

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 200811

WS 20-20-20 w/micros

Statistical Summary

Analytes: 36

Labs Reporting: 69

Issue Date : 09/30/2020

Analyte Code	Analyte Sample # 200811	# 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
001	Ammoniacal N (%)	21	21	3.332	0.5339	3.298		0.5166	0.1409	15.66%		0.0987	3.34%
002	Nitrate N (%)	11	10	6.588	1.118	6.576		0.9537	0.3770	14.50%		0.1089	3.01%
005	Urea N (%)	11	11	10.05	1.180	9.994		1.093	0.4119	10.94%		0.2651	2.83%
007	Urea (%)	2	2	10.32	0.3924								
009	Ammoniacal Plus Nitrate N (%)	1		10.18									
010	Total N (20%)	62	60	20.10	0.9012	20.14	0.7314	0.5528	0.0892	2.74%	1.76	0.2711	2.55%
020	Total P2O5 (%)	34	32	14.85	1.156	14.72		0.6755	0.1493	4.59%		0.2454	2.67%
030	Citrate Insoluble P2O5 (%)	2	2	0.0150	0.0071								
040	Indirect Available P2O5 (20%)	3	3	14.69	0.2972	14.69	0.7000	0.2972	0.2145	2.02%	0.99	0.1800	2.67%
041	Direct Available P2O5 (20%)	34	33	14.90	1.121	14.75	0.7000	0.5487	0.1194	3.72%	1.83	0.1538	2.67%
048	Water Soluble P2O5 (%)	7	7	14.58	0.2546	14.58		0.2887	0.1364	1.98%		0.2116	2.67%
050	Soluble K2O (20%)	67	66	23.47	2.500	23.54	1.1963	1.662	0.2558	7.06%	3.24	0.4961	2.49%
060	Water (Free) (%)	1		0.6950									
101	Acid Soluble Ca (%)	6	4	0.2950	0.5601	0.2950	0.2147	0.5601	0.3500	189.89%	6.08	0.4356	4.81%
121	Acid Soluble Mg (%)	10	8	0.0215	0.0298	0.0117	0.2006	0.0034	0.0015	28.78%	0.04	0.0014	7.81%
143	Elemental S (%)	2	2	0.0475	0.0106								
148	Total S (%)	8	6	0.0635	0.0285	0.0549	0.2027	0.0095	0.0048	17.26%	0.11	0.0058	6.19%
149	S - HNO3 soluble (%)	1		0.0503									
151	Acid Soluble As (ppm)	17	6	0.1480	0.0598	0.1480		0.0678	0.0346	45.81%		0.0108	21.33%
165	Acid Soluble B (0.02%)	33	31	0.0201	0.0066	0.0196	0.0059	0.0023	0.0005	11.76%	0.90	0.0014	7.23%
171	Water Soluble B (%)	3	3	0.0193	0.0008	0.0193		0.0008	0.0006	4.10%		0.0013	7.24%
181	Acid Soluble Cd (ppm)	17	5	0.0163	0.0115	0.0163		0.0115	0.0064	70.68%		0.0020	29.73%
191	Acid Soluble Cr (ppm)	16	13	1.148	0.7653	1.148		0.8679	0.3009	75.60%		0.2106	15.67%
202	Acid Soluble Co (ppm)	16	10	0.5069	0.6579	0.3242	1.0973	0.1271	0.0502	39.20%	0.27	0.0339	18.95%
221	Acid Soluble Cu (0.05%)	47	45	0.0501	0.0098	0.0489	0.0099	0.0040	0.0007	8.15%	0.94	0.0018	6.30%
241	Acid Soluble Fe (0.1%)	48	46	0.1061	0.0309	0.1014	0.0151	0.0088	0.0016	8.71%	1.36	0.0084	5.64%
251	Acid Soluble Pb (ppm)	17	3	0.0550	0.0382	0.0550		0.0382	0.0275	69.46%		0.0106	24.76%
261	Acid Soluble Mn (0.05%)	46	45	0.0475	0.0046	0.0480	0.0098	0.0035	0.0007	7.30%	0.83	0.0011	6.32%
271	Water Soluble Mn (%)	1		0.0510									
281	Acid Soluble Hg (ppm)	9	1	0.0290		0.0480		0.0035	0.0044	7.30%		0.0020	25.26%
289	Acid Soluble Mo (5ppm)	23	19	4.534	1.726	4.532	2.3596	1.953	0.5600	43.09%	1.93	0.7226	12.74%
291	Acid Soluble Ni (ppm)	15	10	0.6230	0.5750	0.6230		0.6521	0.2578	104.68%		0.1475	17.18%
301	Acid Soluble Se (ppm)	13	6	1.243	1.607	1.243		1.822	0.9300	146.59%		0.2730	15.48%

Analyte Code	Analyte Sample # 200811	# 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
311	Sodium (%)	6	6	0.2262	0.0236	0.2259	0.0276	0.0262	0.0134	11.58%	2.21	0.0128	5.00%
321	Acid Soluble Zn (0.05%)	50	49	0.0517	0.0185	0.0497	0.0100	0.0017	0.0003	3.35%	0.39	0.0014	6.28%
325	Water Soluble Zn (%)	2	2	0.0985	0.0644								

The Analyte IA Ratio = $2.33 * \text{Robust SD} / \text{IA at the Analyte Assigned Value}$. 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.

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Analyte Proficiency From All Labs

