

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 160111

Micro Mix

### Statistical Summary

# Analytes: 32

# Labs Reporting: 72

Issue Date : 02/29/2016

Analyte Code	Analyte	# Tests Submitted	# Tests 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
001	Ammoniacal Nitrogen (%)	1		0.0800									
010	Total Nitrogen (%)	4	4	0.1259	0.0622	0.1259		0.0622	0.0311	49.44%		0.0088	5.46%
020	Total Phosphorus as P2O5 (%)	4	4	0.7625	0.6604	0.7625		0.6604	0.3302	86.60%		0.0100	4.17%
030	Citrate Insoluble Phosphorus as P2O5 (%)	1		0.6600									
040	Indirect Available Phosphorus as P2O5 (%)	1		1.080									
041	Direct Available Phosphorus as P2O5 (%)	2	2	0.2830	0.2588								
048	Water Soluble Phosphorus as P2O5 (%)	1		0.0450									
050	Soluble Potassium as K2O (%)	7	7	0.1762	0.0494	0.1770		0.0542	0.0205	30.62%		0.0099	5.19%
060	Water (Free) (%)	4	4	2.769	0.5284	2.769		0.5284	0.2642	19.08%		0.1675	3.43%
101	Acid Soluble Calcium (%)	11	11	2.269	0.1418	2.263		0.1467	0.0442	6.48%		0.0816	3.54%
121	Acid Soluble Magnesium (%)	13	12	0.6692	0.0780	0.6692		0.0885	0.0255	13.22%		0.0174	4.25%
143	Elemental Sulfur (%)	1		0.2085									
145	Sulfate Sulfur, HCl soluble (%)	1		0.0700									
148	Total Sulfur (%)	7	7	0.2010	0.1068	0.2010		0.1211	0.0458	60.27%		0.0112	5.09%
151	Acid Soluble Arsenic (ppm)	5	5	9.905	1.889	9.905		1.889	0.8450	19.08%		0.3065	11.33%
165	Acid Soluble Boron (1.5%)	53	51	1.550	0.1357	1.547	0.2351	0.1092	0.0153	7.06%	7.60%	0.0457	3.75%
171	Water Soluble Boron (%)	3	3	1.534	0.0750	1.534		0.0750	0.0433	4.89%		0.0177	3.75%
181	Acid Soluble Cadmium (ppm)	7	7	4.770	1.463	4.473		0.8834	0.3339	19.75%		0.1276	12.77%
190	Water Soluble Chlorine (%)	1		0.0180									
191	Acid Soluble Chromium (ppm)	7	7	74.74	17.95	73.96		18.56	7.013	25.09%		1.519	8.37%
202	Acid Soluble Cobalt (ppm)	6	6	155.4	27.64	155.4		31.35	12.80	20.18%		3.538	7.49%
221	Acid Soluble Copper (3%)	68	66	3.922	0.3940	3.942	0.3992	0.2735	0.0337	6.94%	5.06%	0.1489	3.25%
241	Acid Soluble Iron (18%)	66	65	17.88	3.031	18.41	1.0000	1.749	0.2169	9.50%	2.72%	0.4737	2.58%
251	Acid Soluble Lead (ppm)	6	6	466.4	34.35	469.3		32.11	13.11	6.84%		11.03	6.34%
261	Acid Soluble Manganese (7.5%)	63	61	8.211	0.6880	8.249	0.8299	0.5757	0.0737	6.98%	5.03%	0.2129	2.91%
271	Water Soluble Manganese (%)	2	2	8.490	0.2758								
289	Acid Soluble Molybdenum (200ppm)	25	24	200.1	68.66	195.2	59.5686	64.55	13.18	33.07%	15.26%	15.92	7.23%
291	Acid Soluble Nickel (ppm)	6	6	114.4	22.47	114.4		25.48	10.40	22.26%		5.571	7.84%
301	Acid Soluble Selenium (ppm)	2	2	39.59	7.189								
311	Sodium (%)	7	7	0.5633	0.0255	0.5633		0.0289	0.0109	5.14%		0.0267	4.36%
321	Acid Soluble Zinc (7%)	69	67	8.145	0.5985	8.163	0.8213	0.5342	0.0653	6.54%	5.03%	0.2221	2.92%

Analyte Code	Analyte	# Tests Submitted	# Tests 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
325	Water Soluble Zinc (%)	1		7.085									

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Analyte Proficiency From All Labs

