Environment Canada
Proficiency Testing Program

Study 0098
September 2011

Trace Elements in Water

Environment Canada Proficiency Testing Program

Glossary of Terms and Definitions

A. Statistics listed in Data Summary (Appendix A)

1.	Assigned Value	The median value of test results for a parameter and sample
2.	R-Std Dev	Robust Standard Deviation [1]
3.	Acceptable Limits	See 'Limits & Flags' and Table 1
4.	Warning Limits	See 'Limits & Flags' and Table 1
5.	Action Limits	See 'Limits & Flags' and Table 1
6.	N	The number of usable test results for calculating the assigned value

B. Calculation of Performance Statistics (Appendix A)

Laboratory Bias: Laboratory Bias [2] D = x-X, where D is the deviation, x is the test result and X is the assigned value. This deviation is normalized with the robust standard deviation (R-Std Dev) and evaluated by the z-score [3] (see enclosed Z-Score Summary).

Limits & Flags: Acceptable Limits/No Flags: When a test result is within 2 R-Std Dev of the assigned value, flags are not assigned (see Table 1 below).

Warning Limits/Warning Flags: When a test result is between 2 and 3 R-Std Dev, the flags 'WH' or 'WL' indicate a WARNING flag, for a high or low result respectively (see Table 1 below).

Action Limits/Action Flags: When a test result deviates by more than 3 R-Std Dev from the assigned value, the flags 'AH' or 'AL' indicate an ACTION flag, high or low respectively (see Table 1 below).

Table 1 Evaluating test results, determining limits and assigning flags [2]

Criteria	Limits	Flags
Assigned value ± 2 $\hat{\sigma}^*$	Acceptable Limits	No Flag
2 $\hat{\sigma}$ - 3 $\hat{\sigma}$ from assigned value	Warning Limits	Warning Flag (W)
> 3 $\hat{\sigma}$ from assigned value	Action Limits	Action Flag (A)

$^*\hat{\sigma}$ is the R-Std Dev

Systemic Bias: Systemic bias is indicated when a laboratory's test results (ranked by the Youden non-parametric analysis [4] for an individual parameter) are consistently higher or lower than the assigned value. Ranks are assigned to each test result for each sample, from 1 for the lowest, to N for the highest, where N is the number of usable test results. These ranks are totalled for each laboratory (Total Rank), and divided by the number of samples ranked (No. Samples Ranked). **Total Rank** and **Average Rank** for each laboratory are displayed on page 2 of the Data Summary. The **Overall Average Rank** for each parameter is shown at the bottom of the same page. Systemic bias is identified when **Average Rank** falls outside of the 95% confidence interval for the **Overall Average Rank**. Systemic bias may be indicated by the Youden rankings even when the test results have not been flagged (W or A) for deviation from the assigned value.

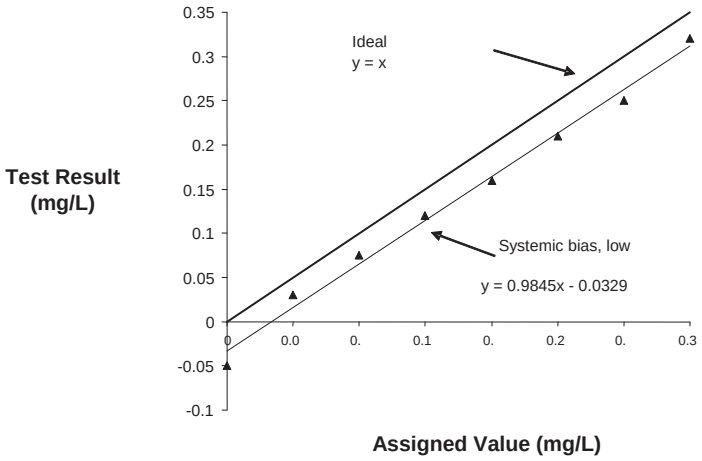
No. Samples Ranked: This is the number of test results used to calculate systemic bias. A laboratory must report five or more test results (not including '<') and there must be ten or more participating laboratories.

The two measured components of 'systemic' bias are 1) Bias Blank and 2) Bias % Slope. These components are illustrated in Figure 1: Parameter Performance. All 'systemic' biases are correctable with the investigation of the following two analytical components.

1) Bias Blank: The first component is the y-intercept of the linear regression plot (-0.0329 in Figure 1). These bias blanks are stated in the Data Summary and Evaluations for each parameter.

2) Bias % Slope: The second measured component is the % deviation of the laboratory test results versus the assigned values for a parameter. This is calculated as [(**m-1**) x 100], where **1** is the slope of the "ideal" line (assigned values) and **m** is the slope of the linear regression plot (laboratory test results). The Bias % Slope in Figure 1 below is minus 1.55 per cent (-1.55%). For most parameters, a Bias % Slope greater than the absolute value of 5 is considered unacceptable and requires action.

Figure 1: Parameter Performance



Bias Statement: Systemic bias is noted with the 'BIASED HIGH' or 'BIASED LOW' notations. An asterisk with the statement indicates that the bias is considered minor, yet worthy of evaluation. The minor biases are not recorded in the database and are not noted in the laboratory proficiency appraisal (see enclosed Laboratory Proficiency Appraisal). In Table 2 of the Final Report (Laboratory Performance Scores), systemic biases are calculated as the equivalent of *five* flagged values.

Method Coding: Method codes are an important part of quality assurance. These definitions are provided on the Data Reporting Forms to assist with uniform descriptions.

C. Uncertainty of Assigned Values

If desired, the standard uncertainty (u_X)of the assigned value may be estimated from the statistics presented in the data summary (Appendix A)

$$u_X = 1.25 \times \text{R-Std Dev} / \sqrt{N} \qquad [5]$$

This uncertainty is not used in the performance evaluations, but may be of interest to some participants. Reporting details of the measurement uncertainty of any assigned value is a requirement of *ISO/IEC 17043:2010, Conformity assessment – General requirements for proficiency testing*

D. Enclosures with the Final Report

1. Laboratory Proficiency Appraisal (see Table 2 in the Final Report for definitions)
2. Z-Score Summary [3]

References:
[1] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, Annex C, Robust Analysis, Section C.1: Algorithm A, p64.
[2] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, Calculation of Performance Statistics, Section 7.1.1 and 7.1.2, p18-19.
[3] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, *z*-scores, Section 7.4.1 and 7.4.2, p25-26.
[4] Ranking Laboratories by Round-Robin Tests, W.J. Youden, Precision Measurement and Calibration, H.H. Ku, Editor, NBS Special Publication 300-Volume 1, U.S. Government Printing Office, Washington, D.C., 1969.
[5] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, Standard uncertainty u_X of the assigned value , Section 5.6.2, p 9-10.

Section 3 – Trace Elements in Water

Program Name: FPTM

Study Code: 0098 Range of Samples: 1 to 10

Table 1 Participating Laboratories in EC PT for Trace Elements in Water

ALS Environmental, Winnipeg, MB
Capital District Health Authority, QEII Lab, Halifax, NS
CSIRO Land and Water, Lucas Heights, NSW, Australia
Environment Canada, ALET, Moncton, NB
Environment Canada, AQRD, Ottawa, ON
Environment Canada, NLET, Burlington, ON
Environment Canada, PYLET, Vancouver, BC
Environment New Brunswick, Fredericton, NB
Environnement Canada, QLET, Montreal, QC
Environnement Quebec, CEAEQ, Laval, QC
Exova, Edmonton, AB
Kinectrics Inc., Toronto, ON
Maxxam Analytics Incorporated, Burnaby, BC
Minera Alumbrera, Tucuman, Argentina
National Instru. Bolcertfici, Ninbol S.R.L., La Paz, Bolivia
Natural Resources Canada - GLFC, Sault Ste. Marie, ON
Santé Canada - DSPA, Longueuil, QC
Saskatchewan Research Council, Saskatoon, SK
Servicio Geologico Minero Argentino, Buenos Aires, Argentina
Silliker JR Laboratories ULC, Burnaby, BC
Sisecam Soda Sanayii A.S., Mersin, Turkey
South Florida Water Management Dist., West Palm Beach, FL, US
Swiss Federal Research Institute, Birmensdorf, Switzerland
TAIGA Environmental Laboratory, Yellowknife, NT
U.S. Geological Survey, NWQL, Denver, CO, US
Universidade da Coruña, A Coruña, Spain
Ville de Montreal, Montreal, QC

29 Laboratories (2 laboratory names unpublished).

2011-09-08

Program Name: FPTM **Number of Labs:** 34

Study Code: 0098 **Range of Samples:** 1 to 10

Table 2 Laboratory Performance Scores - EC PT for Trace Elements in Water

	Systemic Bias			Flagged Results			
Lab Code	No. of Parameters Analyzed	No. of Parameters Biased	Parameters Biased (50%)	No. of Results Reported	No. of Flags Assigned	Results Flagged (50%)	% Score (Sum of Parameters Biased & Results Flagged)
F003	28	0	0.00	280	0	0.00	0.00
F207	5	0	0.00	50	0	0.00	0.00
F193	15	0	0.00	150	1	0.33	0.33
F154	28	0	0.00	280	3	0.54	0.54
F014	17	0	0.00	170	3	0.88	0.88
F153	22	0	0.00	220	5	1.14	1.14
F007	18	0	0.00	180	5	1.39	1.39
F223	10	0	0.00	93	3	1.61	1.61
F021b	13	0	0.00	130	5	1.92	1.92
F249a	5	0	0.00	50	2	2.00	2.00
F247	2	0	0.00	20	1	2.50	2.50
F020	26	1	1.92	260	3	0.58	2.50
F248	21	1	2.38	210	4	0.95	3.33
F249	26	2	3.85	260	0	0.00	3.85
F022	29	2	3.45	290	4	0.69	4.14
F153b	26	1	1.92	260	13	2.50	4.42
F026	15	1	3.33	150	5	1.67	5.00
F060	27	2	3.70	270	7	1.30	5.00
F060b	1	0	0.00	10	1	5.00	5.00
F024	28	1	1.79	280	19	3.39	5.18
F021	18	2	5.56	180	0	0.00	5.56
F069b	17	1	2.94	170	12	3.53	6.47
F011	27	4	7.41	270	14	2.59	10.00
F068	23	4	8.70	230	11	2.39	11.09
F239	11	0	0.00	101	30	14.85	14.85
F158	24	6	12.50	240	14	2.92	15.42
F186	26	4	7.69	260	54	10.38	18.08
F015	26	7	13.46	260	38	7.31	20.77
F183	25	8	16.00	250	47	9.40	25.40
F301	11	2	9.09	110	48	21.82	30.91
F069	22	10	22.73	220	41	9.32	32.05
F179	3	1	16.67	30	11	18.33	35.00
F308	28	7	12.50	280	146	26.07	38.57
F009	24	14	29.17	240	103	21.46	50.62

Laboratory Performance Rating

Rating	% Score*
Very Good	0 - 5
Good	> 5 - 12.5
Fair	> 12.5 - 30
Poor	> 30

*Sum of Parameters Biased & Results Flagged

Program Name: FPTM

Study Code: 0098

Table 3 Five-Year Historical Laboratory Performance - EC PT for Trace Elements in Water

LAB CODE	% Score Per Study (Sum of Parameters Biased & Results Flagged)										MEDIAN	RATING
	0089 Winter 2006	0090 Summer 2007	0091 Winter 2007	0092 Summer 2008	0093 Winter 2008	0094 Summer 2009	0095 Winter 2009	0096 Summer 2010	0097 Winter 2010	0098 Summer 2011		
F003	0.4	1.4	0.7	0.4	0.4	0.2	4.6	1.8	0.4	0.0	0.4	Very Good
F007									0.0	1.4	0.7	Very Good
F009	17.5	20.5	30.4	22.2	13.5	16.9	9.8	28.1	13.3	50.6	19.0	Fair
F011	28.3	40.7	17.2	29.4	17.4	1.1	8.7	5.0	7.8	10.0	13.6	Fair
F014	1.6	6.3		2.2		3.4			4.1	0.9	2.8	Very Good
F015	15.0	9.4	13.5	8.1	2.3	4.4	31.4	18.1	16.0	20.8	14.2	Fair
F020	6.2	5.6	36.5	6.4	8.7	4.2	7.5	3.9	6.2	2.5	6.2	Good
F021	9.0	11.3	11.8	36.7	2.2	9.8	9.7	0.6	10.8	5.6	9.8	Good
F021b			4.0	21.5	3.9	3.1	8.6	11.4	10.0	1.9	6.3	Good
F022	3.5	0.9	7.8	9.3	2.4	1.2	0.7	1.2	8.8	4.1	2.9	Very Good
F024	28.4	11.1	8.9	5.2	2.5	0.5	2.3	9.6	2.1	5.2	5.2	Good
F026	1.7	1.0	0.7	5.0	0.7	1.3	5.7	1.3	4.3	5.0	1.5	Very Good
F060	12.4	12.2	13.9	8.7	11.9	1.9	15.9	8.0	24.4	5.0	12.0	Good
F060b								15.0	25.0	5.0	15.0	Fair
F068	6.4	4.1	0.7	20.2	1.1	10.9	2.2	0.7	0.2	11.1	3.1	Very Good
F069		13.5		11.3		10.4		20.9		32.1	13.5	Fair
F069b						8.4		11.2		6.5	8.4	Good
F153										1.1	1.1	Very Good
F153b										4.4	4.4	Very Good
F154						23.0	20.7	9.8	9.3	0.5	9.8	Good
F158	13.5	20.2	18.1	16.5	9.2	17.7	10.8	23.5	9.4	15.4	15.9	Fair
F179	0.0									35.0	17.5	Fair
F183	12.8			8.5		15.7	19.6	20.8	11.5	25.4	15.7	Fair
F186						40.0				18.1	29.0	Fair
F193	0.8	1.8	4.0	10.5	0.3	0.8	1.4	0.0	0.6	0.3	0.8	Very Good
F207	6.3	10.7		8.2		1.7	7.2	2.2	11.1	0.0	6.8	Good
F223		1.8		5.6		1.3		4.3		1.6	1.8	Very Good

Program Name: FPTM

Study Code: 0098

Table 3 Five-Year Historical Laboratory Performance - EC PT for Trace Elements in Water

LAB CODE	% Score Per Study (Sum of Parameters Biased & Results Flagged)										MEDIAN	RATING
	0089 Winter 2006	0090 Summer 2007	0091 Winter 2007	0092 Summer 2008	0093 Winter 2008	0094 Summer 2009	0095 Winter 2009	0096 Summer 2010	0097 Winter 2010	0098 Summer 2011		
F239										14.9	14.9	Fair
F247					0.0			2.5		2.5	2.5	Very Good
F248			19.5	10.2	21.0	14.5	21.0	2.3	1.2	3.3	12.4	Good
F249									14.2	3.9	9.0	Good
F249a										2.0	2.0	Very Good
F301										30.9	30.9	Poor
F308										38.6	38.6	Poor
Interlab Median	6.4	9.4	11.8	9.0	2.5	4.2	8.7	5.0	9.0	5.0		

Laboratory Performance Rating

Rating	% Score
Very Good	0 - 5
Good	> 5 - 12.5
Fair	> 12.5 - 30
Poor	> 30

Program Name: FPTM

Study Code: 0098

2011-09-08

Table 4 Sample Design - EC PT for Trace Elements in Water

Sample Number	Sample Name
1	TM-9.2
2	TMDA-70.2
3	TM-DWS.3
4	TM-25.5
5	TMDA-51.4
6	TMDA-53.3
7	TMDA-62.2
8	TM-28.4
9	TMRain-04
10	TM-15.2

Program Name: FPTM **Range of Samples:** 1 to 10 2011-09-08

Study Code: 0098

Table 5 Summary of Interlaboratory Median Values - EC PT for Trace Elements in Water

Parameters	TM-9.2 Sample 1	TMDA-70.2 Sample 2	TM-DWS.3 Sample 3	TM-25.5 Sample 4	TMDA-51.4 Sample 5	TMDA-53.3 Sample 6	TMDA-62.2 Sample 7	TM-28.4 Sample 8	TMRain-04 Sample 9	TM-15.2 Sample 10
Aluminum (ug/L)	36.0	428	57.0	26.0	96.4	364	120	55.0	2.25	34.2
Antimony (ug/L)	4.31	22.2	3.35	23.2	15.0	16.8	61.0	3.40	0.350	16.0
Arsenic (ug/L)	20.00	42.0	4.70	28.0	16.2	33.5	57.0	6.26	1.10	15.5
Barium (ug/L)	57.0	316	146	27.4	73.6	282	114	16.2	0.894	13.30
Beryllium (ug/L)	5.96	16.2	14.0	25.9	10.00	13.0	56.0	3.39	0.372	15.0
Bismuth (ug/L)	1.660	13.00	13.70	20.0	12.55	13.00	54.4	2.37	0.692	12.90
Boron (ug/L)	29.7	37.0	79.0	31.0	48.2	10.05	118	19.0	1.080	22.8
Cadmium (ug/L)	3.84	140.00	4.82	24.0	25.8	118	92.5	1.92	0.5300	13.00
Chromium (ug/L)	4.00	398	44.4	24.0	67.3	344	94.8	5.00	0.890	16.4
Cobalt (ug/L)	2.00	287	51.7	27.8	71.5	252	95.0	3.60	0.2500	15.0
Copper (ug/L)	33.6	406	163	27.5	81.8	312	94.5	6.66	7.15	17.4
Gallium (ug/L)	2.90	0.0839	0.0537	0.120	9.48	0.0585	32.8	12.3	1.43007	0.1000
Iron (ug/L)	113.5	372.0	222	30.3	125	325	117.0	18.0	26.0	26.3
Lead (ug/L)	8.53	450	7.04	27.4	71.0	350	98.0	4.41	0.362	11.70
Lithium (ug/L)	4.21	22.1	20.1	25.2	18.0	10.9	58.2	3.48	0.502	15.0
Manganese (ug/L)	10.00	312	48.0	25.7	85.6	361	94.6	7.00	6.90	18.5
Molybdenum (ug/L)	12.6	268	67.0	29.0	58.6	257	102.0	3.98	0.220	14.3
Nickel (ug/L)	19.2	330	83.8	15.6	66.5	313	98.0	10.00	0.930	17.9
Rubidium (ug/L)	4.42	0.685	0.450	0.476	15.6	0.406	16.10	2.39	0.0300	0.740
Selenium (ug/L)	15.0	27.6	9.10	29.5	13.8	22.6	53.3	4.45	0.845	15.1
Silver (ug/L)	3.80	8.40	8.94	21.8	12.4	14.2	12.1	3.89	0.00467	11.2
Strontium (ug/L)	110	444	238	72.0	117	365	149	73.0	1.88	111
Thallium (ug/L)	2.00	21.3	8.60	29.8	20.7	15.60	52.1	4.00	0.380	18.20
Tin (ug/L)	2.86	0.0815	0.0718	23.6	16.6	18.4	109.5	3.90	0.730	15.0
Titanium (ug/L)	8.00	0.400	0.217	24.1	14.0	0.300	57.8	8.10	0.516	14.80
Tungsten (ug/L)	1.94	0.108	0.049	0.087	12.30	0.092	6.332	3.60	12.200	6.50
Uranium (ug/L)	1.90	58.4	14.50	26.8	29.3	32.0	56.0	5.90	0.293	15.35
Vanadium (ug/L)	3.10	314	45.0	26.0	47.4	314	114	3.14	0.700	13.00
Zinc (ug/L)	52.2	500	394	46.8	140	387	120	29.7	7.80	35.2

