

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 201011

Grade 10-0-20

### Statistical Summary

# Analytes: 32

# Labs Reporting: 90

Issue Date : 11/30/2020

Analyte Code	Analyte Sample # 201011	# 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 (%)	37	37	9.627	1.203	9.746		0.8853	0.1819	9.08%		0.2295	2.84%
002	Nitrate N (%)	1		0.0041									
009	Ammoniacal Plus Nitrate N (%)	1		8.745									
010	Total N (10%)	70	69	9.754	1.462	9.809	0.5781	1.119	0.1684	11.41%	4.51	0.2876	2.84%
020	Total P2O5 (%)	6	3	0.0522	0.0848	0.0522		0.0848	0.0612	162.52%		0.0003	6.24%
041	Direct Available P2O5 (%)	3	1	0.0330		0.0522	0.6700	0.0848	0.1059	162.52%	0.29	0.0000	6.24%
050	Soluble K2O (20%)	78	75	24.83	3.157	24.77	1.2331	3.455	0.4987	13.95%	6.53	0.5342	2.47%
060	Water (Free) (%)	4	4	0.1988	0.0975	0.1988		0.0974	0.0609	49.01%		0.0353	5.10%
101	Acid Soluble Ca (%)	8	6	0.0242	0.0226	0.0168	0.2008	0.0060	0.0031	35.69%	0.07	0.0009	7.40%
121	Acid Soluble Mg (%)	15	15	0.0249	0.0094	0.0243	0.2012	0.0094	0.0030	38.52%	0.11	0.0056	7.00%
143	Elemental S (%)	4	4	20.76	0.8674	20.76		0.8674	0.5421	4.18%		0.5410	2.53%
145	Sulfate S, HCl soluble (%)	8	8	20.90	0.4903	20.90		0.5560	0.2457	2.66%		0.3238	2.53%
148	Total S (20.5%)	57	56	20.98	0.7168	20.98	1.0000	0.6960	0.1163	3.32%	1.62	0.3032	2.53%
149	S - HNO3 soluble (%)	3	3	20.83	0.1323	20.83		0.1323	0.0955	0.64%		0.3038	2.53%
151	Acid Soluble As (ppm)	13	3	1.029	1.448	1.029		1.448	1.045	140.72%		0.3583	15.93%
165	Acid Soluble B (%)	8	5	0.0024	0.0010	0.0024	0.0034	0.0010	0.0006	42.97%	0.71	0.0002	9.93%
181	Acid Soluble Cd (ppm)	14	7	0.9344	1.818	0.4465		0.7216	0.3409	161.62%		0.2028	18.06%
190	Water Soluble Cl (%)	1		0.2450									
191	Acid Soluble Cr (ppm)	14	12	6.090	4.288	5.521		3.350	1.209	60.69%		0.9834	12.37%
202	Acid Soluble Co (ppm)	13	10	2.986	1.004	2.941	1.8822	1.034	0.4086	35.15%	1.28	0.4045	13.60%
221	Acid Soluble Cu (%)	23	19	0.0133	0.0466	0.0019	0.0052	0.0007	0.0002	39.54%	0.33	0.0030	10.30%
241	Acid Soluble Fe (1%)	66	65	1.016	0.1425	1.011	0.1061	0.1263	0.0196	12.50%	2.77	0.0571	3.99%
251	Acid Soluble Pb (ppm)	13	8	1.542	1.913	1.167		1.159	0.5123	99.30%		0.6371	15.63%
261	Acid Soluble Mn (0.2%)	58	57	0.2440	0.0487	0.2466	0.0297	0.0419	0.0069	16.98%	3.29	0.0162	4.94%
271	Water Soluble Mn (%)	5	5	0.2408	0.0475	0.2408		0.0475	0.0266	19.73%		0.0052	4.96%
281	Acid Soluble Hg (ppm)	10	3	207.6	344.0	207.6		344.0	248.2	165.65%		10.06	7.17%
289	Acid Soluble Mo (ppm)	12	5	2.959	4.585	2.959	1.8877	4.585	2.563	154.95%	5.66	0.3607	13.59%
291	Acid Soluble Ni (ppm)	18	14	5.255	1.451	5.095		1.069	0.3573	20.99%		0.2415	12.52%
301	Acid Soluble Se (ppm)	10	3	71.88	123.1	71.88		123.1	88.82	171.22%		3.622	8.41%
311	Sodium (%)	8	8	0.1856	0.0144	0.1856	0.0236	0.0164	0.0072	8.82%	1.62	0.0122	5.15%
321	Acid Soluble Zn (0.2%)	61	60	0.2110	0.0233	0.2111	0.0261	0.0217	0.0035	10.26%	1.93	0.0146	5.05%
325	Water Soluble Zn (%)	12	12	0.2256	0.0575	0.2139		0.0276	0.0100	12.90%		0.0138	5.04%

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

Analyte Code	Analyte Sample # 201011	# 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
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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.

