May 18, 2012

Mackenzie Valley Environmental Review Board
5102 - 50th Ave.
Yellowknife, NT X1A 2N7

Attention: Mr. Paul Mercredi
Environmental Assessment Officer

Subject: Site Specific Water Quality Objectives for the Avalon Thor Lake Project

Dear Mr. Mercredi:

Further to our informal meeting in your office earlier this week, as requested, Avalon Rare Metals Inc. (Avalon) is pleased to provide to the MVEIRB the following additional information pertaining to Site Specific Water Quality Objectives (SSWQOs) for the Thor Lake Project. In addition, Avalon is also pleased to provide for the public record a copy of Det'on Cho Stantec's April 2012 water quality sampling data report (Attachment 1), which includes analysis of the normal suite of Rare Earth Elements (REEs).

Table 1 summarizes Avalon's current position on appropriate SSWQOs for all typically regulated metals and the suite of REEs present in water at the Nechalacho Mine site. To obtain appropriate values for the REE parameters for which there are no CCME guideline values, EBA, on behalf of Avalon, developed tentative SSWQOs for the REEs based on the CCME protocol for the derivation of water quality guidelines for the protection of aquatic life (2007).

More specifically the proposed SSWQOs for the REEs presented in Table 1 were developed using the CCME principal of applying a safety factor of 10 to the Lowest Observed Adverse Effect Level (LOAEL), based on the data presented in the Wilfred University Lanthanide report prepared for Environment Canada (2011) and previously summarized in Table 1 of Avalon's response to AANDC IR 2.1.

Corporate Office:
130 Adelaide St. W., Suite 1901, Toronto, ON M5H 3P5
Tel: (416) 364-4938 Fax: (416) 364-5162

Operations Office:
Unit 330 – 6165 Hwy 17, Delta, BC V4K 5B8
Tel: (604) 940-3800 Fax: (604) 940-3808

AVALON RARE METALS INC.

Table 1: Proposed Site Specific Water Quality Objectives (SSWQOs) for the Nechalacho Mine Area

Parameter	CCME Guideline µg/l	Drizzle Lake µg/l			Murky Lake µg/l			Thor Lake µg/l			Proposed SSWQO
		Mean	S.D.	Modelled Value	Mean	S.D.	Modelled Value	Mean*	S.D.	Modelled Value	µg/l
Metals											
Aluminum (Al)	100	8.30	9.10	10.0	7.20	3.90	8.53	3.30	0.54	3.77	100
Arsenic (As)	5.0	0.92	0.23	0.93	1.29	0.51	1.29	0.77	0.06	0.77	5.0
Cadmium (Cd)	0.052	0.01	0.002	0.01	0.02	0.01	0.02	0.02	0.01	0.02	0.052
Chromium (Cr)	8.9	0.25	0	0.25	0.25	0	0.25	0.28	0.02	0.28	8.9
Copper (Cu)	2-4	0.25	0.09	0.26	0.36	0.13	0.36	0.36	0.15	0.36	2-4
Iron (Fe)	300	1091	2322	1093	3054	4948	3055	69.50	25.40	69.93	background
Lead (Pb)	1-7	0.028	0.01	0.030	0.03	0.01	0.031	0.05	0.05	0.050	1-7
Mercury (Hg)	0.026	0.005	0	0.005	0.01	0.01	0.01	0.01	0	0.01	0.026
Molybdenum (Mo)	73	1.27	0.48	1.40	1.42	0.53	1.52	2.10	0.03	2.14	73
Nickel (Ni)	25-150	0.25	0	0.27	0.25	0	0.27	0.25	0	0.26	25-150
Selenium (Se)	1.0	0.50	0	0.50	0.50	0	0.50	0.50	0	0.50	1.0
Silver (Ag)	0.1	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0	0.01	0.1
Thallium (Tl)	0.8	0.05	0	0.05	0.05	0	0.05	0.05	0	0.05	0.8
Uranium (U)	0.01	0.15									background
Vanadium (V)	0.1	0.3									background
Zinc (Zn)	30	0.90	0.60	0.92	2.30	1.10	2.32	1.43	0.50	1.44	30
Rare Earth Elements**											Based on 10% of Lowest Observed Adverse Effect Level
Cerium (Ce)	N/A	<0.05		0.1	0.05			<0.05			3.2
Dysprosium (Dy)	N/A	<0.05		0. 0019	<0.05			<0.05			16.2
Erbium (Er)	N/A	<0.05		0.00044	<0.05			<0.05			19.1
Europium (Eu)	N/A	<0.05		0.00083	<0.05			<0.05			11.2

Table 1: Proposed Site Specific Water Quality Objectives (SSWQOs) for the Nechalacho Mine Area