Sample # 200811

WS 20-20-20 w/micros

Lab Values

Analytes: 36

Labs Reporting: 69

Issue Date : 09/30/2020

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 N (%)	0368	2.596	0.0300	3.298	0.5166	0.0987	21	-1.36	001.99	0
001	Ammoniacal N (%)	0231	2.715	0.0100	3.298	0.5166	0.0987	21	-1.13	001.99	0
001	Ammoniacal N (%)	0309	2.735	0.0700	3.298	0.5166	0.0987	21	-1.09	001.10	0
001	Ammoniacal N (%)	0096	2.890	0.0400	3.298	0.5166	0.0987	21	-0.79	001.99	0
001	Ammoniacal N (%)	0394	2.900	0.0750	3.298	0.5166	0.0987	21	-0.77	001.99	0
001	Ammoniacal N (%)	0444	3.000	0.1200	3.298	0.5166	0.0987	21	-0.58	001.10	0
001	Ammoniacal N (%)	0524	3.013	0.0786	3.298	0.5166	0.0987	21	-0.55	001.99	0
001	Ammoniacal N (%)	0546	3.085	0.2700	3.298	0.5166	0.0987	21	-0.41	001.99	0
001	Ammoniacal N (%)	0300	3.110	0.0270	3.298	0.5166	0.0987	21	-0.37	001.99	0
001	Ammoniacal N (%)	0563	3.158	0.0090	3.298	0.5166	0.0987	21	-0.27	001.10	0
001	Ammoniacal N (%)	0230	3.160	0.0800	3.298	0.5166	0.0987	21	-0.27	001.10	0
001	Ammoniacal N (%)	0027	3.199	0.0630	3.298	0.5166	0.0987	21	-0.19	001.99	0
001	Ammoniacal N (%)	0136	3.200	0.0000	3.298	0.5166	0.0987	21	-0.19	001.10	0
001	Ammoniacal N (%)	0529	3.585	0.2100	3.298	0.5166	0.0987	21	0.56	001.99	0
001	Ammoniacal N (%)	0220	3.640	0.0800	3.298	0.5166	0.0987	21	0.66	001.99	0
001	Ammoniacal N (%)	0498	3.690	0.3000	3.298	0.5166	0.0987	21	0.76	001.10	0
001	Ammoniacal N (%)	0486	3.725	0.3500	3.298	0.5166	0.0987	21	0.83	001.10	0
001	Ammoniacal N (%)	0405	3.815	0.0300	3.298	0.5166	0.0987	21	1.00	001.99	0
001	Ammoniacal N (%)	0538	3.900	0.1000	3.298	0.5166	0.0987	21	1.17	001.99	0
001	Ammoniacal N (%)	0255	4.115	0.0300	3.298	0.5166	0.0987	21	1.58	001.99	0
001	Ammoniacal N (%)	0117	4.750	0.1000	3.298	0.5166	0.0987	21	2.81	001.10	0
002	Nitrate N (%)	0529	4.515	0.2100	6.576	0.9537	0.1089	10	-2.01	002.99	0
002	Nitrate N (%)	0368	5.773	0.0100	6.576	0.9537	0.1089	10	-0.78	002.99	0
002	Nitrate N (%)	0538	5.870	0.1400	6.576	0.9537	0.1089	10	-0.69	002.99	0
002	Nitrate N (%)	0136	6.400	0.4000	6.576	0.9537	0.1089	10	-0.17	002.99	0
002	Nitrate N (%)	0029	6.435	0.0500	6.576	0.9537	0.1089	10	-0.14	002.99	0
002	Nitrate N (%)	0486	6.640	0.0200	6.576	0.9537	0.1089	10	0.06	002.99	0
002	Nitrate N (%)	0394	7.025	0.0830	6.576	0.9537	0.1089	10	0.44	002.99	0
002	Nitrate N (%)	0444	7.180	0.0600	6.576	0.9537	0.1089	10	0.59	002.99	0
002	Nitrate N (%)	0027	7.288	0.1160	6.576	0.9537	0.1089	10	0.69	002.99	0
002	Nitrate N (%)	0220	8.750	0.0000	6.576	0.9537	0.1089	10	2.12	002.99	0
002	Nitrate N (%)	0230	9.735	0.7300	6.576	0.9537	0.1089	10	3.08	002.20	1
005	Urea N (%)	0529	8.090	0.4000	9.994	1.093	0.2651	11	-1.63	005.99	0
005	Urea N (%)	0486	9.165	0.1100	9.994	1.093	0.2651	11	-0.71	005.00	0
005	Urea N (%)	0546	9.395	0.6900	9.994	1.093	0.2651	11	-0.51	005.99	0
005	Urea N (%)	0136	9.500	0.6000	9.994	1.093	0.2651	11	-0.42	005.00	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				
005	Urea N (%)	0309	9.690	0.4800	9.994	1.093	0.2651	11	-0.26	005.99	0
005	Urea N (%)	0394	9.862	0.0540	9.994	1.093	0.2651	11	-0.11	005.10	0
005	Urea N (%)	0029	10.18	0.0200	9.994	1.093	0.2651	11	0.16	005.99	0
005	Urea N (%)	0538	10.30	0.2000	9.994	1.093	0.2651	11	0.26	005.99	0
005	Urea N (%)	0405	10.36	0.0900	9.994	1.093	0.2651	11	0.31	005.99	0
005	Urea N (%)	0368	11.50	0.0010	9.994	1.093	0.2651	11	1.29	005.00	0
005	Urea N (%)	0027	12.53	0.2710	9.994	1.093	0.2651	11	2.17	005.99	0
007	Urea (%)	0220	10.05	0.0700				2		007.99	0
007	Urea (%)	0444	10.60	0.0400				2		007.00	0
009	Ammoniacal Plus Nitrate N (%)	0444	10.18	0.0600				1		009.10	0
010	Total N (20%)	0529	16.19†	0.0200	20.14	0.5528	0.2711	60	-7.15	010.99	0
010	Total N (20%)	0035	18.00†	0.2000	20.14	0.5528	0.2711	60	-3.88	010.60	0
010	Total N (20%)	0292	18.44†	0.3900	20.14	0.5528	0.2711	60	-3.09	010.60	0
010	Total N (20%)	0300	18.60†	0.4590	20.14	0.5528	0.2711	60	-2.80	010.16	0
010	Total N (20%)	0523	19.20†	0.0000	20.14	0.5528	0.2711	60	-1.70	010.60	0
010	Total N (20%)	0422	19.25†	0.3000	20.14	0.5528	0.2711	60	-1.61	010.60	0
010	Total N (20%)	0073	19.35†	0.0900	20.14	0.5528	0.2711	60	-1.44	010.60	0
010	Total N (20%)	0230	19.40†	0.8000	20.14	0.5528	0.2711	60	-1.34	010.60	0
010	Total N (20%)	0498	19.65	0.1000	20.14	0.5528	0.2711	60	-0.89	010.12	0
010	Total N (20%)	0034	19.66	0.0300	20.14	0.5528	0.2711	60	-0.88	010.60	0
010	Total N (20%)	0029	19.72	0.4500	20.14	0.5528	0.2711	60	-0.77	010.60	0
010	Total N (20%)	0486	19.72	0.0700	20.14	0.5528	0.2711	60	-0.77	010.60	0
010	Total N (20%)	0309	19.73	0.1800	20.14	0.5528	0.2711	60	-0.75	010.11	0
010	Total N (20%)	0394	19.79	0.0620	20.14	0.5528	0.2711	60	-0.64	010.99	0
010	Total N (20%)	0096	19.79	0.1200	20.14	0.5528	0.2711	60	-0.64	010.60	0
010	Total N (20%)	0040	19.80	0.2000	20.14	0.5528	0.2711	60	-0.62	010.60	0
010	Total N (20%)	0516	19.81	0.8200	20.14	0.5528	0.2711	60	-0.60	010.60	0
010	Total N (20%)	0356	19.81	0.1790	20.14	0.5528	0.2711	60	-0.60	010.60	0
010	Total N (20%)	0524	19.87	0.1669	20.14	0.5528	0.2711	60	-0.50	010.99	0
010	Total N (20%)	0538	19.94	0.0900	20.14	0.5528	0.2711	60	-0.38	010.99	0
010	Total N (20%)	0049	19.95	0.1900	20.14	0.5528	0.2711	60	-0.36	010.60	0
010	Total N (20%)	0043	19.97	0.0200	20.14	0.5528	0.2711	60	-0.31	010.60	0
010	Total N (20%)	0542	20.00	0.0850	20.14	0.5528	0.2711	60	-0.26	010.60	0
010	Total N (20%)	0136	20.00	0.2000	20.14	0.5528	0.2711	60	-0.26	010.60	0
010	Total N (20%)	0402	20.07	0.1130	20.14	0.5528	0.2711	60	-0.13	010.60	0
010	Total N (20%)	0389	20.10	0.3900	20.14	0.5528	0.2711	60	-0.09	010.60	0
010	Total N (20%)	0220	20.11	0.2200	20.14	0.5528	0.2711	60	-0.06	010.11	0
010	Total N (20%)	0472	20.13	0.5800	20.14	0.5528	0.2711	60	-0.02	010.60	0
010	Total N (20%)	0055	20.14	0.3200	20.14	0.5528	0.2711	60	0.00	010.60	0
010	Total N (20%)	0291	20.18	0.0100	20.14	0.5528	0.2711	60	0.06	010.60	0
010	Total N (20%)	0325	20.20	0.0000	20.14	0.5528	0.2711	60	0.10	010.60	0
010	Total N (20%)	0231	20.22	0.0400	20.14	0.5528	0.2711	60	0.14	010.60	0
010	Total N (20%)	0368	20.23	0.0920	20.14	0.5528	0.2711	60	0.16	010.60	0
010	Total N (20%)	0451	20.26	0.6300	20.14	0.5528	0.2711	60	0.20	010.60	0
010	Total N (20%)	0095	20.27	0.8900	20.14	0.5528	0.2711	60	0.22	010.60	0
010	Total N (20%)	0234	20.30	0.0100	20.14	0.5528	0.2711	60	0.28	010.60	0
010	Total N (20%)	0324	20.30	0.2000	20.14	0.5528	0.2711	60	0.29	010.60	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				
010	Total N (20%)	0037	20.30	0.5690	20.14	0.5528	0.2711	60	0.29	010.60	0
010	Total N (20%)	0546	20.31	0.0100	20.14	0.5528	0.2711	60	0.29	010.11	0
010	Total N (20%)	0513	20.31	0.0600	20.14	0.5528	0.2711	60	0.30	010.99	0
010	Total N (20%)	0494	20.32	0.3300	20.14	0.5528	0.2711	60	0.31	010.60	0
010	Total N (20%)	0177	20.35	0.0700	20.14	0.5528	0.2711	60	0.37	010.60	0
010	Total N (20%)	0157	20.35	0.5000	20.14	0.5528	0.2711	60	0.38	010.60	0
010	Total N (20%)	0561	20.36	0.1800	20.14	0.5528	0.2711	60	0.39	010.60	0
010	Total N (20%)	0025	20.41	0.0200	20.14	0.5528	0.2711	60	0.48	010.60	0
010	Total N (20%)	0405	20.47	0.1700	20.14	0.5528	0.2711	60	0.58	010.60	0
010	Total N (20%)	0360	20.48	0.6500	20.14	0.5528	0.2711	60	0.60	010.60	0
010	Total N (20%)	0023	20.55	0.0000	20.14	0.5528	0.2711	60	0.74	010.60	0
010	Total N (20%)	0027	20.59	1.020	20.14	0.5528	0.2711	60	0.81	010.60	0
010	Total N (20%)	0354	20.60	0.2000	20.14	0.5528	0.2711	60	0.83	010.60	0
010	Total N (20%)	0527	20.67	0.1740	20.14	0.5528	0.2711	60	0.95	010.60	0
010	Total N (20%)	0390	20.74	0.6300	20.14	0.5528	0.2711	60	1.07	010.60	0
010	Total N (20%)	0444	20.78	0.1000	20.14	0.5528	0.2711	60	1.15	010.60	0
010	Total N (20%)	0450	20.90‡	0.2000	20.14	0.5528	0.2711	60	1.37	010.60	0
010	Total N (20%)	0547	20.94‡	0.0500	20.14	0.5528	0.2711	60	1.43	010.60	0
010	Total N (20%)	0255	20.97‡	0.0690	20.14	0.5528	0.2711	60	1.49	010.60	0
010	Total N (20%)	0377	21.20‡	1.100	20.14	0.5528	0.2711	60	1.91	010.60	0
010	Total N (20%)	0169	21.73‡	0.0500	20.14	0.5528	0.2711	60	2.86	010.60	0
010	Total N (20%)	0563	21.86‡	0.8760	20.14	0.5528	0.2711	60	3.10	010.12	0
010	Total N (20%)	0114	22.81‡	0.5200	20.14	0.5528	0.2711	60	4.83	010.60	0
010	Total N (20%)	0041	19.54	1.810	20.14	0.5528	0.2711	60	-1.10	010.60	1
010	Total N (20%)	0105	4.330†	0.2000	20.14	0.5528	0.2711	60	-28.60	010.11	2
020	Total P2O5 (%)	0390	13.35	0.9000	14.72	0.6755	0.2454	32	-2.03	020.50	0
020	Total P2O5 (%)	0389	13.44	0.0600	14.72	0.6755	0.2454	32	-1.90	020.50	0
020	Total P2O5 (%)	0523	13.60	0.2000	14.72	0.6755	0.2454	32	-1.66	020.50	0
020	Total P2O5 (%)	0472	13.69	0.0200	14.72	0.6755	0.2454	32	-1.53	020.50	0
020	Total P2O5 (%)	0547	13.80	0.2000	14.72	0.6755	0.2454	32	-1.36	020.50	0
020	Total P2O5 (%)	0552	14.16	0.4200	14.72	0.6755	0.2454	32	-0.83	020.50	0
020	Total P2O5 (%)	0309	14.28	0.5400	14.72	0.6755	0.2454	32	-0.65	020.20	0
020	Total P2O5 (%)	0096	14.37	0.0500	14.72	0.6755	0.2454	32	-0.53	020.40	0
020	Total P2O5 (%)	0035	14.43	0.4400	14.72	0.6755	0.2454	32	-0.43	020.40	0
020	Total P2O5 (%)	0513	14.48	0.0500	14.72	0.6755	0.2454	32	-0.37	020.99	0
020	Total P2O5 (%)	0231	14.50	0.0300	14.72	0.6755	0.2454	32	-0.34	020.20	0
020	Total P2O5 (%)	0292	14.63	0.0900	14.72	0.6755	0.2454	32	-0.14	020.20	0
020	Total P2O5 (%)	0529	14.70	0.0400	14.72	0.6755	0.2454	32	-0.03	020.99	0
020	Total P2O5 (%)	0444	14.71	0.1100	14.72	0.6755	0.2454	32	-0.02	020.10	0
020	Total P2O5 (%)	0300	14.75	0.0300	14.72	0.6755	0.2454	32	0.03	020.20	0
020	Total P2O5 (%)	0356	14.77	0.0090	14.72	0.6755	0.2454	32	0.07	020.20	0
020	Total P2O5 (%)	0524	14.78	0.3795	14.72	0.6755	0.2454	32	0.09	020.50	0
020	Total P2O5 (%)	0114	14.81	0.0800	14.72	0.6755	0.2454	32	0.13	020.10	0
020	Total P2O5 (%)	0291	14.83	0.0100	14.72	0.6755	0.2454	32	0.15	020.50	0
020	Total P2O5 (%)	0405	14.83	0.0800	14.72	0.6755	0.2454	32	0.16	020.20	0
020	Total P2O5 (%)	0324	14.85	0.1000	14.72	0.6755	0.2454	32	0.19	020.20	0
020	Total P2O5 (%)	0542	14.85	0.2800	14.72	0.6755	0.2454	32	0.19	020.50	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				
020	Total P2O5 (%)	0561	15.10	0.0300	14.72	0.6755	0.2454	32	0.55	020.20	0
020	Total P2O5 (%)	0433	15.10	0.0900	14.72	0.6755	0.2454	32	0.55	020.50	0
020	Total P2O5 (%)	0422	15.10	0.6000	14.72	0.6755	0.2454	32	0.56	020.50	0
020	Total P2O5 (%)	0444	15.12	0.2400	14.72	0.6755	0.2454	32	0.59	020.50	0
020	Total P2O5 (%)	0042	15.15	0.7000	14.72	0.6755	0.2454	32	0.63	020.50	0
020	Total P2O5 (%)	0527	15.27	0.3311	14.72	0.6755	0.2454	32	0.81	020.50	0
020	Total P2O5 (%)	0368	15.79	0.0880	14.72	0.6755	0.2454	32	1.59	020.50	0
020	Total P2O5 (%)	0169	15.85	0.1000	14.72	0.6755	0.2454	32	1.67	020.50	0
020	Total P2O5 (%)	0255	15.96	0.0530	14.72	0.6755	0.2454	32	1.83	020.50	0
020	Total P2O5 (%)	0515	20.14	1.503	14.72	0.6755	0.2454	32	8.01	020.99	0