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 201011

Grade 10-0-20

### Lab Values

# Analytes: 32

# Labs Reporting: 90

Issue Date : 11/30/2020

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 (%)	0117	5.850	0.5000	9.746	0.8853	0.2295	37	-4.40	001.10	0
001	Ammoniacal N (%)	0230	5.930	0.0200	9.746	0.8853	0.2295	37	-4.31	001.10	0
001	Ammoniacal N (%)	0231	8.105	0.6900	9.746	0.8853	0.2295	37	-1.85	001.10	0
001	Ammoniacal N (%)	0567	8.450	0.1000	9.746	0.8853	0.2295	37	-1.46	001.99	0
001	Ammoniacal N (%)	0027	8.494	0.4020	9.746	0.8853	0.2295	37	-1.41	001.99	0
001	Ammoniacal N (%)	0498	8.500	0.2000	9.746	0.8853	0.2295	37	-1.41	001.10	0
001	Ammoniacal N (%)	0562	8.675	0.1500	9.746	0.8853	0.2295	37	-1.21	001.99	0
001	Ammoniacal N (%)	0456	8.710	0.0200	9.746	0.8853	0.2295	37	-1.17	001.10	0
001	Ammoniacal N (%)	0524	8.963	0.0380	9.746	0.8853	0.2295	37	-0.88	001.99	0
001	Ammoniacal N (%)	0537	9.500	0.4000	9.746	0.8853	0.2295	37	-0.28	001.99	0
001	Ammoniacal N (%)	0371	9.595	0.0300	9.746	0.8853	0.2295	37	-0.17	001.99	0
001	Ammoniacal N (%)	0394	9.634	0.3340	9.746	0.8853	0.2295	37	-0.13	001.99	0
001	Ammoniacal N (%)	0558	9.715	0.0300	9.746	0.8853	0.2295	37	-0.03	001.99	0
001	Ammoniacal N (%)	0550	9.760	0.0400	9.746	0.8853	0.2295	37	0.02	001.99	0
001	Ammoniacal N (%)	0564	9.790	0.0800	9.746	0.8853	0.2295	37	0.05	001.99	0
001	Ammoniacal N (%)	0136	9.800	0.6000	9.746	0.8853	0.2295	37	0.06	001.10	0
001	Ammoniacal N (%)	0539	9.800	0.2000	9.746	0.8853	0.2295	37	0.06	001.99	0
001	Ammoniacal N (%)	0565	9.815	0.0700	9.746	0.8853	0.2295	37	0.08	001.99	0
001	Ammoniacal N (%)	0549	9.875	0.0500	9.746	0.8853	0.2295	37	0.15	001.99	0
001	Ammoniacal N (%)	0493	9.950	0.1000	9.746	0.8853	0.2295	37	0.23	001.99	0
001	Ammoniacal N (%)	0513	9.950	0.0800	9.746	0.8853	0.2295	37	0.23	001.99	0
001	Ammoniacal N (%)	0540	9.980	0.0200	9.746	0.8853	0.2295	37	0.26	001.99	0
001	Ammoniacal N (%)	0423	10.02	0.3800	9.746	0.8853	0.2295	37	0.31	001.99	0
001	Ammoniacal N (%)	0510	10.10	0.1686	9.746	0.8853	0.2295	37	0.40	001.99	0
001	Ammoniacal N (%)	0546	10.11	0.1100	9.746	0.8853	0.2295	37	0.41	001.10	0
001	Ammoniacal N (%)	0532	10.15	0.7000	9.746	0.8853	0.2295	37	0.46	001.99	0
001	Ammoniacal N (%)	0560	10.19	0.0900	9.746	0.8853	0.2295	37	0.50	001.99	0
001	Ammoniacal N (%)	0255	10.21	0.9400	9.746	0.8853	0.2295	37	0.52	001.99	0
001	Ammoniacal N (%)	0481	10.23	0.0500	9.746	0.8853	0.2295	37	0.54	001.10	0
001	Ammoniacal N (%)	0096	10.23	0.8000	9.746	0.8853	0.2295	37	0.55	001.99	0
001	Ammoniacal N (%)	0506	10.25	0.3000	9.746	0.8853	0.2295	37	0.57	001.99	0
001	Ammoniacal N (%)	0553	10.60	0.4000	9.746	0.8853	0.2295	37	0.96	001.99	0
001	Ammoniacal N (%)	0536	10.63	0.0500	9.746	0.8853	0.2295	37	0.99	001.99	0
001	Ammoniacal N (%)	0405	10.75	0.1400	9.746	0.8853	0.2295	37	1.13	001.99	0
001	Ammoniacal N (%)	0559	10.80	0.0100	9.746	0.8853	0.2295	37	1.18	001.99	0
001	Ammoniacal N (%)	0200	11.08	0.1000	9.746	0.8853	0.2295	37	1.51	001.99	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				
001	Ammoniacal N (%)	0535	12.05	0.1000	9.746	0.8853	0.2295	37	2.60	001.99	0
002	Nitrate N (%)	0553	0.0041	0.0001				1		002.99	0
009	Ammoniacal Plus Nitrate N (%)	0444	8.745	0.5100				1		009.10	0
010	Total N (10%)	0034	5.105†	0.2900	9.809	1.119	0.2876	69	-4.20	010.60	0
010	Total N (10%)	0023	6.000†	0.0000	9.809	1.119	0.2876	69	-3.40	010.60	0
010	Total N (10%)	0486	6.395†	0.4100	9.809	1.119	0.2876	69	-3.05	010.60	0
010	Total N (10%)	0114	6.940†	0.9400	9.809	1.119	0.2876	69	-2.56	010.60	0
010	Total N (10%)	0230	7.005†	0.0900	9.809	1.119	0.2876	69	-2.51	010.60	0
010	Total N (10%)	0472	7.610†	0.0800	9.809	1.119	0.2876	69	-1.96	010.60	0
010	Total N (10%)	0390	8.140†	0.2600	9.809	1.119	0.2876	69	-1.49	010.60	0
010	Total N (10%)	0043	8.290†	0.2000	9.809	1.119	0.2876	69	-1.36	010.60	0
010	Total N (10%)	0086	8.378†	0.1921	9.809	1.119	0.2876	69	-1.28	010.60	0
010	Total N (10%)	0095	8.495†	0.2300	9.809	1.119	0.2876	69	-1.17	010.60	0
010	Total N (10%)	0498	8.500†	0.2000	9.809	1.119	0.2876	69	-1.17	010.12	0
010	Total N (10%)	0234	8.525†	0.0100	9.809	1.119	0.2876	69	-1.15	010.60	0
010	Total N (10%)	0041	8.696†	0.6840	9.809	1.119	0.2876	69	-0.99	010.60	0
010	Total N (10%)	0040	8.700†	0.6000	9.809	1.119	0.2876	69	-0.99	010.60	0
010	Total N (10%)	0527	8.835†	0.1090	9.809	1.119	0.2876	69	-0.87	010.60	0
010	Total N (10%)	0106	8.850†	0.4800	9.809	1.119	0.2876	69	-0.86	010.60	0
010	Total N (10%)	0037	8.960†	0.1390	9.809	1.119	0.2876	69	-0.76	010.60	0
010	Total N (10%)	0422	9.020†	0.2000	9.809	1.119	0.2876	69	-0.70	010.60	0
010	Total N (10%)	0456	9.080†	0.0600	9.809	1.119	0.2876	69	-0.65	010.11	0
010	Total N (10%)	0561	9.265	0.4900	9.809	1.119	0.2876	69	-0.49	010.60	0
010	Total N (10%)	0169	9.320	0.0200	9.809	1.119	0.2876	69	-0.44	010.60	0
010	Total N (10%)	0029	9.467	0.7220	9.809	1.119	0.2876	69	-0.31	010.60	0
010	Total N (10%)	0444	9.490	0.2000	9.809	1.119	0.2876	69	-0.28	010.60	0
010	Total N (10%)	0394	9.634	0.3340	9.809	1.119	0.2876	69	-0.16	010.99	0
010	Total N (10%)	0377	9.645	0.3700	9.809	1.119	0.2876	69	-0.15	010.60	0
010	Total N (10%)	0481	9.675	0.2700	9.809	1.119	0.2876	69	-0.12	010.12	0
010	Total N (10%)	0547	9.680	0.1400	9.809	1.119	0.2876	69	-0.11	010.60	0
010	Total N (10%)	0558	9.715	0.0300	9.809	1.119	0.2876	69	-0.08	010.99	0
010	Total N (10%)	0539	9.800	0.2000	9.809	1.119	0.2876	69	-0.01	010.11	0
010	Total N (10%)	0117	9.820	0.1200	9.809	1.119	0.2876	69	0.01	010.12	0
010	Total N (10%)	0556	9.855	0.0300	9.809	1.119	0.2876	69	0.04	010.99	0
010	Total N (10%)	0073	9.870	0.3400	9.809	1.119	0.2876	69	0.05	010.60	0
010	Total N (10%)	0360	9.885	0.4700	9.809	1.119	0.2876	69	0.07	010.60	0
010	Total N (10%)	0049	9.925	0.1300	9.809	1.119	0.2876	69	0.10	010.60	0
010	Total N (10%)	0533	9.945	0.0500	9.809	1.119	0.2876	69	0.12	010.99	0
010	Total N (10%)	0550	9.985	0.0300	9.809	1.119	0.2876	69	0.16	010.60	0
010	Total N (10%)	0177	9.994	0.0920	9.809	1.119	0.2876	69	0.17	010.60	0
010	Total N (10%)	0231	10.05	0.2000	9.809	1.119	0.2876	69	0.22	010.60	0
010	Total N (10%)	0560	10.09	0.2400	9.809	1.119	0.2876	69	0.25	010.99	0
010	Total N (10%)	0518	10.13	0.0900	9.809	1.119	0.2876	69	0.28	010.99	0
010	Total N (10%)	0564	10.15	0.0500	9.809	1.119	0.2876	69	0.30	010.99	0
010	Total N (10%)	0421	10.17	0.0480	9.809	1.119	0.2876	69	0.32	010.60	0
010	Total N (10%)	0565	10.18	0.0600	9.809	1.119	0.2876	69	0.33	010.99	0
010	Total N (10%)	0567	10.23	0.0500	9.809	1.119	0.2876	69	0.37	010.99	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				
010	Total N (10%)	0562	10.23	0.1500	9.809	1.119	0.2876	69	0.37	010.99	0
010	Total N (10%)	0521	10.24	0.0000	9.809	1.119	0.2876	69	0.39	010.60	0
010	Total N (10%)	0255	10.25	0.6420	9.809	1.119	0.2876	69	0.39	010.60	0
010	Total N (10%)	0506	10.25	0.3000	9.809	1.119	0.2876	69	0.39	010.99	0
010	Total N (10%)	0481	10.26	0.5600	9.809	1.119	0.2876	69	0.40	010.60	0
010	Total N (10%)	0485	10.36	0.1170	9.809	1.119	0.2876	69	0.49	010.60	0
010	Total N (10%)	0534	10.40‡	0.2000	9.809	1.119	0.2876	69	0.53	010.60	0
010	Total N (10%)	0291	10.41‡	0.0100	9.809	1.119	0.2876	69	0.53	010.60	0
010	Total N (10%)	0510	10.45‡	0.1050	9.809	1.119	0.2876	69	0.58	010.11	0
010	Total N (10%)	0450	10.50‡	0.2000	9.809	1.119	0.2876	69	0.62	010.60	0
010	Total N (10%)	0354	10.60‡	0.4000	9.809	1.119	0.2876	69	0.71	010.60	0
010	Total N (10%)	0096	10.71‡	0.4400	9.809	1.119	0.2876	69	0.81	010.60	0
010	Total N (10%)	0423	10.71‡	0.4400	9.809	1.119	0.2876	69	0.81	010.60	0
010	Total N (10%)	0420	10.71‡	0.1200	9.809	1.119	0.2876	69	0.81	010.99	0
010	Total N (10%)	0420	10.75‡	0.1000	9.809	1.119	0.2876	69	0.84	010.60	0
010	Total N (10%)	0405	10.79‡	0.1700	9.809	1.119	0.2876	69	0.87	010.60	0
010	Total N (10%)	0559	10.82‡	0.0100	9.809	1.119	0.2876	69	0.90	010.99	0
010	Total N (10%)	0324	11.10‡	0.6000	9.809	1.119	0.2876	69	1.15	010.60	0
010	Total N (10%)	0568	11.15‡	0.9000	9.809	1.119	0.2876	69	1.20	010.12	0
010	Total N (10%)	0025	11.97‡	0.2400	9.809	1.119	0.2876	69	1.93	010.60	0
