

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 150412

SPM

Statistical Summary

Analytes: 33

Labs Reporting: 83

Issue Date : 05/31/2015

Analyte Code	Analyte	# Tests Submitted	# Tests in Robust	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
010	Total Nitrogen (%)	8	6	0.0671	0.0506	0.0569		0.0346	0.0100	60.82%		0.0155	6.16%
020	Total Phosphorus as P2O5 (%)	5	2	0.0725	0.0035	0.0725		0.0035	0.0018	4.88%		0.0250	5.94%
030	Citrate Insoluble Phosphorus as P2O5 (%)	1		0.0200									
040	Indirect Available Phosphorus as P2O5 (%)	1		0.0550									
041	Direct Available Phosphorus as P2O5 (%)	4	2	19.97	27.76	19.97		27.76	13.88	138.96%		2.137	2.55%
048	Water Soluble Phosphorus as P2O5 (%)	1		0.0300									
050	Soluble Potassium as K2O (22%)	81	78	22.25	0.8900	22.23	1.1569	0.5984	0.0479	2.69%	2.60%	0.2667	2.51%
060	Water (%)	4	4	0.1014	0.0400	0.1014		0.0400	0.0142	39.50%		0.0128	5.64%
101	Acid Soluble Calcium (%)	11	10	0.1591	0.0381	0.1665		0.0209	0.0047	12.56%		0.0066	5.24%
121	Acid Soluble Magnesium (10.8%)	55	53	11.32	0.7263	11.35	0.7673	0.4907	0.0477	4.33%	3.38%	0.2074	2.78%
131	Water Soluble Magnesium (%)	13	13	10.74	0.8913	10.75		0.9874	0.1936	9.18%		0.1442	2.80%
143	Elemental Sulfur (%)	6	6	22.91	0.6801	22.97		0.6514	0.1880	2.84%		0.6150	2.50%
145	Sulfate Sulfur, HCl soluble (%)	5	5	22.73	0.8311	22.73		0.8311	0.2628	3.66%		0.0560	2.50%
146	Total Sulfur in Liquid (%)	1		20.85									
147	Total Sulfur in Urea/Formulations (%)	1		23.50									
148	Total Sulfur (22%)	38	37	22.60	0.8519	22.59	1.0000	0.8269	0.0961	3.66%	2.21%	0.2855	2.50%
149	Sulfur - HNO3 soluble (%)	2	2	22.74	0.4769								
151	Acid Soluble Arsenic (ppm)	9	7	0.3010	0.3094	0.1953		0.0388	0.0104	19.88%		0.0104	20.45%
165	Acid Soluble Boron (%)	7	7	0.0068	0.0025	0.0054		0.0008	0.0002	14.63%		0.0005	8.78%
181	Acid Soluble Cadmium (ppm)	9	5	0.0760	0.0827	0.0760		0.0827	0.0262	108.83%		0.0137	23.58%
190	Water Soluble Chlorine (2.5%)	16	15	0.8523	0.2516	0.8036	0.0854	0.0630	0.0115	7.84%	5.31%	0.0112	4.13%
191	Acid Soluble Chromium (ppm)	18	17	103.7	46.84	115.5		27.80	4.768	24.06%		3.738	7.83%
202	Acid Soluble Cobalt (ppm)	13	12	2.139	0.6840	2.217		0.5526	0.1128	24.93%		0.1343	14.19%
221	Acid Soluble Copper (%)	19	15	0.6708	1.445	0.0011		0.0009	0.0002	75.59%		0.0103	11.09%
241	Acid Soluble Iron (%)	12	11	0.0588	0.0129	0.0585		0.0137	0.0029	23.38%		0.0018	6.13%
251	Acid Soluble Lead (ppm)	9	6	0.3675	0.4412	0.1793		0.1743	0.0503	97.20%		0.0190	20.72%
261	Acid Soluble Manganese (%)	10	8	0.0018	0.0004	0.0018		0.0004	0.0001	22.73%		0.0001	10.36%
281	Acid Soluble Mercury (ppm)	5	5	0.1156	0.1844	0.1156		0.1844	0.0583	159.49%		0.0081	22.13%
289	Acid Soluble Molybdenum (ppm)	15	14	11.52	3.380	12.16		2.116	0.3998	17.40%		0.5824	10.98%
291	Acid Soluble Nickel (ppm)	22	21	54.95	25.66	60.68		18.19	2.807	29.98%		1.902	8.62%
301	Acid Soluble Selenium (ppm)	4	4	1.354	1.025	1.354		1.025	0.3623	75.71%		0.2225	15.28%

Analyte Code	Analyte	# Tests Submitted	# Tests in Robust	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
311	Sodium (%)	10	10	0.4791	0.0592	0.4680		0.0428	0.0096	9.15%		0.0150	4.48%
321	Acid Soluble Zinc (%)	21	17	0.6994	2.203	0.0024		0.0021	0.0004	90.08%		0.0050	9.93%

