

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 150212

Zinc Oxy-Sulfate

Statistical Summary

Issue Date : 03/31/2015

Method Code	Analyte & Method	Total # Labs Submitting	# Labs in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	IA %RSD	Average Range (R-bar)	Horwitz %RSD
101.00	Acid Soluble Calcium, AA, inorganic 965.09 (%)	1		2.634									
101.30	Acid Soluble Calcium, ICP, test portion inorganic ... (%)	6	6	2.679	0.1604	2.704		0.1233	0.0356	4.56%		0.0847	3.44%
121.00	Acid Soluble Magnesium, AA, inorganic 965.09 (%)	1		0.2351									
121.30	Acid Soluble Magnesium, ICP, test portion inorgani... (%)	6	6	0.2709	0.0223	0.2725		0.0217	0.0063	7.97%		0.0155	4.86%
144.01	Sulfur, Gravimetric (%)	2	2	6.057	6.345								
144.02	Sulfur, Gravimetric (%)	1		9.400									
144.70	Sulfur, Spectrometric (%)	1		6.510									
144.99	Sulfur, Other (%)	8	8	8.245	2.565	9.121		1.491	0.3728	16.35%		0.2661	2.87%
151.00	Acid Soluble Arsenic , AA, test portion as in 200... (ppm)	1		175.6									
151.30	Acid Soluble Arsenic , ICP (ppm)	9	9	215.8	67.54	230.0		21.79	5.136	9.47%		5.371	7.06%
151.99	Acid Soluble Arsenic , Other (ppm)	2	2	64.08	24.86								
165.99	Acid Soluble Boron , Other (%)	2	2	0.0545	0.0014								
181.00	Acid Soluble Cadmium , AA, test portion as in 200... (ppm)	1		0.9150									
181.30	Acid Soluble Cadmium , ICP (ppm)	10	9	191.4	22.61	190.4		21.46	5.057	11.27%		5.258	7.26%
181.99	Acid Soluble Cadmium , Other (ppm)	2	2	139.5	7.884								
191.00	Acid Soluble Chromium , AA, test portion as in 20... (ppm)	1		98.00									
191.30	Acid Soluble Chromium , ICP (ppm)	8	7	99.58	22.34	100.1		24.45	6.533	24.42%		4.922	8.00%
191.99	Acid Soluble Chromium , Other (ppm)	2	2	56.83	17.22								
202.00	Acid Soluble Cobalt , AA, test portion as in 2006... (ppm)	1		180.0									
202.30	Acid Soluble Cobalt , ICP (ppm)	9	9	276.0	25.10	276.0		28.46	6.708	10.31%		11.24	6.87%
202.99	Acid Soluble Cobalt , Other (ppm)	2	2	184.3	22.20								
221.00	Acid Soluble Copper , AA, inorganic 965.09 (%)	3	3	0.8962	0.7704	0.8962		0.7704	0.3145	85.96%		0.0000	4.07%
221.30	Acid Soluble Copper , ICP, test portion inorganic... (%)	11	11	1.355	0.1385	1.335		0.0884	0.0188	6.62%		0.0441	3.83%
221.99	Acid Soluble Copper , Other (%)	3	3	1.302	0.0829	1.302		0.0829	0.0338	6.36%		0.1140	3.84%
241.00	Acid Soluble Iron , AA, inorganic 965.09 (%)	1		5.304									
241.30	Acid Soluble Iron , ICP, test portion inorganic 965.09 (%)	8	8	4.500	1.047	4.500		1.187	0.2967	26.37%		0.2315	3.19%
241.99	Acid Soluble Iron , Other (%)	1		4.080									
251.00	Acid Soluble Lead , AA, test portion as in 2006.0... (ppm)	1		600.7									
251.30	Acid Soluble Lead , ICP (ppm)	10	9	710.0	67.49	692.7		42.18	9.941	6.09%		10.27	5.98%
251.99	Acid Soluble Lead , Other (ppm)	2	2	449.3	220.2								
261.11	Acid Soluble Manganese , AA, total Mn (%)	1		0.2721									