020	Total P2O5 (%)	0402	18.96	2.033	14.72	0.6755	0.2454	32	6.27	020.50	1
020	Total P2O5 (%)	0516	29.16	0.0270	14.72	0.6755	0.2454	32	21.37	020.50	2
030	Citrate Insoluble P2O5 (%)	0405	0.0100	0.0000				2		030.20	0
030	Citrate Insoluble P2O5 (%)	0096	0.0200	0.0000				2		030.40	0
040	Indirect Available P2O5 (20%)	0096	14.35	0.0600	14.69	0.2972	0.1800	3	-1.14	040.40	0
040	Indirect Available P2O5 (20%)	0405	14.82	0.0800	14.69	0.2972	0.1800	3	0.44	040.99	0
040	Indirect Available P2O5 (20%)	0498	14.90	0.4000	14.69	0.2972	0.1800	3	0.71	040.20	0
041	Direct Available P2O5 (20%)	0095	13.02†	0.4200	14.75	0.5487	0.1538	33	-3.16	041.40	0
041	Direct Available P2O5 (20%)	0055	13.61†	0.0700	14.75	0.5487	0.1538	33	-2.09	041.21	0
041	Direct Available P2O5 (20%)	0027	14.05†	0.1640	14.75	0.5487	0.1538	33	-1.28	041.20	0
041	Direct Available P2O5 (20%)	0377	14.06	0.0100	14.75	0.5487	0.1538	33	-1.27	041.51	0
041	Direct Available P2O5 (20%)	0102	14.10	0.2000	14.75	0.5487	0.1538	33	-1.19	041.10	0
041	Direct Available P2O5 (20%)	0513	14.42	0.0600	14.75	0.5487	0.1538	33	-0.61	041.11	0
041	Direct Available P2O5 (20%)	0177	14.45	0.0295	14.75	0.5487	0.1538	33	-0.56	041.21	0
041	Direct Available P2O5 (20%)	0023	14.45	0.1000	14.75	0.5487	0.1538	33	-0.55	041.51	0
041	Direct Available P2O5 (20%)	0136	14.45	0.5000	14.75	0.5487	0.1538	33	-0.55	041.51	0
041	Direct Available P2O5 (20%)	0494	14.49	0.4500	14.75	0.5487	0.1538	33	-0.49	041.10	0
041	Direct Available P2O5 (20%)	0040	14.55	0.3000	14.75	0.5487	0.1538	33	-0.37	041.51	0
041	Direct Available P2O5 (20%)	0049	14.56	0.0400	14.75	0.5487	0.1538	33	-0.35	041.10	0
041	Direct Available P2O5 (20%)	0494	14.64	0.1200	14.75	0.5487	0.1538	33	-0.20	041.51	0
041	Direct Available P2O5 (20%)	0177	14.64	0.0208	14.75	0.5487	0.1538	33	-0.20	041.10	0
041	Direct Available P2O5 (20%)	0220	14.65	0.0500	14.75	0.5487	0.1538	33	-0.20	041.11	0
041	Direct Available P2O5 (20%)	0368	14.69	0.1750	14.75	0.5487	0.1538	33	-0.11	041.50	0
041	Direct Available P2O5 (20%)	0472	14.69	0.3600	14.75	0.5487	0.1538	33	-0.11	041.21	0
041	Direct Available P2O5 (20%)	0231	14.72	0.0300	14.75	0.5487	0.1538	33	-0.07	041.21	0
041	Direct Available P2O5 (20%)	0029	14.72	0.2800	14.75	0.5487	0.1538	33	-0.06	041.40	0
041	Direct Available P2O5 (20%)	0043	14.73	0.0700	14.75	0.5487	0.1538	33	-0.05	041.51	0
041	Direct Available P2O5 (20%)	0300	14.73	0.0000	14.75	0.5487	0.1538	33	-0.04	041.20	0
041	Direct Available P2O5 (20%)	0117	14.83	0.2095	14.75	0.5487	0.1538	33	0.14	041.51	0
041	Direct Available P2O5 (20%)	0394	14.84	0.1280	14.75	0.5487	0.1538	33	0.16	041.21	0
041	Direct Available P2O5 (20%)	0405	15.05	0.0800	14.75	0.5487	0.1538	33	0.54	041.21	0
041	Direct Available P2O5 (20%)	0360	15.07	0.0500	14.75	0.5487	0.1538	33	0.57	041.51	0
041	Direct Available P2O5 (20%)	0405	15.14	0.0600	14.75	0.5487	0.1538	33	0.71	041.11	0
041	Direct Available P2O5 (20%)	0073	15.17	0.0600	14.75	0.5487	0.1538	33	0.76	041.11	0
041	Direct Available P2O5 (20%)	0034	15.24	0.0900	14.75	0.5487	0.1538	33	0.88	041.40	0
041	Direct Available P2O5 (20%)	0486	15.67‡	0.1900	14.75	0.5487	0.1538	33	1.66	041.51	0
041	Direct Available P2O5 (20%)	0055	15.81‡	0.0100	14.75	0.5487	0.1538	33	1.92	041.11	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				
041	Direct Available P2O5 (20%)	0354	16.20‡	0.4000	14.75	0.5487	0.1538	33	2.64	041.21	0
041	Direct Available P2O5 (20%)	0325	16.35‡	0.1000	14.75	0.5487	0.1538	33	2.91	041.50	0
041	Direct Available P2O5 (20%)	0538	19.98‡	0.2500	14.75	0.5487	0.1538	33	9.52	041.99	0
041	Direct Available P2O5 (20%)	0025	15.10	1.200	14.75	0.5487	0.1538	33	0.63	041.51	1
048	Water Soluble P2O5 (%)	0444	14.17	0.0400	14.58	0.2887	0.2116	7	-1.27	048.50	0
048	Water Soluble P2O5 (%)	0513	14.46	0.0300	14.58	0.2887	0.2116	7	-0.38	048.99	0
048	Water Soluble P2O5 (%)	0096	14.48	0.3900	14.58	0.2887	0.2116	7	-0.32	048.40	0
048	Water Soluble P2O5 (%)	0444	14.59	0.0600	14.58	0.2887	0.2116	7	0.04	048.10	0
048	Water Soluble P2O5 (%)	0546	14.66	0.0850	14.58	0.2887	0.2116	7	0.26	048.50	0
048	Water Soluble P2O5 (%)	0472	14.69	0.6200	14.58	0.2887	0.2116	7	0.35	048.20	0
048	Water Soluble P2O5 (%)	0394	15.00	0.2560	14.58	0.2887	0.2116	7	1.32	048.20	0
050	Soluble K2O (20%)	0389	12.34†	0.1500	23.54	1.662	0.4961	66	-6.74	050.99	0
050	Soluble K2O (20%)	0523	16.85†	0.9000	23.54	1.662	0.4961	66	-4.03	050.99	0
050	Soluble K2O (20%)	0450	19.76†	0.2800	23.54	1.662	0.4961	66	-2.28	050.99	0
050	Soluble K2O (20%)	0538	19.96†	0.1200	23.54	1.662	0.4961	66	-2.16	050.99	0
050	Soluble K2O (20%)	0515	20.88†	0.2725	23.54	1.662	0.4961	66	-1.60	050.99	0
050	Soluble K2O (20%)	0472	21.20†	0.0000	23.54	1.662	0.4961	66	-1.41	050.31	0
050	Soluble K2O (20%)	0325	21.25†	1.100	23.54	1.662	0.4961	66	-1.38	050.99	0
050	Soluble K2O (20%)	0547	21.34†	0.3000	23.54	1.662	0.4961	66	-1.33	050.99	0
050	Soluble K2O (20%)	0371	21.35†	0.6700	23.54	1.662	0.4961	66	-1.32	050.99	0
050	Soluble K2O (20%)	0055	21.37†	2.190	23.54	1.662	0.4961	66	-1.31	050.00	0
050	Soluble K2O (20%)	0529	21.43†	0.4800	23.54	1.662	0.4961	66	-1.27	050.60	0
050	Soluble K2O (20%)	0073	21.79†	1.380	23.54	1.662	0.4961	66	-1.06	050.30	0
050	Soluble K2O (20%)	0498	21.95†	0.5000	23.54	1.662	0.4961	66	-0.96	050.31	0
050	Soluble K2O (20%)	0390	22.22†	0.8400	23.54	1.662	0.4961	66	-0.80	050.50	0
050	Soluble K2O (20%)	0102	22.50	1.000	23.54	1.662	0.4961	66	-0.63	050.00	0
050	Soluble K2O (20%)	0049	22.70	0.0200	23.54	1.662	0.4961	66	-0.51	050.00	0
050	Soluble K2O (20%)	0255	22.82	0.3530	23.54	1.662	0.4961	66	-0.44	050.99	0
050	Soluble K2O (20%)	0169	22.87	0.0700	23.54	1.662	0.4961	66	-0.41	050.50	0
050	Soluble K2O (20%)	0552	22.90	0.2400	23.54	1.662	0.4961	66	-0.39	050.99	0
050	Soluble K2O (20%)	0513	22.92	0.0600	23.54	1.662	0.4961	66	-0.38	050.62	0
050	Soluble K2O (20%)	0394	22.95	0.0130	23.54	1.662	0.4961	66	-0.36	050.99	0
050	Soluble K2O (20%)	0354	23.05	0.1000	23.54	1.662	0.4961	66	-0.30	050.52	0
050	Soluble K2O (20%)	0524	23.06	0.2309	23.54	1.662	0.4961	66	-0.29	050.99	0
050	Soluble K2O (20%)	0368	23.15	0.3380	23.54	1.662	0.4961	66	-0.24	050.51	0
050	Soluble K2O (20%)	0494	23.22	0.7800	23.54	1.662	0.4961	66	-0.20	050.52	0
050	Soluble K2O (20%)	0043	23.26	1.750	23.54	1.662	0.4961	66	-0.17	050.52	0
050	Soluble K2O (20%)	0360	23.32	0.0300	23.54	1.662	0.4961	66	-0.14	050.52	0
050	Soluble K2O (20%)	0096	23.37	2.100	23.54	1.662	0.4961	66	-0.11	050.99	0
050	Soluble K2O (20%)	0324	23.40	0.2000	23.54	1.662	0.4961	66	-0.09	050.50	0
050	Soluble K2O (20%)	0231	23.42	0.0500	23.54	1.662	0.4961	66	-0.08	050.00	0
050	Soluble K2O (20%)	0114	23.49	0.1100	23.54	1.662	0.4961	66	-0.04	050.00	0
050	Soluble K2O (20%)	0025	23.50	0.6000	23.54	1.662	0.4961	66	-0.03	050.52	0
050	Soluble K2O (20%)	0486	23.51	0.2200	23.54	1.662	0.4961	66	-0.02	050.52	0
050	Soluble K2O (20%)	0561	23.55	0.2700	23.54	1.662	0.4961	66	0.00	050.00	0
050	Soluble K2O (20%)	0377	23.56	0.2900	23.54	1.662	0.4961	66	0.01	050.52	0
050	Soluble K2O (20%)	0095	23.61	1.100	23.54	1.662	0.4961	66	0.04	050.62	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 K2O (20%)	0029	23.68	0.1000	23.54	1.662	0.4961	66	0.08	050.62	0
050	Soluble K2O (20%)	0300	23.73	0.7300	23.54	1.662	0.4961	66	0.11	050.99	0
050	Soluble K2O (20%)	0494	23.76	0.5600	23.54	1.662	0.4961	66	0.13	050.00	0
050	Soluble K2O (20%)	0177	23.79	0.1551	23.54	1.662	0.4961	66	0.15	050.99	0
050	Soluble K2O (20%)	0157	23.90	1.000	23.54	1.662	0.4961	66	0.21	050.30	0
050	Soluble K2O (20%)	0356	24.15	0.2670	23.54	1.662	0.4961	66	0.36	050.30	0
050	Soluble K2O (20%)	0444	24.21	0.0400	23.54	1.662	0.4961	66	0.40	050.50	0
050	Soluble K2O (20%)	0220	24.25	0.0500	23.54	1.662	0.4961	66	0.42	050.00	0
050	Soluble K2O (20%)	0023	24.25	0.1000	23.54	1.662	0.4961	66	0.42	050.52	0
050	Soluble K2O (20%)	0117	24.31	0.6854	23.54	1.662	0.4961	66	0.46	050.52	0
050	Soluble K2O (20%)	0433	24.38	0.1100	23.54	1.662	0.4961	66	0.50	050.99	0
050	Soluble K2O (20%)	0546	24.39	0.4660	23.54	1.662	0.4961	66	0.51	050.99	0
050	Soluble K2O (20%)	0035	24.42	1.670	23.54	1.662	0.4961	66	0.52	050.61	0
050	Soluble K2O (20%)	0234	24.50	0.5000	23.54	1.662	0.4961	66	0.57	050.99	0
050	Soluble K2O (20%)	0040	24.60	0.2000	23.54	1.662	0.4961	66	0.63	050.30	0
050	Soluble K2O (20%)	0136	24.65	0.3000	23.54	1.662	0.4961	66	0.66	050.52	0
050	Soluble K2O (20%)	0563	24.99‡	0.6795	23.54	1.662	0.4961	66	0.87	050.99	0
050	Soluble K2O (20%)	0042	25.10‡	0.2000	23.54	1.662	0.4961	66	0.94	050.99	0
050	Soluble K2O (20%)	0405	25.16‡	0.0600	23.54	1.662	0.4961	66	0.97	050.00	0
050	Soluble K2O (20%)	0034	25.20‡	1.980	23.54	1.662	0.4961	66	1.00	050.62	0
050	Soluble K2O (20%)	0309	25.27‡	0.4400	23.54	1.662	0.4961	66	1.04	050.30	0
050	Soluble K2O (20%)	0291	25.29‡	0.0100	23.54	1.662	0.4961	66	1.05	050.51	0
050	Soluble K2O (20%)	0292	25.46‡	0.0300	23.54	1.662	0.4961	66	1.15	050.50	0
050	Soluble K2O (20%)	0527	25.53‡	0.2627	23.54	1.662	0.4961	66	1.20	050.99	0
050	Soluble K2O (20%)	0027	25.77‡	0.3500	23.54	1.662	0.4961	66	1.34	050.99	0
050	Soluble K2O (20%)	0422	25.85‡	0.9000	23.54	1.662	0.4961	66	1.39	050.50	0
050	Soluble K2O (20%)	0542	27.35‡	0.7300	23.54	1.662	0.4961	66	2.29	050.99	0
050	Soluble K2O (20%)	0402	27.57‡	0.2740	23.54	1.662	0.4961	66	2.42	050.99	0
050	Soluble K2O (20%)	0230	27.75‡	0.5000	23.54	1.662	0.4961	66	2.53	050.00	0
050	Soluble K2O (20%)	0516	31.90‡	0.2880	23.54	1.662	0.4961	66	5.02	050.99	0
050	Soluble K2O (20%)	0041	22.38	4.160	23.54	1.662	0.4961	66	-0.70	050.60	1
060	Water (Free) (%)	0096	0.6950	0.0900				1		060.00	0
101	Acid Soluble Ca (%)	0096	0.0098	0.0024	0.2950	0.5601	0.4356	4	-0.43	101.30	0
101	Acid Soluble Ca (%)	0354	0.0100	0.0000	0.2950	0.5601	0.4356	4	-0.43	101.30	0
101	Acid Soluble Ca (%)	0472	0.0250	0.0100	0.2950	0.5601	0.4356	4	-0.41	101.30	0
101	Acid Soluble Ca (%)	0552	1.135	1.730	0.2950	0.5601	0.4356	4	1.27	101.99	0
101	Acid Soluble Ca (%)	0527	< 0.001		0.2950	0.5601	0.4356	4		101.33	5
101	Acid Soluble Ca (%)	0563	< 0.01		0.2950	0.5601	0.4356	4		101.33	5
121	Acid Soluble Mg (%)	0524	0.0085	0.0001	0.0117	0.0034	0.0014	8	-0.89	121.99	0
121	Acid Soluble Mg (%)	0389	0.0095	0.0010	0.0117	0.0034	0.0014	8	-0.60	121.99	0
121	Acid Soluble Mg (%)	0096	0.0100	0.0000	0.0117	0.0034	0.0014	8	-0.47	121.30	0
121	Acid Soluble Mg (%)	0523	0.0100	0.0000	0.0117	0.0034	0.0014	8	-0.47	121.99	0
121	Acid Soluble Mg (%)	0494	0.0108	0.0006	0.0117	0.0034	0.0014	8	-0.25	121.33	0
121	Acid Soluble Mg (%)	0527	0.0130	0.0005	0.0117	0.0034	0.0014	8	0.33	121.33	0
121	Acid Soluble Mg (%)	0563	0.0153	0.0011	0.0117	0.0034	0.0014	8	0.96	121.33	0
121	Acid Soluble Mg (%)	0516	0.0950	0.0080	0.0117	0.0034	0.0014	8	22.59	121.99	0
121	Acid Soluble Mg (%)	0552	0.3200	0.4000	0.0117	0.0034	0.0014	8	83.63	121.99	1

