TITLE: SABS PROFICIENCY TESTING SCHEME, RSA

SABS

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TANZANIA, 3 – 8 December 2007

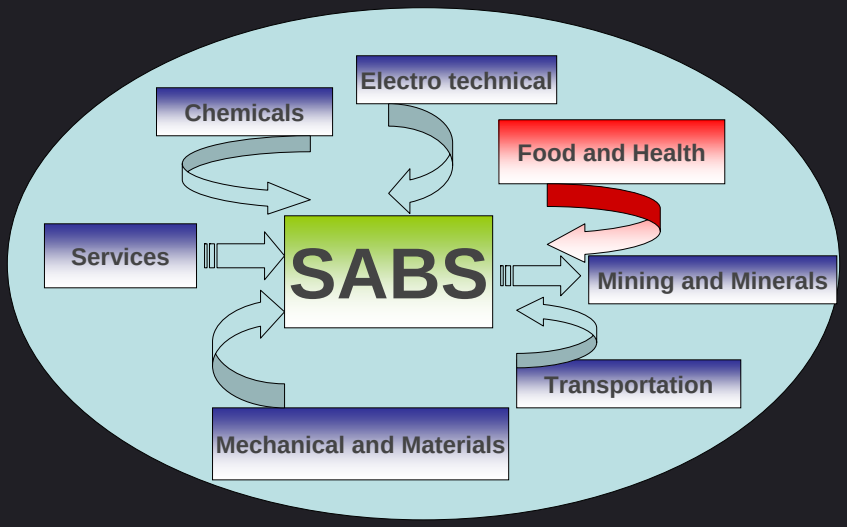
Mission

SABS

Mission Statement of SABS:

Ø To offer value-added standardization services on an ethical and principled basis that uplift the African standard and empower South African industry to compete vigorously towards increased market access. In so doing SABS contributes to the economic growth of South Africa and Africa as a whole within a framework that protects consumers and the environment by promoting uncompromised quality of products and services.

SABS BUSINESS UNITS



Purpose of PTS

- The SABS Commercial (Pty) Ltd (Food Chemistry), is a provider of a proficiency testing scheme (PTS) and recognized by a accreditation body SANAS (South African National Accreditation System) according to ILAC G 13 (Guidelines for the requirements for the competence of providers of proficiency testing schemes).

- It is recognised that schemes conducted may have primary aims such as establishing the effectiveness and precision of test methods, equipment and evaluating the individual performance of laboratory staff.

Purpose of PTS

- Proficiency testing schemes are used by laboratory accreditation bodies as part of an assessment process to verify competence of a laboratory.
- A high level of confidence is given to an accredited proficiency testing scheme (PTS) based on international acceptable requirements.
- Running a PTS Programme improves the quality system of the laboratory.

SABS WATER CHECK (PTS)

- SABS Water-Check (PTS) is a high frequency inter-laboratory Inorganic Chemistry Water proficiency-testing programme with the objective of providing a rapid report-back service to participants for self-evaluation
- SABS Water-Check allows flexibility in participation and no specific methods or instrumentation are prescribed.
- The programme is divided into three categories, each category being scheduled on a quarterly basis.

PTS Provider, SABS is supply the following:

SABS

- Preparation of samples for the following groups

Group 1

Heavy metals in water: aluminium, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, silicon, strontium, vanadium, zinc, mercury, arsenic and selenium.

Scheduled : January, April, July, and October.

Provides the following

SABS

Group 2

Nutrients and oxygen demand: kjeldahl nitrogen, nitrate, ammonia, total phosphate, orthophosphate, oxygen absorbed , chemical oxygen demand, dissolved organic carbon and total organic carbon.

Scheduled : February, May, August, November.

Provides the following

SABS

Group 3

Major constituents in water: pH, conductivity, dissolved solids, calcium, magnesium, sodium, potassium, chloride, fluoride, sulfate, alkalinity, nitrate and turbidity.

Scheduled: March, June, September, and December

REPORT

SABS

- **REPORT DISCUSSION**

Conclusion

- **List of participating laboratories/Client base locally and Internationally for all the groups (101)**

PARTICIPATION ON THE SCHEME MEANS GROWTH, IMPROVEMENT AND TAKING THE LABORATORY TO AN IMPROVED QUALITY SYSTEM.

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME

TABLE A

ANALYTICAL RESULTS **Okt 07**

GROUP 1 **Gr 1 (cont)**

Determinand		B1	B3	B5	B7	B8	B9A	B9B	B10	B11A	B11B	B14	B16	B16a	B19	B21A	B21B	B22	B23	B25	B30	B31	B33	B34	B36	Spike ug/l	Median	Robust SD	n
Aluminium as Al in µg/l	1			723,0		792,0	803,0		807,0	857,0		810,0			590,0	995,0	959,0	752,0	870,0	872,0	573,0	782,0			804,0	750,0	802,0	105	48
	2			1523		1582	1450		1523	1692		1400			1380	2002	1861	1500	1520	1600	1346	1516			1575	1500	1552	151	48
	3			211,0		203,0	341,0		254,0	273,0		30,00			10,00	361,0	379,0	38,00	195,0	236,0		356,0			216,0	375,0	257,0	85	47
Barium as Ba in µg/l	1	176,5		200,0		167,0	434,0		220,0	217,0		185,0			170,0	286,0		146,0		191,0		192,0			185,0	150,0	190,0	15	34
	2	512,5		513,0		468,0	470,0		549,0	559,0		490,0			470,0	774,0		434,0		489,0		483,0			491,0	450,0	488,0	27	34
	3	326,5		344,0		314,0	291,0		307,0	388,0		335,0			320,0	525,0		303,0		327,0		336,0			327,0	300,0	327,0	18	34
Beryllium as Be in µg/l	1	36,00		49,00		50,00	110,0		51,00	52,00		52,00			50,00	53,00	47,00	34,00	50,00	51,00						50,00	50,00	3	25
	2	139,5		149,0		153,0	114,0		149,0	156,0		155,0			150,0	190,0	182,0	120,0	150,0	154,0						150,0	150,0	7	25
	3	91,00		62,00		91,00	77,50		59,00	93,00		80,00			70,00	112,0	96,00	46,00	90,00	74,00						100,0	81,79	14	25
Boron as B µg/l	1	425,5		560,0		591,0	1480		568,0	576,0		550,0			330,0	776,0	763,0	505,0		572,0		566,0				500,0	541,0	53	29
	2	2075		2091		2012	1502		2025	2135		2000			1340	2761	2521	1370		2010		2011				2000	2005	162	30
	3	1055		1087		1048	908,0		1059	1108		1000			750,0	1412	1370	927,0		1070		1033				1000	1038	83	30
Cadmium as Cd in µg/l	1	137,5		117,0		115,0	478,0		145,0	133,0		140,0			110,0	154,0	155,0	123,0	125,0	125,0	117,0	126,0	120,0		120,0	125,0	126,0	13	51
	2	553,0		517,0		489,0	214,0		577,0	532,0		540,0			500,0	650,0	626,0	476,0	500,0	504,0	502,0	502,0	470,0		489,0	500,0	502,0	33	51
	3	263,5		230,0		234,0	101,0		231,0	265,0		280,0			240,0	320,0	313,0	228,0	240,0	233,0	242,4	252,0	230,0		246,0	250,0	241,0	19	51
Chromium as Cr in µg/l	1	1060		1248	1268	1156	2910		1208	1155		1200			1100	1591	1581	1103	1190	1210	1189	1203	1120		1174	1200	1191	52	51
	2	2110		2495	2674	2357	366,0		2497	2349		2500			2400	3301	3177	2328	2405	2450	2418	2413	2320		2385	2400	2413	99	51
	3	452,0		413,0	515,0	314,0	1280		424,0	397,0		60,00			340,0	512,0	611,0	30,00	385,0	342,0	327,3	550,0	370,0		287,0	600,0	397,0	103	51
Cobalt as Co in µg/l	1	402,0		377,0		380,0	369,0		405,0	385,0		450,0			380,0	544,0	534,0	386,0	410,0	392,0	437,4	395,0	370,0		398,0	400,0	397,0	18	48
	2	798,5		797,0		771,0	762,0		801,0	769,0		850,0			780,0	1082	1060	769,0	760,0	796,0	855,0	800,0	740,0		797,0	800,0	797,0	39	48
	3	195,5		168,0		184,0	126,0		200,0	192,0		220,0			190,0	240,0	245,0	196,0	195,0	188,0	210,5	194,0	190,0		200,0	200,0	195,0	10	48
Copper as Cu in µg/l	1	379,0	311,0	317,0		306,0	884,0		336,0	328,0		350,0			290,0	427,0	410,0	324,0	320,0	359,0	352,3	306,0	290,0		324,0	300,0	322,0	24	54
	2	1185		1288		1206	731,0		1203	1247		1200			1200	1643	1573	1143	1170	1290	1382,0	1196	1090		1205,0	1200	1205	62	53
	3	531,0		551,0		517,0	363,0		523,0			520,0			510,0	795,0	773,0	305,0	515,0	425,0	601,0	589,0	380,0		464,0	600,0	490,0	117	53
Iron as Fe in µg/l	1		1010	1154		1086	2150		1171	1128		1300			660,0	1491		941,0	1120	1070	1099	1285	1030		1111	1250	1099	147	53
	2		2546	2774		2472	1360		2628	2614		2600			1730	3393		2293	2410	2660	2725	2520	2340		2540	2500	2471	120	54
	3		422,0	439,0		338,0	987,0		454,0	481,0		30,00			150,0	505,0		37,00	465,0	440,0	375,7	660,0	375,0		416,0	625,0	438,5	94	54
Lead as Pb in µg/l	1	414,5		124,0		169,0	675,0		109,0	161,0		150,0			120,0	192,0		123,0	175,0	150,0		169,0	170,0		156,0	150,0	154,0	30	50
	2	848,0		604,0		624,0	255,0		555,0	615,0		616,0			490,0	766,0		526,0	520,0	582,0		603,0	500,0		577,0	600,0	586,0	45	50
	3	499,0		185,0		207,0	193,0		196,0	199,0		16,00			190,0	315,0		24,0	230,0	167,0		292,0	140,0		162,0	300,0	192,5	65	50
Manganese as Mn in µg/l	1	248,0	281,0	246,0	224,0	247,0	854,0		282,0	280,0		290,0			240,0	346,0	332,0	271,0	260,0	286,0	279,7	271,0			278,0	250,0	270,5	17	56
	2	1010	1072	1038	1104	983,0	408,0		1040	1049		1000			990,0	1308	1304	940,0	980,0	1060	1026	1015			1024,0	1000	1003	54	56
	3	483,5	523,0	489,0	507,0	481,0	213,0		551,0	530,0		560,0			500,0	651,0	655,0	470,0	495,0	531,0	519,0	511,0			519,0	500,0	493,5	36	56
Mercury as Hg in µg/l	1		1,900				6,000		1,400			0,770			0,000			2,400		10,00			0,270		3,000	2,400	3	15
	2	13,50	7,800				6,000		7,600			1,540			0,000			9,800		15,00			10,72		9,000	8,800	4	16
	3		8,800				6,000		2,500			0,950			0,000			1,900		7,000			0,350		6,000	2,500	3	15
Molybdenum as Mo in µg/l	1	148,5		74,00		83,00	189,0			98,00		80,00			80,00	106,0		75,00		69,00	52,80	99,00				100,0	89,7	14	29
	2	303,0		267,0		275,0	425,0			306,0		290,0			250,0	377,0		250,0		263,0	247,6	287,0				300,0	275,0	24	30
	3	250,0		187,0		163,0	302,0			199,0		150,0			180,0	194,0		45,00		194,0	171,5	199,0				200,0	188,5	26	30
Nickel as Ni in µg/l	1	1055		1064		1068	1180		1094	1153		1700			1070	1461	1475	1068	1155	1060	1156	1094	1060		1113	1100	1108	62	50
	2	2025		2337		2150	2300		2202	2294		3500			2190	2964	2947	2147	2215	2200	2289	2189	2150		2231	2200	2201	111	50
	3	504,0		531,0		529,0	567,0		577,0	577,0		900,0			550,0	734,0	728,0	540,0	630,0	556,0	573,0	549,0	570,0		553,0	550,0	554,8	33	50
Silicon as Si in µg/l	1		1890	1954		1883	1661		1782			1900			1150	2227		2080	1755	1950		1721				-	1746	208	30
	2		1903	1745		1790	1503		1745			1800			1130	2211		2003	1700	1810		1697				-	1744	178	30
	3		1854	3131		1798	1540		1692			1800			1130	2201		2000	1690	1830		1699				-	1691	184	30
Strontium as Sr in µg/l	1	185,0		178,0		174,0	322,0		151,0	202,0		150,0			160,0	229,0	236,0	175,0		184,0		178,0			177,0	80,00	176,5	13	34
	2	353,0		347,0		327,0	338,0		325,0	380,0		280,0			330,0	443,0	451,0	371,0		339,0		330,0			330,0	240,0	330,0	16	33
	3	265,0		264,0		251,0	244,0		258,0	292,0		225,0			250,0	334,0	319,0	293,0		261,0		255,0			252,0	160,0	255,0	18	33
Vanadium as V in µg/l	1	104,0		90,00		76,00	329,0		63,00	91,00		90,00			70,00	114,0	115,0	82,0		70,00		95,00				100,0	86,0	18	28
	2	395,0		390,0		404,0	287,0		392,0	431,0		430,0			390,0	553,0		394,0		415,0		398,0				400,0	399,5	39	28
	3	177,0		152,0		108,0	109,0		143,0	155,0		27,0			120,0	171,0		32,0		128,0		191,0				200,0	143,5	40	28
Zinc as Zn in µg/l	1	540,5	474,0	424,0		452,0	481,0		454,0	463,0		540,0			440,0	627,0		500,0	425,0	572,0	417,0	469,0	410,0		457,0	40,00	460,0	52	53
	2	504,5	448,0	386,0		423,0	418,0		402,0	410,0		480,0			410,0	554,0	546,0	484,0	395,0	478,0	383,2	432,0	375,0		429,0	120,0	425,5	43	54
	3	309,0		277,0		327,0	323,0		326,0	352,0		390,0			340,0	448,0	426,0	320,0	315,0	362,0	308,2	353,0	300,0		340,0	80,00	326,0	40	53
Arsenic as As in µg/l	4		2,100				5,000					5,900						1,000		11,00						3,000	4,415	3	12
	5		15,00				18,00					14,00			20,00			12,00		25,00						15,00	14,50	2	14
	6		8,200				11,00					9,100			10,00			5,000		16,00						9,000	8,835	1	12
Selenium as Se in µg/l	4	121,0	7,900				10,00		8,200			8,900						6,500		18,00						7,500	8,900	3	15
	5	103,5	13,00				16,00		16,60			13,00			20,00			10,90		20,00						12,50	15,10	6	17
	6	93,00	5,500				7,000		16,10			7,900			30,00			3,300		11,00						5,000	7,000	5	15