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Analytes: 33

Sample # 150412

Lab Values

Labs Reporting: 83

SPM

Issue Date : 05/31/2015

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total Nitrogen (%)	0325	0.0250	0.0100	0.0569	0.0346	0.0155	6	-0.92	010.60	0
010	Total Nitrogen (%)	0292	0.0300	0.0000	0.0569	0.0346	0.0155	6	-0.78	010.60	0
010	Total Nitrogen (%)	0482	0.0450	0.0100	0.0569	0.0346	0.0155	6	-0.34	010.60	0
010	Total Nitrogen (%)	0354	0.0535	0.0010	0.0569	0.0346	0.0155	6	-0.10	010.60	0
010	Total Nitrogen (%)	0096	0.0900	0.0400	0.0569	0.0346	0.0155	6	0.96	010.60	0
010	Total Nitrogen (%)	0472	0.1590	0.0320	0.0569	0.0346	0.0155	6	2.95	010.60	0
010	Total Nitrogen (%)	0421	0.0000	0.0000	0.0569	0.0346	0.0155	6	-1.64	010.60	4
010	Total Nitrogen (%)	0389	0.0050	0.0100	0.0569	0.0346	0.0155	6	-1.50	010.60	4
020	Total Phosphorus as P2O5 (%)	0389	0.0700	0.0000	0.0725	0.0035	0.0250	2	-0.71	020.50	0
020	Total Phosphorus as P2O5 (%)	0096	0.0750	0.0500	0.0725	0.0035	0.0250	2	0.71	020.40	0
020	Total Phosphorus as P2O5 (%)	0322	0.0000	0.0000	0.0725	0.0035	0.0250	2	-20.51	020.10	4
020	Total Phosphorus as P2O5 (%)	0292	0.0000	0.0000	0.0725	0.0035	0.0250	2	-20.51	020.20	4
020	Total Phosphorus as P2O5 (%)	0472	0.0000	0.0000	0.0725	0.0035	0.0250	2	-20.51	020.50	4
030	Citrate Insoluble Phosphorus as P2O5 (%)	0096	0.0200	0.0000			0.0000	1			
040	Indirect Available Phosphorus as P2O5 (%)	0096	0.0550	0.0500			0.0500	1			
041	Direct Available Phosphorus as P2O5 (%)	0354	0.3470	0.0740	19.97	27.76	2.137	2	-0.71	041.60	0
041	Direct Available Phosphorus as P2O5 (%)	0325	39.60	4.200	19.97	27.76	2.137	2	0.71	041.50	0
041	Direct Available Phosphorus as P2O5 (%)	0421	0.0000	0.0000	19.97	27.76	2.137	2	-0.72	041.51	4
041	Direct Available Phosphorus as P2O5 (%)	0472	0.0000	0.0000	19.97	27.76	2.137	2	-0.72	041.60	4
048	Water Soluble Phosphorus as P2O5 (%)	0096	0.0300	0.0200			0.0200	1			
050	Soluble Potassium as K2O (22%)	0506	19.90*	0.4000	22.23	0.5984	0.2667	78	-3.89	050.99	0
050	Soluble Potassium as K2O (22%)	0025	20.00*	0.2000	22.23	0.5984	0.2667	78	-3.72	050.51	0
050	Soluble Potassium as K2O (22%)	0472	20.70*	0.0500	22.23	0.5984	0.2667	78	-2.56	050.31	0
050	Soluble Potassium as K2O (22%)	0510	20.80*	0.0100	22.23	0.5984	0.2667	78	-2.40	050.60	0
050	Soluble Potassium as K2O (22%)	0307	20.99*	0.6820	22.23	0.5984	0.2667	78	-2.07	050.99	0
050	Soluble Potassium as K2O (22%)	0482	21.00*	0.0000	22.23	0.5984	0.2667	78	-2.05	050.99	0
050	Soluble Potassium as K2O (22%)	0042	21.07*	1.530	22.23	0.5984	0.2667	78	-1.94	050.99	0
050	Soluble Potassium as K2O (22%)	0428	21.14	0.3811	22.23	0.5984	0.2667	78	-1.82	050.30	0
050	Soluble Potassium as K2O (22%)	0072	21.21	0.4300	22.23	0.5984	0.2667	78	-1.71	050.00	0
050	Soluble Potassium as K2O (22%)	0452	21.31	0.0900	22.23	0.5984	0.2667	78	-1.54	050.51	0
050	Soluble Potassium as K2O (22%)	0485	21.41	0.3200	22.23	0.5984	0.2667	78	-1.37	050.52	0
050	Soluble Potassium as K2O (22%)	0389	21.42	0.4000	22.23	0.5984	0.2667	78	-1.35	050.99	0
050	Soluble Potassium as K2O (22%)	0292	21.57	0.0200	22.23	0.5984	0.2667	78	-1.10	050.50	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
050	Soluble Potassium as K2O (22%)	0090	21.68	0.0500	22.23	0.5984	0.2667	78	-0.92	050.00	0
050	Soluble Potassium as K2O (22%)	0474	21.71	0.2200	22.23	0.5984	0.2667	78	-0.87	050.99	0
050	Soluble Potassium as K2O (22%)	0095	21.72	0.6300	22.23	0.5984	0.2667	78	-0.86	050.62	0
050	Soluble Potassium as K2O (22%)	0481	21.75	0.6000	22.23	0.5984	0.2667	78	-0.80	050.99	0
050	Soluble Potassium as K2O (22%)	0027	21.76	0.0110	22.23	0.5984	0.2667	78	-0.78	050.99	0
050	Soluble Potassium as K2O (22%)	0322	21.77	0.0880	22.23	0.5984	0.2667	78	-0.77	050.10	0
050	Soluble Potassium as K2O (22%)	0494	21.78	0.2600	22.23	0.5984	0.2667	78	-0.75	050.00	0
050	Soluble Potassium as K2O (22%)	0500	21.84	0.8900	22.23	0.5984	0.2667	78	-0.66	050.30	0
050	Soluble Potassium as K2O (22%)	0070	21.90	0.2000	22.23	0.5984	0.2667	78	-0.55	050.51	0
050	Soluble Potassium as K2O (22%)	0489	22.05	0.0700	22.23	0.5984	0.2667	78	-0.31	050.00	0
050	Soluble Potassium as K2O (22%)	0377	22.05	0.0600	22.23	0.5984	0.2667	78	-0.30	050.52	0
050	Soluble Potassium as K2O (22%)	0096	22.08	0.1100	22.23	0.5984	0.2667	78	-0.26	050.99	0
050	Soluble Potassium as K2O (22%)	0498	22.10	0.0000	22.23	0.5984	0.2667	78	-0.21	050.99	0
050	Soluble Potassium as K2O (22%)	0416	22.10	0.0525	22.23	0.5984	0.2667	78	-0.21	050.00	0
050	Soluble Potassium as K2O (22%)	0258	22.12	0.1100	22.23	0.5984	0.2667	78	-0.19	050.00	0
050	Soluble Potassium as K2O (22%)	0105	22.13	0.1400	22.23	0.5984	0.2667	78	-0.16	050.60	0
050	Soluble Potassium as K2O (22%)	0291	22.14	0.0100	22.23	0.5984	0.2667	78	-0.16	050.51	0
050	Soluble Potassium as K2O (22%)	0029	22.14	0.1600	22.23	0.5984	0.2667	78	-0.15	050.62	0
050	Soluble Potassium as K2O (22%)	0034	22.14	0.0545	22.23	0.5984	0.2667	78	-0.14	050.61	0
050	Soluble Potassium as K2O (22%)	0231	22.15	0.0000	22.23	0.5984	0.2667	78	-0.13	050.00	0
050	Soluble Potassium as K2O (22%)	0177	22.17	0.0754	22.23	0.5984	0.2667	78	-0.09	050.99	0
050	Soluble Potassium as K2O (22%)	0157	22.20	0.4000	22.23	0.5984	0.2667	78	-0.05	050.30	0
050	Soluble Potassium as K2O (22%)	0513	22.20	0.0000	22.23	0.5984	0.2667	78	-0.05	050.61	0
050	Soluble Potassium as K2O (22%)	0394	22.20	0.0000	22.23	0.5984	0.2667	78	-0.05	050.99	0
050	Soluble Potassium as K2O (22%)	0405	22.20	0.0200	22.23	0.5984	0.2667	78	-0.05	050.00	0
050	Soluble Potassium as K2O (22%)	0049	22.23	0.0500	22.23	0.5984	0.2667	78	-0.01	050.00	0