010	Total N (10%)	0535	12.05‡	0.1000	9.809	1.119	0.2876	69	2.00	010.11	0
010	Total N (10%)	0136	12.10‡	1.000	9.809	1.119	0.2876	69	2.05	010.60	0
010	Total N (10%)	0524	12.67‡	0.7277	9.809	1.119	0.2876	69	2.56	010.99	0
010	Total N (10%)	0035	12.80‡	1.200	9.809	1.119	0.2876	69	2.67	010.60	0
010	Total N (10%)	0494	13.26‡	1.164	9.809	1.119	0.2876	69	3.09	010.60	0
010	Total N (10%)	0516	8.890†	2.300	9.809	1.119	0.2876	69	-0.82	010.60	1
020	Total P2O5 (%)	0515	0.0017	0.0001	0.0522	0.0848	0.0003	3	-0.48	020.99	0
020	Total P2O5 (%)	0524	0.0048	0.0008	0.0522	0.0848	0.0003	3	-0.45	020.50	0
020	Total P2O5 (%)	0516	0.1500	0.0000	0.0522	0.0848	0.0003	3	0.94	020.50	0
020	Total P2O5 (%)	0422	0.0000	0.0000	0.0522	0.0848	0.0003	3		020.50	4
020	Total P2O5 (%)	0553	< 0.007		0.0522	0.0848	0.0003	3		020.20	5
020	Total P2O5 (%)	0527	< 0.01		0.0522	0.0848	0.0003	3		020.50	5
041	Direct Available P2O5 (%)	0354	0.0330	0.0000				1		041.21	0
041	Direct Available P2O5 (%)	0568	0.0000	0.0000				1		041.21	4
041	Direct Available P2O5 (%)	0009	< 0.1					1		041.10	5
050	Soluble K2O (20%)	0540	20.01†	0.0300	24.77	3.455	0.5342	75	-1.38	050.99	0
050	Soluble K2O (20%)	0560	20.02†	0.0880	24.77	3.455	0.5342	75	-1.37	050.99	0
050	Soluble K2O (20%)	0518	20.05†	0.0000	24.77	3.455	0.5342	75	-1.37	050.99	0
050	Soluble K2O (20%)	0506	20.20†	0.0000	24.77	3.455	0.5342	75	-1.32	050.99	0
050	Soluble K2O (20%)	0537	20.20†	0.2000	24.77	3.455	0.5342	75	-1.32	050.99	0
050	Soluble K2O (20%)	0234	20.23†	0.1000	24.77	3.455	0.5342	75	-1.31	050.99	0
050	Soluble K2O (20%)	0510	20.51†	0.0091	24.77	3.455	0.5342	75	-1.23	050.60	0
050	Soluble K2O (20%)	0200	20.56†	0.1000	24.77	3.455	0.5342	75	-1.22	050.60	0
050	Soluble K2O (20%)	0549	20.58†	0.1500	24.77	3.455	0.5342	75	-1.21	050.99	0
050	Soluble K2O (20%)	0531	20.70†	0.6000	24.77	3.455	0.5342	75	-1.18	050.99	0
050	Soluble K2O (20%)	0553	20.80†	1.200	24.77	3.455	0.5342	75	-1.15	050.99	0
050	Soluble K2O (20%)	0423	21.10†	0.4000	24.77	3.455	0.5342	75	-1.06	050.52	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%)	0536	22.05†	0.1000	24.77	3.455	0.5342	75	-0.79	050.99	0
050	Soluble K2O (20%)	0559	22.08†	0.0600	24.77	3.455	0.5342	75	-0.78	050.99	0
050	Soluble K2O (20%)	0255	22.10†	0.5160	24.77	3.455	0.5342	75	-0.77	050.99	0
050	Soluble K2O (20%)	0230	22.20†	0.4000	24.77	3.455	0.5342	75	-0.74	050.50	0
050	Soluble K2O (20%)	0532	22.25†	0.5000	24.77	3.455	0.5342	75	-0.73	050.99	0
050	Soluble K2O (20%)	0516	22.27†	0.0400	24.77	3.455	0.5342	75	-0.72	050.99	0
050	Soluble K2O (20%)	0533	22.37†	0.8100	24.77	3.455	0.5342	75	-0.70	050.99	0
050	Soluble K2O (20%)	0169	22.41†	0.1000	24.77	3.455	0.5342	75	-0.68	050.60	0
050	Soluble K2O (20%)	0420	22.71†	0.0400	24.77	3.455	0.5342	75	-0.60	050.50	0
050	Soluble K2O (20%)	0547	22.76†	0.0000	24.77	3.455	0.5342	75	-0.58	050.51	0
050	Soluble K2O (20%)	0114	22.84†	0.8700	24.77	3.455	0.5342	75	-0.56	050.00	0
050	Soluble K2O (20%)	0472	22.98†	0.4500	24.77	3.455	0.5342	75	-0.52	050.31	0
050	Soluble K2O (20%)	0556	23.00†	0.2000	24.77	3.455	0.5342	75	-0.51	050.99	0
050	Soluble K2O (20%)	0049	23.17†	0.1500	24.77	3.455	0.5342	75	-0.46	050.00	0
050	Soluble K2O (20%)	0558	23.30†	0.2000	24.77	3.455	0.5342	75	-0.43	050.99	0
050	Soluble K2O (20%)	0513	23.59	0.1700	24.77	3.455	0.5342	75	-0.34	050.62	0
050	Soluble K2O (20%)	0535	23.60	0.2000	24.77	3.455	0.5342	75	-0.34	050.99	0
050	Soluble K2O (20%)	0539	23.60	0.2000	24.77	3.455	0.5342	75	-0.34	050.99	0
050	Soluble K2O (20%)	0421	23.71	0.1038	24.77	3.455	0.5342	75	-0.31	050.99	0
050	Soluble K2O (20%)	0450	23.79	0.2000	24.77	3.455	0.5342	75	-0.28	050.99	0
050	Soluble K2O (20%)	0498	23.85	1.500	24.77	3.455	0.5342	75	-0.27	050.31	0
050	Soluble K2O (20%)	0354	23.90	0.0000	24.77	3.455	0.5342	75	-0.25	050.52	0
050	Soluble K2O (20%)	0136	23.95	0.7000	24.77	3.455	0.5342	75	-0.24	050.52	0
050	Soluble K2O (20%)	0035	24.29	3.430	24.77	3.455	0.5342	75	-0.14	050.61	0
050	Soluble K2O (20%)	0481	24.51	0.0000	24.77	3.455	0.5342	75	-0.08	050.99	0
050	Soluble K2O (20%)	0177	24.52	0.3172	24.77	3.455	0.5342	75	-0.07	050.99	0
050	Soluble K2O (20%)	0073	24.65	0.1100	24.77	3.455	0.5342	75	-0.04	050.30	0
050	Soluble K2O (20%)	0565	24.80	0.1000	24.77	3.455	0.5342	75	0.01	050.99	0
050	Soluble K2O (20%)	0564	24.83	0.1500	24.77	3.455	0.5342	75	0.02	050.99	0
050	Soluble K2O (20%)	0360	24.97	0.2300	24.77	3.455	0.5342	75	0.06	050.52	0
050	Soluble K2O (20%)	0117	24.98	0.6876	24.77	3.455	0.5342	75	0.06	050.52	0
050	Soluble K2O (20%)	0494	25.17	0.1700	24.77	3.455	0.5342	75	0.11	050.00	0
050	Soluble K2O (20%)	0494	25.28	2.880	24.77	3.455	0.5342	75	0.15	050.52	0
050	Soluble K2O (20%)	0546	25.32	1.637	24.77	3.455	0.5342	75	0.16	050.99	0
050	Soluble K2O (20%)	0029	25.47	0.3500	24.77	3.455	0.5342	75	0.20	050.62	0
050	Soluble K2O (20%)	0394	25.53	0.6400	24.77	3.455	0.5342	75	0.22	050.99	0
050	Soluble K2O (20%)	0562	25.70	0.2000	24.77	3.455	0.5342	75	0.27	050.99	0
050	Soluble K2O (20%)	0521	25.77	0.0000	24.77	3.455	0.5342	75	0.29	050.99	0
050	Soluble K2O (20%)	0567	25.78	0.1500	24.77	3.455	0.5342	75	0.29	050.99	0
050	Soluble K2O (20%)	0291	25.93	0.0100	24.77	3.455	0.5342	75	0.33	050.51	0
050	Soluble K2O (20%)	0086	26.47‡	0.8252	24.77	3.455	0.5342	75	0.49	050.50	0
050	Soluble K2O (20%)	0444	26.59‡	0.1300	24.77	3.455	0.5342	75	0.53	050.00	0
050	Soluble K2O (20%)	0550	26.76‡	0.2000	24.77	3.455	0.5342	75	0.58	050.00	0
050	Soluble K2O (20%)	0390	27.09‡	0.4200	24.77	3.455	0.5342	75	0.67	050.50	0
050	Soluble K2O (20%)	0422	27.16‡	0.4600	24.77	3.455	0.5342	75	0.69	050.50	0
050	Soluble K2O (20%)	0040	27.20‡	1.400	24.77	3.455	0.5342	75	0.70	050.30	0
050	Soluble K2O (20%)	0561	27.24‡	0.0000	24.77	3.455	0.5342	75	0.71	050.00	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				
050	Soluble K2O (20%)	0106	27.66‡	1.820	24.77	3.455	0.5342	75	0.84	050.50	0
050	Soluble K2O (20%)	0231	27.78‡	0.3500	24.77	3.455	0.5342	75	0.87	050.00	0
050	Soluble K2O (20%)	0027	28.52‡	0.1000	24.77	3.455	0.5342	75	1.09	050.99	0
050	Soluble K2O (20%)	0324	28.75‡	3.700	24.77	3.455	0.5342	75	1.15	050.50	0
050	Soluble K2O (20%)	0377	28.88‡	0.5100	24.77	3.455	0.5342	75	1.19	050.52	0
050	Soluble K2O (20%)	0095	29.05‡	1.160	24.77	3.455	0.5342	75	1.24	050.62	0
050	Soluble K2O (20%)	0444	29.31‡	0.7200	24.77	3.455	0.5342	75	1.31	050.50	0
050	Soluble K2O (20%)	0034	29.40‡	1.540	24.77	3.455	0.5342	75	1.34	050.62	0
050	Soluble K2O (20%)	0524	29.41‡	1.176	24.77	3.455	0.5342	75	1.34	050.99	0
050	Soluble K2O (20%)	0486	30.00‡	0.5400	24.77	3.455	0.5342	75	1.51	050.52	0
050	Soluble K2O (20%)	0419	30.00‡	1.026	24.77	3.455	0.5342	75	1.51	050.50	0
050	Soluble K2O (20%)	0433	30.29‡	0.4200	24.77	3.455	0.5342	75	1.60	050.99	0
050	Soluble K2O (20%)	0527	30.33‡	0.3234	24.77	3.455	0.5342	75	1.61	050.99	0
050	Soluble K2O (20%)	0356	30.47‡	1.086	24.77	3.455	0.5342	75	1.65	050.30	0
050	Soluble K2O (20%)	0043	30.65‡	0.0100	24.77	3.455	0.5342	75	1.70	050.99	0
050	Soluble K2O (20%)	0023	32.25‡	0.7000	24.77	3.455	0.5342	75	2.16	050.52	0
050	Soluble K2O (20%)	0042	18.81†	7.580	24.77	3.455	0.5342	75	-1.73	050.99	1
050	Soluble K2O (20%)	0515	22.80†	4.771	24.77	3.455	0.5342	75	-0.57	050.99	1
050	Soluble K2O (20%)	0568	24.03	4.630	24.77	3.455	0.5342	75	-0.22	050.51	1
060	Water (Free) (%)	0456	0.1150	0.0300	0.1988	0.0974	0.0353	4	-0.86	060.00	0
060	Water (Free) (%)	0419	0.1250	0.0300	0.1988	0.0974	0.0353	4	-0.76	060.10	0
060	Water (Free) (%)	0510	0.2353	0.0013	0.1988	0.0974	0.0353	4	0.37	060.99	0
060	Water (Free) (%)	0096	0.3200	0.0800	0.1988	0.0974	0.0353	4	1.24	060.00	0
101	Acid Soluble Ca (%)	0419	0.0125	0.0027	0.0168	0.0060	0.0009	6	-0.65	101.33	0
101	Acid Soluble Ca (%)	0553	0.0125	0.0010	0.0168	0.0060	0.0009	6	-0.64	101.00	0
101	Acid Soluble Ca (%)	0035	0.0135	0.0010	0.0168	0.0060	0.0009	6	-0.49	101.30	0
101	Acid Soluble Ca (%)	0494	0.0167	0.0006	0.0168	0.0060	0.0009	6	-0.02	101.33	0
101	Acid Soluble Ca (%)	0096	0.0200	0.0000	0.0168	0.0060	0.0009	6	0.47	101.30	0
101	Acid Soluble Ca (%)	0354	0.0700	0.0000	0.0168	0.0060	0.0009	6	7.88	101.30	0