Method Code	Analyte & Method	Total # Labs Submitting	# Labs in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	IA %RSD	Average Range (R-bar)	Horwitz %RSD
261.30	Acid Soluble Manganese , ICP, test portion 972.02a (%)	6	6	0.2651	0.0203	0.2605		0.0130	0.0037	4.99%		0.0130	4.90%
261.99	Acid Soluble Manganese , Other (%)	1		0.2600									
281.00	Acid Soluble Mercury , AA (ppm)	1		0.7030									
281.99	Acid Soluble Mercury , Other (ppm)	1		0.3250									
289.00	Acid Soluble Molybdenum , AA, test portion in 200... (ppm)	1		737.5									
289.30	Acid Soluble Molybdenum , ICP (ppm)	10	10	613.5	114.1	631.6		39.01	8.723	6.18%		24.69	6.06%
289.99	Acid Soluble Molybdenum , Other (ppm)	2	2	504.1	135.6								
291.00	Acid Soluble Nickel , AA, test portion as in 2006... (ppm)	1		189.5									
291.30	Acid Soluble Nickel , ICP (ppm)	9	9	195.9	17.84	194.6		17.36	4.093	8.92%		13.17	7.24%
291.99	Acid Soluble Nickel , Other (ppm)	2	2	139.6	10.50								
301.30	Acid Soluble Selenium , ICP (ppm)	2	2	1.748	0.5480								
301.99	Acid Soluble Selenium , Other (ppm)	1		0.8674									
311.99	Sodium, Other (%)	4	4	0.1381	0.0393	0.1381		0.0393	0.0139	28.45%		0.0283	5.39%
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	14	14	37.09	3.490	36.22	1.0000	0.9309	0.1759	2.57%	1.38%	0.6973	2.33%
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	34	33	37.18	2.165	37.14	1.0000	1.954	0.2405	5.26%	1.35%	0.5131	2.32%
321.99	Acid Soluble Zinc , Other (36%)	5	5	36.68	2.338	36.68	1.0000	2.338	0.7394	6.37%	1.36%	0.7080	2.33%
325.00	Water Soluble Zinc , AA (%)	2	2	10.04	7.565								
325.30	Water Soluble Zinc , ICP (%)	2	2	5.065	0.0636								
325.99	Water Soluble Zinc , Other (%)	1		3.250									

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STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 150212

Zinc Oxy-Sulfate

Method Precision Report

Issue Date : 03/31/2015

Method Code	Analyte & Method	Total # Labs Submitting	# Labs Used in Precision Calcs	Mean	SD	Between Labs sL	Within Labs sr	Reproducibility SR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
101.30	Acid Soluble Calcium, ICP, test portion inorganic 965.09	6	6	2.679	0.1604	0.1510	0.0763	0.1692	5.64%	2.85%	6.32%	2.218
121.30	Acid Soluble Magnesium, ICP, test portion inorganic 965.09	6	6	0.2709	0.0223	0.0206	0.0120	0.0238	7.61%	4.42%	8.80%	1.992
144.99	Sulfur, Other	8	8	8.245	2.565	2.558	0.2687	2.572	31.02%	3.26%	31.19%	9.572
151.30	Acid Soluble Arsenic , ICP	9	8	237.1	23.51	23.32	4.200	23.70	9.83%	1.77%	9.99%	5.641
181.30	Acid Soluble Cadmium , ICP	10	9	191.4	22.61	22.38	4.488	22.83	11.70%	2.35%	11.93%	5.087
191.30	Acid Soluble Chromium , ICP	8	7	99.58	22.34	22.16	3.992	22.52	22.25%	4.01%	22.61%	5.641
202.30	Acid Soluble Cobalt , ICP	9	9	276.0	25.10	24.31	8.825	25.86	8.81%	3.20%	9.37%	2.930
221.30	Acid Soluble Copper , ICP, test portion inorganic 965.09	11	9	1.312	0.0878	0.0858	0.0261	0.0897	6.54%	1.99%	6.84%	3.443
241.30	Acid Soluble Iron , ICP, test portion inorganic 965.09	8	7	4.467	1.126	1.122	0.1394	1.130	25.11%	3.12%	25.30%	8.106
251.30	Acid Soluble Lead , ICP	10	9	710.0	67.49	67.20	8.803	67.78	9.47%	1.24%	9.55%	7.700
261.30	Acid Soluble Manganese , ICP, test portion 972.02a	6	6	0.2651	0.0203	0.0189	0.0104	0.0216	7.12%	3.93%	8.13%	2.070
289.30	Acid Soluble Molybdenum , ICP	10	9	646.8	46.16	43.83	20.47	48.38	6.78%	3.17%	7.48%	2.363
291.30	Acid Soluble Nickel , ICP	9	9	195.9	17.84	16.24	10.44	19.31	8.29%	5.33%	9.86%	1.850
321.00	Acid Soluble Zinc , AA, inorganic 965.09	14	12	36.28	0.8544	0.8255	0.3119	0.8824	2.28%	0.86%	2.43%	2.830
321.30	Acid Soluble Zinc , ICP, test portion inorganic 965.09	34	32	37.18	2.200	2.173	0.4847	2.226	5.84%	1.30%	5.99%	4.593