050	Soluble Potassium as K2O (22%)	0037	22.25	0.0700	22.23	0.5984	0.2667	78	0.03	050.61	0
050	Soluble Potassium as K2O (22%)	0421	22.25	0.1000	22.23	0.5984	0.2667	78	0.04	050.52	0
050	Soluble Potassium as K2O (22%)	0114	22.29	0.0600	22.23	0.5984	0.2667	78	0.10	050.00	0
050	Soluble Potassium as K2O (22%)	0043	22.29	0.0200	22.23	0.5984	0.2667	78	0.10	050.99	0
050	Soluble Potassium as K2O (22%)	0072	22.30	0.6900	22.23	0.5984	0.2667	78	0.11	050.51	0
050	Soluble Potassium as K2O (22%)	0494	22.30	0.4300	22.23	0.5984	0.2667	78	0.11	050.61	0
050	Soluble Potassium as K2O (22%)	0423	22.30	0.1000	22.23	0.5984	0.2667	78	0.12	050.52	0
050	Soluble Potassium as K2O (22%)	0493	22.30	0.1000	22.23	0.5984	0.2667	78	0.12	050.99	0
050	Soluble Potassium as K2O (22%)	0368	22.31	0.0350	22.23	0.5984	0.2667	78	0.14	050.99	0
050	Soluble Potassium as K2O (22%)	0055	22.35	0.0900	22.23	0.5984	0.2667	78	0.19	050.50	0
050	Soluble Potassium as K2O (22%)	0035	22.39	1.590	22.23	0.5984	0.2667	78	0.26	050.61	0
050	Soluble Potassium as K2O (22%)	0354	22.42	0.2600	22.23	0.5984	0.2667	78	0.33	050.52	0
050	Soluble Potassium as K2O (22%)	0211	22.43	0.0100	22.23	0.5984	0.2667	78	0.33	050.00	0
050	Soluble Potassium as K2O (22%)	0356	22.48	0.3700	22.23	0.5984	0.2667	78	0.41	050.30	0
050	Soluble Potassium as K2O (22%)	0136	22.49	0.1200	22.23	0.5984	0.2667	78	0.44	050.30	0
050	Soluble Potassium as K2O (22%)	0415	22.50	0.0000	22.23	0.5984	0.2667	78	0.45	050.60	0
050	Soluble Potassium as K2O (22%)	0486	22.52	0.0700	22.23	0.5984	0.2667	78	0.48	050.51	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
050	Soluble Potassium as K2O (22%)	0420	22.54	0.4800	22.23	0.5984	0.2667	78	0.51	050.50	0
050	Soluble Potassium as K2O (22%)	0444	22.55	0.8100	22.23	0.5984	0.2667	78	0.53	050.99	0
050	Soluble Potassium as K2O (22%)	0157	22.55	1.700	22.23	0.5984	0.2667	78	0.54	050.50	0
050	Soluble Potassium as K2O (22%)	0040	22.60	0.4000	22.23	0.5984	0.2667	78	0.62	050.30	0
050	Soluble Potassium as K2O (22%)	0055	22.65	0.5200	22.23	0.5984	0.2667	78	0.70	050.00	0
050	Soluble Potassium as K2O (22%)	0185	22.73	0.0800	22.23	0.5984	0.2667	78	0.84	050.30	0
050	Soluble Potassium as K2O (22%)	0043	22.74	0.1400	22.23	0.5984	0.2667	78	0.85	050.51	0
050	Soluble Potassium as K2O (22%)	0324	22.80	0.2400	22.23	0.5984	0.2667	78	0.96	050.50	0
050	Soluble Potassium as K2O (22%)	0360	22.81	0.1700	22.23	0.5984	0.2667	78	0.96	050.52	0
050	Soluble Potassium as K2O (22%)	0169	22.83	0.0500	22.23	0.5984	0.2667	78	1.00	050.60	0
050	Soluble Potassium as K2O (22%)	0233	22.84	0.0500	22.23	0.5984	0.2667	78	1.01	050.52	0
050	Soluble Potassium as K2O (22%)	0023	22.85	0.2700	22.23	0.5984	0.2667	78	1.03	050.52	0
050	Soluble Potassium as K2O (22%)	0390	23.00	0.0000	22.23	0.5984	0.2667	78	1.29	050.50	0
050	Soluble Potassium as K2O (22%)	0450	23.03	0.0000	22.23	0.5984	0.2667	78	1.34	050.99	0
050	Soluble Potassium as K2O (22%)	0444	23.07	0.2800	22.23	0.5984	0.2667	78	1.41	050.50	0
050	Soluble Potassium as K2O (22%)	0234	23.26	0.0200	22.23	0.5984	0.2667	78	1.72	050.99	0
050	Soluble Potassium as K2O (22%)	0451	23.78	0.0700	22.23	0.5984	0.2667	78	2.58	050.99	0
050	Soluble Potassium as K2O (22%)	0487	23.80	0.0000	22.23	0.5984	0.2667	78	2.63	050.99	0
050	Soluble Potassium as K2O (22%)	0230	24.00	1.800	22.23	0.5984	0.2667	78	2.96	050.00	0
050	Soluble Potassium as K2O (22%)	0402	24.14	0.0300	22.23	0.5984	0.2667	78	3.19	050.99	0
050	Soluble Potassium as K2O (22%)	0483	24.15	0.1200	22.23	0.5984	0.2667	78	3.21	050.51	0
050	Soluble Potassium as K2O (22%)	0275	25.86	0.6800	22.23	0.5984	0.2667	78	6.07	050.99	0
050	Soluble Potassium as K2O (22%)	0351	20.39*	2.523	22.23	0.5984	0.2667	78	-3.07	050.60	1
050	Soluble Potassium as K2O (22%)	0406	24.81	2.680	22.23	0.5984	0.2667	78	4.31	050.50	1
050	Soluble Potassium as K2O (22%)	0325	0.2000*	0.2000	22.23	0.5984	0.2667	78	-36.81	050.99	2
060	Water (Free) (%)	0096	0.0700	0.0200	0.1014	0.0400	0.0128	4	-0.78	060.00	0
060	Water (Free) (%)	0489	0.0850	0.0100	0.1014	0.0400	0.0128	4	-0.41	060.00	0
060	Water (Free) (%)	0416	0.0905	0.0211	0.1014	0.0400	0.0128	4	-0.27	060.00	0
060	Water (Free) (%)	0510	0.1600	0.0000	0.1014	0.0400	0.0128	4	1.46	060.99	0
101	Acid Soluble Calcium (%)	0472	0.0650	0.0100	0.1665	0.0209	0.0066	10	-4.86	101.30	0
101	Acid Soluble Calcium (%)	0086	0.1333	0.0002	0.1665	0.0209	0.0066	10	-1.59	101.03	0
101	Acid Soluble Calcium (%)	0482	0.1550	0.0100	0.1665	0.0209	0.0066	10	-0.55	101.30	0
101	Acid Soluble Calcium (%)	0423	0.1580	0.0040	0.1665	0.0209	0.0066	10	-0.41	101.32	0
101	Acid Soluble Calcium (%)	0494	0.1657	0.0021	0.1665	0.0209	0.0066	10	-0.04	101.33	0
101	Acid Soluble Calcium (%)	0420	0.1704	0.0019	0.1665	0.0209	0.0066	10	0.18	101.30	0
101	Acid Soluble Calcium (%)	0096	0.1750	0.0100	0.1665	0.0209	0.0066	10	0.41	101.30	0
101	Acid Soluble Calcium (%)	0421	0.1800	0.0000	0.1665	0.0209	0.0066	10	0.64	101.33	0
101	Acid Soluble Calcium (%)	0474	0.1850	0.0100	0.1665	0.0209	0.0066	10	0.88	101.30	0
101	Acid Soluble Calcium (%)	0354	0.2040	0.0180	0.1665	0.0209	0.0066	10	1.79	101.30	0
101	Acid Soluble Calcium (%)	0035	0.1800	0.0760	0.1665	0.0209	0.0066	10	0.64	101.30	1
121	Acid Soluble Magnesium (10.8%)	0354	9.532*	0.3630	11.35	0.4907	0.2074	53	-3.70	121.30	0
121	Acid Soluble Magnesium (10.8%)	0513	9.950*	0.0600	11.35	0.4907	0.2074	53	-2.84	121.00	0
121	Acid Soluble Magnesium (10.8%)	0506	10.08*	0.2500	11.35	0.4907	0.2074	53	-2.59	121.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
121	Acid Soluble Magnesium (10.8%)	0486	10.11*	0.0700	11.35	0.4907	0.2074	53	-2.53	121.33	0
