



Analyte PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Analytes: 26

Sample # 231111

Regular PT Scheme

Labs Reporting: 66

High Micros

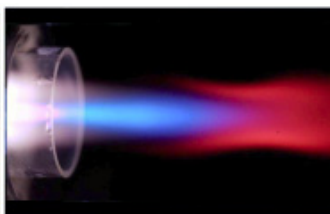
Statistical Summary

Issue Date : 12/31/2023

Analyte Code	Analyte Sample # 231111	# 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	Analyte IA Ratio	Average Range (R-bar)	Horwitz %RSD
010	Total N (%)	5	4	0.0641	0.0580	0.0799	0.4900	0.0532	0.0332	66.55%	0.25	0.0075	5.85%
020	Total P2O5 (%)	3	0	0.0067	0.0058	0.0799		0.0532		66.55%		0.0000	5.85%
041	Direct Available P2O5 (%)	2	2	6.698	9.436								
050	Soluble K2O (%)	4	2	0.0171	0.0112	0.0243	0.4100	0.0131	0.0116	53.94%	0.07	0.0065	7.00%
101	Acid Soluble Ca (%)	6	5	0.1538	0.0763	0.1825	0.2091	0.0327	0.0183	17.92%	0.36	0.0679	5.17%
121	Acid Soluble Mg (%)	10	7	0.1331	0.0761	0.1600	0.2080	0.0301	0.0142	18.79%	0.34	0.0028	5.27%
148	Total S (%)	10	9	10.69	4.404	12.14	0.8069	1.092	0.4549	9.00%	3.15	0.3599	2.75%
149	S - HNO3 soluble (%)	1		10.82									
151	Acid Soluble As (ppm)	16	6	2.800	3.083	3.511		2.426	1.238	69.11%		0.4415	13.24%
165	Acid Soluble B (2.5%)	56	56	2.482	0.2157	2.491	0.3766	0.1518	0.0254	6.09%	0.94	0.0613	3.49%
171	Water Soluble B (%)	9	9	2.498	0.1810	2.492		0.1907	0.0795	7.65%		0.0457	3.49%
181	Acid Soluble Cd (ppm)	17	16	28.44	9.624	28.84		3.066	0.9582	10.63%		1.025	9.64%
191	Acid Soluble Cr (ppm)	15	12	31.29	30.00	28.34		7.401	2.670	26.11%		1.515	9.67%
202	Acid Soluble Co (ppm)	18	17	76.44	14.45	78.41	24.5239	8.370	2.537	10.67%	0.80	2.585	8.30%
221	Acid Soluble Cu (10%)	64	62	10.13	0.4926	10.15	1.0000	0.3750	0.0595	3.70%	0.87	0.1347	2.82%
241	Acid Soluble Fe (9%)	65	63	8.321	1.071	8.484	0.8534	0.7995	0.1259	9.42%	2.18	0.1361	2.90%
251	Acid Soluble Pb (ppm)	19	19	324.5	54.20	324.1		54.06	15.50	16.68%		20.18	6.70%
261	Acid Soluble Mn (8%)	61	60	8.102	0.5042	8.137	0.8187	0.3907	0.0631	4.80%	1.11	0.1060	2.92%
271	Water Soluble Mn (%)	4	4	8.203	0.1626	8.203		0.1626	0.1016	1.98%		0.0500	2.91%
281	Acid Soluble Hg (ppm)	8	3	0.4529	0.7513	0.0740		0.0171	0.0123	23.05%		0.0070	22.00%
289	Acid Soluble Mo (ppm)	16	11	5.984	6.536	4.895	2.4685	1.425	0.5370	29.11%	1.34	0.4700	12.60%
291	Acid Soluble Ni (ppm)	18	17	140.4	39.47	145.4		19.68	5.968	13.54%		4.798	7.56%
301	Acid Soluble Se (ppm)	13	5	14.78	20.41	33.56		21.18	11.84	63.11%		1.707	9.43%
311	Sodium (%)	4	4	1.413	0.1010	1.413	0.1463	0.1010	0.0631	7.15%	1.61	0.0718	3.80%
321	Acid Soluble Zn (%)	35	34	4.104	0.6183	4.035	0.4085	0.3803	0.0815	9.42%	2.17	0.0872	3.24%
325	Water Soluble Zn (%)	3	3	2.005	1.212	2.005		1.212	0.8750	60.47%		0.0100	3.60%

The Analyte IA Ratio = 2.33 * Robust SD / IA at the Analyte Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.

Horwitz %RSD
Average Range (R-bar)
Analyte IA Ratio
Robust % RSD
Robust Uncertainty (U)
Robust sd
IA at Analyte Value
Assigned Value Robust Mean
Raw SD
Raw Mean
Tests in Robust Calculations
Tests Submitted
Analyte Sample # 231111
Analyte Code