Parameter	CCME Guideline µg/l	Drizzle Lake µg/l			Murky Lake µg/l			Thor Lake µg/l			Proposed SSWQO
		Mean	S.D.	Modelled Value	Mean	S.D.	Modelled Value	Mean*	S.D.	Modelled Value	µg/l
Gadolinium (Gd)	N/A	<0.05		0.0071	<0.05			<0.05			15.0
Hafnium (Hf)	N/A	<0.1		0.046	<0.1			<0.1			4.4
Holmium (Ho)	N/A	<0.05		0.0024	<0.05			<0.05			0.7
Lanthanum (La)	N/A	<0.05		0.052	<0.05			<0.05			1.8
Lutetium (Lu)	N/A	<0.05		0.000025	<0.05			<0.05			2.9
Niobium (Nb)	N/A	<0.1		0.0019	<0.1			<0.1			2.6
Neodymium (Nd)	N/A	<0.05		0.047	<0.05			<0.05			14.3
Praseodymium (Pf)	N/A	<0.05		0.013	<0.05			<0.05			3.5
Samarium (Sm)	N/A	<0.05		0.0083	<0.05			<0.05			7.4
Scandium (Sc)	N/A	0.90		0.0026	1.2			0.5			2.9
Tantalum (Ta)	N/A	<0.1		0.00017	<0.1			<0.1			0.2
Terbium (Tb)	N/A	<0.05		0.00062	<0.05			<0.05			8.4
Thulium (Tm)	N/A	<0.05		0.000035	<0.05			<0.05			6.9
Ytterbium (Yb)	N/A	<0.05		0.00025	<0.05			,0.05			6.9
Zirconium (Zr)	N/A	<0.1		0.0025	<0.1			<0.1			11.2

* Mean of mean values for four sampling locations in Thor Lake.

** REE data obtained from Det'on Cho Stantec (2012)

As noted in the SSWQO Table 1 included with this letter, the background REE values presented in this table were incorporated from the April 2012 water quality sampling program completed by Det'on Cho Stantec. The modeled values for REEs in the table represent the maximum predicted concentration of REEs that would be added to the current background levels in the Drizzle Lake receiving environment.

The water quality data presented in this table for the standard metals were based on mean values generated for these parameters from the several years of data previously obtained by Stantec and presented in the DAR. The modeled values for these parameters in Drizzle, Murky and Thor Lakes represent the predicted concentrations of these parameters in each of these lakes taking into consideration the prevailing natural background concentrations.

As also noted in our May 10, 2012 response to MVEIRB Clarification Number 2, Avalon anticipates the need for further meeting(s) with AANDC and EC in the future to reach a final consensus on the appropriate suite of SSWQOs that should apply to the Thor lake Project and the specific SSWQO guideline values.

Avalon appreciates the opportunity to provide this additional information on Site Specific Water Quality Objectives to the MVEIRB and trust that this will meet the Board's needs such that the review process can proceed to the Technical Hearing phase.

Yours truly,

David Swisher
VP Operations
Avalon Rare Metals Inc.

Attachment 1 - Det'on Cho Stantec April 2012 Water Quality report.

Det'on Cho Stantec

Det'on Cho Stantec
5021 - 49th Street PO Box 1680
Yellowknife NT X1A 2P3
Tel: (867) 920-2216
Fax: (867) 920-2278

VIA E-MAIL

May 18, 2012
File No.: 123510673-202

Avalon Rare Metals
Unit 330, 6165 Highway 17
Delta, BC V4K 5B8

Attention: David Swisher, VP Operations

Dear Mr. Swisher:

Reference: Thor Lake Rare Earth Metals Baseline Aquatics Program – April 2012 Water Quality

As part of the aquatics program for the Thor Lake Rare Earth Metals Baseline Program, Det'on Cho Stantec (DCS) completed a winter field program in the Thor Lake area to collect water quality data from eight (8) lakes. This letter report is provided at the request of Avalon Rare Metals (Avalon) and serves to provide an update on the analytical results for the winter sampling event. All aquatic data collected from June 2011 to April 2012 will be provided in an updated Technical Data Report in June 2012.

METHODOLOGY

Between April 3 and 6, 2012, DCS collected lake profile data and water quality samples at the following lake sample stations:

Lake	Sample Station	Coordinates[1]	
		Easting	Northing
Long	LL-02	417273	6885871
Ring	TL-04	417267	6888738
Thor	TL-06	415842	6886885
	TL-07	416636	6887520
Murky	UN-10	417893	6887973
Buck	UN-12	417861	6889261
Drizzle	UN-13	418851	6888823
Redemption	UN-14	429566	6899312
Ball[2]	n/a	417796	6889038

NOTE:
[1] All UTM coordinates are in UTM Zone 12 and were collected in the WGS84 datum
[2] Only profile data were collected from Ball Lake to support DCS' fish habitat assessment

Ice thickness and profile data were collected at all sample stations from under the ice to lake bottom. Measurements were taken every 0.5 m, if the total station depth was greater than 2.0 m, or every 0.25 m, if station depth was less than 2.0 m. *Insitu* parameters included temperature, pH, dissolved oxygen (D.O.), conductivity, and oxidation-reduction potential.

Water quality samples were collected from all sample stations with the exception of Ball Lake, which only required winter profile data to support DCS' baseline fisheries program. Water samples were collected at mid-depth from each sample station and analysed for general chemistry, nutrients, dissolved organic carbon, total and dissolved metals (at ALS Laboratories) and radionuclides (at the Saskatchewan Research Council [SRC]). Additionally, at the request of Avalon on May 9, 2012, the samples were analysed for the full suite of rare earth elements (REEs) by the SRC.

RESULTS

Profile data for each sample station are provided in Appendix A while water quality data are presented in Appendix B. Across the sampled waterbodies in April 2012, lake profiles indicate a mean water temperature of 2.50°C (range from 0.39 to 3.50°C), mean pH of 7.80 (range of 7.36 to 8.43) and mean conductance of 352 µS/cm (range of 131 to 598 µS/cm). Mean D.O. was 4.23 mg/L (range from 0.13 to 10.17 mg/L) or 31.5% (range from 0.9 to 71.8%) and decreased from under ice to bottom at all sample stations. Ice thickness was an average of 0.64 m, ranging from 0.35 m at Murky to 0.80 m at Long and Thor West.

