Table 1
Grand Forks Ambient Network
Summary Water Quality Statistics
(uncensored data)

				EAGLE ROCK							OLIVER							OSOYOOS							GRAND FORKS							
Labatory Parameter	unit	New Label	GCDWQ	N	Max	Mode	Arith. Mean	StDev (sd)	Skewness	Normal Dist.	N	Max	Mode	Arith. Mean	StDev (sd)	Skewness	Normal Dist.	N	Max	Mode	Arith. Mean	StDev (sd)	Skewness	Normal Dist.	N	Max	Mode	Arith. Mean	StDev (sd)	Skewness	Normal Dist.	
Alkalinity Total 4.5 (mg/L)	mg/L	**Alkalinity**	n.a.	26	230.0	163.0	150.2	58.28	-0.66	no	62	289.0	130.0	188.6	67.00	0.03	no	387	525.0	270.0	280.8	51.32	0.49	no	419	358.0	150.0	167.4	56.94	0.42	yes	**Alkalinity**
Ammonia - Dissolved (mg/L)	mg/L	**NH4**	n.a.	24	0.037	0.005	0.013	0.01	1.03	yes	62	2.370	0.005	0.046	0.30	7.87	no	429	4.570	0.005	0.046	0.26	13.96	no	440	0.330	0.005	0.010	0.02	11.47	no	**NH4**
Arsenic - Total (mg/L)	mg/L	**As**	0.01	22	**0.060**	**0.050**	**0.012**	0.02	1.43	no	63	**0.060**	0.000	0.004	0.01	4.33	no	316	**0.300**	**0.040**	**0.024**	0.03	4.02	no	398	**0.278**	**0.060**	**0.014**	0.03	4.86	no	**As**
Bicarbonate (mg/L)	mg/L	**HCO3**	n.a.	6	290.0	#N/A	171.7	67.95	1.18	yes	19	340.0	260.0	244.7	73.06	-0.28	no	28	450.0	330.0	346.8	60.50	-0.89	no	52	380.0	200.0	220.0	73.14	0.41	no	**HCO3**
Calcium - Total (mg/L)	mg/L	**Ca**	n.a.	23	86.6	56.8	54.9	23.54	-0.75	yes	63	135.0	37.1	60.9	29.31	0.43	yes	314	226.0	110.0	106.9	24.17	-0.12	no	398	223.0	69.4	63.5	23.75	1.08	no	**Ca**
Chloride - Dissolved (mg/L)	mg/L	**Cl**	250	28	24.9	#N/A	10.6	8.31	0.13	no	63	21.0	11.0	7.7	4.80	0.72	yes	429	195.0	16.0	23.0	22.11	3.53	no	443	50.0	1.3	7.2	7.36	1.92	no	**Cl**
Iron - Total (mg/L)	mg/L	**Fe**	0.3	22	**3.110**	0.006	**0.528**	0.71	2.52	no	63	**8.420**	0.005	0.212	1.09	7.13	no	314	**167.000**	0.005	**2.311**	15.22	9.18	no	398	**340.000**	0.005	**3.618**	28.01	9.31	no	**Fe**
Fluoride - Dissolved (mg/L)	mg/L	**Fl**	1.5	24	0.14	0.10	0.08	0.03	0.09	yes	62	0.55	0.28	0.33	0.09	0.85	no	296	0.68	0.35	0.37	0.08	0.66	yes	375	0.76	0.40	0.42	0.13	0.09	yes	**Fl**
Hardness - Total (mg/L)	mg/L	**Hardness**	n.a.	25	280.5	#N/A	174.2	72.35	-0.60	yes	63	564.0	131.0	230.6	106.95	0.61	yes	206	639.0	355.0	365.6	78.79	0.20	no	290	431.0	229.0	219.7	77.46	-0.07	no	**Hardness**
Potassium - Total (mg/L)	mg/L	**K**	n.a.	21	3.00	3.00	2.47	0.61	-0.43	no	63	8.10	5.00	4.01	1.57	-0.01	yes	215	15.00	6.00	6.68	2.19	1.12	no	305	5.66	2.00	2.55	0.95	0.43	no	**K**
Magnesium - Total (mg/L)	mg/L	**Mg**	n.a.	23	15.60	#N/A	7.84	3.96	0.48	yes	63	54.90	18.70	19.06	11.01	1.10	yes	314	85.90	18.30	25.42	11.49	1.70	no	398	119.00	16.10	15.18	10.13	4.95	no	**Mg**
Manganese - Total (mg/L)	mg/L	**Mn**	0.05	22	**0.1800**	0.0100	**0.0589**	0.06	1.13	no	63	**0.1740**	0.0040	0.0290	0.04	1.78	yes	314	**18.1000**	0.0010	**0.1282**	1.07	15.36	no	398	**11.5000**	0.0010	**0.1492**	0.92	9.47	no	**Mn**
Sodium - Total (mg/L)	mg/L	**Na**	200	22	13.4	#N/A	7.1	3.64	0.20	yes	63	26.0	15.5	15.2	5.41	0.19	no	215	115.0	20.9	28.5	11.89	3.90	no	305	43.7	7.8	10.9	6.38	1.69	no	**Na**