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 Mg (%)	0354	< 0.01		0.0117	0.0034	0.0014	8		121.30	5
143	Elemental S (%)	0472	0.0400	0.0000				2		143.99	0
143	Elemental S (%)	0389	0.0550	0.0100				2		143.99	0
148	Total S (%)	0494	0.0459	0.0085	0.0549	0.0095	0.0058	6	-0.85	148.07	0
148	Total S (%)	0523	0.0500	0.0000	0.0549	0.0095	0.0058	6	-0.46	148.99	0
148	Total S (%)	0096	0.0515	0.0030	0.0549	0.0095	0.0058	6	-0.32	148.99	0
148	Total S (%)	0515	0.0527	0.0052	0.0549	0.0095	0.0058	6	-0.20	148.07	0
148	Total S (%)	0354	0.0600	0.0000	0.0549	0.0095	0.0058	6	0.48	148.99	0
148	Total S (%)	0516	0.1210	0.0180	0.0549	0.0095	0.0058	6	6.22	148.99	0
148	Total S (%)	0527	< 0.01		0.0549	0.0095	0.0058	6		148.07	5
148	Total S (%)	0563	< 0.03		0.0549	0.0095	0.0058	6		148.07	5
149	S - HNO3 soluble (%)	0524	0.0503	0.0027				1		149.04	0
151	Acid Soluble As (ppm)	0523	0.0950	0.0000	0.1480	0.0678	0.0108	6	-0.78	151.30	0
151	Acid Soluble As (ppm)	0450	0.1000	0.0000	0.1480	0.0678	0.0108	6	-0.71	151.30	0
151	Acid Soluble As (ppm)	0529	0.1050	0.0100	0.1480	0.0678	0.0108	6	-0.63	151.32	0
151	Acid Soluble As (ppm)	0255	0.1505	0.0030	0.1480	0.0678	0.0108	6	0.04	151.30	0
151	Acid Soluble As (ppm)	0524	0.1980	0.0400	0.1480	0.0678	0.0108	6	0.74	151.30	0
151	Acid Soluble As (ppm)	0563	0.2397	0.0118	0.1480	0.0678	0.0108	6	1.35	151.33	0
151	Acid Soluble As (ppm)	0220	0.6500	0.1000	0.1480	0.0678	0.0108	6	7.40	151.99	1
151	Acid Soluble As (ppm)	0515	0.0000	0.0000	0.1480	0.0678	0.0108	6		151.33	4
151	Acid Soluble As (ppm)	0515	0.0000	0.0000	0.1480	0.0678	0.0108	6		151.34	4
151	Acid Soluble As (ppm)	0527	< 0.0001		0.1480	0.0678	0.0108	6		151.33	5
151	Acid Soluble As (ppm)	0498	< 0.2		0.1480	0.0678	0.0108	6		151.00	5
151	Acid Soluble As (ppm)	0368	< 0.4		0.1480	0.0678	0.0108	6		151.34	5
151	Acid Soluble As (ppm)	0136	< 0.5		0.1480	0.0678	0.0108	6		151.33	5
151	Acid Soluble As (ppm)	0405	< 1		0.1480	0.0678	0.0108	6		151.99	5
151	Acid Soluble As (ppm)	0494	< 1.42		0.1480	0.0678	0.0108	6		151.33	5
151	Acid Soluble As (ppm)	0300	< 2		0.1480	0.0678	0.0108	6		151.32	5
151	Acid Soluble As (ppm)	0117	< 10		0.1480	0.0678	0.0108	6		151.33	5
165	Acid Soluble B (0.02%)	0234	0.01000†	0.0000	0.0196	0.0023	0.0014	31	-4.17	165.30	0
165	Acid Soluble B (0.02%)	0529	0.01000†	0.0000	0.0196	0.0023	0.0014	31	-4.17	165.30	0
165	Acid Soluble B (0.02%)	0515	0.01105†	0.0037	0.0196	0.0023	0.0014	31	-3.71	165.99	0
165	Acid Soluble B (0.02%)	0169	0.0165	0.0010	0.0196	0.0023	0.0014	31	-1.35	165.30	0
165	Acid Soluble B (0.02%)	0524	0.0166	0.0003	0.0196	0.0023	0.0014	31	-1.33	165.99	0
165	Acid Soluble B (0.02%)	0043	0.0175	0.0010	0.0196	0.0023	0.0014	31	-0.92	165.30	0
165	Acid Soluble B (0.02%)	0527	0.0176	0.0004	0.0196	0.0023	0.0014	31	-0.87	165.99	0
165	Acid Soluble B (0.02%)	0486	0.0185	0.0010	0.0196	0.0023	0.0014	31	-0.48	165.99	0
165	Acid Soluble B (0.02%)	0377	0.0186	0.0001	0.0196	0.0023	0.0014	31	-0.46	165.30	0
165	Acid Soluble B (0.02%)	0117	0.0187	0.0001	0.0196	0.0023	0.0014	31	-0.42	165.99	0
165	Acid Soluble B (0.02%)	0324	0.0190	0.0004	0.0196	0.0023	0.0014	31	-0.27	165.30	0
165	Acid Soluble B (0.02%)	0444	0.0190	0.0000	0.0196	0.0023	0.0014	31	-0.27	165.30	0
165	Acid Soluble B (0.02%)	0360	0.0195	0.0010	0.0196	0.0023	0.0014	31	-0.05	165.99	0
165	Acid Soluble B (0.02%)	0498	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	165.00	0
165	Acid Soluble B (0.02%)	0102	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	165.30	0
165	Acid Soluble B (0.02%)	0354	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	165.30	0
165	Acid Soluble B (0.02%)	0371	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	165.30	0
165	Acid Soluble B (0.02%)	0231	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	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 B (0.02%)	0300	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	165.99	0
165	Acid Soluble B (0.02%)	0472	0.0200	0.0000	0.0196	0.0023	0.0014	31	0.17	165.99	0
165	Acid Soluble B (0.02%)	0368	0.0204	0.0001	0.0196	0.0023	0.0014	31	0.32	165.99	0
165	Acid Soluble B (0.02%)	0433	0.0204	0.0000	0.0196	0.0023	0.0014	31	0.34	165.30	0
165	Acid Soluble B (0.02%)	0394	0.0210	0.0020	0.0196	0.0023	0.0014	31	0.60	165.30	0
165	Acid Soluble B (0.02%)	0029	0.0210	0.0000	0.0196	0.0023	0.0014	31	0.60	165.00	0
165	Acid Soluble B (0.02%)	0390	0.0213	0.0056	0.0196	0.0023	0.0014	31	0.73	165.99	0
165	Acid Soluble B (0.02%)	0042	0.0215	0.0030	0.0196	0.0023	0.0014	31	0.82	165.99	0
165	Acid Soluble B (0.02%)	0402	0.0217	0.0004	0.0196	0.0023	0.0014	31	0.90	165.30	0
165	Acid Soluble B (0.02%)	0255	0.0220	0.0020	0.0196	0.0023	0.0014	31	1.03	165.99	0
165	Acid Soluble B (0.02%)	0563	0.0228	0.0000	0.0196	0.0023	0.0014	31	1.38	165.99	0
165	Acid Soluble B (0.02%)	0220	0.02700‡	0.0000	0.0196	0.0023	0.0014	31	3.20	165.00	0
165	Acid Soluble B (0.02%)	0309	0.05000‡	0.0200	0.0196	0.0023	0.0014	31	13.17	165.00	0
165	Acid Soluble B (0.02%)	0516	0.1210‡	0.0060	0.0196	0.0023	0.0014	31	43.94	165.99	2
165	Acid Soluble B (0.02%)	0552	0.04500‡	0.0900	0.0196	0.0023	0.0014	31		165.99	4
171	Water Soluble B (%)	0546	0.0185	0.0009	0.0193	0.0008	0.0013	3	-1.10	171.99	0
171	Water Soluble B (%)	0538	0.0195	0.0030	0.0193	0.0008	0.0013	3	0.23	171.10	0
171	Water Soluble B (%)	0027	0.0200	0.0000	0.0193	0.0008	0.0013	3	0.86	171.99	0
181	Acid Soluble Cd (ppm)	0523	0.0020	0.0000	0.0163	0.0115	0.0020	5	-1.24	181.30	0
181	Acid Soluble Cd (ppm)	0255	0.0070	0.0060	0.0163	0.0115	0.0020	5	-0.81	181.30	0
181	Acid Soluble Cd (ppm)	0389	0.0200	0.0000	0.0163	0.0115	0.0020	5	0.32	181.30	0
181	Acid Soluble Cd (ppm)	0563	0.0224	0.0042	0.0163	0.0115	0.0020	5	0.53	181.33	0
181	Acid Soluble Cd (ppm)	0529	0.0300	0.0000	0.0163	0.0115	0.0020	5	1.19	181.32	0
181	Acid Soluble Cd (ppm)	0524	0.0164	0.0086	0.0163	0.0115	0.0020	5	0.01	181.30	1
181	Acid Soluble Cd (ppm)	0515	0.0000	0.0000	0.0163	0.0115	0.0020	5		181.33	4
181	Acid Soluble Cd (ppm)	0515	0.0000	0.0000	0.0163	0.0115	0.0020	5		181.34	4
181	Acid Soluble Cd (ppm)	0527	< 0.0001		0.0163	0.0115	0.0020	5		181.33	5
181	Acid Soluble Cd (ppm)	0405	< 0.01		0.0163	0.0115	0.0020	5		181.99	5
181	Acid Soluble Cd (ppm)	0498	< 0.1		0.0163	0.0115	0.0020	5		181.00	5
181	Acid Soluble Cd (ppm)	0368	< 0.1		0.0163	0.0115	0.0020	5		181.34	5
181	Acid Soluble Cd (ppm)	0220	< 0.1		0.0163	0.0115	0.0020	5		181.99	5
181	Acid Soluble Cd (ppm)	0394	< 0.14		0.0163	0.0115	0.0020	5		181.30	5
181	Acid Soluble Cd (ppm)	0300	< 0.5		0.0163	0.0115	0.0020	5		181.32	5
181	Acid Soluble Cd (ppm)	0136	< 0.5		0.0163	0.0115	0.0020	5		181.33	5
181	Acid Soluble Cd (ppm)	0117	< 5		0.0163	0.0115	0.0020	5		181.33	5
191	Acid Soluble Cr (ppm)	0368	0.1510	0.0540	1.148	0.8679	0.2106	13	-1.15	191.34	0
191	Acid Soluble Cr (ppm)	0563	0.2690	0.0060	1.148	0.8679	0.2106	13	-1.01	191.33	0
191	Acid Soluble Cr (ppm)	0529	0.2750	0.0900	1.148	0.8679	0.2106	13	-1.01	191.32	0
191	Acid Soluble Cr (ppm)	0523	0.3280	0.0000	1.148	0.8679	0.2106	13	-0.94	191.30	0
191	Acid Soluble Cr (ppm)	0527	0.5423	0.0245	1.148	0.8679	0.2106	13	-0.70	191.33	0
191	Acid Soluble Cr (ppm)	0450	1.000	0.0000	1.148	0.8679	0.2106	13	-0.17	191.30	0
191	Acid Soluble Cr (ppm)	0524	1.110	0.0255	1.148	0.8679	0.2106	13	-0.04	191.30	0
191	Acid Soluble Cr (ppm)	0444	1.600	0.1600	1.148	0.8679	0.2106	13	0.52	191.30	0
191	Acid Soluble Cr (ppm)	0515	1.664	1.548	1.148	0.8679	0.2106	13	0.59	191.34	0
191	Acid Soluble Cr (ppm)	0394	1.805	0.0300	1.148	0.8679	0.2106	13	0.76	191.30	0
191	Acid Soluble Cr (ppm)	0220	1.900	0.2000	1.148	0.8679	0.2106	13	0.87	191.99	0
191	Acid Soluble Cr (ppm)	0389	2.115	0.0300	1.148	0.8679	0.2106	13	1.11	191.30	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				
191	Acid Soluble Cr (ppm)	0035	2.165	0.5700	1.148	0.8679	0.2106	13	1.17	191.30	0
191	Acid Soluble Cr (ppm)	0515	15.87	12.09	1.148	0.8679	0.2106	13	16.96	191.33	1