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Method Proficiency For All Labs (Lab Values)

Sample # 150212

Lab Values

Zinc Oxy-Sulfate

Issue Date : 03/31/2015

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Labs	Magruder CS Z Score	Threshold %RSD	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
101.00	Acid Soluble Calcium, AA, inorganic 965.09 (%)	0105	2.634	0.1150			0.1150	1			
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0035	2.385	0.2300	2.704	0.1233	0.0847	6	-2.59	6%	0
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0354	2.636	0.0700	2.704	0.1233	0.0847	6	-0.55	1%	0
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0102	2.699	0.0782	2.704	0.1233	0.0847	6	-0.04	0%	0
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0472	2.725	0.0300	2.704	0.1233	0.0847	6	0.17	0%	0
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0096	2.795	0.0500	2.704	0.1233	0.0847	6	0.74	2%	0
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0041	2.835	0.0500	2.704	0.1233	0.0847	6	1.06	2%	0
121.00	Acid Soluble Magnesium, AA, inorganic 965.09 (%)	0105	0.2351	0.0025			0.0025	1			
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0035	0.2360	0.0240	0.2725	0.0217	0.0155	6	-1.68	7%	0
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0096	0.2600	0.0200	0.2725	0.0217	0.0155	6	-0.58	2%	0
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0041	0.2650	0.0100	0.2725	0.0217	0.0155	6	-0.35	1%	0
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0354	0.2805	0.0150	0.2725	0.0217	0.0155	6	0.37	1%	0
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0102	0.2840	0.0040	0.2725	0.0217	0.0155	6	0.53	2%	0
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0472	0.3000	0.0200	0.2725	0.0217	0.0155	6	1.27	5%	0
144.01	Sulfur, Gravimetric (%)	0043	1.570	0.0200	6.057	6.345	0.0795	2	-0.71	37%	0
144.01	Sulfur, Gravimetric (%)	0102	10.54	0.1390	6.057	6.345	0.0795	2	0.71	37%	0
144.02	Sulfur, Gravimetric (%)	0292	9.400	0.0400			0.0400	1			
144.70	Sulfur, Spectrometric (%)	0506	6.510	0.7000			0.7000	1			
144.99	Sulfur, Other (Identify) (%)	0096	4.600	0.0800	9.121	1.491	0.2661	8	-3.03	25%	0
144.99	Sulfur, Other (Identify) (%)	0354	4.671	0.0230	9.121	1.491	0.2661	8	-2.98	24%	0
144.99	Sulfur, Other (Identify) (%)	0506	6.510	0.7000	9.121	1.491	0.2661	8	-1.75	14%	0
144.99	Sulfur, Other (Identify) (%)	0472	9.355	0.1300	9.121	1.491	0.2661	8	0.16	1%	0
144.99	Sulfur, Other (Identify) (%)	0389	9.810	0.0800	9.121	1.491	0.2661	8	0.46	4%	0
144.99	Sulfur, Other (Identify) (%)	0035	10.07	0.6700	9.121	1.491	0.2661	8	0.63	5%	0
144.99	Sulfur, Other (Identify) (%)	0494	10.36	0.4310	9.121	1.491	0.2661	8	0.83	7%	0
144.99	Sulfur, Other (Identify) (%)	0102	10.59	0.0150	9.121	1.491	0.2661	8	0.98	8%	0
151.00	Acid Soluble Arsenic , AA, test portion as i... (ppm)	0025	175.6	1.700			1.700	1			
151.30	Acid Soluble Arsenic , ICP (ppm)	0096	45.55	5.500	230.0	21.79	5.371	9	-8.46	40%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0027	205.0	10.00	230.0	21.79	5.371	9	-1.15	5%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0230	225.5	7.000	230.0	21.79	5.371	9	-0.21	1%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0037	225.6	4.460	230.0	21.79	5.371	9	-0.20	1%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0481	228.5	1.000	230.0	21.79	5.371	9	-0.07	0%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0095	231.5	7.000	230.0	21.79	5.371	9	0.07	0%	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Labs	Magruder CS Z Score	Threshold %RSD	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
151.30	Acid Soluble Arsenic , ICP (ppm)	0102	240.8	3.377	230.0	21.79	5.371	9	0.50	2%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0041	258.0	4.000	230.0	21.79	5.371	9	1.29	6%	0