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME

TABLE A

ANALYTICAL RESULTS **Okt 07**

GROUP 1 **Gr 1 (cont)**

Determinand		B38	B39	B41	B42	B45	B49A	B49B	B63	B68	B69A	B69B	B69C	B70	B71	B73	B74	B76	B78	B79	B81	B86	B88	B91	Spike ug/l	Median	Robust SD	n
Aluminium as Al in µg/l	1	650,0	871,0		754,0		940,0	903,0	780,0	797,0	858,0				752,7	863,0	353,0	890,0				724,0			750,0	802,0	105	48
	2	1330	1829		2518		1450	1759	1535	1515	1635				1497	1812	1490	1800				1458			1500	1552	151	48
	3	300,0	149,0		30,00		470,0	260,0	224,0	312,0	273,0				173,4	117,0	317,0	270,0				199,0			375,0	257,0	85	47
Barium as Ba in µg/l	1		176,0		190,0			155,0		200,0	191,0				186,4	207,0	190,0	200,0							150,0	190,0	15	34
	2		483,0		487,0			469,0		480,0	472,0				474,6	519,0	490,0	510,0							450,0	488,0	27	34
	3		305,0		339,0			305,0		337,0	322,0				328,5	345,0	331,0	350,0							300,0	327,0	18	34
Beryllium as Be in µg/l	1				48,00			43,00	50,00	43,00					49,97										50,00	50,00	3	25
	2				146,0			168,0	150,0	133,0					151,1										150,0	150,0	7	25
	3				50,0			51,00	63,00	80,00					81,79										100,0	81,79	14	25
Boron as B µg/l	1				518,0			599,0							536,0		261,0	620,0							500,0	541,0	53	29
	2				1868			1977							1831		1810	2230							2000	2005	162	30
	3				993,0			1059							943,0		933,0	1160							1000	1038	83	30
Cadmium as Cd in µg/l	1		140,0		128,0		120,0	113,0	125,0	110,0	128,0				112,0	135,0	109,0	140,0				122,0			125,0	126,0	13	51
	2		601,0		496,0		500,0	509,0	500,0	453,0	502,0				469,0	510,0	439,0	540,0				195,0			500,0	502,0	33	51
	3		252,0		253,0		240,0	200,0	171,0	221,0	245,0				217,0	265,0	206,0	260,0				241,0			250,0	241,0	19	51
Chromium as Cr in µg/l	1		1237		1187		1410	1218	1160	1187	1162				1191	1216	1080	1190				1131			1200	1191	52	51
	2		2583		2388		2990	2489	2402	2464	2385				2444	2496	2190	2480				2348			2400	2413	99	51
	3		275,0		27,00		480,0	384,0	371,0	433,0	378,0				330,0	239,0	433,0	350,0				320,0			600,0	397,0	103	51
Cobalt as Co in µg/l	1		465,0		397,0		350,0	401,0	395,0	397,0	404,0				407,7	414,0	370,0	420,0				386,0			400,0	397,0	18	48
	2		983,0		790,0		720,0	800,0	779,0	777,0	804,0				804,7	829,0	716,0	850,0				768,0			800,0	797,0	39	48
	3		238,0		198,0		140,0	193,0	188,0	216,0	198,0				200,0	217,0	169,0	210,0				195,0			200,0	195,0	10	48
Copper as Cu in µg/l	1		304,0		321,0		330,0	323,0	309,0	341,0	324,0				351,8	346,0	289,0	330,0				332,0			300,0	322,0	24	54
	2		1285		1188		1180	1249	1210	1179	1217				1335	1275	1120	1270,0				1276			1200	1205	62	53
	3		255,0		328,0		400,0	339,0	340,0	581,0	449,0				463,6	552,0	436,0	570,0				441,0			600,0	490,0	117	53
Iron as Fe in µg/l	1	1250	871,0		1279		1100	1109	861,0	1223	1004				943,7	1003	930,0	960,0				1006			1250	1099	147	53
	2	2540	2601		2281		2450	2473	2384	2563	2543				2455	2216	2230	2570				2499			2500	2471	120	54
	3	670,0	199,0		24,00		500,0	425,0	425,0	659,0	391,0				409,8	313,0	438,0	250,0				368,0			625,0	438,5	94	54
Lead as Pb in µg/l	1		123,0		109,0		190,0	162,0	98,00	179,0	154,0				161,0	91,00	104,0	150,0				137,0			150,0	154,0	30	50
	2		625,0		688,0		590,0	612,0	577,0	608,0	593,0				594,0	525,0	442,0	580,0				565,0			600,0	586,0	45	50
	3		123,0		20,00		230,0	170,0	188,0	258,0	192,0				23,00	116,0	107,0	200,0				166,0			300,0	192,5	65	50
Manganese as Mn in µg/l	1	250,0	287,0		269,0		260,0	289,0	272,0	90,0	267,0				270,9	288,0	246,0	280,0				259,0			250,0	270,5	17	56
	2	930,0	1111		999,0		1010	1064	974,0	849,0	1010				1005	1051	918,0	1070				971,0			1000	1003	54	56
	3	480,0	539,0		505,0		490,0	523,0	484,0	303,0	495,0				508,9	539,0	456,0	530,0				484,0			500,0	493,5	36	56
Mercury as Hg in µg/l	1		8,000					<100.0														4,500			3,000	2,400	3	15
	2		10,00					<100.0														7,500			9,000	8,800	4	16
	3		6,000					<100.0														1,500			6,000	2,500	3	15
Molybdenum as Mo in µg/l	1		7,000					57,00	103,0	133,0					92,03		77,00					82,00			100,0	89,7	14	29
	2		24,00					259,0	275,0	305,0					267,4		270,0					273,0			300,0	275,0	24	30
	3		19,00					160,0	219,0	228,0					161,8		178,0					192,0			200,0	188,5	26	30
Nickel as Ni in µg/l	1		1197		1102		1060	1148	1086	1070	1121				1120	1158	1010	1160				1136			1100	1108	62	50
	2		2450		2182		2100	2287	2196	2174	2232				2250	2312	2020	2340				2221			2200	2201	111	50
	3		590,0		546,0		530,0	563,0	503,0	526,0	549,0				563,3	594,0	496,0	560,0				572,0			550,0	554,8	33	50
Silicon as Si in µg/l	1		1657		1650			1897		1662					1667		873,0								-	1746	208	30
	2		1659		1617			1843		1596					1649		1630								-	1744	178	30
	3		1606		1603			1856		1649					1627		1640								-	1691	184	30
Strontium as Sr in µg/l	1		165,0		181,0			149,0	181,0	213,0	179,0				175,5										80,00	176,5	13	34
	2		349,0		327,0			316,0	335,0	378,0	326,0				331,0										240,0	330,0	16	33
	3		275,0		257,0			276,0	255,0	298,0	250,0				257,0										160,0	255,0	18	33
Vanadium as V in µg/l	1		68,00		82,00			25,00	72,00						78,70		63,00					78,00			100,0	86,0	18	28
	2		426,0		373,0			415,0	421,0						401,0		368,0					392,0			400,0	399,5	39	28
	3		107,0		23,00			108,0	145,0						131,7		144,0					127,0			200,0	143,5	40	28
Zinc as Zn in µg/l	1		557,0		472,0		460,0	483,0	450,0		461,0				446,0	491,0	410,0	500,0				427,0			40,00	460,0	52	53
	2		529,0		427,0		450,0	439,0	425,0		426,0				419,5	455,0	380,0	450,0				383,0			120,0	425,5	43	54
	3		363,0		343,0		300,0	305,0	264,0		333,0				333,1	339,0	285,0	370,0				316,0			80,00	326,0	40	53
Arsenic as As in µg/l	4							6.000									1,260								3,000	4,415	3	12
	5		14,00					14,00									11,00								15,00	14,50	2	14
	6							9,000									8,670								9,000	8,835	1	12
Selenium as Se in µg/l	4							<10.00									9,230					1,800			7,500	8,900	3	15
	5		1,000					31,00									15,60					3,500			12,50	15,10	6	17
	6							<10,00									4,630					1,500			5,000	7,000	5	15