Analyte PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Analytes: 26

Sample # 231111

Regular PT Scheme

Labs Reporting: 66

High Micros

Lab Values

Issue Date : 12/31/2023

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
010	Total N (%)	0422	0.0500	0.0000	0.0799	0.0532	0.0075	4	-0.56	010.60	0
010	Total N (%)	0472	0.0530	0.0000	0.0799	0.0532	0.0075	4	-0.51	010.60	0
010	Total N (%)	0354	0.0570	0.0040	0.0799	0.0532	0.0075	4	-0.43	010.60	0
010	Total N (%)	0588	0.1595	0.0110	0.0799	0.0532	0.0075	4	1.50	010.60	0
010	Total N (%)	0527	< 0.001		0.0799	0.0532	0.0075	4		010.60	5
020	Total P2O5 (%)	0422	0.0000	0.0000				0		020.50	4
020	Total P2O5 (%)	0527	< 0.01					0		020.50	5
020	Total P2O5 (%)	0588	< 0.01					0		020.50	5
041	Direct Available P2O5 (%)	0354	0.0255	0.0010				2		041.21	0
041	Direct Available P2O5 (%)	0421	13.37	0.2200				2		041.50	0
050	Soluble K2O (%)	0422	0.0150	0.0100				2		050.50	0
050	Soluble K2O (%)	0354	0.0335	0.0030				2		050.52	0
050	Soluble K2O (%)	0527	< 0.01					2		050.99	5
050	Soluble K2O (%)	0588	< 0.01					2		050.99	5
101	Acid Soluble Ca (%)	0354	0.1440	0.2320	0.1825	0.0327	0.0679	5	-1.03	101.30	0
101	Acid Soluble Ca (%)	0472	0.1500	0.0200	0.1825	0.0327	0.0679	5	-0.87	101.33	0
101	Acid Soluble Ca (%)	0421	0.2000	0.0000	0.1825	0.0327	0.0679	5	0.47	101.33	0
101	Acid Soluble Ca (%)	0494	0.2089	0.0013	0.1825	0.0327	0.0679	5	0.70	101.33	0
101	Acid Soluble Ca (%)	0630	0.2097	0.0182	0.1825	0.0327	0.0679	5	0.73	101.33	0
101	Acid Soluble Ca (%)	0527	< 0.01		0.1825	0.0327	0.0679	5		101.33	5
121	Acid Soluble Mg (%)	0421	0.1020	0.0040	0.1600	0.0301	0.0028	7	-1.75	121.33	0
121	Acid Soluble Mg (%)	0472	0.1400	0.0000	0.1600	0.0301	0.0028	7	-0.60	121.33	0
121	Acid Soluble Mg (%)	0300	0.1575	0.0010	0.1600	0.0301	0.0028	7	-0.08	121.32	0
121	Acid Soluble Mg (%)	0423	0.1610	0.0020	0.1600	0.0301	0.0028	7	0.03	121.32	0
121	Acid Soluble Mg (%)	0630	0.1715	0.0018	0.1600	0.0301	0.0028	7	0.34	121.33	0
121	Acid Soluble Mg (%)	0494	0.1800	0.0143	0.1600	0.0301	0.0028	7	0.60	121.33	0
121	Acid Soluble Mg (%)	0527	0.1954	0.0019	0.1600	0.0301	0.0028	7	1.06	121.33	0
121	Acid Soluble Mg (%)	0354	0.2200	0.1200	0.1600	0.0301	0.0028	7	1.80	121.30	1
121	Acid Soluble Mg (%)	0515	< 0.0016		0.1600	0.0301	0.0028	7		121.33	5
121	Acid Soluble Mg (%)	0515	< 0.0016		0.1600	0.0301	0.0028	7		121.99	5
148	Total S (%)	0515	6.128	0.0690	12.14	1.092	0.3599	9	-5.08	148.07	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
148	Total S (%)	0472	11.04	0.0500	12.14	1.092	0.3599	9	-0.93	148.07	0
148	Total S (%)	0300	11.77	0.0510	12.14	1.092	0.3599	9	-0.31	148.99	0
148	Total S (%)	0513	12.15	0.1500	12.14	1.092	0.3599	9	0.01	148.07	0
148	Total S (%)	0354	12.15	0.1000	12.14	1.092	0.3599	9	0.01	148.99	0
148	Total S (%)	0451	12.50	0.8000	12.14	1.092	0.3599	9	0.31	148.00	0
148	Total S (%)	0494	12.55	1.022	12.14	1.092	0.3599	9	0.35	148.07	0
148	Total S (%)	0422	12.81	0.7000	12.14	1.092	0.3599	9	0.57	148.99	0
148	Total S (%)	0421	15.68	0.3300	12.14	1.092	0.3599	9	2.99	148.07	0
148	Total S (%)	0527	< 0.1		12.14	1.092	0.3599	9		148.07	5
149	S - HNO3 soluble (%)	0423	10.82	0.1400				1		149.04	0
151	Acid Soluble As (ppm)	0136	1.565	0.0700	3.511	2.426	0.4415	6	-0.80	151.33	0
151	Acid Soluble As (ppm)	0627	1.730	0.0800	3.511	2.426	0.4415	6	-0.73	151.30	0
151	Acid Soluble As (ppm)	0630	2.204	0.3570	3.511	2.426	0.4415	6	-0.54	151.30	0
151	Acid Soluble As (ppm)	0368	4.150	0.7000	3.511	2.426	0.4415	6	0.26	151.34	0
151	Acid Soluble As (ppm)	0300	4.265	0.4819	3.511	2.426	0.4415	6	0.31	151.32	0
151	Acid Soluble As (ppm)	0494	8.390	0.9600	3.511	2.426	0.4415	6	2.01	151.33	0
151	Acid Soluble As (ppm)	0405	5.000	2.000	3.511	2.426	0.4415	6	0.61	151.32	1
151	Acid Soluble As (ppm)	0255	0.0000	0.0000	3.511	2.426	0.4415	6		151.30	4
151	Acid Soluble As (ppm)	0527	< 0.0001		3.511	2.426	0.4415	6		151.33	5
151	Acid Soluble As (ppm)	0515	< 0.186		3.511	2.426	0.4415	6		151.34	5
151	Acid Soluble As (ppm)	0515	< 0.25		3.511	2.426	0.4415	6		151.33	5
151	Acid Soluble As (ppm)	0220	< 0.5		3.511	2.426	0.4415	6		151.32	5
151	Acid Soluble As (ppm)	0220	< 0.5		3.511	2.426	0.4415	6		151.99	5
151	Acid Soluble As (ppm)	0626	< 0.5		3.511	2.426	0.4415	6		151.99	5
151	Acid Soluble As (ppm)	0605	< 6.2		3.511	2.426	0.4415	6		151.30	5
151	Acid Soluble As (ppm)	0035	< 9.36		3.511	2.426	0.4415	6		151.30	5
165	Acid Soluble B (2.5%)	0309	1.690†	0.0400	2.491	0.1518	0.0613	56	-5.28	165.00	0
165	Acid Soluble B (2.5%)	0515	1.904†	0.0290	2.491	0.1518	0.0613	56	-3.87	165.99	0
165	Acid Soluble B (2.5%)	0220	2.100†	0.0000	2.491	0.1518	0.0613	56	-2.57	165.70	0
165	Acid Soluble B (2.5%)	0389	2.165	0.0300	2.491	0.1518	0.0613	56	-2.15	165.30	0
165	Acid Soluble B (2.5%)	0035	2.265	0.0700	2.491	0.1518	0.0613	56	-1.49	165.99	0
165	Acid Soluble B (2.5%)	0521	2.280	0.0000	2.491	0.1518	0.0613	56	-1.39	165.30	0
165	Acid Soluble B (2.5%)	0485	2.290	0.1000	2.491	0.1518	0.0613	56	-1.32	165.30	0
165	Acid Soluble B (2.5%)	0577	2.295	0.0300	2.491	0.1518	0.0613	56	-1.29	165.00	0
165	Acid Soluble B (2.5%)	0231	2.315	0.0100	2.491	0.1518	0.0613	56	-1.16	165.99	0
165	Acid Soluble B (2.5%)	0354	2.315	0.2700	2.491	0.1518	0.0613	56	-1.16	165.30	0
165	Acid Soluble B (2.5%)	0472	2.345	0.0100	2.491	0.1518	0.0613	56	-0.96	165.99	0
165	Acid Soluble B (2.5%)	0518	2.350	0.1000	2.491	0.1518	0.0613	56	-0.93	165.99	0
165	Acid Soluble B (2.5%)	0405	2.370	0.0400	2.491	0.1518	0.0613	56	-0.80	165.00	0
165	Acid Soluble B (2.5%)	0043	2.381	0.0110	2.491	0.1518	0.0613	56	-0.73	165.30	0
165	Acid Soluble B (2.5%)	0394	2.383	0.0233	2.491	0.1518	0.0613	56	-0.71	165.30	0
165	Acid Soluble B (2.5%)	0451	2.405	0.0960	2.491	0.1518	0.0613	56	-0.56	165.30	0
