003	0.001	0.003	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.2	0.2	0.1	mg/L
	Potassium (K)	5.7	6	5.8	6	5.7	5.8	5.6	5.6	5.7	5.9	5.5	5.8	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	0.01	0.01	0.01	mg/L
	Sodium (Na)	71.6	73.5	132	136	190	191	306	303	560	576	1030	1090	0.1	mg/L
	Strontium (Sr)	0.021	0.023	0.021	0.023	0.021	0.022	0.021	0.021	0.02	0.022	0.019	0.021	0.001	mg/L
	Sulfur (S)	68.8	71.7	112	114	151	156	232	247	393	407	782	823	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	54.4	44.6	56.9	47.1	51.7	46.3	56.4	44	52.7	44.8	52	43.4	0.2	ug/L
	Antimony (Sb)	< 0.005	0.008	< 0.005	0.023	< 0.005	0.016	0.005	0.012	0.006	0.012	0.01	0.017	0.005	ug/L
	Arsenic (As)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.2	0.2	0.1	ug/L
	Barium (Ba)	1.09	1.75	1.09	1.68	1.06	1.77	1.13	1.8	1.15	1.99	1.3	1.95	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.02	0.01	ug/L
	Chromium (Cr)	0.7	0.9	0.9	0.8	0.9	0.9	1	0.9	0.9	1	1.1	1.1	0.2	ug/L
	Cobalt (Co)	0.082	0.101	0.089	0.105	0.09	0.122	0.097	0.118	0.103	0.132	0.119	0.148	0.005	ug/L
	Copper (Cu)	0.59	4.82	0.77	7.24	0.88	6.81	1.26	3.29	1.91	3.94	3.45	7.4	0.05	ug/L
	Lead (Pb)	0.05	0.31	0.07	0.21	0.08	0.21	0.14	0.18	0.31	0.19	0.64	0.31	0.01	ug/L
	Lithium (Li)	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	ug/L
	Manganese (Mn)	0.113	1.06	0.152	0.725	0.172	0.683	0.244	1.88	0.363	1.84	0.585	1.84	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05	ug/L
	Nickel (Ni)	1.97	3.15	2.14	3.73	2.16	2.81	2.27	2.99	2.21	2.79	2.23	2.79	0.05	ug/L
	Selenium (Se)	< 0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	0.2	0.4	0.3	0.2	ug/L

	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	19.3	22.6	20.7	24.2	20.8	24	21.8	24.8	22.7	26.2	24.4	27.8	0.005	ug/L
	Thallium (Tl)	0.04	0.007	0.038	0.009	0.034	0.01	0.032	0.012	0.032	0.013	0.032	0.013	0.002	ug/L
	Tin (Sn)	0.03	0.07	0.03	0.31	0.02	0.17	0.02	0.12	0.03	0.09	0.02	0.09	0.01	ug/L
	Uranium (U)	0.003	0.015	0.003	0.017	0.003	0.02	0.003	0.014	0.003	0.015	0.003	0.016	0.002	ug/L
	Vanadium (V)	0.21	0.26	0.28	0.24	0.28	0.3	0.3	0.3	0.32	0.34	0.36	0.37	0.05	ug/L
	Zinc (Zn)	< 0.2	1.5	1.2	1.6	2.2	2.4	4.4	3.1	8.9	6.3	19.3	15.5	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	267	277	271	275	266	271	266	262	263	274	258	265	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	267	277	271	275	266	271	266	262	263	274	258	265	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	33.2	35.1	33.7	35.6	34.3	35.4	34.3	35	34.5	34.8	34.4	34.6	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	3.3	< 0.5	2.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.291	< 0.002	0.274	< 0.002	0.28	< 0.002	0.219	< 0.002	0.202	< 0.002	0.168	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002	0.005	< 0.002	0.005	< 0.002	0.004	0.003	0.005	0.005	0.008	0.006	0.008	0.002	mg/L

2) Chinook eyed-egg medium hard water treatment (100 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	64.3	68.9	64.5	69	64.7	68.3	65.3	68	65.2	67.9	65.8	67.9	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	24	24	24	25	24	24	24	24	23	24	24	24	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L

	Sulphate (SO4)	76	78	203	205	274	333	620	600	1030	1330	1990	2080	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.1	8.13	8.1	8.12	8.09	8.12	8.09	8.09	8.09	8.04	8.05	8.05	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	219	237	403	422	587	620	950	988	1690	< 10	3140	3200	10	mg/L
***Residue, Total**															
	Solids, Total	226	232	415	418	608	599	942	952	1680	1690	3150	3160	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	365	381	633	657	900	931	1420	1450	2410	2460	4290	4390	2	uS/cm
***Turbidity**															
	Turbidity	0.08	0.09	0.08	0.11	0.1	0.12	0.09	0.16	0.08	0.15	0.09	0.17	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	0.1	0.11	0.19	0.19	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	27.6	28.9	27.6	28.9	27.2	28.9	27.4	29	28.2	29.3	27.6	28.5	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	0.022	< 0.005	0.013	< 0.005	0.008	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	11.6	12.2	11.6	12	11.5	12.2	11.7	12.3	12.2	12.6	12.1	12.4	0.1	mg/L
	Manganese (Mn)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	0.002	0.004	0.003	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.1	mg/L
	Potassium (K)	2.4	2.6	2.4	2.5	2.3	2.5	2.3	2.5	2.4	2.6	2.4	2.4	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	mg/L

	Sodium (Na)	29.6	31	88.7	91.9	148	154	262	272	532	531	1050	1010	0.1	mg/L
	Strontium (Sr)	0.009	0.011	0.009	0.01	0.009	0.01	0.008	0.01	0.008	0.01	0.008	0.009	0.001	mg/L
	Sulfur (S)	28.4	29.5	71.1	74.7	114	117	195	200	361	371	763	755	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	26.6	20.6	26.8	22	26.7	19.1	28.7	18.9	26.6	18.3	23.7	18.8	0.2	ug/L
	Antimony (Sb)	0.011	0.014	0.006	0.009	0.007	0.01	0.01	0.009	0.01	0.01	0.01	0.011	0.005	ug/L
	Arsenic (As)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.3	0.3	0.1	ug/L
	Barium (Ba)	0.56	1.2	0.58	1.17	0.61	0.99	0.67	1.05	0.68	1.16	0.7	1.17	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.04	0.04	0.01	ug/L
	Chromium (Cr)	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.2	ug/L
	Cobalt (Co)	0.047	0.047	0.047	0.053	0.048	0.053	0.057	0.061	0.059	0.076	0.074	0.086	0.005	ug/L
	Copper (Cu)	0.4	17	0.53	10.9	0.66	7.01	1.04	2.44	1.82	3.76	3.17	8.74	0.05	ug/L
	Lead (Pb)	0.06	0.29	0.1	0.18	0.13	0.18	0.2	0.15	0.32	0.14	0.61	0.31	0.01	ug/L
	Lithium (Li)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	ug/L
	Manganese (Mn)	0.15	0.697	0.182	0.674	0.202	0.62	0.259	1.65	0.367	2.46	0.599	1.15	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05	ug/L
	Nickel (Ni)	0.88	1.75	0.92	2.98	0.94	1.72	0.97	1.38	0.94	1.3	0.97	3.66	0.05	ug/L
	Selenium (Se)	< 0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 0.2	0.4	0.4	0.8	0.9	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	8.31	9.55	8.34	10	8.53	9.96	8.82	10.4	9.28	11.1	10.1	12.2	0.005	ug/L
	Thallium (Tl)	0.052	0.013	0.05	0.015	0.05	0.016	0.049	0.021	0.046	0.02	0.048	0.022	0.002	ug/L
	Tin (Sn)	0.1	0.12	0.08	0.1	0.07	0.11	0.05	0.06	0.04	0.05	0.04	0.07	0.01	ug/L
	Uranium (U)	0.002	0.011	0.002	0.009	< 0.002	0.011	0.002	0.009	< 0.002	0.01	< 0.002	0.012	0.002	ug/L
	Vanadium (V)	0.1	0.1	0.14	0.15	0.16	0.15	0.19	0.18	0.14	0.22	0.16	0.28	0.05	ug/L
	Zinc (Zn)	0.9	1.9	2.3	2.8	3.7	3.7	6.3	5.2	9.7	8.3	19.7	18.4	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	116	122	117	122	115	123	117	123	120	125	119	122	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	117	123	117	122	116	123	117	123	120	125	119	122	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															

	Carbon, Total Inorganic	15.7	16.2	16	16.6	15.9	15.6	15.8	16.1	15.7	16.2	15.8	16.3	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	3.4	< 0.5	2.4	< 0.5	2.5	< 0.5	1	< 0.5	0.8	< 0.5	0.5	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.292	< 0.002	0.28	< 0.002	0.263	< 0.002	0.247	< 0.002	0.236	0.003	0.227	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.004	0.006	0.004	0.003	0.005	0.002	< 0.002	0.002	0.004	0.019	0.005	0.005	0.002	mg/L

3) Chinook eyed-egg soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	32.4	36.5	32.5	36.7	32.6	37.2	32.8	36.8	33.1	35.7	33.4	36.8	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	11.1	11.7	11.2	12.1	11.5	11.5	11	11.7	11.1	11.3	11.7	11.3	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	38	39	160	167	275	285	610	605	1110	1170	1950	1990	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	0.038	< 0.005	0.037	0.045	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	7.82	7.87	7.82	7.88	7.82	7.85	7.8	7.83	7.79	7.8	7.75	7.76	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	105	117	285	309	479	497	835	868	1580	1590	3040	3080	10	mg/L
***Residue, Total**															
	Solids, Total	124	119	302	309	490	479	852	855	1560	1590	3070	3080	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	188	198	465	488	745	763	1280	1300	2280	2320	4160	4200	2	uS/cm
***Turbidity**															

	Turbidity	0.07	0.13	0.17	0.1	0.08	0.12	0.09	0.14	0.07	0.13	0.14	0.17	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.1	0.1	0.18	0.18	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.002	< 0.001	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	13.8	14.3	13.6	14.4	13.6	13.9	13.1	13.1	13.7	14.3	12.7	13.2	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	5.6	5.9	5.8	6.1	5.8	6	5.7	5.7	6.2	6.2	5.9	6.1	0.1	mg/L
	Manganese (Mn)	< 0.001	0.002	< 0.001	0.003	< 0.001	0.002	< 0.001	0.002	0.002	0.005	0.003	0.006	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.1	mg/L
	Potassium (K)	1.1	1.3	1.1	1.2	1.1	1.2	1.1	1.1	1.1	1.2	1.1	1.2	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	mg/L
	Sodium (Na)	14.3	14.8	74.5	77.6	134	136	246	242	492	497	991	1020	0.1	mg/L
	Strontium (Sr)	0.004	0.006	0.004	0.006	0.004	0.006	0.004	0.005	0.004	0.006	0.004	0.006	0.001	mg/L
	Sulfur (S)	13.6	14.2	58.2	60.2	99.3	101	185	193	349	358	734	760	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	14.3	13.5	14.2	11.4	14.4	11.3	15.6	11.9	15.1	11.9	14.5	10.3	0.2	ug/L
	Antimony (Sb)	< 0.005	0.038	0.007	0.014	0.007	0.014	0.005	0.018	0.011	0.013	0.016	0.014	0.005	ug/L
	Arsenic (As)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.2	0.5	0.4	0.1	ug/L
	Barium (Ba)	0.35	1.64	0.4	1.13	0.47	1.23	0.45	1.02	0.49	1.24	0.79	1.6	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	0.03	0.03	0.01	ug/L
	Chromium (Cr)	0.3	< 0.2	0.3	< 0.2	0.3	0.3	0.4	0.2	0.5	0.3	0.5	0.4	0.2	ug/L
	Cobalt (Co)	0.021	0.045	0.027	0.036	0.03	0.049	0.037	0.049	0.054	0.052	0.067	0.08	0.005	ug/L
	Copper (Cu)	0.12	3.33	0.34	1.83	0.57	2.87	0.99	3.55	1.87	3.53	3.31	5.87	0.05	ug/L
	Lead (Pb)	0.02	0.47	0.05	0.17	0.09	0.22	0.14	0.17	0.25	0.18	0.59	0.27	0.01	ug/L
	Lithium (Li)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	ug/L
	Manganese (Mn)	0.152	2.36	0.188	2.66	0.21	2.1	0.266	1.85	0.385	3.38	0.614	3.51	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.05	ug/L
	Nickel (Ni)	0.49	1.58	0.53	1.14	0.56	2.93	0.55	1.33	0.56	1.7	0.53	1.88	0.05	ug/L
	Selenium (Se)	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.3	0.3	0.6	0.6	1.7	1.2	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	4.65	5.51	4.7	5.53	4.67	5.52	4.83	5.77	5.19	5.96	5.34	6.9	0.005	ug/L
	Thallium (Tl)	0.006	0.017	0.01	0.016	0.02	0.022	0.033	0.021	0.045	0.022	0.049	0.027	0.002	ug/L
	Tin (Sn)	0.04	0.35	0.04	0.17	0.03	0.17	0.03	0.11	0.04	0.08	0.18	0.09	0.01	ug/L

	Uranium (U)	< 0.002	0.008	< 0.002	0.007	< 0.002	0.008	< 0.002	0.008	< 0.002	0.006	0.005	0.007	0.002	ug/L
	Vanadium (V)	0.1	0.1	0.1	0.12	0.12	0.13	0.14	0.15	0.19	0.17	0.22	0.26	0.05	ug/L
	Zinc (Zn)	0.7	4.7	3	3.4	5.5	4.3	7.2	7	11	10	18.2	17.2	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	57.6	59.8	57.7	60.9	57.7	59.3	56.3	56.1	59.5	61.4	56.1	57.8	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	57.6	59.9	57.8	61	57.8	59.3	56.3	56.1	59.5	61.5	56.1	57.8	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	7.9	8.8	8	8.7	7.9	8.6	8.1	8.5	8.1	8.4	8.1	8.4	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	3	< 0.5	3.3	< 0.5	1.5	< 0.5	1.5	< 0.5	1.3	< 0.5	1.3	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.286	< 0.002	0.298	< 0.002	0.265	< 0.002	0.239	< 0.002	0.227	0.003	0.247	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002	0.003	0.003	0.002	0.002	0.006	0.003	0.006	0.004	0.007	0.011	0.01	0.002	mg/L

4) Fathead Minnow hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	141		162		164		165		167		179		0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	103	193	101	142	107	125	102	129	105	88	110	143	0.5	mg/L
	Fluoride (F)	< 0.01	0.09	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	187	470	325	469	500	602	785	1070	1340	2410	2540	6434	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		0.005	mg/L
***pH**															
	pH	8.35		8.46		8.47		8.46		8.42		8.41		0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	576		783		976		1360		2120		3700		10	mg/L
***Residue, Total**															
	Solids, Total	559		778		986		1370		2160		3770		10	mg/L
***SpecificConductance**															