PARAMETER: 13095 Aluminum ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	36.3	424.	57.4	25.6	97.8	357.	120.	57.3	2.25	35.9
F007	36.	431.	53.4	25.1	97.5	364.	120.	55.1	2.2	33.6
F009	44.6 AH	473. WH	67.8 WH	36.6 AH	112. AH	411. AH	137. WH	68.9 WH	7.70 AH	41.0 WH
F011	38.6	428.	56.7	26.4	96.4	368.	119.	60.6	2.7	34.2
F014	35.	435.	56.	25.	93.	366.	114.	53.	2.	32.
F015	37.6	429.	62.6	28.4	105.	344.	127.	60.7	2.5	37.4
F020	38.1	444.	63.	27.8	98.8	373.	127.	55.	5. AH	36.1
F021b	36.	425.	56.	26.	94.	361.	114.	53.	<4.	33.
F022	34.6	407.	51.7	22.8	88.7	342.	109.	49.8	1.97	35.1
F024	35.1	420.	55.3	24.9	92.5	358.	116.	52.6	2.3	31.8
F026	37.4	427.	58.1	26.5	96.5	365.	120.	54.4	<5.	35.0
F060	39.	422.	59.	26.	99.	358.	120.	55.	2.	34.
F068	35.	447.	52.	23.	87.	377.	108.	49.	2.	30.
F069	36.	391. WL	55.4	24.7	93.4	357.	125.	54.3	2.03	33.7
F069b	<50.0	437.	54.8	<50.0	97.4	373.	121.	53.5	<50.0	<50.0
F153	35.	442.	57.	24.	96.	371.	119.	53.	<10.	32.
F153b	39.	420.	62.	28.	102.	360.	123.	60.	2.7	36.
F154	34.3	431.	54.5	26.3	92.9	375.	142. WH	61.3	2.5	32.1
F158	36.	432.	59.	26.	96.	363.	124.	56.	3.	35.
F179	50. AH	424.	68. WH	30.	100.	364.	127.	62.	<15.	40. WH
F183	38.8	486. AH	61.2	27.0	104.	424. AH	122.	64.6	2.03	34.4
F186	36.	445.	61.	28.	100.	374.	116.	55.	4. AH	36.
F193	36.8	424.	57.7	25.5	96.9	367.	117.	53.9	2.1	34.
F248	35.4	412.	55.6	24.4	91.1	346.	113.	53.4	<5.0	33.1
F249	36.1	428.	56.1	24.9	96.1	370.	119.	54.2	2.28	33.1
F301	44.2 AH	486. AH	164. AH	29.0	95.1	346.	172. AH	62.8	3.12	39.0 WH
F308	185. AH	388. WL	258. AH	94.7 AH	276. AH	1240. AH	248. AH	113. AH	<68.7	<68.7
ASSIGNED VALUE *	36.0	428	57.0	26.0	96.4	364	120	55.0	2.25	34.2
R-STD DEV *	2.30	15.6	4.79	2.22	4.92	13.0	7.6	5.06	0.556	2.32
ACCEPTABLE LIMITS(+-) *	4.60	31.2	9.58	4.44	9.84	26.0	15.2	10.12	1.112	4.64
WARNING LIMITS(+-) *	4.60- 6.90	31.2- 46.8	9.58- 14.37	4.44- 6.66	9.84- 14.76	26.0- 39.0	15.2- 22.8	10.12- 15.18	1.112- 1.668	4.64- 6.96
ACTION LIMITS(<>) *	6.90	46.8	14.37	6.66	14.76	39.0	22.8	15.18	1.668	6.96
N *	26	27	27	26	27	27	27	27	20	25

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	130.0	13.0			10			ICP-MS
F007	114.5	11.4			10			ICP-MS
F009	244.0	24.4	AHWHWHAHAHAHWHWHAHWH	BIASED HIGH	10	9.9	5.7801	ICP-MS
F011	148.0	14.8			10			
F014	77.5	7.7			10			ICP-MS
F015	180.5	18.0			10			ICP-AES
F020	197.5	19.7	AH		10			ICP-MS
F021b	77.0	8.5			9			ICP-AES
F022	32.0	3.2		BIASED LOW	10	-5.3	-1.3008	ICP-MS
F024	58.0	5.8		BIASED LOW*	10	-1.7	-1.1823	ICP-MS
F026	130.0	14.4			9			ICP-AES
F060	128.5	12.8			10			ICP-MS
F068	63.0	6.3		BIASED LOW	10	5.3	-7.4730	ICP-MS
F069	83.0	8.3	WL		10			ICP-MS
F069b	85.5	14.2			6			ICP-AES
F153	89.0	9.8			9			ICP-AES
F153b	171.5	17.1			10			ICP-MS
F154	129.0	12.9	WH		10			ICP-MS
F158	147.5	14.7			10			ICP-MS
F179	186.0	20.6	AH WH WH		9			
F183	196.0	19.6	AH AH		10			ICP-MS
F186	174.0	17.4	AH		10			ICP-MS
F193	115.5	11.5			10			ICP-MS
F248	47.0	5.2		BIASED LOW*	9	-4.4	-0.1012	ICP-MS
F249	111.5	11.1			10			ICP-AES
F301	201.0	20.1	AHAHAH AH WH		10			GFAAS
F308	188.0	23.5	AHWLAHAHAHAHAHAH	BIASED HIGH	8	67.7	102.1140	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.5

PARAMETER: 51095 Antimony ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	4.31	20.8	3.17	21.4	14.5	16.2	60.5	3.39	0.354	15.8
F007	4.38	22.0	3.39	25.1	15.1	16.5	59.5	3.45	0.36	14.6
F009	4.4	20.5	3.4	21.6	14.6	16.0	62.8	3.5	<1.	15.7
F011	4.2	22.4	3.3	23.0	14.6	16.2	59.8	3.3	0.4	16.0
F014	4.3	20.	3.7	22.	15.	17.	61.	3.4	<1.0	16.
F015	4.84 AH	22.6	3.99 WH	27.1	17.2 WH	18.1	67.6	3.85 WH	0.391	18.
F020	4.39	22.3	3.27	22.5	15.2	16.7	62.5	3.38	0.34	16.6
F021	4.31	22.8	3.37	24.1	15.5	17.3	62.7	3.50	0.36	16.9
F022	4.25	22.1	3.45	22.5	14.9	16.6	60.6	3.42	0.349	15.9
F024	4.6	19.1 WL	3.8 WH	17.8 WL	16.8 WH	18.2	65.7	4.2 AH	0.5 AH	17.4
F060	4.4	20.3	3.4	20.4	15.2	16.8	61.6	3.4	0.3	16.5
F068	4.5	23.	3.4	24.	15.	17.	63.	3.5	0.35	16.
F069	4.72 WH	22.4	3.63	26.8	16.3	17.9	67.1	3.67	0.381	17.8
F153	<10.	22.	<10.	19.	14.	18.	59.	<10.	<10.	14.
F153b	4.4	22.	3.3	24.	14.	16.	59.	3.3	0.35	16.
F154	4.32	22.5	3.33	23.4	14.6	16.5	58.4	3.31	0.35	15.6
F158	4.	23.	3.	24.	15.	17.	62.	4. AH	<2.	17.
F186	4.2	23.7	3.1	25.2	15.6	17.4	67.5	3.4	<0.1 AL	17.6
F193	4.3	22.8	3.3	24.5	15.	16.8	60.6	3.4	<0.5	16.
F248	4.20	21.8	3.20	23.1	13.9	15.6	58.5	3.30	<0.50	15.5
F249	4.12	20.9	3.15	22.8	14.3	15.8	58.2	3.28	0.34	15.1
F308	<7.6	24.2	<7.6	27.8	17.0 WH	18.9 WH	73.2 AH	<7.6	<7.6	<7.6 AL
ASSIGNED VALUE *	4.31	22.2	3.35	23.2	15.0	16.8	61.0	3.40	0.350	16.0
R-STD DEV *	0.168	1.25	0.220	2.36	0.87	0.91	3.51	0.151	0.0275	1.07
ACCEPTABLE LIMITS(+-) *	0.336	2.50	0.440	4.72	1.74	1.82	7.02	0.302	0.0550	2.14
WARNING LIMITS(+-) *	.336- .504	2.50- 3.75	.440- .660	4.72- 7.08	1.74- 2.61	1.82- 2.73	7.02- 10.53	.302- .453	.0550- .0825	2.14- 3.21
ACTION LIMITS(<>) *	0.504	3.75	0.660	7.08	2.61	2.73	10.53	0.453	0.0825	3.21
N *	20	22	20	22	22	22	22	20	14	21

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	63.0	6.3			10			ICP-MS
F007	103.0	10.3			10			ICP-MS
F009	85.5	9.5			9			ICP-MS
F011	82.0	8.2			10			
F014	90.5	10.0			9			ICP-MS
F015	191.0	19.1	AH WH WH WH	BIASED HIGH	10	10.0	0.1113	ICP-MS
F020	101.5	10.1			10			ICP-MS
F021	142.5	14.2			10			ICP-MS Agilent
F022	92.0	9.2			10			ICP-MS
F024	150.0	15.0	WLWHWLWH AHAH		10			ICP-MS
F060	98.5	9.8			10			ICP-MS
F068	139.0	13.9			10			ICP-MS
F069	173.5	17.3	WH	BIASED HIGH	10	9.4	-0.0970	ICP-MS
F153	38.0	6.3			6			ICP-AES
F153b	76.5	7.6			10			ICP-MS
F154	80.5	8.0			10			ICP-MS
F158	110.0	12.2	AH		9			ICP-MS
F186	129.5	14.3	AL		9			ICP-MS
F193	103.0	11.4			9			ICP-MS
F248	39.0	4.3		BIASED LOW*	9	-4.3	0.0685	ICP-MS
F249	33.5	3.3		BIASED LOW	10	-5.0	0.0212	ICP-MS
F308	109.0	21.8	WHWHAH AL	BIASED HIGH	5	22.0	-1.5869	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 10.8

PARAMETER: 33095 Arsenic ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
LAB NO	TM-9.2 LAB RESULT	TMDA-70.2 LAB RESULT	TM-DWS.3 LAB RESULT	TM-25.5 LAB RESULT	TMDA-51.4 LAB RESULT	TMDA-53.3 LAB RESULT	TMDA-62.2 LAB RESULT	TM-28.4 LAB RESULT	TMRain-04 LAB RESULT	TM-15.2 LAB RESULT
F003	20.0	42.8	4.72	28.4	16.2	34.2	58.1	6.37	1.13	15.5
F007	19.5	40.2	4.61	27.7	16.8	33.0	56.8	6.29	1.15	15.6
F009	21.5	44.4	6.3 AH	30.8	18.0 WH	35.5	61.9 WH	7.8 AH	2.4 AH	17.5 WH
F011	19.2	41.5	4.7	27.0	16.0	33.4	55.0	6.0	1.1	15.4
F014	20.	42.	4.7	28.	16.	33.	57.	6.2	1.1	15.
F015	19.	40.	5.1	27.6	16.2	32.1	54.8	6.1	1.1	14.8
F020	19.2	39.5	4.48	27.2	15.7	33.3	55.2	5.94	1.11	15.1
F021	19.9	42.0	4.98	29.0	16.7	35.5	57.8	6.30	1.16	16.0
F022	20.0	43.2	4.68	27.9	16.3	34.2	57.2	6.22	1.08	15.3
F024	19.3	41.8	4.7	27.4	16.2	33.5	56.1	6.3	1.2	15.1
F026	19.3	40.1	<15.	25.7	18.0 WH	32.5	55.5	<15.	<15.	16.0
F060	20.7	43.0	5.2	28.5	17.1	34.7	58.2	6.4	1.1	15.5
F068	22.	45.	5.1	30.	17.	36.	62. WH	6.8	1.3 WH	16.
F069	21.1	37.2 WL	5.04	29.8	17.3	36.5	61.	6.73	1.22	16.4
F153	22.	41.	<10.	29.	17.	33.	58.	<10.	<10.	15.
F153b	20.	42.	4.9	28.	16.	34.	56.	6.3	1.2	16.
F154	19.3	42.2	4.66	27.	16.1	34.	54.9	5.97	1.07	14.8
F158	20.	44.	5.	29.	17.	35.	59.	6.	<2.	16.
F183	18.8	39.2	4.71	27.4	15.6	32.9	49.8 AL	5.99	1.10	15.1
F186	20.9	46.1	4.7	31.7 WH	17.2	32.	58.7	6.1	0.8 AL	16.1
F193	20.	43.	4.9	28.6	16.6	34.4	57.	6.2	1.1	15.6
F223	20.3	42.9	4.65	27.4	16.1	33.3	56.5	6.7	<4.	16.4
F248	19.4	41.2	4.60	27.2	15.8	33.5	55.9	6.40	1.10	15.3
F249	19.4	40.2	4.54	27.5	16.1	31.9	53.9	6.08	1.09	14.9
F249a	18.7	41.2	5.90 AH	27.0	15.0	33.9	55.5	6.49	<2.	14.7
F301	1.82 AL	70.0 AH	8.34 AH	53.7 AH	15.2	80.7 AH	129. AH	11.6 AH	2.50 AH	39.4 AH
F308	21.5	43.2	2.53 AL	30.4	17.2	41.9 AH	57.7	7.60 AH	<0.2 AL	13.4 AL
ASSIGNED VALUE *	20.00	42.0	4.70	28.0	16.2	33.5	57.0	6.26	1.10	15.5
R-STD DEV *	1.044	2.04	0.303	1.43	0.75	1.50	2.28	0.344	0.073	0.69
ACCEPTABLE LIMITS(+-) *	2.088	4.08	0.606	2.86	1.50	3.00	4.56	0.688	0.146	1.38
WARNING LIMITS(+-) *	2.088- 3.132	4.08- 6.12	.606- .909	2.86- 4.29	1.50- 2.25	3.00- 4.50	4.56- 6.84	.688- 1.032	.146- .219	1.38- 2.07
ACTION LIMITS(<>) *	3.132	6.12	0.909	4.29	2.25	4.50	6.84	1.032	0.219	2.07
N *	27	27	25	27	27	27	27	25	21	27

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	157.5	15.7			10			ICP-MS
F007	116.0	11.6			10			ICP-MS
F009	241.5	24.1	AH WH WHAHAHWH	BIASED HIGH*	10	4.9	1.0352	ICP-MS
F011	78.5	7.8			10			
F014	108.0	10.8			10			ICP-MS
F015	77.5	7.7			10			ICP-MS
F020	57.5	5.7		BIASED LOW*	10	-3.7	0.0236	ICP-MS
F021	170.5	17.0			10			ICP-MS Agilent
F022	133.0	13.3			10			ICP-MS
F024	114.5	11.4			10			ICP-MS
F026	72.0	10.2	WH		7			ICP-AES
F060	182.5	18.2			10			ICP-MS
F068	226.0	22.6	WH WH	BIASED HIGH	10	8.2	-0.1845	ICP-MS
F069	202.5	20.2	WL		10			ICP-MS
F153	107.0	15.2			7			ICP-AES
F153b	143.5	14.3			10			ICP-MS
F154	71.0	7.1			10			ICP-MS
F158	166.0	18.4			9			ICP-MS
F183	55.0	5.5	AL	BIASED LOW	10	-10.6	0.9715	ICP-MS
F186	163.5	16.3	WH AL		10			ICP-MS
F193	153.0	15.3			10			ICP-MS
F223	128.0	14.2			9			AAS hydride
F248	93.0	9.3			10			ICP-MS
F249	58.0	5.8		BIASED LOW	10	-5.4	0.3047	ICP-MS
F249a	81.0	9.0	AH		9			ICP-AES
F301	209.0	20.9	ALAHAHAH AHAHAHAHAH	BIASED HIGH	10	119.3	-8.0479	GFAAS
F308	161.5	17.9	AL AH AHALAL		9			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.5

PARAMETER: 56095 Barium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1= TM-9.2	2= TMDA-70.2	3= TM-DWS.3	4= TM-25.5	5= TMDA-51.4	6= TMDA-53.3	7= TMDA-62.2	8= TM-28.4	9= TMRain-04	10= TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	56.6	321.	147.	27.4	73.3	283.	113.	16.3	0.888	13.3
F007	58.2	308.	145.	28.2	77.9	279.	118.	16.4	0.84	13.6
F009	57.6	331.	148.	27.7	74.7	297.	119.	16.7	1.4 AH	13.7
F011	55.4	317.	141.	26.6	70.2	276.	110.	16.3	1.2 WH	12.7
F014	56.	315.	144.	27.	72.	280.	112.	16.	<10.	13.
F015	57.	296. WL	168. AH	28.5	80.3 WH	268.	113.	16.4	0.91	13.4
F020	55.3	308.	139.	28.	70.8	276.	112.	15.9	0.85	13.3
F021b	57.	320.	146.	27.	73.	285.	114.	16.	<1.	13.
F022	56.5	314.	143.	26.7	72.9	280.	115.	16.0	0.802	13.3
F024	57.2	326.	148.	27.5	75.2	289.	116.	16.2	0.9	13.5
F060	58.	320.	147.	28.	76.	286.	118.	17.	<1.	14.
F068	56.	333.	140.	26.	71.	293.	110.	15. WL	0.82	12. WL
F069	59.8 WH	306.	151.	28.5	77.3	293.	122.	16.9	0.882	13.9
F069b	55.4	316.	144.	27.3	71.2	280.	110.	16.1	1.04	13.1
F153	57.	314.	147.	28.	75.	283.	114.	17.	<3.	14.
F153b	57.	315.	149.	28.	74.	285.	115.	17.	0.9	14.
F154	58.	320.	149.	27.6	74.2	279.	115.	16.2	0.93	13.4
F158	56.	323.	143.	26.	71.	280.	112.	16.	<2.	13.
F183	57.5	306.	140.	26.8	73.5	273.	1010. AH	15.1 WL	<1.0	12.6
F186	59.2	324.	152.	30. WH	78.	299. WH	119.	16.8	1.4 AH	15.3 AH
F193	57.4	317.	151.	27.4	74.7	286.	115.	16.1	0.9	13.4
F239	54. WL	307.	142.	25. WL	68.	277.	109.	16.	<2.0	13.
F248	57.5	323.	150.	27.3	73.8	283.	117.	16.6	<5.0	13.6
F249	57.1	316.	143.	26.8	72.9	280.	110.	16.2	0.76	13.0
F308	63.6 AH	399. AH	190. AH	28.9	92.8 AH	374. AH	131. AH	19.0 AH	<2.78	7.17 AL
ASSIGNED VALUE *	57.0	316	146	27.4	73.6	282	114	16.2	0.894	13.30
R-STD DEV *	1.29	9.0	4.9	0.95	3.01	7.8	4.3	0.50	0.1271	0.545
ACCEPTABLE LIMITS(+-) *	2.58	18.0	9.8	1.90	6.02	15.6	8.6	1.00	0.2542	1.090
WARNING LIMITS(+-) *	2.58- 3.87	18.0- 27.0	9.8- 14.7	1.90- 2.85	6.02- 9.03	15.6- 23.4	8.6- 12.9	1.00- 1.50	.2542- .3813	1.090- 1.635
ACTION LIMITS(<>) *	3.87	27.0	14.7	2.85	9.03	23.4	12.9	1.50	0.3813	1.635
N *	25	25	25	25	25	25	25	25	16	25