165	Acid Soluble B (2.5%)	0136	2.405	0.0100	2.491	0.1518	0.0613	56	-0.56	165.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
165	Acid Soluble B (2.5%)	0513	2.440	0.0000	2.491	0.1518	0.0613	56	-0.33	165.30	0
165	Acid Soluble B (2.5%)	0605	2.440	0.0800	2.491	0.1518	0.0613	56	-0.33	165.99	0
165	Acid Soluble B (2.5%)	0234	2.480	0.0800	2.491	0.1518	0.0613	56	-0.07	165.30	0
165	Acid Soluble B (2.5%)	0260	2.485	0.3100	2.491	0.1518	0.0613	56	-0.04	165.30	0
165	Acid Soluble B (2.5%)	0559	2.485	0.0100	2.491	0.1518	0.0613	56	-0.04	165.99	0
165	Acid Soluble B (2.5%)	0423	2.486	0.0040	2.491	0.1518	0.0613	56	-0.03	165.99	0
165	Acid Soluble B (2.5%)	0073	2.495	0.0900	2.491	0.1518	0.0613	56	0.03	165.99	0
165	Acid Soluble B (2.5%)	0023	2.497	0.0040	2.491	0.1518	0.0613	56	0.04	165.99	0
165	Acid Soluble B (2.5%)	0626	2.500	0.0000	2.491	0.1518	0.0613	56	0.06	165.70	0
165	Acid Soluble B (2.5%)	0600	2.500	0.1000	2.491	0.1518	0.0613	56	0.06	165.99	0
165	Acid Soluble B (2.5%)	0307	2.505	0.1500	2.491	0.1518	0.0613	56	0.09	165.99	0
165	Acid Soluble B (2.5%)	0300	2.510	0.0000	2.491	0.1518	0.0613	56	0.12	165.99	0
165	Acid Soluble B (2.5%)	0626	2.510	0.0400	2.491	0.1518	0.0613	56	0.13	165.30	0
165	Acid Soluble B (2.5%)	0292	2.515	0.0100	2.491	0.1518	0.0613	56	0.16	165.30	0
165	Acid Soluble B (2.5%)	0627	2.520	0.0000	2.491	0.1518	0.0613	56	0.19	165.30	0
165	Acid Soluble B (2.5%)	0444	2.535	0.0700	2.491	0.1518	0.0613	56	0.29	165.30	0
165	Acid Soluble B (2.5%)	0368	2.536	0.2623	2.491	0.1518	0.0613	56	0.30	165.99	0
165	Acid Soluble B (2.5%)	0543	2.536	0.0600	2.491	0.1518	0.0613	56	0.30	165.99	0
165	Acid Soluble B (2.5%)	0558	2.536	0.0075	2.491	0.1518	0.0613	56	0.30	165.00	0
165	Acid Soluble B (2.5%)	0055	2.548	0.0290	2.491	0.1518	0.0613	56	0.37	165.00	0
165	Acid Soluble B (2.5%)	0028	2.552	0.0440	2.491	0.1518	0.0613	56	0.40	165.00	0
165	Acid Soluble B (2.5%)	0527	2.560	0.0313	2.491	0.1518	0.0613	56	0.45	165.99	0
165	Acid Soluble B (2.5%)	0626	2.575	0.0500	2.491	0.1518	0.0613	56	0.56	165.00	0
165	Acid Soluble B (2.5%)	0433	2.581	0.0010	2.491	0.1518	0.0613	56	0.59	165.30	0
165	Acid Soluble B (2.5%)	0291	2.585	0.0100	2.491	0.1518	0.0613	56	0.62	165.99	0
165	Acid Soluble B (2.5%)	0360	2.585	0.1300	2.491	0.1518	0.0613	56	0.62	165.99	0
165	Acid Soluble B (2.5%)	0630	2.589	0.1024	2.491	0.1518	0.0613	56	0.64	165.30	0
165	Acid Soluble B (2.5%)	0421	2.610	0.0340	2.491	0.1518	0.0613	56	0.79	165.99	0
165	Acid Soluble B (2.5%)	0452	2.615	0.0010	2.491	0.1518	0.0613	56	0.82	165.99	0
165	Acid Soluble B (2.5%)	0095	2.615	0.0100	2.491	0.1518	0.0613	56	0.82	165.99	0
165	Acid Soluble B (2.5%)	0619	2.620	0.2000	2.491	0.1518	0.0613	56	0.85	165.30	0
165	Acid Soluble B (2.5%)	0619	2.620	0.2000	2.491	0.1518	0.0613	56	0.85	165.99	0
165	Acid Soluble B (2.5%)	0324	2.625	0.3100	2.491	0.1518	0.0613	56	0.88	165.30	0
165	Acid Soluble B (2.5%)	0029	2.690	0.0110	2.491	0.1518	0.0613	56	1.31	165.00	0
165	Acid Soluble B (2.5%)	0422	2.690	0.0390	2.491	0.1518	0.0613	56	1.31	165.30	0
165	Acid Soluble B (2.5%)	0049	2.707	0.1059	2.491	0.1518	0.0613	56	1.43	165.30	0
165	Acid Soluble B (2.5%)	0106	2.797	0.2229	2.491	0.1518	0.0613	56	2.02	165.30	0
165	Acid Soluble B (2.5%)	0220	2.965±	0.0700	2.491	0.1518	0.0613	56	3.12	165.99	0
165	Acid Soluble B (2.5%)	0255	3.104±	0.0660	2.491	0.1518	0.0613	56	4.04	165.99	0
171	Water Soluble B (%)	0619	2.290	0.0400	2.492	0.1907	0.0457	9	-0.98	171.00	0
171	Water Soluble B (%)	0619	2.290	0.0400	2.492	0.1907	0.0457	9	-0.98	171.99	0
171	Water Soluble B (%)	0536	2.330	0.0400	2.492	0.1907	0.0457	9	-0.78	171.00	0
171	Water Soluble B (%)	0538	2.500	0.0200	2.492	0.1907	0.0457	9	0.04	171.10	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
171	Water Soluble B (%)	0584	2.500	0.0200	2.492	0.1907	0.0457	9	0.04	171.10	0
171	Water Soluble B (%)	0027	2.522	0.1340	2.492	0.1907	0.0457	9	0.15	171.99	0
171	Water Soluble B (%)	0600	2.540	0.1200	2.492	0.1907	0.0457	9	0.23	171.99	0
171	Water Soluble B (%)	0533	2.675	0.0300	2.492	0.1907	0.0457	9	0.89	171.00	0
171	Water Soluble B (%)	0580	2.835	0.0300	2.492	0.1907	0.0457	9	1.66	171.10	0
181	Acid Soluble Cd (ppm)	0626	24.84	1.610	28.84	3.066	1.025	16	-1.31	181.30	0
181	Acid Soluble Cd (ppm)	0605	26.04	1.770	28.84	3.066	1.025	16	-0.92	181.30	0
181	Acid Soluble Cd (ppm)	0035	26.10	1.000	28.84	3.066	1.025	16	-0.89	181.30	0
181	Acid Soluble Cd (ppm)	0394	26.70	0.5000	28.84	3.066	1.025	16	-0.70	181.30	0
181	Acid Soluble Cd (ppm)	0627	27.04	0.6300	28.84	3.066	1.025	16	-0.59	181.30	0
181	Acid Soluble Cd (ppm)	0368	27.20	0.4000	28.84	3.066	1.025	16	-0.54	181.34	0
181	Acid Soluble Cd (ppm)	0300	27.25	1.050	28.84	3.066	1.025	16	-0.52	181.32	0
181	Acid Soluble Cd (ppm)	0136	27.85	0.0400	28.84	3.066	1.025	16	-0.32	181.33	0
181	Acid Soluble Cd (ppm)	0630	28.09	1.293	28.84	3.066	1.025	16	-0.25	181.30	0
181	Acid Soluble Cd (ppm)	0405	29.50	1.000	28.84	3.066	1.025	16	0.21	181.32	0
181	Acid Soluble Cd (ppm)	0220	29.95	0.1000	28.84	3.066	1.025	16	0.36	181.99	0
181	Acid Soluble Cd (ppm)	0220	30.75	0.3000	28.84	3.066	1.025	16	0.62	181.32	0
181	Acid Soluble Cd (ppm)	0527	31.40	0.4831	28.84	3.066	1.025	16	0.84	181.33	0
181	Acid Soluble Cd (ppm)	0255	31.91	5.210	28.84	3.066	1.025	16	1.00	181.30	0
181	Acid Soluble Cd (ppm)	0494	37.05	1.700	28.84	3.066	1.025	16	2.68	181.33	0
181	Acid Soluble Cd (ppm)	0515	51.77	5.380	28.84	3.066	1.025	16	7.48	181.33	0
181	Acid Soluble Cd (ppm)	0515	< 0.133		28.84	3.066	1.025	16		181.34	5
191	Acid Soluble Cr (ppm)	0136	14.96	0.4900	28.34	7.401	1.515	12	-1.81	191.33	0
191	Acid Soluble Cr (ppm)	0220	20.95	1.300	28.34	7.401	1.515	12	-1.00	191.32	0
191	Acid Soluble Cr (ppm)	0368	24.85	1.900	28.34	7.401	1.515	12	-0.47	191.34	0