191	Acid Soluble Cr (ppm)	0405	< 1		1.148	0.8679	0.2106	13		191.99	5
191	Acid Soluble Cr (ppm)	0300	< 5		1.148	0.8679	0.2106	13		191.32	5
202	Acid Soluble Co (ppm)	0220	0.1150	0.0100	0.3242	0.1271	0.0339	10	-1.65	202.99	0
202	Acid Soluble Co (ppm)	0529	0.2000	0.0200	0.3242	0.1271	0.0339	10	-0.98	202.32	0
202	Acid Soluble Co (ppm)	0255	0.2615	0.0090	0.3242	0.1271	0.0339	10	-0.49	202.99	0
202	Acid Soluble Co (ppm)	0389	0.3000	0.0000	0.3242	0.1271	0.0339	10	-0.19	202.30	0
202	Acid Soluble Co (ppm)	0523	0.3010	0.0000	0.3242	0.1271	0.0339	10	-0.18	202.30	0
202	Acid Soluble Co (ppm)	0527	0.3316	0.0212	0.3242	0.1271	0.0339	10	0.06	202.33	0
202	Acid Soluble Co (ppm)	0563	0.3605	0.0200	0.3242	0.1271	0.0339	10	0.29	202.33	0
202	Acid Soluble Co (ppm)	0405	0.4000	0.0000	0.3242	0.1271	0.0339	10	0.60	202.99	0
202	Acid Soluble Co (ppm)	0524	0.4390	0.1770	0.3242	0.1271	0.0339	10	0.90	202.30	0
202	Acid Soluble Co (ppm)	0368	2.360	0.0820	0.3242	0.1271	0.0339	10	16.02	202.34	0
202	Acid Soluble Co (ppm)	0546	0.2018	0.2195	0.3242	0.1271	0.0339	10	-0.96	202.33	1
202	Acid Soluble Co (ppm)	0515	0.0000	0.0000	0.3242	0.1271	0.0339	10		202.33	4
202	Acid Soluble Co (ppm)	0515	0.0000	0.0000	0.3242	0.1271	0.0339	10		202.34	4
202	Acid Soluble Co (ppm)	0494	< 0.7		0.3242	0.1271	0.0339	10		202.33	5
202	Acid Soluble Co (ppm)	0300	< 1		0.3242	0.1271	0.0339	10		202.32	5
202	Acid Soluble Co (ppm)	0136	< 3		0.3242	0.1271	0.0339	10		202.33	5
221	Acid Soluble Cu (0.05%)	0023	0.0400	0.0000	0.0489	0.0040	0.0018	45	-2.24	221.30	0
221	Acid Soluble Cu (0.05%)	0389	0.0400	0.0000	0.0489	0.0040	0.0018	45	-2.24	221.99	0
221	Acid Soluble Cu (0.05%)	0390	0.0411	0.0140	0.0489	0.0040	0.0018	45	-1.96	221.99	0
221	Acid Soluble Cu (0.05%)	0498	0.0420	0.0000	0.0489	0.0040	0.0018	45	-1.74	221.01	0
221	Acid Soluble Cu (0.05%)	0035	0.0440	0.0020	0.0489	0.0040	0.0018	45	-1.23	221.30	0
221	Acid Soluble Cu (0.05%)	0095	0.0448	0.0049	0.0489	0.0040	0.0018	45	-1.05	221.30	0
221	Acid Soluble Cu (0.05%)	0157	0.0450	0.0040	0.0489	0.0040	0.0018	45	-0.98	221.30	0
221	Acid Soluble Cu (0.05%)	0300	0.0450	0.0000	0.0489	0.0040	0.0018	45	-0.98	221.32	0
221	Acid Soluble Cu (0.05%)	0524	0.0454	0.0013	0.0489	0.0040	0.0018	45	-0.90	221.99	0
221	Acid Soluble Cu (0.05%)	0433	0.0456	0.0009	0.0489	0.0040	0.0018	45	-0.85	221.30	0
221	Acid Soluble Cu (0.05%)	0486	0.0460	0.0020	0.0489	0.0040	0.0018	45	-0.73	221.33	0
221	Acid Soluble Cu (0.05%)	0324	0.0461	0.0011	0.0489	0.0040	0.0018	45	-0.72	221.30	0
221	Acid Soluble Cu (0.05%)	0394	0.0464	0.0005	0.0489	0.0040	0.0018	45	-0.65	221.32	0
221	Acid Soluble Cu (0.05%)	0494	0.0464	0.0046	0.0489	0.0040	0.0018	45	-0.63	221.33	0
221	Acid Soluble Cu (0.05%)	0405	0.0477	0.0015	0.0489	0.0040	0.0018	45	-0.32	221.99	0
221	Acid Soluble Cu (0.05%)	0377	0.0480	0.0002	0.0489	0.0040	0.0018	45	-0.23	221.30	0
221	Acid Soluble Cu (0.05%)	0523	0.0480	0.0000	0.0489	0.0040	0.0018	45	-0.23	221.99	0
221	Acid Soluble Cu (0.05%)	0220	0.0483	0.0002	0.0489	0.0040	0.0018	45	-0.16	221.99	0
221	Acid Soluble Cu (0.05%)	0527	0.0487	0.0007	0.0489	0.0040	0.0018	45	-0.07	221.33	0
221	Acid Soluble Cu (0.05%)	0360	0.0490	0.0000	0.0489	0.0040	0.0018	45	0.02	221.30	0
221	Acid Soluble Cu (0.05%)	0546	0.0492	0.0010	0.0489	0.0040	0.0018	45	0.07	221.33	0
221	Acid Soluble Cu (0.05%)	0538	0.0495	0.0030	0.0489	0.0040	0.0018	45	0.14	221.00	0
221	Acid Soluble Cu (0.05%)	0220	0.0495	0.0010	0.0489	0.0040	0.0018	45	0.14	221.32	0
221	Acid Soluble Cu (0.05%)	0040	0.0497	0.0002	0.0489	0.0040	0.0018	45	0.19	221.00	0
221	Acid Soluble Cu (0.05%)	0368	0.0499	0.0026	0.0489	0.0040	0.0018	45	0.24	221.99	0
221	Acid Soluble Cu (0.05%)	0102	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.30	0
221	Acid Soluble Cu (0.05%)	0231	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	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 Cu (0.05%)	0354	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.30	0
221	Acid Soluble Cu (0.05%)	0444	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.30	0
221	Acid Soluble Cu (0.05%)	0472	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.30	0
221	Acid Soluble Cu (0.05%)	0529	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.32	0
221	Acid Soluble Cu (0.05%)	0037	0.0500	0.0020	0.0489	0.0040	0.0018	45	0.27	221.33	0
221	Acid Soluble Cu (0.05%)	0043	0.0500	0.0020	0.0489	0.0040	0.0018	45	0.27	221.33	0
221	Acid Soluble Cu (0.05%)	0136	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.33	0
221	Acid Soluble Cu (0.05%)	0042	0.0500	0.0000	0.0489	0.0040	0.0018	45	0.27	221.99	0
221	Acid Soluble Cu (0.05%)	0096	0.0517	0.0002	0.0489	0.0040	0.0018	45	0.70	221.30	0
221	Acid Soluble Cu (0.05%)	0563	0.0519	0.0011	0.0489	0.0040	0.0018	45	0.73	221.33	0
221	Acid Soluble Cu (0.05%)	0029	0.0520	0.0006	0.0489	0.0040	0.0018	45	0.77	221.00	0
221	Acid Soluble Cu (0.05%)	0027	0.0530	0.0020	0.0489	0.0040	0.0018	45	1.02	221.99	0
221	Acid Soluble Cu (0.05%)	0234	0.0550	0.0100	0.0489	0.0040	0.0018	45	1.52	221.30	0
221	Acid Soluble Cu (0.05%)	0117	0.0551	0.0079	0.0489	0.0040	0.0018	45	1.54	221.33	0
221	Acid Soluble Cu (0.05%)	0402	0.0558	0.0003	0.0489	0.0040	0.0018	45	1.71	221.30	0
221	Acid Soluble Cu (0.05%)	0255	0.0570	0.0020	0.0489	0.0040	0.0018	45	2.02	221.30	0
221	Acid Soluble Cu (0.05%)	0371	0.06000‡	0.0000	0.0489	0.0040	0.0018	45	2.78	221.30	0
221	Acid Soluble Cu (0.05%)	0516	0.1085‡	0.0090	0.0489	0.0040	0.0018	45	14.94	221.99	0
221	Acid Soluble Cu (0.05%)	0515	0.06505‡	0.0251	0.0489	0.0040	0.0018	45	4.04	221.99	1
221	Acid Soluble Cu (0.05%)	0552	0.09000‡	0.0400	0.0489	0.0040	0.0018	45	10.30	221.30	1
241	Acid Soluble Fe (0.1%)	0498	0.06350†	0.0010	0.1014	0.0088	0.0084	46	-4.29	241.01	0
241	Acid Soluble Fe (0.1%)	0035	0.08600†	0.0040	0.1014	0.0088	0.0084	46	-1.75	241.30	0
241	Acid Soluble Fe (0.1%)	0300	0.0895	0.0010	0.1014	0.0088	0.0084	46	-1.35	241.32	0
241	Acid Soluble Fe (0.1%)	0023	0.0900	0.0000	0.1014	0.0088	0.0084	46	-1.29	241.30	0
241	Acid Soluble Fe (0.1%)	0389	0.0900	0.0000	0.1014	0.0088	0.0084	46	-1.29	241.99	0
241	Acid Soluble Fe (0.1%)	0095	0.0902	0.0081	0.1014	0.0088	0.0084	46	-1.28	241.30	0
241	Acid Soluble Fe (0.1%)	0157	0.0910	0.0140	0.1014	0.0088	0.0084	46	-1.18	241.30	0
241	Acid Soluble Fe (0.1%)	0524	0.0921	0.0021	0.1014	0.0088	0.0084	46	-1.06	241.99	0
241	Acid Soluble Fe (0.1%)	0394	0.0923	0.0009	0.1014	0.0088	0.0084	46	-1.04	241.32	0
241	Acid Soluble Fe (0.1%)	0354	0.0950	0.0100	0.1014	0.0088	0.0084	46	-0.73	241.30	0
241	Acid Soluble Fe (0.1%)	0390	0.0964	0.0001	0.1014	0.0088	0.0084	46	-0.57	241.30	0
241	Acid Soluble Fe (0.1%)	0177	0.0966	0.0063	0.1014	0.0088	0.0084	46	-0.55	241.33	0
241	Acid Soluble Fe (0.1%)	0546	0.0969	0.0009	0.1014	0.0088	0.0084	46	-0.52	241.33	0
241	Acid Soluble Fe (0.1%)	0043	0.0985	0.0010	0.1014	0.0088	0.0084	46	-0.33	241.33	0
241	Acid Soluble Fe (0.1%)	0096	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.30	0
241	Acid Soluble Fe (0.1%)	0102	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.30	0
241	Acid Soluble Fe (0.1%)	0231	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.30	0
241	Acid Soluble Fe (0.1%)	0371	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.30	0
241	Acid Soluble Fe (0.1%)	0472	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.30	0
241	Acid Soluble Fe (0.1%)	0055	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.33	0
241	Acid Soluble Fe (0.1%)	0405	0.1000	0.0000	0.1014	0.0088	0.0084	46	-0.16	241.99	0
241	Acid Soluble Fe (0.1%)	0324	0.1005	0.0010	0.1014	0.0088	0.0084	46	-0.10	241.30	0
241	Acid Soluble Fe (0.1%)	0037	0.1005	0.0090	0.1014	0.0088	0.0084	46	-0.10	241.33	0
241	Acid Soluble Fe (0.1%)	0563	0.1005	0.0068	0.1014	0.0088	0.0084	46	-0.10	241.33	0
241	Acid Soluble Fe (0.1%)	0523	0.1005	0.0010	0.1014	0.0088	0.0084	46	-0.10	241.99	0
241	Acid Soluble Fe (0.1%)	0356	0.1010	0.0020	0.1014	0.0088	0.0084	46	-0.05	241.00	0