TABLE A
ANALYTICAL RESULTS

Okt 07

GROUP 1

Gr 1 (cont)

Determinand		B93	B94	B99	B100	B101	B103	B104	B105	B107	B108	B109	B112	B113	B115	B116	B117	B121a	B121c	B123	B124	B125	B126	B127	B128	Spike ug/l	Median	Robust SD	n
Aluminium as Al in µg/l	1			700,0	790,0		98,40	873,0			809,0	730,0	890,0	801,0		1100					786,0				776,0	750,0	802,0	105	48
	2			1600	1468		1776	1643			1566	1450	1538	1608		2207					1505				1567	1500	1552	151	48
	3			100,0	257,0		445,9	261,0			220,0	200,0	280,0	234,3		269,0					326,0				242,0	375,0	257,0	85	47
Barium as Ba in µg/l	1				184,0						203,0			182,3		181,0									185,0	150,0	190,0	15	34
	2				487,0						526,0			473,5		469,0									471,0	450,0	488,0	27	34
	3				324,0						357,0			325,0		314,0									326,0	300,0	327,0	18	34
Beryllium as Be in µg/l	1				50,00						53,00			50,89											57,00	50,00	50,00	3	25
	2				146,0						163,0			152,8											169,0	150,0	150,0	7	25
	3				83,00						83,00			74,10											92,00	100,0	81,79	14	25
Boron as B µg/l	1				549,0		529,0				511,0			512,5		487,0									541,0	500,0	541,0	53	29
	2				1863		2030				1882			1909		1930									1998	2000	2005	162	30
	3				960,0		1024				975,0			968,9		971,0									1043	1000	1038	83	30
Cadmium as Cd in µg/l	1				120,0	130,0	114,6	128,0	146,0		135,0	134,0	122,0	126,9		108,0		118,0		150,7	142,0				127,0	125,0	126,0	13	51
	2				513,0	540,0	505,1	524,0	582,0		538,0	512,0	501,0	501,2		417,0		452,0		541,5	503,0				527,0	500,0	502,0	33	51
	3				243,0	260,0	243,6	254,0	280,0		266,0	251,0	230,0	200,9		205,0		189,0		276,2	253,0				213,0	250,0	241,0	19	51
Chromium as Cr in µg/l	1			1250	1194	1230	1192	1193	1172		1302	1351	1199	1190				2189		1162					1171	1200	1191	52	51
	2			2700	2500	2370	2465	2400	2348		2594	2400	2399	2473				4272		2385					2402	2400	2413	99	51
	3			620,0	412,0	560,0	403,1	425,0	440,0		411,0	343,0	305,0	391,0				926,0		295,8					123,0	600,0	397,0	103	51
Cobalt as Co in µg/l	1				386,0	400,0	406,3	399,0	422,0		397,0	403,0	385,0	393,6				380,0		403,6	432,0				406,0	400,0	397,0	18	48
	2				803,0	790,0	796,3	797,0	823,0		829,0	799,0	913,0	791,3				738,0		802,6	817,0				821,0	800,0	797,0	39	48
	3				184,0	200,0	189,3	195,0	208,0		194,0	207,0	189,0	191,2				179,0		202,8	218,0				203,0	200,0	195,0	10	48
Copper as Cu in µg/l	1			310,0	333,0	330,0	263,2	316,0	292,0		329,0	316,0	348,0	305,6		320,0		290,0		303,3	327,0				335,0	300,0	322,0	24	54
	2			1180	1257	1190	1177	1168	1178		1271	1242	1210	1193		1214		1154		1239	1217				1305	1200	1205	62	53
	3			570,0	544,0	610,0	342,7	439,0	636,0		529,0	458,0	490,0	324,9		304,0		452,0		504,3	592,0				351,0	600,0	490,0	117	53
Iron as Fe in µg/l	1			1550	1046	1260	1149	1043	1144		874,0	1198	913,0	855,9		962,0		1041		1137	1267				1150	1250	1099	147	53
	2			2600	2469	2470	2502	2500	2324		2410	2602	2024	2497		2406		2466		2444	2450				2486	2500	2471	120	54
	3			750,0	490,0	620,0	470,7	476,0	438,0		220,0	454,0	378,0	429,1		361,0		598,0		447,0	562,0				458,0	625,0	438,5	94	54
Lead as Pb in µg/l	1			200,0	150,0	126,0	350,8	166,0	178,0		160,0	154,0	117,0	172,1		134,0		854,0		50,14	172,0				147,0	150,0	154,0	30	50
	2			570,0	595,0	600,0	774,4	546,0	604,0		627,0	599,0	511,0	603,6		498,0		1019		520,8	553,0				571,0	600,0	586,0	45	50
	3			310,0	200,0	253,0	538,5	173,0	274,0		181,0	212,0	185,0	213,9		120,0		438,0		141,3	249,0				67,00	300,0	192,5	65	50
Manganese as Mn in µg/l	1			280,0	241,0	270,0	245,4	267,0	290,0		225,0	267,0	260,0	260,3		250,0		254,0		275,6	267,0				271,0	250,0	270,5	17	56
	2			940,0	997,0	1030	972,8	1013	1058		1062	964,0	919,0	1005		925,0		971,0		1030	970,0				1000	1000	1003	54	56
	3			470,0	440,0	480,0	464,9	510,0	516,0		475,0	492,0	476,0	495,3		456,0		461,0		524,4	487,0				520,0	500,0	493,5	36	56
Mercury as Hg in µg/l	1						146,5		1,700																	3,000	2,400	3	15
	2						133,4		7,350																	9,000	8,800	4	16
	3						183,0		2,150																	6,000	2,500	3	15
Molybdenum as Mo in µg/l	1				92,00		80,80				90,00			89,74											88,00	100,0	89,7	14	29
	2				288,0		304,2				307,0			277,9											262,0	300,0	275,0	24	30
	3				181,0		223,5				177,0			201,0											156,0	200,0	188,5	26	30
Nickel as Ni in µg/l	1			1160	1101	1140	1129	1148	1294		1157	1100	1022	1144				1013		1098	1056				1078	1100	1108	62	50
	2			2040	2194	2240	2298	2280	2452		2327	2190	2259	2260				1995		2179	2055				2173	2200	2201	111	50
	3			600,0	493,0	560,0	582,6	567,0	662,0		576,0	505,0	550,0	565,9				519,0		553,5	504,0				549,0	550,0	554,8	33	50
Silicon as Si in µg/l	1				1651		1688		1737		1685		1839	738,5							1534					-	1746	208	30
	2				1609		1742		1825		1679		1944	731,6							1468					-	1744	178	30
	3				1646		1710		1792		1611		1999	730,9							1458					-	1691	184	30
Strontium as Sr in µg/l	1				154,0		21,50	169,0						185,5		173,0									147,0	80,00	176,5	13	34
	2						21,70	322,0						347,3		327,0									276,0	240,0	330,0	16	33
	3						18,90	243,0						264,8		248,0									186,0	160,0	255,0	18	33
Vanadium as V in µg/l	1				77,00						91,00			96,4											91,00	100,0	86,0	18	28
	2				410,0						435,0			426,9											398,0	400,0	399,5	39	28
	3				150,0						160,0			171,8											54,00	200,0	143,5	40	28
Zinc as Zn in µg/l	1			480,0	462,0	430,0	422,9	470,0	508,0		486,0	500,0	543,0	407,7		342,0		380,0		0,410	618,0				447,0	40,00	460,0	52	53
	2			430,0	421,0	380,0	440,7	440,0	466,0		442,0	453,0	467,0	377,7		311,0		360,0		0,350	308,0				412,0	120,0	425,5	43	54
	3			370,0	300,0	320,0	315,7	358,0	370,0		354,0	372,0	367,0	272,7		241,0		267,0		0,260	148,0				325,0	80,00	326,0	40	53
Arsenic as As in µg/l	4				<0.008		115,2																		5,000	3,000	4,415	3	12
	5				14,90		138,8																		16,00	15,00	14,50	2	14
	6				7,500		158,7																		8,000	9,000	8,835	1	12
Selenium as Se in µg/l	4				10,50		55,70																			7,500	8,900	3	15
	5				15,10		57,50																			12,50	15,10	6	17
	6				7,450		60,20																			5,000	7,000	5	15