191	Acid Soluble Cr (ppm)	0394	25.63	2.700	28.34	7.401	1.515	12	-0.37	191.30	0
191	Acid Soluble Cr (ppm)	0220	25.95	2.700	28.34	7.401	1.515	12	-0.32	191.99	0
191	Acid Soluble Cr (ppm)	0605	26.60	0.1900	28.34	7.401	1.515	12	-0.24	191.30	0
191	Acid Soluble Cr (ppm)	0300	26.81	0.1687	28.34	7.401	1.515	12	-0.21	191.32	0
191	Acid Soluble Cr (ppm)	0630	27.62	13.31	28.34	7.401	1.515	12	-0.10	191.30	0
191	Acid Soluble Cr (ppm)	0405	33.50	3.000	28.34	7.401	1.515	12	0.70	191.32	0
191	Acid Soluble Cr (ppm)	0627	34.62	0.2700	28.34	7.401	1.515	12	0.85	191.30	0
191	Acid Soluble Cr (ppm)	0494	37.95	0.1000	28.34	7.401	1.515	12	1.30	191.33	0
191	Acid Soluble Cr (ppm)	0035	38.40	0.0000	28.34	7.401	1.515	12	1.36	191.30	0
191	Acid Soluble Cr (ppm)	0515	131.3	86.35	28.34	7.401	1.515	12	13.92	191.33	1
191	Acid Soluble Cr (ppm)	0527	< 0.0001		28.34	7.401	1.515	12		191.33	5
191	Acid Soluble Cr (ppm)	0515	< 0.141		28.34	7.401	1.515	12		191.34	5
202	Acid Soluble Co (ppm)	0515	36.28	1.170	78.41	8.370	2.585	17	-5.03	202.33	0
202	Acid Soluble Co (ppm)	0515	45.73	10.21	78.41	8.370	2.585	17	-3.91	202.34	0
202	Acid Soluble Co (ppm)	0626	70.28	1.510	78.41	8.370	2.585	17	-0.97	202.99	0
202	Acid Soluble Co (ppm)	0423	70.86	0.8500	78.41	8.370	2.585	17	-0.90	202.32	0
202	Acid Soluble Co (ppm)	0626	73.51	2.520	78.41	8.370	2.585	17	-0.59	202.30	0
202	Acid Soluble Co (ppm)	0255	75.23	11.25	78.41	8.370	2.585	17	-0.38	202.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
202	Acid Soluble Co (ppm)	0605	75.39	0.0000	78.41	8.370	2.585	17	-0.36	202.30	0
202	Acid Soluble Co (ppm)	0027	78.14	6.688	78.41	8.370	2.585	17	-0.03	202.30	0
202	Acid Soluble Co (ppm)	0136	80.05	3.510	78.41	8.370	2.585	17	0.19	202.33	0
202	Acid Soluble Co (ppm)	0220	82.10	0.4000	78.41	8.370	2.585	17	0.44	202.99	0
202	Acid Soluble Co (ppm)	0220	82.65	0.7000	78.41	8.370	2.585	17	0.51	202.32	0
202	Acid Soluble Co (ppm)	0035	82.70	0.6000	78.41	8.370	2.585	17	0.51	202.30	0
202	Acid Soluble Co (ppm)	0368	83.15	0.9000	78.41	8.370	2.585	17	0.57	202.34	0
202	Acid Soluble Co (ppm)	0300	83.25	3.132	78.41	8.370	2.585	17	0.58	202.32	0
202	Acid Soluble Co (ppm)	0494	85.55	4.300	78.41	8.370	2.585	17	0.85	202.33	0
202	Acid Soluble Co (ppm)	0405	87.50	1.000	78.41	8.370	2.585	17	1.09	202.32	0
202	Acid Soluble Co (ppm)	0527	94.91	2.275	78.41	8.370	2.585	17	1.97	202.33	0
202	Acid Soluble Co (ppm)	0630	88.72	18.68	78.41	8.370	2.585	17	1.23	202.30	1
221	Acid Soluble Cu (10%)	0521	8.550†	0.0000	10.15	0.3750	0.1347	62	-4.26	221.32	0
221	Acid Soluble Cu (10%)	0029	8.758†	0.1350	10.15	0.3750	0.1347	62	-3.71	221.00	0
221	Acid Soluble Cu (10%)	0580	9.315	0.0300	10.15	0.3750	0.1347	62	-2.22	221.00	0
221	Acid Soluble Cu (10%)	0368	9.629	0.0388	10.15	0.3750	0.1347	62	-1.38	221.99	0
221	Acid Soluble Cu (10%)	0543	9.630	0.0400	10.15	0.3750	0.1347	62	-1.38	221.33	0
221	Acid Soluble Cu (10%)	0513	9.645	0.0500	10.15	0.3750	0.1347	62	-1.34	221.30	0
221	Acid Soluble Cu (10%)	0627	9.765	0.1100	10.15	0.3750	0.1347	62	-1.02	221.33	0
221	Acid Soluble Cu (10%)	0533	9.775	0.0300	10.15	0.3750	0.1347	62	-0.99	221.00	0
221	Acid Soluble Cu (10%)	0498	9.800	0.2000	10.15	0.3750	0.1347	62	-0.93	221.01	0
221	Acid Soluble Cu (10%)	0073	9.810	0.4400	10.15	0.3750	0.1347	62	-0.90	221.32	0
221	Acid Soluble Cu (10%)	0433	9.841	0.0350	10.15	0.3750	0.1347	62	-0.82	221.30	0
221	Acid Soluble Cu (10%)	0626	9.850	0.0600	10.15	0.3750	0.1347	62	-0.79	221.10	0
221	Acid Soluble Cu (10%)	0035	9.850	0.1000	10.15	0.3750	0.1347	62	-0.79	221.30	0
221	Acid Soluble Cu (10%)	0255	9.920	0.1590	10.15	0.3750	0.1347	62	-0.61	221.30	0
221	Acid Soluble Cu (10%)	0536	9.920	0.1000	10.15	0.3750	0.1347	62	-0.61	221.00	0
221	Acid Soluble Cu (10%)	0049	9.920	0.6600	10.15	0.3750	0.1347	62	-0.61	221.30	0
221	Acid Soluble Cu (10%)	0472	9.980	0.0000	10.15	0.3750	0.1347	62	-0.45	221.33	0
221	Acid Soluble Cu (10%)	0444	9.985	0.2100	10.15	0.3750	0.1347	62	-0.43	221.30	0
221	Acid Soluble Cu (10%)	0177	9.986	0.2641	10.15	0.3750	0.1347	62	-0.43	221.33	0
221	Acid Soluble Cu (10%)	0423	9.995	0.3500	10.15	0.3750	0.1347	62	-0.41	221.32	0
221	Acid Soluble Cu (10%)	0538	10.00	0.0200	10.15	0.3750	0.1347	62	-0.39	221.00	0
221	Acid Soluble Cu (10%)	0405	10.01	0.1900	10.15	0.3750	0.1347	62	-0.38	221.32	0
221	Acid Soluble Cu (10%)	0028	10.01	0.1800	10.15	0.3750	0.1347	62	-0.37	221.32	0
221	Acid Soluble Cu (10%)	0220	10.02	0.0800	10.15	0.3750	0.1347	62	-0.34	221.32	0
221	Acid Soluble Cu (10%)	0260	10.02	0.2000	10.15	0.3750	0.1347	62	-0.34	221.33	0
221	Acid Soluble Cu (10%)	0619	10.03	0.1500	10.15	0.3750	0.1347	62	-0.33	221.30	0
221	Acid Soluble Cu (10%)	0619	10.03	0.1500	10.15	0.3750	0.1347	62	-0.33	221.99	0
221	Acid Soluble Cu (10%)	0300	10.03	0.0289	10.15	0.3750	0.1347	62	-0.30	221.32	0
221	Acid Soluble Cu (10%)	0600	10.05	0.2000	10.15	0.3750	0.1347	62	-0.26	221.99	0
221	Acid Soluble Cu (10%)	0527	10.07	0.0633	10.15	0.3750	0.1347	62	-0.20	221.33	0
221	Acid Soluble Cu (10%)	0518	10.08	0.4500	10.15	0.3750	0.1347	62	-0.19	221.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
221	Acid Soluble Cu (10%)	0360	10.09	0.1100	10.15	0.3750	0.1347	62	-0.17	221.30	0
221	Acid Soluble Cu (10%)	0559	10.11	0.0100	10.15	0.3750	0.1347	62	-0.11	221.99	0
221	Acid Soluble Cu (10%)	0451	10.11	0.0800	10.15	0.3750	0.1347	62	-0.10	221.30	0
221	Acid Soluble Cu (10%)	0389	10.12	0.0900	10.15	0.3750	0.1347	62	-0.09	221.99	0
221	Acid Soluble Cu (10%)	0494	10.12	0.1377	10.15	0.3750	0.1347	62	-0.08	221.33	0
221	Acid Soluble Cu (10%)	0234	10.13	0.0100	10.15	0.3750	0.1347	62	-0.06	221.30	0
221	Acid Soluble Cu (10%)	0605	10.19	0.2100	10.15	0.3750	0.1347	62	0.10	221.99	0