151.30	Acid Soluble Arsenic , ICP (ppm)	0368	282.0	6.000	230.0	21.79	5.371	9	2.39	11%	0
151.99	Acid Soluble Arsenic , Other (ppm)	0506	46.50	0.0000	64.08	24.85	67.65	2	-0.71	14%	0
151.99	Acid Soluble Arsenic , Other (ppm)	0042	81.65	135.3	64.08	24.85	67.65	2	0.71	14%	0
165.99	Acid Soluble Boron , Other (%)	0354	0.0535	0.0030	0.0545	0.0014	0.0020	2	-0.71	1%	0
165.99	Acid Soluble Boron , Other (%)	0102	0.0555	0.0010	0.0545	0.0014	0.0020	2	0.71	1%	0
181.00	Acid Soluble Cadmium , AA, test portion as i...	0498	0.9150	0.0900			0.0900	1			
181.30	Acid Soluble Cadmium , ICP (ppm)	0481	157.5	1.000	190.4	21.46	5.258	9	-1.53	9%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0230	173.5	1.000	190.4	21.46	5.258	9	-0.79	4%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0037	178.8	4.540	190.4	21.46	5.258	9	-0.54	3%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0027	179.0	2.000	190.4	21.46	5.258	9	-0.53	3%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0095	193.5	7.000	190.4	21.46	5.258	9	0.15	1%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0096	195.7	5.300	190.4	21.46	5.258	9	0.25	1%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0041	204.0	12.00	190.4	21.46	5.258	9	0.64	4%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0102	204.9	9.480	190.4	21.46	5.258	9	0.68	4%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0368	235.5	5.000	190.4	21.46	5.258	9	2.10	12%	0
181.30	Acid Soluble Cadmium , ICP (ppm)	0035	153.5	37.00	190.4	21.46	5.258	9	-1.72	10%	1
181.99	Acid Soluble Cadmium , Other (ppm)	0042	133.9	5.400	139.5	7.884	2.750	2	-0.71	2%	0
181.99	Acid Soluble Cadmium , Other (ppm)	0506	145.1	0.1000	139.5	7.884	2.750	2	0.71	2%	0
191.00	Acid Soluble Chromium , AA, test portion as ...	0481	98.00	10.00			10.00	1			
191.30	Acid Soluble Chromium , ICP (ppm)	0368	69.45	5.500	100.1	24.45	4.922	7	-1.25	15%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0230	72.85	3.900	100.1	24.45	4.922	7	-1.11	14%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0035	99.80	10.40	100.1	24.45	4.922	7	-0.01	0%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0096	102.7	2.100	100.1	24.45	4.922	7	0.10	1%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0037	104.0	3.640	100.1	24.45	4.922	7	0.16	2%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0041	116.0	2.000	100.1	24.45	4.922	7	0.65	8%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0102	132.3	6.913	100.1	24.45	4.922	7	1.32	16%	0
191.30	Acid Soluble Chromium , ICP (ppm)	0027	134.0	26.00	100.1	24.45	4.922	7	1.39	17%	1
191.99	Acid Soluble Chromium , Other (ppm)	0042	44.65	2.900	56.83	17.22	1.450	2	-0.71	11%	0
191.99	Acid Soluble Chromium , Other (ppm)	0506	69.00	0.0000	56.83	17.22	1.450	2	0.71	11%	0
202.00	Acid Soluble Cobalt , AA, test portion as in...	0481	180.0	0.0000			0.0000	1			
202.30	Acid Soluble Cobalt , ICP (ppm)	0027	242.0	4.000	276.0	28.46	11.24	9	-1.19	6%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0035	245.0	22.00	276.0	28.46	11.24	9	-1.09	6%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0037	261.3	11.90	276.0	28.46	11.24	9	-0.51	3%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0230	270.0	6.000	276.0	28.46	11.24	9	-0.21	1%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0096	271.0	16.00	276.0	28.46	11.24	9	-0.17	1%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0095	278.0	8.000	276.0	28.46	11.24	9	0.07	0%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0041	300.5	13.00	276.0	28.46	11.24	9	0.86	4%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0102	307.9	6.270	276.0	28.46	11.24	9	1.12	6%	0