121	Acid Soluble Magnesium (10.8%)	0389	10.23*	0.2500	11.35	0.4907	0.2074	53	-2.28	121.99	0
121	Acid Soluble Magnesium (10.8%)	0307	10.29*	0.1190	11.35	0.4907	0.2074	53	-2.15	121.30	0
121	Acid Soluble Magnesium (10.8%)	0482	10.30*	0.4000	11.35	0.4907	0.2074	53	-2.13	121.30	0
121	Acid Soluble Magnesium (10.8%)	0474	10.37*	0.1800	11.35	0.4907	0.2074	53	-1.99	121.30	0
121	Acid Soluble Magnesium (10.8%)	0512	10.51*	0.3100	11.35	0.4907	0.2074	53	-1.71	121.99	0
121	Acid Soluble Magnesium (10.8%)	0090	10.66	0.0300	11.35	0.4907	0.2074	53	-1.41	121.30	0
121	Acid Soluble Magnesium (10.8%)	0510	10.73	0.0100	11.35	0.4907	0.2074	53	-1.26	121.70	0
121	Acid Soluble Magnesium (10.8%)	0029	10.88	0.6400	11.35	0.4907	0.2074	53	-0.95	121.00	0
121	Acid Soluble Magnesium (10.8%)	0095	10.92	0.3000	11.35	0.4907	0.2074	53	-0.87	121.30	0
121	Acid Soluble Magnesium (10.8%)	0157	11.05	0.7000	11.35	0.4907	0.2074	53	-0.60	121.30	0
121	Acid Soluble Magnesium (10.8%)	0231	11.07	0.2600	11.35	0.4907	0.2074	53	-0.56	121.30	0
121	Acid Soluble Magnesium (10.8%)	0258	11.10	0.0200	11.35	0.4907	0.2074	53	-0.50	121.00	0
121	Acid Soluble Magnesium (10.8%)	0494	11.12	0.4194	11.35	0.4907	0.2074	53	-0.47	121.33	0
121	Acid Soluble Magnesium (10.8%)	0394	11.20	0.4000	11.35	0.4907	0.2074	53	-0.30	121.30	0
121	Acid Soluble Magnesium (10.8%)	0035	11.25	0.3000	11.35	0.4907	0.2074	53	-0.19	121.30	0
121	Acid Soluble Magnesium (10.8%)	0025	11.26	0.0200	11.35	0.4907	0.2074	53	-0.17	121.33	0
121	Acid Soluble Magnesium (10.8%)	0157	11.30	0.2000	11.35	0.4907	0.2074	53	-0.09	121.00	0
121	Acid Soluble Magnesium (10.8%)	0324	11.30	0.6600	11.35	0.4907	0.2074	53	-0.09	121.30	0
121	Acid Soluble Magnesium (10.8%)	0043	11.33	0.0400	11.35	0.4907	0.2074	53	-0.03	121.00	0
121	Acid Soluble Magnesium (10.8%)	0096	11.34	0.2100	11.35	0.4907	0.2074	53	-0.02	121.30	0
121	Acid Soluble Magnesium (10.8%)	0390	11.35	0.5000	11.35	0.4907	0.2074	53	0.01	121.30	0
121	Acid Soluble Magnesium (10.8%)	0028	11.35	0.1000	11.35	0.4907	0.2074	53	0.01	121.00	0
121	Acid Soluble Magnesium (10.8%)	0489	11.35	0.0800	11.35	0.4907	0.2074	53	0.01	121.70	0
121	Acid Soluble Magnesium (10.8%)	0423	11.38	0.0500	11.35	0.4907	0.2074	53	0.06	121.32	0
121	Acid Soluble Magnesium (10.8%)	0055	11.42	0.1500	11.35	0.4907	0.2074	53	0.14	121.30	0
121	Acid Soluble Magnesium (10.8%)	0073	11.44	0.4200	11.35	0.4907	0.2074	53	0.19	121.30	0
121	Acid Soluble Magnesium (10.8%)	0230	11.45	0.1000	11.35	0.4907	0.2074	53	0.21	121.30	0
121	Acid Soluble Magnesium (10.8%)	0360	11.46	0.0600	11.35	0.4907	0.2074	53	0.23	121.30	0
121	Acid Soluble Magnesium (10.8%)	0485	11.47	0.1300	11.35	0.4907	0.2074	53	0.24	121.00	0
121	Acid Soluble Magnesium (10.8%)	0177	11.49	0.1520	11.35	0.4907	0.2074	53	0.29	121.33	0
121	Acid Soluble Magnesium (10.8%)	0421	11.50	0.0600	11.35	0.4907	0.2074	53	0.32	121.33	0
121	Acid Soluble Magnesium (10.8%)	0040	11.53	0.2700	11.35	0.4907	0.2074	53	0.37	121.00	0
121	Acid Soluble Magnesium (10.8%)	0136	11.55	0.1000	11.35	0.4907	0.2074	53	0.42	121.03	0
121	Acid Soluble Magnesium (10.8%)	0487	11.55	0.1000	11.35	0.4907	0.2074	53	0.42	121.99	0
121	Acid Soluble Magnesium (10.8%)	0114	11.58	0.0400	11.35	0.4907	0.2074	53	0.48	121.30	0
121	Acid Soluble Magnesium (10.8%)	0452	11.61	0.0200	11.35	0.4907	0.2074	53	0.54	121.30	0
121	Acid Soluble Magnesium (10.8%)	0169	11.64	0.0700	11.35	0.4907	0.2074	53	0.59	121.00	0
121	Acid Soluble Magnesium (10.8%)	0433	11.71	0.0300	11.35	0.4907	0.2074	53	0.73	121.30	0
121	Acid Soluble Magnesium (10.8%)	0420	11.75	0.1600	11.35	0.4907	0.2074	53	0.83	121.30	0
121	Acid Soluble Magnesium (10.8%)	0481	11.89	0.2800	11.35	0.4907	0.2074	53	1.11	121.00	0
121	Acid Soluble Magnesium (10.8%)	0037	11.98	0.1600	11.35	0.4907	0.2074	53	1.29	121.33	0
121	Acid Soluble Magnesium (10.8%)	0450	12.05	0.0000	11.35	0.4907	0.2074	53	1.44	121.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
121	Acid Soluble Magnesium (10.8%)	0291	12.07	0.0100	11.35	0.4907	0.2074	53	1.47	121.30	0
121	Acid Soluble Magnesium (10.8%)	0117	12.20	0.2000	11.35	0.4907	0.2074	53	1.74	121.33	0
121	Acid Soluble Magnesium (10.8%)	0234	12.30	0.1800	11.35	0.4907	0.2074	53	1.95	121.30	0
121	Acid Soluble Magnesium (10.8%)	0483	12.30	0.0000	11.35	0.4907	0.2074	53	1.95	121.30	0
121	Acid Soluble Magnesium (10.8%)	0042	12.51	0.6300	11.35	0.4907	0.2074	53	2.36	121.99	0
121	Acid Soluble Magnesium (10.8%)	0049	12.82	0.1700	11.35	0.4907	0.2074	53	3.00	121.30	0
121	Acid Soluble Magnesium (10.8%)	0472	13.32	0.5600	11.35	0.4907	0.2074	53	4.02	121.30	0
121	Acid Soluble Magnesium (10.8%)	0233	10.37*	1.385	11.35	0.4907	0.2074	53	-1.99	121.30	1
121	Acid Soluble Magnesium (10.8%)	0500	17.50	0.2800	11.35	0.4907	0.2074	53	12.54	121.00	2
131	Water Soluble Magnesium (%)	0506	9.410	0.3600	10.75	0.9874	0.1442	13	-1.36	131.99	0
131	Water Soluble Magnesium (%)	0513	9.450	0.0000	10.75	0.9874	0.1442	13	-1.32	131.00	0
131	Water Soluble Magnesium (%)	0025	9.750	0.3200	10.75	0.9874	0.1442	13	-1.01	131.30	0
131	Water Soluble Magnesium (%)	0275	10.17	0.3000	10.75	0.9874	0.1442	13	-0.59	131.30	0
131	Water Soluble Magnesium (%)	0029	10.33	0.0200	10.75	0.9874	0.1442	13	-0.43	131.00	0
131	Water Soluble Magnesium (%)	0368	10.54	0.0590	10.75	0.9874	0.1442	13	-0.21	131.30	0
131	Water Soluble Magnesium (%)	0394	10.85	0.1000	10.75	0.9874	0.1442	13	0.10	131.30	0
131	Water Soluble Magnesium (%)	0510	10.99	0.0200	10.75	0.9874	0.1442	13	0.24	131.70	0
131	Water Soluble Magnesium (%)	0027	11.17	0.1290	10.75	0.9874	0.1442	13	0.43	131.30	0
