Inter-laboratory Quality Control Material Data Sheet

QC Material ID: 13958-QC-PR12182

Product Type: Soil

Issue Date: 13 June 2025

Expiry Date: 11 September 2028

Test Name	Methods	n Value	Assigned Value	Assigned Range
Acid P (mg/kg)	Extr Acid P 9G1 9G2 (mg/kg)	12	53.3	27.7 - 78.8
Air-Dry Moist Content (%)	Air-Dry Moisture Content 2A1 (%)	28	1.02	0.72 - 1.32
Ammonium Nitrogen (mg/kg)	Amm-N 7C1 7C2 (mg/kg) **	22	28.9	23.3 - 34.5
Aqua Regia Aluminium (mg/kg)	Aqua Regia Al 17A2 17B1 17B 2 17C1 (mg/kg)	14	6,500	2467 - 10533
Aqua Regia Arsenic (mg/kg)	Aqua Regia As 17A2 17B1 17B 2 17C1 (mg/kg)	11	2.00	1.53 - 2.47
Aqua Regia Boron (mg/kg)	Aqua Regia B 17A2 17B1 17B 2 17C1 (mg/kg)	12	2.31	0.53 - 4.09
Aqua Regia Cadmium (mg/kg)	Aqua Regia Cd 17A2 17B1 17 B2 17C1 (mg/kg)	11	0.0840	0.0493 - 0.1187
Aqua Regia Calcium (mg/kg)	Aqua Regia Ca 17A2 17B1 17 B2 17C1 (mg/kg)	13	3,740	3562 - 3918
Aqua Regia Chromium (mg/kg)	Aqua Regia Cr 17A2 17B1 17B 2 17C1 (mg/kg)	14	31.0	26.0 - 36.0
Aqua Regia Cobalt (mg/kg)	Aqua Regia Co 17A2 17B1 17 B2 17C1 (mg/kg)	13	3.00	2.32 - 3.68
Aqua Regia Copper (mg/kg)	Aqua Regia Cu 17A2 17B1 17 B2 17C1 (mg/kg)	17	7.00	5.46 - 8.54
Aqua Regia Iron (mg/kg)	Aqua Regia Fe 17A2 17B1 17B 2 17C1 (mg/kg)	16	7,780	5971 - 9589
Aqua Regia Lead (mg/kg)	Aqua Regia Pb 17A2 17B1 17 B2 17C1 (mg/kg)	15	15.0	12.0 - 18.0
Aqua Regia Magnesium (mg/kg)	Aqua Regia Mg 17A2 17B1 17 B2 17C1 (mg/kg)	15	974	862 - 1085
Aqua Regia Manganese (mg/kg)	Aqua Regia Mn 17A2 17B1 17 B2 17C1 (mg/kg)	18	67.8	55.9 - 79.7
Aqua Regia Molybdenum (mg/kg)	Aqua Regia Mo 17A2 17B1 17 B2 17C1 (mg/kg)	10	2.20	0.47 - 3.94