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME

TABLE A

ANALYTICAL RESULTS **Okt 07**

GROUP 1

Determinand		B129	B130	B131	B132 A	B132B	B135	B138	B139	B141	B142	B143	B144	B147	B148	B149	B152	B153	Spike ug/l	Median	Robust SD	n
Aluminium as Al in µg/l	1	574,0			1082	1082	831,0	863,0		937,0		700,0			685,2	503,0			750,0	802,0	105	48
	2	1349			1659	1659	1695	1689		1728		1300			1423	1168			1500	1552	151	48
	3	150,0			392,0	392,0	226,0	373,0		275,0		300,0			262,3	101,0			375,0	257,0	85	47
Barium as Ba in µg/l	1	180,0			196,0	196,0	180,0	168,0		212,0						199,0			150,0	190,0	15	34
	2	489,0			506,0	506,0	432,0	453,0		526,0						497,0			450,0	488,0	27	34
	3	244,0			334,0	334,0	299,0	317,0		368,0						339,0			300,0	327,0	18	34
Beryllium as Be in µg/l	1						45,70	40,60								44,00			50,00	50,00	3	25
	2						137,0	127,0								151,0			150,0	150,0	7	25
	3						83,90	83,70								89,00			100,0	81,79	14	25
Boron as B µg/l	1	382,0			140,0	140,0		405,0								559,0			500,0	541,0	53	29
	2	1699			2061	2061	2176	1590								2075			2000	2005	162	30
	3	781,0			1063	1063	1065	813,0								1048			1000	1038	83	30
Cadmium as Cd in µg/l	1	84,00		160,0	140,0	130,0	127,0	104,0							113,6	126,0			125,0	126,0	13	51
	2	374,0		480,0	523,0	498,0	472,0	415,0							492,8	505,0			500,0	502,0	33	51
	3	126,0		250,0	217,0	243,0	236,0	214,0							237,9	250,0			250,0	241,0	19	51
Chromium as Cr in µg/l	1	804,0			1184	1244	1110	1131		1277					1169	1363			1200	1191	52	51
	2	1861			2469	2632	2190	2330		2589					2370	2606			2400	2413	99	51
	3	60,00			394,0	537,0	481,0	501,0		416,0					448,0	630,0			600,0	397,0	103	51
Cobalt as Co in µg/l	1				412,0	380,0	373,0	354,0							384,7	370,0			400,0	397,0	18	48
	2				825,0	755,0	694,0	826,0							776,1	758,0			800,0	797,0	39	48
	3				200,0	181,0	180,0	164,0							193,3	192,0			200,0	195,0	10	48
Copper as Cu in µg/l	1	225,0		260,0	331,0	312,0	302,0	270,0		353,0					302,2	319,0			300,0	322,0	24	54
	2	952,0		1230	1265	1142	1070	981,0		1369					1152	1205			1200	1205	62	53
	3	119,0		500,0	368,0	533,0	517,0	420,0		411,0					564,7	581,0			600,0	490,0	117	53
Iron as Fe in µg/l	1	642,0		850,0	1180	1180	936,0	1201		1160		900,0			1088				1250	1099	147	53
	2	1752		1960	2460	2460	2400	2471		2725		2000			2443	2617			2500	2471	120	54
	3	33,00		420,0	540,0	540,0	434,0	620,0		482,0		380,0			510,4	701,0			625,0	438,5	94	54
Lead as Pb in µg/l	1	86,00			163,0	189,0	153,0	155,0		130,0					147,3	148,0			150,0	154,0	30	50
	2	457,0			605,0	661,0	527,0	567,0		611,0					564,0	522,0			600,0	586,0	45	50
	3	10,00			202,0	267,0	244,0	143,0		183,0					226,4	230,0			300,0	192,5	65	50
Manganese as Mn in µg/l	1	201,0		210,0	280,0	280,0	271,0	281,0		291,0		270,0			241,6	301,0			250,0	270,5	17	56
	2	798,0		850,0	990,0	990,0	959,0	1022		1071,0		890,0			909,9	1021			1000	1003	54	56
	3	319,0		420,0	470,0	470,0	452,0	525,0		536,0		470,0			457,0	514,0			500,0	493,5	36	56
Mercury as Hg in µg/l	1						2,610	1,500											3,000	2,400	3	15
	2						11,40	6,500											9,000	8,800	4	16
	3						3,220	0,870											6,000	2,500	3	15
Molybdenum as Mo in µg/l	1				101,0	101,0	93,70	81,00		90,30									100,0	89,7	14	29
	2				302,0	302,0	265,0	259,0		300,0						272,0			300,0	275,0	24	30
	3				227,0	227,0	171,0	190,0		201,0						178,0			200,0	188,5	26	30
Nickel as Ni in µg/l	1	829,0			1123	1124	1060	912,0							1084	1116			1100	1108	62	50
	2	1731			2272	2053	1950	1904							2152	2142			2200	2201	111	50
	3	327,0			571,0	563,0	503,0	467,0							545,7	530,0			550,0	554,8	33	50
Silicon as Si in µg/l	1	1087			1900	1900	2104			1835									-	1746	208	30
	2	1052			2400	2400	2102			1759									-	1744	178	30
	3	1034			1500	1500	2076			1756									-	1691	184	30
Strontium as Sr in µg/l	1	151,0			177,0	177,0	176,0	158,0		188,0						172,0			80,00	176,5	13	34
	2	299,0			322,0	322,0	308,0	319,0		350,0						329,0			240,0	330,0	16	33
	3	188,0			240,0	240,0	234,0	244,0		269,0						241,0			160,0	255,0	18	33
Vanadium as V in µg/l	1				155,0	155,0	94,80	76,00											100,0	86,0	18	28
	2				480,0	480,0	364,0	488,0								301,0			400,0	399,5	39	28
	3				227,0	227,0	169,0	170,0								120,0			200,0	143,5	40	28
Zinc as Zn in µg/l	1	406,0		360,0	498,0	460,0	353,0	444,0		493,0		380,0			441,7	502,0			40,00	460,0	52	53
	2	344,0		370,0	420,0	428,0	311,0	405,0		451,0		360,0			399,1	454,0			120,0	425,5	43	54
	3	274,0		280,0	321,0	336,0	254,0	329,0		356,0		280,0			334,4	375,0			80,00	326,0	40	53
Arsenic as As in µg/l	4						3.830	3,100											3,000	4,415	3	12
	5						14,10	13,00											15,00	14,50	2	14
	6							8,000											9,000	8,835	1	12
Selenium as Se in µg/l	4						9.310	3.200								7,000			7,500	8,900	3	15
	5						14,30	9,300								12,00			12,50	15,10	6	17
	6							2,200								5,000			5,000	7,000	5	15

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME
TABLE B

Z-SCORE VALUES **Okt 07**
GROUP 1

Determinand		B1	B3	B5	B7	B8	B9A	B9B	B10	B11A	B11B	B14	B16	B16a	B19	B21A	B21B	B22	B23	B25	B30	B31	B33	B34	B36
Aluminium as Al in µg/l	1	-	-	-0,76	-	-0,10	0,01	-	0,05	0,53	-	0,08	-	-	-2,03	1,85	1,50	-0,48	0,65	0,67	-2,19	-0,19	-	-	0,02
	2	-	-	-0,19	-	0,20	-0,67	-	-0,19	0,93	-	-1,00	-	-	-1,14	2,97	2,04	-0,34	-0,21	0,32	-1,36	-0,24	-	-	0,15
	3	-	-	-0,54	-	-0,64	0,99	-	-0,04	0,19	-	-2,69	-	-	-2,92	1,23	1,44	-2,59	-0,73	-0,25	-	1,17	-	-	-0,49
Barium as Ba in µg/l	1	-0,91	-	0,67	-	-1,55	16,45	-	2,02	1,82	-	-0,34	-	-	-1,35	6,47	-	-2,97	-	0,07	-	0,13	-	-	-0,34
	2	0,92	-	0,94	-	-0,75	-0,67	-	2,29	2,66	-	0,07	-	-	-0,67	10,71	-	-2,02	-	0,04	-	-0,19	-	-	0,11
	3	-0,03	-	0,96	-	-0,73	-2,02	-	-1,12	3,43	-	0,45	-	-	-0,39	11,13	-	-1,35	-	0,00	-	0,51	-	-	0,00
Beryllium as Be in µg/l	1	-4,72	-	-0,34	-	0,00	20,23	-	0,34	0,67	-	0,67	-	-	0,00	1,01	-1,01	-5,39	0,00	0,34	-	-	-	-	-
	2	-1,42	-	-0,13	-	0,40	-4,86	-	-0,13	0,81	-	0,67	-	-	0,00	5,39	4,32	-4,05	0,00	0,54	-	-	-	-	-
	3	0,67	-	-1,45	-	0,67	-0,31	-	-1,67	0,82	-	-0,13	-	-	-0,86	2,21	1,04	-2,62	0,60	-0,57	-	-	-	-	-
Boron as B µg/l	1	-2,16	-	0,36	-	0,94	17,59	-	0,51	0,66	-	0,17	-	-	-3,95	4,40	4,16	-0,67	-	0,58	-	0,47	-	-	-
	2	0,43	-	0,53	-	0,04	-3,10	-	0,12	0,80	-	-0,03	-	-	-4,10	4,66	3,18	-3,91	-	0,03	-	0,04	-	-	-
	3	0,20	-	0,59	-	0,12	-1,57	-	0,25	0,84	-	-0,46	-	-	-3,47	4,50	4,00	-1,34	-	0,39	-	-0,06	-	-	-
Cadmium as Cd in µg/l	1	0,86	-	-0,67	-	-0,82	26,37	-	1,42	0,52	-	1,05	-	-	-1,20	2,10	2,17	-0,22	-0,07	-0,07	-0,67	0,00	-0,45	-	-0,45
	2	1,56	-	0,46	-	-0,40	-8,83	-	2,30	0,92	-	1,16	-	-	-0,06	4,54	3,80	-0,80	-0,06	0,06	0,00	0,00	-0,98	-	-0,40
	3	1,17	-	-0,57	-	-0,36	-7,26	-	-0,52	1,24	-	2,02	-	-	-0,05	4,10	3,73	-0,67	-0,05	-0,41	0,07	0,57	-0,57	-	0,26
Chromium as Cr in µg/l	1	-2,52	-	1,10	1,48	-0,67	33,12	-	0,33	-0,69	-	0,17	-	-	-1,75	7,71	7,51	-1,70	-0,02	0,37	-0,04	0,23	-1,37	-	-0,33
	2	-3,05	-	0,83	2,63	-0,56	-20,60	-	0,85	-0,64	-	0,88	-	-	-0,13	8,94	7,69	-0,86	-0,08	0,37	0,05	0,00	-0,94	-	-0,28
	3	0,53	-	0,15	1,14	-0,80	8,54	-	0,26	0,00	-	-3,26	-	-	-0,55	1,11	2,07	-3,55	-0,12	-0,53	-0,67	1,48	-0,26	-	-1,06
Cobalt as Co in µg/l	1	0,28	-	-1,11	-	-0,94	-1,55	-	0,44	-0,67	-	2,94	-	-	-0,94	8,16	7,60	-0,61	0,72	-0,28	2,24	-0,11	-1,50	-	0,06
	2	0,04	-	0,00	-	-0,67	-0,91	-	0,10	-0,73	-	1,37	-	-	-0,44	7,39	6,82	-0,73	-0,96	-0,03	1,50	0,08	-1,48	-	0,00
	3	0,05	-	-2,60	-	-1,06	-6,65	-	0,48	-0,29	-	2,41	-	-	-0,48	4,33	4,82	0,10	0,00	-0,67	1,49	-0,10	-0,48	-	0,48
Copper as Cu in µg/l	1	2,40	-0,46	-0,21	-	-0,67	23,69	-	0,59	0,25	-	1,18	-	-	-1,35	4,43	3,71	0,08	-0,08	1,56	1,28	-0,67	-1,35	-	0,08
	2	-0,32	-	1,33	-	0,02	-7,61	-	-0,03	0,67	-	-0,08	-	-	-0,08	7,03	5,91	-1,00	-0,56	1,36	2,84	-0,14	-1,85	-	0,00
	3	0,35	-	-0,87	-	0,52	0,23	-	-1,08	0,28	-	0,26	-	-	0,17	2,60	2,42	-1,58	0,21	-0,55	0,95	0,85	-0,94	-	-0,22
Iron as Fe in µg/l	1	-	-0,61	0,37	-	-0,09	7,16	-	0,49	0,20	-	1,37	-	-	-2,99	2,67	-	-1,08	0,14	-0,20	0,00	1,27	-0,47	-	0,08
	2	-	0,63	2,53	-	0,01	-9,24	-	1,31	1,19	-	1,08	-	-	-6,16	7,68	-	-1,48	-0,50	1,58	2,12	0,41	-1,09	-	0,58
	3	-	-0,18	0,01	-	-1,07	5,86	-	0,17	0,45	-	-4,36	-	-	-3,08	0,71	-	-4,29	0,28	0,02	-0,67	2,37	-0,68	-	-0,24
Lead as Pb in µg/l	1	8,57	-	-0,99	-	0,49	17,14	-	-1,48	0,23	-	-0,13	-	-	-1,12	1,25	-	-1,02	0,69	-0,13	-	0,49	0,53	-	0,07
	2	5,79	-	0,40	-	0,84	-7,32	-	-0,69	0,64	-	0,66	-	-	-2,12	3,98	-	-1,33	-1,46	-0,09	-	0,38	-1,90	-	-0,20
	3	4,75	-	-0,12	-	0,22	0,01	-	0,05	0,10	-	-2,74	-	-	-0,04	1,90	-	-2,61	0,58	-0,40	-	1,54	-0,81	-	-0,47
Manganese as Mn in µg/l	1	-1,32	0,62	-1,43	-2,72	-1,38	34,22	-	0,68	0,56	-	1,15	-	-	-1,79	4,43	3,61	0,03	-0,61	0,91	0,54	0,03	-	-	0,44
	2	0,14	1,28	0,66	1,88	-0,36	-10,98	-	0,69	0,86	-	-0,05	-	-	-0,23	5,64	5,57	-1,15	-0,42	1,06	0,43	0,23	-	-	0,40
	3	-0,28	0,81	-0,12	0,37	-0,34	-7,72	-	1,58	1,00	-	1,83	-	-	0,18	4,33	4,44	-0,65	0,04	1,03	0,70	0,48	-	-	0,70
Mercury as Hg in µg/l	1	-	-0,16	-	-	-	1,16	-	-0,32	-	-	-0,52	-	-	-0,77	-	-	0,00	-	2,44	-	-	-0,68	-	-
	2	1,29	-0,28	-	-	-	-0,77	-	-0,33	-	-	-2,00	-	-	-2,42	-	-	0,28	-	1,71	-	-	0,53	-	-
	3	-	1,98	-	-	-	1,10	-	0,00	-	-	-0,49	-	-	-0,78	-	-	-0,19	-	1,41	-	-	-0,67	-	-
Molybdenum as Mo in µg/l	1	4,07	-	-1,09	-	-0,47	6,87	-	-	0,57	-	-0,67	-	-	-0,67	1,13	-	-1,02	-	-1,44	-2,56	0,64	-	-	-
	2	1,18	-	-0,34	-	0,00	6,32	-	-	1,31	-	0,63	-	-	-1,05	4,30	-	-1,05	-	-0,51	-1,15	0,51	-	-	-
	3	2,40	-	-0,06	-	-1,00	4,44	-	-	0,41	-	-1,50	-	-	-0,33	0,21	-	-5,61	-	0,21	-0,66	0,41	-	-	-
Nickel as Ni in µg/l	1	-0,84	-	-0,70	-	-0,63	1,16	-	-0,22	0,73	-	9,51	-	-	-0,60	5,68	5,90	-0,63	0,76	-0,76	0,78	-0,22	-0,76	-	0,09
	2	-1,58	-	1,22	-	-0,46	0,89	-	0,01	0,84	-	11,68	-	-	-0,10	6,86	6,71	-0,49	0,13	-0,01	0,79	-0,11	-0,46	-	0,27
	3	-1,54	-	-0,72	-	-0,78	0,37	-	0,67	0,67	-	10,47	-	-	-0,14	5,43	5,25	-0,45	2,28	0,04	0,55	-0,17	0,46	-	-0,05
Silicon as Si in µg/l	1	-	0,69	1,00	-	0,66	-0,41	-	0,17	-	-	0,74	-	-	-2,86	2,31	-	1,60	0,04	0,98	-	-0,12	-	-	-
	2	-	0,90	0,01	-	0,26	-1,35	-	0,01	-	-	0,32	-	-	-3,45	2,63	-	1,46	-0,24	0,37	-	-0,26	-	-	-
	3	-	0,89	7,83	-	0,58	-0,82	-	0,01	-	-	0,59	-	-	-3,05	2,77	-	1,68	-0,01	0,76	-	0,04	-	-	-
Strontium as Sr in µg/l	1	0,66	-	0,12	-	-0,19	11,21	-	-1,97	1,97	-	-2,04	-	-	-1,27	4,05	4,59	-0,12	-	0,58	-	0,12	-	-	0,04
	2	1,41	-	1,04	-	-0,18	0,49	-	-0,31	3,07	-	-3,07	-	-	0,00	6,93	7,42	2,51	-	0,55	-	0,00	-	-	0,00
	3	0,56	-	0,51	-	-0,22	-0,62	-	0,17	2,08	-	-1,69	-	-	-0,28	4,44	3,60	2,14	-	0,34	-	0,00	-	-	-0,17
Vanadium as V in µg/l	1	1,19	-	0,26	-	-0,66	16,06	-	-1,52	0,33	-	0,26	-	-	-1,06	1,85	1,92	-0,26	-	-1,06	-	0,59	-	-	-
	2	-0,24	-	-0,40	-	0,05	-3,71	-	-0,34	0,92	-	0,88	-	-	-0,40	4,83	-	-0,27	-	0,40	-	-0,14	-	-	-
	3	0,84	-	0,21	-	-0,89	-0,86	-	-0,01	0,29	-	-2,91	-	-	-0,59	0,69	-	-2,78	-	-0,39	-	1,19	-	-	-
Zinc as Zn in µg/l	1	1,55	0,27	-0,69	-	-0,15	0,40	-	-0,12	0,06	-	1,54	-	-	-0,39	3,22	-	0,77	-0,67	2,16	-0,83	0,17	-0,96	-	-0,06
	2	1,87	0,56	-0,88	-	-0,02	-0,14	-	-0,51	-0,33	-	1,30	-	-	-0,33	3,02	2,84	1,40	-0,67	1,26	-0,95	0,19	-1,14	-	0,12
	3	-0,42	-	-1,22	-	0,02	-0,07	-	0,00	0,65	-	1,60	-	-	0,35	3,05	2,50	-0,15	-0,27	0,90	-0,44	0,67	-0,65	-	0,35
Arsenic as As in µg/l	4	-	-0,80	-	-	-	0,20	-	-	-	-	0,51	-	-	-	-	-	-1,18	-	2,28	-	-	-	-	-
	5	-	0,22	-	-	-	1,57	-	-	-	-	-0,22	-	-	2,47	-	-	-1,12	-	4,72	-	-	-	-	-
	6	-	-0,43	-	-	-	1,46	-	-	-	-	0,18	-	-	0,79	-	-	-2,59	-	4,83	-	-	-	-	-
Selenium as Se in µg/l	4	39,78	-0,35	-	-	-	0,39	-	-0,25	-	-	0,00	-	-	-	-	-	-0,85	-	3,23	-	-	-	-	-
	5	14,19	-0,34	-	-	-	0,14	-	0,24	-	-	-0,34	-	-	0,79	-	-	-0,67	-	0,79	-	-	-	-	-
	6	15,67	-0,27	-	-	-	0,00	-	1,66	-	-	0,16	-	-	4,19	-	-	-0,67	-	0,73	-	-	-	-	-