131	Water Soluble Magnesium (%)	0485	11.39	0.0300	10.75	0.9874	0.1442	13	0.64	131.00	0
131	Water Soluble Magnesium (%)	0498	11.45	0.1000	10.75	0.9874	0.1442	13	0.71	131.00	0
131	Water Soluble Magnesium (%)	0023	11.93	0.2360	10.75	0.9874	0.1442	13	1.19	131.30	0
131	Water Soluble Magnesium (%)	0444	12.15	0.2000	10.75	0.9874	0.1442	13	1.42	131.30	0
143	Elemental Sulfur (%)	0472	21.88	1.020	22.97	0.6514	0.6150	6	-1.68	143.99	0
143	Elemental Sulfur (%)	0390	22.35	1.100	22.97	0.6514	0.6150	6	-0.95	143.99	0
143	Elemental Sulfur (%)	0055	23.05	0.3500	22.97	0.6514	0.6150	6	0.11	143.00	0
143	Elemental Sulfur (%)	0105	23.18	0.2600	22.97	0.6514	0.6150	6	0.32	143.00	0
143	Elemental Sulfur (%)	0114	23.21	0.1000	22.97	0.6514	0.6150	6	0.37	143.00	0
143	Elemental Sulfur (%)	0389	23.78	0.8600	22.97	0.6514	0.6150	6	1.24	143.99	0
145	Sulfate Sulfur, HCl soluble (%)	0027	22.07	0.0100	22.73	0.8311	0.0560	5	-0.80	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0025	22.18	0.1200	22.73	0.8311	0.0560	5	-0.67	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0405	22.64	0.0400	22.73	0.8311	0.0560	5	-0.11	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0444	22.64	0.0600	22.73	0.8311	0.0560	5	-0.11	145.99	0
145	Sulfate Sulfur, HCl soluble (%)	0043	24.15	0.0500	22.73	0.8311	0.0560	5	1.70	145.00	0
146	Total Sulfur in Liquid (%)	0292	20.85	0.1000			0.1000	1			
147	Total Sulfur in Urea/Formulations (%)	0291	23.50	0.0200			0.0200	1			
148	Total Sulfur (22%)	0506	21.20*	0.6000	22.59	0.8269	0.2855	37	-1.68	148.99	0
148	Total Sulfur (22%)	0354	21.24*	0.5420	22.59	0.8269	0.2855	37	-1.64	148.99	0
148	Total Sulfur (22%)	0451	21.35*	0.0600	22.59	0.8269	0.2855	37	-1.50	148.00	0
148	Total Sulfur (22%)	0406	21.41*	0.7200	22.59	0.8269	0.2855	37	-1.42	148.07	0
148	Total Sulfur (22%)	0486	21.44*	0.3300	22.59	0.8269	0.2855	37	-1.39	148.07	0
148	Total Sulfur (22%)	0275	21.46*	0.5600	22.59	0.8269	0.2855	37	-1.36	148.99	0
148	Total Sulfur (22%)	0482	21.50*	1.200	22.59	0.8269	0.2855	37	-1.32	148.99	0
148	Total Sulfur (22%)	0230	21.55*	0.7000	22.59	0.8269	0.2855	37	-1.26	148.01	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
148	Total Sulfur (22%)	0421	21.75	0.3000	22.59	0.8269	0.2855	37	-1.01	148.07	0
148	Total Sulfur (22%)	0483	22.00	0.2000	22.59	0.8269	0.2855	37	-0.71	148.07	0
148	Total Sulfur (22%)	0513	22.12	0.1700	22.59	0.8269	0.2855	37	-0.57	148.99	0
148	Total Sulfur (22%)	0452	22.34	0.1000	22.59	0.8269	0.2855	37	-0.30	148.99	0
148	Total Sulfur (22%)	0450	22.44	0.0000	22.59	0.8269	0.2855	37	-0.18	148.99	0
148	Total Sulfur (22%)	0351	22.51	0.0630	22.59	0.8269	0.2855	37	-0.09	148.00	0
148	Total Sulfur (22%)	0481	22.57	0.0200	22.59	0.8269	0.2855	37	-0.02	148.01	0
148	Total Sulfur (22%)	0096	22.59	0.0200	22.59	0.8269	0.2855	37	0.00	148.99	0
148	Total Sulfur (22%)	0405	22.66	0.0400	22.59	0.8269	0.2855	37	0.09	148.01	0
148	Total Sulfur (22%)	0037	22.67	0.1300	22.59	0.8269	0.2855	37	0.09	148.07	0
148	Total Sulfur (22%)	0029	22.73	0.0200	22.59	0.8269	0.2855	37	0.17	148.00	0
148	Total Sulfur (22%)	0513	22.79	0.0800	22.59	0.8269	0.2855	37	0.24	148.01	0
148	Total Sulfur (22%)	0040	22.85	0.1000	22.59	0.8269	0.2855	37	0.32	148.01	0
148	Total Sulfur (22%)	0095	22.89	0.1500	22.59	0.8269	0.2855	37	0.36	148.01	0
148	Total Sulfur (22%)	0360	22.91	0.2500	22.59	0.8269	0.2855	37	0.38	148.00	0
148	Total Sulfur (22%)	0307	22.93	0.6700	22.59	0.8269	0.2855	37	0.41	148.99	0
148	Total Sulfur (22%)	0371	22.94	0.1100	22.59	0.8269	0.2855	37	0.42	148.01	0
148	Total Sulfur (22%)	0029	22.99	0.0700	22.59	0.8269	0.2855	37	0.48	148.01	0
148	Total Sulfur (22%)	0394	23.00	0.6000	22.59	0.8269	0.2855	37	0.50	148.07	0
148	Total Sulfur (22%)	0028	23.09	0.3800	22.59	0.8269	0.2855	37	0.61	148.01	0
148	Total Sulfur (22%)	0177	23.23	0.0356	22.59	0.8269	0.2855	37	0.78	148.07	0
148	Total Sulfur (22%)	0324	23.29	0.2000	22.59	0.8269	0.2855	37	0.85	148.01	0
148	Total Sulfur (22%)	0157	23.30	0.2000	22.59	0.8269	0.2855	37	0.86	148.01	0
148	Total Sulfur (22%)	0498	23.35	0.1000	22.59	0.8269	0.2855	37	0.92	148.01	0
148	Total Sulfur (22%)	0485	23.36	0.1800	22.59	0.8269	0.2855	37	0.93	148.01	0
148	Total Sulfur (22%)	0023	23.40	0.1920	22.59	0.8269	0.2855	37	0.98	148.07	0
148	Total Sulfur (22%)	0474	23.64	0.3600	22.59	0.8269	0.2855	37	1.27	148.99	0
148	Total Sulfur (22%)	0049	23.68	0.0100	22.59	0.8269	0.2855	37	1.31	148.00	0
148	Total Sulfur (22%)	0117	25.15	1.100	22.59	0.8269	0.2855	37	3.10	148.07	0
148	Total Sulfur (22%)	0494	23.82	1.515	22.59	0.8269	0.2855	37	1.48	148.07	1
149	Sulfur - HNO3 soluble (%)	0423	22.40	0.4000	22.74	0.4769	1.778	2	-0.71	149.04	0
149	Sulfur - HNO3 soluble (%)	0368	23.07	3.155	22.74	0.4769	1.778	2	0.71	149.04	0
151	Acid Soluble Arsenic (ppm)	0025	0.1395	0.0110	0.1953	0.0388	0.0104	7	-1.44	151.00	0
151	Acid Soluble Arsenic (ppm)	0501	0.1650	0.0100	0.1953	0.0388	0.0104	7	-0.78	151.99	0
151	Acid Soluble Arsenic (ppm)	0394	0.1773	0.0219	0.1953	0.0388	0.0104	7	-0.47	151.30	0
151	Acid Soluble Arsenic (ppm)	0450	0.2000	0.0000	0.1953	0.0388	0.0104	7	0.12	151.30	0
151	Acid Soluble Arsenic (ppm)	0042	0.2100	0.0200	0.1953	0.0388	0.0104	7	0.38	151.99	0
151	Acid Soluble Arsenic (ppm)	0498	0.2150	0.0100	0.1953	0.0388	0.0104	7	0.51	151.00	0
151	Acid Soluble Arsenic (ppm)	0474	1.000	0.0000	0.1953	0.0388	0.0104	7	20.72	151.30	0
151	Acid Soluble Arsenic (ppm)	0230	0.7190	0.1540	0.1953	0.0388	0.0104	7	13.48	151.30	1
151	Acid Soluble Arsenic (ppm)	0368	0.0000	0.0000	0.1953	0.0388	0.0104	7	-5.03	151.30	4
165	Acid Soluble Boron (%)	0421	0.0045	0.0010	0.0054	0.0008	0.0005	7	-1.13	165.99	0