As has been noticed in the past for samples collected under ice, levels of ammonia, nitrate and total Kjeldahl nitrogen were elevated during April 2012. Several metals exceeded their applicable CCME guidelines at one or more sample stations: total aluminum, cadmium and iron in Ring and total iron at Murky, Buck and Drizzle. Elevated levels of dissolved iron were also observed at these four stations; however, the elevated levels of total aluminum and cadmium in Ring are likely related to high suspended solids in the sample. Similar to past results, all radionuclide results and most of the REE results were below detection or less than five times the detection limit.

Differences of lake profile and water quality data were noted between shallow (<2.0 m) and deep (>2.0 m) lakes. This pattern has been observed during previous winter sampling events (see Stantec's 2010 *Thor Lake Rare Earth Metals Baseline Project Environmental Baseline Report: Volume 3 – Aquatics and Fisheries*) and reflects the reducing and anoxic conditions typically seen under ice in shallow lakes. This, along with the decreased pH and increased solubility typically observed, can naturally cause elevated levels of metals (e.g., arsenic, iron, manganese, strontium) and other parameters (i.e., several REEs were highest in the shallow lakes).

Reference: Thor Lake Rare Earth Metals Baseline Aquatics Program – April 2012 Water Quality

CLOSURE

We trust that this information meets your current requirements. If you have any questions or comments about the April 2012 water quality data, please contact Carey Sibbald at 867-920-2216 or by email at carey.sibbald@stantec.com.

Sincerely,

DET'ON CHO STANTEC

Original signed by

Carey Sibbald, B.Sc., EPt
Environmental Biologist
Tel: 867-920-2216
Fax: 867-920-2278
carey.sibbald@stantec.com

Original signed by

Karen Munro, M.Sc., R.P.Bio
Senior Aquatic Scientist
Tel: 604-678-3085
Fax: 604-436-3752
karen.munro@stantec.com

CS/KM/

Attachment: Appendix A: Lake Profile Data – April 2012
Appendix B: Water Quality Data – April 2012

c. Nick Lawson, Det'on Cho Stantec
Rick Hoos, EBA

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APPENDIX A

Lake Profile Data – April 2012

Table A1 Long Lake (LL-02) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
5-Apr-12	>15.0	0.5	ICE							- Ice thickness = 0.80 m
		1.0	1.22	7.86	317	62.9	9.13	85.7	0.15	
		1.5	1.82	7.73	313	62.6	8.92	92.0	0.15	
		2.0	1.40	7.81	311	62.0	8.70	97.0	0.15	
		2.5	1.74	7.81	311	61.2	8.52	100.9	0.15	
		3.0	1.96	7.81	310	60.5	8.35	104.3	0.15	
		3.5	2.17	7.81	310	69.5	8.19	107.5	0.15	
		4.0	2.24	7.81	311	68.5	8.00	110.0	0.15	
		4.5	2.26	7.81	311	56.7	7.79	113.0	0.15	
		5.0	2.26	7.80	312	55.5	7.61	116.1	0.15	
		5.5	2.27	7.80	312	55.0	7.55	119.1	0.15	
		6.0	2.28	7.79	312	54.6	7.48	123.6	0.15	
		6.5	2.29	7.80	312	52.6	7.21	131.5	0.15	
		7.0	2.30	7.78	312	52.4	7.19	134.4	0.15	
		7.5	2.31	7.78	313	52.0	7.11	136.5	0.15	
		8.0	2.32	7.77	313	51.3	7.02	139.0	0.15	
		8.5	2.32	7.77	313	50.9	6.89	140.9	0.15	
		9.0	2.35	7.76	313	50.0	6.82	142.7	0.15	
		9.5	2.38	7.75	313	49.2	6.71	144.8	0.15	
		10.0	2.41	7.75	313	48.6	6.63	146.2	0.15	
		10.5	2.43	7.74	313	48.0	6.54	147.7	0.15	
		11.0	2.45	7.74	313	47.0	6.40	149.0	0.15	
		11.5	2.49	7.73	313	46.4	6.25	150.9	0.15	
		12.0	2.52	7.72	314	44.3	5.99	152.0	0.15	
		12.5	2.55	7.70	314	41.1	5.54	153.3	0.15	
		13.0	2.58	7.69	314	38.4	5.12	155.0	0.15	
		13.5	2.48	7.67	315	33.5	4.36	155.9	0.15	
		14.0	2.82	7.63	316	23.8	3.01	156.6	0.15	
		14.5	3.00	7.56	345	12.2	1.53	93.0	0.16	
		15.0	3.19	7.40	420	6.5	0.81	-77.9	0.20	

NOTE:
- Shaded row implies sample depth, unless otherwise noted in Comments

Table A2 Ring Lake (TL-04) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
4-Apr-12	1.50	0.25	ICE							- Ice thickness = 0.70 m
		0.50								- Sampled at 0.90 m
		1.00	1.11	7.67	596	32.2	4.36	-119.4	0.29	
		1.25	1.58	7.60	598	10.7	1.42	-127.9	0.29	
		1.50	2.10	7.59	570	5.0	0.65	-139.1	0.27	