	Conductivity (25C)	910		1180		1440		1970		2940		4990		2	uS/cm
***Turbidity**															
	Turbidity	0.07		0.15		0.18		0.12		0.15		0.16		0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05	mg/L
	Antimony (Sb)	< 0.05	0.06	< 0.05	0.06	0.05	0.06	0.08	0.1	0.12	0.19	< 0.05	< 0.05	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	0.001	0.009	0.001	0.002	< 0.001	0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	0.003	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.03	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	87.3	99.2	95	82.3	94.5	84.8	93.8	96.7	93.6	137	98.7	216	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05	0.06	0.05	mg/L
	Magnesium (Mg)	18.2	34.5	18.3	24.1	18.2	21.4	18.5	22.5	18	24.6	17.2	35.4	0.1	mg/L
	Manganese (Mn)	0.005	< 0.001	0.01	< 0.001	0.01	< 0.001	0.01	0.002	0.01	0.003	0.01	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.3	0.5	0.3	0.4	0.3	0.4	0.3	0.4	0.4	0.5	< 0.1	< 0.1	0.1	mg/L
	Potassium (K)	6.3	12.1	6.2	8.9	6.2	8	6.1	8.3	6	9.9	6.1	15.7	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.01	0.03	0.01	mg/L
	Sodium (Na)	77.3	199	139	198	200	253	322	429	609	983	1110	2760	0.1	mg/L
	Strontium (Sr)	0.035	0.099	0.035	0.045	0.035	0.042	0.032	0.042	0.031	0.047	0.032	0.075	0.001	mg/L
	Sulfur (S)	61	149	104	149	152	187	233	309	387	737	831	1970	0.05	mg/L
	Tin (Sn)	0.06	0.24	0.07	0.17	0.1	0.35	0.07	0.22	0.07	0.22	0.06	0.27	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	17.6	40.4	18.5	30.3	17.8	27.5	18.6	29.8	17.8	36.2	15	56.5	0.2	ug/L
	Antimony (Sb)	< 0.005	0.031	< 0.005	0.015	< 0.005	0.013	< 0.005	0.011	< 0.005	0.013	0.016	0.021	0.005	ug/L
	Arsenic (As)	0.3	0.5	< 0.1	0.3	< 0.1	0.3	0.1	0.4	0.3	0.6	1	1.9	0.1	ug/L
	Barium (Ba)	1.06	8.14	1.05	1.46	1.02	1.36	1.05	1.41	1.1	1.74	1.14	3.3	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.4	< 0.2	0.5	< 0.2	0.5	0.3	0.4	< 0.2	0.4	0.4	0.5	0.3	0.2	ug/L
	Cobalt (Co)	0.118	0.149	0.13	0.116	0.138	0.12	0.138	0.138	0.142	0.185	0.134	0.309	0.005	ug/L
	Copper (Cu)	1.18	3.63	1.22	2.07	1.45	1.93	1.63	2.43	2.53	4.68	3.31	9.02	0.05	ug/L
	Lead (Pb)	0.03	0.1	0.1	0.04	0.09	0.03	0.07	0.03	0.09	0.05	0.12	0.13	0.01	ug/L
	Lithium (Li)	< 0.05	0.52	< 0.05	0.09	< 0.05	0.07	< 0.05	0.08	0.05	0.14	0.08	0.31	0.05	ug/L

	Manganese (Mn)	4.87	0.363	8.84	0.278	8.86	0.282	8.41	0.481	9.04	0.934	9.64	2.18	0.005	ug/L
	Molybdenum (Mo)	0.06	0.24	0.06	0.1	0.05	0.08	0.05	0.07	0.05	0.1	0.11	0.18	0.05	ug/L
	Nickel (Ni)	3.29	4.2	3.82	3.44	3.91	3.55	3.96	3.99	4.06	5.15	3.5	7.91	0.05	ug/L
	Selenium (Se)	1	0.7	0.3	0.2	0.2	0.3	0.4	0.3	0.9	0.9	2.9	3.5	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	35.1	105	35.1	47	35.7	44	34.2	44.6	35.5	54.8	38.6	87	0.005	ug/L
	Thallium (Tl)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	0.002	ug/L
	Tin (Sn)	16	202	29.1	130	53.3	326	31.8	181	36.8	213	31.2	306	0.01	ug/L
	Uranium (U)	0.002	0.075	0.003	0.007	0.003	0.006	0.003	0.007	0.003	0.009	0.005	0.021	0.002	ug/L
	Vanadium (V)	0.12	0.06	0.17	0.08	0.17	0.14	0.16	0.11	0.16	0.19	0.19	0.27	0.05	ug/L
	Zinc (Zn)	0.3	8.4	1.2	2.2	1.7	1.4	1.2	1.3	1.6	1.9	1.5	4.9	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	293	390	313	305	311	300	310	334	308	443	317	686	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	293	390	313	305	311	300	310	334	308	443	317	686	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	32.6		37.2		37.9		38		38.6		39.2		0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	0.017		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.003		0.01		0.014		0.011		0.008		0.016		0.002	mg/L

5) Fathead minnow medium hard water treatment (100 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	66.9		60.6		66.8		67.3		67.7		67.7		0.5	mg CaCO3 / L
***ICA (Cl F SO4)**													49		
	Chloride (Cl)	36	56	33	48	37	51	36	53	37	50	37	< 0.01	0.5	mg/L
	Fluoride (F)	< 0.01	0.07	< 0.01	0.06	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	3100	0.01	mg/L
	Sulphate (SO4)	72	125	198	271	362	509	646	973	1180	1600	2340		1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L

	Nitrogen, Nitrite as N	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		0.005	mg/L
***pH**															
	pH	8.1		8.06		8.08		8.07		8.04		8.04		0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	245		397		626		1020		1750		3280		10	mg/L
***Residue, Total**															
	Solids, Total	229		399		619		986		1760		3290		10	mg/L
***SpecificConductance**															
	Conductivity (25C)	406		621		958		1490		2500		4420		2	uS/cm
***Turbidity**															
	Turbidity	0.15		0.2		0.12		0.11		0.11		0.11		0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.08	0.11	0.13	0.19	< 0.05	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	38.1	54.5	34.1	46.9	35.9	51.1	36.7	51.8	35	45.5	34.7	45.9	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.05	mg/L
	Magnesium (Mg)	7.5	11	7	9.7	7.6	10.4	7.6	10.6	7.3	9.7	7.2	9.7	0.1	mg/L
	Manganese (Mn)	0.004	< 0.001	0.004	< 0.001	0.004	< 0.001	0.005	0.002	0.005	0.003	0.007	0.003	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.1	0.3	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	< 0.1	0.1	mg/L
	Potassium (K)	2.3	3.6	2.1	3.1	2.3	3.3	2.3	3.2	2.3	3.1	2.3	3.1	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	0.01	mg/L
	Sodium (Na)	31.2	49.4	87.4	122	159	222	283	393	555	661	1040	1400	0.1	mg/L
	Strontium (Sr)	0.015	0.023	0.013	0.02	0.014	0.021	0.014	0.021	0.013	0.019	0.014	0.02	0.001	mg/L
	Sulfur (S)	25.5	40.2	66.5	91.7	115	164	202	284	357	506	768	1020	0.05	mg/L
	Tin (Sn)	0.08	0.39	0.08	0.37	< 0.05	0.11	0.07	0.27	0.05	0.16	0.05	0.18	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	8.2	13.7	9.6	12.9	8.3	14.2	7.7	19.3	7.5	16.3	7.2	14.4	0.2	ug/L
	Antimony (Sb)	< 0.005	0.013	< 0.005	0.012	< 0.005	0.006	< 0.005	0.007	0.016	0.007	< 0.005	< 0.005	0.005	ug/L
	Arsenic (As)	0.5	0.6	0.1	0.4	0.1	0.4	0.3	0.7	0.9	1.3	2.4	2.9	0.1	ug/L
	Barium (Ba)	0.63	1.18	0.53	0.95	0.48	0.95	0.48	1	0.51	0.95	0.6	1.11	0.02	ug/L

	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	< 0.2	0.3	0.3	0.4	0.2	ug/L
	Cobalt (Co)	0.055	0.081	0.073	0.071	0.053	0.075	0.054	0.079	0.064	0.076	0.063	0.081	0.005	ug/L
	Copper (Cu)	0.94	1.58	0.84	1.48	1.12	1.76	1.42	2.56	1.9	3.75	4	5.6	0.05	ug/L
	Lead (Pb)	0.07	0.05	0.24	0.05	0.1	0.06	0.08	0.07	0.08	0.06	0.07	0.06	0.01	ug/L
	Lithium (Li)	0.07	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05	0.07	0.08	0.11	0.05	ug/L
	Manganese (Mn)	3.84	0.502	3.74	0.553	3.87	0.315	3.72	0.765	4.01	0.759	4.08	1.32	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	0.05	< 0.05	0.05	0.05	ug/L
	Nickel (Ni)	1.61	2.19	1.48	1.94	1.58	2.28	1.6	2.11	1.49	1.93	1.48	1.87	0.05	ug/L
	Selenium (Se)	1.7	1.1	0.5	0.5	0.5	0.7	0.9	1.6	2.8	3.3	7.4	8.3	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	15.3	23.3	13.1	19.8	14.3	21.9	14.7	21.9	14.9	20.7	15.8	22	0.005	ug/L
	Thallium (Tl)	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.005	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Tin (Sn)	42.3	347	43.8	339	6.33	74.1	42.8	247	25.1	149	32.8	179	0.01	ug/L
	Uranium (U)	0.003	0.007	< 0.002	0.005	< 0.002	0.005	< 0.002	0.005	0.005	0.006	< 0.002	0.006	0.002	ug/L
	Vanadium (V)	0.09	0.09	0.09	0.09	0.11	0.11	0.11	0.15	0.07	0.15	0.15	0.2	0.05	ug/L
	Zinc (Zn)	2.2	5.2	3.3	7.2	2.1	4.5	1.7	4.1	1.4	3.3	1.7	2.5	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	126	181	114	157	121	170	123	173	117	154	116	155	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	126	181	114	157	121	170	123	173	117	154	116	155	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	15.3		14.2		15.6		15.6		15.7		15.7		0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5		< 0.5		< 0.5		< 0.5		0.7		1.2		0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.003		< 0.002		0.002		0.005		0.006		0.011		0.002	mg/L

6) Fathead minnow soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	34.8		33.9		33.8		34.3		34.7		35.9		0.5	mg CaCO3 /

															L
***ICA (Cl F SO4)**															
	Chloride (Cl)	18.1	91	20	28	20	15	20	31	19	31	17	26	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	36	74	181	186	322	447	645	862	1150	1720	2290	3180	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		0.005	mg/L
***pH**															
	pH	7.87		7.86		7.84		7.81		7.79		7.75		0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	116		303		504		881		1650		3190		10	mg/L
***Residue, Total**															
	Solids, Total	440		305		510		904		1650		3170		10	mg/L
***SpecificConductance**															
	Conductivity (25C)	229		501		791		1350		2400		4380		2	uS/cm
***Turbidity**															
	Turbidity	0.11		0.11		0.11		0.14		0.21		0.12		0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.07	0.1	0.13	0.19	< 0.05	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.032	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	17.6	41.1	17.1	24.1	17	23.8	17.6	23.6	17.9	25.7	19.1	24.6	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	0.011	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	3.8	16	3.7	5.2	3.8	5.2	3.9	5.1	3.4	5	3.5	4.7	0.1	mg/L
	Manganese (Mn)	0.002	0.011	0.002	< 0.001	0.002	0.001	0.003	0.002	0.003	0.003	0.004	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	0.3	< 0.1	0.2	< 0.1	0.2	0.1	0.2	0.1	0.2	0.1	< 0.1	0.1	mg/L
	Potassium (K)	1.1	3	1.1	1.6	1.1	1.6	1	1.6	1.1	1.7	1.3	1.9	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	1.44	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	0.02	0.01	0.01	mg/L
	Sodium (Na)	15.6	64.3	78.2	101	141	191	264	346	472	730	1010	1390	0.1	mg/L
	Strontium (Sr)	0.009	0.222	0.007	0.012	0.007	0.012	0.007	0.011	0.007	0.011	0.008	0.011	0.001	mg/L
	Sulfur (S)	12.6	31.8	58.9	74	104	136	190	249	330	460	754	1010	0.05	mg/L
	Tin (Sn)	< 0.05	0.05	0.06	0.32	< 0.05	0.07	< 0.05	0.11	< 0.05	0.2	< 0.05	0.13	0.05	mg/L

	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	3.9	32.6	5.8	7.6	4	7.2	5.8	6.4	4.6	6.8	6.4	5.9	0.2	ug/L
	Antimony (Sb)	< 0.005	0.063	< 0.005	0.012	< 0.005	0.017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	ug/L
	Arsenic (As)	0.5	0.3	0.2	0.3	0.2	0.5	0.4	0.7	0.8	1.4	1.6	1.9	0.1	ug/L
	Barium (Ba)	0.33	26.2	0.27	0.81	0.33	0.78	0.32	0.72	0.34	0.72	0.44	0.83	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	< 0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	0.2	ug/L
	Cobalt (Co)	0.026	0.226	0.028	0.041	0.047	0.051	0.031	0.041	0.031	0.047	0.044	0.052	0.005	ug/L
	Copper (Cu)	0.5	1.65	0.96	1.58	1.34	2.32	1.86	2.2	2.92	5.2	4.82	5.77	0.05	ug/L
	Lead (Pb)	0.08	0.09	0.09	0.07	0.08	0.09	0.1	0.07	0.06	0.06	0.07	0.06	0.01	ug/L
	Lithium (Li)	< 0.05	1.85	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	ug/L
	Manganese (Mn)	2.31	9.27	1.89	0.762	1.84	0.587	1.95	0.58	1.91	0.804	1.99	2.61	0.005	ug/L
	Molybdenum (Mo)	< 0.05	0.87	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	ug/L
	Nickel (Ni)	0.75	1.76	0.76	1.02	0.75	1.11	0.77	1.03	0.76	1.07	0.78	0.93	0.05	ug/L
	Selenium (Se)	1.6	0.6	0.6	0.4	0.7	0.8	1.3	1.4	2.5	3.7	4.7	5.3	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	8.57	211	6.99	11.5	7	11.2	7.19	10.8	7.61	12	8.78	12.3	0.005	ug/L
	Thallium (Tl)	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Tin (Sn)	10.7	15.4	38.1	310	9.38	43.5	16.6	91.8	27.6	206	20.6	128	0.01	ug/L
	Uranium (U)	< 0.002	0.374	< 0.002	0.007	< 0.002	0.005	< 0.002	0.005	< 0.002	0.004	< 0.002	0.005	0.002	ug/L
	Vanadium (V)	< 0.05	0.13	0.06	< 0.05	0.05	0.06	0.07	< 0.05	0.07	0.1	0.11	0.15	0.05	ug/L
	Zinc (Zn)	1.9	8.3	1.2	4.6	1.2	6.3	1	3.3	1	4.4	1	3.3	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	59.3	168	58.1	81.7	58	81	60	79.9	58.8	84.6	62.2	80.8	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	59.3	169	58.1	81.7	58	81.1	60	79.9	58.8	84.6	62.2	80.8	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	7.9		7.7		7.6		7.7		7.8		7.8		0.5	mg/L
TOC															
	Carbon, Total Organic	1.2		1.1		1.3		1.5		1.6		2.2		0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	0.003		0.002		0.002		< 0.002		0.002		< 0.002		0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002		< 0.002		< 0.002		0.002		0.004		0.007		0.002	mg/L