165	Acid Soluble Boron (%)	0423	0.0049	0.0002	0.0054	0.0008	0.0005	7	-0.62	165.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
165	Acid Soluble Boron (%)	0086	0.0050	0.0000	0.0054	0.0008	0.0005	7	-0.50	165.30	0
165	Acid Soluble Boron (%)	0389	0.0050	0.0000	0.0054	0.0008	0.0005	7	-0.50	165.30	0
165	Acid Soluble Boron (%)	0354	0.0080	0.0020	0.0054	0.0008	0.0005	7	3.31	165.30	0
165	Acid Soluble Boron (%)	0472	0.0100	0.0000	0.0054	0.0008	0.0005	7	5.84	165.99	0
165	Acid Soluble Boron (%)	0482	0.0100	0.0000	0.0054	0.0008	0.0005	7	5.84	165.99	0
181	Acid Soluble Cadmium (ppm)	0450	0.0200	0.0000	0.0760	0.0827	0.0137	5	-0.68	181.30	0
181	Acid Soluble Cadmium (ppm)	0501	0.0250	0.0100	0.0760	0.0827	0.0137	5	-0.62	181.99	0
181	Acid Soluble Cadmium (ppm)	0042	0.0300	0.0000	0.0760	0.0827	0.0137	5	-0.56	181.99	0
181	Acid Soluble Cadmium (ppm)	0494	0.0901	0.0287	0.0760	0.0827	0.0137	5	0.17	181.33	0
181	Acid Soluble Cadmium (ppm)	0452	0.2150	0.0300	0.0760	0.0827	0.0137	5	1.68	181.30	0
181	Acid Soluble Cadmium (ppm)	0474	3.100	0.4000	0.0760	0.0827	0.0137	5	36.56	181.30	1
181	Acid Soluble Cadmium (ppm)	0230	0.0000	0.0000	0.0760	0.0827	0.0137	5	-0.92	181.30	4
181	Acid Soluble Cadmium (ppm)	0368	0.0000	0.0000	0.0760	0.0827	0.0137	5	-0.92	181.30	4
181	Acid Soluble Cadmium (ppm)	0394	0.0000	0.0000	0.0760	0.0827	0.0137	5	-0.92	181.30	4
190	Water Soluble Chlorine (2.5%)	0055	0.4950*	0.0100	0.8036	0.0630	0.0112	15	-4.90	190.00	0
190	Water Soluble Chlorine (2.5%)	0368	0.5450*	0.0100	0.8036	0.0630	0.0112	15	-4.10	190.99	0
190	Water Soluble Chlorine (2.5%)	0481	0.7500	0.0200	0.8036	0.0630	0.0112	15	-0.85	190.00	0
190	Water Soluble Chlorine (2.5%)	0023	0.7625	0.0030	0.8036	0.0630	0.0112	15	-0.65	190.99	0
190	Water Soluble Chlorine (2.5%)	0394	0.7800	0.0200	0.8036	0.0630	0.0112	15	-0.37	190.00	0
190	Water Soluble Chlorine (2.5%)	0029	0.7800	0.0000	0.8036	0.0630	0.0112	15	-0.37	190.99	0
190	Water Soluble Chlorine (2.5%)	0494	0.7950	0.0300	0.8036	0.0630	0.0112	15	-0.14	190.00	0
190	Water Soluble Chlorine (2.5%)	0029	0.8000	0.0000	0.8036	0.0630	0.0112	15	-0.06	190.00	0
190	Water Soluble Chlorine (2.5%)	0043	0.8000	0.0200	0.8036	0.0630	0.0112	15	-0.06	190.00	0
190	Water Soluble Chlorine (2.5%)	0117	0.8225	0.0050	0.8036	0.0630	0.0112	15	0.30	190.00	0
190	Water Soluble Chlorine (2.5%)	0258	0.8300	0.0200	0.8036	0.0630	0.0112	15	0.42	190.00	0
190	Water Soluble Chlorine (2.5%)	0105	0.8500	0.0000	0.8036	0.0630	0.0112	15	0.74	190.00	0
190	Water Soluble Chlorine (2.5%)	0444	0.9950	0.0100	0.8036	0.0630	0.0112	15	3.04	190.00	0
190	Water Soluble Chlorine (2.5%)	0498	1.275	0.0100	0.8036	0.0630	0.0112	15	7.48	190.00	0
190	Water Soluble Chlorine (2.5%)	0513	1.505	0.0100	0.8036	0.0630	0.0112	15	11.13	190.00	0
190	Water Soluble Chlorine (2.5%)	0230	0.4850*	0.0700	0.8036	0.0630	0.0112	15	-5.05	190.00	1
191	Acid Soluble Chromium (ppm)	0023	0.0620	0.0680	115.5	27.80	3.738	17	-4.15	191.33	0
191	Acid Soluble Chromium (ppm)	0501	19.17	0.1100	115.5	27.80	3.738	17	-3.47	191.99	0
191	Acid Soluble Chromium (ppm)	0512	20.75	7.500	115.5	27.80	3.738	17	-3.41	191.99	0
191	Acid Soluble Chromium (ppm)	0482	87.75	2.300	115.5	27.80	3.738	17	-1.00	191.30	0
191	Acid Soluble Chromium (ppm)	0444	97.70	4.600	115.5	27.80	3.738	17	-0.64	191.30	0
191	Acid Soluble Chromium (ppm)	0042	101.5	4.360	115.5	27.80	3.738	17	-0.51	191.99	0
191	Acid Soluble Chromium (ppm)	0506	104.0	8.000	115.5	27.80	3.738	17	-0.41	191.99	0
191	Acid Soluble Chromium (ppm)	0035	106.4	17.30	115.5	27.80	3.738	17	-0.33	191.30	0
191	Acid Soluble Chromium (ppm)	0452	123.5	0.7000	115.5	27.80	3.738	17	0.29	191.30	0
191	Acid Soluble Chromium (ppm)	0450	126.0	0.0000	115.5	27.80	3.738	17	0.38	191.30	0
191	Acid Soluble Chromium (ppm)	0230	136.0	2.000	115.5	27.80	3.738	17	0.74	191.30	0
191	Acid Soluble Chromium (ppm)	0096	136.1	4.000	115.5	27.80	3.738	17	0.74	191.30	0
191	Acid Soluble Chromium (ppm)	0494	136.4	4.596	115.5	27.80	3.738	17	0.75	191.33	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
191	Acid Soluble Chromium (ppm)	0368	136.9	3.790	115.5	27.80	3.738	17	0.77	191.30	0
191	Acid Soluble Chromium (ppm)	0474	138.0	4.000	115.5	27.80	3.738	17	0.81	191.30	0
191	Acid Soluble Chromium (ppm)	0037	143.2	0.2300	115.5	27.80	3.738	17	0.99	191.33	0
191	Acid Soluble Chromium (ppm)	0481	150.0	0.0000	115.5	27.80	3.738	17	1.24	191.00	0
191	Acid Soluble Chromium (ppm)	0027	155.5	51.00	115.5	27.80	3.738	17	1.44	191.30	1
202	Acid Soluble Cobalt (ppm)	0501	0.4500	0.0200	2.217	0.5526	0.1343	12	-3.20	202.99	0
202	Acid Soluble Cobalt (ppm)	0423	1.475	0.2500	2.217	0.5526	0.1343	12	-1.34	202.32	0
202	Acid Soluble Cobalt (ppm)	0482	1.850	0.1000	2.217	0.5526	0.1343	12	-0.66	202.30	0
202	Acid Soluble Cobalt (ppm)	0035	1.975	0.3700	2.217	0.5526	0.1343	12	-0.44	202.30	0
202	Acid Soluble Cobalt (ppm)	0368	2.105	0.0300	2.217	0.5526	0.1343	12	-0.20	202.30	0
202	Acid Soluble Cobalt (ppm)	0042	2.190	0.4200	2.217	0.5526	0.1343	12	-0.05	202.99	0
202	Acid Soluble Cobalt (ppm)	0230	2.195	0.2100	2.217	0.5526	0.1343	12	-0.04	202.30	0
202	Acid Soluble Cobalt (ppm)	0096	2.445	0.0700	2.217	0.5526	0.1343	12	0.41	202.30	0
202	Acid Soluble Cobalt (ppm)	0452	2.525	0.0100	2.217	0.5526	0.1343	12	0.56	202.30	0
202	Acid Soluble Cobalt (ppm)	0494	2.563	0.0815	2.217	0.5526	0.1343	12	0.63	202.33	0
202	Acid Soluble Cobalt (ppm)	0037	2.895	0.0500	2.217	0.5526	0.1343	12	1.23	202.33	0
202	Acid Soluble Cobalt (ppm)	0474	3.000	0.0000	2.217	0.5526	0.1343	12	1.42	202.30	0
202	Acid Soluble Cobalt (ppm)	0512	5.800	5.000	2.217	0.5526	0.1343	12	6.48	202.99	1