221	Acid Soluble Cu (10%)	0040	10.19	0.0078	10.15	0.3750	0.1347	62	0.12	221.33	0
221	Acid Soluble Cu (10%)	0485	10.20	0.6000	10.15	0.3750	0.1347	62	0.14	221.00	0
221	Acid Soluble Cu (10%)	0095	10.22	0.0700	10.15	0.3750	0.1347	62	0.18	221.32	0
221	Acid Soluble Cu (10%)	0626	10.23	0.0500	10.15	0.3750	0.1347	62	0.21	221.00	0
221	Acid Soluble Cu (10%)	0515	10.28	0.2100	10.15	0.3750	0.1347	62	0.34	221.33	0
221	Acid Soluble Cu (10%)	0231	10.40	0.1500	10.15	0.3750	0.1347	62	0.66	221.30	0
221	Acid Soluble Cu (10%)	0291	10.40	0.0200	10.15	0.3750	0.1347	62	0.67	221.30	0
221	Acid Soluble Cu (10%)	0307	10.40	0.2000	10.15	0.3750	0.1347	62	0.67	221.99	0
221	Acid Soluble Cu (10%)	0577	10.40	0.1600	10.15	0.3750	0.1347	62	0.67	221.99	0
221	Acid Soluble Cu (10%)	0292	10.41	0.0500	10.15	0.3750	0.1347	62	0.69	221.32	0
221	Acid Soluble Cu (10%)	0630	10.45	0.3879	10.15	0.3750	0.1347	62	0.81	221.33	0
221	Acid Soluble Cu (10%)	0027	10.45	0.1240	10.15	0.3750	0.1347	62	0.82	221.99	0
221	Acid Soluble Cu (10%)	0558	10.48	0.0016	10.15	0.3750	0.1347	62	0.89	221.00	0
221	Acid Soluble Cu (10%)	0452	10.58	0.0600	10.15	0.3750	0.1347	62	1.15	221.33	0
221	Acid Soluble Cu (10%)	0394	10.59	0.1330	10.15	0.3750	0.1347	62	1.18	221.33	0
221	Acid Soluble Cu (10%)	0023	10.60	0.2920	10.15	0.3750	0.1347	62	1.20	221.99	0
221	Acid Soluble Cu (10%)	0102	10.69	0.1000	10.15	0.3750	0.1347	62	1.45	221.33	0
221	Acid Soluble Cu (10%)	0055	10.69	0.3450	10.15	0.3750	0.1347	62	1.45	221.33	0
221	Acid Soluble Cu (10%)	0136	10.71	0.0900	10.15	0.3750	0.1347	62	1.49	221.33	0
221	Acid Soluble Cu (10%)	0354	10.75	0.1000	10.15	0.3750	0.1347	62	1.61	221.30	0
221	Acid Soluble Cu (10%)	0043	10.91	0.0500	10.15	0.3750	0.1347	62	2.02	221.33	0
221	Acid Soluble Cu (10%)	0587	10.92	0.1500	10.15	0.3750	0.1347	62	2.05	221.99	0
221	Acid Soluble Cu (10%)	0106	11.20‡	0.2453	10.15	0.3750	0.1347	62	2.81	221.33	0
221	Acid Soluble Cu (10%)	0422	11.74‡	0.4900	10.15	0.3750	0.1347	62	4.23	221.30	0
221	Acid Soluble Cu (10%)	0515	9.237	0.8560	10.15	0.3750	0.1347	62	-2.43	221.99	1
221	Acid Soluble Cu (10%)	0324	10.16	0.9000	10.15	0.3750	0.1347	62	0.03	221.30	1
241	Acid Soluble Fe (9%)	0255	3.941†	0.0740	8.484	0.7995	0.1361	63	-5.68	241.30	0
241	Acid Soluble Fe (9%)	0415	5.222†	0.1450	8.484	0.7995	0.1361	63	-4.08	241.00	0
241	Acid Soluble Fe (9%)	0558	6.105†	0.0125	8.484	0.7995	0.1361	63	-2.98	241.00	0
241	Acid Soluble Fe (9%)	0619	6.210†	0.1400	8.484	0.7995	0.1361	63	-2.84	241.30	0
241	Acid Soluble Fe (9%)	0307	6.325†	0.5300	8.484	0.7995	0.1361	63	-2.70	241.99	0
241	Acid Soluble Fe (9%)	0515	6.869†	0.1560	8.484	0.7995	0.1361	63	-2.02	241.99	0
241	Acid Soluble Fe (9%)	0619	6.910†	0.0000	8.484	0.7995	0.1361	63	-1.97	241.99	0
241	Acid Soluble Fe (9%)	0055	6.914†	0.0535	8.484	0.7995	0.1361	63	-1.96	241.33	0
241	Acid Soluble Fe (9%)	0543	7.157†	0.0080	8.484	0.7995	0.1361	63	-1.66	241.33	0
241	Acid Soluble Fe (9%)	0472	7.215†	0.0500	8.484	0.7995	0.1361	63	-1.59	241.33	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
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241	Acid Soluble Fe (9%)	0423	7.315†	0.0700	8.484	0.7995	0.1361	63	-1.46	241.32	0
241	Acid Soluble Fe (9%)	0292	7.530†	0.0400	8.484	0.7995	0.1361	63	-1.19	241.32	0
241	Acid Soluble Fe (9%)	0035	7.775	0.0900	8.484	0.7995	0.1361	63	-0.89	241.30	0
241	Acid Soluble Fe (9%)	0389	7.800	0.2400	8.484	0.7995	0.1361	63	-0.86	241.99	0
241	Acid Soluble Fe (9%)	0605	7.800	0.2600	8.484	0.7995	0.1361	63	-0.86	241.99	0
241	Acid Soluble Fe (9%)	0515	7.916	0.4430	8.484	0.7995	0.1361	63	-0.71	241.33	0
241	Acid Soluble Fe (9%)	0027	7.979	0.2650	8.484	0.7995	0.1361	63	-0.63	241.99	0
241	Acid Soluble Fe (9%)	0580	8.140	0.0000	8.484	0.7995	0.1361	63	-0.43	241.00	0
241	Acid Soluble Fe (9%)	0231	8.180	0.1600	8.484	0.7995	0.1361	63	-0.38	241.30	0
241	Acid Soluble Fe (9%)	0136	8.265	0.1700	8.484	0.7995	0.1361	63	-0.27	241.33	0
241	Acid Soluble Fe (9%)	0073	8.285	0.3700	8.484	0.7995	0.1361	63	-0.25	241.32	0
241	Acid Soluble Fe (9%)	0518	8.375	0.1500	8.484	0.7995	0.1361	63	-0.14	241.99	0
241	Acid Soluble Fe (9%)	0627	8.395	0.0500	8.484	0.7995	0.1361	63	-0.11	241.33	0
241	Acid Soluble Fe (9%)	0049	8.445	0.3700	8.484	0.7995	0.1361	63	-0.05	241.30	0
241	Acid Soluble Fe (9%)	0630	8.453	0.2058	8.484	0.7995	0.1361	63	-0.04	241.33	0
241	Acid Soluble Fe (9%)	0106	8.583	0.2142	8.484	0.7995	0.1361	63	0.12	241.33	0
241	Acid Soluble Fe (9%)	0433	8.596	0.0650	8.484	0.7995	0.1361	63	0.14	241.30	0
241	Acid Soluble Fe (9%)	0040	8.600	0.1600	8.484	0.7995	0.1361	63	0.15	241.33	0
241	Acid Soluble Fe (9%)	0300	8.647	0.0892	8.484	0.7995	0.1361	63	0.20	241.32	0
241	Acid Soluble Fe (9%)	0559	8.665	0.0100	8.484	0.7995	0.1361	63	0.23	241.99	0
241	Acid Soluble Fe (9%)	0368	8.684	0.1127	8.484	0.7995	0.1361	63	0.25	241.99	0
241	Acid Soluble Fe (9%)	0220	8.685	0.1100	8.484	0.7995	0.1361	63	0.25	241.32	0
241	Acid Soluble Fe (9%)	0043	8.700	0.1240	8.484	0.7995	0.1361	63	0.27	241.33	0
241	Acid Soluble Fe (9%)	0600	8.700	0.2000	8.484	0.7995	0.1361	63	0.27	241.99	0
241	Acid Soluble Fe (9%)	0394	8.723	0.0089	8.484	0.7995	0.1361	63	0.30	241.33	0
241	Acid Soluble Fe (9%)	0626	8.795	0.2900	8.484	0.7995	0.1361	63	0.39	241.00	0
241	Acid Soluble Fe (9%)	0405	8.800	0.1800	8.484	0.7995	0.1361	63	0.40	241.32	0
241	Acid Soluble Fe (9%)	0451	8.824	0.2980	8.484	0.7995	0.1361	63	0.43	241.30	0
241	Acid Soluble Fe (9%)	0527	8.860	0.0568	8.484	0.7995	0.1361	63	0.47	241.33	0
241	Acid Soluble Fe (9%)	0028	8.885	0.1300	8.484	0.7995	0.1361	63	0.50	241.32	0
241	Acid Soluble Fe (9%)	0626	8.900	0.0400	8.484	0.7995	0.1361	63	0.52	241.70	0
241	Acid Soluble Fe (9%)	0360	8.910	0.0000	8.484	0.7995	0.1361	63	0.53	241.30	0