7) *Hyalella* hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 28	125 mg/L-Day 0	125 mg/L-Day 28	250 mg/L-Day 0	250 mg/L-Day 28	500 mg/L-Day 0	500 mg/L-Day 28	1000 mg/L-Day 0	1000 mg/L-Day 28	2000 mg/L-Day 0	2000 mg/L-Day 28	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	92.6	84.8	111	95.3	122	89.3	137	125	158	148	165	159	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	119	118	116	117	121	89	112	125	113	113	112	61	0.5	mg/L
	Fluoride (F)	0.06	0.05	0.05	0.04	0.04	0.08	0.05	0.04	< 0.01	0.03	< 0.01	0.02	0.01	mg/L
	Sulphate (SO4)	170	164	333	249	405	288	620	655	1160	1060	1980	2010	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	0.09	0.09	0.08	0.08	0.08	0.07	0.32	0.08	< 0.05	0.10	< 0.05	0.11	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	0.010	< 0.002	0.007	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.35	8.24	8.44	8.21	8.48	8.27	8.53	8.40	8.57	8.47	8.56	8.48	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	584	509	728	649	945	643	1310	1140	2080	1920	3600	3320	10	mg/L
***Residue, Total**															
	Solids, Total	581	519	744	641	956	658	1310	1160	2080	1910	3580	2326	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	925	877	1150	1050	1440	1030	1900	1760	2860	2760	4710	4580	2	uS/cm
***Turbidity**															
	Turbidity	11.3	1.73	16.6	1.85	14.2	1.76	8.35	1.80	9.29	1.86	11.8	4.28	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	0.11	< 0.05	0.11	< 0.05	0.07	< 0.05	0.15	< 0.05	0.20	0.08	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.07	0.07	0.12	0.10	0.21	< 0.05	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	0.001	0.001	0.002	0.001	0.002	0.001	0.001	< 0.001	0.001	0.001	0.002	0.002	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.04	0.08	0.04	0.07	0.04	0.06	0.04	0.07	0.04	0.07	0.04	0.07	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	48.9	52.4	56.1	48.7	58.7	41.4	61.3	57.1	73.3	66.6	74.4	73.1	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	0.007	0.007	0.006	0.006	0.006	< 0.005	0.006	< 0.005	0.006	0.005	0.007	0.005	mg/L
	Iron (Fe)	0.045	0.031	0.216	0.042	0.221	0.042	0.130	0.039	0.280	0.034	0.360	0.161	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	17.5	19.5	19.6	18.6	19.8	14.8	19.2	19.2	19.4	19.7	19.5	20.0	0.1	mg/L
	Manganese (Mn)	0.129	0.026	0.107	0.007	0.096	0.010	0.129	0.038	0.095	0.007	0.154	0.075	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.2	0.2	0.3	0.1	0.3	0.1	0.3	0.2	0.4	0.3	0.4	< 0.1	0.1	mg/L

	Potassium (K)	6.9	8.9	8.5	8.1	7.9	6.2	7.3	7.7	7.5	8.1	7.1	7.9	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	0.34	0.06	0.43	0.09	0.43	0.08	0.37	< 0.05	0.46	< 0.05	0.46	0.33	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.03	0.01	0.01	mg/L
	Sodium (Na)	87.1	78.9	153	118	213	130	314	250	601	436	1100	1010	0.1	mg/L
	Strontium (Sr)	0.183	0.206	0.178	0.167	0.175	0.134	0.167	0.170	0.174	0.181	0.183	0.193	0.001	mg/L
	Sulfur (S)	68.3	53.3	93.2	78.1	138	88.4	211	175	347	306	787	729	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	0.003	< 0.002	0.003	< 0.002	< 0.002	< 0.002	0.005	< 0.002	0.006	0.003	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	149	18.5	214	16.9	255	20.4	173	27.8	177	22.4	236	62.6	0.2	ug/L
	Antimony (Sb)	0.043	0.076	0.040	0.072	0.047	0.076	0.042	0.079	0.054	0.091	0.056	0.098	0.005	ug/L
	Arsenic (As)	1.2	1.2	1.1	1.2	1.1	1.2	1.2	1.5	1.8	1.8	2.8	2.5	0.1	ug/L
	Barium (Ba)	1.98	1.10	1.99	1.08	2.26	0.96	2.00	1.04	2.04	1.65	2.73	2.33	0.02	ug/L
	Berylium (Be)	0.005	< 0.002	0.009	< 0.002	0.011	< 0.002	0.006	< 0.002	0.006	< 0.002	0.009	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.8	0.8	1.1	0.9	1.0	0.8	1.1	1.0	1.0	1.2	1.1	1.4	0.2	ug/L
	Cobalt (Co)	0.429	0.273	0.491	0.245	0.546	0.198	0.459	0.338	0.467	0.280	0.578	0.458	0.005	ug/L
	Copper (Cu)	5.16	5.86	5.69	5.20	4.90	5.42	5.24	6.04	5.26	6.41	8.74	8.11	0.05	ug/L
	Lead (Pb)	0.25	0.14	0.36	0.09	0.38	0.09	0.25	0.08	0.27	0.08	0.43	0.18	0.01	ug/L
	Lithium (Li)	1.74	2.12	1.84	1.95	2.02	1.71	1.90	1.94	2.02	1.90	2.60	1.76	0.05	ug/L
	Manganese (Mn)	139	25.7	101	6.13	101	9.27	131	38.7	86.5	6.28	151	79	0.005	ug/L
	Molybdenum (Mo)	0.78	1.71	0.79	1.67	0.85	1.48	0.88	1.76	0.88	1.93	0.97	1.89	0.05	ug/L
	Nickel (Ni)	3.00	2.85	3.20	2.78	3.49	2.47	3.36	3.25	3.57	3.51	3.83	3.79	0.05	ug/L
	Selenium (Se)	1.7	0.7	1.1	0.7	1.2	0.6	1.4	0.8	2.8	1.1	5.5	2.7	0.2	ug/L
	Silver (Ag)	< 0.02	0.16	< 0.02	0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	216	218	188	181	199	151	194	193	195	204	208	226	0.005	ug/L
	Thallium (Tl)	0.002	0.005	0.003	0.005	0.004	0.007	0.003	0.006	0.003	0.006	0.004	0.007	0.002	ug/L
	Tin (Sn)	0.03	0.02	0.02	0.03	0.02	0.21	0.02	0.11	0.02	0.07	0.02	0.06	0.01	ug/L
	Uranium (U)	0.087	0.161	0.105	0.161	0.120	0.149	0.123	0.196	0.128	0.248	0.137	0.264	0.002	ug/L
	Vanadium (V)	1.13	1.16	1.42	1.20	1.52	1.18	1.32	1.50	1.45	1.79	1.77	2.07	0.05	ug/L
	Zinc (Zn)	1.4	< 0.2	1.9	< 0.2	2.3	< 0.2	1.5	< 0.2	1.7	< 0.2	5.0	0.7	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	194	211	221	198	228	164	232	222	263	248	266	265	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	195		222		229		233	222	264	248	268	266	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	20.9	19.2	24.9	22.1	27.4	20.3	30.5	28.2	35.0	33.5	36.8	35.7	0.5	mg/L
TOC															
	Carbon, Total Organic	0.9	1.8	0.8	1.9	1.0	1.5	0.6	1.9	1.1	1.8	0.9	1.8	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.280	< 0.002	0.300	< 0.002	0.689	< 0.002	1.09	< 0.002	1.16	< 0.002	1.01	0.002	mg/L

***Phosphorus, Total**															
	Phosphorus, Total as P	0.043	0.044	0.055	0.049	0.053	0.069	0.046	0.075	0.054	0.100	0.076	0.133	0.002	mg/L

8) Hyalella medium hard water treatment (100 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 28	125 mg/L-Day 0	125 mg/L-Day 28	250 mg/L-Day 0	250 mg/L-Day 28	500 mg/L-Day 0	500 mg/L-Day 28	1000 mg/L-Day 0	1000 mg/L-Day 28	2000 mg/L-Day 0	2000 mg/L-Day 28	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	67.8	68	69.5	61.8	69	67.6	70.9	66.3	69.5	71.9	71.4	77.2	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	76	48	67	81	69	44	101	43	118	43	111	44	0.5	mg/L
	Fluoride (F)	0.09	< 0.01	0.07	< 0.01	0.05	0.05	0.03	0.04	0.02	0.03	< 0.01	0.03	0.01	mg/L
	Sulphate (SO4)	68	57	200	150	342	274	638	477	1040	964	2200	1960	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.16	8.17	8.18	8.15	8.17	8.18	8.17	8.15	8.13	8.14	8.12	8.17	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	252	248	449	373	627	577	979	877	1700	1570	3160	3030	10	mg/L
***Residue, Total**															
	Solids, Total	254	281	443	406	625	572	992	893	1710	1570	3150	3040	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	430	414	728	588	979	874	1520	1320	2470	2260	4360	4140	2	uS/cm
***Turbidity**															
	Turbidity	3.13	5.79	6.87	2.03	3.72	1.78	3.23	3.19	8.06	1.64	10.5	1.1	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	0.06	0.08	0.13	< 0.05	0.07	< 0.05	0.08	< 0.05	0.14	< 0.05	0.15	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.05	0.1	0.09	0.19	0.18	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	0.001	< 0.001	0.002	< 0.001	0.001	< 0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.03	0.06	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	30.4	25.5	30.5	22	30.1	21.9	31.5	24.6	29.2	26.2	30.3	28.3	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	0.008	0.012	< 0.005	0.006	< 0.005	0.006	< 0.005	< 0.005	0.005	0.006	< 0.005	0.006	0.005	mg/L
	Iron (Fe)	0.133	0.178	0.286	0.041	0.148	0.027	0.14	0.091	0.292	0.045	0.303	0.026	0.005	mg/L

	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	8.2	9.5	8.9	8.3	8.8	8.6	9.2	9.6	9.4	10	9.6	11.1	0.1	mg/L
	Manganese (Mn)	0.064	0.146	0.098	0.041	0.085	0.058	0.054	0.015	0.044	0.04	0.13	0.262	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.1	mg/L
	Potassium (K)	3.5	4.7	3.7	4	3.7	4.1	3.9	4.6	4.3	4.9	4.4	5.4	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	0.28	0.09	0.43	< 0.05	0.31	< 0.05	0.33	< 0.05	0.44	< 0.05	0.41	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	mg/L
	Sodium (Na)	39.4	42.8	104	82.7	161	133	287	241	487	438	1030	967	0.1	mg/L
	Strontium (Sr)	0.091	0.096	0.091	0.081	0.087	0.081	0.091	0.091	0.092	0.096	0.092	0.107	0.001	mg/L
	Sulfur (S)	24.3	22.9	69.6	53.4	114	106	200	165	341	314	759	697	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	0.002	0.004	< 0.002	0.002	< 0.002	0.003	< 0.002	0.005	< 0.002	0.005	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	72.6	115	154	41.6	95.6	38.6	75.2	61.4	201	53	261	36.1	0.2	ug/L
	Antimony (Sb)	0.081	0.089	0.044	0.08	0.026	0.099	0.03	0.086	0.05	0.093	0.046	0.082	0.005	ug/L
	Arsenic (As)	0.5	1.2	0.9	1.2	0.8	1.3	1	1.5	2	2.1	2.7	2.9	0.1	ug/L
	Barium (Ba)	1.3	1.19	1.44	0.66	1.17	0.78	1.13	1.09	1.65	1.37	2.42	1.93	0.02	ug/L
	Berylium (Be)	< 0.002	0.004	0.003	0.003	< 0.002	< 0.002	< 0.002	0.002	0.003	< 0.002	0.004	0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	ug/L
	Chromium (Cr)	0.4	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.7	0.5	0.9	0.5	0.2	ug/L
	Cobalt (Co)	0.225	0.38	0.389	0.238	0.273	0.221	0.216	0.216	0.36	0.193	0.548	0.314	0.005	ug/L
	Copper (Cu)	5.85	9.27	2.99	4.4	3.61	4.95	4.44	4.17	6.95	5.61	5.83	8.56	0.05	ug/L
	Lead (Pb)	0.11	0.19	0.24	0.07	0.12	0.07	0.13	0.11	0.24	0.06	0.35	0.07	0.01	ug/L
	Lithium (Li)	0.56	2.11	0.88	1.74	0.7	1.73	0.76	1.97	1.17	2.22	1.26	2.83	0.05	ug/L
	Manganese (Mn)	57.3	124	88.5	35.6	78.9	55.1	49.2	12.8	45.4	34.9	142	249	0.005	ug/L
	Molybdenum (Mo)	0.56	1.51	0.7	1.38	0.66	1.63	0.76	1.49	0.94	1.59	0.92	1.66	0.05	ug/L
	Nickel (Ni)	2.46	2.28	2.03	1.88	1.85	1.91	1.84	1.87	2.15	1.85	2.34	1.98	0.05	ug/L
	Selenium (Se)	0.4	0.4	0.6	0.5	0.8	0.6	1.4	1	4.1	2.1	6	4.3	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	83.8	88.3	86.1	78.8	84.2	85.3	90.1	88.1	99.5	100	104	114	0.005	ug/L
	Thallium (Tl)	0.003	0.004	0.003	0.003	0.002	0.006	0.003	0.004	0.004	0.005	0.005	0.005	0.002	ug/L
	Tin (Sn)	0.04	0.02	0.04	0.02	0.03	0.17	0.02	0.05	0.03	0.04	0.02	0.04	0.01	ug/L
	Uranium (U)	0.037	0.075	0.049	0.059	0.048	0.067	0.044	0.059	0.059	0.061	0.051	0.056	0.002	ug/L
	Vanadium (V)	0.55	1.32	0.95	1.04	0.76	1.13	0.74	1.2	1.29	1.34	1.53	1.43	0.05	ug/L
	Zinc (Zn)	0.9	1.7	1.4	0.9	1	0.7	1.3	1.7	2.3	1.2	5.1	1.9	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	110	103	113	89.2	111	90.3	117	101	112	107	115	116	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	110	104	114	89.5	112	90.6	117	101	113	107	116	117	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	15.5	15.3	15.8	13.9	15.7	15.2	15.9	14.9	15.8	15.9	16.1	16.8	0.5	mg/L

TOC															
	Carbon, Total Organic	< 0.5	2.1	0.8	1.8	0.7	1.9	0.7	2.2	1.2	2.2	0.9	2.3	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	0.122	0.603	0.169	0.79	0.181	0.807	0.258	0.96	0.202	1.21	0.265	1.35	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.024	0.098	0.036	0.079	0.031	0.088	0.029	0.111	0.064	0.114	0.079	0.133	0.002	mg/L

9) *Hyalella* soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 28	62.5 mg/L-Day 0	62.5 mg/L-Day 28	125 mg/L-Day 0	125 mg/L-Day 28	250 mg/L-Day 0	250 mg/L-Day 28	500 mg/L-Day 0	500 mg/L-Day 28	1000 mg/L-Day 0	1000 mg/L-Day 28	2000 mg/L-Day 0	2000 mg/L-Day 28	MDL	Unit
General																	
***Alkalinity,TotpH4.5**																	
	Alkalinity to pH 4.5	33.1	46.2	35.6	46.3	36.1	49.1	35.4	45.8	35.4	49.1	35.5	50.8	42.3	53	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**																	
	Chloride (Cl)	18	19.2	20	22	20	20	20	21	19	25	18	21	94	30	0.5	mg/L
	Fluoride (F)	0.12	< 0.01	0.1	< 0.01	0.02	< 0.01	0.01	< 0.01	0.02	< 0.01	0.01	< 0.01	0.01	0.04	0.01	mg/L
	Sulphate (SO4)	35	34	90	95	149	159	280	288	516	596	1030	1070	2380	1920	1	mg/L
***ICA (NO2 NO3 Br)**																	
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	0.005	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.007	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**																	
	pH	7.95	7.94	7.94	7.82	7.93	7.95	7.91	7.96	7.92	7.92	7.90	7.93	7.91	7.99	0.01	pH Units
***Residue, Filterable**																	
	Solids, Total Dissolved (FR)	129	123	233	216	305	308	489	488	875	866	1580	1610	3090	3010	10	mg/L
***Residue, Total**																	
	Solids, Total	117	128	215	220	299	312	488	483	873	869	1580	1620	3100	3030	10	mg/L
***SpecificConductance**																	
	Conductivity (25C)	210	228	365	372	489	511	781	793	1340	1360	2340	2370	4270	4060	2	uS/cm
***Turbidity**																	
	Turbidity	6.57	2.83	8.88	2.23	9.42	3.24	9.59	1.9	14	2.9	8.55	2.83	14.1	1.03	0.05	NTU
Metals																	
***ICP, Extractable**																	
	Aluminum (Al)	0.15	< 0.05	0.11	< 0.05	0.22	< 0.05	0.23	< 0.05	0.22	0.06	0.26	0.06	0.27	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	0.1	0.11	0.18	0.18	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	0.001	< 0.001	0.001	< 0.001	0.002	< 0.001	0.002	< 0.001	0.002	0.001	0.002	< 0.001	0.001	0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.06	0.03	0.06	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	<	<	<	<	<	<	<	<	<	< 0.005	<	< 0.005	0.005	mg/L