202.30	Acid Soluble Cobalt , ICP (ppm)	0368	308.0	14.00	276.0	28.46	11.24	9	1.13	6%	0
202.99	Acid Soluble Cobalt , Other (ppm)	0042	168.6	15.00	184.3	22.20	7.500	2	-0.71	4%	0
202.99	Acid Soluble Cobalt , Other (ppm)	0506	200.0	0.0000	184.3	22.20	7.500	2	0.71	4%	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Labs	Magruder CS Z Score	Threshold %RSD	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
221.00	Acid Soluble Copper , AA, inorganic 965.09 (%)	0498	0.0067	0.0001	0.8962	0.7704	0.0000	3	-1.15	50%	0
221.00	Acid Soluble Copper , AA, inorganic 965.09 (%)	0481	1.340	0.0000	0.8962	0.7704	0.0000	3	0.58	25%	0
221.00	Acid Soluble Copper , AA, inorganic 965.09 (%)	0105	1.342	0.0000	0.8962	0.7704	0.0000	3	0.58	25%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0096	1.150	0.0525	1.335	0.0884	0.0441	11	-2.09	7%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0368	1.240	0.0000	1.335	0.0884	0.0441	11	-1.08	4%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0472	1.295	0.0300	1.335	0.0884	0.0441	11	-0.46	2%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0037	1.299	0.0170	1.335	0.0884	0.0441	11	-0.42	1%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0035	1.320	0.0600	1.335	0.0884	0.0441	11	-0.17	1%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0433	1.320	0.0000	1.335	0.0884	0.0441	11	-0.17	1%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0095	1.340	0.0400	1.335	0.0884	0.0441	11	0.05	0%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0041	1.375	0.0500	1.335	0.0884	0.0441	11	0.45	1%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0025	1.414	0.1520	1.335	0.0884	0.0441	11	0.89	3%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0354	1.470	0.0240	1.335	0.0884	0.0441	11	1.52	5%	0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0102	1.687	0.0600	1.335	0.0884	0.0441	11	3.98	13%	0
221.99	Acid Soluble Copper , Other (%)	0506	1.215	0.1700	1.302	0.0829	0.1140	3	-1.05	3%	0
221.99	Acid Soluble Copper , Other (%)	0042	1.311	0.1520	1.302	0.0829	0.1140	3	0.11	0%	0
221.99	Acid Soluble Copper , Other (%)	0230	1.380	0.0200	1.302	0.0829	0.1140	3	0.94	3%	0
241.00	Acid Soluble Iron , AA, inorganic 965.09 (%)	0105	5.304	0.1600			0.1600	1			
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0025	2.827	0.1540	4.500	1.187	0.2315	8	-1.41	19%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0472	3.365	0.0500	4.500	1.187	0.2315	8	-0.96	13%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0035	4.055	0.2500	4.500	1.187	0.2315	8	-0.37	5%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0377	4.425	0.0100	4.500	1.187	0.2315	8	-0.06	1%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0041	4.730	0.7800	4.500	1.187	0.2315	8	0.19	3%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0096	5.340	0.0400	4.500	1.187	0.2315	8	0.71	9%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0354	5.435	0.3850	4.500	1.187	0.2315	8	0.79	10%	0
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0102	5.821	0.1830	4.500	1.187	0.2315	8	1.11	15%	0
241.99	Acid Soluble Iron , Other (%)	0506	4.080	0.6000			0.6000	1			
251.00	Acid Soluble Lead , AA, test portion as in 2... (ppm)	0025	600.7	3.800			3.800	1			
251.30	Acid Soluble Lead , ICP (ppm)	0027	650.5	19.00	692.7	42.18	10.27	9	-1.00	3%	0
251.30	Acid Soluble Lead , ICP (ppm)	0230	657.0	0.0000	692.7	42.18	10.27	9	-0.85	3%	0
251.30	Acid Soluble Lead , ICP (ppm)	0095	664.5	11.00	692.7	42.18	10.27	9	-0.67	2%	0
251.30	Acid Soluble Lead , ICP (ppm)	0037	672.3	13.85	692.7	42.18	10.27	9	-0.48	1%	0
251.30	Acid Soluble Lead , ICP (ppm)	0096	682.7	22.60	692.7	42.18	10.27	9	-0.24	1%	0