241	Acid Soluble Fe (9%)	0587	8.975	0.0300	8.484	0.7995	0.1361	63	0.61	241.99	0
241	Acid Soluble Fe (9%)	0324	9.010	0.2200	8.484	0.7995	0.1361	63	0.66	241.30	0
241	Acid Soluble Fe (9%)	0023	9.018	0.0260	8.484	0.7995	0.1361	63	0.67	241.99	0
241	Acid Soluble Fe (9%)	0533	9.035	0.0100	8.484	0.7995	0.1361	63	0.69	241.00	0
241	Acid Soluble Fe (9%)	0536	9.035	0.0500	8.484	0.7995	0.1361	63	0.69	241.00	0
241	Acid Soluble Fe (9%)	0538	9.040	0.1200	8.484	0.7995	0.1361	63	0.70	241.00	0
241	Acid Soluble Fe (9%)	0354	9.040	0.0000	8.484	0.7995	0.1361	63	0.70	241.30	0
241	Acid Soluble Fe (9%)	0485	9.045	0.3500	8.484	0.7995	0.1361	63	0.70	241.00	0
241	Acid Soluble Fe (9%)	0291	9.060	0.0200	8.484	0.7995	0.1361	63	0.72	241.30	0
241	Acid Soluble Fe (9%)	0513	9.065	0.0700	8.484	0.7995	0.1361	63	0.73	241.30	0
241	Acid Soluble Fe (9%)	0234	9.070	0.1000	8.484	0.7995	0.1361	63	0.73	241.30	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
241	Acid Soluble Fe (9%)	0452	9.079	0.1060	8.484	0.7995	0.1361	63	0.74	241.33	0
241	Acid Soluble Fe (9%)	0444	9.135	0.0900	8.484	0.7995	0.1361	63	0.81	241.30	0
241	Acid Soluble Fe (9%)	0444	9.135	0.0900	8.484	0.7995	0.1361	63	0.81	241.99	0
241	Acid Soluble Fe (9%)	0577	9.140	0.0600	8.484	0.7995	0.1361	63	0.82	241.00	0
241	Acid Soluble Fe (9%)	0521	9.150	0.0000	8.484	0.7995	0.1361	63	0.83	241.33	0
241	Acid Soluble Fe (9%)	0102	9.265	0.0500	8.484	0.7995	0.1361	63	0.98	241.33	0
241	Acid Soluble Fe (9%)	0494	9.302	0.7016	8.484	0.7995	0.1361	63	1.02	241.33	0
241	Acid Soluble Fe (9%)	0422	9.489†	0.5070	8.484	0.7995	0.1361	63	1.26	241.30	0
241	Acid Soluble Fe (9%)	0029	9.652†	0.1926	8.484	0.7995	0.1361	63	1.46	241.00	0
241	Acid Soluble Fe (9%)	0095	9.890†	0.1400	8.484	0.7995	0.1361	63	1.76	241.32	0
241	Acid Soluble Fe (9%)	0177	7.767	0.8767	8.484	0.7995	0.1361	63	-0.90	241.33	1
241	Acid Soluble Fe (9%)	0260	8.420	0.8000	8.484	0.7995	0.1361	63	-0.08	241.33	1
251	Acid Soluble Pb (ppm)	0630	215.7	38.47	324.1	54.06	20.18	19	-2.00	251.30	0
251	Acid Soluble Pb (ppm)	0515	243.4	39.20	324.1	54.06	20.18	19	-1.49	251.33	0
251	Acid Soluble Pb (ppm)	0515	252.2	38.30	324.1	54.06	20.18	19	-1.33	251.34	0
251	Acid Soluble Pb (ppm)	0605	265.0	8.690	324.1	54.06	20.18	19	-1.09	251.30	0
251	Acid Soluble Pb (ppm)	0220	295.9	0.6000	324.1	54.06	20.18	19	-0.52	251.32	0
251	Acid Soluble Pb (ppm)	0220	296.0	3.100	324.1	54.06	20.18	19	-0.52	251.99	0
251	Acid Soluble Pb (ppm)	0394	302.9	25.47	324.1	54.06	20.18	19	-0.39	251.30	0
251	Acid Soluble Pb (ppm)	0494	319.0	26.00	324.1	54.06	20.18	19	-0.09	251.33	0
251	Acid Soluble Pb (ppm)	0626	327.6	11.60	324.1	54.06	20.18	19	0.07	251.00	0
251	Acid Soluble Pb (ppm)	0626	335.1	18.46	324.1	54.06	20.18	19	0.20	251.30	0
251	Acid Soluble Pb (ppm)	0405	337.0	24.00	324.1	54.06	20.18	19	0.24	251.32	0
251	Acid Soluble Pb (ppm)	0627	359.0	4.000	324.1	54.06	20.18	19	0.65	251.30	0
251	Acid Soluble Pb (ppm)	0368	359.5	17.00	324.1	54.06	20.18	19	0.66	251.34	0
251	Acid Soluble Pb (ppm)	0255	359.6	68.90	324.1	54.06	20.18	19	0.66	251.30	0
251	Acid Soluble Pb (ppm)	0136	360.3	8.280	324.1	54.06	20.18	19	0.67	251.33	0
251	Acid Soluble Pb (ppm)	0035	364.0	54.00	324.1	54.06	20.18	19	0.74	251.30	0
251	Acid Soluble Pb (ppm)	0027	366.4	7.585	324.1	54.06	20.18	19	0.78	251.30	0
251	Acid Soluble Pb (ppm)	0300	366.4	18.60	324.1	54.06	20.18	19	0.78	251.32	0
251	Acid Soluble Pb (ppm)	0527	439.8	1.098	324.1	54.06	20.18	19	2.14	251.33	0
261	Acid Soluble Mn (8%)	0515	6.588†	0.4870	8.137	0.3907	0.1060	60	-3.97	261.99	0
261	Acid Soluble Mn (8%)	0515	6.947†	0.1780	8.137	0.3907	0.1060	60	-3.05	261.35	0
261	Acid Soluble Mn (8%)	0580	7.255†	0.0300	8.137	0.3907	0.1060	60	-2.26	261.12	0
261	Acid Soluble Mn (8%)	0292	7.420	0.0400	8.137	0.3907	0.1060	60	-1.83	261.14	0
261	Acid Soluble Mn (8%)	0405	7.560	0.0200	8.137	0.3907	0.1060	60	-1.48	261.34	0
261	Acid Soluble Mn (8%)	0389	7.665	0.0700	8.137	0.3907	0.1060	60	-1.21	261.99	0
261	Acid Soluble Mn (8%)	0533	7.695	0.0500	8.137	0.3907	0.1060	60	-1.13	261.00	0
261	Acid Soluble Mn (8%)	0231	7.705	0.0300	8.137	0.3907	0.1060	60	-1.11	261.32	0
261	Acid Soluble Mn (8%)	0073	7.760	0.3800	8.137	0.3907	0.1060	60	-0.96	261.34	0
261	Acid Soluble Mn (8%)	0368	7.760	0.0492	8.137	0.3907	0.1060	60	-0.96	261.99	0
261	Acid Soluble Mn (8%)	0106	7.793	0.1972	8.137	0.3907	0.1060	60	-0.88	261.35	0
261	Acid Soluble Mn (8%)	0423	7.818	0.1740	8.137	0.3907	0.1060	60	-0.82	261.34	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
261	Acid Soluble Mn (8%)	0095	7.870	0.0400	8.137	0.3907	0.1060	60	-0.68	261.34	0
261	Acid Soluble Mn (8%)	0626	7.885	0.0700	8.137	0.3907	0.1060	60	-0.64	261.11	0
261	Acid Soluble Mn (8%)	0472	7.890	0.0000	8.137	0.3907	0.1060	60	-0.63	261.35	0
261	Acid Soluble Mn (8%)	0260	7.900	0.2000	8.137	0.3907	0.1060	60	-0.61	261.35	0
261	Acid Soluble Mn (8%)	0626	7.930	0.0200	8.137	0.3907	0.1060	60	-0.53	261.99	0
261	Acid Soluble Mn (8%)	0028	7.950	0.0200	8.137	0.3907	0.1060	60	-0.48	261.34	0
261	Acid Soluble Mn (8%)	0177	7.967	0.1948	8.137	0.3907	0.1060	60	-0.44	261.35	0
261	Acid Soluble Mn (8%)	0307	7.970	0.0200	8.137	0.3907	0.1060	60	-0.43	261.99	0
261	Acid Soluble Mn (8%)	0300	7.973	0.0210	8.137	0.3907	0.1060	60	-0.42	261.34	0
261	Acid Soluble Mn (8%)	0485	7.995	0.1900	8.137	0.3907	0.1060	60	-0.36	261.12	0
261	Acid Soluble Mn (8%)	0255	7.998	0.2620	8.137	0.3907	0.1060	60	-0.36	261.99	0
261	Acid Soluble Mn (8%)	0291	8.030	0.0200	8.137	0.3907	0.1060	60	-0.27	261.30	0
261	Acid Soluble Mn (8%)	0220	8.030	0.0800	8.137	0.3907	0.1060	60	-0.27	261.32	0
261	Acid Soluble Mn (8%)	0220	8.030	0.0800	8.137	0.3907	0.1060	60	-0.27	261.34	0
261	Acid Soluble Mn (8%)	0234	8.050	0.0600	8.137	0.3907	0.1060	60	-0.22	261.30	0