NOTE:
- Shaded row implies sample depth, unless otherwise noted in Comments

Table A3 Thor Lake West (TL-06) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
3-Apr-12	>15.0	0.5	ICE							- Ice thickness = 0.8 m
		1.0	0.63	8.18	-	62.3	8.61	300.3	0.18	
		1.5	1.44	8.14	359	51.7	7.01	299.1	0.17	
		2.0	2.35	8.09	354	48.1	6.51	289.0	0.17	
		2.5	2.82	8.06	353	46.3	6.23	296.7	0.17	
		3.0	2.97	8.04	353	44.0	5.88	296.4	0.17	
		3.5	3.03	8.03	355	40.8	5.64	296.1	0.17	
		4.0	3.02	8.01	357	38.1	5.09	295.5	0.17	
		4.5	3.05	7.99	360	37.3	5.01	295.0	0.17	
		5.0	3.02	7.99	363	37.5	5.04	294.7	0.17	
		5.5	3.00	7.99	365	38.0	5.13	294.7	0.17	
		6.0	3.11	7.98	367	38.5	5.18	293.1	0.17	
		6.5	3.02	7.97	367	37.9	5.09	293.5	0.18	
		7.0	3.04	7.96	367	36.9	4.92	293.3	0.18	
		7.5	3.04	7.96	371	35.9	4.82	293.2	0.18	
		8.0	3.04	7.95	372	36.0	4.84	293.3	0.18	
		8.5	3.03	7.95	373	36.0	4.85	292.8	0.18	
		9.0	3.04	7.94	375	36.0	4.83	292.7	0.18	
		9.5	3.12	7.93	376	33.7	4.48	293.0	0.18	
		10.0	3.10	7.92	378	31.9	4.27	292.6	0.18	
		10.5	3.15	7.92	380	30.8	4.10	292.5	0.18	
		11.0	3.18	7.91	380	28.7	3.83	293.6	0.18	
		11.5	3.22	7.90	382	28.0	3.73	292.3	0.18	
		12.0	3.26	7.90	383	26.8	3.55	292.4	0.18	
		12.5	3.30	7.88	385	23.7	3.14	292.3	0.18	
		13.0	3.35	7.86	386	21.0	3.74	285.5	0.18	
		13.5	3.42	7.79	412	10.4	1.27	-183.9	0.20	
		14.0	3.47	7.86	419	2.6	0.28	-212.6	0.20	
		14.5	3.48	7.88	419	1.4	0.18	-222.5	0.20	
		15.0	3.49	7.91	419	1.1	0.14	-230.9	0.20	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

Table A4 Thor Lake East (TL-07) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510431-201

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
3-Apr-12	14.0	0.5	ICE							- Ice thickness = 0.65 m
		1.0	1.38	8.05	365	55.2	7.62	199.3	0.17	
		1.5	2.13	7.99	362	49.8	6.83	203.3	0.17	
		2.0	2.60	7.95	360	48.0	6.50	215.9	0.17	
		2.5	2.89	7.92	369	46.0	6.17	208.0	0.17	
		3.0	2.96	7.89	360	42.5	5.62	209.7	0.17	
		3.5	3.02	7.87	361	36.4	4.83	211.1	0.17	
		4.0	3.15	7.84	360	31.9	4.93	212.6	0.17	
		4.5	3.10	7.82	363	29.0	3.86	213.5	0.17	
		5.0	3.15	7.80	363	27.5	3.64	214.5	0.17	
		5.5	3.12	7.78	365	25.6	3.43	215.2	0.17	
		6.0	3.10	7.77	367	25.5	3.41	215.7	0.17	
		6.5	3.12	7.75	368	24.7	3.26	216.1	0.18	
		7.0	3.16	7.74	369	23.0	3.05	216.7	0.18	
		7.5	3.17	7.73	370	21.8	2.92	216.8	0.18	
		8.0	3.15	7.71	373	21.5	2.88	217.4	0.18	
		8.5	3.18	7.71	374	20.8	2.76	217.5	0.18	
		9.0	3.20	7.69	377	23.6	2.24	217.4	0.18	
		9.5	3.25	7.68	378	16.3	2.12	217.7	0.18	
		10.0	3.39	7.64	411	11.9	1.46	-145.5	0.20	
		10.5	3.42	7.75	420	2.4	0.31	-212.5	0.20	
		11.0	3.44	7.78	421	1.8	0.21	-226.3	0.20	
		11.5	3.46	7.79	422	1.3	0.17	-231.5	0.20	
		12.0	3.46	7.80	423	1.1	0.15	-235.5	0.20	
		12.5	3.48	7.81	424	1.1	0.14	-239.1	0.20	
		13.0	3.48	7.82	424	1.0	0.13	-242.5	0.20	
		13.5	3.49	7.83	425	1.0	0.13	-244.9	0.20	
		14.0	3.50	7.83	425	0.9	0.13	-246.9	0.20	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

Table A5 Murky Lake (UN-10) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
5-Apr-12	1.50	0.25	ICE							- Ice thickness = 0.35 m
		0.50	1.31	7.62	131	26.2	3.36	-155.4	0.06	- Sampled at 0.90 m
		0.75	1.62	7.57	435	11.2	1.49	-147.7	0.20	
		1.00	1.75	7.51	445	5.7	0.79	-142.6	0.21	
		1.25	2.53	7.48	540	4.1	0.54	-139.1	0.26	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

Table A6 Buck Lake (UN-12) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
4-Apr-12	1.50	0.25	ICE							- Ice thickness = 0.60 m - Sampled at 0.90 m
		0.50								
		0.75	0.62	7.43	531	16.2	2.10	-118.3	0.25	
		1.00	0.98	7.41	534	8.3	1.12	-122.1	0.26	
		1.25	1.44	7.38	533	5.5	0.74	-123.7	0.25	
		1.50	2.39	7.36	529	3.6	0.48	-130.0	0.25	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