# Analytes: 32

Sample # 160111

Lab Values

# Labs Reporting: 72

Micro Mix

Issue Date : 02/29/2016

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				
001	Ammoniacal Nitrogen (%)	0096	0.0800	0.0000			0.0000	1			0
010	Total Nitrogen (%)	0389	0.0600	0.0200	0.1259	0.0622	0.0088	4	-1.06	010.60	0
010	Total Nitrogen (%)	0292	0.1050	0.0100	0.1259	0.0622	0.0088	4	-0.34	010.60	0
010	Total Nitrogen (%)	0482	0.1300	0.0000	0.1259	0.0622	0.0088	4	0.07	010.60	0
010	Total Nitrogen (%)	0354	0.2085	0.0050	0.1259	0.0622	0.0088	4	1.33	010.60	0
020	Total Phosphorus as P2O5 (%)	0389	0.3150	0.0100	0.7625	0.6604	0.0100	4	-0.68	020.50	0
020	Total Phosphorus as P2O5 (%)	0511	0.4200	0.0000	0.7625	0.6604	0.0100	4	-0.52	020.50	0
020	Total Phosphorus as P2O5 (%)	0292	0.5750	0.0100	0.7625	0.6604	0.0100	4	-0.28	020.20	0
020	Total Phosphorus as P2O5 (%)	0096	1.740	0.0200	0.7625	0.6604	0.0100	4	1.48	020.40	0
030	Citrate Insoluble Phosphorus as P2O5 (%)	0096	0.6600	0.1200			0.1200	1			0
040	Indirect Available Phosphorus as P2O5 (%)	0096	1.080	0.1000			0.1000	1			0
041	Direct Available Phosphorus as P2O5 (%)	0511	0.1000	0.0000	0.2830	0.2588	0.0190	2	-0.71	041.51	0
041	Direct Available Phosphorus as P2O5 (%)	0354	0.4660	0.0380	0.2830	0.2588	0.0190	2	0.71	041.60	0
048	Water Soluble Phosphorus as P2O5 (%)	0096	0.0450	0.0100			0.0100	1			0
050	Soluble Potassium as K2O (%)	0511	0.0900	0.0000	0.1770	0.0542	0.0099	7	-1.50	050.51	0
050	Soluble Potassium as K2O (%)	0292	0.1550	0.0100	0.1770	0.0542	0.0099	7	-0.38	050.50	0
050	Soluble Potassium as K2O (%)	0501	0.1600	0.0000	0.1770	0.0542	0.0099	7	-0.29	050.99	0
050	Soluble Potassium as K2O (%)	0096	0.1800	0.0000	0.1770	0.0542	0.0099	7	0.05	050.99	0
050	Soluble Potassium as K2O (%)	0354	0.1985	0.0190	0.1770	0.0542	0.0099	7	0.37	050.52	0
050	Soluble Potassium as K2O (%)	0389	0.2000	0.0000	0.1770	0.0542	0.0099	7	0.40	050.99	0
050	Soluble Potassium as K2O (%)	0482	0.2500	0.0400	0.1770	0.0542	0.0099	7	1.26	050.99	0
060	Water (Free) (%)	0096	2.065	0.0900	2.769	0.5284	0.1675	4	-1.33	060.00	0
060	Water (Free) (%)	0055	2.665	0.3300	2.769	0.5284	0.1675	4	-0.20	060.30	0
060	Water (Free) (%)	0513	3.120	0.0600	2.769	0.5284	0.1675	4	0.66	060.30	0
060	Water (Free) (%)	0513	3.225	0.1900	2.769	0.5284	0.1675	4	0.86	060.99	0
101	Acid Soluble Calcium (%)	0035	2.110	0.2000	2.263	0.1467	0.0816	11	-1.00	101.30	0
101	Acid Soluble Calcium (%)	0354	2.148	0.0290	2.263	0.1467	0.0816	11	-0.75	101.30	0
101	Acid Soluble Calcium (%)	0102	2.151	0.0560	2.263	0.1467	0.0816	11	-0.73	101.30	0
101	Acid Soluble Calcium (%)	0482	2.165	0.0900	2.263	0.1467	0.0816	11	-0.64	101.30	0
101	Acid Soluble Calcium (%)	0494	2.205	0.0847	2.263	0.1467	0.0816	11	-0.38	101.33	0
101	Acid Soluble Calcium (%)	0096	2.225	0.1300	2.263	0.1467	0.0816	11	-0.25	101.30	0
101	Acid Soluble Calcium (%)	0501	2.270	0.1200	2.263	0.1467	0.0816	11	0.05	101.99	0
101	Acid Soluble Calcium (%)	0457	2.278	0.0980	2.263	0.1467	0.0816	11	0.10	101.00	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				
101	Acid Soluble Calcium (%)	0105	2.405	0.0700	2.263	0.1467	0.0816	11	0.93	101.00	0
101	Acid Soluble Calcium (%)	0511	2.450	0.0000	2.263	0.1467	0.0816	11	1.22	101.30	0
101	Acid Soluble Calcium (%)	0041	2.550	0.0200	2.263	0.1467	0.0816	11	1.88	101.30	0
121	Acid Soluble Magnesium (%)	0389	0.5515	0.0070	0.6692	0.0885	0.0174	12	-1.33	121.99	0
121	Acid Soluble Magnesium (%)	0501	0.5650	0.0100	0.6692	0.0885	0.0174	12	-1.18	121.99	0
121	Acid Soluble Magnesium (%)	0457	0.6185	0.0210	0.6692	0.0885	0.0174	12	-0.57	121.00	0
121	Acid Soluble Magnesium (%)	0043	0.6200	0.0400	0.6692	0.0885	0.0174	12	-0.56	121.00	0
121	Acid Soluble Magnesium (%)	0096	0.6400	0.0400	0.6692	0.0885	0.0174	12	-0.33	121.30	0
121	Acid Soluble Magnesium (%)	0482	0.6400	0.0000	0.6692	0.0885	0.0174	12	-0.33	121.30	0
121	Acid Soluble Magnesium (%)	0354	0.6720	0.0220	0.6692	0.0885	0.0174	12	0.03	121.30	0
121	Acid Soluble Magnesium (%)	0105	0.6810	0.0320	0.6692	0.0885	0.0174	12	0.13	121.00	0
121	Acid Soluble Magnesium (%)	0041	0.7350	0.0300	0.6692	0.0885	0.0174	12	0.74	121.30	0
121	Acid Soluble Magnesium (%)	0494	0.7512	0.0067	0.6692	0.0885	0.0174	12	0.93	121.33	0
121	Acid Soluble Magnesium (%)	0511	0.7600	0.0000	0.6692	0.0885	0.0174	12	1.03	121.30	0
121	Acid Soluble Magnesium (%)	0102	0.7960	0.0000	0.6692	0.0885	0.0174	12	1.43	121.30	0
121	Acid Soluble Magnesium (%)	0035	0.5675	0.1050	0.6692	0.0885	0.0174	12	-1.15	121.30	1
143	Elemental Sulfur (%)	0389	0.2085	0.0010			0.0010	1			0
145	Sulfate Sulfur, HCl soluble (%)	0511	0.0700	0.0000			0.0000	1			0
148	Total Sulfur (%)	0354	0.0540	0.0160	0.2010	0.1211	0.0112	7	-1.14	148.99	0
148	Total Sulfur (%)	0096	0.0700	0.0000	0.2010	0.1211	0.0112	7	-1.01	148.99	0
148	Total Sulfur (%)	0501	0.1750	0.0100	0.2010	0.1211	0.0112	7	-0.20	148.99	0
148	Total Sulfur (%)	0102	0.2180	0.0220	0.2010	0.1211	0.0112	7	0.13	148.07	0
148	Total Sulfur (%)	0494	0.2702	0.0101	0.2010	0.1211	0.0112	7	0.53	148.07	0
148	Total Sulfur (%)	0292	0.3000	0.0000	0.2010	0.1211	0.0112	7	0.76	148.07	0
148	Total Sulfur (%)	0482	0.3200	0.0200	0.2010	0.1211	0.0112	7	0.92	148.99	0
151	Acid Soluble Arsenic (ppm)	0096	7.050	0.5000	9.905	1.889	0.3065	5	-1.51	151.30	0
151	Acid Soluble Arsenic (ppm)	0037	9.300	0.2800	9.905	1.889	0.3065	5	-0.32	151.33	0
151	Acid Soluble Arsenic (ppm)	0511	10.40	0.0000	9.905	1.889	0.3065	5	0.26	151.30	0