261	Acid Soluble Mn (8%)	0527	8.082	0.0613	8.137	0.3907	0.1060	60	-0.14	261.35	0
261	Acid Soluble Mn (8%)	0043	8.085	0.0550	8.137	0.3907	0.1060	60	-0.13	261.35	0
261	Acid Soluble Mn (8%)	0433	8.091	0.0890	8.137	0.3907	0.1060	60	-0.12	261.30	0
261	Acid Soluble Mn (8%)	0627	8.100	0.0400	8.137	0.3907	0.1060	60	-0.09	261.35	0
261	Acid Soluble Mn (8%)	0444	8.100	0.0600	8.137	0.3907	0.1060	60	-0.09	261.30	0
261	Acid Soluble Mn (8%)	0538	8.150	0.1000	8.137	0.3907	0.1060	60	0.03	261.12	0
261	Acid Soluble Mn (8%)	0360	8.150	0.0800	8.137	0.3907	0.1060	60	0.03	261.31	0
261	Acid Soluble Mn (8%)	0600	8.150	0.2000	8.137	0.3907	0.1060	60	0.03	261.99	0
261	Acid Soluble Mn (8%)	0605	8.180	0.1000	8.137	0.3907	0.1060	60	0.11	261.99	0
261	Acid Soluble Mn (8%)	0558	8.186	0.0069	8.137	0.3907	0.1060	60	0.13	261.12	0
261	Acid Soluble Mn (8%)	0136	8.200	0.0200	8.137	0.3907	0.1060	60	0.16	261.35	0
261	Acid Soluble Mn (8%)	0587	8.260	0.1000	8.137	0.3907	0.1060	60	0.31	261.99	0
261	Acid Soluble Mn (8%)	0494	8.347	0.2847	8.137	0.3907	0.1060	60	0.54	261.35	0
261	Acid Soluble Mn (8%)	0518	8.350	0.1000	8.137	0.3907	0.1060	60	0.55	261.99	0
261	Acid Soluble Mn (8%)	0559	8.355	0.0100	8.137	0.3907	0.1060	60	0.56	261.99	0
261	Acid Soluble Mn (8%)	0049	8.370	0.2800	8.137	0.3907	0.1060	60	0.60	261.32	0
261	Acid Soluble Mn (8%)	0451	8.375	0.1430	8.137	0.3907	0.1060	60	0.61	261.32	0
261	Acid Soluble Mn (8%)	0102	8.375	0.0300	8.137	0.3907	0.1060	60	0.61	261.35	0
261	Acid Soluble Mn (8%)	0354	8.390	0.1000	8.137	0.3907	0.1060	60	0.65	261.30	0
261	Acid Soluble Mn (8%)	0513	8.435	0.0900	8.137	0.3907	0.1060	60	0.76	261.32	0
261	Acid Soluble Mn (8%)	0023	8.452	0.0930	8.137	0.3907	0.1060	60	0.81	261.99	0
261	Acid Soluble Mn (8%)	0324	8.475	0.6300	8.137	0.3907	0.1060	60	0.87	261.31	0
261	Acid Soluble Mn (8%)	0630	8.489	0.0110	8.137	0.3907	0.1060	60	0.90	261.35	0
261	Acid Soluble Mn (8%)	0543	8.491	0.1670	8.137	0.3907	0.1060	60	0.90	261.35	0
261	Acid Soluble Mn (8%)	0029	8.542	0.2610	8.137	0.3907	0.1060	60	1.04	261.12	0
261	Acid Soluble Mn (8%)	0394	8.551	0.8666	8.137	0.3907	0.1060	60	1.06	261.35	0
261	Acid Soluble Mn (8%)	0027	8.760	0.1870	8.137	0.3907	0.1060	60	1.59	261.99	0
261	Acid Soluble Mn (8%)	0055	8.764	0.4865	8.137	0.3907	0.1060	60	1.61	261.35	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
261	Acid Soluble Mn (8%)	0619	8.785	0.0100	8.137	0.3907	0.1060	60	1.66	261.32	0
261	Acid Soluble Mn (8%)	0619	8.785	0.0100	8.137	0.3907	0.1060	60	1.66	261.99	0
261	Acid Soluble Mn (8%)	0452	8.985±	0.0780	8.137	0.3907	0.1060	60	2.17	261.35	0
261	Acid Soluble Mn (8%)	0521	9.150±	0.0000	8.137	0.3907	0.1060	60	2.59	261.34	0
261	Acid Soluble Mn (8%)	0422	9.261±	0.1280	8.137	0.3907	0.1060	60	2.88	261.30	0
261	Acid Soluble Mn (8%)	0035	6.600±	1.620	8.137	0.3907	0.1060	60	-3.93	261.30	1
271	Water Soluble Mn (%)	0536	7.990	0.0600	8.203	0.1626	0.0500	4	-1.31	271.00	0
271	Water Soluble Mn (%)	0577	8.165	0.0300	8.203	0.1626	0.0500	4	-0.23	271.00	0
271	Water Soluble Mn (%)	0619	8.300	0.0800	8.203	0.1626	0.0500	4	0.60	271.30	0
271	Water Soluble Mn (%)	0619	8.355	0.0300	8.203	0.1626	0.0500	4	0.94	271.99	0
281	Acid Soluble Hg (ppm)	0220	0.0600	0.0000	0.0740	0.0171	0.0070	3	-0.67	281.99	0
281	Acid Soluble Hg (ppm)	0626	0.0690	0.0040	0.0740	0.0171	0.0070	3	-0.24	281.99	0
281	Acid Soluble Hg (ppm)	0630	0.0930	0.0100	0.0740	0.0171	0.0070	3	0.90	281.30	0
281	Acid Soluble Hg (ppm)	0527	< 0.001		0.0740	0.0171	0.0070	3		281.30	5
281	Acid Soluble Hg (ppm)	0300	< 0.05		0.0740	0.0171	0.0070	3		281.00	5
281	Acid Soluble Hg (ppm)	0515	< 0.1		0.0740	0.0171	0.0070	3		281.30	5
281	Acid Soluble Hg (ppm)	0605	< 1.25		0.0740	0.0171	0.0070	3		281.30	5
281	Acid Soluble Hg (ppm)	0405	< 2		0.0740	0.0171	0.0070	3		281.30	5
289	Acid Soluble Mo (ppm)	0494	3.395	0.1500	4.895	1.425	0.4700	11	-1.05	289.33	0
289	Acid Soluble Mo (ppm)	0255	3.482	2.332	4.895	1.425	0.4700	11	-0.99	289.30	0
289	Acid Soluble Mo (ppm)	0136	3.730	0.1000	4.895	1.425	0.4700	11	-0.82	289.33	0
289	Acid Soluble Mo (ppm)	0630	4.165	0.0080	4.895	1.425	0.4700	11	-0.51	289.30	0
289	Acid Soluble Mo (ppm)	0368	4.550	0.1000	4.895	1.425	0.4700	11	-0.24	289.34	0
289	Acid Soluble Mo (ppm)	0220	4.800	0.4000	4.895	1.425	0.4700	11	-0.07	289.99	0
289	Acid Soluble Mo (ppm)	0220	4.900	0.4000	4.895	1.425	0.4700	11	0.00	289.32	0
289	Acid Soluble Mo (ppm)	0527	5.292	0.2687	4.895	1.425	0.4700	11	0.28	289.33	0
289	Acid Soluble Mo (ppm)	0234	5.500	1.000	4.895	1.425	0.4700	11	0.42	289.30	0
289	Acid Soluble Mo (ppm)	0405	7.000	0.0000	4.895	1.425	0.4700	11	1.48	289.32	0
289	Acid Soluble Mo (ppm)	0300	7.747	1.036	4.895	1.425	0.4700	11	2.00	289.32	0
289	Acid Soluble Mo (ppm)	0515	28.61	14.09	4.895	1.425	0.4700	11	16.64	289.33	1
289	Acid Soluble Mo (ppm)	0106	0.0000	0.0000	4.895	1.425	0.4700	11		289.33	4
289	Acid Soluble Mo (ppm)	0515	< 0.23		4.895	1.425	0.4700	11		289.34	5
289	Acid Soluble Mo (ppm)	0035	< 2.34		4.895	1.425	0.4700	11		289.30	5
289	Acid Soluble Mo (ppm)	0626	< 10		4.895	1.425	0.4700	11		289.33	5
291	Acid Soluble Ni (ppm)	0630	0.2488	0.4685	145.4	19.68	4.798	17	-7.37	291.30	0
291	Acid Soluble Ni (ppm)	0515	105.8	14.39	145.4	19.68	4.798	17	-2.01	291.34	0
291	Acid Soluble Ni (ppm)	0515	122.4	3.300	145.4	19.68	4.798	17	-1.17	291.33	0
291	Acid Soluble Ni (ppm)	0136	131.4	7.560	145.4	19.68	4.798	17	-0.71	291.33	0
291	Acid Soluble Ni (ppm)	0626	136.5	4.300	145.4	19.68	4.798	17	-0.46	291.34	0
291	Acid Soluble Ni (ppm)	0394	139.4	2.490	145.4	19.68	4.798	17	-0.31	291.30	0
291	Acid Soluble Ni (ppm)	0405	140.0	4.000	145.4	19.68	4.798	17	-0.28	291.32	0
291	Acid Soluble Ni (ppm)	0035	142.0	4.000	145.4	19.68	4.798	17	-0.17	291.30	0