Nitrite Nitrogen - Dissolved (mg/L)	mg/L	**NO2**	n.a.	26	0.019	0.002	0.005	0.01	1.60	no	63	0.021	0.002	0.003	0.00	4.68	no	378	2.020	0.005	0.014	0.11	17.03	no	428	1.490	0.005	0.011	0.07	19.02	no	**NO2**
Nitrogen - Total (mg/L)	mg/L	**NO3**	10	25	4.40	0.03	1.24	1.41	1.09	no	63	**10.10**	0.03	1.90	2.88	1.86	no	209	**48.90**	**11.00**	**8.88**	6.76	1.71	no	294	**20.00**	0.07	4.62	5.04	0.95	no	**NO3**
Total Dissolved Solids (mg/L)	mg/L	**TDS**	500	28	340.0	50.0	205.7	91.20	-0.50	no	63	**538.0**	260.0	300.1	127.99	0.26	no	423	**1590.0**	**480.0**	**514.9**	128.09	1.50	no	442	**650.0**	350.0	285.5	104.36	-0.10	yes	**TDS**
Conductivity (uS/cm)	uS/cm	**Conductance**	n.a.	29	553.0	334.0	334.7	155.42	-0.41	no	63	790.0	294.0	474.9	184.15	0.19	no	402	1340.0	790.0	768.3	158.10	0.06	no	443	940.0	467.0	440.7	157.81	-0.19	yes	**Conductance**
Sulfate - Dissolved (mg/L)	mg/L	**SO4**	500	27	31.1	1.0	13.4	8.23	0.37	yes	37	113.0	87.3	52.7	30.19	0.03	no	382	186.0	54.0	68.5	25.55	1.45	no	430	146.0	39.0	42.8	28.73	1.07	yes	**SO4**
Uranium - Total (mg/L)	mg/L	**U**	0.02	15	0.0071	0.0071	0.0038	0.00	0.29	yes	55	**0.0420**	0.0020	0.0082	0.01	2.24	yes	108	**0.0304**	0.0154	0.0091	0.01	1.71	yes	183	**0.0185**	0.0112	0.0054	0.00	0.95	no	**U**
pH (pH units)	pH units	**pH**	6.5 to 8.5	28	**8.87**	8.10	8.11	0.22	1.72	no	63	**8.85**	8.10	8.06	0.24	-0.79	no	430	**8.60**	8.00	7.91	0.26	-0.28	yes	441	8.40	8.20	8.04	0.31	-8.80	no	**pH**
Dissolved : Chloride / Fluoride		**Cl/Fl**	n.a.	28	522.5	#N/A	119.8	133.1	1.27	yes	63	75.0	17.1	24.3	16.8	1.29	yes	433	661.1	40.0	43.8	59.4	4.66	no	443	178.750	10.000	17.379	25.49	3.08	no	**Cl/Fl**

NOTES:

(1) **8.420** Yellow Box with Red Value - value is greater than or equal to GCDWQ
(2) **8.420** Yellow Box with Blue Value - value is greater than or equal to 85% GCDWQ
(3) Max, Mode, & Arithmetic Mean are standard parametric statistical methods.
(4) Errors in mode calculations have not been resolved
(5) Standard Deviation & Skewness are indicators of normal tendencies
(6) Normal Distribution indicator above is based on the Studentized Range Test
(7) **Standard Deviation**
The standard deviation is kind of the "mean of the mean.
The likelihood of the true value of mean falling within a specified range is calculated using the following formula:
Range is " Mean +/- K*standard deviation" , where K depends on the level of likelihood desired

K	Likelihood
0.6745	50%
1	68.26%
1.96	95%
2.576	99%

(8) **Skewness**
Skewness is a measure of symmetry, or more precisely, the lack of symmetry.
A distribution, or data set, is symmetric if it looks the same to the left and right of the center point
The skewness for a normal distribution is zero, and any symmetric data should have a skewness near zero.
Negative values for the skewness indicate data that are skewed left, meaning the left tail is long relative to the right tail
Positive values for the skewness indicate data that are skewed right, meaning the right tail is long relative to the left tail