151	Acid Soluble Arsenic (ppm)	0494	10.64	0.3795	9.905	1.889	0.3065	5	0.39	151.33	0
151	Acid Soluble Arsenic (ppm)	0102	12.14	0.3730	9.905	1.889	0.3065	5	1.18	151.30	0
165	Acid Soluble Boron (1.5%)	0487	1.200*	0.0000	1.547	0.1092	0.0457	51	-3.18	165.99	0
165	Acid Soluble Boron (1.5%)	0457	1.223*	0.1210	1.547	0.1092	0.0457	51	-2.97	165.99	0
165	Acid Soluble Boron (1.5%)	0291	1.315	0.0100	1.547	0.1092	0.0457	51	-2.13	165.99	0
165	Acid Soluble Boron (1.5%)	0397	1.380	0.0180	1.547	0.1092	0.0457	51	-1.53	165.30	0
165	Acid Soluble Boron (1.5%)	0230	1.395	0.0300	1.547	0.1092	0.0457	51	-1.39	165.99	0
165	Acid Soluble Boron (1.5%)	0498	1.405	0.0100	1.547	0.1092	0.0457	51	-1.30	165.00	0
165	Acid Soluble Boron (1.5%)	0324	1.410	0.1600	1.547	0.1092	0.0457	51	-1.26	165.30	0
165	Acid Soluble Boron (1.5%)	0037	1.418	0.0870	1.547	0.1092	0.0457	51	-1.19	165.00	0
165	Acid Soluble Boron (1.5%)	0220	1.445	0.0500	1.547	0.1092	0.0457	51	-0.93	165.00	0
165	Acid Soluble Boron (1.5%)	0042	1.450	0.1000	1.547	0.1092	0.0457	51	-0.89	165.99	0
165	Acid Soluble Boron (1.5%)	0515	1.459	0.2198	1.547	0.1092	0.0457	51	-0.81	165.99	0
165	Acid Soluble Boron (1.5%)	0354	1.462	0.0300	1.547	0.1092	0.0457	51	-0.78	165.30	0
165	Acid Soluble Boron (1.5%)	0506	1.465	0.0500	1.547	0.1092	0.0457	51	-0.75	165.00	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 (1.5%)	0371	1.465	0.0100	1.547	0.1092	0.0457	51	-0.75	165.30	0
165	Acid Soluble Boron (1.5%)	0482	1.495	0.1100	1.547	0.1092	0.0457	51	-0.48	165.99	0
165	Acid Soluble Boron (1.5%)	0519	1.515	0.1100	1.547	0.1092	0.0457	51	-0.29	165.30	0
165	Acid Soluble Boron (1.5%)	0292	1.520	0.0200	1.547	0.1092	0.0457	51	-0.25	165.30	0
165	Acid Soluble Boron (1.5%)	0508	1.520	0.0200	1.547	0.1092	0.0457	51	-0.25	165.99	0
165	Acid Soluble Boron (1.5%)	0394	1.527	0.0360	1.547	0.1092	0.0457	51	-0.18	165.30	0
165	Acid Soluble Boron (1.5%)	0513	1.530	0.0200	1.547	0.1092	0.0457	51	-0.16	165.99	0
165	Acid Soluble Boron (1.5%)	0234	1.535	0.0100	1.547	0.1092	0.0457	51	-0.11	165.30	0
165	Acid Soluble Boron (1.5%)	0485	1.535	0.0900	1.547	0.1092	0.0457	51	-0.11	165.30	0
165	Acid Soluble Boron (1.5%)	0433	1.537	0.0570	1.547	0.1092	0.0457	51	-0.10	165.30	0
165	Acid Soluble Boron (1.5%)	0402	1.550	0.0200	1.547	0.1092	0.0457	51	0.03	165.30	0
165	Acid Soluble Boron (1.5%)	0472	1.550	0.0000	1.547	0.1092	0.0457	51	0.03	165.99	0
165	Acid Soluble Boron (1.5%)	0040	1.553	0.0360	1.547	0.1092	0.0457	51	0.05	165.30	0
165	Acid Soluble Boron (1.5%)	0501	1.555	0.0100	1.547	0.1092	0.0457	51	0.07	165.99	0
165	Acid Soluble Boron (1.5%)	0494	1.563	0.0234	1.547	0.1092	0.0457	51	0.14	165.30	0
165	Acid Soluble Boron (1.5%)	0397	1.569	0.0710	1.547	0.1092	0.0457	51	0.20	165.00	0
165	Acid Soluble Boron (1.5%)	0090	1.570	0.0200	1.547	0.1092	0.0457	51	0.21	165.30	0
165	Acid Soluble Boron (1.5%)	0023	1.579	0.0290	1.547	0.1092	0.0457	51	0.29	165.30	0
165	Acid Soluble Boron (1.5%)	0481	1.580	0.0200	1.547	0.1092	0.0457	51	0.30	165.00	0
165	Acid Soluble Boron (1.5%)	0421	1.589	0.0090	1.547	0.1092	0.0457	51	0.38	165.99	0
165	Acid Soluble Boron (1.5%)	0307	1.592	0.0110	1.547	0.1092	0.0457	51	0.41	165.30	0
165	Acid Soluble Boron (1.5%)	0377	1.595	0.0300	1.547	0.1092	0.0457	51	0.44	165.30	0
165	Acid Soluble Boron (1.5%)	0389	1.595	0.0100	1.547	0.1092	0.0457	51	0.44	165.30	0
165	Acid Soluble Boron (1.5%)	0095	1.605	0.0100	1.547	0.1092	0.0457	51	0.53	165.99	0
165	Acid Soluble Boron (1.5%)	0486	1.605	0.0100	1.547	0.1092	0.0457	51	0.53	165.99	0
165	Acid Soluble Boron (1.5%)	0043	1.610	0.0200	1.547	0.1092	0.0457	51	0.58	165.99	0
165	Acid Soluble Boron (1.5%)	0055	1.612	0.0440	1.547	0.1092	0.0457	51	0.59	165.00	0
165	Acid Soluble Boron (1.5%)	0231	1.615	0.0700	1.547	0.1092	0.0457	51	0.62	165.99	0
165	Acid Soluble Boron (1.5%)	0360	1.615	0.0160	1.547	0.1092	0.0457	51	0.62	165.99	0
165	Acid Soluble Boron (1.5%)	0368	1.619	0.0349	1.547	0.1092	0.0457	51	0.66	165.99	0
165	Acid Soluble Boron (1.5%)	0029	1.628	0.0180	1.547	0.1092	0.0457	51	0.74	165.00	0
165	Acid Soluble Boron (1.5%)	0452	1.675	0.0100	1.547	0.1092	0.0457	51	1.17	165.99	0
165	Acid Soluble Boron (1.5%)	0025	1.704	0.1020	1.547	0.1092	0.0457	51	1.44	165.99	0
165	Acid Soluble Boron (1.5%)	0169	1.760	0.0600	1.547	0.1092	0.0457	51	1.95	165.99	0
165	Acid Soluble Boron (1.5%)	0511	1.780	0.0000	1.547	0.1092	0.0457	51	2.13	165.99	0
165	Acid Soluble Boron (1.5%)	0211	1.820	0.2400	1.547	0.1092	0.0457	51	2.50	165.30	0
165	Acid Soluble Boron (1.5%)	0483	1.840	0.0200	1.547	0.1092	0.0457	51	2.68	165.99	0
165	Acid Soluble Boron (1.5%)	0444	1.910	0.0200	1.547	0.1092	0.0457	51	3.32	165.30	0
165	Acid Soluble Boron (1.5%)	0406	1.680	0.3600	1.547	0.1092	0.0457	51	1.22	165.30	1
165	Acid Soluble Boron (1.5%)	0325	1.920	0.3600	1.547	0.1092	0.0457	51	3.42	165.99	1
171	Water Soluble Boron (%)	0405	1.460	0.0200	1.534	0.0750	0.0177	3	-0.98	171.99	0
171	Water Soluble Boron (%)	0422	1.532	0.0130	1.534	0.0750	0.0177	3	-0.03	171.99	0
171	Water Soluble Boron (%)	0117	1.610	0.0200	1.534	0.0750	0.0177	3	1.02	171.10	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				
181	Acid Soluble Cadmium (ppm)	0389	3.625	0.0500	4.473	0.8834	0.1276	7	-0.90	181.30	0
181	Acid Soluble Cadmium (ppm)	0482	3.900	0.2000	4.473	0.8834	0.1276	7	-0.61	181.30	0
181	Acid Soluble Cadmium (ppm)	0096	3.950	0.3000	4.473	0.8834	0.1276	7	-0.55	181.30	0
181	Acid Soluble Cadmium (ppm)	0494	4.165	0.0362	4.473	0.8834	0.1276	7	-0.33	181.33	0