291	Acid Soluble Ni (ppm)	0626	143.6	4.300	145.4	19.68	4.798	17	-0.09	291.00	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
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291	Acid Soluble Ni (ppm)	0220	148.0	2.400	145.4	19.68	4.798	17	0.13	291.32	0
291	Acid Soluble Ni (ppm)	0220	155.9	6.600	145.4	19.68	4.798	17	0.53	291.99	0
291	Acid Soluble Ni (ppm)	0300	156.7	10.55	145.4	19.68	4.798	17	0.57	291.32	0
291	Acid Soluble Ni (ppm)	0494	161.5	3.000	145.4	19.68	4.798	17	0.82	291.33	0
291	Acid Soluble Ni (ppm)	0627	163.4	0.6000	145.4	19.68	4.798	17	0.91	291.30	0
291	Acid Soluble Ni (ppm)	0027	164.6	7.971	145.4	19.68	4.798	17	0.98	291.30	0
291	Acid Soluble Ni (ppm)	0255	165.1	5.600	145.4	19.68	4.798	17	1.00	291.99	0
291	Acid Soluble Ni (ppm)	0368	170.0	6.000	145.4	19.68	4.798	17	1.25	291.34	0
291	Acid Soluble Ni (ppm)	0605	180.3	72.32	145.4	19.68	4.798	17	1.77	291.30	1
301	Acid Soluble Se (ppm)	0630	1.560	0.3730	33.56	21.18	1.707	5	-1.51	301.30	0
301	Acid Soluble Se (ppm)	0627	22.04	2.360	33.56	21.18	1.707	5	-0.54	301.30	0
301	Acid Soluble Se (ppm)	0405	46.00	4.000	33.56	21.18	1.707	5	0.59	301.32	0
301	Acid Soluble Se (ppm)	0220	48.90	0.6000	33.56	21.18	1.707	5	0.72	301.99	0
301	Acid Soluble Se (ppm)	0220	49.30	1.200	33.56	21.18	1.707	5	0.74	301.32	0
301	Acid Soluble Se (ppm)	0255	0.0000	0.0000	33.56	21.18	1.707	5		301.99	4
301	Acid Soluble Se (ppm)	0527	< 0.01		33.56	21.18	1.707	5		301.33	5
301	Acid Soluble Se (ppm)	0515	< 0.27		33.56	21.18	1.707	5		301.33	5
301	Acid Soluble Se (ppm)	0515	< 0.27		33.56	21.18	1.707	5		301.34	5
301	Acid Soluble Se (ppm)	0626	< 0.5		33.56	21.18	1.707	5		301.00	5
301	Acid Soluble Se (ppm)	0368	< 1.5		33.56	21.18	1.707	5		301.34	5
301	Acid Soluble Se (ppm)	0605	< 1.65		33.56	21.18	1.707	5		301.30	5
301	Acid Soluble Se (ppm)	0035	< 20.1		33.56	21.18	1.707	5		301.30	5
311	Sodium (%)	0423	1.263	0.0590	1.413	0.1010	0.0718	4	-1.49	311.33	0
311	Sodium (%)	0527	1.453	0.0180	1.413	0.1010	0.0718	4	0.39	311.33	0
311	Sodium (%)	0354	1.460	0.0400	1.413	0.1010	0.0718	4	0.46	311.99	0
311	Sodium (%)	0494	1.477	0.1701	1.413	0.1010	0.0718	4	0.63	311.33	0
321	Acid Soluble Zn (%)	0405	3.135	0.0300	4.035	0.3803	0.0872	34	-2.37	321.32	0
321	Acid Soluble Zn (%)	0515	3.272	1.191	4.035	0.3803	0.0872	34	-2.01	321.99	0
321	Acid Soluble Zn (%)	0533	3.395	0.0100	4.035	0.3803	0.0872	34	-1.68	321.99	0
321	Acid Soluble Zn (%)	0255	3.535	0.0330	4.035	0.3803	0.0872	34	-1.32	321.30	0
321	Acid Soluble Zn (%)	0035	3.590	0.2400	4.035	0.3803	0.0872	34	-1.17	321.30	0
321	Acid Soluble Zn (%)	0423	3.615	0.0100	4.035	0.3803	0.0872	34	-1.11	321.32	0
321	Acid Soluble Zn (%)	0472	3.745	0.1700	4.035	0.3803	0.0872	34	-0.76	321.33	0
321	Acid Soluble Zn (%)	0605	3.745	0.1900	4.035	0.3803	0.0872	34	-0.76	321.99	0
321	Acid Soluble Zn (%)	0307	3.750	0.0200	4.035	0.3803	0.0872	34	-0.75	321.99	0
321	Acid Soluble Zn (%)	0394	3.774	0.0060	4.035	0.3803	0.0872	34	-0.69	321.33	0
321	Acid Soluble Zn (%)	0102	3.785	0.0100	4.035	0.3803	0.0872	34	-0.66	321.33	0
321	Acid Soluble Zn (%)	0260	3.910	0.0800	4.035	0.3803	0.0872	34	-0.33	321.33	0
321	Acid Soluble Zn (%)	0043	3.966	0.0280	4.035	0.3803	0.0872	34	-0.18	321.33	0
321	Acid Soluble Zn (%)	0627	4.015	0.0500	4.035	0.3803	0.0872	34	-0.05	321.33	0
321	Acid Soluble Zn (%)	0300	4.049	0.0630	4.035	0.3803	0.0872	34	0.03	321.32	0
321	Acid Soluble Zn (%)	0106	4.085	1.103	4.035	0.3803	0.0872	34	0.13	321.33	0
321	Acid Soluble Zn (%)	0626	4.085	0.1100	4.035	0.3803	0.0872	34	0.13	321.00	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
321	Acid Soluble Zn (%)	0587	4.085	0.0700	4.035	0.3803	0.0872	34	0.13	321.99	0
321	Acid Soluble Zn (%)	0136	4.120	0.0600	4.035	0.3803	0.0872	34	0.22	321.33	0
321	Acid Soluble Zn (%)	0600	4.125	0.1500	4.035	0.3803	0.0872	34	0.24	321.99	0
321	Acid Soluble Zn (%)	0559	4.165	0.0100	4.035	0.3803	0.0872	34	0.34	321.99	0
321	Acid Soluble Zn (%)	0626	4.180	0.1400	4.035	0.3803	0.0872	34	0.38	321.33	0
321	Acid Soluble Zn (%)	0421	4.217	0.1330	4.035	0.3803	0.0872	34	0.48	321.33	0
321	Acid Soluble Zn (%)	0354	4.225	0.1300	4.035	0.3803	0.0872	34	0.50	321.30	0
321	Acid Soluble Zn (%)	0630	4.226	0.5784	4.035	0.3803	0.0872	34	0.50	321.33	0
321	Acid Soluble Zn (%)	0220	4.255	0.0900	4.035	0.3803	0.0872	34	0.58	321.32	0
321	Acid Soluble Zn (%)	0422	4.257	0.0110	4.035	0.3803	0.0872	34	0.58	321.30	0
321	Acid Soluble Zn (%)	0494	4.261	0.0993	4.035	0.3803	0.0872	34	0.59	321.33	0
321	Acid Soluble Zn (%)	0095	4.320	0.1000	4.035	0.3803	0.0872	34	0.75	321.32	0
321	Acid Soluble Zn (%)	0368	4.473	0.1136	4.035	0.3803	0.0872	34	1.15	321.99	0
321	Acid Soluble Zn (%)	0234	4.510	0.0200	4.035	0.3803	0.0872	34	1.25	321.30	0
321	Acid Soluble Zn (%)	0027	4.530	0.0840	4.035	0.3803	0.0872	34	1.30	321.99	0
321	Acid Soluble Zn (%)	0619	4.650	0.0800	4.035	0.3803	0.0872	34	1.62	321.30	0
321	Acid Soluble Zn (%)	0619	4.650	0.0800	4.035	0.3803	0.0872	34	1.62	321.99	0
321	Acid Soluble Zn (%)	0515	6.955	1.703	4.035	0.3803	0.0872	34	7.68	321.33	1
325	Water Soluble Zn (%)	0538	0.6050	0.0100	2.005	1.212	0.0100	3	-1.15	325.00	0
325	Water Soluble Zn (%)	0619	2.705	0.0100	2.005	1.212	0.0100	3	0.58	325.30	0
325	Water Soluble Zn (%)	0619	2.705	0.0100	2.005	1.212	0.0100	3	0.58	325.99	0

Interpreting Z Scores and Flags:

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, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

Notes:

*Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. Identical duplicates not included in calculation of Rob R-bar. Your offset values are higher (‡) or lower (†) than the Robust Analyte value ± Investigational Allowance. 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.