221	Acid Soluble Copper (%)	0096	0.0003	0.0000	0.0011	0.0009	0.0103	15	-0.97	221.30	0
221	Acid Soluble Copper (%)	0230	0.0003	0.0000	0.0011	0.0009	0.0103	15	-0.97	221.30	0
221	Acid Soluble Copper (%)	0433	0.0004	0.0001	0.0011	0.0009	0.0103	15	-0.92	221.30	0
221	Acid Soluble Copper (%)	0444	0.0004	0.0000	0.0011	0.0009	0.0103	15	-0.86	221.30	0
221	Acid Soluble Copper (%)	0474	0.0004	0.0000	0.0011	0.0009	0.0103	15	-0.86	221.30	0
221	Acid Soluble Copper (%)	0035	0.0005	0.0002	0.0011	0.0009	0.0103	15	-0.74	221.30	0
221	Acid Soluble Copper (%)	0512	0.0007	0.0003	0.0011	0.0009	0.0103	15	-0.57	221.99	0
221	Acid Soluble Copper (%)	0043	0.0008	0.0002	0.0011	0.0009	0.0103	15	-0.39	221.00	0
221	Acid Soluble Copper (%)	0394	0.0026	0.0010	0.0011	0.0009	0.0103	15	1.70	221.30	0
221	Acid Soluble Copper (%)	0402	0.0030	0.0000	0.0011	0.0009	0.0103	15	2.16	221.30	0
221	Acid Soluble Copper (%)	0354	0.0040	0.0020	0.0011	0.0009	0.0103	15	3.32	221.30	0
221	Acid Soluble Copper (%)	0234	0.0235	0.0010	0.0011	0.0009	0.0103	15	25.97	221.30	0
221	Acid Soluble Copper (%)	0042	2.080	0.1000	0.0011	0.0009	0.0103	15	2414.51	221.99	0
221	Acid Soluble Copper (%)	0452	3.745	0.0500	0.0011	0.0009	0.0103	15	4348.34	221.30	0
221	Acid Soluble Copper (%)	0450	4.200	0.0000	0.0011	0.0009	0.0103	15	4876.81	221.30	0
221	Acid Soluble Copper (%)	0368	2.325	0.4100	0.0011	0.0009	0.0103	15	2699.07	221.30	1
221	Acid Soluble Copper (%)	0472	0.0000	0.0000	0.0011	0.0009	0.0103	15	-1.32	221.30	4
221	Acid Soluble Copper (%)	0421	0.0000	0.0000	0.0011	0.0009	0.0103	15	-1.32	221.33	4
221	Acid Soluble Copper (%)	0389	0.0000	0.0000	0.0011	0.0009	0.0103	15	-1.32	221.99	4
241	Acid Soluble Iron (%)	0423	0.0390	0.0020	0.0585	0.0137	0.0018	11	-1.43	241.32	0
241	Acid Soluble Iron (%)	0472	0.0400	0.0000	0.0585	0.0137	0.0018	11	-1.35	241.30	0
241	Acid Soluble Iron (%)	0482	0.0500	0.0000	0.0585	0.0137	0.0018	11	-0.62	241.30	0
241	Acid Soluble Iron (%)	0035	0.0547	0.0057	0.0585	0.0137	0.0018	11	-0.28	241.30	0
241	Acid Soluble Iron (%)	0086	0.0573	0.0017	0.0585	0.0137	0.0018	11	-0.09	241.03	0
241	Acid Soluble Iron (%)	0389	0.0580	0.0040	0.0585	0.0137	0.0018	11	-0.04	241.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
241	Acid Soluble Iron (%)	0096	0.0600	0.0000	0.0585	0.0137	0.0018	11	0.11	241.30	0
241	Acid Soluble Iron (%)	0354	0.0635	0.0030	0.0585	0.0137	0.0018	11	0.37	241.30	0
241	Acid Soluble Iron (%)	0474	0.0700	0.0000	0.0585	0.0137	0.0018	11	0.84	241.30	0
241	Acid Soluble Iron (%)	0420	0.0739	0.0036	0.0585	0.0137	0.0018	11	1.13	241.30	0
241	Acid Soluble Iron (%)	0421	0.0800	0.0000	0.0585	0.0137	0.0018	11	1.57	241.33	0
241	Acid Soluble Iron (%)	0494	671.1	5.820	0.0585	0.0137	0.0018	11	49073.39	241.33	2
251	Acid Soluble Lead (ppm)	0450	0.0300	0.0000	0.1793	0.1743	0.0190	6	-0.86	251.30	0
251	Acid Soluble Lead (ppm)	0042	0.0400	0.0000	0.1793	0.1743	0.0190	6	-0.80	251.99	0
251	Acid Soluble Lead (ppm)	0501	0.0950	0.0100	0.1793	0.1743	0.0190	6	-0.48	251.99	0
251	Acid Soluble Lead (ppm)	0368	0.1800	0.0440	0.1793	0.1743	0.0190	6	0.00	251.30	0
251	Acid Soluble Lead (ppm)	0452	0.8600	0.0600	0.1793	0.1743	0.0190	6	3.90	251.30	0
251	Acid Soluble Lead (ppm)	0474	1.000	0.0000	0.1793	0.1743	0.0190	6	4.71	251.30	0
251	Acid Soluble Lead (ppm)	0512	38.15	30.90	0.1793	0.1743	0.0190	6	217.82	251.99	2
251	Acid Soluble Lead (ppm)	0394	0.0000	0.0000	0.1793	0.1743	0.0190	6	-1.03	251.30	4
251	Acid Soluble Lead (ppm)	0230	0.8950	1.790	0.1793	0.1743	0.0190	6	4.11	251.30	4
261	Acid Soluble Manganese (%)	0474	0.0013	0.0000	0.0018	0.0004	0.0001	8	-1.20	261.30	0
261	Acid Soluble Manganese (%)	0423	0.0014	0.0001	0.0018	0.0004	0.0001	8	-1.08	261.34	0
261	Acid Soluble Manganese (%)	0389	0.0017	0.0002	0.0018	0.0004	0.0001	8	-0.22	261.99	0
261	Acid Soluble Manganese (%)	0035	0.0018	0.0001	0.0018	0.0004	0.0001	8	-0.09	261.30	0
261	Acid Soluble Manganese (%)	0096	0.0018	0.0001	0.0018	0.0004	0.0001	8	-0.09	261.30	0
261	Acid Soluble Manganese (%)	0354	0.0020	0.0000	0.0018	0.0004	0.0001	8	0.52	261.30	0
261	Acid Soluble Manganese (%)	0420	0.0021	0.0000	0.0018	0.0004	0.0001	8	0.77	261.30	0
261	Acid Soluble Manganese (%)	0494	0.0024	0.0001	0.0018	0.0004	0.0001	8	1.38	261.35	0
261	Acid Soluble Manganese (%)	0472	0.0000	0.0000	0.0018	0.0004	0.0001	8	-4.40	261.30	4
261	Acid Soluble Manganese (%)	0421	0.0000	0.0000	0.0018	0.0004	0.0001	8	-4.40	261.35	4
281	Acid Soluble Mercury (ppm)	0230	0.0024	0.0001	0.1156	0.1844	0.0081	5	-0.61	281.00	0
281	Acid Soluble Mercury (ppm)	0394	0.0058	0.0004	0.1156	0.1844	0.0081	5	-0.60	281.30	0
281	Acid Soluble Mercury (ppm)	0450	0.0200	0.0000	0.1156	0.1844	0.0081	5	-0.52	281.30	0
281	Acid Soluble Mercury (ppm)	0042	0.1150	0.0300	0.1156	0.1844	0.0081	5	0.00	281.99	0
281	Acid Soluble Mercury (ppm)	0501	0.4350	0.0100	0.1156	0.1844	0.0081	5	1.73	281.99	0
289	Acid Soluble Molybdenum (ppm)	0501	1.810	0.1400	12.16	2.116	0.5824	14	-4.89	289.99	0
289	Acid Soluble Molybdenum (ppm)	0423	7.935	0.8700	12.16	2.116	0.5824	14	-2.00	289.33	0
289	Acid Soluble Molybdenum (ppm)	0474	10.00	0.4000	12.16	2.116	0.5824	14	-1.02	289.30	0
289	Acid Soluble Molybdenum (ppm)	0096	10.80	0.6000	12.16	2.116	0.5824	14	-0.64	289.30	0
289	Acid Soluble Molybdenum (ppm)	0042	11.10	2.190	12.16	2.116	0.5824	14	-0.50	289.99	0
289	Acid Soluble Molybdenum (ppm)	0035	11.30	2.000	12.16	2.116	0.5824	14	-0.41	289.30	0
289	Acid Soluble Molybdenum (ppm)	0095	12.50	1.000	12.16	2.116	0.5824	14	0.16	289.30	0
289	Acid Soluble Molybdenum (ppm)	0433	12.71	0.0900	12.16	2.116	0.5824	14	0.26	289.30	0
289	Acid Soluble Molybdenum (ppm)	0452	12.71	0.0600	12.16	2.116	0.5824	14	0.26	289.30	0