181	Acid Soluble Cadmium (ppm)	0511	4.800	0.0000	4.473	0.8834	0.1276	7	0.35	181.30	0
181	Acid Soluble Cadmium (ppm)	0102	5.075	0.2170	4.473	0.8834	0.1276	7	0.64	181.30	0
181	Acid Soluble Cadmium (ppm)	0037	7.875	0.0900	4.473	0.8834	0.1276	7	3.60	181.33	0
190	Water Soluble Chlorine (%)	0511	0.0180	0.0000			0.0000	1			0
191	Acid Soluble Chromium (ppm)	0511	58.10	0.0000	73.96	18.56	1.519	7	-0.80	191.30	0
191	Acid Soluble Chromium (ppm)	0494	59.00	0.0838	73.96	18.56	1.519	7	-0.75	191.33	0
191	Acid Soluble Chromium (ppm)	0096	60.85	3.300	73.96	18.56	1.519	7	-0.66	191.30	0
191	Acid Soluble Chromium (ppm)	0389	71.25	3.100	73.96	18.56	1.519	7	-0.14	191.30	0
191	Acid Soluble Chromium (ppm)	0037	83.09	0.9700	73.96	18.56	1.519	7	0.46	191.33	0
191	Acid Soluble Chromium (ppm)	0482	83.65	2.300	73.96	18.56	1.519	7	0.49	191.30	0
191	Acid Soluble Chromium (ppm)	0102	107.2	0.8780	73.96	18.56	1.519	7	1.68	191.30	0
202	Acid Soluble Cobalt (ppm)	0096	114.5	6.600	155.4	31.35	3.538	6	-1.21	202.30	0
202	Acid Soluble Cobalt (ppm)	0482	134.0	2.000	155.4	31.35	3.538	6	-0.63	202.30	0
202	Acid Soluble Cobalt (ppm)	0389	154.5	1.000	155.4	31.35	3.538	6	-0.03	202.30	0
202	Acid Soluble Cobalt (ppm)	0494	160.8	0.9450	155.4	31.35	3.538	6	0.16	202.33	0
202	Acid Soluble Cobalt (ppm)	0102	182.5	4.424	155.4	31.35	3.538	6	0.80	202.30	0
202	Acid Soluble Cobalt (ppm)	0037	185.8	6.260	155.4	31.35	3.538	6	0.90	202.33	0
221	Acid Soluble Copper (3%)	0516	2.130*	0.0340	3.942	0.2735	0.1489	66	-6.62	221.00	0
221	Acid Soluble Copper (3%)	0500	3.005*	0.0300	3.942	0.2735	0.1489	66	-3.43	221.00	0
221	Acid Soluble Copper (3%)	0515	3.049*	0.1720	3.942	0.2735	0.1489	66	-3.27	221.99	0
221	Acid Soluble Copper (3%)	0501	3.325*	0.0100	3.942	0.2735	0.1489	66	-2.26	221.99	0
221	Acid Soluble Copper (3%)	0042	3.445*	0.3700	3.942	0.2735	0.1489	66	-1.82	221.99	0
221	Acid Soluble Copper (3%)	0515	3.537*	0.0463	3.942	0.2735	0.1489	66	-1.48	221.33	0
221	Acid Soluble Copper (3%)	0513	3.550	0.0600	3.942	0.2735	0.1489	66	-1.43	221.00	0
221	Acid Soluble Copper (3%)	0324	3.600	0.5400	3.942	0.2735	0.1489	66	-1.25	221.30	0
221	Acid Soluble Copper (3%)	0433	3.635	0.1500	3.942	0.2735	0.1489	66	-1.12	221.30	0
221	Acid Soluble Copper (3%)	0291	3.700	0.0200	3.942	0.2735	0.1489	66	-0.88	221.99	0
221	Acid Soluble Copper (3%)	0506	3.715	0.0700	3.942	0.2735	0.1489	66	-0.83	221.99	0
221	Acid Soluble Copper (3%)	0420	3.745	0.0300	3.942	0.2735	0.1489	66	-0.72	221.30	0
221	Acid Soluble Copper (3%)	0114	3.750	0.1000	3.942	0.2735	0.1489	66	-0.70	221.30	0
221	Acid Soluble Copper (3%)	0360	3.750	0.2000	3.942	0.2735	0.1489	66	-0.70	221.30	0
221	Acid Soluble Copper (3%)	0354	3.754	0.1600	3.942	0.2735	0.1489	66	-0.69	221.30	0
221	Acid Soluble Copper (3%)	0041	3.765	0.1300	3.942	0.2735	0.1489	66	-0.65	221.30	0
221	Acid Soluble Copper (3%)	0307	3.766	0.1770	3.942	0.2735	0.1489	66	-0.64	221.30	0
221	Acid Soluble Copper (3%)	0481	3.770	0.0600	3.942	0.2735	0.1489	66	-0.63	221.00	0
221	Acid Soluble Copper (3%)	0027	3.778	0.0730	3.942	0.2735	0.1489	66	-0.60	221.99	0
221	Acid Soluble Copper (3%)	0519	3.790	0.1800	3.942	0.2735	0.1489	66	-0.55	221.33	0
221	Acid Soluble Copper (3%)	0023	3.805	0.1700	3.942	0.2735	0.1489	66	-0.50	221.03	0
221	Acid Soluble Copper (3%)	0157	3.810	0.0600	3.942	0.2735	0.1489	66	-0.48	221.30	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				
221	Acid Soluble Copper (3%)	0043	3.815	0.0700	3.942	0.2735	0.1489	66	-0.46	221.00	0
221	Acid Soluble Copper (3%)	0037	3.815	0.1280	3.942	0.2735	0.1489	66	-0.46	221.33	0
221	Acid Soluble Copper (3%)	0444	3.825	0.0100	3.942	0.2735	0.1489	66	-0.43	221.30	0
221	Acid Soluble Copper (3%)	0421	3.859	0.2210	3.942	0.2735	0.1489	66	-0.30	221.33	0
221	Acid Soluble Copper (3%)	0406	3.880	0.7400	3.942	0.2735	0.1489	66	-0.23	221.30	0
221	Acid Soluble Copper (3%)	0405	3.885	0.0500	3.942	0.2735	0.1489	66	-0.21	221.33	0
221	Acid Soluble Copper (3%)	0292	3.900	0.0600	3.942	0.2735	0.1489	66	-0.15	221.32	0
221	Acid Soluble Copper (3%)	0029	3.903	0.0020	3.942	0.2735	0.1489	66	-0.14	221.00	0
221	Acid Soluble Copper (3%)	0117	3.905	0.1700	3.942	0.2735	0.1489	66	-0.13	221.03	0
221	Acid Soluble Copper (3%)	0452	3.920	0.1000	3.942	0.2735	0.1489	66	-0.08	221.30	0
221	Acid Soluble Copper (3%)	0095	3.945	0.1700	3.942	0.2735	0.1489	66	0.01	221.30	0
221	Acid Soluble Copper (3%)	0498	3.950	0.1000	3.942	0.2735	0.1489	66	0.03	221.00	0
221	Acid Soluble Copper (3%)	0482	3.950	0.2000	3.942	0.2735	0.1489	66	0.03	221.30	0
221	Acid Soluble Copper (3%)	0073	3.965	0.4300	3.942	0.2735	0.1489	66	0.08	221.30	0
221	Acid Soluble Copper (3%)	0371	3.980	0.1400	3.942	0.2735	0.1489	66	0.14	221.30	0
221	Acid Soluble Copper (3%)	0389	4.010	0.0600	3.942	0.2735	0.1489	66	0.25	221.99	0
221	Acid Soluble Copper (3%)	0485	4.015	0.0300	3.942	0.2735	0.1489	66	0.27	221.00	0
221	Acid Soluble Copper (3%)	0169	4.020	0.1000	3.942	0.2735	0.1489	66	0.29	221.00	0
221	Acid Soluble Copper (3%)	0177	4.025	0.0437	3.942	0.2735	0.1489	66	0.31	221.33	0
221	Acid Soluble Copper (3%)	0402	4.030	0.1600	3.942	0.2735	0.1489	66	0.32	221.30	0
221	Acid Soluble Copper (3%)	0231	4.040	0.0800	3.942	0.2735	0.1489	66	0.36	221.30	0
221	Acid Soluble Copper (3%)	0035	4.050	0.2000	3.942	0.2735	0.1489	66	0.40	221.30	0
221	Acid Soluble Copper (3%)	0040	4.068	0.2327	3.942	0.2735	0.1489	66	0.46	221.00	0