				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		0.005			
	Calcium (Ca)	15.1	13.1	13.7	13.9	14.7	13.8	15.2	14.7	14.7	14.6	15.3	16.2	16.5	16.2	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	0.012	0.015	0.011	0.012	0.013	0.017	0.007	0.01	0.008	0.005	< 0.005	0.007	< 0.005	0.009	0.005	mg/L
	Iron (Fe)	0.277	0.061	0.225	0.046	0.398	0.065	0.422	0.04	0.381	0.075	0.358	0.066	0.536	0.031	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	4.5	5.2	4.3	5.5	4.7	5.7	5	6.1	5.2	6.6	5.7	7.5	6.8	8.4	0.1	mg/L
	Manganese (Mn)	0.042	0.045	0.072	0.038	0.076	0.1	0.086	0.034	0.083	0.025	0.066	0.045	0.065	0.202	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.1	0.2	0.1	0.2	0.1	0.3	0.1	0.3	< 0.1	0.3	< 0.1	0.4	0.2	0.3	0.1	mg/L
	Potassium (K)	2.1	3.1	2	3.2	2.3	3.5	2.4	3.7	2.6	4	2.7	4.4	3.7	4.9	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	0.52	0.1	0.42	0.11	0.63	0.06	0.65	< 0.05	0.62	0.38	0.64	0.1	0.61	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	mg/L
	Sodium (Na)	18.1	19.4	44.9	50	78.2	79.1	141	142	254	257	488	542	1020	944	0.1	mg/L
	Strontium (Sr)	0.044	0.049	0.041	0.052	0.045	0.055	0.046	0.058	0.047	0.062	0.052	0.071	0.063	0.078	0.001	mg/L
	Sulfur (S)	11	10.8	35.7	33.1	53.5	53	96.1	97.6	190	179	347	358	746	694	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	0.006	< 0.002	0.004	< 0.002	0.009	< 0.002	0.009	< 0.002	0.008	< 0.002	0.009	< 0.002	0.008	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**																	
	Aluminum (Al)	117	50	102	39.5	110	54.1	159	35.3	190	66.2	146	55.6	335	42.3	0.2	ug/L
	Antimony (Sb)	0.063	0.096	0.064	0.113	0.06	0.088	0.072	0.104	0.084	0.123	0.072	0.112	0.059	0.111	0.005	ug/L
	Arsenic (As)	0.7	1.2	0.8	1.4	0.8	1.7	0.9	1.5	1.5	2.2	2.7	2.6	3	3	0.1	ug/L
	Barium (Ba)	1.03	0.71	0.95	0.77	0.99	0.82	1.84	0.64	2	1.16	1.77	1.06	2.73	1.74	0.02	ug/L
	Berylium (Be)	0.006	< 0.002	0.008	< 0.002	0.007	< 0.002	0.006	< 0.002	0.009	< 0.002	0.006	< 0.002	0.006	0.003	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	0.01	0.01	< 0.01	0.01	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	ug/L
	Chromium (Cr)	0.6	< 0.2	0.6	< 0.2	0.5	< 0.2	0.6	< 0.2	0.7	0.2	0.6	0.3	1	0.4	0.2	ug/L
	Cobalt (Co)	0.17	0.166	0.236	0.161	0.233	0.235	0.271	0.182	0.343	0.21	0.277	0.207	0.582	0.242	0.005	ug/L
	Copper (Cu)	8.38	13	8.5	10.1	8.88	15.3	5.87	9.16	7.11	5.03	3.99	7.02	6.04	10.6	0.05	ug/L
	Lead (Pb)	0.21	0.09	0.28	0.08	0.28	0.1	0.33	0.06	0.47	0.1	0.33	0.1	0.44	0.12	0.01	ug/L
	Lithium (Li)	0.64	1.96	0.74	1.99	0.71	2.06	0.85	2.15	1.01	2.35	0.99	2.48	1.46	3.41	0.05	ug/L
	Manganese (Mn)	26.9	41.6	57.6	34.2	50.7	92.8	63.7	30.1	63.9	22.5	46.5	39.8	68.2	193	0.005	ug/L
	Molybdenum (Mo)	0.76	1.24	0.9	1.29	0.92	1.4	1.03	1.38	1.11	1.48	1.02	1.56	1.04	1.97	0.05	ug/L
	Nickel (Ni)	1.14	1.59	1.26	1.54	1.17	1.78	1.29	1.56	1.36	1.43	1.21	1.53	2	1.6	0.05	ug/L
	Selenium (Se)	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	1.1	1	3.5	2.7	6.2	3.9	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	27.2	49.2	30.4	51.4	29.5	55.4	34.4	57.7	39.5	63	44.2	69.8	69.7	81.4	0.005	ug/L
	Thallium (Tl)	0.094	0.005	0.105	0.004	0.099	0.005	0.099	0.004	0.099	0.005	0.088	0.007	0.006	0.005	0.002	ug/L
	Tin (Sn)	0.07	0.08	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.05	0.02	0.03	0.01	ug/L
	Uranium (U)	0.018	0.015	0.019	0.014	0.02	0.02	0.023	0.015	0.029	0.016	0.022	0.018	0.034	0.021	0.002	ug/L
	Vanadium (V)	0.72	0.98	0.78	1.07	0.77	1.2	0.91	1.09	1.1	1.34	0.98	1.36	1.93	1.46	0.05	ug/L
	Zinc (Zn)	1.1	1.4	1.5	1.3	1.3	1.6	1.7	1.3	2.2	1.2	1.9	1.3	4.9	1.7	0.2	ug/L
Hardness, Extr. CaMg																	
	Hardness, Extractable	56	53.9	51.9	57.4	56.1	58	58.4	61.9	58	63.3	61.7	71.1	69.2	75.2	0.4	mg CaCO3 /

	Calcium+Magnesium - calc.																L
Hardness, Extr.Total																	
	Hardness, Extractable Total - calc.	57.2	54.3	52.9	57.7	57.9	58.5	60.2	62.2	59.7	63.8	63.5	71.6	71.2	75.7	0.4	mg CaCO3 / L
Non-Halogenated																	
***TIC**																	
	Carbon, Total Inorganic	8.3	10.6	8.5	10.6	8.5	11.2	8.6	10.4	9.1	11	8.6	11.5	9.1	11.5	0.5	mg/L
TOC																	
	Carbon, Total Organic	0.9	4.5	1.3	4.1	1.4	5.2	1.2	4.8	1.1	4.4	1.4	5	1.3	3	0.5	mg/L
Nutrients																	
***Nitrogen, Ammonia**																	
	Nitrogen, Ammonia as N	0.161	1.21	0.104	1.05	0.154	1.7	0.188	0.989	0.25	1.27	0.214	1.41	0.328	1.71	0.002	mg/L
***Phosphorus, Total**																	
	Phosphorus, Total as P	0.034	0.146	0.045	0.152	0.052	0.216	0.046	0.182	0.07	0.216	0.061	0.26	0.094	0.177	0.002	mg/L

10) *Lemna* hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	138		138		138		139		139		140		0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	91	175	97	185	98	145	93	143	97	175	104	174	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	161	248	335	345	443	465	713	738	1170	1210	2180	2200	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		0.005	mg/L
***pH**															
	pH	8.22		8.26		8.27		8.27		8.27		8.24		0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	527		705		902		1260		2000		3400		10	mg/L
***Residue, Total**															
	Solids, Total	506		702		888		1260		2000		3510		10	mg/L
***SpecificConductance**															
	Conductivity (25C)	833		1080		1340		1830		2800		4600		2	uS/cm
***Turbidity**															
	Turbidity	0.82		0.82		0.97		1.14		1.12		1.09		0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L

	Antimony (Sb)	< 0.05	0.07	< 0.05	0.09	0.05	0.1	0.08	0.12	0.12	0.15	0.19	0.24	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.002	0.001	0.002	< 0.001	0.002	< 0.001	0.002	< 0.001	0.001	< 0.001	0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	0.33	< 0.01	0.35	< 0.01	0.33	< 0.01	0.31	< 0.01	0.29	< 0.01	0.29	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	74.2	91.3	75.5	99	76.7	95	77.6	92.5	72.8	89.7	73	88.5	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	0.218	< 0.005	0.205	< 0.005	0.152	< 0.005	0.153	< 0.005	0.112	< 0.005	0.118	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.06	0.06	0.05	mg/L
	Magnesium (Mg)	17.4	50.2	17.7	52.3	18.5	48.5	18.6	47.5	17.6	43.5	17.9	43	0.1	mg/L
	Manganese (Mn)	< 0.001	0.173	< 0.001	0.204	< 0.001	0.127	< 0.001	0.085	0.001	0.098	0.003	0.247	0.001	mg/L
	Molybdenum (Mo)	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.02	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.3	2.1	0.3	2.2	0.3	2	0.3	1.9	0.3	1.9	0.3	1.9	0.1	mg/L
	Potassium (K)	6.2	14.1	5.7	15	5.8	13.6	5.8	13.1	5.7	13	5.6	14.2	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.03	0.01	mg/L
	Sodium (Na)	77.7	199	129	277	194	324	303	441	595	742	1080	1260	0.1	mg/L
	Strontium (Sr)	0.213	0.216	0.194	0.226	0.199	0.211	0.197	0.208	0.189	0.193	0.181	0.192	0.001	mg/L
	Sulfur (S)	53.1	80.5	88.1	132	134	171	211	256	343	405	773	872	0.05	mg/L
	Tin (Sn)	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	1.6	1.6	1.7	1.5	1.7	1.6	1.8	2.1	1.7	2.5	2.4	2	0.2	ug/L
	Antimony (Sb)	< 0.005	0.015	< 0.005	0.018	< 0.005	0.017	< 0.005	0.016	< 0.005	0.016	0.02	0.018	0.005	ug/L
	Arsenic (As)	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.2	0.2	0.8	0.6	0.1	ug/L
	Barium (Ba)	1.02	2.06	1.04	2.2	1.04	2.08	1.07	2.09	1.15	2.29	1.37	2.64	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.8	0.3	0.8	0.5	0.9	0.4	0.9	0.4	0.9	0.4	0.9	0.5	0.2	ug/L
	Cobalt (Co)	0.118	0.284	0.119	0.315	0.116	0.218	0.117	0.226	0.119	0.23	0.122	0.214	0.005	ug/L
	Copper (Cu)	0.97	4.71	1.13	5.1	1.16	5.25	1.58	6.77	2.07	9.12	2.56	14.3	0.05	ug/L
	Lead (Pb)	0.03	0.03	0.1	0.06	0.13	0.06	0.13	0.09	0.23	0.12	0.42	0.23	0.01	ug/L
	Lithium (Li)	0.1	0.17	0.09	0.2	0.09	0.15	0.09	0.17	0.09	0.16	0.12	0.18	0.05	ug/L
	Manganese (Mn)	0.4	156	0.457	183	0.445	114	0.462	78.1	0.545	98.4	0.742	248	0.005	ug/L
	Molybdenum (Mo)	0.06	30.6	0.06	32	0.06	30.8	0.06	31.1	0.06	32.7	0.3	35.2	0.05	ug/L
	Nickel (Ni)	3.38	3.25	3.39	3.39	3.35	3.27	3.34	3.33	3.33	3.12	3.12	3.09	0.05	ug/L
	Selenium (Se)	0.5	0.2	< 0.2	0.2	< 0.2	0.2	< 0.2	0.3	0.3	0.5	2.2	1.6	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	194	207	191	213	189	200	189	197	186	189	186	187	0.005	ug/L
	Thallium (Tl)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Tin (Sn)	< 0.01	0.04	< 0.01	0.02	< 0.01	0.03	< 0.01	0.03	< 0.01	0.04	0.23	0.03	0.01	ug/L
	Uranium (U)	0.006	0.007	0.006	0.007	0.006	0.007	0.006	0.007	0.006	0.008	0.009	0.01	0.002	ug/L
	Vanadium (V)	0.41	0.25	0.4	0.29	0.45	0.27	0.43	0.28	0.44	0.3	0.46	0.33	0.05	ug/L
	Zinc (Zn)	< 0.2	8.2	1.3	7.9	1.8	6	3.6	7.3	6.9	7.7	14.3	10.2	0.2	ug/L
Hardness, Extr. CaMg															

	Hardness, Extractable Calcium+Magnesium - calc.	257	435	261	462	268	437	270	426	254	403	256	398	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	257	435	262	463	268	438	270	427	254	404	256	399	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	32.2		32.7		32.4		32.5		32.5		32.5		0.5	mg/L
TOC															
	Carbon, Total Organic	0.6		< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002		< 0.002		< 0.002		< 0.002	175	< 0.002		< 0.002		0.002	mg/L
***Phosphorus, Total**									< 0.01						
	Phosphorus, Total as P	< 0.002		< 0.002		< 0.002		0.003	1210	0.006		0.015		0.002	mg/L

11) *Lemna* medium hard water treatment (100 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	64.3		64.3		64.4		64.9		64.9		65.3		0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	33	99	34	99	34	100	31	98	34	100	33	96	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	66	117	188	285	312	394	573	634	1070	1150	2150	2020	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		0.005	mg/L
***pH**															
	pH	8.13		8.12		8.13		8.11		8.11		8.07		0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	213		392		583		952		1680		3190		10	mg/L
***Residue, Total**															
	Solids, Total	200		391		568		960		1700		3100		10	mg/L
***SpecificConductance**															
	Conductivity (25C)	368		637		900		1430		2420		4270		2	uS/cm
***Turbidity**															
	Turbidity	0.12		0.09		0.09		0.09		0.12		0.19		0.05	NTU
Metals															