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	121.5	12.1			10			ICP-MS
F007	146.5	14.6			10			ICP-MS
F009	190.0	19.0	AH		10			ICP-MS
F011	66.5	6.6	WH		10			
F014	70.5	7.8			9			ICP-MS
F015	136.0	13.6	WLAH WH		10			ICP-MS
F020	60.5	6.0		BIASED LOW*	10	-2.9	-0.0755	ICP-MS
F021b	99.0	11.0			9			ICP-AES
F022	80.5	8.0			10			ICP-MS
F024	161.5	16.1			10			ICP-MS
F060	173.0	19.2			9			ICP-MS
F068	70.5	7.0	WL WL		10			ICP-MS
F069	184.0	18.4	WH		10			ICP-MS
F069b	87.0	8.7			10			ICP-AES
F153	141.0	15.6			9			ICP-AES
F153b	158.0	15.8			10			ICP-MS
F154	145.0	14.5			10			ICP-MS
F158	69.5	7.7			9			ICP-MS
F183	73.0	8.1	AHWL		9			ICP-MS
F186	221.0	22.1	WH WH AHAH	BIASED HIGH*	10	3.4	0.8884	ICP-MS
F193	146.5	14.6			10			ICP-MS
F239	31.0	3.4	WL WL	BIASED LOW*	9	-2.4	-1.5206	ICP-AES
F248	149.0	16.5			9			ICP-MS
F249	81.0	8.1			10			ICP-AES
F308	199.0	22.1	AHAHAH AHAHAHAH AL	BIASED HIGH	9	31.0	-7.7047	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.7

PARAMETER: 04095 Beryllium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	5.99	16.2	14.2	26.2	10.0	12.8	55.9	3.47	0.372	15.4
F009	6.7 WH	17.9	15.2	29.0	10.9	13.9	59.2	3.9	<1.	17.5
F011	6.0	16.9	14.4	26.3	10.4	13.3	56.9	3.6	0.4	15.9
F015	6.34	16.8	15.9 WH	29.2	11.5 WH	14.3	61.7	3.9	0.448	17.5
F020	5.64	15.6	13.3	24.9	9.33	11.9	56.1	3.04	0.33	14.4
F021	5.92	16.2	13.9	25.8	10.1	13.0	55.4	3.27	0.36	14.8
F022	6.16	17.0	14.4	36.4 AH	10.1	13.4	57.9	3.39	0.356	15.4
F024	5.7	16.6	13.5	25.8	9.7	12.9	54.8	3.4	0.4	14.6
F060	5.8	16.2	13.6	25.1	10.3	12.8	53.8	3.5	0.4	14.3
F068	6.0	15.	14.	26.	9.7	12.	56.	3.3	0.38	14.
F069	6.32	13.5 WL	15.4	27.7	11.7 WH	15.3 WH	65.6 WH	3.98 WH	0.438	18.1 WH
F069b	5.79	16.1	14.	25.8	9.76	13.1	54.3	3.25	0.36	14.8
F153	5.6	16.	14.	26.	10.	13.	57.	<5.	<5.	15.
F153b	5.8	14. WL	13.	24.	10.	12.	53.	3.2	0.32	15.
F154	5.25	15.9	12.9	23.9	9.48	12.5	53.4	3.19	0.36	14.3
F158	7. WH	18.	16. WH	29.	11.	14.	62.	4. WH	<2.	17.
F183	6.13	16.5	13.9	25.1	10.0	13.3	52.1	3.43	<0.5	15.2
F186	5.6	16.6	14.2	25.6	10.	13.5	58.4	3.1	0.3	15.1
F248	5.90	16.3	13.8	24.9	9.60	12.6	55.9	3.30	0.40	15.0
F249	6.14	15.5	14.0	26.4	10.1	12.4	54.9	3.36	0.37	14.6
F249a	6.17	16.8	14.5	26.7	10.4	13.5	58.7	3.50	0.38	15.7
F308	5.28	22.3 AH	20.1 AH	35.5 AH	19.6 AH	29.6 AH	61.4	3.31	14.8 AH	21.3 AH
ASSIGNED VALUE *	5.96	16.2	14.0	25.9	10.00	13.0	56.0	3.39	0.372	15.0
R-STD DEV *	0.357	0.97	0.92	1.97	0.625	0.86	3.38	0.276	0.0447	1.22
ACCEPTABLE LIMITS(+-) *	0.714	1.94	1.84	3.94	1.250	1.72	6.76	0.552	0.0894	2.44
WARNING LIMITS(+-) *	.714- 1.071	1.94- 2.91	1.84- 2.76	3.94- 5.91	1.250- 1.875	1.72- 2.58	6.76- 10.14	.552- .828	.0894- .1341	2.44- 3.66
ACTION LIMITS(<>) *	1.071	2.91	2.76	5.91	1.875	2.58	10.14	0.828	0.1341	3.66
N *	22	22	22	22	22	22	22	21	18	22

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	112.0	11.2			10			ICP-MS
F009	169.5	18.8	WH	BIASED HIGH	9	5.2	0.6501	ICP-MS
F011	151.5	15.1			10			
F015	191.5	19.1	WH WH	BIASED HIGH	10	10.0	0.1135	ICP-MS
F020	38.5	3.8		BIASED LOW*	10	0.3	-0.6343	ICP-MS
F021	88.5	8.8			10			ICP-MS Agilent
F022	146.0	14.6	AH		10			ICP-MS
F024	84.0	8.4			10			ICP-MS
F060	87.0	8.7			10			ICP-MS
F068	75.5	7.5			10			ICP-MS
F069	177.0	17.7	WL WHWHWHWH WH	BIASED HIGH	10	16.0	-0.8071	ICP-MS
F069b	76.0	7.6			10			ICP-AES
F153	76.0	9.5			8			ICP-AES
F153b	44.0	4.4	WL	BIASED LOW	10	-5.9	-0.0538	ICP-MS
F154	30.5	3.0		BIASED LOW*	10	-4.9	-0.1315	ICP-MS
F158	180.5	20.0	WH WH WH	BIASED HIGH	9	10.2	0.1848	ICP-MS
F183	90.5	10.0			9			ICP-MS
F186	95.0	9.5			10			ICP-MS
F248	81.0	8.1			10			ICP-MS
F249	93.0	9.3			10			ICP-MS
F249a	159.5	15.9			10			ICP-AES
F308	179.0	17.9	AHAHAHAHAH AHAH	BIASED HIGH*	10	-1.5	7.5182	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.2

PARAMETER: 83095 Bismuth ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	1.53	13.8	14.4	22.2	12.7	13.8	56.3	2.15	0.669	14.9
F009	<2.	9.2	9.0	14.3	7.8	8.6	39.5	<2.	<2.	9.2
F011	1.7	15.2	15.8	23.6	14.2	14.8	60.1	2.6	0.8	13.3
F015	1.74	13.3	15.	20.3	13.	12.5	55.3	2.56	0.6	12.5
F020	1.57	14.1	14.2	22.	12.4	13.7	54.5	2.22	0.684	14.9
F022	1.93	7.85	10.2	16.4	18.5	17.4	54.3	23.4 AH	0.738	11.9
F024	1.4	12.7	13.2	18.6	10.1	12.5	53.8	2.1	0.6	13.7
F060	2.0	11.9	11.7	17.2	9.0	10.9	39.8	3.3	1.1 AH	12.1
F154	1.66	14.3	15.1	22.2	12.8	13.5	55.2	2.37	0.73	15.3
F183	0.970 WL	8.15	7.84 WL	12.1 WL	7.26	7.28	31.7 WL	1.40	<0.5 WL	8.48
F186	1.6	14.2	14.7	22.8	13.2	14.2	56.2	13.2 AH	0.7	15.0
F308	2.17	8.64	11.3	19.8	9.73	9.83	49.7	3.04	<0.13 AL	6.69 WL
ASSIGNED VALUE *	1.660	13.00	13.70	20.0	12.55	13.00	54.4	2.37	0.692	12.90
R-STD DEV *	0.2964	3.084	2.885	3.84	3.075	3.026	8.18	1.019	0.0942	2.974
ACCEPTABLE LIMITS(+-) *	0.5928	6.168	5.770	7.68	6.150	6.052	16.36	2.038	0.1884	5.948
WARNING LIMITS(+-) *	.5928- .889	26.168- 9.252	5.770- 8.655	7.68- 11.52	6.150- 9.225	6.052- 9.078	16.36- 24.54	2.038- 3.057	.1884- .2826	5.948- 8.922
ACTION LIMITS(<>) *	0.8892	9.252	8.655	11.52	9.225	9.078	24.54	3.057	0.2826	8.922
N *	11	12	12	12	12	12	12	11	9	12

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	71.0	7.1			10			ICP-MS
F009	17.0	2.4		BIASED LOW	7	-25.7	-0.8821	ICP-MS
F011	99.0	9.9		BIASED HIGH	10	11.0	0.1676	
F015	69.0	6.9			10			ICP-MS
F020	66.5	6.6			10			ICP-MS
F022	68.0	6.8	AH		10			ICP-MS
F024	46.0	4.6			10			ICP-MS
F060	57.0	5.7	AH		10			ICP-MS
F154	83.5	8.3			10			ICP-MS
F183	11.0	1.2	WL WLWL WL WL	BIASED LOW	9	-41.8	0.1536	ICP-MS
F186	91.0	9.1	AH		10			ICP-MS
F308	44.0	4.8	ALWL		9			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 10

OVERALL AVERAGE RANK IS 6.2

PARAMETER: 05095 Boron ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	29.4	35.8	81.4	31.6	48.2	9.58	120.	19.1	0.739	23.4
F009	<40.	<40.	77.	<40.	47.	<40.	113.	<40.	<40.	<40.
F011	26.1	33.1	69.4	28.4	43.1 WL	9.4	107.	17.4	1.6	20.6
F015	30.	40.	90. WH	30.	50.	<10.	120.	20.	<10.	30. AH
F020	<50.	<50.	75.	<50.	<50.	<50.	125.	<50.	<50.	<50.
F021b	28.	36.	79.	30.	48.	10.	120.	18.	<10.	22.
F022	28.3	36.2	77.6	31.0	46.7	10.2	115.	18.8	0.706	23.1
F024	23. AL	31. WL	72.6	27.4 WL	41. AL	<10.	108.	17.7	<10.	19. WL
F026	30.8	38.7	83.4	33.4	50.3	<20.	124.	21.1	<20.	25.0
F060	30.	38.	83.	33.	50.	11.	125.	21.	<2.	23.
F069	28.8	28.9 WL	78.5	30.1	50.2	9.4	125.	18.1	<3.0	22.8
F069b	28.6	35.5	78.5	31.2	46.6	10.1	116.	18.7	1.38	22.9
F153	30.	38.	82.	31.	49.	10.	118.	19.	<10.	22.
F153b	30.	31. WL	81.	30.	49.	11.	118.	19.	2.6 WH	24.
F154	30.	37.	79.	30.	46.	<10.	117.	17.	<10.	21.
F158	31.	40.	88.	33.	51.	11.	130.	20.	<5.	25.
F183	28.8	37.6	79.2	31.4	48.6	10.2	118.	19.5	0.953	22.3
F186	26.	36.6	76.	32.	47.	10.	116.	47. AH	<2.	23.
F193	27.8	37.3	78.2	30.1	46.	9.8	115.	18.	<3.0	21.7
F239			58.5 AL							
F249	31.0	37.5	80.3	32.6	49.0	10.6	118.	19.1	1.08	24.6
F308	33.0	37.8	91.3 WH	34.6 WH	46.6	<10.2	109.	20.8	<10.2	22.0
ASSIGNED VALUE *	29.7	37.0	79.0	31.0	48.2	10.05	118	19.0	1.080	22.8
R-STD DEV *	1.89	2.70	5.07	1.77	2.14	0.630	6.1	1.47	0.5559	1.66
ACCEPTABLE LIMITS(+-) *	3.78	5.40	10.14	3.54	4.28	1.260	12.2	2.94	1.1118	3.32
WARNING LIMITS(+-) *	3.78- 5.67	5.40- 8.10	10.14- 15.21	3.54- 5.31	4.28- 6.42	1.260- 1.890	12.2- 18.3	2.94- 4.41	1.1118- 1.663	3.32- 4.98
ACTION LIMITS(<>) *	5.67	8.10	15.21	5.31	6.42	1.890	18.3	4.41	1.6677	4.98
N *	19	19	22	19	20	14	21	19	7	19

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	101.5	10.1			10			ICP-MS
F009	18.5	6.1		INSUFFICIENT DATA	3			ICP-MS
F011	25.5	2.5	WL	BIASED LOW	10	-10.4	0.1799	
F015	122.0	15.2	WH AH		8			ICP-MS
F020	23.0	11.5		INSUFFICIENT DATA	2			ICP-MS
F021b	69.5	7.7			9			ICP-AES
F022	74.5	7.4			10			ICP-MS
F024	14.5	1.8	ALWL WLAL WL	BIASED LOW	8	-6.4	-2.5277	ICP-MS
F026	141.5	17.6		BIASED HIGH*	8	4.4	0.6704	ICP-AES
F060	140.0	15.5		BIASED HIGH	9	5.8	-0.3674	ICP-MS
F069	80.0	8.8	WL		9			ICP-MS
F069b	75.5	7.5			10			ICP-AES
F153	102.0	11.3			9			ICP-AES
F153b	105.0	10.5	WL WH		10			ICP-MS
F154	55.5	6.9			8			ICP-MS
F158	158.5	17.6		BIASED HIGH	9	11.2	-1.0666	ICP-MS
F183	103.5	10.3			10			ICP-MS
F186	82.5	9.1	AH		9			ICP-MS
F193	52.0	5.7			9			ICP-MS
F239	1.0	1.0	AL	INSUFFICIENT DATA	1			ICP-AES
F249	126.5	12.6			10			ICP-AES
F308	104.5	13.0	WHWH		8			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 9.9

PARAMETER: 48095 Cadmium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	3.80	140.	4.82	23.9	25.6	117.	92.7	1.91	0.521	13.0
F007	3.97	142.	4.78	25.1	26.2	120.	95.5	1.95	0.553	12.1
F009	3.8	136.	4.5	23.7	24.9	115.	92.1	2.0	<1.	12.6
F011	3.84	137.	4.77	23.5	24.6	114.	89.0	2.17 AH	0.77 AH	13.0
F014	3.8	137.	4.8	24.	26.	120.	91.	2.0	0.5	13.
F015	3.83	137.	5.17	24.	26.3	116.	91.8	1.92	0.53	12.6
F020	3.81	142.	4.66	24.1	25.3	119.	93.1	1.91	0.506	12.9
F021	3.84	143.	5.04	24.9	26.8	122.	96.2	1.97	0.53	13.5
F021b	4.	137.	5.	24.	25.	118.	90.	<3.	<3.	12.
F022	3.88	130. WL	4.82	23.9	25.6	119.	93.5	1.90	0.489	12.8
F024	3.7	140.	4.7	23.5	25.2	119.	93.5	1.9	0.5	12.9
F026	3.88	141.	4.80	24.3	26.0	118.	95.7	1.98	<1.	13.1
F060	3.78	138.	4.75	23.4	25.7	116.	91.7	2.04	0.54	12.7
F068	3.9	157. AH	5.0	25.	26.	130. WH	97.	2.0	0.58	13.
F069	3.97	144.	5.24	25.3	27.6	137. AH	106. AH	2.02	0.553	13.8
F069b	3.26 AL	133.	4.48	22.9	24.1	112.	87.4	1.8	0.41 WL	12.2
F153	4.	140.	5.	24.	26.	120.	94.	<2.	<2.	13.
F153b	3.8	138.	5.0	24.	25.	117.	92.	1.9	0.53	13.
F154	3.79	136.	4.74	23.4	24.8	113.	89.	1.87	0.53	12.5
F158	4.	154. AH	5.	26.	28.	128. WH	100.	2.	<1.	14.
F183	4.00	149.	4.92	26.5 WH	28.6 WH	117.	91.1	1.92	0.55	14.2 WH
F186	3.84	146.	4.93	24.4	26.7	121.	100.	1.91	0.49	13.7
F193	3.8	139.	4.9	24.3	25.8	120.	92.2	1.9	0.6	12.8
F223	3.72	141.	4.49	22.6	23.8	111.	92.5	1.88	<1.	12.9
F239	<19.	139.	<19.	20. AL	22. AL	116.	90.	<19.	<19.	<19.
F248	3.90	143.	5.00	24.2	25.5	118.	94.7	2.00	0.60	13.0
F249	3.66	146.	4.67	22.7	24.4	124.	96.6	1.81	0.52	12.2
F301	5.45 AH	143.	5.55 AH	26.	26.9	121.	90.1	6.05 AH	<0.0020 AL	13.7
F308	<5.36	<5.36 AL	<5.36	25.5	27.2	149. AH	105. AH	<5.36	<5.36	8.32 AL
ASSIGNED VALUE *	3.84	140.00	4.82	24.0	25.8	118	92.5	1.92	0.5300	13.00
R-STD DEV *	0.118	4.574	0.213	1.04	1.21	4.4	3.62	0.075	0.04295	0.616
ACCEPTABLE LIMITS(+-) *	0.236	9.148	0.426	2.08	2.42	8.8	7.24	0.150	0.08590	1.232
WARNING LIMITS(+-) *	.236- .354	9.148- 13.72	.426- .639	2.08- 3.12	2.42- 3.63	8.8- 13.2	7.24- 10.86	.150- .225	.08590- .1281	.232- 1.848
ACTION LIMITS(<>) *	0.354	13.722	0.639	3.12	3.63	13.2	10.86	0.225	0.12885	1.848
N *	27	28	27	29	29	29	29	25	20	28

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	121.5	12.1			10			ICP-MS
F007	168.0	16.8			10			ICP-MS
F009	75.0	8.3			9			ICP-MS
F011	111.5	11.1	AHAH		10			
F014	127.5	12.7			10			ICP-MS
F015	128.0	12.8			10			ICP-MS
F020	123.5	12.3			10			ICP-MS
F021	201.5	20.1			10			ICP-MS Agilent
F021b	93.5	11.6			8			ICP-AES
F022	108.5	10.8	WL		10			ICP-MS
F024	98.0	9.8			10			ICP-MS
F026	156.5	17.3			9			ICP-AES
F060	104.0	10.4			10			ICP-MS
F068	215.5	21.5	AH WH		10			ICP-MS
F069	243.0	24.3	AHAH	BIASED HIGH	10	9.1	0.1517	ICP-MS
F069b	20.5	2.0	AL WL	BIASED LOW	10	-5.3	-0.1255	ICP-AES
F153	148.0	18.5			8			ICP-AES
F153b	117.5	11.7			10			ICP-MS
F154	53.0	5.3		BIASED LOW*	10	-3.8	0.0519	ICP-MS
F158	226.0	25.1	AH WH	BIASED HIGH	9	9.0	-0.2230	ICP-MS
F183	197.0	19.7	WHWH WH		10			ICP-MS
F186	187.0	18.7			10			ICP-MS
F193	139.0	13.9			10			ICP-MS
F223	58.5	6.5		BIASED LOW*	9	-1.7	-0.4420	GFAAS
F239	25.0	5.0	ALAL	BIASED LOW*	5	1.9	-4.4173	ICP-AES
F248	179.5	17.9			10			ICP-MS
F249	101.0	10.1			10			ICP-MS
F301	205.5	22.8	AH AH AHAL	BIASED HIGH*	9	-0.3	1.5878	AAS
F308	110.0	22.0	AL AHAH AL		5			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 14.1