221	Acid Soluble Copper (3%)	0105	4.069	0.1710	3.942	0.2735	0.1489	66	0.46	221.00	0
221	Acid Soluble Copper (3%)	0472	4.075	0.0300	3.942	0.2735	0.1489	66	0.49	221.30	0
221	Acid Soluble Copper (3%)	0457	4.080	0.0400	3.942	0.2735	0.1489	66	0.51	221.00	0
221	Acid Soluble Copper (3%)	0025	4.087	0.0140	3.942	0.2735	0.1489	66	0.53	221.33	0
221	Acid Soluble Copper (3%)	0090	4.090	0.1600	3.942	0.2735	0.1489	66	0.54	221.30	0
221	Acid Soluble Copper (3%)	0512	4.093	0.0410	3.942	0.2735	0.1489	66	0.55	221.99	0
221	Acid Soluble Copper (3%)	0325	4.100	0.3800	3.942	0.2735	0.1489	66	0.58	221.30	0
221	Acid Soluble Copper (3%)	0368	4.114	0.5585	3.942	0.2735	0.1489	66	0.63	221.30	0
221	Acid Soluble Copper (3%)	0394	4.161	0.0120	3.942	0.2735	0.1489	66	0.80	221.32	0
221	Acid Soluble Copper (3%)	0422	4.210	0.0200	3.942	0.2735	0.1489	66	0.98	221.33	0
221	Acid Soluble Copper (3%)	0211	4.235	0.3100	3.942	0.2735	0.1489	66	1.07	221.33	0
221	Acid Soluble Copper (3%)	0377	4.245	0.3700	3.942	0.2735	0.1489	66	1.11	221.30	0
221	Acid Soluble Copper (3%)	0486	4.245	0.0100	3.942	0.2735	0.1489	66	1.11	221.33	0
221	Acid Soluble Copper (3%)	0096	4.261	0.1398	3.942	0.2735	0.1489	66	1.17	221.30	0
221	Acid Soluble Copper (3%)	0055	4.349	0.0180	3.942	0.2735	0.1489	66	1.49	221.30	0
221	Acid Soluble Copper (3%)	0131	4.365	0.3300	3.942	0.2735	0.1489	66	1.55	221.30	0
221	Acid Soluble Copper (3%)	0487	4.500	0.2000	3.942	0.2735	0.1489	66	2.04	221.99	0
221	Acid Soluble Copper (3%)	0102	4.514	0.2210	3.942	0.2735	0.1489	66	2.09	221.30	0
221	Acid Soluble Copper (3%)	0234	4.590	0.1400	3.942	0.2735	0.1489	66	2.37	221.30	0
221	Acid Soluble Copper (3%)	0483	4.650	0.0600	3.942	0.2735	0.1489	66	2.59	221.30	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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221	Acid Soluble Copper (3%)	0390	4.870	0.2600	3.942	0.2735	0.1489	66	3.39	221.99	0
221	Acid Soluble Copper (3%)	0230	4.740	2.240	3.942	0.2735	0.1489	66	2.92	221.30	1
221	Acid Soluble Copper (3%)	0494	0.00040*	0.0000	3.942	0.2735	0.1489	66	-14.41	221.33	2
241	Acid Soluble Iron (18%)	0516	6.074*	0.0980	18.41	1.749	0.4737	65	-7.05	241.00	0
241	Acid Soluble Iron (18%)	0292	6.295*	0.0300	18.41	1.749	0.4737	65	-6.93	241.02	0
241	Acid Soluble Iron (18%)	0114	9.570*	0.3000	18.41	1.749	0.4737	65	-5.05	241.30	0
241	Acid Soluble Iron (18%)	0035	11.65*	1.300	18.41	1.749	0.4737	65	-3.86	241.30	0
241	Acid Soluble Iron (18%)	0472	11.96*	0.3100	18.41	1.749	0.4737	65	-3.69	241.30	0
241	Acid Soluble Iron (18%)	0131	14.51*	1.270	18.41	1.749	0.4737	65	-2.23	241.30	0
241	Acid Soluble Iron (18%)	0090	14.82*	0.1300	18.41	1.749	0.4737	65	-2.05	241.30	0
241	Acid Soluble Iron (18%)	0482	15.85*	0.7000	18.41	1.749	0.4737	65	-1.46	241.30	0
241	Acid Soluble Iron (18%)	0230	15.85*	0.5000	18.41	1.749	0.4737	65	-1.46	241.30	0
241	Acid Soluble Iron (18%)	0500	16.36*	0.0100	18.41	1.749	0.4737	65	-1.17	241.00	0
241	Acid Soluble Iron (18%)	0452	16.37*	0.0200	18.41	1.749	0.4737	65	-1.17	241.30	0
241	Acid Soluble Iron (18%)	0422	16.50*	0.2000	18.41	1.749	0.4737	65	-1.09	241.33	0
241	Acid Soluble Iron (18%)	0487	16.85*	1.100	18.41	1.749	0.4737	65	-0.89	241.99	0
241	Acid Soluble Iron (18%)	0389	16.90*	0.8000	18.41	1.749	0.4737	65	-0.86	241.99	0
241	Acid Soluble Iron (18%)	0291	17.20*	0.0300	18.41	1.749	0.4737	65	-0.69	241.30	0
241	Acid Soluble Iron (18%)	0486	17.27*	0.0100	18.41	1.749	0.4737	65	-0.65	241.33	0
241	Acid Soluble Iron (18%)	0433	17.29*	0.5400	18.41	1.749	0.4737	65	-0.64	241.30	0
241	Acid Soluble Iron (18%)	0519	17.74	0.4300	18.41	1.749	0.4737	65	-0.38	241.30	0
241	Acid Soluble Iron (18%)	0506	17.85	0.1000	18.41	1.749	0.4737	65	-0.32	241.99	0
241	Acid Soluble Iron (18%)	0368	17.89	0.2186	18.41	1.749	0.4737	65	-0.30	241.30	0
241	Acid Soluble Iron (18%)	0169	17.89	0.4000	18.41	1.749	0.4737	65	-0.30	241.00	0
241	Acid Soluble Iron (18%)	0234	18.06	0.0800	18.41	1.749	0.4737	65	-0.20	241.30	0
241	Acid Soluble Iron (18%)	0508	18.08	0.3100	18.41	1.749	0.4737	65	-0.19	241.99	0
241	Acid Soluble Iron (18%)	0513	18.12	0.2600	18.41	1.749	0.4737	65	-0.16	241.00	0
241	Acid Soluble Iron (18%)	0377	18.14	0.1800	18.41	1.749	0.4737	65	-0.15	241.30	0
241	Acid Soluble Iron (18%)	0444	18.21	0.0800	18.41	1.749	0.4737	65	-0.11	241.30	0
241	Acid Soluble Iron (18%)	0023	18.23	0.2200	18.41	1.749	0.4737	65	-0.10	241.33	0
241	Acid Soluble Iron (18%)	0481	18.40	0.0300	18.41	1.749	0.4737	65	-0.01	241.00	0
241	Acid Soluble Iron (18%)	0405	18.45	0.3000	18.41	1.749	0.4737	65	0.02	241.33	0
241	Acid Soluble Iron (18%)	0354	18.46	0.0030	18.41	1.749	0.4737	65	0.03	241.30	0
241	Acid Soluble Iron (18%)	0494	18.47	0.4292	18.41	1.749	0.4737	65	0.03	241.33	0
241	Acid Soluble Iron (18%)	0406	18.53	0.2600	18.41	1.749	0.4737	65	0.07	241.30	0
241	Acid Soluble Iron (18%)	0157	18.55	0.7000	18.41	1.749	0.4737	65	0.08	241.30	0
241	Acid Soluble Iron (18%)	0402	18.56	0.0100	18.41	1.749	0.4737	65	0.08	241.30	0
241	Acid Soluble Iron (18%)	0498	18.60	0.8000	18.41	1.749	0.4737	65	0.11	241.00	0
241	Acid Soluble Iron (18%)	0096	18.66	0.9000	18.41	1.749	0.4737	65	0.14	241.30	0
241	Acid Soluble Iron (18%)	0397	18.74	0.2700	18.41	1.749	0.4737	65	0.19	241.33	0
241	Acid Soluble Iron (18%)	0421	18.78	0.4480	18.41	1.749	0.4737	65	0.21	241.33	0
241	Acid Soluble Iron (18%)	0040	18.81	0.5200	18.41	1.749	0.4737	65	0.23	241.00	0
241	Acid Soluble Iron (18%)	0117	18.84	0.5300	18.41	1.749	0.4737	65	0.24	241.03	0



Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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241	Acid Soluble Iron (18%)	0420	18.86	0.3300	18.41	1.749	0.4737	65	0.26	241.30	0
241	Acid Soluble Iron (18%)	0177	18.91	0.1030	18.41	1.749	0.4737	65	0.28	241.33	0
241	Acid Soluble Iron (18%)	0485	18.91	0.2800	18.41	1.749	0.4737	65	0.29	241.00	0
241	Acid Soluble Iron (18%)	0043	18.92	0.3000	18.41	1.749	0.4737	65	0.29	241.00	0
241	Acid Soluble Iron (18%)	0360	19.27	0.1100	18.41	1.749	0.4737	65	0.49	241.30	0
241	Acid Soluble Iron (18%)	0371	19.35	0.3000	18.41	1.749	0.4737	65	0.54	241.30	0
241	Acid Soluble Iron (18%)	0027	19.37	0.1400	18.41	1.749	0.4737	65	0.55	241.99	0
241	Acid Soluble Iron (18%)	0220	19.40	0.0100	18.41	1.749	0.4737	65	0.56	241.70	0
241	Acid Soluble Iron (18%)	0394	19.47	0.9900	18.41	1.749	0.4737	65	0.60	241.32	0
241	Acid Soluble Iron (18%)	0025	19.72	0.0300	18.41	1.749	0.4737	65	0.75	241.33	0
241	Acid Soluble Iron (18%)	0029	19.74	0.1800	18.41	1.749	0.4737	65	0.76	241.00	0
241	Acid Soluble Iron (18%)	0231	19.80	0.1300	18.41	1.749	0.4737	65	0.79	241.30	0
241	Acid Soluble Iron (18%)	0041	19.82	0.2900	18.41	1.749	0.4737	65	0.80	241.30	0
241	Acid Soluble Iron (18%)	0055	19.99	0.0500	18.41	1.749	0.4737	65	0.90	241.30	0
241	Acid Soluble Iron (18%)	0037	20.01	0.2800	18.41	1.749	0.4737	65	0.92	241.33	0
241	Acid Soluble Iron (18%)	0324	20.05	0.5000	18.41	1.749	0.4737	65	0.94	241.30	0
241	Acid Soluble Iron (18%)	0211	20.07	0.0700	18.41	1.749	0.4737	65	0.95	241.33	0
241	Acid Soluble Iron (18%)	0457	20.31	0.5500	18.41	1.749	0.4737	65	1.09	241.00	0
241	Acid Soluble Iron (18%)	0483	20.35	0.1000	18.41	1.749	0.4737	65	1.11	241.30	0
241	Acid Soluble Iron (18%)	0073	20.52	0.9000	18.41	1.749	0.4737	65	1.21	241.30	0
241	Acid Soluble Iron (18%)	0515	20.85	0.0487	18.41	1.749	0.4737	65	1.40	241.33	0
241	Acid Soluble Iron (18%)	0102	20.89	1.715	18.41	1.749	0.4737	65	1.42	241.30	0
241	Acid Soluble Iron (18%)	0390	20.95	1.300	18.41	1.749	0.4737	65	1.45	241.30	0
241	Acid Soluble Iron (18%)	0325	21.20	3.800	18.41	1.749	0.4737	65	1.60	241.30	0
241	Acid Soluble Iron (18%)	0515	22.34	3.460	18.41	1.749	0.4737	65	2.25	241.99	0
241	Acid Soluble Iron (18%)	0042	18,840	289.0	18.41	1.749	0.4737	65	10762.70	241.99	2
251	Acid Soluble Lead (ppm)	0482	404.0	22.00	469.3	32.11	11.03	6	-1.88	251.30	0
251	Acid Soluble Lead (ppm)	0096	457.5	0.5000	469.3	32.11	11.03	6	-0.34	251.30	0
251	Acid Soluble Lead (ppm)	0389	463.0	6.000	469.3	32.11	11.03	6	-0.18	251.30	0
251	Acid Soluble Lead (ppm)	0037	487.2	19.02	469.3	32.11	11.03	6	0.52	251.33	0
251	Acid Soluble Lead (ppm)	0494	490.1	17.97	469.3	32.11	11.03	6	0.60	251.33	0
251	Acid Soluble Lead (ppm)	0102	496.7	0.7080	469.3	32.11	11.03	6	0.79	251.30	0
261	Acid Soluble Manganese (7.5%)	0500	5.620*	0.0000	8.249	0.5757	0.2129	61	-4.57	261.11	0
261	Acid Soluble Manganese (7.5%)	0234	6.220*	0.4400	8.249	0.5757	0.2129	61	-3.52	261.30	0
261	Acid Soluble Manganese (7.5%)	0498	7.035*	0.0900	8.249	0.5757	0.2129	61	-2.11	261.11	0
261	Acid Soluble Manganese (7.5%)	0292	7.235*	0.0100	8.249	0.5757	0.2129	61	-1.76	261.14	0
261	Acid Soluble Manganese (7.5%)	0433	7.390*	0.0400	8.249	0.5757	0.2129	61	-1.49	261.30	0
261	Acid Soluble Manganese (7.5%)	0516	7.530	0.5000	8.249	0.5757	0.2129	61	-1.25	261.11	0
261	Acid Soluble Manganese (7.5%)	0444	7.535	0.0700	8.249	0.5757	0.2129	61	-1.24	261.32	0
261	Acid Soluble Manganese (7.5%)	0420	7.545	0.0500	8.249	0.5757	0.2129	61	-1.22	261.30	0
261	Acid Soluble Manganese (7.5%)	0481	7.560	0.0200	8.249	0.5757	0.2129	61	-1.20	261.11	0
261	Acid Soluble Manganese (7.5%)	0402	7.675	0.0900	8.249	0.5757	0.2129	61	-1.00	261.32	0
261	Acid Soluble Manganese (7.5%)	0023	7.685	0.3700	8.249	0.5757	0.2129	61	-0.98	261.35	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				
261	Acid Soluble Manganese (7.5%)	0513	7.700	0.1000	8.249	0.5757	0.2129	61	-0.95	261.12	0
261	Acid Soluble Manganese (7.5%)	0114	7.830	0.1000	8.249	0.5757	0.2129	61	-0.73	261.30	0
261	Acid Soluble Manganese (7.5%)	0405	7.865	0.0700	8.249	0.5757	0.2129	61	-0.67	261.35	0
261	Acid Soluble Manganese (7.5%)	0117	7.905	0.1900	8.249	0.5757	0.2129	61	-0.60	261.15	0
261	Acid Soluble Manganese (7.5%)	0307	7.951	0.3150	8.249	0.5757	0.2129	61	-0.52	261.30	0
261	Acid Soluble Manganese (7.5%)	0368	7.953	0.1170	8.249	0.5757	0.2129	61	-0.51	261.30	0
261	Acid Soluble Manganese (7.5%)	0029	7.963	0.8390	8.249	0.5757	0.2129	61	-0.50	261.12	0
261	Acid Soluble Manganese (7.5%)	0230	7.985	0.1900	8.249	0.5757	0.2129	61	-0.46	261.31	0
261	Acid Soluble Manganese (7.5%)	0486	8.045	0.2300	8.249	0.5757	0.2129	61	-0.35	261.35	0
261	Acid Soluble Manganese (7.5%)	0157	8.070	0.6400	8.249	0.5757	0.2129	61	-0.31	261.30	0
261	Acid Soluble Manganese (7.5%)	0040	8.093	0.2540	8.249	0.5757	0.2129	61	-0.27	261.12	0
261	Acid Soluble Manganese (7.5%)	0519	8.110	0.0800	8.249	0.5757	0.2129	61	-0.24	261.32	0
261	Acid Soluble Manganese (7.5%)	0042	8.115	0.6100	8.249	0.5757	0.2129	61	-0.23	261.99	0
261	Acid Soluble Manganese (7.5%)	0073	8.160	0.3800	8.249	0.5757	0.2129	61	-0.15	261.32	0
261	Acid Soluble Manganese (7.5%)	0421	8.167	0.2170	8.249	0.5757	0.2129	61	-0.14	261.35	0
261	Acid Soluble Manganese (7.5%)	0485	8.180	0.0800	8.249	0.5757	0.2129	61	-0.12	261.12	0
261	Acid Soluble Manganese (7.5%)	0096	8.181	0.4072	8.249	0.5757	0.2129	61	-0.12	261.30	0
261	Acid Soluble Manganese (7.5%)	0397	8.189	0.0800	8.249	0.5757	0.2129	61	-0.10	261.35	0
261	Acid Soluble Manganese (7.5%)	0043	8.240	0.0400	8.249	0.5757	0.2129	61	-0.02	261.00	0
261	Acid Soluble Manganese (7.5%)	0494	8.242	0.1024	8.249	0.5757	0.2129	61	-0.01	261.35	0
261	Acid Soluble Manganese (7.5%)	0506	8.250	0.3000	8.249	0.5757	0.2129	61	0.00	261.99	0
261	Acid Soluble Manganese (7.5%)	0360	8.260	0.2200	8.249	0.5757	0.2129	61	0.02	261.31	0
261	Acid Soluble Manganese (7.5%)	0025	8.280	0.0040	8.249	0.5757	0.2129	61	0.05	261.35	0
261	Acid Soluble Manganese (7.5%)	0231	8.295	0.0900	8.249	0.5757	0.2129	61	0.08	261.32	0
261	Acid Soluble Manganese (7.5%)	0457	8.323	0.0950	8.249	0.5757	0.2129	61	0.13	261.12	0
261	Acid Soluble Manganese (7.5%)	0389	8.335	0.1100	8.249	0.5757	0.2129	61	0.15	261.99	0