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME
TABLE B

Z-SCORE VALUES **Okt 07**
GROUP 1

Determinand		B38	B39	B41	B42	B45	B49	B49B	B63	B68	B69A	B69B	B69C	B70	B71	B73	B74	B76	B78	B79	B81	B86	B88	B91
Aluminium as Al in µg/l	1	-1,45	0,66	-	-0,46	-	1,32	0,97	-0,21	-0,05	0,54	-	-	-	-0,47	0,58	-4,29	0,84	-	-	-	-0,75	-	-
	2	-1,47	1,83	-	6,39	-	-0,67	1,37	-0,11	-0,24	0,55	-	-	-	-0,36	1,72	-0,41	1,64	-	-	-	-0,62	-	-
	3	0,51	-1,28	-	-2,69	-	2,52	0,04	-0,39	0,65	0,19	-	-	-	-0,99	-1,66	0,71	0,15	-	-	-	-0,69	-	-
Barium as Ba in µg/l	1	-	-0,94	-	0,00	-	-	-2,36	-	0,67	0,07	-	-	-	-0,24	1,15	0,00	0,67	-	-	-	-	-	-
	2	-	-0,19	-	-0,04	-	-	-0,71	-	-0,30	-0,60	-	-	-	-0,50	1,16	0,07	0,82	-	-	-	-	-	-
	3	-	-1,24	-	0,67	-	-	-1,24	-	0,56	-0,28	-	-	-	0,08	1,01	0,22	1,29	-	-	-	-	-	-
Beryllium as Be in µg/l	1	-	-	-	-0,67	-	-	-2,36	0,00	-2,36	-	-	-	-	-0,01	-	-	-	-	-	-	-	-	-
	2	-	-	-	-0,54	-	-	2,43	0,00	-2,29	-	-	-	-	0,15	-	-	-	-	-	-	-	-	-
	3	-	-	-	-2,33	-	-	-2,25	-1,38	-0,13	-	-	-	-	0,00	-	-	-	-	-	-	-	-	-
Boron as B µg/l	1	-	-	-	-0,43	-	-	1,09	-	-	-	-	-	-	-0,09	-	-5,24	1,48	-	-	-	-	-	-
	2	-	-	-	-0,84	-	-	-0,17	-	-	-	-	-	-	-1,07	-	-1,20	1,39	-	-	-	-	-	-
	3	-	-	-	-0,54	-	-	0,25	-	-	-	-	-	-	-1,14	-	-1,26	1,47	-	-	-	-	-	-
Cadmium as Cd in µg/l	1	-	1,05	-	0,15	-	-0,45	-0,97	-0,07	-1,20	0,15	-	-	-	-1,05	0,67	-1,27	1,05	-	-	-	-0,30	-	-
	2	-	3,03	-	-0,18	-	-0,06	0,21	-0,06	-1,50	0,00	-	-	-	-1,01	0,25	-1,93	1,16	-	-	-	-9,41	-	-
	3	-	0,57	-	0,62	-	-0,05	-2,13	-3,63	-1,04	0,21	-	-	-	-1,24	1,24	-1,82	0,99	-	-	-	0,00	-	-
Chromium as Cr in µg/l	1	-	0,89	-	-0,08	-	4,22	0,52	-0,60	-0,08	-0,56	-	-	-	0,00	0,48	-2,14	-0,02	-	-	-	-1,16	-	-
	2	-	1,71	-	-0,25	-	5,81	0,76	-0,11	0,51	-0,28	-	-	-	0,31	0,84	-2,24	0,67	-	-	-	-0,65	-	-
	3	-	-1,18	-	-3,58	-	0,80	-0,13	-0,25	0,35	-0,18	-	-	-	-0,65	-1,53	0,35	-0,45	-	-	-	-0,74	-	-
Cobalt as Co in µg/l	1	-	3,77	-	0,00	-	-2,61	0,22	-0,11	0,00	0,39	-	-	-	0,59	0,94	-1,50	1,28	-	-	-	-0,61	-	-
	2	-	4,82	-	-0,18	-	-2,00	0,08	-0,47	-0,52	0,18	-	-	-	0,20	0,83	-2,10	1,37	-	-	-	-0,75	-	-
	3	-	4,14	-	0,29	-	-5,30	-0,19	-0,67	2,02	0,29	-	-	-	0,48	2,12	-2,50	1,44	-	-	-	0,00	-	-
Copper as Cu in µg/l	1	-	-0,76	-	-0,04	-	0,34	0,04	-0,55	0,80	0,08	-	-	-	1,26	1,01	-1,39	0,34	-	-	-	0,42	-	-
	2	-	1,28	-	-0,27	-	-0,40	0,71	0,08	-0,42	0,19	-	-	-	2,09	1,12	-1,36	1,04	-	-	-	1,14	-	-
	3	-	-2,01	-	-1,38	-	-0,77	-1,29	-1,28	0,78	-0,35	-	-	-	-0,23	0,53	-0,46	0,68	-	-	-	-0,42	-	-
Iron as Fe in µg/l	1	1,03	-1,55	-	1,23	-	0,01	0,07	-1,62	0,84	-0,65	-	-	-	-1,06	-0,65	-1,15	-0,95	-	-	-	-0,63	-	-
	2	0,58	1,09	-	-1,58	-	-0,17	0,02	-0,72	0,77	0,60	-	-	-	-0,13	-2,12	-2,00	0,83	-	-	-	0,24	-	-
	3	2,47	-2,56	-	-4,43	-	0,66	-0,14	-0,14	2,35	-0,51	-	-	-	-0,31	-1,34	-0,01	-2,01	-	-	-	-0,75	-	-
Lead as Pb in µg/l	1	-	-1,02	-	-1,48	-	1,18	0,26	-1,84	0,82	0,00	-	-	-	0,23	-2,07	-1,64	-0,13	-	-	-	-0,56	-	-
	2	-	0,86	-	2,26	-	0,09	0,57	-0,20	0,49	0,15	-	-	-	0,18	-1,35	-3,18	-0,13	-	-	-	-0,46	-	-
	3	-	-1,08	-	-2,67	-	0,58	-0,35	-0,07	1,02	-0,01	-	-	-	-2,63	-1,19	-1,33	0,12	-	-	-	-0,41	-	-
Manganese as Mn in µg/l	1	-1,20	0,97	-	-0,09	-	-0,61	1,09	0,09	-10,58	-0,20	-	-	-	0,03	1,03	-1,43	0,56	-	-	-	-0,67	-	-
	2	-1,34	2,00	-	-0,06	-	0,14	1,14	-0,53	-2,84	0,14	-	-	-	0,05	0,90	-1,56	1,25	-	-	-	-0,58	-	-
	3	-0,37	1,25	-	0,32	-	-0,10	0,81	-0,26	-5,24	0,04	-	-	-	0,42	1,25	-1,03	1,00	-	-	-	-0,26	-	-
Mercury as Hg in µg/l	1	-	1,80	-	-	-	-	15,28	-	-	-	-	-	-	-	-	-	-	-	-	-	0,67	-	-
	2	-	0,33	-	-	-	-	11,34	-	-	-	-	-	-	-	-	-	-	-	-	-	-0,36	-	-
	3	-	1,10	-	-	-	-	14,90	-	-	-	-	-	-	-	-	-	-	-	-	-	-0,31	-	-
Molybdenum as Mo in µg/l	1	-	-5,73	-	-	-	-	-2,27	0,92	2,99	-	-	-	-	0,16	-	-0,88	-	-	-	-	-0,54	-	-
	2	-	-10,58	-	-	-	-	-0,67	0,00	1,26	-	-	-	-	-0,32	-	-0,21	-	-	-	-	-0,08	-	-
	3	-	-6,63	-	-	-	-	-1,11	1,19	1,54	-	-	-	-	-1,04	-	-0,41	-	-	-	-	0,14	-	-
Nickel as Ni in µg/l	1	-	1,44	-	-0,09	-	-0,76	0,65	-0,35	-0,60	0,22	-	-	-	0,20	0,81	-1,57	0,84	-	-	-	0,46	-	-
	2	-	2,24	-	-0,17	-	-0,91	0,77	-0,04	-0,24	0,28	-	-	-	0,44	1,00	-1,63	1,25	-	-	-	0,18	-	-
	3	-	1,07	-	-0,27	-	-0,75	0,25	-1,57	-0,87	-0,17	-	-	-	0,26	1,19	-1,78	0,16	-	-	-	0,52	-	-
Silicon as Si in µg/l	1	-	-0,43	-	-0,46	-	-	0,72	-	-0,40	-	-	-	-	-0,38	-	-4,19	-	-	-	-	-	-	-
	2	-	-0,47	-	-0,71	-	-	0,56	-	-0,83	-	-	-	-	-0,53	-	-0,64	-	-	-	-	-	-	-
	3	-	-0,46	-	-0,48	-	-	0,90	-	-0,23	-	-	-	-	-0,35	-	-0,28	-	-	-	-	-	-	-
Strontium as Sr in µg/l	1	-	-0,89	-	0,35	-	-	-2,12	0,35	2,81	0,19	-	-	-	-0,08	-	-	-	-	-	-	-	-	-
	2	-	1,16	-	-0,18	-	-	-0,86	0,31	2,94	-0,25	-	-	-	0,06	-	-	-	-	-	-	-	-	-
	3	-	1,12	-	0,11	-	-	1,18	0,00	2,42	-0,28	-	-	-	0,11	-	-	-	-	-	-	-	-	-
Vanadium as V in µg/l	1	-	-1,19	-	-0,26	-	-	-4,03	-0,93	-	-	-	-	-	-0,48	-	-1,52	-	-	-	-	-0,53	-	-
	2	-	0,75	-	-0,95	-	-	0,40	0,59	-	-	-	-	-	-0,05	-	-1,11	-	-	-	-	-0,34	-	-
	3	-	-0,91	-	-3,01	-	-	-0,89	0,04	-	-	-	-	-	-0,29	-	0,01	-	-	-	-	-0,41	-	-
Zinc as Zn in µg/l	1	-	1,87	-	0,23	-	0,00	0,44	-0,19	-	0,02	-	-	-	-0,27	0,60	-0,96	0,77	-	-	-	-0,64	-	-
	2	-	2,44	-	0,07	-	0,60	0,35	0,02	-	0,05	-	-	-	-0,10	0,72	-1,02	0,60	-	-	-	-0,95	-	-
	3	-	0,92	-	0,42	-	-0,65	-0,52	-1,55	-	0,17	-	-	-	0,18	0,32	-1,02	1,10	-	-	-	-0,25	-	-
Arsenic as As in µg/l	4	-	-	-	-	-	-	0,55	-	-	-	-	-	-	-	-	-1,09	-	-	-	-	-	-	-
	5	-	-0,22	-	-	-	-	-0,22	-	-	-	-	-	-	-	-	-1,57	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	0,11	-	-	-	-	-	-	-	-	-0,11	-	-	-	-	-	-	-
Selenium as Se in µg/l	4	-	-	-	-	-	-	-1,38	-	-	-	-	-	-	-	-	0,12	-	-	-	-	-2,52	-	-
	5	-	-2,26	-	-	-	-	2,55	-	-	-	-	-	-	-	-	0,08	-	-	-	-	-1,86	-	-
	6	-	-	-	-	-	-	-0,36	-	-	-	-	-	-	-	-	-0,43	-	-	-	-	-1,00	-	-