***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	0.05	< 0.05	0.07	< 0.05	0.08	0.06	0.1	0.11	0.15	< 0.05	0.22	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.002	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	0.32	< 0.01	0.33	< 0.01	0.33	< 0.01	0.32	< 0.01	0.3	< 0.01	0.28	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	27.2	44	32.7	45	32.9	45	32.3	44.3	31.7	46.4	31.3	42.1	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	0.176	< 0.005	0.158	< 0.005	0.12	< 0.005	0.117	< 0.005	0.127	< 0.005	0.17	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05	mg/L
	Magnesium (Mg)	6.4	37.9	7.6	37.6	7.7	38.1	7.7	37	7.5	35.4	7.5	31.9	0.1	mg/L
	Manganese (Mn)	< 0.001	0.112	< 0.001	0.111	< 0.001	0.173	< 0.001	0.09	0.001	0.147	0.001	0.323	0.001	mg/L
	Molybdenum (Mo)	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.02	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.1	1.8	0.2	1.8	0.1	1.8	0.2	1.8	0.2	1.7	< 0.1	1.7	0.1	mg/L
	Potassium (K)	2	9.6	2.3	9.4	2.4	10	2.4	9.7	2.4	10.4	2.4	10.5	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.01	0.03	0.01	mg/L
	Sodium (Na)	28.5	150	91.2	211	157	278	282	400	561	716	1080	1160	0.1	mg/L
	Strontium (Sr)	0.063	0.082	0.074	0.081	0.079	0.083	0.078	0.081	0.074	0.079	0.073	0.072	0.001	mg/L
	Sulfur (S)	27.4	45.3	67.5	92.2	104	138	191	227	341	394	776	795	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	1	0.9	0.8	1.1	0.9	1.3	1.7	1.7	1.2	1.3	1.7	1.5	0.2	ug/L
	Antimony (Sb)	0.005	0.021	< 0.005	0.019	< 0.005	0.016	< 0.005	0.016	< 0.005	0.016	< 0.005	0.014	0.005	ug/L
	Arsenic (As)	0.4	0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.2	0.5	0.3	1.9	1	0.1	ug/L
	Barium (Ba)	0.53	1.38	0.55	1.39	0.6	1.4	0.6	1.5	0.72	1.67	0.9	1.86	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.4	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.6	0.3	0.7	0.4	0.2	ug/L
	Cobalt (Co)	0.052	0.14	0.052	0.134	0.052	0.131	0.054	0.111	0.058	0.123	0.064	0.15	0.005	ug/L
	Copper (Cu)	0.67	3.77	0.7	4.07	1.01	4.61	1.15	5.81	1.97	9.13	3.28	14.9	0.05	ug/L
	Lead (Pb)	0.02	0.03	0.07	0.06	0.09	0.06	0.13	0.07	0.19	0.12	0.39	0.29	0.01	ug/L
	Lithium (Li)	0.05	0.13	< 0.05	0.14	< 0.05	0.14	< 0.05	0.11	0.05	0.15	0.07	0.14	0.05	ug/L
	Manganese (Mn)	0.17	102	0.195	103	0.219	156	0.281	83.1	0.443	144	0.972	324	0.005	ug/L
	Molybdenum (Mo)	0.09	29.4	0.07	29.4	< 0.05	30.1	< 0.05	30.6	< 0.05	32.9	0.06	32.5	0.05	ug/L
	Nickel (Ni)	1.45	1.68	1.49	1.69	1.6	1.72	1.5	1.67	1.5	1.67	1.49	1.47	0.05	ug/L
	Selenium (Se)	1	0.4	< 0.2	0.3	< 0.2	0.4	0.4	0.5	1.3	0.8	5.5	2.9	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	71.9	79.6	71.9	80.8	72.4	80.9	72.3	79.3	74.3	82	70.6	75	0.005	ug/L
	Thallium (Tl)	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Tin (Sn)	0.05	0.12	0.04	0.08	0.03	0.07	0.02	0.05	0.02	0.04	0.02	0.04	0.01	ug/L
	Uranium (U)	0.003	0.004	0.003	0.003	0.002	0.003	0.003	0.003	0.002	0.003	0.003	0.004	0.002	ug/L
	Vanadium (V)	0.18	0.14	0.2	0.14	0.2	0.15	0.21	0.13	0.23	0.17	0.28	0.19	0.05	ug/L

	Zinc (Zn)	< 0.2	6.5	1	6	2.4	5.1	3.8	5.1	6.8	6.9	14.1	12.6	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	94.4	266	113	267	114	269	112	263	110	262	109	236	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	94.4	267	113	268	114	270	112	263	110	262	109	237	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	15		15.1		15		15		15		15		0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		< 0.5		0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002		< 0.002		0.002		0.004		0.007		0.014		0.002	mg/L

12) *Lemna* soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	33.1		33.1		33.4		33.3		33.5		34.3		0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	17	87	18	85	17	83	18	96	18	87	18	83	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	31	103	160	207	282	399	549	751	1050	1390	2040	2540	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		< 0.05		0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		< 0.002		0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		0.005	mg/L
***pH**															
	pH	7.83		7.82		7.47		7.75		7.76		7.74		0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	109		291		467		830		1570		2920		10	mg/L
***Residue, Total**															
	Solids, Total	100		272		473		822		1570		2960		10	mg/L
***SpecificConductance**															
	Conductivity (25C)	193		465		754		1280		2280		4130		2	uS/cm
***Turbidity**															

	Turbidity	0.19		0.15		0.12		0.11		0.12		0.14		0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	0.13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.07	0.05	0.1	0.1	0.14	< 0.05	0.22	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	0.33	< 0.01	0.33	< 0.01	0.33	< 0.01	0.32	< 0.01	0.32	< 0.01	0.29	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	17.4	28	17.4	27.9	17.2	27.6	17.2	27.7	18.3	28.7	16.9	26.6	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	0.13	< 0.005	0.147	< 0.005	0.199	< 0.005	0.171	< 0.005	0.148	< 0.005	0.165	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05	mg/L
	Magnesium (Mg)	3.4	35.1	3.5	34.1	3.5	33.9	3.7	33.3	3.7	31.9	3.6	29.7	0.1	mg/L
	Manganese (Mn)	< 0.001	0.096	< 0.001	0.144	< 0.001	0.167	< 0.001	0.149	0.001	0.2	< 0.001	0.442	0.001	mg/L
	Molybdenum (Mo)	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.03	< 0.01	0.02	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	1.7	< 0.1	1.7	< 0.1	1.7	< 0.1	1.7	0.1	1.6	< 0.1	1.6	0.1	mg/L
	Potassium (K)	1.1	8.4	1.1	8.7	1.1	8.9	1.1	9.1	1.3	9.7	1.3	10.2	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	< 0.01	0.03	0.01	mg/L
	Sodium (Na)	15.4	136	74.3	193	133	259	248	387	498	702	1010	1180	0.1	mg/L
	Strontium (Sr)	0.033	0.041	0.032	0.041	0.032	0.041	0.032	0.041	0.034	0.04	0.032	0.038	0.001	mg/L
	Sulfur (S)	11.3	34.8	53.7	80.1	90.5	127	165	211	335	397	683	804	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	1.9	1.8	1.9	2.2	1.5	5.3	1.4	1.4	2.2	2	1.6	2.2	0.2	ug/L
	Antimony (Sb)	< 0.005	0.012	< 0.005	0.014	< 0.005	0.013	< 0.005	0.013	0.02	0.013	0.01	0.037	0.005	ug/L
	Arsenic (As)	0.3	< 0.1	< 0.1	< 0.1	0.1	0.1	0.3	0.2	0.7	0.4	2	1.2	0.1	ug/L
	Barium (Ba)	0.39	1.06	0.44	1.18	0.45	1.29	0.48	1.29	0.65	1.4	0.75	1.68	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	< 0.002	0.003	0.003	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.3	0.3	0.3	0.3	0.3	< 0.2	0.4	0.4	0.4	0.4	0.5	0.4	0.2	ug/L
	Cobalt (Co)	0.026	0.105	0.029	0.107	0.028	0.112	0.03	0.107	0.039	0.103	0.04	0.143	0.005	ug/L
	Copper (Cu)	0.49	3.03	2.25	4.39	0.87	5.13	1.37	6.53	1.39	9.75	2.74	15.7	0.05	ug/L
	Lead (Pb)	0.02	0.03	0.07	0.05	0.11	0.12	0.12	0.08	0.24	0.16	0.37	0.29	0.01	ug/L
	Lithium (Li)	< 0.05	0.08	< 0.05	0.15	< 0.05	0.15	< 0.05	0.11	0.06	0.1	0.07	0.2	0.05	ug/L
	Manganese (Mn)	0.457	85.8	0.457	127	0.401	150	0.425	136	0.532	193	0.772	440	0.005	ug/L
	Molybdenum (Mo)	< 0.05	29.3	< 0.05	29.2	< 0.05	29.7	< 0.05	30.5	0.26	32.6	0.16	32.5	0.05	ug/L
	Nickel (Ni)	0.77	1.1	0.8	1.16	0.79	1.18	0.78	1.1	0.8	1.12	0.75	0.93	0.05	ug/L
	Selenium (Se)	0.7	< 0.2	0.2	0.2	0.3	0.4	0.9	0.6	2.1	1.2	5.7	3.7	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	32.9	40.6	32.9	41.6	33.3	42.4	33.4	41.8	34.6	41.4	31.3	39.2	0.005	ug/L
	Thallium (Tl)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.008	0.002	ug/L
	Tin (Sn)	0.01	0.03	0.01	0.04	< 0.01	0.03	0.01	0.03	0.24	0.03	0.1	0.26	0.01	ug/L

	Uranium (U)	< 0.002	< 0.002	0.002	0.002	< 0.002	0.002	< 0.002	< 0.002	0.005	< 0.002	0.003	0.006	0.002	ug/L
	Vanadium (V)	0.12	0.15	0.14	0.13	0.14	0.1	0.15	0.14	0.16	0.14	0.19	0.16	0.05	ug/L
	Zinc (Zn)	6	6.2	2.8	6.1	2.3	7.2	4.3	7.2	8.3	8	13.5	12.1	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	57.5	214	58	210	57.2	209	58	206	61	203	57	189	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	58	215	58	211	57.2	209	58	207	61	204	57	190	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	7.5		7.5		7.4		7.5		7.4		7.4		0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5		0.5		< 0.5		< 0.5		< 0.5		0.5		0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002		0.004		< 0.002		0.003		< 0.002		< 0.002		0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002		< 0.002		< 0.002		0.002		0.006		0.014		0.002	mg/L

13) Freshwater mussel hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	151	160	151	160	152	159	152	158	153	156	153	157	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	94	155	95	130	94	146	91	149	92	140	91	128	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	143	158	258	270	394	434	641	730	1120	1130	2050	2010	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	0.003	< 0.002	0.007	< 0.002	0.011	< 0.002	0.009	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.51	8.45	8.53	8.45	8.52	8.44	8.51	8.44	8.51	8.41	8.47	8.36	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	588	600	766	802	937	971	1280	1300	1980	2100	3370	3350	10	mg/L
***Residue, Total**															
	Solids, Total	495	629	658	845	850	990	1230	1320	1950	2110	3340	3440	10	mg/L
***SpecificConductance**															

	Conductivity (25C)	831	1060	1070	1320	1320	1560	1820	2040	2790	3030	4620	4900	2	uS/cm
***Turbidity**															
	Turbidity	0.17	0.22	0.16	0.43	0.16	0.41	0.16	0.3	0.2	0.48	0.17	0.55	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.07	0.08	0.11	0.12	0.19	0.21	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	0.001	0.007	0.001	0.007	0.001	0.007	0.001	0.007	0.001	0.007	< 0.001	0.008	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	78.4	92.8	86.9	91.4	87.9	91.9	87.2	91	89.3	91.2	86	92.1	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05	0.05	mg/L
	Magnesium (Mg)	15.6	17.9	16.8	17.6	17	17.9	17	17.4	17.2	17.4	16.7	17.3	0.1	mg/L
	Manganese (Mn)	0.001	< 0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.003	0.002	0.004	0.005	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	0.2	0.2	0.1	mg/L
	Potassium (K)	5.2	7	5.8	6.6	5.8	6.7	5.7	6.5	6	6.4	5.7	6.4	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.08	< 0.05	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	0.03	0.03	0.01	mg/L
	Sodium (Na)	65.3	108	130	167	192	231	308	346	579	613	1040	1100	0.1	mg/L
	Strontium (Sr)	0.024	0.054	0.026	0.055	0.026	0.054	0.025	0.053	0.026	0.051	0.024	0.051	0.001	mg/L
	Sulfur (S)	61.2	60.1	104	110	144	150	228	238	387	416	838	806	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	74.6	22.2	72.9	23.2	72.1	31.5	64.3	28.9	70.6	31	68.7	27.6	0.2	ug/L
	Antimony (Sb)	0.025	0.018	0.019	0.018	0.017	0.018	0.017	0.019	0.016	0.017	0.017	0.017	0.005	ug/L
	Arsenic (As)	0.2	0.5	< 0.1	0.4	< 0.1	0.4	< 0.1	0.5	0.1	0.6	0.3	1.1	0.1	ug/L
	Barium (Ba)	1.41	5.61	1.4	5.87	1.4	5.91	1.52	6.17	1.46	6.83	1.57	7.95	0.02	ug/L
	Berylium (Be)	0.005	< 0.002	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	0.004	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.6	0.8	0.7	0.8	0.7	0.8	0.8	0.8	0.7	0.8	1	0.8	0.2	ug/L
	Cobalt (Co)	0.131	0.133	0.134	0.128	0.137	0.133	0.138	0.132	0.145	0.128	0.141	0.139	0.005	ug/L
	Copper (Cu)	0.8	3.01	0.93	3.04	1.12	3.15	1.53	3.56	2.35	4.37	3.88	6.16	0.05	ug/L
	Lead (Pb)	0.09	0.19	0.1	0.18	0.12	0.18	0.15	0.15	0.22	0.16	0.38	0.17	0.01	ug/L
	Lithium (Li)	0.1	0.17	0.09	0.15	0.1	0.14	0.11	0.14	0.13	0.14	0.18	0.11	0.05	ug/L
	Manganese (Mn)	0.93	0.737	0.96	1.09	0.985	1.43	1.06	1.15	1.14	0.941	1.29	1.94	0.005	ug/L
	Molybdenum (Mo)	< 0.05	0.06	< 0.05	0.07	< 0.05	0.07	< 0.05	0.06	< 0.05	0.06	0.06	0.07	0.05	ug/L
	Nickel (Ni)	3.07	2.77	3.17	2.86	3.19	2.77	3.12	2.74	3.15	2.64	2.9	2.52	0.05	ug/L
	Selenium (Se)	0.5	0.4	< 0.2	0.2	< 0.2	0.2	< 0.2	0.4	< 0.2	0.8	0.6	2.5	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	29.5	55.9	28.8	57.8	29.1	56.1	28.8	56.3	29	59.9	28	61.5	0.005	ug/L

	Thallium (Tl)	0.008	0.012	0.007	0.011	0.006	0.01	0.006	0.008	0.005	0.009	0.005	0.009	0.002	ug/L
	Tin (Sn)	0.08	< 0.01	0.04	< 0.01	0.03	< 0.01	0.02	< 0.01	0.02	< 0.01	0.02	< 0.01	0.01	ug/L
	Uranium (U)	0.026	0.255	0.026	0.272	0.026	0.267	0.025	0.239	0.024	0.254	0.025	0.232	0.002	ug/L
	Vanadium (V)	0.31	0.43	0.34	0.45	0.33	0.46	0.38	0.46	0.35	0.47	0.41	0.5	0.05	ug/L
	Zinc (Zn)	< 0.2	4.5	0.8	0.4	0.6	0.2	1.7	0.2	6.3	0.7	10.3	2.5	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	260	305	286	301	290	303	288	299	294	299	284	301	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	260	306	286	301	290	303	288	299	294	299	284	301	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	38.5	36.4	39.1	37.1	39.2	36.7	39.3	36.5	38	36.5	38.2	36.5	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	1.8	< 0.5	1.5	< 0.5	1.5	< 0.5	1.4	< 0.5	1.8	< 0.5	1.9	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.049	< 0.002	0.085	< 0.002	0.083	< 0.002	0.102	< 0.002	0.1	< 0.002	0.206	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.034	0.014	0.033	0.024	0.036	0.018	0.035	0.014	0.039	0.018	0.043	0.032	0.002	mg/L

14) Freshwater mussel medium hard water treatment (100 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	63.7	72	64.6	71.9	64.3	70.1	64.3	69.9	64.8	70.4	65.6	69.6	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	35	84	36	86	36	81	36	79	36	83	36	76	0.5	mg/L
	Fluoride (F)	< 0.01	0.02	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	55	65	173	191	286	324	558	548	1030	1040	2040	2190	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.031	< 0.002	0.009	< 0.002	0.022	< 0.002	0.006	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.12	8.09	8.14	8.11	8.13	8.13	8.12	8.12	8.09	8.05	8.07	8.04	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	267	310	440	504	603	693	930	1030	1680	1740	3110	3100	10	mg/L