261	Acid Soluble Manganese (7.5%)	0324	8.355	0.3300	8.249	0.5757	0.2129	61	0.18	261.31	0
261	Acid Soluble Manganese (7.5%)	0177	8.368	0.0961	8.249	0.5757	0.2129	61	0.21	261.35	0
261	Acid Soluble Manganese (7.5%)	0354	8.408	0.0150	8.249	0.5757	0.2129	61	0.28	261.30	0
261	Acid Soluble Manganese (7.5%)	0377	8.420	0.3600	8.249	0.5757	0.2129	61	0.30	261.30	0
261	Acid Soluble Manganese (7.5%)	0105	8.433	0.2520	8.249	0.5757	0.2129	61	0.32	261.12	0
261	Acid Soluble Manganese (7.5%)	0371	8.455	0.1100	8.249	0.5757	0.2129	61	0.36	261.32	0
261	Acid Soluble Manganese (7.5%)	0512	8.493	0.3110	8.249	0.5757	0.2129	61	0.42	261.99	0
261	Acid Soluble Manganese (7.5%)	0090	8.495	0.1500	8.249	0.5757	0.2129	61	0.43	261.30	0
261	Acid Soluble Manganese (7.5%)	0027	8.573	0.2010	8.249	0.5757	0.2129	61	0.56	261.99	0
261	Acid Soluble Manganese (7.5%)	0422	8.635	0.5500	8.249	0.5757	0.2129	61	0.67	261.35	0
261	Acid Soluble Manganese (7.5%)	0501	8.650	0.0600	8.249	0.5757	0.2129	61	0.70	261.99	0
261	Acid Soluble Manganese (7.5%)	0055	8.743	0.1740	8.249	0.5757	0.2129	61	0.86	261.32	0
261	Acid Soluble Manganese (7.5%)	0452	8.805	0.0500	8.249	0.5757	0.2129	61	0.97	261.30	0
261	Acid Soluble Manganese (7.5%)	0291	8.875	0.0500	8.249	0.5757	0.2129	61	1.09	261.30	0
261	Acid Soluble Manganese (7.5%)	0211	8.915	0.1100	8.249	0.5757	0.2129	61	1.16	261.15	0
261	Acid Soluble Manganese (7.5%)	0472	8.945	0.0300	8.249	0.5757	0.2129	61	1.21	261.30	0
261	Acid Soluble Manganese (7.5%)	0483	8.945	0.0500	8.249	0.5757	0.2129	61	1.21	261.32	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				
261	Acid Soluble Manganese (7.5%)	0482	9.015	0.2100	8.249	0.5757	0.2129	61	1.33	261.31	0
261	Acid Soluble Manganese (7.5%)	0515	9.043	0.0354	8.249	0.5757	0.2129	61	1.38	261.35	0
261	Acid Soluble Manganese (7.5%)	0035	9.060	0.5400	8.249	0.5757	0.2129	61	1.41	261.30	0
261	Acid Soluble Manganese (7.5%)	0102	9.079	0.7920	8.249	0.5757	0.2129	61	1.44	261.30	0
261	Acid Soluble Manganese (7.5%)	0390	9.310	0.5200	8.249	0.5757	0.2129	61	1.84	261.30	0
261	Acid Soluble Manganese (7.5%)	0041	9.405	0.0300	8.249	0.5757	0.2129	61	2.01	261.30	0
261	Acid Soluble Manganese (7.5%)	0131	9.750	0.4200	8.249	0.5757	0.2129	61	2.61	261.30	0
261	Acid Soluble Manganese (7.5%)	0325	9.000	1.180	8.249	0.5757	0.2129	61	1.30	261.30	1
261	Acid Soluble Manganese (7.5%)	0515	9.978	1.271	8.249	0.5757	0.2129	61	3.00	261.99	1
271	Water Soluble Manganese (%)	0394	8.295	0.4300	8.490	0.2758	0.5300	2	-0.71	271.30	0
271	Water Soluble Manganese (%)	0406	8.685	0.6300	8.490	0.2758	0.5300	2	0.71	271.30	0
289	Acid Soluble Molybdenum (200ppm)	0234	110.5*	5.000	195.2	64.55	15.92	24	-1.31	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0027	115.0*	10.00	195.2	64.55	15.92	24	-1.24	289.99	0
289	Acid Soluble Molybdenum (200ppm)	0397	125.0*	18.00	195.2	64.55	15.92	24	-1.09	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0506	132.5*	5.000	195.2	64.55	15.92	24	-0.97	289.99	0
289	Acid Soluble Molybdenum (200ppm)	0291	146.5	5.000	195.2	64.55	15.92	24	-0.75	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0325	154.0	12.00	195.2	64.55	15.92	24	-0.64	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0433	155.0	10.00	195.2	64.55	15.92	24	-0.62	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0037	161.5	5.000	195.2	64.55	15.92	24	-0.52	289.33	0
289	Acid Soluble Molybdenum (200ppm)	0368	169.1	37.73	195.2	64.55	15.92	24	-0.41	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0452	169.2	1.500	195.2	64.55	15.92	24	-0.40	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0095	175.5	81.00	195.2	64.55	15.92	24	-0.31	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0096	180.0	14.40	195.2	64.55	15.92	24	-0.24	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0377	182.4	20.60	195.2	64.55	15.92	24	-0.20	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0498	189.0	6.000	195.2	64.55	15.92	24	-0.10	289.00	0
289	Acid Soluble Molybdenum (200ppm)	0405	204.5	3.000	195.2	64.55	15.92	24	0.14	289.33	0
289	Acid Soluble Molybdenum (200ppm)	0515	211.7	30.54	195.2	64.55	15.92	24	0.25	289.33	0
289	Acid Soluble Molybdenum (200ppm)	0519	223.0	30.00	195.2	64.55	15.92	24	0.43	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0042	232.1	18.60	195.2	64.55	15.92	24	0.57	289.99	0
289	Acid Soluble Molybdenum (200ppm)	0515	232.1	23.19	195.2	64.55	15.92	24	0.57	289.34	0
289	Acid Soluble Molybdenum (200ppm)	0481	271.0	16.00	195.2	64.55	15.92	24	1.17	289.99	0
289	Acid Soluble Molybdenum (200ppm)	0292	279.8	2.500	195.2	64.55	15.92	24	1.31	289.33	0
289	Acid Soluble Molybdenum (200ppm)	0211	282.0	6.000	195.2	64.55	15.92	24	1.34	289.33	0
289	Acid Soluble Molybdenum (200ppm)	0500	301.5	1.000	195.2	64.55	15.92	24	1.65	289.00	0
289	Acid Soluble Molybdenum (200ppm)	0444	400.0	20.00	195.2	64.55	15.92	24	3.17	289.30	0
289	Acid Soluble Molybdenum (200ppm)	0230	193.5	107.0	195.2	64.55	15.92	24	-0.03	289.30	1
291	Acid Soluble Nickel (ppm)	0501	84.40	0.2000	114.4	25.48	5.571	6	-1.09	291.34	0
291	Acid Soluble Nickel (ppm)	0482	91.90	2.200	114.4	25.48	5.571	6	-0.82	291.30	0
291	Acid Soluble Nickel (ppm)	0096	114.9	5.000	114.4	25.48	5.571	6	0.02	291.30	0
291	Acid Soluble Nickel (ppm)	0102	120.4	14.03	114.4	25.48	5.571	6	0.22	291.30	0
291	Acid Soluble Nickel (ppm)	0494	135.3	1.390	114.4	25.48	5.571	6	0.76	291.33	0
291	Acid Soluble Nickel (ppm)	0037	139.8	10.60	114.4	25.48	5.571	6	0.92	291.33	0
301	Acid Soluble Selenium (ppm)	0494	34.51	0.2767	39.59	7.189	1.090	2	-0.71	301.33	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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301	Acid Soluble Selenium (ppm)	0037	44.68	1.903	39.59	7.189	1.090	2	0.71	301.33	0
311	Sodium (%)	0501	0.5250	0.0300	0.5633	0.0289	0.0267	7	-1.24	311.99	0
311	Sodium (%)	0494	0.5479	0.0092	0.5633	0.0289	0.0267	7	-0.50	311.33	0
311	Sodium (%)	0035	0.5525	0.0350	0.5633	0.0289	0.0267	7	-0.35	311.33	0
311	Sodium (%)	0354	0.5550	0.0020	0.5633	0.0289	0.0267	7	-0.27	311.99	0
311	Sodium (%)	0102	0.5775	0.0210	0.5633	0.0289	0.0267	7	0.46	311.33	0
311	Sodium (%)	0482	0.5850	0.0300	0.5633	0.0289	0.0267	7	0.70	311.99	0
311	Sodium (%)	0096	0.6000	0.0600	0.5633	0.0289	0.0267	7	1.19	311.99	0