241	Acid Soluble Fe (0.1%)	0368	0.1015	0.0066	0.1014	0.0088	0.0084	46	0.01	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 Fe (0.1%)	0255	0.1020	0.0020	0.1014	0.0088	0.0084	46	0.07	241.30	0
241	Acid Soluble Fe (0.1%)	0494	0.1023	0.0030	0.1014	0.0088	0.0084	46	0.10	241.33	0
241	Acid Soluble Fe (0.1%)	0360	0.1035	0.0030	0.1014	0.0088	0.0084	46	0.24	241.30	0
241	Acid Soluble Fe (0.1%)	0486	0.1035	0.0030	0.1014	0.0088	0.0084	46	0.24	241.33	0
241	Acid Soluble Fe (0.1%)	0516	0.1040	0.0020	0.1014	0.0088	0.0084	46	0.29	241.99	0
241	Acid Soluble Fe (0.1%)	0527	0.1045	0.0040	0.1014	0.0088	0.0084	46	0.35	241.33	0
241	Acid Soluble Fe (0.1%)	0515	0.1052	0.0051	0.1014	0.0088	0.0084	46	0.42	241.99	0
241	Acid Soluble Fe (0.1%)	0027	0.1060	0.0020	0.1014	0.0088	0.0084	46	0.52	241.99	0
241	Acid Soluble Fe (0.1%)	0029	0.1080	0.0076	0.1014	0.0088	0.0084	46	0.75	241.00	0
241	Acid Soluble Fe (0.1%)	0040	0.1100	0.0000	0.1014	0.0088	0.0084	46	0.97	241.00	0
241	Acid Soluble Fe (0.1%)	0234	0.1100	0.0000	0.1014	0.0088	0.0084	46	0.97	241.30	0
241	Acid Soluble Fe (0.1%)	0444	0.1100	0.0000	0.1014	0.0088	0.0084	46	0.97	241.30	0
241	Acid Soluble Fe (0.1%)	0220	0.1110	0.0020	0.1014	0.0088	0.0084	46	1.08	241.03	0
241	Acid Soluble Fe (0.1%)	0433	0.1131	0.0013	0.1014	0.0088	0.0084	46	1.32	241.30	0
241	Acid Soluble Fe (0.1%)	0402	0.1155	0.0017	0.1014	0.0088	0.0084	46	1.59	241.30	0
241	Acid Soluble Fe (0.1%)	0042	0.1200‡	0.0000	0.1014	0.0088	0.0084	46	2.10	241.99	0
241	Acid Soluble Fe (0.1%)	0377	0.1201‡	0.0082	0.1014	0.0088	0.0084	46	2.12	241.30	0
241	Acid Soluble Fe (0.1%)	0515	0.1677‡	0.1259	0.1014	0.0088	0.0084	46	7.50	241.33	0
241	Acid Soluble Fe (0.1%)	0552	0.2900‡	0.1400	0.1014	0.0088	0.0084	46	21.36	241.30	0
241	Acid Soluble Fe (0.1%)	0117	0.5371‡	0.8822	0.1014	0.0088	0.0084	46	49.34	241.33	1
241	Acid Soluble Fe (0.1%)	0538	0.5455‡	0.8890	0.1014	0.0088	0.0084	46	50.30	241.00	1
251	Acid Soluble Pb (ppm)	0523	0.0190	0.0000	0.0550	0.0382	0.0106	3	-0.94	251.30	0
251	Acid Soluble Pb (ppm)	0524	0.0509	0.0217	0.0550	0.0382	0.0106	3	-0.11	251.30	0
251	Acid Soluble Pb (ppm)	0529	0.0950	0.0100	0.0550	0.0382	0.0106	3	1.05	251.32	0
251	Acid Soluble Pb (ppm)	0255	0.0000	0.0000	0.0550	0.0382	0.0106	3		251.30	4
251	Acid Soluble Pb (ppm)	0515	0.0000	0.0000	0.0550	0.0382	0.0106	3		251.33	4
251	Acid Soluble Pb (ppm)	0515	0.0000	0.0000	0.0550	0.0382	0.0106	3		251.34	4
251	Acid Soluble Pb (ppm)	0450	0.1500	0.3000	0.0550	0.0382	0.0106	3		251.30	4
251	Acid Soluble Pb (ppm)	0527	< 0.0001		0.0550	0.0382	0.0106	3		251.33	5
251	Acid Soluble Pb (ppm)	0563	< 0.01		0.0550	0.0382	0.0106	3		251.33	5
251	Acid Soluble Pb (ppm)	0405	< 0.2		0.0550	0.0382	0.0106	3		251.99	5
251	Acid Soluble Pb (ppm)	0498	< 0.5		0.0550	0.0382	0.0106	3		251.00	5
251	Acid Soluble Pb (ppm)	0136	< 0.5		0.0550	0.0382	0.0106	3		251.33	5
251	Acid Soluble Pb (ppm)	0394	< 0.68		0.0550	0.0382	0.0106	3		251.30	5
251	Acid Soluble Pb (ppm)	0368	< 0.7		0.0550	0.0382	0.0106	3		251.34	5
251	Acid Soluble Pb (ppm)	0220	< 1		0.0550	0.0382	0.0106	3		251.99	5
251	Acid Soluble Pb (ppm)	0300	< 5		0.0550	0.0382	0.0106	3		251.32	5
251	Acid Soluble Pb (ppm)	0117	< 5		0.0550	0.0382	0.0106	3		251.33	5
261	Acid Soluble Mn (0.05%)	0498	0.03050†	0.0010	0.0480	0.0035	0.0011	45	-4.99	261.13	0
261	Acid Soluble Mn (0.05%)	0394	0.03795†	0.0009	0.0480	0.0035	0.0011	45	-2.87	261.34	0
261	Acid Soluble Mn (0.05%)	0354	0.0400	0.0000	0.0480	0.0035	0.0011	45	-2.28	261.30	0
261	Acid Soluble Mn (0.05%)	0023	0.0400	0.0000	0.0480	0.0035	0.0011	45	-2.28	261.32	0
261	Acid Soluble Mn (0.05%)	0389	0.0400	0.0000	0.0480	0.0035	0.0011	45	-2.28	261.99	0
261	Acid Soluble Mn (0.05%)	0157	0.0420	0.0040	0.0480	0.0035	0.0011	45	-1.71	261.30	0
261	Acid Soluble Mn (0.05%)	0042	0.0430	0.0000	0.0480	0.0035	0.0011	45	-1.43	261.99	0
261	Acid Soluble Mn (0.05%)	0095	0.0439	0.0027	0.0480	0.0035	0.0011	45	-1.18	261.99	0
261	Acid Soluble Mn (0.05%)	0524	0.0442	0.0016	0.0480	0.0035	0.0011	45	-1.08	261.99	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				
261	Acid Soluble Mn (0.05%)	0043	0.0450	0.0000	0.0480	0.0035	0.0011	45	-0.86	261.35	0
261	Acid Soluble Mn (0.05%)	0255	0.0450	0.0020	0.0480	0.0035	0.0011	45	-0.86	261.99	0
261	Acid Soluble Mn (0.05%)	0035	0.0455	0.0010	0.0480	0.0035	0.0011	45	-0.71	261.30	0
261	Acid Soluble Mn (0.05%)	0300	0.0460	0.0000	0.0480	0.0035	0.0011	45	-0.57	261.32	0
261	Acid Soluble Mn (0.05%)	0377	0.0463	0.0015	0.0480	0.0035	0.0011	45	-0.50	261.32	0
261	Acid Soluble Mn (0.05%)	0546	0.0471	0.0017	0.0480	0.0035	0.0011	45	-0.27	261.35	0
261	Acid Soluble Mn (0.05%)	0096	0.0473	0.0015	0.0480	0.0035	0.0011	45	-0.21	261.30	0
261	Acid Soluble Mn (0.05%)	0324	0.0475	0.0017	0.0480	0.0035	0.0011	45	-0.16	261.31	0
261	Acid Soluble Mn (0.05%)	0405	0.0481	0.0022	0.0480	0.0035	0.0011	45	0.03	261.99	0
261	Acid Soluble Mn (0.05%)	0117	0.0482	0.0004	0.0480	0.0035	0.0011	45	0.06	261.35	0
261	Acid Soluble Mn (0.05%)	0527	0.0485	0.0003	0.0480	0.0035	0.0011	45	0.13	261.35	0
261	Acid Soluble Mn (0.05%)	0390	0.0489	0.0000	0.0480	0.0035	0.0011	45	0.26	261.30	0
261	Acid Soluble Mn (0.05%)	0486	0.0490	0.0020	0.0480	0.0035	0.0011	45	0.28	261.35	0
261	Acid Soluble Mn (0.05%)	0433	0.0491	0.0007	0.0480	0.0035	0.0011	45	0.30	261.30	0
261	Acid Soluble Mn (0.05%)	0368	0.0491	0.0009	0.0480	0.0035	0.0011	45	0.30	261.99	0
261	Acid Soluble Mn (0.05%)	0515	0.0492	0.0012	0.0480	0.0035	0.0011	45	0.34	261.99	0
261	Acid Soluble Mn (0.05%)	0494	0.0495	0.0006	0.0480	0.0035	0.0011	45	0.43	261.35	0
261	Acid Soluble Mn (0.05%)	0538	0.0500	0.0020	0.0480	0.0035	0.0011	45	0.57	261.12	0
261	Acid Soluble Mn (0.05%)	0529	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.14	0
261	Acid Soluble Mn (0.05%)	0102	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.30	0
261	Acid Soluble Mn (0.05%)	0234	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.30	0
261	Acid Soluble Mn (0.05%)	0472	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.30	0
261	Acid Soluble Mn (0.05%)	0360	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.31	0
261	Acid Soluble Mn (0.05%)	0231	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.32	0
261	Acid Soluble Mn (0.05%)	0371	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.32	0
261	Acid Soluble Mn (0.05%)	0055	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.35	0
261	Acid Soluble Mn (0.05%)	0027	0.0500	0.0000	0.0480	0.0035	0.0011	45	0.57	261.99	0
261	Acid Soluble Mn (0.05%)	0523	0.0505	0.0030	0.0480	0.0035	0.0011	45	0.71	261.99	0
261	Acid Soluble Mn (0.05%)	0444	0.0510	0.0000	0.0480	0.0035	0.0011	45	0.86	261.30	0
261	Acid Soluble Mn (0.05%)	0516	0.0510	0.0000	0.0480	0.0035	0.0011	45	0.86	261.99	0
261	Acid Soluble Mn (0.05%)	0040	0.0510	0.0020	0.0480	0.0035	0.0011	45	0.86	261.12	0
261	Acid Soluble Mn (0.05%)	0037	0.0510	0.0040	0.0480	0.0035	0.0011	45	0.86	261.35	0
261	Acid Soluble Mn (0.05%)	0220	0.0515	0.0010	0.0480	0.0035	0.0011	45	1.00	261.15	0
261	Acid Soluble Mn (0.05%)	0029	0.0521	0.0055	0.0480	0.0035	0.0011	45	1.15	261.12	0
261	Acid Soluble Mn (0.05%)	0563	0.0523	0.0018	0.0480	0.0035	0.0011	45	1.23	261.35	0
261	Acid Soluble Mn (0.05%)	0402	0.0560	0.0015	0.0480	0.0035	0.0011	45	2.27	261.30	0
261	Acid Soluble Mn (0.05%)	0552	0.1650±	0.2300	0.0480	0.0035	0.0011	45	33.37	261.32	2
271	Water Soluble Mn (%)	0356	0.0510	0.0040				1		271.00	0
281	Acid Soluble Hg (ppm)	0220	0.0290	0.0020				1		281.99	0
281	Acid Soluble Hg (ppm)	0515	0.0000	0.0000				1		281.30	4
281	Acid Soluble Hg (ppm)	0450	0.0100	0.0200				1		281.30	4
281	Acid Soluble Hg (ppm)	0527	< 0.001					1		281.30	5
281	Acid Soluble Hg (ppm)	0563	< 0.01					1		281.30	5
281	Acid Soluble Hg (ppm)	0368	< 0.01					1		281.99	5
281	Acid Soluble Hg (ppm)	0405	< 0.01					1		281.99	5
281	Acid Soluble Hg (ppm)	0529	< 0.02					1		281.30	5
281	Acid Soluble Hg (ppm)	0300	< 0.05					1		281.99	5