***Residue, Total**															
	Solids, Total	210	309	373	501	559	698	913	1050	1630	1760	3050	3150	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	369	575	633	867	904	1130	1420	1640	2400	2630	4280	4520	2	uS/cm
***Turbidity**															
	Turbidity	0.09	0.91	0.1	0.64	0.1	0.41	0.1	0.27	0.1	0.64	0.1	0.6	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.07	0.1	0.11	0.19	0.19	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.006	< 0.001	0.006	< 0.001	0.006	< 0.001	0.006	< 0.001	0.007	< 0.001	0.008	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	36.7	39.2	36.6	40.7	34.6	40.5	37.7	40.5	35.6	42	36.5	41.5	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	0.024	< 0.005	0.021	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	7.4	7.6	7.4	7.8	7.1	7.7	7.6	7.8	7.1	7.6	7.3	7.3	0.1	mg/L
	Manganese (Mn)	0.002	0.003	0.002	0.002	0.002	0.003	0.003	0.002	0.003	0.005	0.005	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.2	0.2	0.1	mg/L
	Potassium (K)	2.6	3.4	2.5	3.4	2.3	3.4	2.5	3.3	2.4	3.3	2.5	3.3	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.03	0.01	mg/L
	Sodium (Na)	30.2	63.5	92.5	130	149	192	288	321	486	579	1030	1060	0.1	mg/L
	Strontium (Sr)	0.013	0.042	0.012	0.044	0.011	0.043	0.012	0.038	0.011	0.043	0.011	0.042	0.001	mg/L
	Sulfur (S)	23.2	26.5	69.5	77	125	123	212	212	379	373	800	771	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	32.6	15.4	32.9	14.8	35.2	17.1	35	16.8	34	15	32.5	12.5	0.2	ug/L
	Antimony (Sb)	0.024	0.023	0.026	0.026	0.023	0.048	0.024	0.035	0.024	0.032	0.048	0.029	0.005	ug/L
	Arsenic (As)	0.1	0.6	< 0.1	0.5	< 0.1	0.6	0.2	0.6	0.4	1.2	0.6	2.2	0.1	ug/L
	Barium (Ba)	0.77	4.57	0.78	5.36	0.76	5.05	0.78	4.74	0.92	6.4	1.01	7.89	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.009	< 0.002	0.002	0.003	0.003	0.007	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.3	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.3	0.4	0.5	0.2	ug/L
	Cobalt (Co)	0.068	0.072	0.068	0.067	0.069	0.076	0.072	0.074	0.078	0.089	0.089	0.082	0.005	ug/L
	Copper (Cu)	0.54	22.2	0.73	17.9	0.9	2.72	1.36	3.21	2.27	4.31	3.46	5.81	0.05	ug/L

	Lead (Pb)	0.06	0.19	0.08	0.2	0.1	0.16	0.13	0.14	0.19	0.17	0.3	0.19	0.01	ug/L
	Lithium (Li)	0.12	0.13	0.13	0.14	0.12	0.14	0.13	0.12	0.14	0.17	0.15	0.13	0.05	ug/L
	Manganese (Mn)	1.52	4.43	1.53	3.31	1.54	3.01	1.61	1.97	1.77	5.41	1.87	2.64	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.09	< 0.05	0.06	< 0.05	0.07	0.08	0.07	0.05	ug/L
	Nickel (Ni)	1.28	1.39	1.39	1.49	1.41	1.32	1.39	1.31	1.37	1.42	1.21	1.21	0.05	ug/L
	Selenium (Se)	0.3	0.8	< 0.2	0.4	< 0.2	0.6	0.5	1	1.1	2.5	1.5	5.5	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	12.8	45.5	12.9	45.8	13	45.5	13.2	40.3	13.4	46.7	13.5	49.6	0.005	ug/L
	Thallium (Tl)	0.009	0.015	0.01	0.015	0.009	0.019	0.008	0.014	0.007	0.014	0.011	0.013	0.002	ug/L
	Tin (Sn)	0.01	< 0.01	< 0.01	< 0.01	0.01	0.09	< 0.01	< 0.01	0.01	< 0.01	0.18	< 0.01	0.01	ug/L
	Uranium (U)	0.029	0.181	0.029	0.171	0.03	0.178	0.028	0.137	0.026	0.17	0.027	0.151	0.002	ug/L
	Vanadium (V)	0.25	0.37	0.28	0.41	0.3	0.39	0.3	0.4	0.34	0.4	0.32	0.47	0.05	ug/L
	Zinc (Zn)	1.5	2.1	0.7	0.8	2.1	< 0.2	2.7	0.8	5	2.9	9.6	2.5	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	122	129	122	134	116	133	126	133	118	136	121	134	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	122	129	122	134	116	133	126	134	118	137	121	134	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	17.3	16.7	17.2	17	17.1	16.5	17.1	16.1	17.2	16.6	17	16.4	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	2.5	< 0.5	2.2	< 0.5	1.5	< 0.5	1.6	< 0.5	2.4	< 0.5	2.2	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.125	< 0.002	0.096	< 0.002	0.241	< 0.002	0.062	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.039	0.061	0.039	0.063	0.044	0.024	0.043	0.025	0.048	0.131	0.052	0.061	0.002	mg/L

15) Freshwater mussel soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	35.5	40.6	33.5	40.2	34.9	40.7	34.5	39.8	34.9	42.1	34.5	41.9	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	18	66	20	67	18	61	18	59	17	62	17	60	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	26	34	143	154	261	276	519	520	915	1020	1890	2200	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L

	Nitrogen, Nitrate as N	< 0.002	0.078	< 0.002	0.013	< 0.002	0.073	< 0.002	0.034	< 0.002	0.017	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	7.9	7.86	7.88	7.92	7.87	7.89	7.85	7.88	7.83	7.83	7.78	7.78	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	165	184	322	377	492	547	846	907	1570	1660	2980	3040	10	mg/L
***Residue, Total**															
	Solids, Total	98	200	296	380	473	590	822	940	1550	1670	3000	3130	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	192	371	473	668	746	946	1280	1490	2290	2520	4180	4480	2	uS/cm
***Turbidity**															
	Turbidity	0.12	0.33	0.12	0.28	0.11	0.88	0.12	0.24	0.11	0.51	0.14	0.95	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	0.1	0.11	0.18	0.19	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.005	< 0.001	0.005	< 0.001	0.005	< 0.001	0.005	< 0.001	0.006	< 0.001	0.007	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.02	< 0.01	0.02	0.01	0.02	0.05	0.03	0.05	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	18.2	20.8	17.9	21	18.2	21.3	17.8	22.1	16.7	23.9	16.8	23.1	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.015	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	3.5	3.8	3.6	3.7	3.7	3.8	3.7	3.8	3.6	3.8	3.6	3.7	0.1	mg/L
	Manganese (Mn)	0.002	0.001	0.002	0.002	0.002	0.003	0.003	0.002	0.003	0.002	0.005	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.1	mg/L
	Potassium (K)	1.1	2.2	1.1	1.9	1.1	1.9	1.1	2	1.1	2.2	1.2	2.1	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	0.06	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	mg/L
	Sodium (Na)	14.5	47.2	77	109	140	169	260	292	482	587	1020	1060	0.1	mg/L
	Strontium (Sr)	0.007	0.038	0.007	0.036	0.007	0.036	0.007	0.032	0.006	0.038	0.006	0.036	0.001	mg/L
	Sulfur (S)	11.4	13.2	59.3	63.6	104	108	198	192	355	364	766	815	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	15.7	24.7	17.2	11.6	17.4	8.7	17.7	9.9	18.7	7.7	19.1	6	0.2	ug/L
	Antimony (Sb)	0.03	0.026	0.027	0.025	0.026	0.025	0.025	0.03	0.027	0.026	0.026	0.026	0.005	ug/L
	Arsenic (As)	< 0.1	0.6	< 0.1	0.6	0.1	0.6	0.3	0.9	0.5	1.5	0.7	2.7	0.1	ug/L

	Barium (Ba)	1.1	3.89	0.54	3.79	0.51	3.78	0.54	4.19	0.62	5.7	0.72	7.2	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.005	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	< 0.2	0.2	0.2	0.3	0.2	0.4	0.3	0.4	0.4	0.4	0.5	0.4	0.2	ug/L
	Cobalt (Co)	0.047	0.045	0.046	0.046	0.046	0.054	0.049	0.054	0.058	0.052	0.064	0.064	0.005	ug/L
	Copper (Cu)	0.38	2.99	0.48	2.75	0.71	2.91	1.09	4.02	2.02	4.45	3.58	18.3	0.05	ug/L
	Lead (Pb)	0.05	0.23	0.07	0.15	0.08	0.15	0.12	0.15	0.17	0.13	0.33	0.18	0.01	ug/L
	Lithium (Li)	< 0.05	0.14	< 0.05	0.13	0.06	0.12	0.07	0.11	0.1	0.11	0.11	0.08	0.05	ug/L
	Manganese (Mn)	1.69	1.63	1.66	4.17	1.67	2.43	1.69	0.914	1.84	3.71	2.04	2.89	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.05	ug/L
	Nickel (Ni)	0.73	0.88	0.74	0.92	0.75	0.93	0.73	0.89	0.76	0.86	0.79	0.77	0.05	ug/L
	Selenium (Se)	< 0.2	< 0.2	< 0.2	0.3	0.2	0.5	0.6	1.1	1.4	3.1	1.9	6.7	0.2	ug/L
	Silver (Ag)	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	7.01	39	7.08	37.3	7.18	36.8	7.34	34.5	7.58	42.6	7.46	44	0.005	ug/L
	Thallium (Tl)	0.013	0.015	0.012	0.015	0.012	0.014	0.011	0.014	0.009	0.014	0.008	0.014	0.002	ug/L
	Tin (Sn)	< 0.01	< 0.01	0.03	< 0.01	0.02	< 0.01	0.02	< 0.01	0.02	< 0.01	0.02	< 0.01	0.01	ug/L
	Uranium (U)	0.05	0.068	0.049	0.065	0.048	0.054	0.046	0.056	0.04	0.063	0.038	0.056	0.002	ug/L
	Vanadium (V)	0.26	0.41	0.27	0.45	0.27	0.44	0.29	0.46	0.33	0.51	0.39	0.56	0.05	ug/L
	Zinc (Zn)	0.5	1.6	1.5	0.6	2	1.3	3.4	1.8	6.8	1.6	10.2	3.2	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	59.7	67.7	59.6	67.7	60.7	69	59.6	70.7	56.3	75.3	56.9	72.9	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	59.8	67.9	59.7	67.8	60.7	69	59.6	70.8	56.3	75.3	56.9	72.9	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	9.1	9.6	9	9.5	8.7	9.3	9	9.1	9	9.5	8.6	9.6	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	0.9	< 0.5	1	< 0.5	1.4	< 0.5	1.3	< 0.5	2.1	< 0.5	3	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.143	< 0.002	0.074	< 0.002	0.9	< 0.002	0.089	< 0.002	0.1	< 0.002	0.002	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.36	0.34	0.36	0.34	0.36	0.37	0.36	0.37	0.36	0.36	0.36	0.42	0.002	mg/L

16) Bullfrog tadpole hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	118	127	116	125	125	133	124	135	135	148	145	157	0.5	mg CaCO3 /

															L
***ICA (Cl F SO4)**															
	Chloride (Cl)	107	96	80	79	84	87	79	85	80	85	82	86	0.5	mg/L
	Fluoride (F)	< 0.01	0.07	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	159	141	283	296	450	465	703	772	1210	1350	2270	2420	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.22	8.15	8.24	8.14	8.25	8.12	8.29	8.13	8.32	8.14	8.35	8.14	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	4410	505	647	678	860	875	1210	1230	1920	1970	3380	3390	10	mg/L
***Residue, Total**															
	Solids, Total	529	515	700	667	898	879	1270	1260	1980	1970	3430	3450	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	799	824	1020	1030	1300	1330	1780	1830	2690	2740	4480	4510	2	uS/cm
***Turbidity**															
	Turbidity	39.8	3.82	44	4.36	45.5	4.76	51.7	5.3	34.5	3.9	23	2.51	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.07	0.06	0.11	0.11	0.19	0.19	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	87.7	60.5	76.3	56.8	80.8	58.3	81.5	59.9	79.4	61.2	79.5	65.7	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	0.013	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.006	< 0.005	< 0.005	< 0.005	0.009	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	0.07	0.05	mg/L
	Magnesium (Mg)	17.2	17.6	16	16.6	16.5	16.8	16.7	17.3	16.2	16.8	16.9	17.5	0.1	mg/L
	Manganese (Mn)	0.004	0.001	0.002	0.002	0.002	0.002	0.003	0.002	0.003	0.003	0.006	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.6	0.1	mg/L
	Potassium (K)	5.9	6.2	5.3	5.7	5.5	5.8	5.5	5.9	5.4	5.8	5.7	6	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.19	< 0.05	0.2	< 0.05	0.19	< 0.05	0.15	< 0.05	0.09	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.02	0.01	mg/L
	Sodium (Na)	72.8	71.1	122	119	181	174	292	284	495	491	930	1040	0.1	mg/L
	Strontium (Sr)	0.175	0.173	0.152	0.155	0.155	0.155	0.153	0.157	0.143	0.152	0.148	0.152	0.001	mg/L
	Sulfur (S)	54.8	54.3	93	90.9	137	129	216	211	378	361	673	781	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L

	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	10.3	1.1	9.9	1.1	10.7	1.5	15.8	1.5	9.9	1.5	11.2	1.6	0.2	ug/L
	Antimony (Sb)	0.005	0.094	< 0.005	0.03	< 0.005	0.021	< 0.005	0.013	< 0.005	0.012	< 0.005	0.012	0.005	ug/L
	Arsenic (As)	0.4	< 0.1	0.2	0.1	< 0.1	0.1	0.2	0.2	0.2	0.4	0.7	0.9	0.1	ug/L
	Barium (Ba)	0.71	0.91	0.65	0.83	0.68	0.82	0.69	0.82	0.81	1.04	0.92	1.17	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.4	0.4	0.3	0.5	0.4	0.5	0.4	0.5	0.5	0.6	0.5	0.6	0.2	ug/L
	Cobalt (Co)	0.141	0.15	0.135	0.152	0.142	0.153	0.142	0.149	0.139	0.149	0.147	0.158	0.005	ug/L
	Copper (Cu)	1.02	1.78	1	1.26	1.18	2.24	1.39	2.15	2.25	2.79	4.28	3.19	0.05	ug/L
	Lead (Pb)	0.15	0.05	0.08	0.03	0.12	0.02	0.27	0.04	0.46	0.07	0.77	0.11	0.01	ug/L
	Lithium (Li)	0.12	0.09	0.1	0.07	0.13	0.09	0.13	0.09	0.14	0.09	0.18	0.11	0.05	ug/L
	Manganese (Mn)	3.45	1.07	3.27	1.07	3.55	1.09	3.34	1.03	3.27	1.16	3.51	1.42	0.005	ug/L
	Molybdenum (Mo)	< 0.05	0.1	< 0.05	0.09	< 0.05	0.08	< 0.05	0.08	< 0.05	0.09	0.05	0.1	0.05	ug/L
	Nickel (Ni)	3.2	3.53	3.19	3.59	3.32	3.69	3.39	3.49	3.33	3.37	3.29	3.27	0.05	ug/L
	Selenium (Se)	1.1	< 0.2	0.4	< 0.2	0.3	0.3	0.3	0.4	0.6	0.9	1.9	2.2	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	166	172	155	162	161	167	159	163	160	160	158	159	0.005	ug/L
	Thallium (Tl)	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Tin (Sn)	0.35	3.31	0.23	2.35	0.21	1.24	0.18	1.32	0.16	1.64	0.15	2.91	0.01	ug/L
	Uranium (U)	0.014	0.01	0.015	0.01	0.015	0.01	0.016	0.009	0.015	0.009	0.015	0.01	0.002	ug/L
	Vanadium (V)	0.36	0.35	0.35	0.39	0.41	0.37	0.41	0.4	0.43	0.48	0.47	0.49	0.05	ug/L
	Zinc (Zn)	6.7	4.9	2.8	4.2	3.6	2.6	6	2.5	7.8	4.1	12.1	4.2	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	290	223	257	210	270	215	273	221	265	222	268	236	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	290	224	257	210	270	215	273	221	265	222	268	236	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	27.6	29.5	27.3	29.6	29.3	31.3	28.8	32	31.2	35	33.5	37.1	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	8	< 0.5	8.2	< 0.5	7.5	< 0.5	7.3	< 0.5	7	< 0.5	6.6	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	1.25	< 0.002	1.3	< 0.002	1.32	< 0.002	1.36	< 0.002	1.33	< 0.002	1.28	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.002	0.33	0.004	0.32	0.004	0.32	0.006	0.34	0.009	0.35	0.015	0.36	0.002	mg/L