321	Acid Soluble Zinc (7%)	0422	6.500*	0.7200	8.163	0.5342	0.2221	67	-3.11	321.33	0
321	Acid Soluble Zinc (7%)	0292	6.830*	0.0800	8.163	0.5342	0.2221	67	-2.49	321.32	0
321	Acid Soluble Zinc (7%)	0292	6.905*	0.2300	8.163	0.5342	0.2221	67	-2.35	321.30	0
321	Acid Soluble Zinc (7%)	0500	6.910*	0.0200	8.163	0.5342	0.2221	67	-2.34	321.00	0
321	Acid Soluble Zinc (7%)	0420	7.025*	0.0100	8.163	0.5342	0.2221	67	-2.13	321.30	0
321	Acid Soluble Zinc (7%)	0498	7.280*	0.0800	8.163	0.5342	0.2221	67	-1.65	321.00	0
321	Acid Soluble Zinc (7%)	0515	7.398	0.5513	8.163	0.5342	0.2221	67	-1.43	321.33	0
321	Acid Soluble Zinc (7%)	0506	7.480	0.1400	8.163	0.5342	0.2221	67	-1.28	321.99	0
321	Acid Soluble Zinc (7%)	0023	7.500	0.1800	8.163	0.5342	0.2221	67	-1.24	321.33	0
321	Acid Soluble Zinc (7%)	0042	7.575	0.6100	8.163	0.5342	0.2221	67	-1.10	321.99	0
321	Acid Soluble Zinc (7%)	0433	7.610	0.1400	8.163	0.5342	0.2221	67	-1.03	321.30	0
321	Acid Soluble Zinc (7%)	0486	7.670	0.1000	8.163	0.5342	0.2221	67	-0.92	321.33	0
321	Acid Soluble Zinc (7%)	0324	7.675	0.1500	8.163	0.5342	0.2221	67	-0.91	321.30	0
321	Acid Soluble Zinc (7%)	0482	7.720	0.4400	8.163	0.5342	0.2221	67	-0.83	321.30	0
321	Acid Soluble Zinc (7%)	0307	7.771	0.0470	8.163	0.5342	0.2221	67	-0.73	321.30	0
321	Acid Soluble Zinc (7%)	0444	7.810	0.0600	8.163	0.5342	0.2221	67	-0.66	321.30	0
321	Acid Soluble Zinc (7%)	0114	7.830	0.1000	8.163	0.5342	0.2221	67	-0.62	321.30	0
321	Acid Soluble Zinc (7%)	0230	7.870	0.4800	8.163	0.5342	0.2221	67	-0.55	321.30	0
321	Acid Soluble Zinc (7%)	0405	7.875	0.0700	8.163	0.5342	0.2221	67	-0.54	321.33	0
321	Acid Soluble Zinc (7%)	0481	7.920	0.3000	8.163	0.5342	0.2221	67	-0.45	321.00	0
321	Acid Soluble Zinc (7%)	0043	7.925	0.1500	8.163	0.5342	0.2221	67	-0.44	321.00	0
321	Acid Soluble Zinc (7%)	0029	7.938	0.1240	8.163	0.5342	0.2221	67	-0.42	321.00	0
321	Acid Soluble Zinc (7%)	0513	7.945	0.1900	8.163	0.5342	0.2221	67	-0.41	321.00	0
321	Acid Soluble Zinc (7%)	0090	7.965	0.0900	8.163	0.5342	0.2221	67	-0.37	321.30	0
321	Acid Soluble Zinc (7%)	0177	7.971	0.0746	8.163	0.5342	0.2221	67	-0.36	321.33	0
321	Acid Soluble Zinc (7%)	0512	7.972	0.3190	8.163	0.5342	0.2221	67	-0.36	321.99	0
321	Acid Soluble Zinc (7%)	0397	8.000	0.0480	8.163	0.5342	0.2221	67	-0.30	321.33	0
321	Acid Soluble Zinc (7%)	0360	8.040	0.0800	8.163	0.5342	0.2221	67	-0.23	321.30	0
321	Acid Soluble Zinc (7%)	0157	8.090	0.1400	8.163	0.5342	0.2221	67	-0.14	321.30	0
321	Acid Soluble Zinc (7%)	0169	8.110	0.3000	8.163	0.5342	0.2221	67	-0.10	321.00	0
321	Acid Soluble Zinc (7%)	0406	8.130	0.0800	8.163	0.5342	0.2221	67	-0.06	321.30	0
321	Acid Soluble Zinc (7%)	0117	8.180	1.040	8.163	0.5342	0.2221	67	0.03	321.03	0
321	Acid Soluble Zinc (7%)	0519	8.180	0.0400	8.163	0.5342	0.2221	67	0.03	321.30	0
321	Acid Soluble Zinc (7%)	0390	8.190	0.1800	8.163	0.5342	0.2221	67	0.05	321.30	0
321	Acid Soluble Zinc (7%)	0231	8.270	0.0200	8.163	0.5342	0.2221	67	0.20	321.30	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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321	Acid Soluble Zinc (7%)	0234	8.280	0.0400	8.163	0.5342	0.2221	67	0.22	321.30	0
321	Acid Soluble Zinc (7%)	0421	8.301	0.5430	8.163	0.5342	0.2221	67	0.26	321.33	0
321	Acid Soluble Zinc (7%)	0371	8.310	0.2600	8.163	0.5342	0.2221	67	0.28	321.30	0
321	Acid Soluble Zinc (7%)	0472	8.335	0.4300	8.163	0.5342	0.2221	67	0.32	321.30	0
321	Acid Soluble Zinc (7%)	0105	8.339	0.1730	8.163	0.5342	0.2221	67	0.33	321.00	0
321	Acid Soluble Zinc (7%)	0041	8.340	0.0200	8.163	0.5342	0.2221	67	0.33	321.30	0
321	Acid Soluble Zinc (7%)	0354	8.344	0.2340	8.163	0.5342	0.2221	67	0.34	321.30	0
321	Acid Soluble Zinc (7%)	0040	8.352	0.4610	8.163	0.5342	0.2221	67	0.35	321.00	0
321	Acid Soluble Zinc (7%)	0096	8.359	0.1994	8.163	0.5342	0.2221	67	0.37	321.30	0
321	Acid Soluble Zinc (7%)	0389	8.360	0.0800	8.163	0.5342	0.2221	67	0.37	321.99	0
321	Acid Soluble Zinc (7%)	0211	8.370	0.2000	8.163	0.5342	0.2221	67	0.39	321.33	0
321	Acid Soluble Zinc (7%)	0037	8.410	0.0000	8.163	0.5342	0.2221	67	0.46	321.33	0
321	Acid Soluble Zinc (7%)	0485	8.425	0.3100	8.163	0.5342	0.2221	67	0.49	321.00	0
321	Acid Soluble Zinc (7%)	0095	8.480	0.0200	8.163	0.5342	0.2221	67	0.59	321.30	0
321	Acid Soluble Zinc (7%)	0027	8.486	0.4570	8.163	0.5342	0.2221	67	0.60	321.99	0
321	Acid Soluble Zinc (7%)	0402	8.510	0.1200	8.163	0.5342	0.2221	67	0.65	321.30	0
321	Acid Soluble Zinc (7%)	0377	8.510	0.4000	8.163	0.5342	0.2221	67	0.65	321.30	0
321	Acid Soluble Zinc (7%)	0291	8.535	0.0300	8.163	0.5342	0.2221	67	0.70	321.30	0
321	Acid Soluble Zinc (7%)	0494	8.544	0.5563	8.163	0.5342	0.2221	67	0.71	321.33	0
321	Acid Soluble Zinc (7%)	0025	8.558	0.3300	8.163	0.5342	0.2221	67	0.74	321.33	0
321	Acid Soluble Zinc (7%)	0452	8.560	0.0800	8.163	0.5342	0.2221	67	0.74	321.30	0
321	Acid Soluble Zinc (7%)	0073	8.575	0.2300	8.163	0.5342	0.2221	67	0.77	321.30	0
321	Acid Soluble Zinc (7%)	0483	8.635	0.0500	8.163	0.5342	0.2221	67	0.88	321.30	0
321	Acid Soluble Zinc (7%)	0457	8.680	0.0120	8.163	0.5342	0.2221	67	0.97	321.00	0
321	Acid Soluble Zinc (7%)	0516	8.780	0.1200	8.163	0.5342	0.2221	67	1.16	321.00	0
321	Acid Soluble Zinc (7%)	0131	8.955	0.4300	8.163	0.5342	0.2221	67	1.48	321.30	0
321	Acid Soluble Zinc (7%)	0325	9.055	0.5500	8.163	0.5342	0.2221	67	1.67	321.30	0
321	Acid Soluble Zinc (7%)	0394	9.065	0.1900	8.163	0.5342	0.2221	67	1.69	321.32	0
321	Acid Soluble Zinc (7%)	0035	9.085	0.4700	8.163	0.5342	0.2221	67	1.73	321.30	0
321	Acid Soluble Zinc (7%)	0055	9.107	0.0860	8.163	0.5342	0.2221	67	1.77	321.30	0
321	Acid Soluble Zinc (7%)	0487	9.450	0.1000	8.163	0.5342	0.2221	67	2.41	321.99	0
321	Acid Soluble Zinc (7%)	0102	9.557	0.3140	8.163	0.5342	0.2221	67	2.61	321.30	0
321	Acid Soluble Zinc (7%)	0368	8.406	1.460	8.163	0.5342	0.2221	67	0.46	321.30	1
321	Acid Soluble Zinc (7%)	0515	8.554	2.733	8.163	0.5342	0.2221	67	0.73	321.99	1
325	Water Soluble Zinc (%)	0518	7.085	0.0900			0.0900	1			0

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 used in calculations, in this case the Z Scores are included for information only (Grey). An offset lab value with an asterix 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.