289	Acid Soluble Molybdenum (ppm)	0230	13.55	0.1000	12.16	2.116	0.5824	14	0.66	289.30	0
289	Acid Soluble Molybdenum (ppm)	0117	13.70	0.2000	12.16	2.116	0.5824	14	0.73	289.30	0
289	Acid Soluble Molybdenum (ppm)	0494	14.04	0.0338	12.16	2.116	0.5824	14	0.89	289.33	0
289	Acid Soluble Molybdenum (ppm)	0037	14.14	0.1700	12.16	2.116	0.5824	14	0.93	289.33	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
289	Acid Soluble Molybdenum (ppm)	0368	15.05	0.3000	12.16	2.116	0.5824	14	1.37	289.30	0
289	Acid Soluble Molybdenum (ppm)	0394	110.0	0.0000	12.16	2.116	0.5824	14	46.25	289.30	2
291	Acid Soluble Nickel (ppm)	0023	0.0620	0.0840	60.68	18.19	1.902	21	-3.33	291.33	0
291	Acid Soluble Nickel (ppm)	0501	6.945	0.0700	60.68	18.19	1.902	21	-2.95	291.99	0
291	Acid Soluble Nickel (ppm)	0512	9.300	4.200	60.68	18.19	1.902	21	-2.82	291.99	0
291	Acid Soluble Nickel (ppm)	0481	31.35	1.100	60.68	18.19	1.902	21	-1.61	291.00	0
291	Acid Soluble Nickel (ppm)	0506	34.25	4.500	60.68	18.19	1.902	21	-1.45	291.99	0
291	Acid Soluble Nickel (ppm)	0498	42.75	0.3000	60.68	18.19	1.902	21	-0.99	291.00	0
291	Acid Soluble Nickel (ppm)	0482	45.30	5.200	60.68	18.19	1.902	21	-0.85	291.30	0
291	Acid Soluble Nickel (ppm)	0042	49.37	1.250	60.68	18.19	1.902	21	-0.62	291.99	0
291	Acid Soluble Nickel (ppm)	0394	54.50	1.000	60.68	18.19	1.902	21	-0.34	291.30	0
291	Acid Soluble Nickel (ppm)	0035	59.20	7.200	60.68	18.19	1.902	21	-0.08	291.30	0
291	Acid Soluble Nickel (ppm)	0450	66.00	0.0000	60.68	18.19	1.902	21	0.29	291.30	0
291	Acid Soluble Nickel (ppm)	0452	69.36	0.1000	60.68	18.19	1.902	21	0.48	291.30	0
291	Acid Soluble Nickel (ppm)	0095	71.00	0.0000	60.68	18.19	1.902	21	0.57	291.30	0
291	Acid Soluble Nickel (ppm)	0444	72.54	3.430	60.68	18.19	1.902	21	0.65	291.30	0
291	Acid Soluble Nickel (ppm)	0233	73.24	1.790	60.68	18.19	1.902	21	0.69	291.32	0
291	Acid Soluble Nickel (ppm)	0368	76.25	2.083	60.68	18.19	1.902	21	0.86	291.30	0
291	Acid Soluble Nickel (ppm)	0230	76.30	0.6000	60.68	18.19	1.902	21	0.86	291.30	0
291	Acid Soluble Nickel (ppm)	0494	76.74	2.590	60.68	18.19	1.902	21	0.88	291.33	0
291	Acid Soluble Nickel (ppm)	0096	77.10	2.200	60.68	18.19	1.902	21	0.90	291.30	0
291	Acid Soluble Nickel (ppm)	0037	80.48	0.2400	60.68	18.19	1.902	21	1.09	291.33	0
291	Acid Soluble Nickel (ppm)	0474	82.00	2.000	60.68	18.19	1.902	21	1.17	291.30	0
291	Acid Soluble Nickel (ppm)	0027	78.34	27.85	60.68	18.19	1.902	21	0.97	291.30	1
301	Acid Soluble Selenium (ppm)	0042	0.0900	0.0000	1.354	1.025	0.2225	4	-1.23	301.99	0
301	Acid Soluble Selenium (ppm)	0368	1.255	0.3300	1.354	1.025	0.2225	4	-0.10	301.30	0
301	Acid Soluble Selenium (ppm)	0501	1.480	0.0600	1.354	1.025	0.2225	4	0.12	301.99	0
301	Acid Soluble Selenium (ppm)	0230	2.590	0.5000	1.354	1.025	0.2225	4	1.21	301.30	0
311	Sodium (%)	0482	0.4250	0.0100	0.4680	0.0428	0.0150	10	-1.00	311.99	0
311	Sodium (%)	0086	0.4284	0.0080	0.4680	0.0428	0.0150	10	-0.92	311.33	0
311	Sodium (%)	0494	0.4342	0.0134	0.4680	0.0428	0.0150	10	-0.79	311.33	0
311	Sodium (%)	0035	0.4430	0.0240	0.4680	0.0428	0.0150	10	-0.58	311.99	0
311	Sodium (%)	0423	0.4505	0.0130	0.4680	0.0428	0.0150	10	-0.41	311.33	0
311	Sodium (%)	0096	0.4600	0.0200	0.4680	0.0428	0.0150	10	-0.19	311.99	0
311	Sodium (%)	0510	0.5000	0.0200	0.4680	0.0428	0.0150	10	0.75	311.30	0
311	Sodium (%)	0037	0.5014	0.0011	0.4680	0.0428	0.0150	10	0.78	311.33	0
311	Sodium (%)	0354	0.5380	0.0200	0.4680	0.0428	0.0150	10	1.63	311.99	0
311	Sodium (%)	0474	0.6100	0.0200	0.4680	0.0428	0.0150	10	3.31	311.99	0
321	Acid Soluble Zinc (%)	0230	0.0001	0.0000	0.0024	0.0021	0.0050	17	-1.06	321.30	0
321	Acid Soluble Zinc (%)	0474	0.0001	0.0000	0.0024	0.0021	0.0050	17	-1.06	321.30	0
321	Acid Soluble Zinc (%)	0394	0.0003	0.0001	0.0024	0.0021	0.0050	17	-0.99	321.30	0
321	Acid Soluble Zinc (%)	0428	0.0005	0.0001	0.0024	0.0021	0.0050	17	-0.90	321.00	0
321	Acid Soluble Zinc (%)	0512	0.0006	0.0002	0.0024	0.0021	0.0050	17	-0.83	321.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
321	Acid Soluble Zinc (%)	0096	0.0014	0.0001	0.0024	0.0021	0.0050	17	-0.48	321.30	0
321	Acid Soluble Zinc (%)	0043	0.0014	0.0000	0.0024	0.0021	0.0050	17	-0.46	321.00	0
321	Acid Soluble Zinc (%)	0035	0.0014	0.0014	0.0024	0.0021	0.0050	17	-0.46	321.30	0
321	Acid Soluble Zinc (%)	0433	0.0018	0.0005	0.0024	0.0021	0.0050	17	-0.29	321.30	0
321	Acid Soluble Zinc (%)	0354	0.0030	0.0020	0.0024	0.0021	0.0050	17	0.29	321.30	0
321	Acid Soluble Zinc (%)	0506	0.0030	0.0000	0.0024	0.0021	0.0050	17	0.29	321.99	0
321	Acid Soluble Zinc (%)	0086	0.0033	0.0001	0.0024	0.0021	0.0050	17	0.40	321.03	0
321	Acid Soluble Zinc (%)	0402	0.0035	0.0010	0.0024	0.0021	0.0050	17	0.52	321.30	0
321	Acid Soluble Zinc (%)	0421	0.0450	0.0100	0.0024	0.0021	0.0050	17	19.86	321.33	0
321	Acid Soluble Zinc (%)	0042	0.7100	0.0400	0.0024	0.0021	0.0050	17	329.76	321.99	0
321	Acid Soluble Zinc (%)	0452	2.115	0.0300	0.0024	0.0021	0.0050	17	984.52	321.30	0
321	Acid Soluble Zinc (%)	0450	9.000	0.0000	0.0024	0.0021	0.0050	17	4193.04	321.30	0
321	Acid Soluble Zinc (%)	0368	11.75	0.3000	0.0024	0.0021	0.0050	17	5474.59	321.30	1
321	Acid Soluble Zinc (%)	0292	0.0000	0.0000	0.0024	0.0021	0.0050	17	-1.11	321.30	4
321	Acid Soluble Zinc (%)	0472	0.0000	0.0000	0.0024	0.0021	0.0050	17	-1.11	321.30	4
321	Acid Soluble Zinc (%)	0389	0.0000	0.0000	0.0024	0.0021	0.0050	17	-1.11	321.99	4

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, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value submitted. 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.