



# Magruder Certificate of Analysis

## Magruder Sample #200411 Grade 19-19-19

Analyte	Value	± Standard Uncertainty	# Labs
Ammoniacal N (%)	4.480	0.118	34
Urea N (%)	14.48	0.2	20
Total N (19%)	19.16	0.05	86
Total P2O5 (%)	18.13	0.13	45
Direct Available P2O5 (19%)	18.17	0.12	53
Soluble K2O (19%)	19.45	0.09	85
Acid Soluble Mg (%)	0.4812	0.0129	17
Acid Soluble Cd (ppm)	18.17	0.89	19
Acid Soluble Cr (ppm)	104.1	4.5	18
Acid Soluble Fe (%)	0.4157	0.010	16
Acid Soluble Ni (ppm)	11.53	1.28	18
Acid Soluble Zn (%)	0.02745	0.00069	33

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](http://www.magruderchecksample.org/prod/Articles.html)