251.30	Acid Soluble Lead , ICP (ppm)	0102	687.8	8.010	692.7	42.18	10.27	9	-0.12	0%	0
251.30	Acid Soluble Lead , ICP (ppm)	0035	744.5	11.00	692.7	42.18	10.27	9	1.23	4%	0
251.30	Acid Soluble Lead , ICP (ppm)	0041	783.5	3.000	692.7	42.18	10.27	9	2.15	7%	0
251.30	Acid Soluble Lead , ICP (ppm)	0368	847.0	4.000	692.7	42.18	10.27	9	3.66	11%	0
251.30	Acid Soluble Lead , ICP (ppm)	0481	836.5	97.00	692.7	42.18	10.27	9	3.41	10%	1
251.99	Acid Soluble Lead , Other (ppm)	0042	293.7	62.10	449.3	220.2	31.05	2	-0.71	17%	0
251.99	Acid Soluble Lead , Other (ppm)	0506	605.0	0.0000	449.3	220.2	31.05	2	0.71	17%	0
261.11	Acid Soluble Manganese , AA, total Mn (%)	0105	0.2721	0.0291			0.0291	1			
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0035	0.2475	0.0190	0.2605	0.0130	0.0130	6	-1.00	3%	0
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0354	0.2520	0.0060	0.2605	0.0130	0.0130	6	-0.66	2%	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Labs	Magruder CS Z Score	Threshold %RSD	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0472	0.2550	0.0100	0.2605	0.0130	0.0130	6	-0.43	1%	0
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0102	0.2600	0.0175	0.2605	0.0130	0.0130	6	-0.04	0%	0
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0096	0.2741	0.0037	0.2605	0.0130	0.0130	6	1.04	3%	0
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0041	0.3020	0.0220	0.2605	0.0130	0.0130	6	3.19	8%	0
261.99	Acid Soluble Manganese , Other (%)	0506	0.2600	0.0400			0.0400	1			
281.00	Acid Soluble Mercury , AA (ppm)	0230	0.7030	0.0040			0.0040	1			
281.99	Acid Soluble Mercury , Other (ppm)	0042	0.3250	0.0100			0.0100	1			
289.00	Acid Soluble Molybdenum , AA, test portion i... (ppm)	0481	737.5	17.00			17.00	1			
289.30	Acid Soluble Molybdenum , ICP (ppm)	0096	313.3	12.10	631.6	39.01	24.69	10	-8.16	25%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0035	603.0	36.00	631.6	39.01	24.69	10	-0.73	2%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0037	603.9	32.67	631.6	39.01	24.69	10	-0.71	2%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0095	614.0	18.00	631.6	39.01	24.69	10	-0.45	1%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0433	625.0	10.00	631.6	39.01	24.69	10	-0.17	1%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0027	631.5	35.00	631.6	39.01	24.69	10	0.00	0%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0230	650.0	10.00	631.6	39.01	24.69	10	0.47	1%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0102	651.2	23.09	631.6	39.01	24.69	10	0.50	2%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0041	709.0	50.00	631.6	39.01	24.69	10	1.98	6%	0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0368	734.0	20.00	631.6	39.01	24.69	10	2.62	8%	0
289.99	Acid Soluble Molybdenum , Other (ppm)	0042	408.3	42.90	504.1	135.6	21.45	2	-0.71	10%	0
289.99	Acid Soluble Molybdenum , Other (ppm)	0506	600.0	0.0000	504.1	135.6	21.45	2	0.71	10%	0
291.00	Acid Soluble Nickel , AA, test portion as in... (ppm)	0481	189.5	3.000			3.000	1			
291.30	Acid Soluble Nickel , ICP (ppm)	0027	172.0	20.00	194.6	17.36	13.17	9	-1.30	6%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0035	180.0	14.00	194.6	17.36	13.17	9	-0.84	4%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0037	183.9	1.330	194.6	17.36	13.17	9	-0.61	3%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0230	188.5	7.000	194.6	17.36	13.17	9	-0.35	2%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0096	192.2	14.50	194.6	17.36	13.17	9	-0.14	1%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0095	199.5	13.00	194.6	17.36	13.17	9	0.28	1%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0102	206.6	6.735	194.6	17.36	13.17	9	0.69	3%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0041	209.5	19.00	194.6	17.36	13.17	9	0.86	4%	0