Table A7 Drizzle Lake (UN-13) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510431-201

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
4-Apr-12	1.75	0.25	ICE							- Ice thickness = 0.60 m - Sampled at 0.90 m
		0.50								
		0.75	0.63	7.88	535	12.3	1.61	-127.6	0.25	
		1.00	0.75	7.81	532	5.9	0.82	-127.5	0.25	
		1.25	1.65	7.77	524	4.0	0.55	-126.3	0.25	
		1.50	2.30	7.59	533	2.4	0.31	-150.3	0.26	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

Table A8 Redemption Lake (UN-14) Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
4-Apr-12	13.5	0.5	ICE							- Ice thickness = 0.70 m
		1.0	0.39	8.43	25	71.8	10.17	-	0.10	
		1.5	0.85	8.36	199	66.3	9.38	161.5	0.09	
		2.0	1.21	8.25	192	62.9	8.86	166.4	0.09	
		2.5	1.56	8.18	195	61.7	8.60	169.9	0.09	
		3.0	1.74	8.14	194	60.4	8.38	173.5	0.09	
		3.5	1.93	8.10	193	69.2	8.15	176.3	0.09	
		4.0	2.07	8..07	192	66.6	7.74	178.7	0.09	
		4.5	2.22	8.02	192	49.9	6.76	182.0	0.09	
		5.0	2.23	7.99	193	45.3	6.18	184.5	0.09	
		5.5	2.29	7.96	193	42.9	5.81	187.5	0.09	
		6.0	2.35	7.93	193	42.1	5.71	190.3	0.09	
		6.5	2.37	7.90	195	40.0	5.45	192.7	0.09	
		7.0	2.38	7.87	195	38.2	5.19	195.0	0.09	
		7.5	2.40	7.84	195	35.5	4.81	197.2	0.09	
		8.0	2.45	7.81	195	32.0	4.31	199.3	0.09	
		8.5	2.49	7.78	195	27.7	3.67	200.9	0.09	
		9.0	2.51	7.75	196	22.0	2.91	202.5	0.09	
		9.5	2.54	7.72	197	18.3	2.44	203.9	0.09	
		10.0	2.58	7.76	198	14.2	1.81	205.4	0.09	
		10.5	2.65	7.63	201	11.0	1.41	206.5	0.09	
		11.0	2.76	7.59	216	7.0	0.84	207.3	0.10	
		11.5	2.82	7.53	234	3.9	0.50	205.5	0.11	
		12.0	3.00	7.47	262	2.5	0.32	66.5	0.12	
		12.5	3.19	7.45	283	1.5	0.19	-94.8	0.13	
		13.0	3.32	7.49	306	1.1	0.14	150.9	0.15	
		13.5	3.37	7.40	332	1.0	0.13	-157.8	0.16	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

Table A9 Ball Lake Surface Water *In situ* Water Quality - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Date	Total Depth (approx. m)	Depth (m)	Temperature (°C)	pH	Conductivity (µS/cm)	D.O. (%)	D.O. (mg/L)	ORP (mV)	Salinity (ppt)	Comments
4-Apr-12	1.50	0.25	ICE							- Ice thickness = 0.60 m - Water quality profile only
		0.50								
		0.75	0.80	7.62	554	40.3	4.27	-65.2	0.26	
		1.00	0.95	7.53	550	16.4	2.22	-67.6	0.26	
		1.25	1.17	7.44	540	10.0	1.37	-67.0	0.26	

NOTE:
- Shaded rows implies sample depth unless otherwise noted in Comments

APPENDIX B

Water Quality Data – April 2012

Table B1

Baseline Water Chemistry - April 2012
Avalon Rare Metals Ltd. Thor Lake Property
Thor Lake, NT
Project # 123510673-202

