



Magruder Certificate of Analysis

Magruder Sample #180711 Micronutrients

Analyte	Value	± Standard Uncertainty	# Labs
Acid Soluble Calcium (%)	0.9562	0.0263	22
Acid Soluble Magnesium (%)	0.2778	0.0088	22
Total Sulfur (5%)	7.442	0.122	48
Acid Soluble Arsenic (ppm)	10.38	1.32	18
Acid Soluble Boron (1%)	1.271	0.024	59
Acid Soluble Cadmium (ppm)	553.1	19.1	25
Acid Soluble Chromium (ppm)	208.6	11.4	23
Acid Soluble Cobalt (ppm)	216.9	6.4	24
Acid Soluble Copper (1%)	0.8981	0.0110	73
Acid Soluble Iron (%)	2.072	0.040	26
Acid Soluble Lead (ppm)	579.4	20.4	25
Acid Soluble Manganese (5%)	8.393	0.190	72
Acid Soluble Molybdenum (ppm)	367.1	11.2	28
Acid Soluble Nickel (ppm)	1700	52	27
Acid Soluble Selenium (ppm)	25.36	8.24	17
Acid Soluble Zinc (20%)	20.05	0.17	77

1. Data obtained from participant results in the Magruder Check Sample Program.
2. Guaranteed concentrations noted by the value preceding the unit in Analyte name.
3. Values are robust means. Standard uncertainty determined as $1.25 \times \text{robust standard deviation} / \sqrt{\text{\#Labs}}$. Results only shown for analytes tested by 16 or more labs. Values and uncertainties for analytes tested by less than 16 labs are available in Analyte Reports.
4. Technical information on Certificate of Analysis available at www.magruderchecksample.org/prod/Articles.html