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME
TABLE B

Z-SCORE VALUES **Okt 07**
GROUP 1

Determinand		B93	B94	B99	B100	B101	B103	B104	B105	B107	B108	B109	B112	B113	B115	B116	B117	B121a	B121c	B123	B124	B125	B126	B127	B128
Aluminium as Al in µg/l	1	-	-	-0,98	-0,11	-	-6,73	0,68	-	-	0,07	-0,69	0,84	-0,01	-	2,85	-	-	-	-	-0,15	-	-	-	-0,25
	2	-	-	0,32	-0,56	-	1,48	0,60	-	-	0,09	-0,67	-0,09	0,37	-	4,33	-	-	-	-	-0,31	-	-	-	0,10
	3	-	-	-1,86	0,00	-	2,23	0,05	-	-	-0,44	-0,67	0,27	-0,27	-	0,14	-	-	-	-	0,82	-	-	-	-0,18
Barium as Ba in µg/l	1	-	-	-	-0,40	-	-	-	-	-	0,88	-	-	-0,52	-	-0,61	-	-	-	-	-	-	-	-	-0,34
	2	-	-	-	-0,04	-	-	-	-	-	1,42	-	-	-0,54	-	-0,71	-	-	-	-	-	-	-	-	-0,64
	3	-	-	-	-0,17	-	-	-	-	-	1,69	-	-	-0,11	-	-0,73	-	-	-	-	-	-	-	-	-0,06
Beryllium as Be in µg/l	1	-	-	-	0,00	-	-	-	-	-	1,01	-	-	0,30	-	-	-	-	-	-	-	-	-	-	2,36
	2	-	-	-	-0,54	-	-	-	-	-	1,75	-	-	0,38	-	-	-	-	-	-	-	-	-	-	2,56
	3	-	-	-	0,09	-	-	-	-	-	0,09	-	-	-0,56	-	-	-	-	-	-	-	-	-	-	0,75
Boron as B µg/l	1	-	-	-	0,15	-	-0,22	-	-	-	-0,56	-	-	-0,53	-	-1,01	-	-	-	-	-	-	-	-	0,00
	2	-	-	-	-0,87	-	0,15	-	-	-	-0,76	-	-	-0,59	-	-0,46	-	-	-	-	-	-	-	-	-0,04
	3	-	-	-	-0,94	-	-0,17	-	-	-	-0,76	-	-	-0,83	-	-0,81	-	-	-	-	-	-	-	-	0,06
Cadmium as Cd in µg/l	1	-	-	-	-0,45	0,30	-0,85	0,15	1,50	-	0,67	0,60	-0,30	0,07	-	-1,35	-	-0,60	-	1,85	1,20	-	-	-	0,07
	2	-	-	-	0,34	1,16	0,10	0,67	2,45	-	1,10	0,31	-0,03	-0,02	-	-2,61	-	-1,53	-	1,21	0,03	-	-	-	0,77
	3	-	-	-	0,10	0,99	0,13	0,67	2,02	-	1,30	0,52	-0,57	-2,08	-	-1,87	-	-2,70	-	1,82	0,62	-	-	-	-1,45
Chromium as Cr in µg/l	1	-	-	1,14	0,06	0,75	0,02	0,04	-0,37	-	2,14	3,08	0,15	-0,03	-	-	-	19,23	-	-0,55	-	-	-	-	-0,39
	2	-	-	2,89	0,88	-0,43	0,52	-0,13	-0,65	-	1,82	-0,13	-0,14	0,60	-	-	-	18,71	-	-0,29	-	-	-	-	-0,11
	3	-	-	2,16	0,15	1,58	0,06	0,27	0,42	-	0,14	-0,52	-0,89	-0,06	-	-	-	5,12	-	-0,98	-	-	-	-	-2,65
Cobalt as Co in µg/l	1	-	-	-	-0,61	0,17	0,52	0,11	1,39	-	0,00	0,33	-0,67	-0,19	-	-	-	-0,94	-	0,37	1,94	-	-	-	0,50
	2	-	-	-	0,16	-0,18	-0,02	0,00	0,67	-	0,83	0,05	3,01	-0,15	-	-	-	-1,53	-	0,15	0,52	-	-	-	0,62
	3	-	-	-	-1,06	0,48	-0,55	0,00	1,25	-	-0,10	1,16	-0,58	-0,37	-	-	-	-1,54	-	0,75	2,22	-	-	-	0,77
Copper as Cu in µg/l	1	-	-	-0,51	0,46	0,34	-2,48	-0,25	-1,26	-	0,30	-0,25	1,10	-0,69	-	-0,08	-	-1,35	-	-0,79	0,21	-	-	-	0,55
	2	-	-	-0,40	0,83	-0,24	-0,45	-0,59	-0,43	-	1,06	0,59	0,08	-0,19	-	0,14	-	-0,82	-	0,55	0,19	-	-	-	1,61
	3	-	-	0,68	0,46	1,02	-1,26	-0,44	1,25	-	0,33	-0,27	0,00	-1,41	-	-1,59	-	-0,32	-	0,12	0,87	-	-	-	-1,19
Iron as Fe in µg/l	1	-	-	3,07	-0,36	1,10	0,34	-0,38	0,31	-	-1,53	0,67	-1,27	-1,66	-	-0,93	-	-0,40	-	0,26	1,14	-	-	-	0,35
	2	-	-	1,08	-0,01	0,00	0,26	0,25	-1,22	-	-0,50	1,09	-3,72	0,22	-	-0,54	-	-0,04	-	-0,22	-0,17	-	-	-	0,13
	3	-	-	3,33	0,55	1,94	0,34	0,40	-0,01	-	-2,33	0,17	-0,65	-0,10	-	-0,83	-	1,70	-	0,09	1,32	-	-	-	0,21
Lead as Pb in µg/l	1	-	-	1,51	-0,13	-0,92	6,47	0,39	0,79	-	0,20	0,00	-1,22	0,60	-	-0,66	-	23,03	-	-3,42	0,59	-	-	-	-0,23
	2	-	-	-0,35	0,20	0,31	4,17	-0,88	0,40	-	0,91	0,29	-1,66	0,39	-	-1,95	-	9,57	-	-1,44	-0,73	-	-	-	-0,33
	3	-	-	1,82	0,12	0,94	5,36	-0,30	1,26	-	-0,18	0,30	-0,12	0,33	-	-1,12	-	3,81	-	-0,79	0,88	-	-	-	-1,95
Manganese as Mn in µg/l	1	-	-	0,56	-1,73	-0,03	-1,47	-0,20	1,15	-	-2,66	-0,20	-0,61	-0,60	-	-1,20	-	-0,96	-	0,30	-0,20	-	-	-	0,03
	2	-	-	-1,15	-0,10	0,51	-0,55	0,19	1,03	-	1,10	-0,71	-1,54	0,05	-	-1,43	-	-0,58	-	0,50	-0,60	-	-	-	-0,05
	3	-	-	-0,65	-1,47	-0,37	-0,79	0,45	0,62	-	-0,51	-0,04	-0,48	0,05	-	-1,03	-	-0,89	-	0,85	-0,18	-	-	-	0,73
Mercury as Hg in µg/l	1	-	-	-	-	-	46,27	-	-0,22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	34,29	-	-0,40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	56,61	-	-0,11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum as Mo in µg/l	1	-	-	-	0,16	-	-0,62	-	-	-	0,02	-	-	0,00	-	-	-	-	-	-	-	-	-	-	-0,12
	2	-	-	-	0,55	-	1,23	-	-	-	1,35	-	-	0,12	-	-	-	-	-	-	-	-	-	-	-0,55
	3	-	-	-	-0,29	-	1,37	-	-	-	-0,45	-	-	0,49	-	-	-	-	-	-	-	-	-	-	-1,27
Nickel as Ni in µg/l	1	-	-	0,84	-0,10	0,52	0,35	0,65	2,99	-	0,79	-0,12	-1,37	0,58	-	-	-	-1,52	-	-0,15	-0,83	-	-	-	-0,47
	2	-	-	-1,45	-0,06	0,35	0,87	0,71	2,26	-	1,13	-0,10	0,52	0,53	-	-	-	-1,85	-	-0,20	-1,31	-	-	-	-0,25
	3	-	-	1,37	-1,87	0,16	0,84	0,37	3,25	-	0,64	-1,51	-0,14	0,34	-	-	-	-1,08	-	-0,04	-1,54	-	-	-	-0,17
Silicon as Si in µg/l	1	-	-	-	-0,46	-	-0,28	-	-0,04	-	-0,29	-	0,45	-4,84	-	-	-	-	-	-	-1,02	-	-	-	-
	2	-	-	-	-0,76	-	-0,01	-	0,46	-	-0,36	-	1,13	-5,69	-	-	-	-	-	-	-1,55	-	-	-	-
	3	-	-	-	-0,24	-	0,10	-	0,55	-	-0,44	-	1,67	-5,22	-	-	-	-	-	-	-1,27	-	-	-	-
Strontium as Sr in µg/l	1	-	-	-	-1,73	-	-11,94	-0,58	-	-	-	-	-	0,69	-	-0,27	-	-	-	-	-	-	-	-	-2,27
	2	-	-	-	-	-	-18,90	-0,49	-	-	-	-	-	1,06	-	-0,18	-	-	-	-	-	-	-	-	-3,31
	3	-	-	-	-	-	-13,27	-0,67	-	-	-	-	-	0,55	-	-0,39	-	-	-	-	-	-	-	-	-3,88
Vanadium as V in µg/l	1	-	-	-	-0,59	-	-	-	-	-	0,33	-	-	0,69	-	-	-	-	-	-	-	-	-	-	0,33
	2	-	-	-	0,24	-	-	-	-	-	1,04	-	-	0,78	-	-	-	-	-	-	-	-	-	-	-0,14
	3	-	-	-	0,16	-	-	-	-	-	0,41	-	-	0,71	-	-	-	-	-	-	-	-	-	-	-2,24
Zinc as Zn in µg/l	1	-	-	0,39	0,04	-0,58	-0,71	0,19	0,92	-	0,50	0,77	1,60	-1,01	-	-2,27	-	-1,54	-	-8,85	3,04	-	-	-	-0,25
	2	-	-	0,14	-0,07	-1,02	0,39	0,37	0,98	-	0,42	0,67	1,00	-1,08	-	-2,63	-	-1,49	-	-9,85	-2,70	-	-	-	-0,28
	3	-	-	1,10	-0,65	-0,15	-0,26	0,80	1,10	-	0,70	1,15	1,02	-1,33	-	-2,12	-	-1,47	-	-8,14	-4,45	-	-	-	-0,02
Arsenic as As in µg/l	4	-	-	-	-1,53	-	38,31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,20
	5	-	-	-	0,18	-	55,88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0,67
	6	-	-	-	-0,90	-	101,06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0,56
Selenium as Se in µg/l	4	-	-	-	0,57	-	16,61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	0,00	-	6,81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	0,08	-	9,70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SOUTH AFRICAN BUREAU OF STANDARDS - WATER-CHECK PROGRAMME
TABLE B