Parameter	Units	D.L.[a]	CCME FAL[b]	BC WQG[c]	Long 5-Apr-12 LL-02	Ring 4-Apr-12 TL-04	Thor West 3-Apr-12 TL-07	Thor East 5-Apr-12 TL-07	Thor East 5-Apr-12 Replicate	RPD[v]	Murky 5-Apr-12 UN-10	Buck 4-Apr-12 UN-12	Drizzle 4-Apr-12 UN-13	Redemption 4-Apr-12 UN-14	Field Blank 5-Apr-12 -	Travel Blank - -
Physicals																
Conductivity	µS/cm	0.5	-	-	312	549	359	360	362	-0.55	502	485	498	194	<2.0	<2.0
Hardness (as $CaCO_3$)	mg/L	2	-	-	171	324	203	202	209	-3.41	281	285	275	107	<0.50	-
pH	pH	0.01	-	-	8.09	7.7	8.11	8.03	8.07	-0.50	7.75	7.65	7.82	7.75	5.88	6.09
Total Suspended Solids	mg/L	3.0	-	-	<3.0	150	4	<3.0	<3.0	-	30	43.3	16	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	10	-	-	187	421	225	223	219	1.81	371	370	357	129	<10	<10
Turbidity	NTU	0.1	-	-	0.51	64.4	0.94	1.15	1.28	-10.70	29.8	38.8	13	0.73	<0.10	<0.10
Anions																
Alkalinity, Total (as $CaCO_3$)	mg/L	2	-	-	168	318	192	194	193	0.52	281	272	269	88.8	<2.0	<2.0
Ammonia as N	mg/L	0.02	-	-	<0.0050	2.84	0.0135	0.103	0.102	0.98	1.53	2.75	1.58	0.0077	<0.0050	<0.0050
Bromide (Br)	mg/L	0.05	-	-	<0.050	0.069	<0.050	<0.050	<0.050	-	0.076	<0.050	0.057	<0.050	<0.050	<0.050
Chloride (Cl)	mg/L	0.5	-	600	4.76	2.39	5.35	5.15	5.16	-0.19	7.61	2.08	8.54	1.69	<0.50	<0.50
Fluoride (F)	mg/L	0.02	-	0.3[d]	1.3	1.74	1.33	1.32	1.32	0.00	1.72	1.86	1.73	0.067	<0.020	<0.020
Sulfate (SO_4)	mg/L	0.5	-	100	1.78	<0.50	<0.50	<0.50	0.64	-	<0.50	<0.50	<0.50	8.37	<0.50	<0.50
Nutrients																
Nitrate and Nitrite as N	mg/L	0.005	-	-	0.107	<0.0051	0.23	0.321	0.36	-11.45	<0.0051	0.0052	0.0686	0.16	<0.0051	<0.0051
Nitrate (as N)	mg/L	0.005	2.9	31.3	0.107	<0.0050	0.23	0.316	0.355	-11.62	<0.0050	0.0052	0.0686	0.16	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.001	0.06	0.12[e]	<0.0010	<0.0010	<0.0010	0.005	0.0052	-3.92	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	0.05	-	-	0.493	8.3	0.712	0.785	0.692	12.59	3.59	5.77	4.2	0.478	<0.050	<0.050
Ortho Phosphate Dissolved as P	mg/L	0.001	-	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	0.008	<0.0010	<0.0010
Total Phosphate as P	mg/L	0.002	-	-	0.0078	0.144	0.0069	0.0066	0.0072	-	0.0089	0.0206	0.0146	0.0172	<0.0020	<0.0020
Organics																
Dissolved Organic Carbon (DOC)	mg/L	0.5	-	-	13.5	63.6	15.8	18.3	15.2	18.51	42.7	54.6	41.4	15	<0.50	<0.50
Total Metals																
Aluminum (Al)	µg/L	**[f]	100[g]	-	3	**315**	3.1	3.4	<3	-	7.3	8	4	8.9	<3	<3
Antimony (Sb)	µg/L	0.1	-	20	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic (As)	µg/L	0.1	5.0	5.0	0.6	3.71	0.75	0.72	0.71	1.40	2.99	2.14	1.68	0.6	<0.1	<0.1
Barium (Ba)	µg/L	0.05	-	5000	66.2	137	85.4	89.1	89.7	-0.67	208	152.0	122	15.3	<0.05	<0.05
Beryllium (Be)	µg/L	0.5	-	5.3[h]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bismuth (Bi)	µg/L	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (B)	µg/L	10	-	1200	30	31	32	30	32	-	34	30	45	41	<10	<10
Cadmium (Cd)	µg/L	**	0.030 - 0.059[j]	-	<0.017	**0.062**	<0.017	<0.017	<0.017	-	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
Chromium (Cr)	µg/L	0.5	8.9	8.9	<0.5	0.71	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt (Co)	µg/L	0.1	-	110	<0.1	0.5	<0.1	<0.1	<0.1	-	0.22	0.2	0.2	<0.1	<0.1	<0.1
Copper (Cu)	µg/L	**	2 - 4[j]	11 - 21[k]	<0.5	3.27	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron (Fe)	µg/L	30	300	1000	<30	**12500**	37	73	76	-	**11200**	**14100**	**6490**	<30	<30	<30
Lead (Pb)	µg/L	0.05	1 - 7[l]	72 - 194[m]	<0.05	0.373	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lithium (Li)	µg/L	5	-	870	5.9	6.5	6.8	6.8	7.1	-	9.4	8	11	<5	<5	<5
Manganese (Mn)	µg/L	**	-	1540 - 2715[n]	15	1150	47.3	130	138	-5.97	916	1570.0	913	24.1	<0.05	<0.05
Mercury (Hg)	µg/L	0.05	0.026	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum (Mo)	µg/L	0.05	73	2000	4.82	3.52	2.44	2.44	2.5	-2.43	2.86	0.59	2.36	0.19	<0.05	<0.05
Nickel (Ni)	µg/L	0.5	25 - 150[o]	25 - 150	<0.5	0.95	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.8	<0.5	<0.5
Phosphorus (P)	µg/L	300	-	-	<300	<300	<300	<300	<300	-	<300	<300	<300	<300	<300	<300
Selenium (Se)	µg/L	1	1	2	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Silver (Ag)	µg/L	0.01	0.1	0.1 - 3[p]	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Strontium (Sr)	µg/L	0.1	-	-	63	91.8	72.5	71.6	74.5	-3.97	106	101.0	107	47	<0.1	<0.1
Thallium (Tl)	µg/L	0.1	0.8	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Parameter	Units	D.L.[a]	CCME FAL[b]	BC WQG[c]	Long 5-Apr-12 LL-02	Ring 4-Apr-12 TL-04	Thor West 3-Apr-12 TL-07	Thor East 5-Apr-12 TL-07	Thor East 5-Apr-12 Replicate	RPD[v]	Murky 5-Apr-12 UN-10	Buck 4-Apr-12 UN-12	Drizzle 4-Apr-12 UN-13	Redemption 4-Apr-12 UN-14	Field Blank 5-Apr-12 -	Travel Blank - -
Tin (Sn)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium (Ti)	µg/L	10	-	2000	<10	15	<10	<10	<10	-	<10	<10	<10	<10	<10	<10
Uranium (U)	µg/L	0.01	-	300	1.29	0.386	0.479	0.516	0.543	-5.10	0.151	0.04	0.169	0.061	<0.01	<0.01
Vanadium (V)	µg/L	1	-	6	<1	1.5	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Zinc (Zn)	µg/L	**	30	34 - 114[q]	<3	15.9	<3	<3	<3	-	<3	3.8	<3	5.4	<3	<3
Calcium (Ca)	mg/L	0.05	-	-	35.7	72.3	43	42	43.9	-4.42	64.5	68.1	63.2	26.1	<0.050	<0.050
Magnesium (Mg)	mg/L	0.1	-	-	20.6	33	23.7	23.3	23.7	-1.70	30.3	29.8	30.3	12.7	<0.10	<0.10