17) Bullfrog tadpole medium water hardness (100 mg/L)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	64.3	73	63.4	71.8	64.3	71.9	64.5	72.3	63.8	71.5	63.2	71.4	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	32	34	31	34	32	35	32	34	31	34	27	33	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	66	66	196	195	329	322	616	604	1150	1130	2110	2070	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	0.042	< 0.002	0.035	< 0.002	0.023	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.15	7.98	8.13	7.98	8.13	8.01	8.11	7.99	8.08	7.96	8.06	7.93	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	215	245	391	390	580	588	944	946	1660	1660	2960	3050	10	mg/L
***Residue, Total**															
	Solids, Total	222	232	391	411	572	590	945	955	1680	1680	2990	2990	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	367	419	626	660	898	929	1410	1460	2370	2440	4150	4220	2	uS/cm
***Turbidity**															
	Turbidity	0.45	1.79	0.4	1.86	0.34	1.37	0.42	1.14	0.46	1.35	0.43	1.36	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.06	0.11	0.1	< 0.05	< 0.05	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	33	35.2	30.7	32.9	31.4	33.1	29.3	32	31	30.1	28.8	32	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	0.005	< 0.005	0.006	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	0.006	0.007	0.005	0.006	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.007	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	7.4	7.9	7.2	7.7	7.3	7.7	7	7.7	12.3	11.1	11.6	12.6	0.1	mg/L
	Manganese (Mn)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	0.002	0.002	0.002	0.001	0.003	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L

	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.2	0.5	< 0.1	0.3	0.1	mg/L
	Potassium (K)	2.6	3.4	2.4	3.3	2.4	3.3	2.3	3.2	2.5	2.9	2.5	3.3	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.11	< 0.05	0.11	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	< 0.01	0.01	0.01	mg/L
	Sodium (Na)	32.4	34.2	88.8	93.1	143	155	250	271	497	455	921	997	0.1	mg/L
	Strontium (Sr)	0.081	0.089	0.073	0.081	0.072	0.083	0.07	0.082	0.072	0.069	0.069	0.078	0.001	mg/L
	Sulfur (S)	23.9	25.3	64.1	66.4	101	106	190	184	334	315	665	700	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	6	3.8	6.2	2.9	3	2.6	3.9	2.7	3.3	3.9	3.8	4.7	0.2	ug/L
	Antimony (Sb)	0.006	0.018	< 0.005	0.012	< 0.005	0.011	0.005	0.013	< 0.005	0.008	0.005	0.009	0.005	ug/L
	Arsenic (As)	< 0.1	0.2	< 0.1	0.1	< 0.1	0.2	0.2	0.2	0.3	0.3	1.5	1.2	0.1	ug/L
	Barium (Ba)	0.55	1.11	0.54	0.96	0.5	0.96	0.54	0.95	0.6	0.93	0.72	1.11	0.02	ug/L
	Berylium (Be)	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.2	ug/L
	Cobalt (Co)	0.066	0.104	0.063	0.09	0.062	0.088	0.065	0.093	0.061	0.088	0.065	0.102	0.005	ug/L
	Copper (Cu)	0.38	4.7	0.37	5.89	0.51	4.82	0.83	2.81	1.31	4.88	2.77	6.19	0.05	ug/L
	Lead (Pb)	0.07	0.09	0.06	0.07	0.06	0.07	0.09	0.05	0.14	0.08	0.23	0.11	0.01	ug/L
	Lithium (Li)	0.08	0.1	0.08	0.09	0.1	0.11	0.1	0.1	0.11	0.12	0.13	0.14	0.05	ug/L
	Manganese (Mn)	1.53	1.11	1.12	1.26	1.2	1.64	1.54	1.62	1.01	1.9	1.41	2.58	0.005	ug/L
	Molybdenum (Mo)	0.06	0.18	0.06	0.14	0.05	0.11	0.05	0.12	< 0.05	0.11	0.06	0.12	0.05	ug/L
	Nickel (Ni)	1.65	1.66	1.63	1.46	1.6	1.44	1.64	1.49	1.48	1.38	1.48	1.37	0.05	ug/L
	Selenium (Se)	< 0.2	0.4	< 0.2	< 0.2	< 0.2	0.2	0.4	0.4	0.8	0.7	4.2	3.3	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	74.8	78.5	70.9	70.6	72.8	72	74.1	71.3	72.4	68.4	70.1	67.6	0.005	ug/L
	Thallium (Tl)	0.007	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Tin (Sn)	0.04	1.02	0.04	1.48	0.03	1.15	0.03	0.94	0.02	0.86	0.02	0.97	0.01	ug/L
	Uranium (U)	0.006	0.012	0.006	0.009	0.005	0.009	0.006	0.01	0.005	0.008	0.004	0.01	0.002	ug/L
	Vanadium (V)	0.24	0.24	0.24	0.26	0.24	0.28	0.27	0.3	0.27	0.3	0.31	0.34	0.05	ug/L
	Zinc (Zn)	3.9	8.7	1.9	6.5	2.8	6.2	4.2	7.5	8.9	12.8	12.5	14.8	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	113	120	106	228	109	114	102	112	128	121	120	132	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.	113	120	106	228	109	115	102	112	128	121	120	132	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	14.9	17.2	14.7	16.8	14.7	16.6	14.8	17	14.5	16.5	14.3	16.8	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	4.7	< 0.5	4.6	< 0.5	4.8	< 0.5	4.4	< 0.5	5.1	< 0.5	5.1	0.5	mg/L

Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	1.77	< 0.002	1.5	0.003	1.63	0.002	1.67	0.003	1.46	0.002	1.73	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002	0.3	< 0.002	0.32	0.002	0.3	0.004	0.32	0.007	0.32	0.013	0.34	0.002	mg/L

18) Bullfrog tadpole soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Day 7	125 mg/L-Day 0	125 mg/L-Day 7	250 mg/L-Day 0	250 mg/L-Day 7	500 mg/L-Day 0	500 mg/L-Day 7	1000 mg/L-Day 0	1000 mg/L-Day 7	2000 mg/L-Day 0	2000 mg/L-Day 7	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	33.9	34.5	30	33.8	30	35.8	32.3	34.8	32.6	35.1	34.3	35	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	18	20	14.8	19.3	6.52	19.7	7.68	19.8	14.6	17.9	15.1	3.9	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	34	39	154	174	277	304	533	543	1020	1110	2020	2380	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.009	< 0.002	0.017	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	7.84	7.7	7.85	7.67	7.84	7.65	7.85	7.62	7.83	7.63	7.81	7.59	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	114	121	311	309	472	457	851	873	1560	1580	3050	2990	10	mg/L
***Residue, Total**															
	Solids, Total	103	127	286	313	468	485	849	860	468	1590	2990	3090	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	198	210	475	488	750	760	1310	1310	2310	2270	4230	4150	2	uS/cm
***Turbidity**															
	Turbidity	0.09	2.73	0.08	1.76	0.08	1.61	0.07	1.27	0.09	1.11	0.08	1.43	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	0.11	0.1	0.19	0.2	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	16.9	18.3	16.1	18	16.2	17.8	16.3	17.6	16.3	17.5	15.2	17.2	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L

	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	0.007	< 0.005	< 0.005	< 0.005	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	3.5	3.7	3.5	3.8	3.5	3.8	3.5	3.8	3.6	3.8	3.3	3.8	0.1	mg/L
	Manganese (Mn)	0.001	0.003	0.001	0.002	0.002	0.002	0.002	0.003	0.002	0.004	0.004	0.006	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	0.2	0.5	0.2	0.5	0.2	0.6	0.2	0.5	0.2	0.5	0.3	0.5	0.1	mg/L
	Potassium (K)	1.1	1.8	1.1	1.7	1.1	1.8	1.2	1.7	1.2	1.8	1.1	1.8	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.07	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.02	0.03	0.01	mg/L
	Sodium (Na)	14.7	15.8	75.7	79.3	140	146	268	269	537	534	1010	1060	0.1	mg/L
	Strontium (Sr)	0.039	0.044	0.035	0.04	0.035	0.04	0.035	0.039	0.034	0.038	0.031	0.038	0.001	mg/L
	Sulfur (S)	11.3	11.9	56.5	58.7	96	102	184	191	345	361	755	773	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	8.8	3.1	2.9	5.6	2.4	9.3	3.4	2.7	2.2	1.8	2	1.3	0.2	ug/L
	Antimony (Sb)	0.01	0.029	< 0.005	0.017	< 0.005	0.021	0.006	0.015	0.007	0.014	0.037	0.009	0.005	ug/L
	Arsenic (As)	< 0.1	0.5	< 0.1	0.2	< 0.1	0.2	0.2	0.4	0.5	0.6	0.5	1	0.1	ug/L
	Barium (Ba)	0.6	1.09	0.51	0.91	0.56	1.03	0.55	0.96	0.56	1.03	0.4	0.9	0.02	ug/L
	Berylium (Be)	< 0.002	0.004	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.007	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	0.03	0.02	< 0.01	< 0.01	0.02	0.01	0.01	ug/L
	Chromium (Cr)	0.3	< 0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.4	0.3	0.6	0.4	0.2	ug/L
	Cobalt (Co)	0.043	0.059	0.047	0.057	0.045	0.057	0.044	0.056	0.056	0.068	0.06	0.071	0.005	ug/L
	Copper (Cu)	0.3	3.45	0.44	2.29	0.74	2.92	1.4	3.44	2.64	5	3.8	6.92	0.05	ug/L
	Lead (Pb)	0.04	0.08	0.03	0.03	0.03	0.04	0.06	0.05	0.08	0.05	0.15	0.06	0.01	ug/L
	Lithium (Li)	0.06	0.08	< 0.05	0.08	< 0.05	0.08	< 0.05	0.07	< 0.05	0.08	< 0.05	0.1	0.05	ug/L
	Manganese (Mn)	1.41	2.2	1.15	1.61	1.45	1.47	1.3	2.03	0.782	1.84	1.16	2.52	0.005	ug/L
	Molybdenum (Mo)	< 0.05	0.23	< 0.05	0.19	< 0.05	0.15	< 0.05	0.14	< 0.05	0.13	0.4	0.15	0.05	ug/L
	Nickel (Ni)	1.08	1.07	1.22	1.12	1.14	1.07	1.05	0.95	1.12	1.07	0.9	0.93	0.05	ug/L
	Selenium (Se)	< 0.2	1.3	< 0.2	0.3	0.2	0.4	0.4	0.9	1.5	1.6	1.2	2.8	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	35.2	39.2	33.3	36.8	33.1	37.2	34	37.5	34	38.1	35	38.4	0.005	ug/L
	Thallium (Tl)	0.031	0.03	0.029	0.028	0.028	0.027	0.025	0.027	0.026	0.029	0.036	0.033	0.002	ug/L
	Tin (Sn)	0.04	2.7	0.04	0.31	0.03	0.32	0.03	1.1	0.03	1.81	0.41	0.5	0.01	ug/L
	Uranium (U)	0.006	0.018	0.003	0.011	0.003	0.011	0.003	0.011	0.003	0.01	0.013	0.011	0.002	ug/L
	Vanadium (V)	0.16	0.11	0.11	0.14	0.13	0.12	0.14	0.13	0.15	0.16	0.19	0.24	0.05	ug/L
	Zinc (Zn)	9.1	11.1	1.8	3.6	0.4	2.6	1.1	2.5	2.2	19.8	3.1	5	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	56.5	61	54.5	60.3	55	60.1	55.2	59.5	55.3	59.5	51.6	58.8	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total -	56.6	61.1	54.5	60.4	55	60.1	55.3	59.5	55.3	59.5	51.6	58.7	0.4	mg CaCO3 /

	calc.														L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	7.5	9.7	7.4	9.6	7.5	9.7	7.5	9.5	7.5	9.5	7.5	9.8	0.5	mg/L
TOC															
	Carbon, Total Organic	2.4	5.9	2	6.1	2.2	6.9	2	5.8	2.1	6	1.7	5.6	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	1.31	0.003	1.37	< 0.002	1.45	0.004	1.23	< 0.002	1.27	0.003	1.25	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002	0.39	< 0.002	0.39	< 0.002	0.39	< 0.002	0.37	< 0.002	0.39	< 0.002	0.41	0.002	mg/L

19) Rainbow trout hard water treatment (250 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	142	148	149	150	150	150	150	151	151	152	151	152	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	92	90	102	97	76	93	83	84	96	92	91	94	0.5	mg/L
	Fluoride (F)	0.01	< 0.01	0.04	< 0.01	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	170	140	289	256	381	379	696	563	1120	1070	2150	2080	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	0.032	0.006	0.038	< 0.002	0.027	< 0.002	0.021	< 0.002	0.023	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.26	8.41	8.37	8.40	8.40	8.41	8.40	8.42	8.41	8.40	8.39	8.38	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	495	520	681	694	858	879	1230	1220	1880	1960	3370	3390	10	mg/L
***Residue, Total**															
	Solids, Total	548	472	691	667	864	856	1260	1220	1970	1900	3450	3270	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	824	833	1080	1080	1320	1320	1820	1810	2790	2760	4610	4550	2	uS/cm
***Turbidity**															
	Turbidity	0.37	0.23	0.46	0.22	0.45	0.24	0.50	0.23	0.47	0.23	0.56	0.23	0.05	NTU
Metals															

***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.06	0.12	0.11	< 0.05	0.20	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	77.6	77.7	77.1	76.7	74.1	77.3	77.7	76.1	83.4	78.9	78.2	78.2	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	15.7	15.4	15.6	15.5	15.3	15.6	15.9	15.6	17.1	16.2	16.6	16.4	0.1	mg/L
	Manganese (Mn)	< 0.001	< 0.001	< 0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.002	0.002	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1	mg/L
	Potassium (K)	5.6	5.5	5.6	5.5	5.3	5.5	5.6	5.4	6.0	5.7	5.9	5.8	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.01	0.01	0.03	0.01	mg/L
	Sodium (Na)	70.0	68.5	128	126	182	185	305	294	562	551	1020	1040	0.1	mg/L
	Strontium (Sr)	0.153	0.149	0.149	0.146	0.142	0.147	0.148	0.144	0.157	0.148	0.150	0.145	0.001	mg/L
	Sulfur (S)	50.5	50.2	90.2	89.7	135	128	207	210	391	374	714	725	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	3.8	2.9	3.9	2.4	4.6	3.5	4.1	3.0	4.3	3.5	4.7	3.5	0.2	ug/L
	Antimony (Sb)	0.036	0.014	0.020	0.012	0.015	0.011	0.016	0.012	0.010	0.010	0.010	0.010	0.005	ug/L
	Arsenic (As)	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.2	0.3	0.3	0.1	ug/L
	Barium (Ba)	0.92	1.11	0.90	1.33	0.91	1.15	0.94	1.05	1.01	1.14	1.12	1.16	0.02	ug/L
	Berylium (Be)	0.014	< 0.002	0.004	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	0.3	0.2	0.4	0.4	< 0.2	0.3	0.4	0.3	0.3	0.4	0.5	0.4	0.2	ug/L
	Cobalt (Co)	0.138	0.126	0.136	0.119	0.139	0.140	0.130	0.125	0.130	0.128	0.140	0.122	0.005	ug/L
	Copper (Cu)	0.64	1.90	1.03	2.36	1.29	2.76	1.92	2.96	3.36	3.94	5.36	5.97	0.05	ug/L
	Lead (Pb)	0.03	0.25	0.03	0.15	0.05	0.14	0.10	0.17	0.21	0.18	0.40	0.24	0.01	ug/L
	Lithium (Li)	0.10	0.08	0.10	0.07	0.10	0.07	0.10	0.07	0.11	0.08	0.11	0.08	0.05	ug/L
	Manganese (Mn)	0.638	0.607	0.667	0.683	0.730	1.63	0.750	0.741	0.822	0.821	0.998	1.04	0.005	ug/L
	Molybdenum (Mo)	0.09	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.05	ug/L
	Nickel (Ni)	2.61	3.06	2.85	2.83	2.94	2.82	2.75	2.74	2.68	2.64	2.68	2.66	0.05	ug/L
	Selenium (Se)	< 0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	0.3	0.7	0.8	0.2	ug/L