PARAMETER: 24095 Chromium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	4.05	409.	45.3	24.4	68.9	349.	97.1	5.01	0.883	16.9
F007	3.99	402.	45.3	24.3	69.0	351.	97.3	5.05	0.895	17.1
F009	5.1 AH	454. AH	54.4 AH	30.5 AH	80.9 AH	397. AH	114. AH	6.2 AH	1.9 AH	21.0 AH
F011	4.1	393.	44.5	24.3	66.2	337.	95.0	4.9	0.9	17.2
F014	4.0	392.	44.	24.	66.	339.	93.	4.9	0.8	16.
F015	3.9	389.	43.2	22.6	63.2	335.	92.6	4.6	0.9	14.9
F020	3.9	396.	43.8	23.6	66.7	341.	95.6	4.8	0.9	16.5
F021	3.90	389.	43.2	23.5	64.8	335.	93.1	4.73	0.83	16.1
F021b	4.	392.	43.	23.	67.	344.	93.	4. AL	<2.	16.
F022	4.32	380.	44.4	24.1	67.5	349.	96.4	5.02	0.884	16.6
F024	3.9	401.	43.9	23.6	65.8	344.	94.8	4.7	0.7 WL	16.2
F026	4.13	415.	46.7	24.4	70.0	358.	99.1	5.00	<1.	16.8
F060	3.8	369.	43.6	23.9	65.4	319.	94.4	5.1	0.9	16.3
F068	3.9	410.	42.	22. WL	61. WL	347.	89.	4.7	0.8	15.
F069	3.63	350. AL	41.2	22. WL	68.2	299. AL	97.9	4.49 WL	0.779	15.4
F069b	3.37 AL	401.	42.9	23.7	63.7	340.	90.3	4.51	<0.60 AL	15.7
F153	4.	390.	46.	24.	69.	342.	98.	5.	<2.	17.
F153b	4.3	398.	49. WH	24.	69.	342.	98.	5.0	0.99	17.
F154	4.	398.	45.	24.3	67.7	347.	94.	5.1	<2.	16.6
F158	4.	407.	43.	24.	65.	351.	93.	5.	<2.	16.
F183	4.00	423.	45.2	24.8	71.7	346.	99.0	5.30	1.00	16.5
F186	3.9	410.	47.1	24.6	69.5	384. AH	99.	4.9	0.9	17.1
F193	4.	393.	45.7	24.8	67.1	344.	93.5	4.8	<1.0	17.1
F207	4.	403.	46.	24.	68.	347.	96.	5.	<1.	16.
F223		370.	48.4	24.8	67.4	325.	91.4	<5.	<5.	15.6
F247	4.33	414.	45.3	27.8 AH	68.8	359.	98.1	5.0	<1.0	17.5
F248	3.80	383.	42.6	22.7	62.9	322.	88.8	4.70	0.80	15.8
F249	4.09	400.	43.9	24.4	67.3	347.	95.0	4.81	0.82	16.2
F301	4.53 WH	337. AL	41.1	22.6	65.6	286. AL	88.4	5.14	1.12 WH	18.1 WH
F308	3.82	396.	48.	23.1	69.7	358.	86.9 WL	5.74 WH	<1.22	13.6 AL
ASSIGNED VALUE *	4.00	398	44.4	24.0	67.3	344	94.8	5.00	0.890	16.4
R-STD DEV *	0.185	15.2	2.21	0.90	2.49	12.7	3.83	0.248	0.0947	0.83
ACCEPTABLE LIMITS(+-) *	0.370	30.4	4.42	1.80	4.98	25.4	7.66	0.496	0.1894	1.66
WARNING LIMITS(+-) *	.370- .555	30.4- 45.6	4.42- 6.63	1.80- 2.70	4.98- 7.47	25.4- 38.1	7.66- 11.49	.496- .744	.1894- .2841	1.66- 2.49
ACTION LIMITS(<>) *	0.555	45.6	6.63	2.70	7.47	38.1	11.49	0.744	0.2841	2.49
N *	29	30	30	30	30	30	30	29	19	30

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	203.5	20.3			10			ICP-MS
F007	201.5	20.1			10			ICP-MS
F009	287.0	28.7	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	14.3	2.3939	ICP-MS
F011	160.0	16.0			10			
F014	110.5	11.0			10			ICP-MS
F015	63.5	6.3		BIASED LOW*	10	-2.1	-0.7079	ICP-MS
F020	123.5	12.3			10			ICP-MS
F021	82.0	8.2			10			ICP-MS Agilent
F021b	87.0	9.6	AL		9			ICP-AES
F022	173.0	17.3			10			ICP-MS
F024	109.5	10.9	WL		10			ICP-MS
F026	221.0	24.5		BIASED HIGH*	9	4.4	-0.2177	ICP-AES
F060	105.0	10.5			10			ICP-MS
F068	76.0	7.6	WLWL		10			ICP-MS
F069	60.5	6.0	AL WL AL WL	BIASED LOW	10	-12.7	3.1294	ICP-MS
F069b	64.5	7.1	AL AL		9			ICP-AES
F153	165.0	18.3			9			ICP-AES
F153b	202.5	20.2	WH		10			ICP-MS
F154	163.5	18.1			9			ICP-MS
F158	127.5	14.1			9			ICP-MS
F183	224.5	22.4			10			ICP-MS
F186	218.5	21.8	AH		10			ICP-MS
F193	153.5	17.0			9			ICP-MS
F207	161.5	17.9			9			ICP-AES
F223	91.0	13.0			7			GFAAS
F247	223.5	24.8	AH	BIASED HIGH*	9	4.3	0.0275	ICP-AES
F248	44.5	4.4		BIASED LOW*	10	-4.7	-0.4149	ICP-MS
F249	157.0	15.7			10			ICP-MS
F301	117.5	11.7	WHAL AL WHWH		10			GFAAS
F308	137.0	15.2	WLWH AL		9			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.0

PARAMETER: 27095 Cobalt ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	2.00	292.	51.9	28.2	71.6	250.	96.6	3.51	0.298	15.1
F007	1.89	295.	51.7	27.8	72.4	263.	97.7	3.65	0.25	15.3
F009	2.5 AH	332. AH	63.5 AH	35.0 AH	86.1 AH	295. AH	116. AH	4.4 WH	<1.	20.2 AH
F011	2.0	286.	52.2	28.2	71.0	247.	95.8	3.6	0.3	15.8
F015	1.88	265.	49.8	25.9	73.4	238.	94.4	3.31	0.247	13.8
F020	2.02	289.	50.3	27.3	71.6	252.	95.3	3.47	0.26	15.3
F021	1.91	279.	49.8	27.0	69.5	246.	94.7	3.40	0.24	14.7
F022	2.06	275.	51.8	28.0	72.5	241.	96.5	3.61	0.236	15.4
F024	1.9	289.	50.8	27.1	70.4	253.	94.9	3.5	0.2	14.9
F026	2.00	298.	52.6	28.5	73.7	258.	99.2	3.42	<1.	15.7
F060	2.0	274.	51.7	28.0	71.5	234.	95.9	3.7	0.3	15.4
F068	2.0	293.	50.	27.	67.	250.	94.	3.4	0.3	14.
F069	1.77	252. WL	51.	25.3 WL	72.	216. AL	97.4	3.23	0.232	14.
F069b	1.92	290.	49.2	27.	67.7	251.	90.5	3.64	<0.80	14.2
F153	2.	286.	52.	28.	68.	251.	98.	3. WL	<2.	15.
F153b	2.0	282.	50.	24. AL	68.	244.	89.	3.1	0.23	14.
F154	2.08	292.	52.9	28.5	73.3	254.	97.4	3.79	0.31	15.8
F158	2.	304.	51.	28.	70.	265.	96.	4.	<2.	15.
F183	2.17	3207. AH	56.8 WH	28.5	80.0 AH	259.	95.0	3.87	0.284	15.3
F186	1.83	301.	53.9	27.7	73.3	279. WH	102. WH	3.6	0.2	15.7
F193	2.1	286.	52.1	28.4	71.5	253.	94.8	3.6	<1.0	15.7
F239	16. AH	294.	75. AH	21. AL	73.	253.	90.	<12.	<12.	<12. AL
F248	2.00	287.	50.7	27.0	69.2	244.	92.9	3.60	0.30	14.9
F249	1.99	287.	49.6	27.4	69.8	253.	93.0	3.50	0.23	14.8
F301	3.1 AH	274.	53.9	26.9	70.4	241.	93.2	7.6 AH	<0.0020 AL	14.1
F308	1.88	277.	56.6 WH	29.5	77.3 WH	266.	88.4 WL	4.43 WH	2.45 AH	16.0
ASSIGNED VALUE *	2.00	287	51.7	27.8	71.5	252	95.0	3.60	0.2500	15.0
R-STD DEV *	0.117	11.9	2.07	1.09	2.67	10.8	3.20	0.297	0.04500	0.79
ACCEPTABLE LIMITS(+-) *	0.234	23.8	4.14	2.18	5.34	21.6	6.40	0.594	0.09000	1.58
WARNING LIMITS(+-) *	.234- .351	23.8- 35.7	4.14- 6.21	2.18- 3.27	5.34- 8.01	21.6- 32.4	6.40- 9.60	.594- .891	.09000- .1351	1.58- 2.37
ACTION LIMITS(<>) *	0.351	35.7	6.21	3.27	8.01	32.4	9.60	0.891	0.13500	2.37
N *	26	26	26	26	26	26	26	25	18	25

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	146.0	14.6			10			ICP-MS
F007	155.5	15.5			10			ICP-MS
F009	226.0	25.1	AHAHAHAHAHAHAHWH AH	BIASED HIGH	9	15.4	2.5748	ICP-MS
F011	147.0	14.7			10			
F015	60.0	6.0		BIASED LOW	10	-7.0	1.4698	ICP-MS
F020	127.0	12.7			10			ICP-MS
F021	68.5	6.8			10			ICP-MS Agilent
F022	135.5	13.5			10			ICP-MS
F024	98.0	9.8			10			ICP-MS
F026	172.0	19.1			9			ICP-AES
F060	128.0	12.8			10			ICP-MS
F068	88.5	8.8			10			ICP-MS
F069	64.0	6.4	WL WL AL	BIASED LOW	10	-13.4	3.4053	ICP-MS
F069b	74.0	8.2			9			ICP-AES
F153	108.0	12.0	WL		9			ICP-AES
F153b	50.0	5.0	AL	BIASED LOW*	10	-2.3	-1.2261	ICP-MS
F154	201.0	20.1		BIASED HIGH*	10	1.1	0.4195	ICP-MS
F158	146.5	16.2			9			ICP-MS
F183	202.0	20.2	AHWH AH	BIASED HIGH	10	611.0	-199.2750	ICP-MS
F186	165.0	16.5	WHWH		10			ICP-MS
F193	143.5	15.9			9			ICP-MS
F239	111.5	15.9	AH AHAL AL		7			ICP-AES
F248	96.0	9.6			10			ICP-MS
F249	86.0	8.6			10			ICP-MS
F301	106.0	11.7	AH AHAL		9			AAS
F308	172.5	17.2	WH WH WLWHAH		10			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.1

PARAMETER: 29095 Copper ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1= TM-9.2	2= TMDA-70.2	3= TM-DWS.3	4= TM-25.5	5= TMDA-51.4	6= TMDA-53.3	7= TMDA-62.2	8= TM-28.4	9= TMRain-04	10= TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	34.0	412.	163.	27.3	82.2	312.	95.7	6.51	7.43	17.5
F007	32.1	407.	163.	27.2	82.8	309.	95.3	6.53	7.08	17.7
F009	41.7 AH	469. AH	199. AH	34.7 AH	97.4 AH	365. AH	115. AH	8.3 AH	9.9 AH	21.9 AH
F011	34.5	406.	165.	28.2	82.4	308.	95.4	6.9	7.4	18.3
F014	34.	426.	162.	28.	82.	320.	96.	6.8	7.0	17.
F015	32.5	391.	167.	26.6	79.5	311.	88.7	6.35	7.29	16.6
F020	32.8	389.	157.	26.2	79.7	299.	91.8	6.46	8.	17.
F021	33.2	399.	160.	26.7	80.4	307.	94.5	6.38	6.95	16.8
F021b	35.	415.	168.	28.	85.	323.	98.	7.	8.	19.
F022	34.8	397.	166.	27.5	82.9	314.	96.0	6.70	6.52	17.9
F024	33.4	399.	161.	26.8	80.1	305.	93.3	6.4	6.9	17.
F026	34.9	420.	168.	28.1	83.9	317.	97.8	6.73	7.39	18.0
F060	33.	378.	159.	27.	80.	292.	94.	6.	7.	17.
F068	33.	410.	150.	26.	75. WL	307.	91.	6.2	7.1	16.
F069	31.7	348. AL	159.	25.4 WL	80.4	251. AL	94.9	6.2	6.81	16.5
F069b	34.	415.	167.	28.2	81.7	316.	95.4	6.14	7.15	16.6
F153	33.	406.	165.	27.	82.	312.	95.	7.	7.	17.
F153b	34.	406.	169.	28.	82.	312.	93.	6.8	7.4	18.
F154	33.4	415.	157.	27.2	81.1	317.	91.6	6.56	7.19	17.1
F158	36.	437.	174.	29.	85.	330.	101.	7.	8.	19.
F183	33.5	433.	173.	27.6	82.7	320.	84.2 WL	7.00	7.60	17.4
F186	33.1	423.	174.	27.6	82.9	345. WH	96.9	5.7 WL	6.3	17.3
F193	33.9	397.	161.	28.1	80.7	311.	92.	6.7	7.5	17.6
F207	33.	410.	169.	27.	84.	316.	95.	7.	7.	16.
F223	35.8	377.	157.	28.8	80.9	289.	91.6			18.9
F239	28. AL	396.	154.	22. AL	75. WL	301.	88.	<20.	<20.	<20.
F248	33.8	406.	163.	27.3	80.0	306.	92.5	6.70	7.00	17.5
F249	34.5	417.	168.	27.6	83.6	320.	96.7	6.66	7.20	17.6
F301	29.9 WL	363. WL	148. WL	27.6	78.2	274. WL	84.7 WL	6.36	10.5 AH	21.6 AH
F308	35.7	420.	175.	33.7 AH	98.2 AH	339. WH	90.7	7.02	9.70 AH	18.9
ASSIGNED VALUE *	33.6	406	163	27.5	81.8	312	94.5	6.66	7.15	17.4
R-STD DEV *	1.38	18.3	7.4	0.99	2.37	13.1	3.50	0.369	0.531	1.05
ACCEPTABLE LIMITS(+-) *	2.76	36.6	14.8	1.98	4.74	26.2	7.00	0.738	1.062	2.10
WARNING LIMITS(+-) *	2.76- 4.14	36.6- 54.9	14.8- 22.2	1.98- 2.97	4.74- 7.11	26.2- 39.3	7.00- 10.50	.738- 1.107	1.062- 1.593	2.10- 3.15
ACTION LIMITS(<>) *	4.14	54.9	22.2	2.97	7.11	39.3	10.50	1.107	1.593	3.15
N *	30	30	30	30	30	30	30	28	28	29

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	168.5	16.8			10			ICP-MS
F007	139.5	13.9			10			ICP-MS
F009	293.0	29.3	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	15.5	3.0997	ICP-MS
F011	191.0	19.1			10			
F014	179.5	17.9			10			ICP-MS
F015	83.5	8.3			10			ICP-MS
F020	82.0	8.2			10			ICP-MS
F021	90.5	9.0			10			ICP-MS Agilent
F021b	246.0	24.6		BIASED HIGH*	10	2.4	0.6521	ICP-AES
F022	167.5	16.7			10			ICP-MS
F024	91.5	9.1			10			ICP-MS
F026	225.0	22.5			10			ICP-AES
F060	72.5	7.2			10			ICP-MS
F068	66.0	6.6	WL	BIASED LOW*	10	0.0	-3.0582	ICP-MS
F069	50.5	5.0	AL WL AL	BIASED LOW	10	-16.5	5.7505	ICP-MS
F069b	160.0	16.0			10			ICP-AES
F153	138.0	13.8			10			ICP-AES
F153b	182.0	18.2			10			ICP-MS
F154	132.0	13.2			10			ICP-MS
F158	271.5	27.1		BIASED HIGH	10	6.8	-0.5199	ICP-MS
F183	191.5	19.1	WL		10			ICP-MS
F186	174.5	17.4	WH WL		10			ICP-MS
F193	148.5	14.8			10			ICP-MS
F207	156.0	15.6			10			ICP-AES
F223	110.0	13.7			8			ICP-AES
F239	22.5	3.2	AL ALWL	BIASED LOW*	7	-1.5	-5.6699	ICP-AES
F248	122.0	12.2			10			ICP-MS
F249	204.5	20.4			10			ICP-AES
F301	92.5	9.2	WLWLWL WLWL AHAH		10			AAS
F308	250.0	25.0	AHAHWH AH	BIASED HIGH*	10	4.6	2.2595	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.2

PARAMETER: 31095 Gallium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	2.96	0.0839	0.0574	0.124	9.37	0.0683	32.8	12.3	0.00014	0.0962
F022	2.71	0.069	0.044	0.12	8.89	0.055	31.1	11.9	<0.01	0.111
F024	2.9	<0.1	<0.1	0.1	9.2	<0.1	32.8	11.9	<0.1	0.1
F153b	4.5 AH	8.6 AH	4.1 AH	0.9 AH	11.	7.7 AH	36.	13.	<0.3	0.44 AH
F183	2.90	0.257	0.072	0.135	9.92	0.062	37.7	12.4	<0.05	0.131
F249	2.78	0.08	0.05	0.12	8.82	0.05	30.5	11.4	<0.002	0.10
F249a	2.99	<2.	<2.	<2.	9.60	<2.	33.4	12.3	<2.	<2.
F308	3.09	2.91 WH	2.87 AH	2.91 AH	12.6 WH	2.95 AH	32.3	13.4	2.86	2.87 AH
ASSIGNED VALUE *	2.90	0.0839	0.0537	0.120	9.48	0.0585	32.8	12.3	1.43007	0.1000
R-STD DEV *	0.185	1.08669	0.18228	0.0715	1.081	0.12809	2.57	0.72	-	0.08395
ACCEPTABLE LIMITS(+-) *	0.370	2.17338	0.36456	0.1430	2.162	0.25618	5.14	1.44	-	0.16790
WARNING LIMITS(+-) *	.370- .555	2.17338- 3.2	.36456- .546	.1430- .2145	2.162- 3.243	.25618- .3845	5.14- 7.71	1.44- 2.16	-	.16790- .251
ACTION LIMITS(<>) *	0.555	3.26007	0.54684	0.2145	3.243	0.38427	7.71	2.16	-	0.25185
N *	8	6	6	7	8	6	8	8	2	7

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	34.0	3.4			10			ICP-MS
F022	18.0	2.0			9			ICP-MS
F024	17.0	2.8			6			ICP-MS
F153b	59.0	6.5	AHAHAHAH AH	AH	9			ICP-MS
F183	44.5	4.9			9			ICP-MS
F249	15.0	1.6			9			ICP-MS
F249a	21.5	5.3			4			ICP-AES
F308	57.0	5.7	WHAHAHWHAH	AH	10			ICP-MS