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 Mo (5ppm)	0255	1.762†	0.0090	4.532	1.953	0.7226	19	-1.42	289.30	0
289	Acid Soluble Mo (5ppm)	0529	2.290	0.0600	4.532	1.953	0.7226	19	-1.15	289.32	0
289	Acid Soluble Mo (5ppm)	0563	2.534	0.2424	4.532	1.953	0.7226	19	-1.02	289.33	0
289	Acid Soluble Mo (5ppm)	0405	2.720	0.2600	4.532	1.953	0.7226	19	-0.93	289.99	0
289	Acid Soluble Mo (5ppm)	0394	3.000	2.000	4.532	1.953	0.7226	19	-0.78	289.32	0
289	Acid Soluble Mo (5ppm)	0494	3.013	0.8750	4.532	1.953	0.7226	19	-0.78	289.33	0
289	Acid Soluble Mo (5ppm)	0524	3.067	0.9368	4.532	1.953	0.7226	19	-0.75	289.30	0
289	Acid Soluble Mo (5ppm)	0515	4.432	2.195	4.532	1.953	0.7226	19	-0.05	289.33	0
289	Acid Soluble Mo (5ppm)	0234	4.500	1.000	4.532	1.953	0.7226	19	-0.02	289.30	0
289	Acid Soluble Mo (5ppm)	0096	4.850	1.500	4.532	1.953	0.7226	19	0.16	289.30	0
289	Acid Soluble Mo (5ppm)	0117	5.083	1.353	4.532	1.953	0.7226	19	0.28	289.33	0
289	Acid Soluble Mo (5ppm)	0444	5.190	0.5000	4.532	1.953	0.7226	19	0.34	289.30	0
289	Acid Soluble Mo (5ppm)	0368	5.250	0.5000	4.532	1.953	0.7226	19	0.37	289.34	0
289	Acid Soluble Mo (5ppm)	0527	5.330	0.5990	4.532	1.953	0.7226	19	0.41	289.33	0
289	Acid Soluble Mo (5ppm)	0546	5.575	0.0000	4.532	1.953	0.7226	19	0.53	289.33	0
289	Acid Soluble Mo (5ppm)	0220	5.950	0.1000	4.532	1.953	0.7226	19	0.73	289.99	0
289	Acid Soluble Mo (5ppm)	0102	6.700	0.4000	4.532	1.953	0.7226	19	1.11	289.30	0
289	Acid Soluble Mo (5ppm)	0220	7.400‡	0.2000	4.532	1.953	0.7226	19	1.47	289.32	0
289	Acid Soluble Mo (5ppm)	0516	7.500‡	1.000	4.532	1.953	0.7226	19	1.52	289.30	0
289	Acid Soluble Mo (5ppm)	0402	5.600	8.400	4.532	1.953	0.7226	19	0.55	289.30	1
289	Acid Soluble Mo (5ppm)	0515	8.598‡	9.200	4.532	1.953	0.7226	19	2.08	289.34	1
289	Acid Soluble Mo (5ppm)	0136	< 3		4.532	1.953	0.7226	19		289.33	5
289	Acid Soluble Mo (5ppm)	0027	< 10		4.532	1.953	0.7226	19		289.30	5
291	Acid Soluble Ni (ppm)	0524	0.0564	0.0364	0.6230	0.6521	0.1475	10	-0.87	291.30	0
291	Acid Soluble Ni (ppm)	0389	0.1200	0.0000	0.6230	0.6521	0.1475	10	-0.77	291.30	0
291	Acid Soluble Ni (ppm)	0563	0.1683	0.0090	0.6230	0.6521	0.1475	10	-0.70	291.33	0
291	Acid Soluble Ni (ppm)	0527	0.2424	0.0265	0.6230	0.6521	0.1475	10	-0.58	291.33	0
291	Acid Soluble Ni (ppm)	0523	0.2490	0.0000	0.6230	0.6521	0.1475	10	-0.57	291.30	0
291	Acid Soluble Ni (ppm)	0529	0.3450	0.0700	0.6230	0.6521	0.1475	10	-0.43	291.32	0
291	Acid Soluble Ni (ppm)	0450	1.000	0.0000	0.6230	0.6521	0.1475	10	0.58	291.30	0
291	Acid Soluble Ni (ppm)	0255	1.082	0.2800	0.6230	0.6521	0.1475	10	0.70	291.99	0
291	Acid Soluble Ni (ppm)	0444	1.470	0.1200	0.6230	0.6521	0.1475	10	1.30	291.30	0
291	Acid Soluble Ni (ppm)	0368	1.497	0.9330	0.6230	0.6521	0.1475	10	1.34	291.34	0
291	Acid Soluble Ni (ppm)	0515	1.348	1.155	0.6230	0.6521	0.1475	10	1.11	291.34	1
291	Acid Soluble Ni (ppm)	0394	< 0.39		0.6230	0.6521	0.1475	10		291.30	5
291	Acid Soluble Ni (ppm)	0405	< 1		0.6230	0.6521	0.1475	10		291.99	5
291	Acid Soluble Ni (ppm)	0300	< 5		0.6230	0.6521	0.1475	10		291.32	5
291	Acid Soluble Ni (ppm)	0117	< 5		0.6230	0.6521	0.1475	10		291.33	5
301	Acid Soluble Se (ppm)	0529	0.0700	0.0400	1.243	1.822	0.2730	6	-0.64	301.32	0
301	Acid Soluble Se (ppm)	0524	0.1300	0.0200	1.243	1.822	0.2730	6	-0.61	301.30	0
301	Acid Soluble Se (ppm)	0523	0.2490	0.0000	1.243	1.822	0.2730	6	-0.55	301.30	0
301	Acid Soluble Se (ppm)	0563	0.4044	0.0082	1.243	1.822	0.2730	6	-0.46	301.33	0
301	Acid Soluble Se (ppm)	0255	3.058	0.0940	1.243	1.822	0.2730	6	1.00	301.99	0
301	Acid Soluble Se (ppm)	0515	3.548	1.476	1.243	1.822	0.2730	6	1.26	301.34	0
301	Acid Soluble Se (ppm)	0515	5.028	7.280	1.243	1.822	0.2730	6	2.08	301.33	1
301	Acid Soluble Se (ppm)	0527	< 0.001		1.243	1.822	0.2730	6		301.33	5
301	Acid Soluble Se (ppm)	0220	< 0.3		1.243	1.822	0.2730	6		301.99	5