101	Acid Soluble Ca (%)	0106	0.0000	0.0000	0.0168	0.0060	0.0009	6		101.33	4
101	Acid Soluble Ca (%)	0527	< 0.01		0.0168	0.0060	0.0009	6		101.33	5
121	Acid Soluble Mg (%)	0136	0.0150	0.0000	0.0243	0.0094	0.0056	15	-1.00	121.33	0
121	Acid Soluble Mg (%)	0494	0.0153	0.0125	0.0243	0.0094	0.0056	15	-0.97	121.33	0
121	Acid Soluble Mg (%)	0419	0.0176	0.0046	0.0243	0.0094	0.0056	15	-0.72	121.33	0
121	Acid Soluble Mg (%)	0521	0.0192	0.0000	0.0243	0.0094	0.0056	15	-0.55	121.32	0
121	Acid Soluble Mg (%)	0553	0.0195	0.0010	0.0243	0.0094	0.0056	15	-0.52	121.00	0
121	Acid Soluble Mg (%)	0354	0.0200	0.0000	0.0243	0.0094	0.0056	15	-0.46	121.30	0
121	Acid Soluble Mg (%)	0035	0.0205	0.0010	0.0243	0.0094	0.0056	15	-0.41	121.30	0
121	Acid Soluble Mg (%)	0423	0.0205	0.0010	0.0243	0.0094	0.0056	15	-0.41	121.32	0
121	Acid Soluble Mg (%)	0524	0.0208	0.0014	0.0243	0.0094	0.0056	15	-0.38	121.99	0
121	Acid Soluble Mg (%)	0096	0.0250	0.0100	0.0243	0.0094	0.0056	15	0.07	121.30	0
121	Acid Soluble Mg (%)	0106	0.0265	0.0032	0.0243	0.0094	0.0056	15	0.23	121.33	0
121	Acid Soluble Mg (%)	0527	0.0301	0.0011	0.0243	0.0094	0.0056	15	0.61	121.33	0
121	Acid Soluble Mg (%)	0515	0.0384	0.0230	0.0243	0.0094	0.0056	15	1.50	121.99	0
121	Acid Soluble Mg (%)	0515	0.0399	0.0218	0.0243	0.0094	0.0056	15	1.66	121.33	0
121	Acid Soluble Mg (%)	0516	0.0450	0.0040	0.0243	0.0094	0.0056	15	2.20	121.99	0
143	Elemental S (%)	0472	19.80	0.0600	20.76	0.8674	0.5410	4	-1.11	143.99	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				
143	Elemental S (%)	0390	20.25	1.100	20.76	0.8674	0.5410	4	-0.59	143.99	0
143	Elemental S (%)	0255	21.45	0.9940	20.76	0.8674	0.5410	4	0.80	143.99	0
143	Elemental S (%)	0291	21.54	0.0100	20.76	0.8674	0.5410	4	0.90	143.99	0
145	Sulfate S, HCl soluble (%)	0518	20.27	0.0600	20.90	0.5560	0.3238	8	-1.03	145.00	0
145	Sulfate S, HCl soluble (%)	0106	20.37	0.4100	20.90	0.5560	0.3238	8	-0.87	145.00	0
145	Sulfate S, HCl soluble (%)	0444	20.54	0.7200	20.90	0.5560	0.3238	8	-0.59	145.99	0
145	Sulfate S, HCl soluble (%)	0550	20.75	0.0400	20.90	0.5560	0.3238	8	-0.24	145.00	0
145	Sulfate S, HCl soluble (%)	0200	20.98	0.0100	20.90	0.5560	0.3238	8	0.13	145.00	0
145	Sulfate S, HCl soluble (%)	0444	21.33	0.2400	20.90	0.5560	0.3238	8	0.71	145.00	0
145	Sulfate S, HCl soluble (%)	0561	21.45	0.1100	20.90	0.5560	0.3238	8	0.90	145.00	0
145	Sulfate S, HCl soluble (%)	0553	21.50	1.000	20.90	0.5560	0.3238	8	0.99	145.99	0
148	Total S (20.5%)	0486	18.99†	0.3900	20.98	0.6960	0.3032	56	-2.86	148.07	0
148	Total S (20.5%)	0493	19.50†	0.1000	20.98	0.6960	0.3032	56	-2.12	148.00	0
148	Total S (20.5%)	0023	19.90†	0.2000	20.98	0.6960	0.3032	56	-1.55	148.07	0
148	Total S (20.5%)	0516	20.14	0.0970	20.98	0.6960	0.3032	56	-1.20	148.99	0
148	Total S (20.5%)	0230	20.15	0.3000	20.98	0.6960	0.3032	56	-1.19	148.01	0
148	Total S (20.5%)	0537	20.16	0.1200	20.98	0.6960	0.3032	56	-1.17	148.99	0
148	Total S (20.5%)	0558	20.30	0.0000	20.98	0.6960	0.3032	56	-0.97	148.99	0
148	Total S (20.5%)	0394	20.35	0.0700	20.98	0.6960	0.3032	56	-0.91	148.07	0
148	Total S (20.5%)	0534	20.40	0.0500	20.98	0.6960	0.3032	56	-0.83	148.01	0
148	Total S (20.5%)	0556	20.40	0.2000	20.98	0.6960	0.3032	56	-0.83	148.00	0
148	Total S (20.5%)	0538	20.45	0.1000	20.98	0.6960	0.3032	56	-0.76	148.99	0
148	Total S (20.5%)	0533	20.47	0.0900	20.98	0.6960	0.3032	56	-0.73	148.99	0
148	Total S (20.5%)	0540	20.50	0.0100	20.98	0.6960	0.3032	56	-0.69	148.99	0
148	Total S (20.5%)	0049	20.50	0.2600	20.98	0.6960	0.3032	56	-0.68	148.00	0
148	Total S (20.5%)	0560	20.50	0.0400	20.98	0.6960	0.3032	56	-0.68	148.99	0
148	Total S (20.5%)	0117	20.55	0.0511	20.98	0.6960	0.3032	56	-0.62	148.07	0
148	Total S (20.5%)	0506	20.55	0.1000	20.98	0.6960	0.3032	56	-0.61	148.99	0
148	Total S (20.5%)	0535	20.60	0.2000	20.98	0.6960	0.3032	56	-0.54	148.01	0
148	Total S (20.5%)	0535	20.60	0.2000	20.98	0.6960	0.3032	56	-0.54	148.99	0
148	Total S (20.5%)	0539	20.60	0.2000	20.98	0.6960	0.3032	56	-0.54	148.99	0
148	Total S (20.5%)	0532	20.65	0.5000	20.98	0.6960	0.3032	56	-0.47	148.99	0
148	Total S (20.5%)	0450	20.69	0.1900	20.98	0.6960	0.3032	56	-0.42	148.99	0
148	Total S (20.5%)	0567	20.75	0.1000	20.98	0.6960	0.3032	56	-0.32	148.99	0
148	Total S (20.5%)	0073	20.76	0.4200	20.98	0.6960	0.3032	56	-0.31	148.01	0
148	Total S (20.5%)	0481	20.76	0.2200	20.98	0.6960	0.3032	56	-0.31	148.01	0
148	Total S (20.5%)	0531	20.76	0.4800	20.98	0.6960	0.3032	56	-0.31	148.99	0
148	Total S (20.5%)	0562	20.78	0.1500	20.98	0.6960	0.3032	56	-0.29	148.99	0
148	Total S (20.5%)	0536	20.80	0.2000	20.98	0.6960	0.3032	56	-0.25	148.99	0
148	Total S (20.5%)	0433	20.85	0.2100	20.98	0.6960	0.3032	56	-0.19	148.99	0
148	Total S (20.5%)	0565	20.88	0.1000	20.98	0.6960	0.3032	56	-0.14	148.01	0
148	Total S (20.5%)	0564	20.88	0.0600	20.98	0.6960	0.3032	56	-0.14	148.01	0
148	Total S (20.5%)	0157	20.90	0.2000	20.98	0.6960	0.3032	56	-0.11	148.01	0
148	Total S (20.5%)	0405	21.05	0.0400	20.98	0.6960	0.3032	56	0.11	148.01	0
148	Total S (20.5%)	0559	21.15	0.1000	20.98	0.6960	0.3032	56	0.25	148.99	0
148	Total S (20.5%)	0527	21.15	0.3200	20.98	0.6960	0.3032	56	0.26	148.07	0
148	Total S (20.5%)	0029	21.17	0.4600	20.98	0.6960	0.3032	56	0.28	148.00	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				
148	Total S (20.5%)	0546	21.18	0.6072	20.98	0.6960	0.3032	56	0.30	148.07	0
148	Total S (20.5%)	0114	21.27	1.130	20.98	0.6960	0.3032	56	0.42	148.00	0
148	Total S (20.5%)	0231	21.35	0.1000	20.98	0.6960	0.3032	56	0.54	148.01	0
148	Total S (20.5%)	0040	21.50	0.6000	20.98	0.6960	0.3032	56	0.75	148.07	0
148	Total S (20.5%)	0028	21.53	0.3600	20.98	0.6960	0.3032	56	0.80	148.01	0
148	Total S (20.5%)	0029	21.56	0.0700	20.98	0.6960	0.3032	56	0.83	148.01	0
148	Total S (20.5%)	0515	21.58	1.545	20.98	0.6960	0.3032	56	0.88	148.07	0
148	Total S (20.5%)	0177	21.62	0.2383	20.98	0.6960	0.3032	56	0.92	148.07	0
148	Total S (20.5%)	0037	21.62	0.5680	20.98	0.6960	0.3032	56	0.93	148.07	0
148	Total S (20.5%)	0371	21.63	0.4700	20.98	0.6960	0.3032	56	0.93	148.99	0
148	Total S (20.5%)	0377	21.66	0.1800	20.98	0.6960	0.3032	56	0.98	148.99	0
148	Total S (20.5%)	0421	21.70	0.0135	20.98	0.6960	0.3032	56	1.05	148.07	0
148	Total S (20.5%)	0485	21.72	1.043	20.98	0.6960	0.3032	56	1.07	148.01	0
148	Total S (20.5%)	0444	21.76	1.280	20.98	0.6960	0.3032	56	1.13	148.07	0
148	Total S (20.5%)	0444	21.93	0.6800	20.98	0.6960	0.3032	56	1.37	148.01	0
148	Total S (20.5%)	0513	21.99‡	0.1100	20.98	0.6960	0.3032	56	1.45	148.01	0
148	Total S (20.5%)	0324	22.30‡	0.4000	20.98	0.6960	0.3032	56	1.90	148.01	0
148	Total S (20.5%)	0494	22.31‡	0.6129	20.98	0.6960	0.3032	56	1.92	148.07	0
148	Total S (20.5%)	0354	22.35‡	0.3000	20.98	0.6960	0.3032	56	1.97	148.99	0
148	Total S (20.5%)	0136	22.54‡	0.1400	20.98	0.6960	0.3032	56	2.25	148.00	0
148	Total S (20.5%)	0043	20.64	2.190	20.98	0.6960	0.3032	56	-0.49	148.07	1
149	S - HNO3 soluble (%)	0524	20.68	0.3615	20.83	0.1323	0.3038	3	-1.13	149.04	0
149	S - HNO3 soluble (%)	0521	20.88	0.0000	20.83	0.1323	0.3038	3	0.38	149.04	0
149	S - HNO3 soluble (%)	0423	20.93	0.5500	20.83	0.1323	0.3038	3	0.75	149.04	0
151	Acid Soluble As (ppm)	0524	0.1550	0.0280	1.029	1.448	0.3583	3	-0.60	151.30	0
151	Acid Soluble As (ppm)	0255	0.2315	0.0270	1.029	1.448	0.3583	3	-0.55	151.30	0
151	Acid Soluble As (ppm)	0494	2.700	1.020	1.029	1.448	0.3583	3	1.15	151.33	0
151	Acid Soluble As (ppm)	0515	0.0000	0.0000	1.029	1.448	0.3583	3		151.33	4
151	Acid Soluble As (ppm)	0515	0.0000	0.0000	1.029	1.448	0.3583	3		151.34	4
151	Acid Soluble As (ppm)	0527	< 0.001		1.029	1.448	0.3583	3		151.33	5
151	Acid Soluble As (ppm)	0550	< 0.08		1.029	1.448	0.3583	3		151.00	5
151	Acid Soluble As (ppm)	0450	< 0.5		1.029	1.448	0.3583	3		151.30	5
151	Acid Soluble As (ppm)	0481	< 0.5		1.029	1.448	0.3583	3		151.99	5
151	Acid Soluble As (ppm)	0096	< 1		1.029	1.448	0.3583	3		151.32	5
151	Acid Soluble As (ppm)	0136	< 1		1.029	1.448	0.3583	3		151.33	5
151	Acid Soluble As (ppm)	0405	< 1		1.029	1.448	0.3583	3		151.99	5