NOTE: BIAS WAS NOT ASSESSED BECAUSE STATISTICS FOR FEWER THAN 10 LABS WERE AVAILABLE

OVERALL AVERAGE RANK IS 4.0

PARAMETER: 26095 Iron ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	113.	363.	221.	30.5	123.	312.	115.	18.1	26.9	26.3
F007	113.	389.	223.	30.8	131.	331.	122.	18.1	26.1	26.9
F009	145. AH	419. AH	273. AH	52.3 AH	159. AH	371. AH	143. AH	41.6 AH	65.7 AH	55.4 AH
F011	120.	386.	229.	31.	130.	330.	123.	18.	26.	27.
F014	123.	392.	238.	34. WH	133.	338.	123.	23. WH	29.	28.
F015	125.	415. WH	249. WH	34. WH	136.	361. WH	127.	20.	30.	29.
F020	114.	371.	223.	31.	127.	311.	116.	19.	27.	28.
F021b	110.	371.	220.	30.2	126.	326.	115.	<20.	24.5	25.1
F022	105.	358.	213.	30.3	116.	308.	111.	17.4	25.9	26.2
F024	110.	370.	220.	29.9	122.	320.	117.	17.4	24.1	25.6
F026	122.	389.	234.	32.9	134.	333.	127.	19.5	27.2	28.5
F060	100.	360.	210.	30.	120.	310.	120.	<20.	20. WL	30.
F060b	108.	380.	219.	27. WL	120.	330.	114.	17.	22.	24.
F068	130. WH	380.	230.	29.	140.	323.	120.	17.	25.	25.
F069b	119.	388.	230.	30.8	130.	335.	122.	17.4	25.7	26.5
F153	110.	372.	224.	30.	125.	324.	116.	17.	24.	25.
F153b	116.	359.	221.	30.	122.	322.	113.	17.	23.	25.
F154	110.	380.	220.	<100.	120.	330.	110.	<100.	<100.	<100.
F158	96. WL	364.	210.	<50.	107. WL	299.	101. WL	<50.	<50.	<50.
F179	118.	366.	221.	43. AH	136.	317.	115.	21.	25.	27.
F183	114.	381.	217.	30.0	120.	333.	111.	18.4	26.6	25.3
F186	110.	35.7 AL	245. WH	30.	133.	33. AL	133. WH	18.	31. WH	28.
F193	115.	368.	228.	31.5	128.	326.	118.	18.	26.5	26.3
F207	114.	383.	227.	30.	126.	329.	118.	17.	26.	26.
F223	111.	369.	219.	29.1	121.	311.	113.	18.2	25.9	26.2
F239	96. WL	360.	205.	<20. AL	107. WL	303.	99. WL	<20.	<20. WL	<20. AL
F247	118.	387.	229.	31.4	132.	334.	121.	19.2	27.	27.8
F248	117.	376.	225.	32.	125.	319.	120.	21.	27.	32. AH
F249	112.	379.	224.	29.8	125.	330.	118.	18.0	25.4	26.2
F301	115.	329. WL	200. WL	30.4	113.	298.	100. WL	21.5	23.2	21.7 WL
F308	96.9 WL	357.	212.	15.4 AL	116.	325.	82.6 AL	<11.9 AL	<11.9 AL	<11.9 AL
ASSIGNED VALUE *	113.5	372.0	222	30.3	125	325	117.0	18.0	26.0	26.3
R-STD DEV *	7.81	14.70	10.1	1.53	8.5	13.8	7.46	1.69	2.20	1.85
ACCEPTABLE LIMITS(+-) *	15.62	29.40	20.2	3.06	17.0	27.6	14.92	3.38	4.40	3.70
WARNING LIMITS(+-) *	15.62- 23.43	29.40- 44.10	20.2- 30.3	3.06- 4.59	17.0- 25.5	27.6- 41.4	14.92- 22.38	3.38- 5.07	4.40- 6.60	3.70- 5.55
ACTION LIMITS(<>) *	23.43	44.10	30.3	4.59	25.5	41.4	22.38	5.07	6.60	5.55
N *	31	31	31	28	31	31	31	25	27	27

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	132.5	13.2			10			ICP-MS
F007	193.0	19.3			10			ICP-MS
F009	293.0	29.3	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	6.3	26.1789	ICP-MS
F011	205.0	20.5			10			
F014	260.5	26.0	WH WH	BIASED HIGH*	10	4.3	2.4495	ICP-AES
F015	270.5	27.0	WHWHWH WH	BIASED HIGH	10	11.4	-0.8415	ICP-AES
F020	167.5	16.7			10			ICP-MS
F021b	107.5	11.9			9			ICP-AES
F022	75.5	7.5			10			ICP-MS
F024	99.5	9.9			10			ICP-MS
F026	251.5	25.1		BIASED HIGH*	10	3.4	2.3251	ICP-AES
F060	84.0	9.3	WL		9			ICP-MS
F060b	82.5	8.2	WL		10			ICP-AES
F068	159.0	15.9	WH		10			ICP-MS
F069b	201.0	20.1			10			ICP-AES
F153	109.5	10.9			10			ICP-AES
F153b	92.5	9.2			10			ICP-MS
F154	74.0	12.3			6			ICP-MS
F158	22.5	3.7	WL WL WL	BIASED LOW*	6	0.9	-18.3247	ICP-MS
F179	172.5	17.2	AH		10			
F183	136.0	13.6			10			ICP-MS
F186	162.5	16.2	ALWH ALWH WH		10			ICP-MS
F193	171.0	17.1			10			ICP-MS
F207	151.5	15.1			10			ICP-AES
F223	101.0	10.1			10			ICP-AES
F239	17.5	2.9	WL ALWL WL WLAL	BIASED LOW*	6	0.8	-19.3324	ICP-AES
F247	225.0	22.5			10			ICP-AES
F248	197.5	19.7	AH		10			ICP-MS
F249	140.5	14.0			10			ICP-MS
F301	73.5	7.3	WLWL WL WL	BIASED LOW	10	-10.9	2.4557	AAS
F308	33.5	4.7	WL AL ALALALAL	BIASED LOW*	7	3.6	-21.2203	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.2

PARAMETER: 82095 Lead ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	8.60	455.	6.92	27.4	70.4	354.	98.4	4.37	0.342	11.9
F007	8.74	463.	7.04	29.0	72.5	363.	102.	4.43	0.38	11.2
F009	8.3	433.	7.0	26.9	67.8	335.	95.3	4.3	<2.	11.6
F011	9.0	470.	7.4	28.8	74.8	362.	102.	4.7	0.4	12.6
F014	8.6	457.	7.4	28.	71.	364.	99.	4.6	<1.0	12.
F015	8.55	451.	7.88 WH	27.7	73.5	357.	94.6	4.14	0.34	10.7
F020	8.47	435.	6.95	27.1	67.8	340.	97.9	4.27	0.499 WH	11.9
F021	8.76	472.	7.00	27.9	72.8	354.	101.	4.41	0.38	11.9
F021b	<20.	446.	<20.	31. WH	72.	350.	96.	<20.	<20.	<20.
F022	8.51	446.	7.14	26.9	70.4	347.	99.0	4.50	0.345	11.8
F024	8.2	451.	7.2	26.6	69.6	349.	97.5	4.5	0.4	11.5
F026	7.40 AL	450.	5.85 AL	27.1	72.2	349.	102.	3.19 AL	<2.	11.6
F060	8.4	437.	7.2	27.4	69.2	338.	96.4	4.6	0.4	11.7
F068	8.1	423.	6.7	26.	66.	337.	98.	4.3	0.3	11.
F153	<10.	451.	<10.	28.	71.	354.	98.	<10.	<10.	12.
F153b	8.6	448.	7.2	28.	72.	351.	103.	4.5	0.30	12.
F154	8.75	431.	7.13	26.9	67.7	332.	94.1	4.42	0.431	11.7
F158	9.	484. WH	7.	28.	71.	376.	100.	4.	<2.	12.
F183	8.13	410. WL	6.28	23.3 AL	66.0	318. WL	90.0 WL	3.87 WL	<1.00	10.5 WL
F186	8.7	474.	7.2	28.1	72.3	373.	100.	4.5	0.3	12.
F193	8.4	452.	6.9	27.	69.2	352.	96.8	4.3	<0.9	11.6
F223	10.0 AH	442.		30.3 WH	76.3	340.	96.7	<10.	<10.	12.2
F239	<17.	446.	<17.	<17. AL	59. AL	341.	87. AL	<17.	<17.	<17.
F248	8.50	447.	6.70	24.1 WL	64.6 WL	339.	97.2	4.40	0.30	10.9
F249	8.09	464.	6.65	26.2	70.3	363.	99.3	4.24	0.34	11.4
F301	9.30 WH	442.	7.70	26.2	71.5	345.	100.	5.28 AH	0.386	17.4 AH
F308	8.40	476.	4.71 AL	24.6 WL	73.3	395. AH	93.2	4.74	<2.1	4.94 AL
ASSIGNED VALUE *	8.53	450	7.04	27.4	71.0	350	98.0	4.41	0.362	11.70
R-STD DEV *	0.354	16.7	0.375	1.28	3.04	13.7	3.24	0.242	0.0538	0.569
ACCEPTABLE LIMITS(+-) *	0.708	33.4	0.750	2.56	6.08	27.4	6.48	0.484	0.1076	1.138
WARNING LIMITS(+-) *	.708- 1.062	33.4- 50.1	.750- 1.125	2.56- 3.84	6.08- 9.12	27.4- 41.1	6.48- 9.72	.484- .726	.1076- .1614	1.138- 1.707
ACTION LIMITS(<>) *	1.062	50.1	1.125	3.84	9.12	41.1	9.72	0.726	0.1614	1.707
N *	24	27	23	26	27	27	27	23	16	25

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	136.0	13.6			10			ICP-MS
F007	175.0	17.5			10			ICP-MS
F009	63.5	7.0			9			ICP-MS
F011	218.0	21.8		BIASED HIGH*	10	4.0	0.1995	
F014	171.0	19.0			9			ICP-MS
F015	130.5	13.0	WH		10			ICP-MS
F020	101.5	10.1	WH		10			ICP-MS
F021	173.5	17.3			10			ICP-MS Agilent
F021b	75.5	15.1	WH		5			ICP-AES
F022	125.5	12.5			10			ICP-MS
F024	117.5	11.7			10			ICP-MS
F026	98.0	10.8	AL AL AL		9			
F060	112.5	11.2			10			ICP-MS
F068	52.0	5.2		BIASED LOW	10	-5.2	0.5406	ICP-MS
F153	103.0	17.1			6			ICP-AES
F153b	164.5	16.4			10			ICP-MS
F154	96.5	9.6			10			ICP-MS
F158	164.0	18.2	WH		9			ICP-MS
F183	19.5	2.1	WL AL WLWLWL WL	BIASED LOW	9	-8.9	0.0153	ICP-MS
F186	187.5	18.7			10			ICP-MS
F193	96.5	10.7			9			ICP-MS
F223	123.0	17.5	AH WH		7			GFAAS
F239	21.0	5.2	ALAL AL	INSUFFICIENT DATA	4			ICP-AES
F248	67.0	6.7	WLWL		10			ICP-MS
F249	103.5	10.3			10			ICP-MS
F301	165.0	16.5	WH AH AH		10			AAS
F308	115.0	12.7	ALWL AH AL		9			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.9

PARAMETER: 03095 Lithium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	4.18	21.3	19.7	25.5	17.5	10.4	58.2	3.44	0.503	14.3
F007	4.2	23.1	20.6	26.4	18.7	11.2	61.4	3.6	0.6	15.7
F011	3.9	20.2	18.5 WL	23.2 WL	16.3	10.0	52.7	3.2	0.5	13.3
F015	4.63	23.8	23.3 AH	29.1 AH	20.7 WH	12.3	65.3	4.21 WH	0.64	17.4 WH
F020	4.1	22.1	19.9	25.6	16.8	10.	58.6	3.3	0.6	14.4
F022	4.27	22.9	20.2	25.5	18.1	10.9	58.4	3.57	0.474	15.1
F024	4.1	21.8	20.2	25.1	17.3	10.6	57.1	3.4	0.4	14.4
F060	4.	22.	19.	25.	18.	11.	57.	3.	<1.	14.
F069	4.22	19.1	20.2	25.1	19.2	11.8	62.1	3.86	0.572	16.3
F069b	4.48	24.	20.9	25.8	19.3	11.3	62.3	3.6	0.455	16.1
F153	<10.	20.	20.	24.	17.	10.	56.	<10.	<10.	14.
F153b	4.3	19.	20.	24.	18.	10.	54.	3.2	0.50	15.
F154	4.8 WH	23.1	20.3	25.2	19.1	12.4	57.4	4.3 WH	<2.	14.4
F183	4.48	22.7	20.1	25.2	17.8	10.9	50.8	3.95	0.807 WH	15.1
F186	4.0	22.8	20.7	25.2	18.2	11.7	59.6	3.5	<1.	15.2
F249	4.24	21.3	19.7	25.3	17.8	10.4	59.2	3.46	0.49	14.3
F308	3.56 WL	25.6	23.1 AH	28.3 AH	20.9 WH	15.5 AH	50.7	3.36	4.76 AH	15.5
ASSIGNED VALUE *	4.21	22.1	20.1	25.2	18.0	10.9	58.2	3.48	0.502	15.0
R-STD DEV *	0.275	1.86	0.68	0.94	1.21	0.98	4.28	0.358	0.1142	0.98
ACCEPTABLE LIMITS(+-) *	0.550	3.72	1.36	1.88	2.42	1.96	8.56	0.716	0.2284	1.96
WARNING LIMITS(+-) *	.550- .825	3.72- 5.58	1.36- 2.04	1.88- 2.82	2.42- 3.63	1.96- 2.94	8.56- 12.84	.716- 1.074	.2284- .3426	1.96- 2.94
ACTION LIMITS(<>) *	0.825	5.58	2.04	2.82	3.63	2.94	12.84	1.074	0.3426	2.94
N *	16	17	17	17	17	17	17	16	13	17

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	65.5	6.5			10			ICP-MS
F007	121.5	12.1			10			ICP-MS
F011	23.5	2.3	WLWL	BIASED LOW	10	-9.4	0.0709	
F015	155.0	15.5	AHAHWH WH WH	BIASED HIGH	10	12.1	0.2115	ICP-MS
F020	68.5	6.8			10			ICP-MS
F022	96.5	9.6			10			ICP-MS
F024	60.0	6.0			10			ICP-MS
F060	45.5	5.0			9			ICP-MS
F069	106.5	10.6			10			ICP-MS
F069b	130.0	13.0			10			ICP-AES
F153	25.0	3.5		BIASED LOW*	7	-2.9	-0.5205	ICP-AES
F153b	54.0	5.4			10			ICP-MS
F154	109.5	12.1	WH WH		9			ICP-MS
F183	93.0	9.3	WH		10			ICP-MS
F186	94.5	10.5			9			ICP-MS
F249	69.5	6.9			10			ICP-MS
F308	116.0	11.6	WL AHAHWHAH AH		10			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 8.7

PARAMETER: 25095 Manganese ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	9.96	313.	48.0	25.4	85.1	364.	96.3	6.95	6.71	18.5
F007	9.73	326.	46.1	26.1	88.6	370.	98.8	7.34	6.91	19.0
F009	12.7 AH	354. AH	57.5 AH	31.9 AH	102. AH	414. AH	114. AH	8.8 AH	9.9 AH	23.3 AH
F011	10.0	320.	48.6	25.7	85.6	364.	96.7	7.1	6.9	19.0
F014	9.9	316.	48.	26.	85.	367.	96.	7.0	6.8	18.
F015	9.2 WL	288.	45.9	23.6 WL	84.8	339.	91.6	6.29 WL	6.23 WL	16.1 WL
F020	9.84	312.	46.7	24.8	85.7	361.	94.6	6.96	6.61	18.1
F021b	10.	311.	47.	25.	86.	366.	94.	7.	7.	18.
F022	10.1	303.	48.0	25.9	86.6	358.	96.5	7.12	6.29 WL	18.7
F024	10.	312.	46.9	25.2	84.4	360.	94.9	7.	6.7	18.1
F026	10.2	321.	48.8	26.1	87.3	367.	98.3	7.29	6.98	18.9
F060	10.	326.	49.	26.	88.	378.	97.	7.	7.	19.
F068	9.5	313.	45.	24.	82.	357.	93.	6.5	6.5	17.
F069	10.1	284. WL	46.	24.8	81.4	344.	91.1	6.73	6.04 WL	17.9
F069b	10.1	317.	48.5	25.6	86.8	365.	96.5	7.07	6.77	18.3
F153	10.	310.	46.	25.	83.	360.	93.	7.	7.	17.
F153b	10.4	306.	52.	26.	90.	361.	98.	7.5	7.2	19.
F154	10.	308.	48.2	25.8	84.9	357.	93.3	7.06	6.84	18.5
F158	10.	343. WH	50.	26.	88.	386.	99.	7.	7.	19.
F179	<10.	280. WL	<10. AL	23. WL	41. AL	329. WL	59. AL	<10.	<10.	14. AL
F183	10.2	335.	48.9	26.2	94.6 WH	368.	87.0	7.93 AH	7.20	17.7
F186	9.4	322.	50.7	25.3	88.3	407. AH	101.	7.1	7.2	18.9
F193	9.7	309.	47.3	25.7	83.9	362.	93.3	6.9	6.9	18.5
F223	11.2 AH	300.	49.0	25.9	82.6	341.	91.8			19.7
F239	<18.	304.	41. AL	19. AL	78. WL	351.	87.	<18.	<18.	<18.
F248	9.70	303.	47.2	24.7	82.1	350.	92.1	7.00	6.60	17.9
F249	10.1	320.	48.8	25.9	86.9	371.	95.4	7.14	7.03	18.5
F301	16.5 AH	314.	45.8	29.4 AH	82.2	360.	90.5	9.4 AH	6.62	19.2
F308	9.29 WL	297.	52.3 WH	27.3	86.1	378.	89.9	7.67 WH	7.14	17.3
ASSIGNED VALUE *	10.00	312	48.0	25.7	85.6	361	94.6	7.00	6.90	18.5
R-STD DEV *	0.345	13.0	2.04	0.90	3.19	13.1	4.02	0.291	0.301	0.89
ACCEPTABLE LIMITS(+-) *	0.690	26.0	4.08	1.80	6.38	26.2	8.04	0.582	0.602	1.78
WARNING LIMITS(+-) *	.690- 1.035	26.0- 39.0	4.08- 6.12	1.80- 2.70	6.38- 9.57	26.2- 39.3	8.04- 12.06	.582- .873	.602- .903	1.78- 2.67
ACTION LIMITS(<>) *	1.035	39.0	6.12	2.70	9.57	39.3	12.06	0.873	0.903	2.67
N *	27	29	28	29	29	29	29	26	26	28