Z-SCORE VALUES **Okt 07**
GROUP 1

Determinand		B129	B130	B131	B132 A	B132B	B135	B138	B139	B141	B142	B143	B144	B147	B148	B149	B152	B153
Aluminium as Al in µg/l	1	-2,18	-	-	2,68	2,68	0,28	0,58	-	1,29	-	-0,98	-	-	-1,12	-2,86	-	-
	2	-1,34	-	-	0,71	0,71	0,95	0,91	-	1,16	-	-1,67	-	-	-0,85	-2,54	-	-
	3	-1,27	-	-	1,60	1,60	-0,37	1,37	-	0,21	-	0,51	-	-	0,06	-1,85	-	-
Barium as Ba in µg/l	1	-0,67	-	-	0,40	0,40	-0,67	-1,48	-	1,48	-	-	-	-	-	0,61	-	-
	2	0,04	-	-	0,67	0,67	-2,10	-1,31	-	1,42	-	-	-	-	-	0,34	-	-
	3	-4,66	-	-	0,39	0,39	-1,57	-0,56	-	2,30	-	-	-	-	-	0,67	-	-
Beryllium as Be in µg/l	1	-	-	-	-	-	-1,45	-3,17	-	-	-	-	-	-	-	-2,02	-	-
	2	-	-	-	-	-	-1,75	-3,10	-	-	-	-	-	-	-	0,13	-	-
	3	-	-	-	-	-	0,15	0,14	-	-	-	-	-	-	-	0,53	-	-
Boron as B µg/l	1	-2,98	-	-	-7,51	-7,51	-	-2,55	-	-	-	-	-	-	-	0,34	-	-
	2	-1,88	-	-	0,34	0,34	1,05	-2,56	-	-	-	-	-	-	-	0,43	-	-
	3	-3,09	-	-	0,30	0,30	0,33	-2,71	-	-	-	-	-	-	-	0,12	-	-
Cadmium as Cd in µg/l	1	-3,15	-	2,55	1,05	0,30	0,07	-1,65	-	-	-	-	-	-	-0,93	0,00	-	-
	2	-3,92	-	-0,67	0,64	-0,12	-0,92	-2,67	-	-	-	-	-	-	-0,28	0,09	-	-
	3	-5,97	-	0,47	-1,24	0,10	-0,26	-1,40	-	-	-	-	-	-	-0,16	0,47	-	-
Chromium as Cr in µg/l	1	-7,46	-	-	-0,13	1,02	-1,56	-1,16	-	1,66	-	-	-	-	-0,43	3,31	-	-
	2	-5,56	-	-	0,56	2,20	-2,24	-0,84	-	1,77	-	-	-	-	-0,43	1,94	-	-
	3	-3,26	-	-	-0,03	1,35	0,81	1,01	-	0,18	-	-	-	-	0,49	2,25	-	-
Cobalt as Co in µg/l	1	-	-	-	0,83	-0,94	-1,33	-2,39	-	-	-	-	-	-	-0,68	-1,50	-	-
	2	-	-	-	0,73	-1,09	-2,67	0,75	-	-	-	-	-	-	-0,54	-1,01	-	-
	3	-	-	-	0,48	-1,35	-1,44	-2,99	-	-	-	-	-	-	-0,16	-0,29	-	-
Copper as Cu in µg/l	1	-4,09	-	-2,61	0,38	-0,42	-0,84	-2,19	-	1,31	-	-	-	-	-0,83	-0,13	-	-
	2	-4,06	-	0,40	0,96	-1,01	-2,17	-3,60	-	2,63	-	-	-	-	-0,86	0,00	-	-
	3	-3,17	-	0,09	-1,04	0,37	0,23	-0,60	-	-0,67	-	-	-	-	0,64	0,78	-	-
Iron as Fe in µg/l	1	-3,11	-	-1,70	0,55	0,55	-1,11	0,69	-	0,42	-	-1,36	-	-	-0,07	-	-	-
	2	-5,98	-	-4,25	-0,09	-0,09	-0,59	0,00	-	2,12	-	-3,92	-	-	-0,23	1,22	-	-
	3	-4,33	-	-0,20	1,08	1,08	-0,05	1,94	-	0,46	-	-0,62	-	-	0,77	2,80	-	-
Lead as Pb in µg/l	1	-2,24	-	-	0,30	1,15	-0,03	0,03	-	-0,79	-	-	-	-	-0,22	-0,20	-	-
	2	-2,85	-	-	0,42	1,66	-1,30	-0,42	-	0,55	-	-	-	-	-0,49	-1,41	-	-
	3	-2,83	-	-	0,15	1,15	0,80	-0,77	-	-0,15	-	-	-	-	0,53	0,58	-	-
Manganese as Mn in µg/l	1	-4,07	-	-3,54	0,56	0,56	0,03	0,62	-	1,20	-	-0,03	-	-	-1,69	1,79	-	-
	2	-3,78	-	-2,82	-0,23	-0,23	-0,80	0,36	-	1,27	-	-2,08	-	-	-1,71	0,34	-	-
	3	-4,80	-	-2,02	-0,65	-0,65	-1,14	0,87	-	1,17	-	-0,65	-	-	-1,00	0,56	-	-
Mercury as Hg in µg/l	1	-	-	-	-	-	0,07	-0,29	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	0,72	-0,63	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	0,23	-0,51	-	-	-	-	-	-	-	-	-	-
Molybdenum as Mo in µg/l	1	-	-	-	0,78	0,78	0,27	-0,61	-	0,04	-	-	-	-	-	-	-	-
	2	-	-	-	1,14	1,14	-0,42	-0,67	-	1,05	-	-	-	-	-	-0,13	-	-
	3	-	-	-	1,50	1,50	-0,68	0,06	-	0,49	-	-	-	-	-	-0,41	-	-
Nickel as Ni in µg/l	1	-4,47	-	-	0,25	0,26	-0,76	-3,14	-	-	-	-	-	-	-0,38	0,14	-	-
	2	-4,23	-	-	0,64	-1,33	-2,26	-2,67	-	-	-	-	-	-	-0,44	-0,53	-	-
	3	-6,90	-	-	0,49	0,25	-1,57	-2,66	-	-	-	-	-	-	-0,27	-0,75	-	-
Silicon as Si in µg/l	1	-3,16	-	-	0,74	0,74	1,72	-	-	0,43	-	-	-	-	-	-	-	-
	2	-3,89	-	-	3,69	3,69	2,01	-	-	0,09	-	-	-	-	-	-	-	-
	3	-3,57	-	-	-1,04	-1,04	2,09	-	-	0,35	-	-	-	-	-	-	-	-
Strontium as Sr in µg/l	1	-1,97	-	-	0,04	0,04	-0,04	-1,43	-	0,89	-	-	-	-	-	-0,35	-	-
	2	-1,90	-	-	-0,49	-0,49	-1,35	-0,67	-	1,23	-	-	-	-	-	-0,06	-	-
	3	-3,76	-	-	-0,84	-0,84	-1,18	-0,62	-	0,79	-	-	-	-	-	-0,79	-	-
Vanadium as V in µg/l	1	-	-	-	4,56	4,56	0,58	-0,66	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	2,49	2,49	-1,24	2,75	-	-	-	-	-	-	-	-3,26	-	-
	3	-	-	-	2,09	2,09	0,64	0,66	-	-	-	-	-	-	-	-0,59	-	-
Zinc as Zn in µg/l	1	-1,04	-	-1,93	0,73	0,00	-2,06	-0,31	-	0,64	-	-1,54	-	-	-0,35	0,81	-	-
	2	-1,86	-	-1,26	-0,09	0,09	-2,63	-0,44	-	0,63	-	-1,49	-	-	-0,58	0,70	-	-
	3	-1,30	-	-1,15	-0,12	0,25	-1,80	0,07	-	0,75	-	-1,15	-	-	0,21	1,22	-	-
Arsenic as As in µg/l	4	-	-	-	-	-	-0,20	-0,45	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-0,18	-0,67	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-0,56	-	-	-	-	-	-	-	-	-	-
Selenium as Se in µg/l	4	-	-	-	-	-	0,15	-2,02	-	-	-	-	-	-	-	-0,67	-	-
	5	-	-	-	-	-	-0,13	-0,93	-	-	-	-	-	-	-	-0,50	-	-
	6	-	-	-	-	-	-	-0,87	-	-	-	-	-	-	-	-0,36	-	-