151	Acid Soluble As (ppm)	0117	< 10		1.029	1.448	0.3583	3		151.33	5
165	Acid Soluble B (%)	0106	0.0007	0.0006	0.0024	0.0010	0.0002	5	-1.43	165.30	0
165	Acid Soluble B (%)	0524	0.0023	0.0002	0.0024	0.0010	0.0002	5	-0.07	165.99	0
165	Acid Soluble B (%)	0423	0.0026	0.0003	0.0024	0.0010	0.0002	5	0.15	165.99	0
165	Acid Soluble B (%)	0516	0.0030	0.0000	0.0024	0.0010	0.0002	5	0.53	165.99	0
165	Acid Soluble B (%)	0553	0.0034	0.0001	0.0024	0.0010	0.0002	5	0.83	165.00	0
165	Acid Soluble B (%)	0515	0.0000	0.0000	0.0024	0.0010	0.0002	5		165.99	4
165	Acid Soluble B (%)	0354	< 0.01		0.0024	0.0010	0.0002	5		165.30	5
165	Acid Soluble B (%)	0527	< 0.01		0.0024	0.0010	0.0002	5		165.99	5
181	Acid Soluble Cd (ppm)	0394	0.0250	0.0040	0.4465	0.7216	0.2028	7	-0.58	181.30	0
181	Acid Soluble Cd (ppm)	0405	0.0350	0.0100	0.4465	0.7216	0.2028	7	-0.57	181.99	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				
181	Acid Soluble Cd (ppm)	0255	0.0410	0.0260	0.4465	0.7216	0.2028	7	-0.56	181.30	0
181	Acid Soluble Cd (ppm)	0524	0.1379	0.0034	0.4465	0.7216	0.2028	7	-0.43	181.30	0
181	Acid Soluble Cd (ppm)	0506	0.1575	0.0110	0.4465	0.7216	0.2028	7	-0.40	181.99	0
181	Acid Soluble Cd (ppm)	0550	1.200	0.2000	0.4465	0.7216	0.2028	7	1.04	181.00	0
181	Acid Soluble Cd (ppm)	0515	4.944	1.165	0.4465	0.7216	0.2028	7	6.23	181.33	0
181	Acid Soluble Cd (ppm)	0515	3.334	6.668	0.4465	0.7216	0.2028	7		181.34	4
181	Acid Soluble Cd (ppm)	0527	< 0.001		0.4465	0.7216	0.2028	7		181.33	5
181	Acid Soluble Cd (ppm)	0450	< 0.5		0.4465	0.7216	0.2028	7		181.30	5
181	Acid Soluble Cd (ppm)	0481	< 0.5		0.4465	0.7216	0.2028	7		181.99	5
181	Acid Soluble Cd (ppm)	0494	< 0.54		0.4465	0.7216	0.2028	7		181.33	5
181	Acid Soluble Cd (ppm)	0096	< 1		0.4465	0.7216	0.2028	7		181.32	5
181	Acid Soluble Cd (ppm)	0117	< 5		0.4465	0.7216	0.2028	7		181.33	5
190	Water Soluble Cl (%)	0553	0.2450	0.0100				1		190.00	0
191	Acid Soluble Cr (ppm)	0524	2.326	0.0011	5.521	3.350	0.9834	12	-0.95	191.30	0
191	Acid Soluble Cr (ppm)	0506	2.995	0.0700	5.521	3.350	0.9834	12	-0.75	191.99	0
191	Acid Soluble Cr (ppm)	0136	3.100	0.6000	5.521	3.350	0.9834	12	-0.72	191.33	0
191	Acid Soluble Cr (ppm)	0037	3.467	0.2490	5.521	3.350	0.9834	12	-0.61	191.33	0
191	Acid Soluble Cr (ppm)	0394	3.585	0.2100	5.521	3.350	0.9834	12	-0.58	191.30	0
191	Acid Soluble Cr (ppm)	0096	3.950	0.1000	5.521	3.350	0.9834	12	-0.47	191.32	0
191	Acid Soluble Cr (ppm)	0405	4.000	2.000	5.521	3.350	0.9834	12	-0.45	191.99	0
191	Acid Soluble Cr (ppm)	0035	6.420	0.5200	5.521	3.350	0.9834	12	0.27	191.30	0
191	Acid Soluble Cr (ppm)	0494	7.225	2.277	5.521	3.350	0.9834	12	0.51	191.33	0
191	Acid Soluble Cr (ppm)	0515	8.090	2.450	5.521	3.350	0.9834	12	0.77	191.33	0
191	Acid Soluble Cr (ppm)	0527	10.94	0.2270	5.521	3.350	0.9834	12	1.62	191.33	0
191	Acid Soluble Cr (ppm)	0515	16.98	3.097	5.521	3.350	0.9834	12	3.42	191.34	0
191	Acid Soluble Cr (ppm)	0550	< 0.25		5.521	3.350	0.9834	12		191.00	5
191	Acid Soluble Cr (ppm)	0481	< 20		5.521	3.350	0.9834	12		191.99	5
202	Acid Soluble Co (ppm)	0550	1.415	0.0500	2.941	1.034	0.4045	10	-1.48	202.33	0
202	Acid Soluble Co (ppm)	0255	1.992	0.0320	2.941	1.034	0.4045	10	-0.92	202.99	0
202	Acid Soluble Co (ppm)	0524	2.335	0.0205	2.941	1.034	0.4045	10	-0.59	202.30	0
202	Acid Soluble Co (ppm)	0136	2.400	0.8000	2.941	1.034	0.4045	10	-0.52	202.33	0
202	Acid Soluble Co (ppm)	0035	3.045	0.5100	2.941	1.034	0.4045	10	0.10	202.30	0
202	Acid Soluble Co (ppm)	0494	3.110	0.2200	2.941	1.034	0.4045	10	0.16	202.33	0
202	Acid Soluble Co (ppm)	0405	3.400	0.4000	2.941	1.034	0.4045	10	0.44	202.99	0
202	Acid Soluble Co (ppm)	0527	3.457	0.2266	2.941	1.034	0.4045	10	0.50	202.33	0
202	Acid Soluble Co (ppm)	0037	3.760	0.0320	2.941	1.034	0.4045	10	0.79	202.33	0
202	Acid Soluble Co (ppm)	0515	4.945	1.754	2.941	1.034	0.4045	10	1.94	202.34	0
202	Acid Soluble Co (ppm)	0515	7.218	3.454	2.941	1.034	0.4045	10	4.14	202.33	1
202	Acid Soluble Co (ppm)	0096	< 1		2.941	1.034	0.4045	10		202.30	5
202	Acid Soluble Co (ppm)	0481	< 10		2.941	1.034	0.4045	10		202.99	5
221	Acid Soluble Cu (%)	0106	0.0007	0.0005	0.0019	0.0007	0.0030	19	-1.65	221.33	0
221	Acid Soluble Cu (%)	0494	0.0010	0.0003	0.0019	0.0007	0.0030	19	-1.24	221.33	0
221	Acid Soluble Cu (%)	0506	0.0010	0.0000	0.0019	0.0007	0.0030	19	-1.17	221.99	0
221	Acid Soluble Cu (%)	0550	0.0015	0.0002	0.0019	0.0007	0.0030	19	-0.49	221.00	0
221	Acid Soluble Cu (%)	0423	0.0016	0.0003	0.0019	0.0007	0.0030	19	-0.42	221.32	0
221	Acid Soluble Cu (%)	0095	0.0016	0.0001	0.0019	0.0007	0.0030	19	-0.42	221.32	0
221	Acid Soluble Cu (%)	0405	0.0016	0.0001	0.0019	0.0007	0.0030	19	-0.42	221.99	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				
221	Acid Soluble Cu (%)	0035	0.0016	0.0000	0.0019	0.0007	0.0030	19	-0.35	221.30	0
221	Acid Soluble Cu (%)	0498	0.0018	0.0000	0.0019	0.0007	0.0030	19	-0.08	221.02	0
221	Acid Soluble Cu (%)	0524	0.0018	0.0002	0.0019	0.0007	0.0030	19	-0.08	221.99	0
221	Acid Soluble Cu (%)	0394	0.0019	0.0003	0.0019	0.0007	0.0030	19	-0.01	221.32	0
221	Acid Soluble Cu (%)	0136	0.0019	0.0003	0.0019	0.0007	0.0030	19	-0.01	221.33	0
221	Acid Soluble Cu (%)	0421	0.0020	0.0002	0.0019	0.0007	0.0030	19	0.19	221.33	0
221	Acid Soluble Cu (%)	0481	0.0020	0.0000	0.0019	0.0007	0.0030	19	0.19	221.99	0
221	Acid Soluble Cu (%)	0527	0.0021	0.0001	0.0019	0.0007	0.0030	19	0.26	221.33	0
221	Acid Soluble Cu (%)	0515	0.0027	0.0010	0.0019	0.0007	0.0030	19	1.14	221.33	0
221	Acid Soluble Cu (%)	0515	0.0029	0.0010	0.0019	0.0007	0.0030	19	1.42	221.99	0
221	Acid Soluble Cu (%)	0516	0.0185	0.0030	0.0019	0.0007	0.0030	19	22.63	221.99	0
221	Acid Soluble Cu (%)	0537	0.2050	0.0500	0.0019	0.0007	0.0030	19	276.29	221.00	0
221	Acid Soluble Cu (%)	0096	8.300	0.2100	0.0019	0.0007	0.0030	19	11286.16	221.30	2
221	Acid Soluble Cu (%)	0255	0.0000	0.0000	0.0019	0.0007	0.0030	19		221.30	4
221	Acid Soluble Cu (%)	0553	< 0.005		0.0019	0.0007	0.0030	19		221.00	5
221	Acid Soluble Cu (%)	0354	< 0.01		0.0019	0.0007	0.0030	19		221.30	5
241	Acid Soluble Fe (1%)	0200	0.6150†	0.0100	1.011	0.1263	0.0571	65	-3.13	241.20	0
241	Acid Soluble Fe (1%)	0390	0.7370†	0.0160	1.011	0.1263	0.0571	65	-2.17	241.30	0
241	Acid Soluble Fe (1%)	0498	0.7850†	0.0300	1.011	0.1263	0.0571	65	-1.79	241.02	0
241	Acid Soluble Fe (1%)	0421	0.8139†	0.0011	1.011	0.1263	0.0571	65	-1.56	241.33	0
241	Acid Soluble Fe (1%)	0035	0.8160†	0.0040	1.011	0.1263	0.0571	65	-1.54	241.30	0
241	Acid Soluble Fe (1%)	0546	0.8296†	0.0967	1.011	0.1263	0.0571	65	-1.44	241.33	0
241	Acid Soluble Fe (1%)	0106	0.8429†	0.1480	1.011	0.1263	0.0571	65	-1.33	241.33	0
241	Acid Soluble Fe (1%)	0354	0.8450†	0.1700	1.011	0.1263	0.0571	65	-1.31	241.30	0
241	Acid Soluble Fe (1%)	0419	0.8590†	0.1860	1.011	0.1263	0.0571	65	-1.20	241.33	0
241	Acid Soluble Fe (1%)	0136	0.8700†	0.0200	1.011	0.1263	0.0571	65	-1.12	241.33	0
241	Acid Soluble Fe (1%)	0095	0.8850†	0.0100	1.011	0.1263	0.0571	65	-1.00	241.32	0
241	Acid Soluble Fe (1%)	0177	0.8955†	0.0089	1.011	0.1263	0.0571	65	-0.91	241.33	0
241	Acid Soluble Fe (1%)	0481	0.9050	0.0300	1.011	0.1263	0.0571	65	-0.84	241.99	0
241	Acid Soluble Fe (1%)	0506	0.9085	0.0250	1.011	0.1263	0.0571	65	-0.81	241.99	0
241	Acid Soluble Fe (1%)	0291	0.9250	0.0100	1.011	0.1263	0.0571	65	-0.68	241.30	0
241	Acid Soluble Fe (1%)	0516	0.9280	0.0120	1.011	0.1263	0.0571	65	-0.66	241.99	0
241	Acid Soluble Fe (1%)	0553	0.9300	0.0300	1.011	0.1263	0.0571	65	-0.64	241.00	0
241	Acid Soluble Fe (1%)	0534	0.9350	0.0100	1.011	0.1263	0.0571	65	-0.60	241.00	0
241	Acid Soluble Fe (1%)	0513	0.9550	0.0100	1.011	0.1263	0.0571	65	-0.44	241.00	0
241	Acid Soluble Fe (1%)	0043	0.9650	0.2700	1.011	0.1263	0.0571	65	-0.36	241.33	0
241	Acid Soluble Fe (1%)	0394	0.9695	0.0250	1.011	0.1263	0.0571	65	-0.33	241.32	0
241	Acid Soluble Fe (1%)	0559	0.9750	0.0100	1.011	0.1263	0.0571	65	-0.28	241.99	0
241	Acid Soluble Fe (1%)	0531	0.9800	0.0400	1.011	0.1263	0.0571	65	-0.24	241.00	0
241	Acid Soluble Fe (1%)	0405	0.9900	0.0600	1.011	0.1263	0.0571	65	-0.17	241.99	0
241	Acid Soluble Fe (1%)	0533	0.9900	0.0200	1.011	0.1263	0.0571	65	-0.17	241.99	0