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	131.5	13.1			10			ICP-MS
F007	198.0	19.8			10			ICP-MS
F009	278.0	27.8	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	13.4	2.7843	ICP-MS
F011	174.5	17.4			10			
F014	145.5	14.5			10			ICP-MS
F015	36.0	3.6	WL WL WLWLWL	BIASED LOW	10	-6.9	0.7167	ICP-MS
F020	105.0	10.5			10			ICP-MS
F021b	133.5	13.3			10			ICP-AES
F022	145.5	14.5	WL		10			ICP-MS
F024	114.0	11.4			10			ICP-MS
F026	212.5	21.2			10			ICP-AES
F060	207.0	20.7			10			ICP-AES
F068	58.0	5.8		BIASED LOW*	10	-0.4	-1.3356	ICP-MS
F069	58.0	5.8	WL WL	BIASED LOW	10	-6.8	0.7431	ICP-MS
F069b	166.0	16.6			10			ICP-AES
F153	101.5	10.1			10			ICP-AES
F153b	214.0	21.4			10			ICP-MS
F154	129.5	12.9			10			ICP-MS
F158	216.5	21.6	WH		10			ICP-MS
F179	7.0	1.1	WLALWLALWLAL AL	BIASED LOW	6	-5.8	-16.7124	
F183	203.0	20.3	WH AH		10			ICP-MS
F186	204.0	20.4	AH		10			ICP-MS
F193	112.5	11.2			10			ICP-MS
F223	115.5	14.4	AH		8			ICP-AES
F239	20.5	3.4	ALALWL	BIASED LOW*	6	-0.9	-6.5754	ICP-AES
F248	69.5	6.9		BIASED LOW*	10	-3.2	0.0556	ICP-MS
F249	196.0	19.6			10			ICP-AES
F301	157.0	15.7	AH AH AH		10			AAS
F308	157.5	15.7	WL WH WH		10			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 14.5

PARAMETER: 42095 Molybdenum ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1= TM-9.2	2= TMDA-70.2	3= TM-DWS.3	4= TM-25.5	5= TMDA-51.4	6= TMDA-53.3	7= TMDA-62.2	8= TM-28.4	9= TMRain-04	10= TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	12.7	273.	66.8	29.1	59.1	261.	103.	3.86	0.220	14.6
F007	12.8	278.	67.9	30.9	60.4	272.	106.	3.86	0.241	14.3
F009	11.7	268.	63.9	27.9	55.3	257.	101.	4.4	<1.	13.8
F011	12.6	273.	67.8	29.5	59.0	260.	104.	4.4	0.5 AH	14.2
F015	13.7	268.	80.5 AH	32.7 WH	68. WH	264.	117. WH	4.64	0.3	16.5
F020	13.	286.	66.5	29.9	59.6	273.	107.	3.8	0.21	14.9
F021	12.2	265.	64.9	28.4	57.2	251.	99.4	3.71	0.22	14.4
F022	12.1	255.	67.3	29.1	57.8	245.	102.	5.01	0.201	14.3
F024	11.5	262.	66.9	28.8	56.5	253.	102.	5.7 WH	1. AH	13.8
F026	13.3	282.	71.6	31.0	62.5	271.	109.	<5.	<5.	15.4
F060	10. WL	244. WL	62.	27.	51. WL	232. WL	97.	5.	<1.	13.
F068	12.	260.	67.	29.	57.	247.	100.	4.0	0.24	14.
F069	13.4	261.	71.5	31.	62.2	248.	110.	3.96	0.228	15.2
F069b	15.2 WH	275.	67.3	30.6	61.2	260.	105.	5.81 WH	<2.20	16.8 WH
F153	12.	270.	69.	29.	59.	263.	102.	<10.	<10.	14.
F153b	12.7	274.	70.	29.	59.	263.	102.	3.8	0.52 AH	14.
F154	12.4	266.	65.2	28.6	56.4	248.	103.	3.84	0.27	14.3
F158	13.	277.	67.	28.	57.	262.	102.	<10.	<10.	14.
F186	13.3	342. AH	77.4 WH	31.4	63.9	345. AH	113. WH	4.7	0.2	16.1
F223	14.1	256.	68.9	30.1	58.1	245.	101.	<10.	<10.	16.5
F248	11.7	263.	63.8	27.0	53.7	248.	96.0	3.6	<1.0	13.7
F249	12.0	258.	62.9	27.2	55.5	252.	100.	3.54	0.21	13.4
F308	17.1 AH	315. AH	86.3 AH	38.5 AH	72.8 AH	349. AH	125. AH	8.53 AH	<0.8	11.8 WL
ASSIGNED VALUE *	12.6	268	67.0	29.0	58.6	257	102.0	3.98	0.220	14.3
R-STD DEV *	0.98	11.8	3.68	1.71	3.56	12.4	5.03	0.768	0.0695	1.10
ACCEPTABLE LIMITS(+-) *	1.96	23.6	7.36	3.42	7.12	24.8	10.06	1.536	0.1390	2.20
WARNING LIMITS(+-) *	1.96- 2.94	23.6- 35.4	7.36- 11.04	3.42- 5.13	7.12- 10.68	24.8- 37.2	10.06- 15.09	1.536- 2.304	.1390- .2085	2.20- 3.30
ACTION LIMITS(<>) *	2.94	35.4	11.04	5.13	10.68	37.2	15.09	2.304	0.2085	3.30
N *	23	23	23	23	23	23	23	19	14	23

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	119.0	11.9			10			ICP-MS
F007	149.5	14.9			10			ICP-MS
F009	60.5	6.7			9			ICP-MS
F011	128.5	12.8	AH		10			
F015	183.0	18.3	AHWHWH WH	BIASED HIGH*	10	0.2	4.7262	ICP-MS
F020	138.5	13.8			10			ICP-MS
F021	72.5	7.2			10			ICP-MS Agilent
F022	88.5	8.8			10			ICP-MS
F024	88.5	8.8	WHAH		10			ICP-MS
F026	154.0	19.2		BIASED HIGH*	8	4.6	0.7910	ICP-AES
F060	25.5	2.8	WLWL WLWL	BIASED LOW	9	-9.8	0.5013	ICP-MS
F068	74.0	7.4			10			ICP-MS
F069	142.5	14.2			10			ICP-MS
F069b	156.0	17.3	WH WH WH		9			ICP-AES
F153	94.0	11.7			8			ICP-AES
F153b	122.0	12.2	AH		10			ICP-MS
F154	86.5	8.6			10			ICP-MS
F158	90.0	11.2			8			ICP-MS
F186	181.5	18.1	AHWH AHWH	BIASED HIGH	10	30.9	-6.2285	ICP-MS
F223	97.5	12.1			8			ICP-AES
F248	31.0	3.4		BIASED LOW*	9	-2.9	-1.3770	ICP-MS
F249	40.0	4.0		BIASED LOW*	10	-3.2	-0.5878	ICP-MS
F308	180.0	20.0	AHAHAHAHAHAHAHAH WL	BIASED HIGH	9	25.5	-0.0343	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.5

PARAMETER: 28095 Nickel ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	19.3	334.	83.4	15.8	66.5	309.	99.3	9.81	0.890	18.0
F007	18.5	338.	86.0	15.8	69.7	317.	103.	10.0	0.963	18.3
F009	22.9 AH	372. AH	98. AH	18.7 AH	75.3 AH	348. WH	112. AH	12.0 AH	2.0 AH	21.5 AH
F011	19.2	341.	84.9	15.6	67.0	313.	98.9	10.0	0.9	18.6
F014	19.	340.	84.	16.	65.	320.	99.	10.	<5.	17.
F015	19.3	330.	85.	15.6	66.2	313.	94.4	10.1	0.97	17.7
F020	18.6	332.	81.3	15.3	66.6	312.	97.	9.63	0.93	17.6
F021	18.0	313.	78.6	14.6	63.4	293.	94.5	9.31	0.94	16.5
F021b	18.	337.	82.	12. AL	63.	317.	95.	9.	<6.	15. AL
F022	20.0	328.	78.9	16.1	68.3	312.	99.9	10.3	0.813	18.6
F024	18.7	324.	81.	15.1	64.5	304.	95.9	9.7	0.9	17.3
F026	19.4	341.	85.8	15.7	67.8	318.	101.	10.1	<2.	18.2
F060	18.8	322.	81.9	15.3	65.2	298.	96.2	9.8	0.8	17.4
F068	19.	337.	81.	15.	62.	310.	97.	9.4	1.0	16. WL
F069	18.8	285. AL	83.1	15.1	67.1	263. AL	100.	9.91	0.93	17.8
F069b	20.1	324.	79.9	16.6	64.7	300.	94.4	11.2	<1.20	18.5
F153	20.	327.	86.	16.	68.	314.	100.	10.	<5.	18.
F153b	20.	331.	86.	16.	68.	314.	100.	11.	0.95	18.
F154	19.	323.	83.3	15.5	65.2	306.	94.6	9.7	<1.	17.6
F158	20.	353. WH	86.	17. WH	68.	338. WH	102.	11.	<2.	19.
F183	19.4	370. AH	87.9	15.5	69.5	333.	94.0	10.4	<2.5	17.3
F186	17.5 WL	338.	86.5	15.3	66.8	346. WH	104.	9.9	0.8	18.9
F239	<16. AL	328.	78.	<16.	60. WL	306.	90. WL	<16.	<16.	<16. WL
F248	19.3	330.	83.5	15.5	66.2	312.	97.4	10.2	1.00	18.1
F249	19.8	337.	84.4	15.9	68.9	323.	98.5	10.1	0.89	17.7
F301	21.2 WH	329.	84.2	15.7	64.6	308.	102.	11.8 WH	3.26 AH	21.1 AH
F308	<4. AL	326.	92.4 WH	<4. AL	76.3 AH	322.	91.5	<4. AL	<4.	<4. AL
ASSIGNED VALUE *	19.2	330	83.8	15.6	66.5	313	98.0	10.00	0.930	17.9
R-STD DEV *	0.84	9.5	3.26	0.53	2.60	11.8	3.89	0.617	0.0907	0.89
ACCEPTABLE LIMITS(+-) *	1.68	19.0	6.52	1.06	5.20	23.6	7.78	1.234	0.1814	1.78
WARNING LIMITS(+-) *	1.68- 2.52	19.0- 28.5	6.52- 9.78	1.06- 1.59	5.20- 7.80	23.6- 35.4	7.78- 11.67	1.234- 1.851	.1814- .2721	1.78- 2.67
ACTION LIMITS(<>) *	2.52	28.5	9.78	1.59	7.80	35.4	11.67	1.851	0.2721	2.67
N *	25	27	27	25	27	27	27	25	17	25

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	124.0	12.4			10			ICP-MS
F007	173.5	17.3			10			ICP-MS
F009	250.0	25.0	AHAHAHAHAHWHAHAHAHAH	BIASED HIGH	10	11.4	1.6017	ICP-MS
F011	150.0	15.0			10			
F014	127.5	14.1			9			ICP-MS
F015	127.0	12.7			10			ICP-MS
F020	92.5	9.2			10			ICP-MS
F021	35.5	3.5		BIASED LOW	10	-5.8	0.0888	ICP-MS Agilent
F021b	62.0	6.8	AL AL		9			ICP-AES
F022	149.5	14.9			10			ICP-MS
F024	58.0	5.8		BIASED LOW*	10	-2.4	-0.2666	ICP-MS
F026	166.5	18.5			9			ICP-AES
F060	63.5	6.3		BIASED LOW*	10	-3.7	0.4341	ICP-MS
F068	79.5	7.9	WL		10			ICP-MS
F069	91.5	9.1	AL AL		10			ICP-MS
F069b	113.0	12.5			9			ICP-AES
F153	153.0	17.0			9			ICP-AES
F153b	179.0	17.9			10			ICP-MS
F154	72.0	8.0			9			ICP-MS
F158	204.0	22.6	WH WH WH	BIASED HIGH	9	7.5	-1.5217	ICP-MS
F183	154.0	17.1	AH		9			ICP-MS
F186	152.0	15.2	WL WH		10			ICP-MS
F239	19.0	3.8	AL WL WL WL	BIASED LOW*	5	0.9	-7.7437	ICP-AES
F248	134.5	13.4			10			ICP-MS
F249	161.0	16.1			10			ICP-MS
F301	167.0	16.7	WH WHAHAH		10			AAS
F308	84.0	16.8	AL WHALAH AL AL		5			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.2

PARAMETER: 37095 Rubidium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	4.46	0.685	0.470	0.475	15.9	0.406	16.1	2.39	0.0332	0.783
F011	4.0	0.6	0.4	0.4 WL	14.3	0.3 WL	14.5	2.2	<0.1	0.7
F022	4.46	0.687	0.454	0.476	16.0	0.412	16.2	2.43	0.030	0.768
F024	4.5	0.7	0.5	0.5	15.9	0.4	16.2	2.4	<0.05	0.7
F060	4.10	0.67	0.44	0.44	15.1	0.42	15.2	2.28	0.03	0.74
F153b	4.3	0.61	0.39	0.48	15.	0.35	16.	2.5	<0.2	0.69
F154	4.42	0.69	0.45	0.49	15.6	0.42	16.2	2.33	<0.2	0.76
F308	5.67 AH	<0.34 AL	<0.34 WL	<0.34 AL	11.9 AL	<0.34	8.60 AL	3.02 AH	<0.34	<0.34 AL
ASSIGNED VALUE *	4.42	0.685	0.450	0.476	15.6	0.406	16.10	2.39	0.0300	0.740
R-STD DEV *	0.284	0.0463	0.0435	0.0318	0.91	0.0408	0.941	0.144	0.00000	0.0427
ACCEPTABLE LIMITS(+-) *	0.568	0.0926	0.0870	0.0636	1.82	0.0816	1.882	0.288	-	0.0854
WARNING LIMITS(+-) *	.568- .852	.0926- .1389	.0870- .1305	.0636- .0954	1.82- 2.73	.0816- .1224	1.882- 2.823	.288- .432	-	.0854- .1281
ACTION LIMITS(<>) *	0.852	0.1389	0.1305	0.0954	2.73	0.1224	2.823	0.432	-	0.1281
N *	8	7	7	7	8	7	8	8	3	7

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	48.0	4.8			10			ICP-MS
F011	13.5	1.5	WL WL		9			
F022	53.0	5.3			10			ICP-MS
F024	52.0	5.7			9			ICP-MS
F060	31.0	3.1			10			ICP-MS
F153b	28.0	3.1			9			ICP-MS
F154	46.5	5.1			9			ICP-MS
F308	18.0	4.5	AHALWLALAL ALAHAL		4			ICP-MS

NOTE: BIAS WAS NOT ASSESSED BECAUSE STATISTICS FOR FEWER THAN 10 LABS WERE AVAILABLE

OVERALL AVERAGE RANK IS 4.1

PARAMETER: 34095 Selenium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	15.2	27.5	9.03	28.8	13.4	21.7	52.5	4.38	0.798	14.6
F007	18.4 WH	28.4	10.9 AH	30.0	16.0 AH	22.8	53.8	5.27 WH	0.964	17.4 WH
F009	16.4	29.6	9.9	31.9	14.4	24.1	59.7	4.9	1.0	15.7
F011	14.5	27.8	8.9	29.4	14.1	23.1	54.8	4.3	0.8	16.1
F014	15.	26.	8.7	28.	13.	22.	51.	4.4	<1.5	14.
F015	15.6	27.4	9.8	30.	14.5	22.6	53.6	4.8	0.9	15.3
F020	14.6	27.4	8.69	27.6	13.5	22.1	51.2	4.31	0.78	13.9
F021	14.8	26.0	8.91	27.9	12.9	21.5	51.7	4.40	0.72	14.3
F022	15.0	26.4	8.63	27.6	13.3	20.9	48.9	4.72	0.806	14.2
F024	14.6	27.7	9.3	29.6	14.2	23.5	54.	4.6	0.6 WL	14.3
F026	22.9 AH	27.7	<15.	31.6	<15.	24.3	55.0	<15.	<15.	16.2
F060	16.6	28.9	9.7	30.3	14.2	22.8	56.7	4.5	0.9	15.5
F068	16.	30.	9.8	31.	14.	23.	60.	4.7	0.9	15.
F069	16.9	26.9	9.1	31.8	14.7	24.4	58.3	4.88	0.87	16.4
F153	16.	30.	10.	32.	18. AH	24.	56.	<10.	<10.	16.
F153b	15.7	27.7	9.6	29.	13.8	22.9	53.	4.7	0.95	15.2
F154	14.9	27.4	9.	27.9	13.5	22.4	50.7	4.2	<1.	14.4
F158	17.	30.	10.	31.	15.	24.	58.	5.	<2.	16.
F183	15.0	27.0	9.71	31.0	14.2	21.8	49.0	4.23	<1.0	15.4
F186	18. WH	31.2 WH	7.9 WL	34. WH	13.9	2.1 AL	51.6	4.4	<1.	18.2 WH
F193	14.9	27.9	9.1	29.3	13.5	22.6	52.6	4.5	0.9	14.8
F223	14.7	27.0	9.24	29.1	13.6	21.8	55.0	4.00	<4.	14.2
F248	14.9	27.5	8.90	28.6	13.6	22.1	52.6	3.90	0.80	14.7
F249	15.0	26.1	9.00	29.2	13.6	21.5	50.6	4.37	0.82	13.9
ASSIGNED VALUE *	15.0	27.6	9.10	29.5	13.8	22.6	53.3	4.45	0.845	15.1
R-STD DEV *	1.11	1.47	0.580	1.71	0.69	1.18	3.32	0.333	0.0958	1.04
ACCEPTABLE LIMITS(+-) *	2.22	2.94	1.160	3.42	1.38	2.36	6.64	0.666	0.1916	2.08
WARNING LIMITS(+-) *	2.22- 3.33	2.94- 4.41	1.160- 1.740	3.42- 5.13	1.38- 2.07	2.36- 3.54	6.64- 9.96	.666- .999	.1916- .2874	2.08- 3.12
ACTION LIMITS(<>) *	3.33	4.41	1.740	5.13	2.07	3.54	9.96	0.999	0.2874	3.12
N *	24	24	23	24	23	24	24	22	16	24

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	80.5	8.0			10			ICP-MS
F007	189.0	18.9	WH AH AH WH WH	BIASED HIGH*	10	-1.8	1.5800	ICP-MS
F009	196.0	19.6		BIASED HIGH	10	11.5	-0.5891	ICP-MS
F011	113.0	11.3			10			
F014	49.0	5.4		BIASED LOW*	9	-4.6	0.0229	ICP-MS
F015	144.0	14.4			10			ICP-MS
F020	48.0	4.8		BIASED LOW*	10	-3.8	-0.0155	ICP-MS
F021	48.0	4.8		BIASED LOW*	10	-3.6	-0.1528	ICP-MS Agilent
F022	52.5	5.2		BIASED LOW	10	-8.6	0.5366	ICP-MS
F024	115.0	11.5	WL		10			ICP-MS
F026	119.5	19.9	AH	BIASED HIGH	6	-6.6	4.2181	ICP-AES
F060	160.5	16.0			10			ICP-MS
F068	168.0	16.8			10			ICP-MS
F069	173.5	17.3			10			ICP-MS
F153	164.0	20.5	AH	BIASED HIGH*	8	2.9	1.2987	ICP-AES
F153b	133.5	13.3			10			ICP-MS
F154	60.0	6.6			9			ICP-MS
F158	184.5	20.5		BIASED HIGH	9	8.0	0.0117	ICP-MS
F183	95.5	10.6			9			ICP-MS
F186	125.0	13.8	WHWHWLWH AL WH		9			ICP-MS
F193	110.5	11.0			10			ICP-MS
F223	72.0	8.0			9			AAS hydride
F248	75.5	7.5			10			ICP-MS
F249	64.0	6.4			10			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.0