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Version 2

Aqua Regia Potassium (mg/kg)	Aqua Regia K 17A2 17B1 17B 2 17C1 (mg/kg)	15	440	232 - 648
Aqua Regia Selenium (mg/kg)	Aqua Regia Se 17A2 17B1 17 B2 17C1 (mg/kg)	11	0.440	0.000 - 1.080
Aqua Regia Silicon (mg/kg)	Aqua Regia Si 17A2 17B1 17B 2 17C1 (mg/kg)	7 *	280	115 - 445
Aqua Regia Sodium (mg/kg)	Aqua Regia Na 17A2 17B1 17 B2 17C1 (mg/kg)	16	185	121 - 249
Aqua Regia Sulphur (mg/kg)	Aqua Regia S 17A2 17B1 17B 2 17C1 (mg/kg)	12	257	221 - 293
Aqua Regia Zinc (mg/kg)	Aqua Regia Zn 17A2 17B1 17 B2 17C1 (mg/kg)	14	21.7	19.9 - 23.5
Bray P (mg/kg)	Extr P Bray 9E1 9E2 (mg/kg)	8	13.2	12.6 - 13.8
CaCl2 Extractable B (mg/kg)	CaCl2 Extractable B 12C1 12C 2 (mg/kg)	14	0.521	0.352 - 0.691
Colwell P (mg/kg)	Extr P Colwell 9B1 9B2 (mg/kg)	20	29.0	24.1 - 33.8
Electrical Cond (dS/m)	Elec Cond 3A1 (dS/m)	32	0.322	0.307 - 0.337
Exch Aluminium (cmol+/kg)	Exch Al 15G1 (cmol+/kg) **	11	0.0121	0.0000 - 0.0332
Exch Calcium (cmol+/kg)	Exch Ca 15A1 (cmol+/kg) **	19	13.5	11.1 - 15.9
Exch Calcium (cmol+/kg)	Exch Ca 15D3 (cmol+/kg)	13	13.6	12.7 - 14.5
Exch Calcium (cmol+/kg)	Exch Ca 15E1 (cmol+/kg)	3 *	10.9	10.9 - 10.9
Exch Magnesium (cmol+/kg)	Exch Mg 15A1 (cmol+/kg) **	19	2.13	1.86 - 2.40
Exch Magnesium (cmol+/kg)	Exch Mg 15D3 (cmol+/kg)	15	2.11	1.96 - 2.26
Exch Magnesium (cmol+/kg)	Exch Mg 15E1 (cmol+/kg)	3 *	2.08	1.87 - 2.29
Exch Potassium (cmol+/kg)	Exch K 15A1 (cmol+/kg) **	17	0.277	0.212 - 0.342
Exch Potassium (cmol+/kg)	Exch K 15D3 (cmol+/kg)	16	0.270	0.237 - 0.303
Exch Potassium (cmol+/kg)	Exch K 15E1 (cmol+/kg)	3 *	0.232	0.164 - 0.300
Exch Sodium (cmol+/kg)	Exch Na 15A1 (cmol+/kg) **	14	0.330	0.293 - 0.367
Exch Sodium (cmol+/kg)	Exch Na 15D3 (cmol+/kg)	11	0.324	0.312 - 0.336



Exch Sodium (cmol+/kg)	Exch Na 15E1 (cmol+/kg)	3 *	0.280	0.221 - 0.339
Ext Copper (mg/kg)	Extr Cu 12A1 (mg/kg)	21	1.03	0.886 - 1.174
Ext Iron (mg/kg)	Extr Fe 12A1 (mg/kg)	23	99.2	67 - 131
Ext Manganese (mg/kg)	Extr Mn 12A1 (mg/kg)	22	8.48	7.05 - 9.92
Ext Potassium (mg/kg)	Extr K 18A1 (mg/kg)	12	140	116 - 164
Ext Silicon (mg/kg)	Extr Si 13D1 13D2 (mg/kg)	4 *	459	355 - 562
Ext Sulphur (mg/kg)	Extr S 10B1 10B2 10B3 (mg/kg)	9	84.1	77.3 - 90.9
Ext Sulphur (mg/kg)	Extr S 10D1 (mg/kg)	13	97.0	82.2 - 111.8
Ext Zinc (mg/kg)	Extr Zn 12A1 (mg/kg)	21	4.05	3.31 - 4.79
Ext Zinc (mg/kg)	Extr Zn 12D1 (mg/kg)	3 *	9.32	7.57 - 11.07
M3-Aluminium (mg/kg)	M3-Al 18F1 (mg/kg)	14	448	409 - 487
M3-Boron (mg/kg)	M3-B 18F1 (mg/kg)	13	0.553	0.277 - 0.829
M3-Calcium (mg/kg)	M3-Ca 18F1 (mg/kg)	15	2,900	2574 - 3226
M3-Copper (mg/kg)	M3-Cu 18F1 (mg/kg)	17	1.50	0.11 - 2.89
M3-Iron (mg/kg)	M3-Fe 18F1 (mg/kg)	17	451	326 - 576
M3-Magnesium (mg/kg)	M3-Mg 18F1 (mg/kg)	15	309	279 - 339
M3-Manganese (mg/kg)	M3-Mn 18F1 (mg/kg)	16	19.9	15.3 - 24.5
M3-Phosphorus (mg/kg)	M3-P ICP 18F1 (mg/kg)	16	26.2	19.8 - 32.6
M3-Potassium (mg/kg)	M3-K 18F1 (mg/kg)	13	104	92 - 116
M3-Sodium (mg/kg)	M3-Na 18F1 (mg/kg)	13	77.3	69.0 - 85.6
M3-Sulphur (mg/kg)	M3-S 18F1 (mg/kg)	10	107	104 - 110
M3-Zinc (mg/kg)	M3-Zn 18F1 (mg/kg)	14	7.90	7.08 - 8.72