241	Acid Soluble Fe (1%)	0485	0.9958	0.0156	1.011	0.1263	0.0571	65	-0.12	241.00	0
241	Acid Soluble Fe (1%)	0360	0.9960	0.0280	1.011	0.1263	0.0571	65	-0.12	241.30	0
241	Acid Soluble Fe (1%)	0521	1.000	0.0000	1.011	0.1263	0.0571	65	-0.08	241.32	0
241	Acid Soluble Fe (1%)	0524	1.002	0.1933	1.011	0.1263	0.0571	65	-0.07	241.99	0
241	Acid Soluble Fe (1%)	0515	1.005	0.1684	1.011	0.1263	0.0571	65	-0.05	241.33	0
241	Acid Soluble Fe (1%)	0472	1.005	0.0500	1.011	0.1263	0.0571	65	-0.05	241.30	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				
241	Acid Soluble Fe (1%)	0356	1.008	0.0420	1.011	0.1263	0.0571	65	-0.02	241.00	0
241	Acid Soluble Fe (1%)	0234	1.010	0.0400	1.011	0.1263	0.0571	65	-0.01	241.30	0
241	Acid Soluble Fe (1%)	0560	1.015	0.0500	1.011	0.1263	0.0571	65	0.03	241.99	0
241	Acid Soluble Fe (1%)	0567	1.015	0.0100	1.011	0.1263	0.0571	65	0.03	241.99	0
241	Acid Soluble Fe (1%)	0558	1.020	0.0200	1.011	0.1263	0.0571	65	0.07	241.99	0
241	Acid Soluble Fe (1%)	0536	1.030	0.0200	1.011	0.1263	0.0571	65	0.15	241.00	0
241	Acid Soluble Fe (1%)	0096	1.030	0.0800	1.011	0.1263	0.0571	65	0.15	241.30	0
241	Acid Soluble Fe (1%)	0494	1.035	0.1600	1.011	0.1263	0.0571	65	0.19	241.33	0
241	Acid Soluble Fe (1%)	0040	1.035	0.1100	1.011	0.1263	0.0571	65	0.19	241.00	0
241	Acid Soluble Fe (1%)	0564	1.035	0.0100	1.011	0.1263	0.0571	65	0.19	241.99	0
241	Acid Soluble Fe (1%)	0565	1.036	0.0100	1.011	0.1263	0.0571	65	0.20	241.99	0
241	Acid Soluble Fe (1%)	0556	1.040	0.0200	1.011	0.1263	0.0571	65	0.23	241.00	0
241	Acid Soluble Fe (1%)	0535	1.050	0.1000	1.011	0.1263	0.0571	65	0.31	241.00	0
241	Acid Soluble Fe (1%)	0539	1.050	0.1000	1.011	0.1263	0.0571	65	0.31	241.00	0
241	Acid Soluble Fe (1%)	0042	1.060	0.0000	1.011	0.1263	0.0571	65	0.39	241.99	0
241	Acid Soluble Fe (1%)	0433	1.067	0.0450	1.011	0.1263	0.0571	65	0.44	241.30	0
241	Acid Soluble Fe (1%)	0532	1.075	0.0500	1.011	0.1263	0.0571	65	0.51	241.99	0
241	Acid Soluble Fe (1%)	0444	1.085	0.0100	1.011	0.1263	0.0571	65	0.59	241.30	0
241	Acid Soluble Fe (1%)	0255	1.093	0.0070	1.011	0.1263	0.0571	65	0.65	241.30	0
241	Acid Soluble Fe (1%)	0561	1.095	0.1500	1.011	0.1263	0.0571	65	0.67	241.33	0
241	Acid Soluble Fe (1%)	0562	1.095	0.0300	1.011	0.1263	0.0571	65	0.67	241.99	0
241	Acid Soluble Fe (1%)	0231	1.115	0.0100	1.011	0.1263	0.0571	65	0.82	241.30	0
241	Acid Soluble Fe (1%)	0537	1.125‡	0.1500	1.011	0.1263	0.0571	65	0.90	241.00	0
241	Acid Soluble Fe (1%)	0527	1.126‡	0.0209	1.011	0.1263	0.0571	65	0.91	241.33	0
241	Acid Soluble Fe (1%)	0029	1.148‡	0.0060	1.011	0.1263	0.0571	65	1.09	241.00	0
241	Acid Soluble Fe (1%)	0550	1.150‡	0.1000	1.011	0.1263	0.0571	65	1.10	241.00	0
241	Acid Soluble Fe (1%)	0324	1.170‡	0.1200	1.011	0.1263	0.0571	65	1.26	241.30	0
241	Acid Soluble Fe (1%)	0377	1.205‡	0.1300	1.011	0.1263	0.0571	65	1.54	241.30	0
241	Acid Soluble Fe (1%)	0157	1.270‡	0.0600	1.011	0.1263	0.0571	65	2.05	241.30	0
241	Acid Soluble Fe (1%)	0037	1.282‡	0.0800	1.011	0.1263	0.0571	65	2.15	241.33	0
241	Acid Soluble Fe (1%)	0023	1.300‡	0.2000	1.011	0.1263	0.0571	65	2.29	241.30	0
241	Acid Soluble Fe (1%)	0515	1.304‡	0.0343	1.011	0.1263	0.0571	65	2.32	241.99	0
241	Acid Soluble Fe (1%)	0486	1.310‡	0.0200	1.011	0.1263	0.0571	65	2.37	241.33	0
241	Acid Soluble Fe (1%)	0371	1.385‡	0.0100	1.011	0.1263	0.0571	65	2.96	241.30	0
241	Acid Soluble Fe (1%)	0117	1.111	0.2934	1.011	0.1263	0.0571	65	0.79	241.33	1
251	Acid Soluble Pb (ppm)	0255	0.3250	0.0400	1.167	1.159	0.6371	8	-0.73	251.30	0
251	Acid Soluble Pb (ppm)	0450	0.5000	0.0000	1.167	1.159	0.6371	8	-0.58	251.30	0
251	Acid Soluble Pb (ppm)	0527	0.6085	0.0005	1.167	1.159	0.6371	8	-0.48	251.33	0
251	Acid Soluble Pb (ppm)	0394	0.7040	0.0080	1.167	1.159	0.6371	8	-0.40	251.30	0
251	Acid Soluble Pb (ppm)	0405	0.7500	0.3000	1.167	1.159	0.6371	8	-0.36	251.99	0
251	Acid Soluble Pb (ppm)	0524	0.8499	0.2172	1.167	1.159	0.6371	8	-0.27	251.30	0
251	Acid Soluble Pb (ppm)	0035	2.695	1.390	1.167	1.159	0.6371	8	1.32	251.30	0
251	Acid Soluble Pb (ppm)	0515	5.906	3.141	1.167	1.159	0.6371	8	4.09	251.33	0
251	Acid Soluble Pb (ppm)	0550	13.18	5.330	1.167	1.159	0.6371	8	10.36	251.00	1
251	Acid Soluble Pb (ppm)	0515	1.224	2.448	1.167	1.159	0.6371	8		251.34	4
251	Acid Soluble Pb (ppm)	0481	< 1		1.167	1.159	0.6371	8		251.99	5
251	Acid Soluble Pb (ppm)	0494	< 1.27		1.167	1.159	0.6371	8		251.33	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				
251	Acid Soluble Pb (ppm)	0117	< 5		1.167	1.159	0.6371	8		251.33	5
261	Acid Soluble Mn (0.2%)	0419	0.02475†	0.0001	0.2466	0.0419	0.0162	57	-5.30	261.35	0
261	Acid Soluble Mn (0.2%)	0562	0.1700†	0.0200	0.2466	0.0419	0.0162	57	-1.83	261.99	0
261	Acid Soluble Mn (0.2%)	0136	0.1700†	0.0000	0.2466	0.0419	0.0162	57	-1.83	261.35	0
261	Acid Soluble Mn (0.2%)	0531	0.1750†	0.0300	0.2466	0.0419	0.0162	57	-1.71	261.12	0
261	Acid Soluble Mn (0.2%)	0567	0.1900†	0.0000	0.2466	0.0419	0.0162	57	-1.35	261.99	0
261	Acid Soluble Mn (0.2%)	0513	0.2000†	0.0000	0.2466	0.0419	0.0162	57	-1.11	261.12	0
261	Acid Soluble Mn (0.2%)	0553	0.2035†	0.0010	0.2466	0.0419	0.0162	57	-1.03	261.11	0
261	Acid Soluble Mn (0.2%)	0564	0.2055†	0.0030	0.2466	0.0419	0.0162	57	-0.98	261.50	0
261	Acid Soluble Mn (0.2%)	0390	0.2065†	0.0430	0.2466	0.0419	0.0162	57	-0.96	261.30	0
261	Acid Soluble Mn (0.2%)	0565	0.2071†	0.0021	0.2466	0.0419	0.0162	57	-0.94	261.50	0
261	Acid Soluble Mn (0.2%)	0534	0.2110†	0.0060	0.2466	0.0419	0.0162	57	-0.85	261.12	0
261	Acid Soluble Mn (0.2%)	0106	0.2130†	0.0645	0.2466	0.0419	0.0162	57	-0.80	261.35	0
261	Acid Soluble Mn (0.2%)	0536	0.2150†	0.0100	0.2466	0.0419	0.0162	57	-0.75	261.12	0
261	Acid Soluble Mn (0.2%)	0043	0.2150†	0.0300	0.2466	0.0419	0.0162	57	-0.75	261.35	0
261	Acid Soluble Mn (0.2%)	0556	0.2200	0.0400	0.2466	0.0419	0.0162	57	-0.64	261.11	0
261	Acid Soluble Mn (0.2%)	0481	0.2200	0.0000	0.2466	0.0419	0.0162	57	-0.64	261.99	0
261	Acid Soluble Mn (0.2%)	0516	0.2240	0.0020	0.2466	0.0419	0.0162	57	-0.54	261.99	0
261	Acid Soluble Mn (0.2%)	0234	0.2250	0.0100	0.2466	0.0419	0.0162	57	-0.52	261.30	0
261	Acid Soluble Mn (0.2%)	0532	0.2250	0.0100	0.2466	0.0419	0.0162	57	-0.52	261.99	0
261	Acid Soluble Mn (0.2%)	0354	0.2300	0.0400	0.2466	0.0419	0.0162	57	-0.40	261.30	0
261	Acid Soluble Mn (0.2%)	0035	0.2315	0.0270	0.2466	0.0419	0.0162	57	-0.36	261.30	0
261	Acid Soluble Mn (0.2%)	0535	0.2350	0.0100	0.2466	0.0419	0.0162	57	-0.28	261.12	0
261	Acid Soluble Mn (0.2%)	0539	0.2350	0.0100	0.2466	0.0419	0.0162	57	-0.28	261.12	0
261	Acid Soluble Mn (0.2%)	0498	0.2350	0.0300	0.2466	0.0419	0.0162	57	-0.28	261.14	0
261	Acid Soluble Mn (0.2%)	0546	0.2359	0.0409	0.2466	0.0419	0.0162	57	-0.26	261.35	0
261	Acid Soluble Mn (0.2%)	0177	0.2371	0.0015	0.2466	0.0419	0.0162	57	-0.23	261.35	0
261	Acid Soluble Mn (0.2%)	0558	0.2400	0.0200	0.2466	0.0419	0.0162	57	-0.16	261.99	0
261	Acid Soluble Mn (0.2%)	0291	0.2450	0.0100	0.2466	0.0419	0.0162	57	-0.04	261.30	0
261	Acid Soluble Mn (0.2%)	0095	0.2450	0.0100	0.2466	0.0419	0.0162	57	-0.04	261.34	0
261	Acid Soluble Mn (0.2%)	0394	0.2465	0.0070	0.2466	0.0419	0.0162	57	0.00	261.34	0
261	Acid Soluble Mn (0.2%)	0485	0.2468	0.0153	0.2466	0.0419	0.0162	57	0.00	261.12	0
261	Acid Soluble Mn (0.2%)	0255	0.2510	0.0020	0.2466	0.0419	0.0162	57	0.10	261.99	0
261	Acid Soluble Mn (0.2%)	0029	0.2544	0.0104	0.2466	0.0419	0.0162	57	0.19	261.12	0
261	Acid Soluble Mn (0.2%)	0521	0.2545	0.0000	0.2466	0.0419	0.0162	57	0.19	261.34	0
261	Acid Soluble Mn (0.2%)	0042	0.2550	0.0100	0.2466	0.0419	0.0162	57	0.20	261.99	0
261	Acid Soluble Mn (0.2%)	0527	0.2594	0.0039	0.2466	0.0419	0.0162	57	0.30	261.35	0
261	Acid Soluble Mn (0.2%)	0040	0.2610	0.0340	0.2466	0.0419	0.0162	57	0.34	261.12	0
261	Acid Soluble Mn (0.2%)	0506	0.2610	0.0060	0.2466	0.0419	0.0162	57	0.34	261.99	0
261	Acid Soluble Mn (0.2%)	0494	0.2636	0.0095	0.2466	0.0419	0.0162	57	0.40	261.35	0
261	Acid Soluble Mn (0.2%)	0524	0.2652	0.0658	0.2466	0.0419	0.0162	57	0.44	261.99	0
261	Acid Soluble Mn (0.2%)	0360	0.2655	0.0010	0.2466	0.0419	0.0162	57	0.45	261.31	0