Potassium (K)	mg/L	2	-	-	<2.0	5	2.2	2.2	2.2	-	2.9	4.3	3.3	<2.0	<2.0	<2.0
Silicon (Si)	mg/L	0.05	-	-	3.02	2.89	4.35	4.2	4.31	-2.59	8.51	5.93	6.7	2.34	<0.050	<0.050
Sodium (Na)	mg/L	2	-	-	6.9	4.7	7.9	7.7	7.7	-	11	5.8	12.9	3.8	<2.0	<2.0
Dissolved Metals																
Aluminum (Al)	µg/L	1	-	100[r]	<3	7.2	<3	<3	<3	-	<3	<3	<3	<3	<3	-
Antimony (Sb)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
Arsenic (As)	µg/L	0.1	-	-	0.55	3	0.77	0.73	0.7	4.20	2.58	2.03	1.66	0.62	<0.1	-
Barium (Ba)	µg/L	0.05	-	-	64.1	110	83.1	88.3	86.7	1.83	177	121.0	115	14.7	0.531	-
Beryllium (Be)	µg/L	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-
Bismuth (Bi)	µg/L	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-
Boron (B)	µg/L	10	-	-	26	26	28	28	28	-	32	24	40	36	<10	-
Cadmium (Cd)	µg/L	**	-	-	<0.017	<0.017	<0.017	<0.017	<0.017	-	<0.017	<0.017	<0.017	<0.017	<0.017	-
Chromium (Cr)	µg/L	**	-	-	<0.5	<0.5	1.99	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-
Cobalt (Co)	µg/L	0.1	-	-	<0.1	0.15	<0.1	<0.1	<0.1	-	0.18	0.16	0.16	<0.1	<0.1	-
Copper (Cu)	µg/L	0.1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.5	<0.5	-
Iron (Fe)	µg/L	30	-	350	<30	**2180**	<30	<30	<30	-	**4150**	**3570**	**5200**	<30	<30	-
Lead (Pb)	µg/L	0.05	-	-	<0.05	0.051	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
Lithium (Li)	µg/L	5	-	-	6.1	6.7	7.1	7.3	7.2	-	10.3	7	10.7	<5	<5	-
Manganese (Mn)	µg/L	0.05	-	-	0.826	1110	1.5	1.2	1.87	-43.65	860	1440	865	1.05	1.67	-
Mercury (Hg)	µg/L	**	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
Molybdenum (Mo)	µg/L	0.05	-	-	4.47	2.43	2.28	2.35	2.29	2.59	2.72	0.5	2.12	0.144	<0.05	-
Nickel (Ni)	µg/L	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.74	<0.5	-
Phosphorus (P)	µg/L	300	-	-	<300	<300	<300	<300	<300	-	<300	<300	<300	<300	<300	-
Selenium (Se)	µg/L	1	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-
Silver (Ag)	µg/L	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	-
Strontium (Sr)	µg/L	0.1	-	-	61.3	88	70.5	74.1	71.6	3.43	106	91.7	101	43.6	0.2	-
Thallium (Tl)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-
Tin (Sn)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.12	<0.1	<0.1	<0.1	-
Titanium (Ti)	µg/L	10	-	-	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	-
Uranium (U)	µg/L	0.01	-	-	1.23	0.192	0.453	0.506	0.51	-0.79	0.127	0.03	0.153	0.054	<0.01	-
Vanadium (V)	µg/L	1	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	-
Zinc (Zn)	µg/L	1	-	-	<3	3.2	3.2	<3	<3	-	<3	<3	<3	<3	<3	-
Calcium (Ca)	mg/L	0.05	-	-	34.9	72.9	42.3	42.1	44.1	-4.64	62.2	66.1	61.4	22.3	0.102	-
Magnesium (Mg)	mg/L	0.1	-	-	20.3	34.5	23.6	23.5	24.1	-2.52	30.4	29.2	29.7	12.5	<0.10	-
Potassium (K)	mg/L	2	-	-	<2.0	5.2	2.2	2.3	2.3	-	2.9	4.3	3.2	<2.0	<2.0	-
Silicon (Si)	mg/L	0.05	-	-	2.99	2.41	4.34	4.3	4.37	-1.61	8.16	5.67	6.48	2.27	<0.050	-
Sodium (Na)	mg/L	2	-	-	6.8	5	8.4	7.8	7.8	-	10.8	5.8	12.7	3.7	<2.0	-
Radionuclides			**GCDWQ MAC[s]**													
Lead-210 (^{210}Pb)	Bq/L[t]	0.02	0.1	-	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Radium-226 (^{226}Ra)	Bq/L	0.005	0.6	-	<0.005	0.01	<0.005	<0.005	<0.005	-	0.02	0.008	<0.005	<0.005	<0.005	<0.005
Radium-228 (^{228}Ra)	Bq/L	**	0.5	-	<0.02	<0.02	<0.02	<0.02	<0.02	-	0.03	<0.02	<0.02	<0.02	<0.02	<0.03
Thorium-230 (^{230}Th)	Bq/L	0.01	0.4	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium-232 (^{232}Th)	Bq/L	0.01	0.1	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Parameter	Units	D.L.[a]	CCME FAL[b]	BC WQG[c]	Long 5-Apr-12 LL-02	Ring 4-Apr-12 TL-04	Thor West 3-Apr-12 TL-07	Thor East 5-Apr-12 TL-07	Thor East 5-Apr-12 Replicate	RPD[v]	Murky 5-Apr-12 UN-10	Buck 4-Apr-12 UN-12	Drizzle 4-Apr-12 UN-13	Redemption 4-Apr-12 UN-14	Field Blank 5-Apr-12 -	Travel Blank - -
Rare Earth Elements																
Cerium (Ce)	µg/L	0.05	-	-	<0.05	0.21	<0.05	<0.05	<0.05	-	0.05	0.07	<0.05	<0.05	<0.05	<0.05
Dysprosium (Dy)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Erbium (Er)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Europium (Eu)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Gadolinium (Gd)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hafnium (Hf)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.3	<0.1	<0.1	<0.1	<0.1
Holmium (Ho)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lanthanum (La)	µg/L	0.05	-	-	<0.05	0.14	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lutetium (Lu)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Neodymium (Nd)	µg/L	0.05	-	-	<0.05	0.16	<0.05	<0.05	<0.05	-	<0.05	0.05	<0.05	<0.05	<0.05	<0.05
Niobium (Nb)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Praseodymium (Pr)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Samarium (Sm)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Scandium (Sc)	µg/L	0.1	-	-	0.4	0.3	0.6	0.5	0.5	-	1.2	0.8	0.9	0.2	<0.1	<0.1
Tantalum (Ta)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Terbium (Tb)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thulium (Tm	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ytterbium (Yb)	µg/L	0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Yttrium (Y)	µg/L	1	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Zirconium (Zr)	µg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.6	<0.1	<0.1	<0.1	<0.1