Nitrate Nitrogen (mg/kg)	Nitrate N 7B1 7B2 (mg/kg)	9	13.4	12.5 - 14.3
Nitrate Nitrogen (mg/kg)	Nitrate N 7C1 7C2 (mg/kg)	19	14.0	11.0 - 17.0
Olsen P (mg/kg)	Extr P Olsen 9C1 9C2 (mg/kg)	19	11.9	8.9 - 14.9
Organic Carbon W&B (%)	Org C W&B 6A1 (%) **	15	1.51	1.27 - 1.75
PBI Colwell (L/kg)	PBI Colwell 9I2a 9I2b 9I2c (L/kg)	14	82.0	66.3 - 97.7
PBI Olsen (L/kg)	PBI Olsen 9I3a 9I3b 9I3c (L/kg)	3 *	81.1	71.6 - 90.6
PBI Unadjusted (L/kg)	PBI Unadjusted 9I4a 9I4b 9I4c (L/kg)	10	76.9	67.6 - 86.3
pH CaCl2 (pH units)	pH CaCl2 4B1 4B2 4B3 4B4 (pH Units)	30	7.66	7.45 - 7.86
pH Water (pH units)	pH Water 4A1 4A3 (pH Units)	33	8.12	7.97 - 8.27
Total Carbon (%)	Total C 6B2 (%)	26	1.66	1.53 - 1.79
Total Nitrogen (%)	Total N 7A1 7A2 7A3 (%) **	12	0.101	0.0699 - 0.1321
Total Nitrogen (%)	Total N 7A5 (%)	23	0.110	0.092 - 0.128
Total Org C IR (%)	Total Org Carbon IR 6B4a 6B4b (%)	5 *	1.67	1.40 - 1.94
Total Organic Carbon (%)	Total Org C 6B1 6B3 (%) **	23	1.57	1.37 - 1.76
Total Phosphorus (%)	Total P Not Specified (%) **	21	0.0170	0.0140 - 0.0200
Water Ext Cl (mg/kg)	Water Ext Cl 5A1 5A2 5A3 (mg/kg)	21	39.8	28.5 - 51.1

** n Values < 8 are indicative only and should be used with caution*

*** These methods should be reported on an oven dried basis (105°C) by using the formula given in method 2A1 of Rayment and Lyons 2011.*

Instructions for use: Due to possible moisture reabsorption, re-dry the sample at 40°C to constant weight prior to analysis

Description: 150g+ irradiated, packaged in plastic jar

Homogeneity: This QC material has been assessed as homogeneous for use in an Inter-Laboratory Proficiency Study

Stability: An expiry period consistent with the shelf life of the product, experience, and technical advice has been applied



Storage: Keep samples at a stable temperature < 25°C (eg in air conditioned storage). Reseal containers after each use. Do not store in sunlight.

Values: The *Assigned Value* is the consensus median from an inter-laboratory proficiency round excluding outliers; *n Values* are the number of results used to calculate the assigned value. The *Assigned Range* is 2 standard deviations of *n Values*.

Methods: Multiple methods were used in the preparation of these assigned values.