	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	151	141	149	139	150	140	147	139	144	137	148	138	0.005	ug/L
	Thallium (Tl)	0.014	0.004	0.008	0.005	0.007	0.004	0.007	0.004	0.006	0.005	0.005	0.004	0.002	ug/L
	Tin (Sn)	0.27	0.06	0.12	0.05	0.07	0.03	0.06	0.03	0.04	0.03	0.04	0.03	0.01	ug/L
	Uranium (U)	0.019	0.016	0.011	0.021	0.010	0.018	0.010	0.017	0.009	0.016	0.009	0.019	0.002	ug/L
	Vanadium (V)	0.37	0.32	0.41	0.38	0.35	0.35	0.44	0.35	0.39	0.38	0.47	0.42	0.05	ug/L
	Zinc (Zn)	< 0.2	1.9	0.5	1.4	1.4	2.1	2.6	2.5	5.9	5.6	11.0	9.3	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	258	258	257	255	248	257	260	254	279	264	263	263	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.		258	257	255	248	257	260	254	279	264	264	263	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	32.1	33.0	33.8	33.8	33.9	33.9	34.3	34.3	34.3	34.4	34.5	34.3	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.067	< 0.002	0.066	< 0.002	0.065	< 0.002	0.063	< 0.002	0.063	0.090	0.073	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002	0.002	< 0.002	0.003	0.002	0.005	< 0.002	0.006	0.006	0.013	0.011	0.015	0.002	mg/L

20) Rainbow trout medium hard water (100 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	61.5	61.7	61.8	61.9	61.6	62.0	62.2	62.0	62.5	62.8	62.9	62.7	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	34	34	35	35	33	33	33	32	33	31	32	45	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	53	53	174	172	303	291	542	535	1040	972	1990	1810	1	mg/L
***ICA (NO2 NO3 Br)**															
	Bromide (Br)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	< 0.002	0.054	0.003	0.017	< 0.002	0.016	< 0.002	0.016	< 0.002	0.021	< 0.002	< 0.002	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	8.14	8.12	8.13	8.11	8.12	8.11	8.11	8.09	8.10	8.08	8.07	8.05	0.01	pH Units
***Residue, Filterable**															
	Solids, Total	190	196	380	392	558	571	917	930	1640	1610	3070	3000	10	mg/L

	Dissolved (FR)														
***Residue, Total**															
	Solids, Total	201	220	382	388	567	573	942	878	1680	1570	3090	2860	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	355	353	614	618	879	883	1400	1400	2420	2350	4360	4130	2	uS/cm
***Turbidity**															
	Turbidity	0.18	0.19	0.24	0.19	0.21	0.17	0.19	0.35	0.19	0.17	0.19	0.15	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05	0.11	0.10	0.20	0.18	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	30.7	31.2	30.9	31.3	31.1	29.5	30.1	31.1	33.2	32.3	33.1	31.3	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	6.2	6.2	6.3	6.3	6.4	6.1	6.2	6.4	6.9	6.7	6.9	6.6	0.1	mg/L
	Manganese (Mn)	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.004	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.1	mg/L
	Potassium (K)	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.5	2.4	2.5	2.4	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.03	0.02	0.01	mg/L
	Sodium (Na)	26.8	27.1	85.3	86.3	148	140	257	262	519	529	1010	1000	0.1	mg/L
	Strontium (Sr)	0.059	0.060	0.058	0.059	0.059	0.056	0.057	0.059	0.063	0.061	0.060	0.058	0.001	mg/L
	Sulfur (S)	20.7	20.3	62.6	62.3	101	105	184	175	361	327	704	686	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	2.1	1.9	3.2	2.6	2.6	1.7	2.5	2.0	3.6	2.2	2.8	2.1	0.2	ug/L
	Antimony (Sb)	0.005	0.008	0.008	0.010	0.006	0.031	0.008	0.022	0.009	0.016	0.009	0.013	0.005	ug/L
	Arsenic (As)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	0.2	0.2	0.3	0.9	0.7	0.1	ug/L
	Barium (Ba)	0.45	0.68	0.48	0.91	0.47	0.61	0.51	0.66	0.67	0.68	0.73	0.76	0.02	ug/L
	Berylium (Be)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.004	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	ug/L
	Chromium (Cr)	< 0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.2	ug/L

	Cobalt (Co)	0.056	0.058	0.059	0.067	0.057	0.066	0.060	0.081	0.063	0.070	0.067	0.071	0.005	ug/L
	Copper (Cu)	0.50	1.64	0.79	2.08	1.04	2.32	1.69	3.13	2.99	4.14	5.65	6.38	0.05	ug/L
	Lead (Pb)	0.02	0.22	0.05	0.14	0.07	0.14	0.12	0.26	0.23	0.21	0.44	0.26	0.01	ug/L
	Lithium (Li)	0.06	< 0.05	0.06	< 0.05	0.05	0.05	0.06	< 0.05	0.06	0.06	0.07	0.05	0.05	ug/L
	Manganese (Mn)	0.613	0.795	0.669	0.681	0.661	0.734	0.720	0.880	0.832	0.891	1.02	1.09	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	0.05	< 0.05	< 0.05	0.05	0.05	ug/L
	Nickel (Ni)	1.05	1.63	1.12	1.52	1.11	1.48	1.16	2.20	1.10	1.57	1.11	1.32	0.05	ug/L
	Selenium (Se)	< 0.2	0.2	< 0.2	< 0.2	< 0.2	0.4	0.2	0.5	0.6	0.8	2.8	2.1	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	0.03	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	60.2	57.5	60	58	59	58.5	58.8	58.8	58.6	57.9	57.9	56.4	0.005	ug/L
	Thallium (Tl)	0.010	0.006	0.009	0.006	0.010	0.010	0.009	0.008	0.009	0.007	0.008	0.007	0.002	ug/L
	Tin (Sn)	0.02	0.04	0.02	0.02	0.02	0.25	0.02	0.13	0.01	0.08	0.01	0.07	0.01	ug/L
	Uranium (U)	0.004	0.011	0.004	0.013	0.004	0.021	0.004	0.013	0.005	0.011	0.004	0.013	0.002	ug/L
	Vanadium (V)	0.17	0.17	0.21	0.19	0.20	0.19	0.21	0.21	0.25	0.21	0.25	0.24	0.05	ug/L
	Zinc (Zn)	0.5	2.7	5.2	3.6	2.0	2.8	3.6	6.2	6.7	6.8	12.6	11.7	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	102	104	103	104	104	98.6	101	104	112	108	111	106	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.		104		104	104	98.6	101	104	112	108	111	105	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	13.9	14.0	14.1	14.2	14.1	14.2	14.2	14.2	14.1	14.2	14.2	17.2	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.077	< 0.002	0.079	< 0.002	0.081	< 0.002	0.079	< 0.002	0.082	< 0.002	0.067	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	< 0.002	0.002	0.002	0.005	0.002	0.004	0.004	0.004	0.006	0.006	0.012	0.014	0.002	mg/L

21) Rainbow trout soft water treatment (50 mg/L $CaCO_3$)

Chemistry		Control-Day 0	Control-Final	125 mg/L-Day 0	125 mg/L-Final	250 mg/L-Day 0	250 mg/L-Final	500 mg/L-Day 0	500 mg/L-Final	1000 mg/L-Day 0	1000 mg/L-Final	2000 mg/L-Day 0	2000 mg/L-Final	MDL	Unit
General															
***Alkalinity,TotpH4.5**															
	Alkalinity to pH 4.5	35.2	33.9	33.1	33.6	34.8	34.0	33.8	34.1	34.0	34.4	33.9	35.0	0.5	mg CaCO3 / L
***ICA (Cl F SO4)**															
	Chloride (Cl)	17.7	17.2	15.6	14	15.9	22	15.5	16	15.9	17.0	16.6	17.1	0.5	mg/L
	Fluoride (F)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Sulphate (SO4)	28	28	147	139	263	253	521	430	990	1010	2020	2210	1	mg/L
***ICA (NO2 NO3 Br)**															

	Bromide (Br)	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Nitrogen, Nitrate as N	0.012	0.064	< 0.002	0.028	< 0.002	0.067	< 0.002	0.054	< 0.002	< 0.002	< 0.002	0.061	0.002	mg/L
	Nitrogen, Nitrite as N	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
***pH**															
	pH	7.93	7.88	7.87	7.86	7.86	7.87	7.84	7.85	7.82	7.82	7.79	7.79	0.01	pH Units
***Residue, Filterable**															
	Solids, Total Dissolved (FR)	132	114	294	296	472	459	836	810	1500	1540	2890	2960	10	mg/L
***Residue, Total**															
	Solids, Total	103	110	305	292	474	490	744	837	1550	1540	3030	3000	10	mg/L
***SpecificConductance**															
	Conductivity (25C)	188	190	460	461	733	734	1250	1260	2250	2270	4130	4130	2	uS/cm
***Turbidity**															
	Turbidity	0.13	0.24	0.13	0.38	0.09	0.15	0.14	0.17	0.11	0.31	0.18	0.36	0.05	NTU
Metals															
***ICP, Extractable**															
	Aluminum (Al)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Antimony (Sb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.10	0.10	0.19	0.18	0.05	mg/L
	Arsenic (As)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Barium (Ba)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Berylium (Be)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	mg/L
	Boron (B)	0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Cadmium (Cd)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Calcium (Ca)	16.8	16.5	16.5	16.3	16.1	16.5	16.0	16.2	17.2	16.7	16.6	16.2	0.1	mg/L
	Chromium (Cr)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Cobalt (Co)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Copper (Cu)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.012	< 0.005	0.015	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Iron (Fe)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.005	mg/L
	Lead (Pb)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Magnesium (Mg)	3.2	3.2	3.3	3.3	3.3	3.4	3.3	3.4	3.6	3.5	3.5	3.4	0.1	mg/L
	Manganese (Mn)	< 0.001	0.001	< 0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.003	0.004	0.004	0.001	mg/L
	Molybdenum (Mo)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Nickel (Ni)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	mg/L
	Phosphorus (P)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	0.1	mg/L
	Potassium (K)	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	0.1	mg/L
	Selenium (Se)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silicon (Si)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Silver (Ag)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.03	0.02	0.01	mg/L
	Sodium (Na)	14.3	14.0	73.8	73.1	134	134	248	249	528	523	978	1010	0.1	mg/L
	Strontium (Sr)	0.033	0.032	0.031	0.031	0.031	0.032	0.030	0.031	0.033	0.032	0.031	0.031	0.001	mg/L
	Sulfur (S)	10.2	10.1	53.1	53.1	92.7	93.3	172	172	351	330	693	706	0.05	mg/L
	Tin (Sn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
	Titanium (Ti)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	mg/L
	Vanadium (V)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	mg/L
	Zinc (Zn)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	mg/L
***ICPMS, Extractable**															
	Aluminum (Al)	2.3	3.1	2.7	6.8	2.5	2.3	2.0	2.8	2.6	2.2	2.9	2.1	0.2	ug/L

	Antimony (Sb)	0.020	0.021	0.013	0.013	0.016	0.015	0.011	0.010	0.010	0.011	0.012	0.013	0.005	ug/L
	Arsenic (As)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.2	0.3	0.3	1.0	0.8	0.1	ug/L
	Barium (Ba)	0.36	0.57	0.34	0.58	0.38	0.74	0.38	0.73	0.47	0.76	0.65	0.89	0.02	ug/L
	Berylium (Be)	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.002	ug/L
	Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Cadmium (Cd)	< 0.01	0.02	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.02	0.01	ug/L
	Chromium (Cr)	< 0.2	0.3	< 0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.2	ug/L
	Cobalt (Co)	0.036	0.051	0.040	0.096	0.038	0.044	0.040	0.052	0.045	0.049	0.046	0.070	0.005	ug/L
	Copper (Cu)	0.16	4.83	0.67	3.23	0.95	11.7	1.60	14.3	2.97	5.24	5.78	7.40	0.05	ug/L
	Lead (Pb)	0.02	1.34	0.05	0.47	0.07	0.30	0.12	0.28	0.23	0.31	0.44	0.42	0.01	ug/L
	Lithium (Li)	0.06	0.05	0.06	< 0.05	0.06	0.06	0.06	0.06	0.07	0.06	0.07	0.07	0.05	ug/L
	Manganese (Mn)	0.747	1.02	0.761	0.969	0.778	0.998	0.821	1.36	0.945	1.03	1.1	1.71	0.005	ug/L
	Molybdenum (Mo)	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	ug/L
	Nickel (Ni)	0.58	3.81	0.63	2.57	0.63	1.54	0.63	1.54	0.60	1.31	0.57	1.51	0.05	ug/L
	Selenium (Se)	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.4	0.4	1.1	0.9	3.0	2.4	0.2	ug/L
	Silver (Ag)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	ug/L
	Strontium (Sr)	32.3	30.3	31.4	30.3	31.4	30.5	31.8	30.7	31.6	31.2	30.7	30.8	0.005	ug/L
	Thallium (Tl)	0.014	0.010	0.014	0.009	0.013	0.008	0.012	0.008	0.012	0.008	0.012	0.009	0.002	ug/L
	Tin (Sn)	0.15	0.04	0.08	0.04	0.05	0.03	0.05	0.03	0.04	0.02	0.03	0.03	0.01	ug/L
	Uranium (U)	0.005	0.019	0.003	0.010	0.003	0.015	0.003	0.016	0.003	0.011	0.003	0.012	0.002	ug/L
	Vanadium (V)	0.13	0.13	0.15	0.13	0.16	0.17	0.18	0.16	0.18	0.17	0.22	0.22	0.05	ug/L
	Zinc (Zn)	0.9	9.3	2.5	7.5	4.6	6.3	3.8	7.7	6.6	9.7	15.1	16.2	0.2	ug/L
Hardness, Extr. CaMg															
	Hardness, Extractable Calcium+Magnesium - calc.	55.4	54.3	54.9	54.3	53.8	55.3	53.3	54.4	57.8	55.9	55.7	54.4	0.4	mg CaCO3 / L
Hardness, Extr.Total															
	Hardness, Extractable Total - calc.		54.4	54.9	54.4	53.8	55.3	53.3	54.5	57.8	55.9	55.6	54.3	0.4	mg CaCO3 / L
Non-Halogenated															
***TIC**															
	Carbon, Total Inorganic	7.7	7.5	7.7	7.4	7.6	7.5	7.6	7.5	7.6	7.5	7.7	7.5	0.5	mg/L
TOC															
	Carbon, Total Organic	< 0.5	1.1	< 0.5	1.0	< 0.5	1.0	< 0.5	0.6	< 0.5	0.9	< 0.5	0.9	0.5	mg/L
Nutrients															
***Nitrogen, Ammonia**															
	Nitrogen, Ammonia as N	< 0.002	0.085	< 0.002	0.090	< 0.002	0.094	< 0.002	0.084	< 0.002	0.081	< 0.002	0.082	0.002	mg/L
***Phosphorus, Total**															
	Phosphorus, Total as P	0.002	0.004	0.002	0.004	0.002	0.005	0.003	0.006	0.006	0.009	0.011	0.016	0.002	mg/L