291.30	Acid Soluble Nickel , ICP (ppm)	0368	230.5	23.00	194.6	17.36	13.17	9	2.07	9%	0
291.99	Acid Soluble Nickel , Other (ppm)	0042	132.2	12.60	139.6	10.50	6.350	2	-0.71	3%	0
291.99	Acid Soluble Nickel , Other (ppm)	0506	147.1	0.1000	139.6	10.50	6.350	2	0.71	3%	0
301.30	Acid Soluble Selenium , ICP (ppm)	0041	1.360	1.760	1.748	0.5480	1.435	2	-0.71	11%	0
301.30	Acid Soluble Selenium , ICP (ppm)	0368	2.135	1.110	1.748	0.5480	1.435	2	0.71	11%	0
301.99	Acid Soluble Selenium , Other (ppm)	0485	0.8674	0.0341			0.0341	1			
311.99	Sodium, Other (%)	0102	0.1060	0.0160	0.1381	0.0393	0.0283	4	-0.82	12%	0
311.99	Sodium, Other (%)	0096	0.1150	0.0100	0.1381	0.0393	0.0283	4	-0.59	8%	0
311.99	Sodium, Other (%)	0035	0.1380	0.0620	0.1381	0.0393	0.0283	4	0.00	0%	0
311.99	Sodium, Other (%)	0354	0.1935	0.0250	0.1381	0.0393	0.0283	4	1.41	20%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0029	35.14*	2.670	36.22	0.9309	0.6973	14	-1.17	2%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0500	35.40*	0.4000	36.22	0.9309	0.6973	14	-0.89	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0351	35.42*	0.2600	36.22	0.9309	0.6973	14	-0.87	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0258	35.48*	0.2600	36.22	0.9309	0.6973	14	-0.80	1%	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Labs	Magruder CS Z Score	Threshold %RSD	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0040	35.66*	0.1350	36.22	0.9309	0.6973	14	-0.61	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0169	35.77*	0.0900	36.22	0.9309	0.6973	14	-0.49	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0105	35.80*	0.5100	36.22	0.9309	0.6973	14	-0.46	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0028	36.25	0.1000	36.22	0.9309	0.6973	14	0.03	0%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0485	36.37	0.3400	36.22	0.9309	0.6973	14	0.16	0%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0043	36.63	0.6500	36.22	0.9309	0.6973	14	0.43	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0481	37.15	0.5000	36.22	0.9309	0.6973	14	0.99	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0136	37.67	0.3800	36.22	0.9309	0.6973	14	1.55	2%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0498	37.75	0.9000	36.22	0.9309	0.6973	14	1.64	2%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (36%)	0428	48.86	2.567	36.22	0.9309	0.6973	14	13.58	17%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0483	32.45*	0.3000	37.14	1.954	0.5131	33	-2.40	6%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0377	33.20*	0.2000	37.14	1.954	0.5131	33	-2.02	5%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0157	33.95*	1.300	37.14	1.954	0.5131	33	-1.63	4%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0402	34.25*	0.1000	37.14	1.954	0.5131	33	-1.48	4%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0102	35.08*	0.1340	37.14	1.954	0.5131	33	-1.05	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0354	35.27*	0.3350	37.14	1.954	0.5131	33	-0.96	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0472	35.41*	0.1200	37.14	1.954	0.5131	33	-0.89	2%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0486	35.75*	0.2400	37.14	1.954	0.5131	33	-0.71	2%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0095	36.11	1.200	37.14	1.954	0.5131	33	-0.53	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0433	36.13	0.1200	37.14	1.954	0.5131	33	-0.52	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0055	36.14	0.1100	37.14	1.954	0.5131	33	-0.52	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0025	36.87	0.6900	