PARAMETER: 47095 Silver ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	3.84	8.51	9.18	21.9	12.6	14.5	12.4	4.00	0.00034	11.5
F007	3.76	8.34	8.84	21.5	12.6	14.3	12.3	3.94	<0.002	10.6
F009	3.7	8.4	8.8	21.3	12.2	13.9	12.2	3.9	<1.	11.3
F011	3.4 WL	8.2	8.8	21.8	12.1	14.4	12.1	3.7	<0.1	11.2
F015	3.82	8.54	9.77 WH	22.4	13.1	14.8	12.5	4.1	<0.02	11.7
F020	3.87	8.77	8.8	21.9	12.5	14.7	12.4	3.89	0.009	11.8
F021	3.83	8.91	9.53	22.6	13.1	15.1	12.7	4.05	<0.01	11.9
F022	3.70	8.40	8.79	21.0	12.3	14.1	12.1	3.83	<0.01	11.0
F024	3.7	8.3	8.7	21.	12.1	13.8	11.8	3.8	<0.05	11.
F060	3.83	8.64	9.02	21.8	12.6	14.3	12.2	3.93	<0.01	11.6
F068	3.8	8.4	9.0	21.	11.	14.	12.	3.8	<0.05	11.
F069	3.61	7.22 AL	8.64	21.8	11.7	13.7	11.7	3.66	<0.005	10.8
F069b	3.2 AL	6.6 AL	8.3	20.6	11.3	12.9 WL	10.8 AL	3.6	<1.1	10.1 WL
F154	3.82	8.85	8.98	21.8	12.5	14.9	12.4	3.8	<0.1	11.3
F158	4.	9.	9.	22.	13.	15.	12.	4.	<2.	12.
F183	2.19 AL	7.09 AL	8.19 WL	21.8	11.4	13.4	11.9	2.97 AL	<0.1	10.7
F186	3.3 WL	<0.2 AL	9.0	20.7	11.9	13.6	12.1	3.5 WL	<0.2	10.9
F248	3.80	8.40	8.90	21.3	12.0	13.8	12.1	3.90	<0.10	11.2
F249	3.79	8.31	9.06	21.5	12.4	13.9	12.0	3.85	<0.002	11.0
F249a	3.68	8.34	9.37	21.9	13.4	14.5	13.1 WH	3.90	<0.02	11.4
F308	4.08	8.23	10.6 AH	27.9 AH	15.2 AH	18.0 AH	13.2 AH	4.57 AH	<0.6	12.2
ASSIGNED VALUE *	3.80	8.40	8.94	21.8	12.4	14.2	12.1	3.89	0.00467	11.2
R-STD DEV *	0.192	0.364	0.348	0.62	0.72	0.64	0.36	0.184	-	0.52
ACCEPTABLE LIMITS(+-) *	0.384	0.728	0.696	1.24	1.44	1.28	0.72	0.368	-	1.04
WARNING LIMITS(+-) *	.384- .576	.728- 1.092	.696- 1.044	1.24- 1.86	1.44- 2.16	1.28- 1.92	.72- 1.08	.368- .552	-	1.04- 1.56
ACTION LIMITS(<>) *	0.576	1.092	1.044	1.86	2.16	1.92	1.08	0.552	-	1.56
N *	21	20	21	21	21	21	21	21	2	21

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	144.0	14.4			10			ICP-MS
F007	94.5	10.5			9			ICP-MS
F009	87.5	9.7			9			ICP-MS
F011	72.5	8.0	WL		9			
F015	159.0	17.6	WH	BIASED HIGH*	9	2.8	0.1251	ICP-MS
F020	134.5	13.4			10			ICP-MS
F021	170.0	18.8		BIASED HIGH*	9	4.2	0.0826	ICP-MS Agilent
F022	74.5	8.2			9			ICP-MS
F024	52.5	5.8			9			ICP-MS
F060	129.5	14.3			9			ICP-MS
F068	71.5	7.9			9			ICP-MS
F069	41.0	4.5	AL	BIASED LOW*	9	0.9	-0.5472	ICP-MS
F069b	14.0	1.5	ALAL WLAL WL	BIASED LOW*	9	-4.4	-0.5806	ICP-AES
F154	121.5	13.5			9			ICP-MS
F158	150.5	16.7		BIASED HIGH*	9	0.9	0.2513	ICP-MS
F183	29.0	3.2	ALALWL AL	BIASED LOW	9	6.8	-1.5388	ICP-MS
F186	42.5	5.3	WLAL WL		8			ICP-MS
F248	85.0	9.4			9			ICP-MS
F249	84.5	9.3			9			ICP-AES
F249a	130.0	14.4	WH		9			Aqua-regia microwave
F308	173.0	19.2	AHAHAHAHAHAH	BIASED HIGH	9	31.9	-1.5320	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 10.8

PARAMETER: 38095 Strontium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1= TM-9.2	2= TMDA-70.2	3= TM-DWS.3	4= TM-25.5	5= TMDA-51.4	6= TMDA-53.3	7= TMDA-62.2	8= TM-28.4	9= TMRain-04	10= TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	110.	450.	242.	73.0	117.	367.	147.	74.8	1.82	111.
F009	112.	453.	239.	76.	118.	369.	154.	75.1	2.6 AH	114.
F011	102. WL	408.	220.	66.3	108.	335. WL	136.	67.5	1.6	104.
F015	114.	435.	224.	75.3	129. WH	363.	161.	81.6 WH	1.89	124. WH
F020	106.	446.	227.	71.6	112.	367.	145.	69.2	1.78	109.
F021b	109.	444.	236.	72.	117.	367.	146.	72.	2.	109.
F022	108.	434.	233.	74.3	118.	358.	150.	74.6	1.72	111.
F024	113.	462.	246.	73.5	119.	378.	151.	74.1	1.9	113.
F026	113.	456.	243.	75.8	119.	373.	149.	76.7	1.88	113.
F060	108.	437.	234.	72.	115.	357.	143.	73.	2.	108.
F068	107.	430.	237.	72.	110.	357.	150.	72.	1.7	110.
F069	107.	404.	230.	69.6	114.	362.	144.	71.7	1.57 WL	108.
F069b	117.	467.	249.	74.9	125.	380.	153.	75.4	2.02	115.
F153	110.	444.	241.	72.	118.	370.	146.	71.	<10.	109.
F153b	114.	443.	240.	76.	121.	368.	151.	78.	1.9	114.
F154	106.	452.	229.	70.4	112.	359.	146.	70.	1.9	107.
F158	111.	470.	238.	71.	116.	378.	146.	72.	<2.	110.
F183	112.	461.	247.	69.6	122.	405. AH	171. WH	72.9	1.70	121.
F186	114.	473.	260. WH	76.9	125.	413. AH	164.	78.	1.9	121.
F207	107.	431.	232.	70.2	112.	356.	142.	70.3	1.8	106.
F239	104.	432.	226.	68.	111.	355.	139.	67.	<12.	104.
F249	110.	422.	239.	71.9	117.	357.	150.	74.9	1.94	112.
F308	112.	535. AH	328. AH	92.4 AH	155. AH	520. AH	168. WH	77.7	<1.05 AL	124. WH
ASSIGNED VALUE *	110	444	238	72.0	117	365	149	73.0	1.88	111
R-STD DEV *	3.8	19.8	9.7	3.13	5.9	12.3	7.4	3.66	0.150	5.5
ACCEPTABLE LIMITS(+-) *	7.6	39.6	19.4	6.26	11.8	24.6	14.8	7.32	0.300	11.0
WARNING LIMITS(+-) *	7.6- 11.4	39.6- 59.4	19.4- 29.1	6.26- 9.39	11.8- 17.7	24.6- 36.9	14.8- 22.2	7.32- 10.98	.300- .450	11.0- 16.5
ACTION LIMITS(<>) *	11.4	59.4	29.1	9.39	17.7	36.9	22.2	10.98	0.450	16.5
N *	23	23	23	23	23	23	23	23	19	23

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	126.5	12.6			10			ICP-MS
F009	167.5	16.7	AH		10			ICP-MS
F011	13.5	1.3	WL WL	BIASED LOW	10	-8.4	0.7323	
F015	156.5	15.6	WH WH WH		10			ICP-MS
F020	68.5	6.8			10			ICP-MS
F021b	108.0	10.8			10			ICP-AES
F022	106.0	10.6			10			ICP-MS
F024	164.0	16.4			10			ICP-MS
F026	161.5	16.1			10			ICP-AES
F060	89.0	8.9			10			ICP-MS
F068	76.5	7.6			10			ICP-MS
F069	51.0	5.1	WL	BIASED LOW	10	-6.6	3.9600	ICP-MS
F069b	194.5	19.4		BIASED HIGH*	10	4.6	-0.1384	ICP-AES
F153	103.5	11.5			9			ICP-AES
F153b	166.5	16.6			10			ICP-MS
F154	71.5	7.1			10			ICP-MS
F158	109.5	12.1			9			ICP-MS
F183	155.5	15.5	AHWH		10			ICP-MS
F186	205.0	20.5	WH AH	BIASED HIGH	10	9.2	-1.1055	ICP-MS
F207	49.0	4.9		BIASED LOW*	10	-2.8	-0.7855	ICP-AES
F239	22.5	2.5		BIASED LOW*	9	-2.0	-4.5614	ICP-AES
F249	112.5	11.2			10			ICP-AES
F308	195.5	21.7	AHAHAHAHAHWH ALWH	BIASED HIGH	9	33.2	-14.0600	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.8

PARAMETER: 81095 Thallium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	2.00	21.5	8.61	30.5	20.8	15.6	53.3	3.98	0.379	18.7
F009	<10.	21.	<10.	30.	20.	16.	52.	<10.	<10.	18.
F011	2.0	20.7	8.5	29.6	20.8	15.2	52.6	4.0	0.5 AH	18.4
F014	2.1	22.	9.0	31.	21.	16.	54.	4.2	<1.0	19.
F015	1.84	18.7	8.79	28.2	19.9	13.4	43.8 AL	3.42 WL	0.339	15.5 WL
F020	2.01	21.8	8.59	30.7	20.7	15.6	53.2	3.93	0.378	18.9
F021	1.90	22.3	8.23	29.6	20.4	16.5	51.7	3.86	0.37	18.1
F022	2.01	21.2	8.41	29.6	20.6	15.2	52.1	4.05	0.378	18.2
F024	2.	21.4	8.7	30.7	21.1	15.6	53.	4.	0.4	18.6
F060	2.04	21.6	8.71	30.7	21.0	15.7	52.0	4.17	0.40	18.7
F068	1.9	20.	8.1	28.	19.	14.	51.	3.8	0.4	17.
F069	1.66 AL	14.5 AL	4.6 AL	14.9 AL	13.2 AL	9.68 AL	14.2 AL	3.22 AL	0.315 WL	11.1 AL
F153	<10.	22.	<10.	29.	20.	12. WL	52.	<10.	<10.	17.
F153b	2.0	22.	8.9	32.	21.	16.	54.	4.2	0.51 AH	19.
F154	2.05	21.5	8.7	29.9	20.9	15.9	51.1	3.9	0.39	18.2
F158	2.	21.	9.	31.	21.	15.	53.	4.	<2.	19.
F183	1.85	19.2	7.50 WL	27.0	19.1	13.8	44.4 AL	3.44 WL	0.348	16.9
F186	2.0	21.3	8.6	30.7	21.1	15.7	52.6	4.1	0.4	18.4
F248	2.00	19.6	8.00	27.0	19.2	14.2	51.5	4.00	0.40	17.0
F249	1.96	20.8	8.45	29.7	20.1	15.5	51.1	3.82	0.38	17.5
F308	2.40 AH	11.6 AL	<0.9 AL	26.2	12.1 AL	6.83 AL	42.2 AL	4.95 AH	<0.9	8.44 AL
ASSIGNED VALUE *	2.00	21.3	8.60	29.8	20.7	15.60	52.1	4.00	0.380	18.20
R-STD DEV *	0.089	1.27	0.397	1.78	0.92	1.284	1.79	0.227	0.0319	1.120
ACCEPTABLE LIMITS(+-) *	0.178	2.54	0.794	3.56	1.84	2.568	3.58	0.454	0.0638	2.240
WARNING LIMITS(+-) *	.178- .267	2.54- 3.81	.794- 1.191	3.56- 5.34	1.84- 2.76	2.568- 3.852	3.58- 5.37	.454- .681	.0638- .0957	2.240- 3.360
ACTION LIMITS(<>) *	0.267	3.81	1.191	5.34	2.76	3.852	5.37	0.681	0.0957	3.360
N *	19	21	18	21	21	21	21	19	16	21

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	127.5	12.7			10			ICP-MS
F009	69.0	11.5			6			ICP-MS
F011	111.5	11.1	AH		10			
F014	168.5	18.7		BIASED HIGH*	9	3.8	-0.0044	ICP-MS
F015	46.0	4.6	ALWL WL	BIASED LOW	10	-14.2	0.6108	ICP-MS
F020	131.5	13.1			10			ICP-MS
F021	99.5	9.9			10			ICP-MS Agilent
F022	105.0	10.5			10			ICP-MS
F024	140.5	14.0			10			ICP-MS
F060	151.0	15.1			10			ICP-MS
F068	55.5	5.5			10			ICP-MS
F069	14.0	1.4	ALALALALALALALWLAL	BIASED LOW	10	-69.3	3.4488	ICP-MS
F153	53.5	8.9	WL		6			ICP-AES
F153b	176.5	17.6	AH	BIASED HIGH*	10	4.4	-0.0160	ICP-MS
F154	122.0	12.2			10			ICP-MS
F158	130.0	14.4			9			ICP-MS
F183	35.5	3.5	WL ALWL	BIASED LOW	10	-13.4	0.4448	ICP-MS
F186	139.5	13.9			10			ICP-MS
F248	71.0	7.1			10			ICP-MS
F249	79.5	7.9			10			ICP-MS
F308	46.0	5.7	AHALAL ALALALAH AL		8			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 10

OVERALL AVERAGE RANK IS 10.4

PARAMETER: 50095 Tin ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	2.79	0.0531	0.0585	24.5	16.8	18.4	111.	3.91	0.830	15.0
F009	<5.	<5.	<5.	17.8 WL	13.1 WL	15.0 WL	94.7	6. AH	<5.	11.9 WL
F011	2.6	<0.1	<0.1	22.1	15.3	17.0	101.	3.5	0.7	13.8
F014	3.1	<1.0	<1.0	24.	17.	19.	112.	4.0	<1.0	15.
F015	3.14	0.2	0.19	25.2	18.2	18.8	122.	4.64	0.93	15.6
F020	2.87	0.06	0.05	24.5	17.1	18.8	113.	3.77	0.72	15.6
F021	2.89	<0.05	<0.05	25.7	17.9	19.7	116.	3.96	0.74	16.3
F022	2.79	0.103	0.085	23.1	16.5	18.3	107.	4.62	0.701	14.8
F024	2.5	0.3	0.2	19.4 WL	14.5	15.9	94.2	7.9 AH	2.4 AH	13.5
F060	2. AL	<1.	<1.	21.	14.	16.	99.	4.	<1.	13.
F068	2.9	<0.2	<0.2	23.	16.	18.	103.	3.9	0.8	15.
F153b	3.0	<0.2	<0.2	24.	17.	19.	110.	3.8	0.76	15.
F154	2.86	<0.2	<0.2	24.2	16.7	18.9	109.	3.73	0.72	15.
F158	3.	<2.	<2.	24.	17.	19.	110.	4.	<2.	15.
F183	2.58	<0.20	<0.20	22.3	15.3	17.1	108.	4.53	1.08 WH	15.2
F186	2.4	<0.1	<0.1	24.7	17.5	19.	121.	3.8	0.4 WL	16.
F248	2.7	<1.0	<1.0	20.9	15.2	16.7	98.7	3.5	<1.0	13.4
F249	2.73	0.04	0.04	23.0	16.1	17.4	112.	3.64	0.70	14.5
F249a	2.94	<2.	<2.	22.8	16.4	18.0	107.	3.75	<2.	14.1
F308	3.14	<0.31	<0.31	27.1	17.7	19.1	128.	5.38 WH	<0.31 AL	13.3
ASSIGNED VALUE *	2.86	0.0815	0.0718	23.6	16.6	18.4	109.5	3.90	0.730	15.0
R-STD DEV *	0.256	0.11613	0.08186	1.95	1.34	1.32	9.45	0.530	0.1382	1.13
ACCEPTABLE LIMITS(+-) *	0.512	0.23226	0.16372	3.90	2.68	2.64	18.90	1.060	0.2764	2.26
WARNING LIMITS(+-) *	.512- .768	.23226- .348	.16372- .245	3.90- 5.85	2.68- 4.02	2.64- 3.96	18.90- 28.35	1.060- 1.590	.2764- .4146	2.26- 3.39
ACTION LIMITS(<>) *	0.768	0.34839	0.24558	5.85	4.02	3.96	28.35	1.590	0.4146	3.39
N *	19	6	6	20	20	20	20	20	13	20

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	97.5	9.7			10			ICP-MS
F009	25.0	4.1	WLWLWL AH WL	BIASED LOW	6	-13.6	-0.5288	ICP-MS
F011	35.5	4.4		BIASED LOW*	8	-7.7	0.0111	
F014	99.5	14.2			7			ICP-MS
F015	143.5	14.3			10			ICP-MS
F020	105.0	10.5			10			ICP-MS
F021	125.0	15.6		BIASED HIGH*	8	5.9	0.1514	ICP-MS Agilent
F022	83.0	8.3			10			ICP-MS
F024	61.0	6.1	WL AHAH		10			ICP-MS
F060	29.0	4.1	AL	BIASED LOW*	7	-9.2	-0.4771	ICP-MS
F068	73.5	9.1			8			ICP-MS
F153b	97.5	12.1			8			ICP-MS
F154	81.0	10.1			8			ICP-MS
F158	95.0	13.5			7			ICP-MS
F183	73.5	9.1	WH		8			ICP-MS
F186	98.0	12.2	WL		8			ICP-MS
F248	25.5	3.6		BIASED LOW*	7	-9.9	-0.0018	ICP-MS
F249	60.5	6.0			10			ICP-MS
F249a	58.0	8.2			7			ICP-AES
F308	116.5	16.6	WHAL	BIASED HIGH	7	17.9	-1.4401	ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 10

OVERALL AVERAGE RANK IS 9.6

PARAMETER: 22095 Titanium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	8.30	0.160	0.129	24.7	14.4	0.128	59.0	8.50	0.529	14.8
F011	7.4	0.4	<0.1	24.3	13.9	0.2	58.9	8.2	0.4	16.2
F015	8.	<2.	<2.	25.	14.	<2.	59.	8.	<2.	15.
F020	8.1	0.5	<0.5	24.9	14.7	0.6	60.2	8.2	0.8 WH	15.2
F021	8.03	0.09	<0.05	24.2	13.8	0.07	56.6	7.85	0.53	14.3
F022	8.55	0.475	0.305	24.7	14.9	0.397	60.2	8.64	0.461	15.3
F024	7.7	<0.2	<0.2	22.6 WL	14.3	0.3	55.8	8.8	0.4	14.1
F060	8.5	<0.5	<0.5	24.8	14.6	<0.5	59.7	8.4	0.6	15.2
F068	8.0	<0.2	<0.2	24.	13.	<0.2	57.	7.9	0.6	14.
F153b	8.7	<0.2	<0.2	24.	15.	<0.2	56.	7.4	0.56	15.
F154	7.74	<0.2	<0.2	23.9	14.3	<0.2	58.3	7.89	0.5	14.6
F158	8.	<2.	<2.	24.	14.	<2.	58.	8.	<2.	14.
F183	7.86	<0.50	<0.50	23.9	13.6	<0.50	53.0 WL	8.21	0.502	14.7
F186	9.4 WH	<0.2	<0.2	23.7	13.7	0.3	56.3	8.1	0.4	16.4 WH
F249	7.70	<1.	<1.	23.9	13.8	<1.	57.5	7.91	<1.	14.0
F308	10.3 AH	<1.53	<1.53	25.2	14.1	<1.53	53.5	11.2 AH	<1.53	9.72 AL
ASSIGNED VALUE *	8.00	0.400	0.217	24.1	14.0	0.300	57.8	8.10	0.516	14.80
R-STD DEV *	0.517	0.2131	-	0.60	0.53	0.1909	2.16	0.399	0.0965	0.794
ACCEPTABLE LIMITS(+-) *	1.034	-	-	1.20	1.06	0.3818	4.32	0.798	0.1930	1.588
WARNING LIMITS(+-) *	1.034- 1.551	-	-	1.20- 1.80	1.06- 1.59	.3818- .5727	4.32- 6.48	.798- 1.197	.1930- .2895	1.588- 2.382
ACTION LIMITS(<>) *	1.551	-	-	1.80	1.59	0.5727	6.48	1.197	0.2895	2.382
N *	16	5	2	16	16	7	16	16	12	16