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				
301	Acid Soluble Se (ppm)	0494	< 1		1.243	1.822	0.2730	6		301.33	5
301	Acid Soluble Se (ppm)	0405	< 1		1.243	1.822	0.2730	6		301.99	5
301	Acid Soluble Se (ppm)	0368	< 1.2		1.243	1.822	0.2730	6		301.34	5
301	Acid Soluble Se (ppm)	0136	< 5		1.243	1.822	0.2730	6		301.33	5
311	Sodium (%)	0035	0.2005	0.0190	0.2259	0.0262	0.0128	6	-0.87	311.33	0
311	Sodium (%)	0527	0.2144	0.0035	0.2259	0.0262	0.0128	6	-0.39	311.33	0
311	Sodium (%)	0368	0.2155	0.0070	0.2259	0.0262	0.0128	6	-0.35	311.99	0
311	Sodium (%)	0096	0.2200	0.0000	0.2259	0.0262	0.0128	6	-0.20	311.99	0
311	Sodium (%)	0354	0.2400	0.0400	0.2259	0.0262	0.0128	6	0.48	311.99	0
311	Sodium (%)	0563	0.2667	0.0074	0.2259	0.0262	0.0128	6	1.39	311.33	0
321	Acid Soluble Zn (0.05%)	0389	0.0200†	0.0000	0.0497	0.0017	0.0014	49	-17.85	321.99	0
321	Acid Soluble Zn (0.05%)	0354	0.0450	0.0100	0.0497	0.0017	0.0014	49	-2.80	321.30	0
321	Acid Soluble Zn (0.05%)	0377	0.0457	0.0012	0.0497	0.0017	0.0014	49	-2.38	321.30	0
321	Acid Soluble Zn (0.05%)	0498	0.0460	0.0000	0.0497	0.0017	0.0014	49	-2.20	321.01	0
321	Acid Soluble Zn (0.05%)	0394	0.0465	0.0005	0.0497	0.0017	0.0014	49	-1.93	321.32	0
321	Acid Soluble Zn (0.05%)	0300	0.0465	0.0010	0.0497	0.0017	0.0014	49	-1.90	321.32	0
321	Acid Soluble Zn (0.05%)	0255	0.0470	0.0020	0.0497	0.0017	0.0014	49	-1.60	321.30	0
321	Acid Soluble Zn (0.05%)	0035	0.0480	0.0020	0.0497	0.0017	0.0014	49	-1.00	321.30	0
321	Acid Soluble Zn (0.05%)	0524	0.0483	0.0009	0.0497	0.0017	0.0014	49	-0.85	321.99	0
321	Acid Soluble Zn (0.05%)	0390	0.0485	0.0026	0.0497	0.0017	0.0014	49	-0.70	321.30	0
321	Acid Soluble Zn (0.05%)	0523	0.0485	0.0010	0.0497	0.0017	0.0014	49	-0.70	321.99	0
321	Acid Soluble Zn (0.05%)	0220	0.0487	0.0005	0.0497	0.0017	0.0014	49	-0.61	321.99	0
321	Acid Soluble Zn (0.05%)	0527	0.0488	0.0001	0.0497	0.0017	0.0014	49	-0.55	321.33	0
321	Acid Soluble Zn (0.05%)	0095	0.0488	0.0024	0.0497	0.0017	0.0014	49	-0.52	321.30	0
321	Acid Soluble Zn (0.05%)	0157	0.0490	0.0040	0.0497	0.0017	0.0014	49	-0.40	321.30	0
321	Acid Soluble Zn (0.05%)	0324	0.0490	0.0020	0.0497	0.0017	0.0014	49	-0.40	321.30	0
321	Acid Soluble Zn (0.05%)	0444	0.0490	0.0000	0.0497	0.0017	0.0014	49	-0.40	321.30	0
321	Acid Soluble Zn (0.05%)	0043	0.0490	0.0040	0.0497	0.0017	0.0014	49	-0.40	321.33	0
321	Acid Soluble Zn (0.05%)	0220	0.0497	0.0004	0.0497	0.0017	0.0014	49	0.02	321.32	0
321	Acid Soluble Zn (0.05%)	0494	0.0498	0.0004	0.0497	0.0017	0.0014	49	0.08	321.33	0
321	Acid Soluble Zn (0.05%)	0040	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.00	0
321	Acid Soluble Zn (0.05%)	0538	0.0500	0.0020	0.0497	0.0017	0.0014	49	0.20	321.00	0
321	Acid Soluble Zn (0.05%)	0529	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.02	0
321	Acid Soluble Zn (0.05%)	0023	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0102	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0169	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0231	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0234	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0371	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0472	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.30	0
321	Acid Soluble Zn (0.05%)	0055	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.33	0
321	Acid Soluble Zn (0.05%)	0136	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.33	0
321	Acid Soluble Zn (0.05%)	0169	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.33	0
321	Acid Soluble Zn (0.05%)	0042	0.0500	0.0000	0.0497	0.0017	0.0014	49	0.20	321.99	0
321	Acid Soluble Zn (0.05%)	0405	0.0501	0.0005	0.0497	0.0017	0.0014	49	0.23	321.99	0
321	Acid Soluble Zn (0.05%)	0117	0.0504	0.0000	0.0497	0.0017	0.0014	49	0.45	321.33	0
321	Acid Soluble Zn (0.05%)	0368	0.0505	0.0007	0.0497	0.0017	0.0014	49	0.48	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 Zn (0.05%)	0486	0.0505	0.0010	0.0497	0.0017	0.0014	49	0.51	321.33	0
321	Acid Soluble Zn (0.05%)	0563	0.0505	0.0024	0.0497	0.0017	0.0014	49	0.51	321.33	0
321	Acid Soluble Zn (0.05%)	0027	0.0505	0.0010	0.0497	0.0017	0.0014	49	0.51	321.99	0
321	Acid Soluble Zn (0.05%)	0515	0.0506	0.0017	0.0497	0.0017	0.0014	49	0.54	321.99	0
321	Acid Soluble Zn (0.05%)	0433	0.0509	0.0011	0.0497	0.0017	0.0014	49	0.72	321.30	0
321	Acid Soluble Zn (0.05%)	0360	0.0515	0.0010	0.0497	0.0017	0.0014	49	1.11	321.30	0
321	Acid Soluble Zn (0.05%)	0029	0.0527	0.0055	0.0497	0.0017	0.0014	49	1.80	321.00	0
321	Acid Soluble Zn (0.05%)	0037	0.0530	0.0040	0.0497	0.0017	0.0014	49	2.01	321.33	0
321	Acid Soluble Zn (0.05%)	0096	0.0531	0.0017	0.0497	0.0017	0.0014	49	2.04	321.30	0
321	Acid Soluble Zn (0.05%)	0515	0.0543	0.0072	0.0497	0.0017	0.0014	49	2.79	321.33	0
321	Acid Soluble Zn (0.05%)	0402	0.06155‡	0.0007	0.0497	0.0017	0.0014	49	7.15	321.30	0
321	Acid Soluble Zn (0.05%)	0516	0.1740‡	0.0020	0.0497	0.0017	0.0014	49	74.82	321.99	0
321	Acid Soluble Zn (0.05%)	0552	0.3100‡	0.3400	0.0497	0.0017	0.0014	49	156.65	321.30	2
325	Water Soluble Zn (%)	0546	0.0529	0.0008				2		325.30	0
325	Water Soluble Zn (%)	0356	0.1440	0.0100				2		325.00	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, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are grey and included for information only. 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.