Table C: Statistical summary

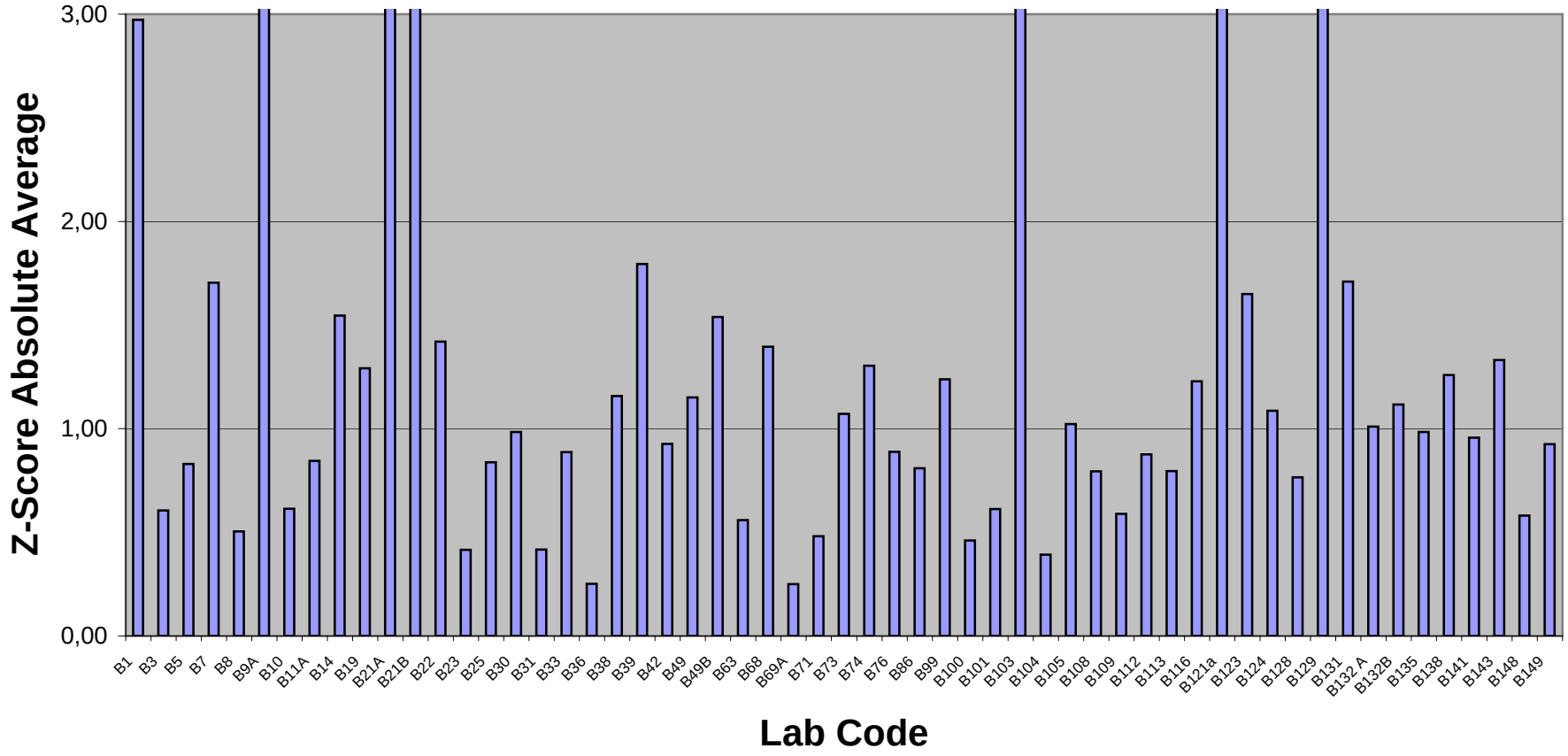
Determinand		Spike µg/l	Median	Robust SD	n
Aluminium as Al in µg/l	1	750,0	802,0	105	48
	2	1500	1552	151	48
	3	375,0	257,0	85	47
Barium as Ba in µg/l	1	150,0	190,0	15	34
	2	450,0	488,0	27	34
	3	300,0	327,0	18	34
Beryllium as Be in µg/l	1	50,00	50,00	3	25
	2	150,0	150,0	7	25
	3	100,0	81,79	14	25
Boron as B µg/l	1	500,0	541,0	53	29
	2	2000	2005	162	30
	3	1000	1038	83	30
Cadmium as Cd in µg/l	1	125,0	126,0	13	51
	2	500,0	502,0	33	51
	3	250,0	241,0	19	51
Chromium as Cr in µg/l	1	1200	1191	52	51
	2	2400	2413	99	51
	3	600,0	397,0	103	51
Cobalt as Co in µg/l	1	400,0	397,0	18	48
	2	800,0	797,0	39	48
	3	200,0	195,0	10	48
Copper as Cu in µg/l	1	300,0	322,0	24	54
	2	1200	1205	62	53
	3	600,0	490,0	117	53
Iron as Fe in µg/l	1	1250	1099	147	53
	2	2500	2471	120	54
	3	625,0	438,5	94	54
Lead as Pb in µg/l	1	150,0	154,0	30	50
	2	600,0	586,0	45	50
	3	300,0	192,5	65	50
Manganese as Mn in µg/l	1	250,0	270,5	17	56
	2	1000	1003	54	56
	3	500,0	493,5	36	56
Mercury as Hg in µg/l	1	3,000	2,400	3	15
	2	9,000	8,800	4	16
	3	6,000	2,500	3	15
Molybdenum as Mo in µg/l	1	100,0	89,7	14	29
	2	300,0	275,0	24	30
	3	200,0	188,5	26	30
Nickel as Ni in µg/l	1	1100	1108	62	50
	2	2200	2201	111	50
	3	550,0	554,8	33	50
Silicon as Si in µg/l	1	-	1746	208	30
	2	-	1744	178	30
	3	-	1691	184	30
Strontium as Sr in µg/l	1	80,00	176,5	13	34
	2	240,0	330,0	16	33
	3	160,0	255,0	18	33
Vanadium as V in µg/l	1	100,0	86,0	18	28
	2	400,0	399,5	39	28
	3	200,0	143,5	40	28
Zinc as Zn in µg/l	1	40,00	460,0	52	53
	2	120,0	425,5	43	54
	3	80,00	326,0	40	53
Arsenic as As in µg/l	4	3,000	4,415	3	12
	5	15,00	14,50	2	14
	6	9,000	8,835	1	12
Selenium as Se in µg/l	4	7,500	8,900	3	15
	5	12,50	15,10	6	17
	6	5,000	7,000	5	15

Lab code	Average absolute z-score	Number of tests performed
B1	2,97	46
B3	0,61	21
B5	0,83	51
B7	1,70	6
B8	0,50	51
B9A	6,27	60
B10	0,61	54
B11A	0,84	48
B14	1,55	60
B19	1,29	58
B21A	4,21	51
B21B	4,10	33
B22	1,42	60
B23	0,42	36
B25	0,84	60
B30	0,98	29
B31	0,42	48
B33	0,89	27
B36	0,25	36
B38	1,16	9
B39	1,80	50
B42	0,93	48
B49	1,15	30
B49B	1,54	60
B63	0,56	42
B68	1,39	42
B69A	0,25	36
B71	0,48	51
B73	1,07	33
B74	1,30	51
B76	0,89	36
B86	0,81	42
B99	1,24	24
B100	0,46	55
B101	0,61	27
B103	8,91	51
B104	0,39	33
B105	1,02	33
B108	0,79	48
B109	0,59	30
B112	0,88	33
B113	0,80	51
B116	1,23	30
B121a	3,86	27
B123	1,65	27
B124	1,09	30
B128	0,76	51
B129	3,35	39
B131	1,71	15
B132 A	1,01	48
B132B	1,12	48
B135	0,98	57
B138	1,26	57
B141	0,96	33
B143	1,33	12
B148	0,58	30
B149	0,92	48

Z < 2 = SATISFACTORY
2 < Z < 3 = QUESTIONABLE *****
Z > 3 = UNSATISFACTORY

*** Note: A Z-score of an individual result > 2 (questionable) should be investigated by the participating laboratory.**

WATER-CHECK GROUP 1
October 2007 Ave Abs Z-Score (Figure 1)



Sample Results

Determinand	Sample 2007/ /	Results mg/ l	Range mg/ l	Method Reference
Kjeldahl nitrogen as **N** in mg / l	1		1.0 - 10.0	
	2 *			
	3 *			
Total phosphate as **P** in mg / l	1		1.0 - 10.0	
	2 *			
	3 *			
Ammonia as **N** in mg / l	1		1.0 - 10.0	
	4 *			
	5 *			
Nitrate as **N** in mg / l	1		1.0 - 10.0	
	4 *			
	5 *			
Ortho-phosphate as **P** in mg / l	1		0.1 - 10.0	
	4 *			
	5 *			
Oxygen absorbed as O_2 in mg / l	1		---	
Chemical oxygen demand as O_2 in mg / l	1		20.0 - 200.0	
	4 *			
	5 *			
Dissolved organic carbon as C in mg / l	1		---	
	4 *			
	5 *			
Total organic carbon as C in mg / l	1		---	

SABS

Water - Check

Month:

Group 2

Lab code: B

Due date:

Enquiries:

Tel:

Fax:

E-mail:

Signed:

Comments:

NOTES:

1. Sample 1: Purified sewage effluent preserved with 1,5 ml / litre H_2SO_4 (conc).

2. * Dilution:

Samples 2, 3, 4 and 5 are synthetic water samples.
Dilute by pipetting **20 ml** of the synthetic concentrate of samples **2,3,4 and 5** respectively into separate **1000 ml** volumetric flasks and dilute to volume with distilled/deionised water
Use Grade A volumetric glassware.

NB: ***Do not correct analytical results for these dilutions.***

3. Testing: Please analyse by single test on a routine basis and express results as one decimal.

4. Ranges: The range values are only valid for the diluted synthetic samples.