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	81.0	8.1			10			ICP-MS
F011	60.5	6.7			9			
F015	59.0	9.8			6			ICP-AES
F020	99.5	11.0	WH		9			ICP-MS
F021	46.5	5.1			9			ICP-MS Agilent
F022	99.0	9.9			10			ICP-MS
F024	43.5	5.4	WL		8			ICP-MS
F060	87.0	12.4		BIASED HIGH*	7	3.1	0.0570	ICP-MS
F068	39.5	5.6			7			ICP-MS
F153b	61.5	8.7			7			ICP-MS
F154	43.5	6.2			7			ICP-MS
F158	40.0	6.6			6			ICP-MS
F183	37.0	5.2	WL		7			ICP-MS
F186	55.5	6.9	WH WH		8			ICP-MS
F249	27.0	4.5			6			ICP-AES
F308	60.0	10.0	AH AH AL		6			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 7.7

PARAMETER: 74095 Tungsten ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F022	2.03	0.136	0.066	0.119	12.2	0.146	0.063	3.6	<0.01	6.44
F069	1.91	0.080	0.032	0.055	7.98	0.038	<0.010	3.4	<0.010	4.05
F154	1.94	<0.2	<0.2	<0.2	12.4	<0.2	<0.2	3.6	<0.2	6.56
F308	12.3	14.7	13.4	13.6	28.7	13.4	12.6	9.98	12.2	20.8
ASSIGNED VALUE *	1.94	0.108	0.049	0.087	12.30	0.092	6.332	3.60	12.200	6.50
R-STD DEV *	0.341	1.2780	0.7760	1.4606	10.376	2.4648	-	0.627	-	7.741
ACCEPTABLE LIMITS(+-) *	-	-	-	-	-	-	-	-	-	-
WARNING LIMITS(+-) *	-	-	-	-	-	-	-	-	-	-
ACTION LIMITS(<>) *	-	-	-	-	-	-	-	-	-	-
N *	4	3	3	3	4	3	2	4	1	4

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F022	18.5	2.0			9			ICP-MS
F069	8.0	1.0			8			ICP-MS
F154	10.5	2.6			4			ICP-MS
F308	31.0	3.1			10			ICP-MS

NOTE: BIAS WAS NOT ASSESSED BECAUSE STATISTICS FOR FEWER THAN 10 LABS WERE AVAILABLE

OVERALL AVERAGE RANK IS 2.1

PARAMETER: 92095 Uranium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1=	2=	3=	4=	5=	6=	7=	8=	9=	10=
	TM-9.2	TMDA-70.2	TM-DWS.3	TM-25.5	TMDA-51.4	TMDA-53.3	TMDA-62.2	TM-28.4	TMRain-04	TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	1.91	59.7	14.5	26.6	29.7	33.1	56.3	5.90	0.284	15.5
F009	1.9	55.3	14.0	25.1	27.2	30.2	51.9	5.7	<1.	14.9
F011	2.0	60.1	14.9	27.3	30.8	33.3	58.8	6.3	0.4 AH	16.1
F014	1.9	57.	15.	27.	29.	32.	55.	5.9	<0.5	15.
F015	1.87	60.1	15.9	26.1	29.9	30.3	54.5	5.33 WL	0.267	13.6
F020	2.04	61.	15.3	27.8	30.2	34.1	58.	6.11	0.296	16.4
F021	1.85	58.4	14.4	28.6	29.4	31.8	58.5	5.76	0.29	15.4
F022	1.93	59.2	14.3	26.1	29.4	32.7	56.4	5.91	0.314	15.3
F024	1.9	59.8	14.8	26.9	30.	33.2	56.9	6.1	0.3	15.6
F060	1.8	59.0	14.6	26.8	29.5	33.4	56.0	6.0	<0.5	15.5
F068	1.9	60.	14.	26.	29.	33.	57.	5.9	0.30	15.
F069	1.82	56.1	15.6	28.1	31.4	34.3	58.9	5.91	0.282	16.6
F153	<10.	60.	15.	20. AL	29.	32.	56.	<10.	<10.	19. AH
F153b	1.9	57.	14.	27.	29.	32.	56.	5.8	0.26	15.
F154	2.03	58.5	15.2	27.	29.9	33.1	55.5	5.99	0.31	15.8
F158	<2.	58.	14.	27.	29.	32.	57.	6.	<2.	15.
F183	2.00	53.1 WL	13.0	23.3	26.8	29.8	44.5 AL	5.00 AL	0.260	13.9
F186	2.0	63.1	15.3	28.	32.0	34.3	59.	6.2	0.3	16.6
F193	1.9	57.3	14.1	26.5	29.2	31.8	55.4	5.9	<0.7	15.4
F248	1.90	54.6	13.0	22.8 WL	26.3	28.8	52.9	5.70	0.30	13.7
F249	1.76	57.5	13.5	24.5	27.0	31.4	55.6	5.50	0.28	14.4
F308	2.12 WH	51.9 WL	9.04 AL	22.9 WL	26.7	29.6	49.1 WL	6.82 AH	<0.8	9.71 AL
ASSIGNED VALUE *	1.90	58.4	14.50	26.8	29.3	32.0	56.0	5.90	0.293	15.35
R-STD DEV *	0.089	2.47	0.922	1.78	1.63	1.69	2.35	0.267	0.0215	1.100
ACCEPTABLE LIMITS(+-) *	0.178	4.94	1.844	3.56	3.26	3.38	4.70	0.534	0.0430	2.200
WARNING LIMITS(+-) *	.178- .267	4.94- 7.41	1.844- 2.766	3.56- 5.34	3.26- 4.89	3.38- 5.07	4.70- 7.05	.534- .801	.0430- .0645	2.200- 3.300
ACTION LIMITS(<>) *	0.267	7.41	2.766	5.34	4.89	5.07	7.05	0.801	0.0645	3.300
N *	20	22	22	22	22	22	22	21	15	22

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	124.5	12.4			10			ICP-MS
F009	48.0	5.3		BIASED LOW	9	-6.9	0.2919	ICP-MS
F011	179.5	17.9	AH	BIASED HIGH*	10	3.7	0.0774	
F014	90.0	10.0			9			ICP-MS
F015	88.5	8.8	WL		10			ICP-MS
F020	180.5	18.0		BIASED HIGH*	10	3.9	0.1486	ICP-MS
F021	112.5	11.2			10			ICP-MS Agilent
F022	123.5	12.3			10			ICP-MS
F024	145.5	14.5			10			ICP-MS
F060	114.0	12.6			9			ICP-MS
F068	107.0	10.7			10			ICP-MS
F069	151.5	15.1			10			ICP-MS
F153	86.5	12.3	AL AH		7			ICP-AES
F153b	84.0	8.4			10			ICP-MS
F154	147.5	14.7			10			ICP-MS
F158	91.0	11.3			8			ICP-MS
F183	38.0	3.8	WL ALAL	BIASED LOW	10	-14.3	0.5656	ICP-MS
F186	193.0	19.3		BIASED HIGH	10	6.8	-0.0024	ICP-MS
F193	83.5	9.2			9			ICP-MS
F248	40.5	4.0	WL	BIASED LOW	10	-6.6	-0.4609	ICP-MS
F249	50.0	5.0		BIASED LOW*	10	-1.1	-0.6347	ICP-MS
F308	53.0	5.8	WHWLALWL WLAH AL		9			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.1

PARAMETER: 23095 Vanadium ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1= TM-9.2	2= TMDA-70.2	3= TM-DWS.3	4= TM-25.5	5= TMDA-51.4	6= TMDA-53.3	7= TMDA-62.2	8= TM-28.4	9= TMRain-04	10= TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	3.13	314.	46.0	26.7	48.0	309.	114.	3.13	0.779	13.2
F007	3.10	323.	45.7	26.5	48.6	325.	118.	3.15	0.717	13.6
F009	3.8 AH	362. AH	55.6 AH	33.0 AH	58.0 AH	362. AH	138. AH	3.9 AH	1.5 AH	16.8 AH
F011	3.1	311.	44.8	26.3	47.4	306.	114.	3.1	0.7	13.6
F014	3.0	295.	43.	25.	45.	306.	105. WL	3.2	<1.0	13.
F015	3.	289.	45.	25.5	46.4	295.	120.	2.97	0.67	12.2
F020	3.3	317.	44.5	26.	48.	314.	115.	3.2	0.7	13.1
F021	3.04	307.	44.0	25.8	46.6	304.	113.	3.09	0.67	13.0
F021b	5. AH	310.	45.	26.	45.	312.	112.	<4.	<4.	12.
F022	3.12	306.	45.3	26.2	48.3	317.	116.	3.15	0.652	13.2
F024	3.1	313.	44.8	25.9	47.1	312.	114.	3.2	0.7	13.
F060	3.3	302.	46.7	27.2	49.8	298.	119.	3.4	0.7	13.9
F068	3.3	333.	45.	26.	46.	323.	115.	3.2	0.7	13.
F069	2.91	246. AL	43.3	24.9	46.7	243. AL	122.	3.01	0.638	12.7
F069b	2.99	319.	44.9	26.4	46.6	315.	111.	3.06	0.74	12.9
F153	<5.	320.	49.	28.	51.	322.	119.	<5.	<5.	14.
F153b	3.4	319.	50.	28.	51.	318.	118.	3.4	0.70	14.
F154	3.1	308.	45.2	26.4	47.9	313.	111.	3.25	0.72	13.
F158	3.	317.	44.	25.	46.	317.	112.	3.	<2.	13.
F183	3.58 WH	377. AH	50.0	30.0 AH	54.2 WH	354. WH	115.	3.67 WH	0.775	13.9
F186	2.9	332.	50.2	27.6	51.6	352. WH	126. WH	3.0	0.5 AL	14.2
F248	3.10	306.	44.4	25.4	46.6	301.	112.	3.10	0.60	12.9
F249	3.00	318.	41.9	25.0	46.0	320.	106.	2.94	0.62	12.0
F308	3.30	331.	48.5	22.7 WL	49.1	381. AH	113.	4.46 AH	<0.14 AL	5.88 AL
ASSIGNED VALUE *	3.10	314	45.0	26.0	47.4	314	114	3.14	0.700	13.00
R-STD DEV *	0.202	14.6	2.66	1.26	2.40	15.2	4.7	0.187	0.0630	0.778
ACCEPTABLE LIMITS(+-) *	0.404	29.2	5.32	2.52	4.80	30.4	9.4	0.374	0.1260	1.556
WARNING LIMITS(+-) *	.404- .606	29.2- 43.8	5.32- 7.98	2.52- 3.78	4.80- 7.20	30.4- 45.6	9.4- 14.1	.374- .561	.1260- .1890	1.556- 2.334
ACTION LIMITS(<>) *	0.606	43.8	7.98	3.78	7.20	45.6	14.1	0.561	0.1890	2.334
N *	23	24	24	24	24	24	24	22	19	24

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	139.0	13.9			10			ICP-MS
F007	160.5	16.0			10			ICP-MS
F009	228.0	22.8	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	14.3	2.3168	ICP-MS
F011	109.5	10.9			10			
F014	48.5	5.3	WL	BIASED LOW*	9	-4.9	-0.3086	ICP-MS
F015	68.0	6.8			10			ICP-MS
F020	128.5	12.8			10			ICP-MS
F021	73.0	7.3			10			ICP-MS Agilent
F021b	74.5	9.3	AH		8			ICP-AES
F022	126.0	12.6			10			ICP-MS
F024	106.5	10.6			10			ICP-MS
F060	148.5	14.8			10			ICP-MS
F068	135.0	13.5			10			ICP-MS
F069	55.0	5.5	AL AL	BIASED LOW	10	-22.8	6.2562	ICP-MS
F069b	98.0	9.8			10			ICP-AES
F153	139.0	19.8		BIASED HIGH*	7	1.1	2.2349	ICP-AES
F153b	184.0	18.4			10			ICP-MS
F154	118.5	11.8			10			ICP-MS
F158	66.0	7.3			9			ICP-MS
F183	205.0	20.5	WHAH AHWHWH WH	BIASED HIGH	10	15.7	-2.1364	ICP-MS
F186	158.5	15.8	WHWH AL		10			ICP-MS
F248	63.5	6.3			10			ICP-MS
F249	55.0	5.5		BIASED LOW*	10	1.2	-2.0290	ICP-MS
F308	131.0	14.5	WL AH AHALAL		9			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.1

PARAMETER: 30095 Zinc ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

SAMPLE	1= TM-9.2	2= TMDA-70.2	3= TM-DWS.3	4= TM-25.5	5= TMDA-51.4	6= TMDA-53.3	7= TMDA-62.2	8= TM-28.4	9= TMRain-04	10= TM-15.2
LAB NO	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT	LAB RESULT
F003	52.2	512.	398.	46.8	141.	391.	122.	29.6	7.77	35.4
F007	52.3	512.	399.	48.7	148.	395.	127.	32.3	8.56	38.9
F009	64.5 AH	592. AH	483. AH	58.9 AH	170. AH	465. AH	145. AH	38.4 AH	11.3 AH	44.0 AH
F011	51.3	487.	377.	45.4	134.	368.	116.	30.3	7.6	35.9
F014	53.	500.	394.	48.	142.	385.	124.	30.	7.8	36.
F015	50.4	487.	394.	45.3	138.	376.	114.	28.	7.4	31.9
F020	48.6	470.	366.	43.7	132.	368.	114.	27.8	8.4	32.8
F021	49.3	468.	365.	45.3	135.	369.	117.	28.0	7.34	33.6
F021b	51.	485.	379.	45.	140.	383.	117.	28.	7.	34.
F022	52.7	507.	385.	46.8	142.	389.	123.	29.7	7.00	35.8
F024	51.6	497.	388.	47.4	140.	382.	120.	29.7	7.7	34.6
F026	53.0	500.	394.	47.0	143.	385.	123.	29.7	7.83	35.4
F060	57.	517.	410.	51.	151.	403.	132.	32.	8.	38.
F068	56.	553.	413.	50.	140.	423.	130.	31.	8.6	36.
F069	53.	454.	428.	47.4	147.	414.	127.	30.6	8.15	36.4
F069b	52.7	495.	387.	49.2	140.	382.	121.	30.1	7.9	33.6
F153	51.	503.	399.	46.	140.	389.	119.	29.	8.	33.
F153b	51.	482.	394.	46.	140.	378.	117.	29.	8.1	34.
F154	51.4	480.	370.	46.5	139.	371.	119.	29.	7.8	34.8
F158	55.	514.	408.	49.	147.	406.	127.	31.	8.	37.
F183	51.0	512.	386.	44.1	135.	396.	110.	28.8	7.59	33.2
F186	68. AH	609. AH	491. AH	71. AH	189. AH	490. AH	151. AH	38. AH	10. AH	45. AH
F193	53.3	442. WL	359.	49.9	137.	360.	116.	30.8	8.9	36.4
F207	53.	506.	406.	46.	144.	389.	122.	29.	7.	35.
F223	54.0	521.	393.	48.7	141.	389.	122.	30.6		36.6
F239	<54.	486.	364.	<54.	113. AL	359.	91. AL	<54.	<54.	<54.
F248	51.7	499.	384.	45.9	139.	376.	117.	29.9	7.7	35.1
F249	54.5	527.	412.	49.2	149.	409.	127.	31.0	7.72	36.7
F301	49.8	475.	363.	44.3	136.	407.	116.	26.9	5.72 AL	33.3
F308	141. AH	577. WH	441. WH	49.5	163. AH	415.	119.	14.2 AL	4.07 AL	28.0 AL
ASSIGNED VALUE *	52.2	500	394	46.8	140	387	120	29.7	7.80	35.2
R-STD DEV *	2.49	26.5	23.2	2.47	6.5	20.6	6.6	1.66	0.668	2.12
ACCEPTABLE LIMITS(+-) *	4.98	53.0	46.4	4.94	13.0	41.2	13.2	3.32	1.336	4.24
WARNING LIMITS(+-) *	4.98- 7.47	53.0- 79.5	46.4- 69.6	4.94- 7.41	13.0- 19.5	41.2- 61.8	13.2- 19.8	3.32- 4.98	1.336- 2.004	4.24- 6.36
ACTION LIMITS(<>) *	7.47	79.5	69.6	7.41	19.5	61.8	19.8	4.98	2.004	6.36
N *	29	30	30	29	30	30	30	29	28	29

* NOTE: SEE GLOSSARY FOR DEFINITIONS

LAB NO.	TOTAL RANK	AVERAGE RANK	SUMMARY OF FLAGGING	BIAS STATEMENT	NO.SAMPLES RANKED	BIAS % SLOPE	BIAS BLANK	METHOD CODING
F003	161.5	16.1			10			ICP-MS
F007	222.5	22.2			10			ICP-MS
F009	285.0	28.5	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	19.3	2.4527	ICP-MS
F011	92.0	9.2			10			
F014	174.5	17.4			10			ICP-MS
F015	69.5	6.9		BIASED LOW*	10	-1.8	-1.4001	ICP-MS
F020	49.0	4.9		BIASED LOW	10	-6.1	0.0009	ICP-MS
F021	52.0	5.2		BIASED LOW	10	-6.5	1.2786	ICP-MS Agilent
F021b	80.0	8.0			10			ICP-AES
F022	149.5	14.9			10			ICP-MS
F024	128.0	12.8			10			ICP-MS
F026	166.0	16.6			10			ICP-AES
F060	249.0	24.9		BIASED HIGH*	10	3.1	2.8336	ICP-MS
F068	241.0	24.1		BIASED HIGH	10	9.0	-3.1051	ICP-MS
F069	202.0	20.2			10			ICP-MS
F069b	144.5	14.4			10			ICP-AES
F153	129.5	12.9			10			ICP-AES
F153b	112.0	11.2			10			ICP-MS
F154	98.5	9.8			10			ICP-MS
F158	230.0	23.0			10			ICP-MS
F183	88.0	8.8			10			ICP-MS
F186	291.0	29.1	AHAHAHAHAHAHAHAHAHAH	BIASED HIGH	10	22.6	5.7281	ICP-MS
F193	132.5	13.2	WL		10			ICP-MS
F207	151.5	15.1			10			ICP-AES
F223	176.0	19.5			9			ICP-AES
F239	15.0	3.0	AL AL	BIASED LOW*	5	2.2	-33.1143	ICP-AES
F248	110.0	11.0			10			ICP-MS
F249	232.0	23.2			10			ICP-AES
F301	59.0	5.9	AL	BIASED LOW*	10	-3.0	-0.8061	AAS
F308	180.0	18.0	AHWHWH AH ALALAL		10			ICP-MS

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.2