261	Acid Soluble Mn (0.2%)	0096	0.2700	0.0600	0.2466	0.0419	0.0162	57	0.56	261.30	0
261	Acid Soluble Mn (0.2%)	0231	0.2700	0.0200	0.2466	0.0419	0.0162	57	0.56	261.32	0
261	Acid Soluble Mn (0.2%)	0423	0.2700	0.0280	0.2466	0.0419	0.0162	57	0.56	261.34	0
261	Acid Soluble Mn (0.2%)	0515	0.2706	0.0127	0.2466	0.0419	0.0162	57	0.57	261.35	0
261	Acid Soluble Mn (0.2%)	0472	0.2800‡	0.0000	0.2466	0.0419	0.0162	57	0.80	261.30	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				
261	Acid Soluble Mn (0.2%)	0117	0.2866±	0.0492	0.2466	0.0419	0.0162	57	0.95	261.35	0
261	Acid Soluble Mn (0.2%)	0561	0.2900±	0.0200	0.2466	0.0419	0.0162	57	1.04	261.35	0
261	Acid Soluble Mn (0.2%)	0444	0.3000±	0.0000	0.2466	0.0419	0.0162	57	1.27	261.30	0
261	Acid Soluble Mn (0.2%)	0023	0.3000±	0.0000	0.2466	0.0419	0.0162	57	1.27	261.32	0
261	Acid Soluble Mn (0.2%)	0486	0.3000±	0.0000	0.2466	0.0419	0.0162	57	1.27	261.35	0
261	Acid Soluble Mn (0.2%)	0550	0.3060±	0.0280	0.2466	0.0419	0.0162	57	1.42	261.11	0
261	Acid Soluble Mn (0.2%)	0377	0.3070±	0.0120	0.2466	0.0419	0.0162	57	1.44	261.32	0
261	Acid Soluble Mn (0.2%)	0324	0.3120±	0.0000	0.2466	0.0419	0.0162	57	1.56	261.31	0
261	Acid Soluble Mn (0.2%)	0027	0.3155±	0.0150	0.2466	0.0419	0.0162	57	1.64	261.99	0
261	Acid Soluble Mn (0.2%)	0433	0.3259±	0.0038	0.2466	0.0419	0.0162	57	1.89	261.30	0
261	Acid Soluble Mn (0.2%)	0371	0.3300±	0.0400	0.2466	0.0419	0.0162	57	1.99	261.32	0
261	Acid Soluble Mn (0.2%)	0515	0.2894±	0.1647	0.2466	0.0419	0.0162	57	1.02	261.99	1
271	Water Soluble Mn (%)	0560	0.1975	0.0010	0.2408	0.0475	0.0052	5	-0.91	271.99	0
271	Water Soluble Mn (%)	0536	0.2050	0.0100	0.2408	0.0475	0.0052	5	-0.75	271.00	0
271	Water Soluble Mn (%)	0559	0.2170	0.0020	0.2408	0.0475	0.0052	5	-0.50	271.99	0
271	Water Soluble Mn (%)	0356	0.2900	0.0120	0.2408	0.0475	0.0052	5	1.04	271.00	0
271	Water Soluble Mn (%)	0405	0.2945	0.0010	0.2408	0.0475	0.0052	5	1.13	271.99	0
281	Acid Soluble Hg (ppm)	0506	0.0905	0.0650	207.6	344.0	10.06	3	-0.49	281.00	0
281	Acid Soluble Hg (ppm)	0550	18.15	8.500	207.6	344.0	10.06	3	-0.45	281.00	0
281	Acid Soluble Hg (ppm)	0524	604.7	21.62	207.6	344.0	10.06	3	0.94	281.30	0
281	Acid Soluble Hg (ppm)	0515	0.0000	0.0000	207.6	344.0	10.06	3		281.30	4
281	Acid Soluble Hg (ppm)	0527	< 0.001		207.6	344.0	10.06	3		281.30	5
281	Acid Soluble Hg (ppm)	0405	< 0.01		207.6	344.0	10.06	3		281.99	5
281	Acid Soluble Hg (ppm)	0009	< 0.05		207.6	344.0	10.06	3		281.30	5
281	Acid Soluble Hg (ppm)	0117	< 0.2		207.6	344.0	10.06	3		281.00	5
281	Acid Soluble Hg (ppm)	0481	< 0.5		207.6	344.0	10.06	3		281.00	5
281	Acid Soluble Hg (ppm)	0450	< 0.5		207.6	344.0	10.06	3		281.30	5
289	Acid Soluble Mo (ppm)	0524	0.3018	0.3153	2.959	4.585	0.3607	5	-0.58	289.30	0
289	Acid Soluble Mo (ppm)	0405	0.3850	0.0700	2.959	4.585	0.3607	5	-0.56	289.99	0
289	Acid Soluble Mo (ppm)	0255	0.6080	0.4180	2.959	4.585	0.3607	5	-0.51	289.30	0
289	Acid Soluble Mo (ppm)	0106	2.500	1.000	2.959	4.585	0.3607	5	-0.10	289.33	0
289	Acid Soluble Mo (ppm)	0516	11.00	0.0000	2.959	4.585	0.3607	5	1.75	289.30	0
289	Acid Soluble Mo (ppm)	0515	5.380	6.992	2.959	4.585	0.3607	5	0.53	289.33	1
289	Acid Soluble Mo (ppm)	0515	0.0000	0.0000	2.959	4.585	0.3607	5		289.34	4
289	Acid Soluble Mo (ppm)	0527	< 0.001		2.959	4.585	0.3607	5		289.33	5
289	Acid Soluble Mo (ppm)	0494	< 0.34		2.959	4.585	0.3607	5		289.33	5
289	Acid Soluble Mo (ppm)	0550	< 1		2.959	4.585	0.3607	5		289.00	5
289	Acid Soluble Mo (ppm)	0136	< 5		2.959	4.585	0.3607	5		289.33	5
289	Acid Soluble Mo (ppm)	0481	< 50		2.959	4.585	0.3607	5		289.99	5
291	Acid Soluble Ni (ppm)	0524	2.911	0.0702	5.095	1.069	0.2415	14	-2.04	291.30	0
291	Acid Soluble Ni (ppm)	0136	3.810	1.300	5.095	1.069	0.2415	14	-1.20	291.33	0
291	Acid Soluble Ni (ppm)	0394	3.950	0.0800	5.095	1.069	0.2415	14	-1.07	291.30	0
291	Acid Soluble Ni (ppm)	0506	4.830	0.0600	5.095	1.069	0.2415	14	-0.25	291.99	0
291	Acid Soluble Ni (ppm)	0450	5.000	0.0000	5.095	1.069	0.2415	14	-0.09	291.30	0
291	Acid Soluble Ni (ppm)	0405	5.000	0.0000	5.095	1.069	0.2415	14	-0.09	291.99	0
291	Acid Soluble Ni (ppm)	0035	5.045	0.0900	5.095	1.069	0.2415	14	-0.05	291.30	0
291	Acid Soluble Ni (ppm)	0096	5.100	0.2000	5.095	1.069	0.2415	14	0.01	291.30	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				
291	Acid Soluble Ni (ppm)	0494	5.113	0.1150	5.095	1.069	0.2415	14	0.02	291.33	0
291	Acid Soluble Ni (ppm)	0521	5.150	0.0000	5.095	1.069	0.2415	14	0.05	291.30	0
291	Acid Soluble Ni (ppm)	0037	5.661	0.3210	5.095	1.069	0.2415	14	0.53	291.33	0
291	Acid Soluble Ni (ppm)	0527	5.779	0.1628	5.095	1.069	0.2415	14	0.64	291.33	0
291	Acid Soluble Ni (ppm)	0255	7.435	0.8310	5.095	1.069	0.2415	14	2.19	291.99	0
291	Acid Soluble Ni (ppm)	0515	8.788	0.1515	5.095	1.069	0.2415	14	3.45	291.33	0
291	Acid Soluble Ni (ppm)	0515	3.709	1.625	5.095	1.069	0.2415	14	-1.30	291.34	1
291	Acid Soluble Ni (ppm)	0550	< 0.6		5.095	1.069	0.2415	14		291.00	5
291	Acid Soluble Ni (ppm)	0117	< 5		5.095	1.069	0.2415	14		291.33	5
291	Acid Soluble Ni (ppm)	0481	< 5		5.095	1.069	0.2415	14		291.99	5
301	Acid Soluble Se (ppm)	0524	0.0100	0.0000	71.88	123.1	3.622	3	-0.47	301.30	0
301	Acid Soluble Se (ppm)	0255	1.640	0.8660	71.88	123.1	3.622	3	-0.46	301.99	0
301	Acid Soluble Se (ppm)	0506	214.0	10.00	71.88	123.1	3.622	3	0.94	301.99	0
301	Acid Soluble Se (ppm)	0515	0.0000	0.0000	71.88	123.1	3.622	3		301.33	4
301	Acid Soluble Se (ppm)	0515	0.0000	0.0000	71.88	123.1	3.622	3		301.34	4
301	Acid Soluble Se (ppm)	0527	< 0.01		71.88	123.1	3.622	3		301.33	5
301	Acid Soluble Se (ppm)	0550	< 0.08		71.88	123.1	3.622	3		301.00	5
301	Acid Soluble Se (ppm)	0481	< 0.5		71.88	123.1	3.622	3		301.99	5
301	Acid Soluble Se (ppm)	0494	< 0.95		71.88	123.1	3.622	3		301.33	5
301	Acid Soluble Se (ppm)	0405	< 1		71.88	123.1	3.622	3		301.99	5
311	Sodium (%)	0553	0.1615	0.0010	0.1856	0.0164	0.0122	8	-1.35	311.00	0
311	Sodium (%)	0035	0.1760	0.0080	0.1856	0.0164	0.0122	8	-0.54	311.33	0
311	Sodium (%)	0423	0.1790	0.0040	0.1856	0.0164	0.0122	8	-0.37	311.33	0
311	Sodium (%)	0354	0.1800	0.0400	0.1856	0.0164	0.0122	8	-0.31	311.99	0
311	Sodium (%)	0096	0.1900	0.0200	0.1856	0.0164	0.0122	8	0.25	311.99	0
311	Sodium (%)	0494	0.1931	0.0203	0.1856	0.0164	0.0122	8	0.42	311.33	0
311	Sodium (%)	0521	0.1974	0.0000	0.1856	0.0164	0.0122	8	0.66	311.32	0
311	Sodium (%)	0527	0.2079	0.0041	0.1856	0.0164	0.0122	8	1.24	311.33	0
321	Acid Soluble Zn (0.2%)	0561	0.1450†	0.0100	0.2111	0.0217	0.0146	60	-3.05	321.33	0
321	Acid Soluble Zn (0.2%)	0200	0.1550†	0.0100	0.2111	0.0217	0.0146	60	-2.59	321.00	0
321	Acid Soluble Zn (0.2%)	0516	0.1730†	0.0020	0.2111	0.0217	0.0146	60	-1.76	321.99	0
321	Acid Soluble Zn (0.2%)	0421	0.1823†	0.0001	0.2111	0.0217	0.0146	60	-1.33	321.33	0
321	Acid Soluble Zn (0.2%)	0390	0.1825†	0.0410	0.2111	0.0217	0.0146	60	-1.32	321.30	0
321	Acid Soluble Zn (0.2%)	0513	0.1850†	0.0100	0.2111	0.0217	0.0146	60	-1.21	321.00	0
321	Acid Soluble Zn (0.2%)	0291	0.1850†	0.0100	0.2111	0.0217	0.0146	60	-1.21	321.30	0
321	Acid Soluble Zn (0.2%)	0136	0.1850†	0.0300	0.2111	0.0217	0.0146	60	-1.21	321.33	0
321	Acid Soluble Zn (0.2%)	0354	0.1900	0.0400	0.2111	0.0217	0.0146	60	-0.97	321.30	0
321	Acid Soluble Zn (0.2%)	0494	0.1943	0.0112	0.2111	0.0217	0.0146	60	-0.78	321.33	0
321	Acid Soluble Zn (0.2%)	0234	0.1950	0.0100	0.2111	0.0217	0.0146	60	-0.74	321.30	0
321	Acid Soluble Zn (0.2%)	0486	0.1950	0.0100	0.2111	0.0217	0.0146	60	-0.74	321.33	0
321	Acid Soluble Zn (0.2%)	0506	0.1965	0.0110	0.2111	0.0217	0.0146	60	-0.67	321.99	0
321	Acid Soluble Zn (0.2%)	0521	0.1972	0.0000	0.2111	0.0217	0.0146	60	-0.64	321.32	0
321	Acid Soluble Zn (0.2%)	0106	0.1972	0.0148	0.2111	0.0217	0.0146	60	-0.64	321.33	0
321	Acid Soluble Zn (0.2%)	0560	0.1985	0.0010	0.2111	0.0217	0.0146	60	-0.58	321.99	0
321	Acid Soluble Zn (0.2%)	0550	0.1990	0.0160	0.2111	0.0217	0.0146	60	-0.56	321.00	0
321	Acid Soluble Zn (0.2%)	0534	0.2000	0.0000	0.2111	0.0217	0.0146	60	-0.51	321.00	0
321	Acid Soluble Zn (0.2%)	0023	0.2000	0.0000	0.2111	0.0217	0.0146	60	-0.51	321.30	0