NOTES:

a. D.L. = laboratory detection limit
b. CCME FAL - Canadian Council of Ministers of the Environment Freshwater Aquatic Life
c. BC WQG - British Columbia Water Quality Guidelines (Approved and Working) for maximum concentrations
d. BC WQG for Fluoride is 0.3 mg/L (maximum) where water hardness ≥ 50 mg/L (as $CaCO_3$)
e. BC WQG for Nitrite 0.12 mg/L when chloride is 2 - 4 mg/L
f. ** implies detection limit varied by season - '<' (less than) value implies detection limit
g. CCME FAL Total Aluminum guideline is 100 µg/L when pH > 6.5
h. BC WQG for Total Beryllium is Working chronic criterion
i. CCME FAL Total Cadmium guideline is site-specific, calculated by $10^{\{0.86[Log(hardness)] - 3.2\}}$
j. CCME FAL Total Copper guideline:
   2 µg/L when [CaCO3] is 0 - 120 mg/L
   3 µg/L when [CaCO3] is 120 - 180 mg/L
   4 µg/L when [CaCO3] is > 180 mg/L
k. BC WQG for Total Copper is site-specific, calculated by 0.094 x (hardness) + 2
l. CCME FAL Total Lead guideline:
   1 µg/L when [CaCO3] is 0 - 60 mg/L
   4 µg/L when [CaCO3] is 120 - 180 mg/L
   7 µg/L when [CaCO3] is > 180 mg/L
m. BC WQG for Total Lead is site-specific, calculated by e(1.273 x [ln(hardness)] - 1.460) (when water hardness (as $CaCO_3$) > 8 mg/L)
n. BC WQG for Total Managnese is site-specific, should be less than or equal to 0.01102 x (hardness) + 0.54
o. CCME FAL Total Nickel guideline:
   25 µg/L when [CaCO3] is 0 - 60 mg/L
   110 µg/L when [CaCO3] is 120 - 180 mg/L
   150 µg/L when [CaCO3] is > 180 mg/L
p. BC WQG for Total Silver:
   0.1 µg/L when [CaCO3] is ≤ 100 mg/L
   3 µg/L when [CaCO3] is > 100 mg/L
q. BCWQG for Total Zinc is site-specific, maximum value calculated by 33 + 0.75 x (hardness - 90)
r. BC WQG for Dissolved Aluminum guideline 100 µg/L for pH ≥ 6.5
s. GCDWQ MAC - Health Canada's Guidelines for Canadian Drinking Water Quality
   Maximum Acceptable Concentration for Radionuclides; based on adults
   consuming 2 L of water per day or 730 L of water per year (May 2008)
t. Bq/L = Becquerel per litre; the becquerel (Bq) measures the quantity of radioactivity
   present without consideration for what kind of radiation is emitted
u. **Bolded** result implies a guideline exceedance
v. RPD = relative percent difference, when results are greater than 5 times the detection limi
x. Replicate result where precision threshold (RPD > 25%) was exceeded