37.14	1.954	0.5131	33	-0.14	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0324	36.95	0.7000	37.14	1.954	0.5131	33	-0.10	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0231	36.96	0.0100	37.14	1.954	0.5131	33	-0.10	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0037	36.99	0.1500	37.14	1.954	0.5131	33	-0.08	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0049	37.00	0.1700	37.14	1.954	0.5131	33	-0.08	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0177	37.01	0.4555	37.14	1.954	0.5131	33	-0.07	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0096	37.15	2.041	37.14	1.954	0.5131	33	0.00	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0494	37.28	1.173	37.14	1.954	0.5131	33	0.07	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0090	37.39	0.1200	37.14	1.954	0.5131	33	0.13	0%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0389	37.75	0.3000	37.14	1.954	0.5131	33	0.31	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0371	38.05	1.600	37.14	1.954	0.5131	33	0.46	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0368	38.10	0.0000	37.14	1.954	0.5131	33	0.49	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0292	38.24	0.0100	37.14	1.954	0.5131	33	0.56	1%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0230	38.55	0.1000	37.14	1.954	0.5131	33	0.72	2%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0117	38.79	1.660	37.14	1.954	0.5131	33	0.84	2%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0307	39.05	1.473	37.14	1.954	0.5131	33	0.98	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0027	39.09	0.4800	37.14	1.954	0.5131	33	1.00	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0291	39.17	0.2500	37.14	1.954	0.5131	33	1.03	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0452	39.40	0.0800	37.14	1.954	0.5131	33	1.15	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0360	39.58	0.2200	37.14	1.954	0.5131	33	1.25	3%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0114	41.52	0.9900	37.14	1.954	0.5131	33	2.24	6%	0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0041	42.45	0.1000	37.14	1.954	0.5131	33	2.72	7%	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Labs	Magruder CS Z Score	Threshold %RSD	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
321.30	Acid Soluble Zinc , ICP, test portion inorga... (36%)	0035	40.60	3.000	37.14	1.954	0.5131	33	1.77	5%	1
321.99	Acid Soluble Zinc , Other (36%)	0512	33.55*	0.5000	36.68	2.338	0.7080	5	-1.34	4%	0
321.99	Acid Soluble Zinc , Other (36%)	0506	35.80*	0.0000	36.68	2.338	0.7080	5	-0.38	1%	0
321.99	Acid Soluble Zinc , Other (36%)	0042	36.90	0.0500	36.68	2.338	0.7080	5	0.09	0%	0
321.99	Acid Soluble Zinc , Other (36%)	0117	37.16	2.190	36.68	2.338	0.7080	5	0.20	1%	0
321.99	Acid Soluble Zinc , Other (36%)	0325	40.00	0.8000	36.68	2.338	0.7080	5	1.42	5%	0
325.00	Water Soluble Zinc , AA (%)	0105	4.691	0.1560	10.04	7.565	0.2380	2	-0.71	27%	0
325.00	Water Soluble Zinc , AA (%)	0027	15.39	0.3200	10.04	7.565	0.2380	2	0.71	27%	0
325.30	Water Soluble Zinc , ICP (%)	0025	5.020	0.1600	5.065	0.0636	0.1900	2	-0.71	0%	0
325.30	Water Soluble Zinc , ICP (%)	0368	5.110	0.2200	5.065	0.0636	0.1900	2	0.71	0%	0
325.99	Water Soluble Zinc , Other (%)	0230	3.250	0.1000			0.1000	1			

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = Rejected for duplicates too far apart and 2 = Rejected as extreme outlier. Robust statistics not used if < 6 labs reporting, in this case the Z Scores are included for information only (Grey). An offset lab value with an astrix indicates that the value is lower than the Analyte value less the IA. Method or Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.