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321	Acid Soluble Zn (0.2%)	0532	0.2000	0.0200	0.2111	0.0217	0.0146	60	-0.51	321.99	0
321	Acid Soluble Zn (0.2%)	0533	0.2000	0.0020	0.2111	0.0217	0.0146	60	-0.51	321.99	0
321	Acid Soluble Zn (0.2%)	0558	0.2000	0.0200	0.2111	0.0217	0.0146	60	-0.51	321.99	0
321	Acid Soluble Zn (0.2%)	0535	0.2050	0.0100	0.2111	0.0217	0.0146	60	-0.28	321.00	0
321	Acid Soluble Zn (0.2%)	0539	0.2050	0.0100	0.2111	0.0217	0.0146	60	-0.28	321.00	0
321	Acid Soluble Zn (0.2%)	0481	0.2050	0.0100	0.2111	0.0217	0.0146	60	-0.28	321.99	0
321	Acid Soluble Zn (0.2%)	0029	0.2052	0.0094	0.2111	0.0217	0.0146	60	-0.27	321.00	0
321	Acid Soluble Zn (0.2%)	0117	0.2074	0.0198	0.2111	0.0217	0.0146	60	-0.17	321.33	0
321	Acid Soluble Zn (0.2%)	0360	0.2075	0.0170	0.2111	0.0217	0.0146	60	-0.17	321.30	0
321	Acid Soluble Zn (0.2%)	0405	0.2085	0.0030	0.2111	0.0217	0.0146	60	-0.12	321.99	0
321	Acid Soluble Zn (0.2%)	0553	0.2095	0.0050	0.2111	0.0217	0.0146	60	-0.07	321.00	0
321	Acid Soluble Zn (0.2%)	0035	0.2095	0.0330	0.2111	0.0217	0.0146	60	-0.07	321.30	0
321	Acid Soluble Zn (0.2%)	0472	0.2100	0.0000	0.2111	0.0217	0.0146	60	-0.05	321.30	0
321	Acid Soluble Zn (0.2%)	0536	0.2100	0.0200	0.2111	0.0217	0.0146	60	-0.05	321.00	0
321	Acid Soluble Zn (0.2%)	0498	0.2100	0.0200	0.2111	0.0217	0.0146	60	-0.05	321.02	0
321	Acid Soluble Zn (0.2%)	0394	0.2105	0.0050	0.2111	0.0217	0.0146	60	-0.03	321.32	0
321	Acid Soluble Zn (0.2%)	0177	0.2120	0.0212	0.2111	0.0217	0.0146	60	0.04	321.33	0
321	Acid Soluble Zn (0.2%)	0231	0.2150	0.0100	0.2111	0.0217	0.0146	60	0.18	321.30	0
321	Acid Soluble Zn (0.2%)	0371	0.2150	0.0100	0.2111	0.0217	0.0146	60	0.18	321.30	0
321	Acid Soluble Zn (0.2%)	0567	0.2150	0.0100	0.2111	0.0217	0.0146	60	0.18	321.99	0
321	Acid Soluble Zn (0.2%)	0043	0.2150	0.0360	0.2111	0.0217	0.0146	60	0.18	321.33	0
321	Acid Soluble Zn (0.2%)	0537	0.2200	0.0600	0.2111	0.0217	0.0146	60	0.41	321.00	0
321	Acid Soluble Zn (0.2%)	0444	0.2200	0.0000	0.2111	0.0217	0.0146	60	0.41	321.30	0
321	Acid Soluble Zn (0.2%)	0562	0.2200	0.0200	0.2111	0.0217	0.0146	60	0.41	321.99	0
321	Acid Soluble Zn (0.2%)	0096	0.2250	0.0100	0.2111	0.0217	0.0146	60	0.64	321.30	0
321	Acid Soluble Zn (0.2%)	0433	0.2251	0.0145	0.2111	0.0217	0.0146	60	0.64	321.30	0
321	Acid Soluble Zn (0.2%)	0040	0.2260	0.0120	0.2111	0.0217	0.0146	60	0.69	321.00	0
321	Acid Soluble Zn (0.2%)	0255	0.2290	0.0520	0.2111	0.0217	0.0146	60	0.83	321.30	0
321	Acid Soluble Zn (0.2%)	0531	0.2300	0.0200	0.2111	0.0217	0.0146	60	0.87	321.00	0
321	Acid Soluble Zn (0.2%)	0515	0.2332	0.0349	0.2111	0.0217	0.0146	60	1.02	321.33	0
321	Acid Soluble Zn (0.2%)	0524	0.2333	0.0019	0.2111	0.0217	0.0146	60	1.02	321.99	0
321	Acid Soluble Zn (0.2%)	0527	0.2334	0.0055	0.2111	0.0217	0.0146	60	1.03	321.33	0
321	Acid Soluble Zn (0.2%)	0157	0.2380‡	0.0280	0.2111	0.0217	0.0146	60	1.24	321.30	0
321	Acid Soluble Zn (0.2%)	0037	0.2400‡	0.0140	0.2111	0.0217	0.0146	60	1.33	321.33	0
321	Acid Soluble Zn (0.2%)	0515	0.2405‡	0.0293	0.2111	0.0217	0.0146	60	1.35	321.99	0
321	Acid Soluble Zn (0.2%)	0324	0.2420‡	0.0040	0.2111	0.0217	0.0146	60	1.43	321.30	0
321	Acid Soluble Zn (0.2%)	0027	0.2460‡	0.0080	0.2111	0.0217	0.0146	60	1.61	321.99	0
321	Acid Soluble Zn (0.2%)	0095	0.2500‡	0.0200	0.2111	0.0217	0.0146	60	1.80	321.32	0
321	Acid Soluble Zn (0.2%)	0377	0.2510‡	0.0120	0.2111	0.0217	0.0146	60	1.84	321.30	0
321	Acid Soluble Zn (0.2%)	0423	0.2635‡	0.0030	0.2111	0.0217	0.0146	60	2.42	321.32	0
321	Acid Soluble Zn (0.2%)	0042	0.2650‡	0.0100	0.2111	0.0217	0.0146	60	2.49	321.99	0
321	Acid Soluble Zn (0.2%)	0419	0.02050†	0.0010	0.2111	0.0217	0.0146	60	-8.80	321.33	2
325	Water Soluble Zn (%)	0562	0.1800	0.0200	0.2139	0.0276	0.0138	12	-1.23	325.99	0
325	Water Soluble Zn (%)	0535	0.1950	0.0100	0.2139	0.0276	0.0138	12	-0.68	325.00	0
325	Water Soluble Zn (%)	0539	0.1950	0.0100	0.2139	0.0276	0.0138	12	-0.68	325.00	0
325	Water Soluble Zn (%)	0559	0.1950	0.0100	0.2139	0.0276	0.0138	12	-0.68	325.99	0
325	Water Soluble Zn (%)	0536	0.2000	0.0200	0.2139	0.0276	0.0138	12	-0.50	325.00	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				
325	Water Soluble Zn (%)	0565	0.2025	0.0031	0.2139	0.0276	0.0138	12	-0.41	325.99	0
325	Water Soluble Zn (%)	0564	0.2025	0.0090	0.2139	0.0276	0.0138	12	-0.41	325.99	0
325	Water Soluble Zn (%)	0546	0.2243	0.0055	0.2139	0.0276	0.0138	12	0.38	325.30	0
325	Water Soluble Zn (%)	0556	0.2300	0.0200	0.2139	0.0276	0.0138	12	0.58	325.00	0
325	Water Soluble Zn (%)	0027	0.2420	0.0220	0.2139	0.0276	0.0138	12	1.02	325.00	0
325	Water Soluble Zn (%)	0518	0.2450	0.0300	0.2139	0.0276	0.0138	12	1.13	325.99	0
325	Water Soluble Zn (%)	0356	0.3960	0.0060	0.2139	0.0276	0.0138	12	6.60	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.