

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 180812

0-0-60 Potash

### Statistical Summary

# Analytes: 25

# Labs Reporting: 83

Issue Date : 09/30/2018

Analyte Code	Analyte Sample # 180812	# 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)	Hornitz %RSD
010	Total Nitrogen (%)	3	3	0.1060	0.0493	0.1060	0.4900	0.0493	0.0356	46.49%	0.23	0.0367	5.61%
020	Total Phosphorus as P2O5 (%)	5	3	19.44	33.65	19.44		33.65	24.28	173.11%		2.740	2.56%
041	Direct Available Phosphorus as P2O5 (%)	2	2	0.0660	0.0481								
050	Soluble Potassium as K2O (60%)	85	84	60.38	2.557	60.32	1.7832	0.9855	0.1344	1.63%	1.29	0.6619	2.16%
060	Water (Free) (%)	12	12	0.3035	0.1965	0.2959		0.2055	0.0742	69.46%		0.0362	4.80%
101	Acid Soluble Calcium (%)	6	6	0.1583	0.1267	0.1505	0.2075	0.1252	0.0639	83.18%	1.41	0.0184	5.32%
121	Acid Soluble Magnesium (%)	8	8	0.1564	0.0487	0.1479	0.2074	0.0329	0.0145	22.26%	0.37	0.0090	5.33%
131	Water Soluble Magnesium (%)	1		0.3588									
148	Total Sulfur (%)	5	5	0.0201	0.0068	0.0201	0.2010	0.0068	0.0038	33.81%	0.08	0.0052	7.20%
151	Acid Soluble Arsenic (ppm)	2	0	0.0000									
165	Acid Soluble Boron (%)	3	1	0.0100		0.0201	0.0060	0.0068	0.0085	33.81%	2.63	0.0000	7.20%
181	Acid Soluble Cadmium (ppm)	2	0	0.0000									
190	Water Soluble Chlorine (%)	13	13	47.41	1.514	47.33	1.0000	0.7104	0.2463	1.50%	1.66	0.1706	2.24%
191	Acid Soluble Chromium (ppm)	2	0	0.5875									
202	Acid Soluble Cobalt (ppm)	2	0	0.0000									
221	Acid Soluble Copper (%)	4	4	0.0241	0.0409	0.0241	0.0074	0.0409	0.0255	169.96%	12.86	0.0177	7.01%
241	Acid Soluble Iron (%)	7	6	0.0165	0.0150	0.0109	0.0061	0.0018	0.0009	16.65%	0.70	0.0055	7.89%
251	Acid Soluble Lead (ppm)	2	0	0.0000									
261	Acid Soluble Manganese (%)	4	2	0.0450	0.0495	0.0450	0.0095	0.0495	0.0438	109.99%	12.14	0.0000	6.38%
281	Acid Soluble Mercury (ppm)	1		0.0000									
289	Acid Soluble Molybdenum (ppm)	2	0	0.0000									
291	Acid Soluble Nickel (ppm)	2	0	0.0000									
301	Acid Soluble Selenium (ppm)	2	0	0.0000									
311	Sodium (%)	20	19	1.245	0.2798	1.226	0.1276	0.1605	0.0460	13.10%	2.93	0.0359	3.88%
321	Acid Soluble Zinc (%)	4	2	0.0400	0.0424	0.0400	0.0090	0.0424	0.0375	106.07%	10.98	0.0300	6.49%

The Analyte IA Ratio = 2.33 \* Robust SD / IA at the Analyte Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting.

Howitz %RSD	
Average Range (R-bar)	
Analyte IA Ratio	
Robust % RSD	
Robust Uncertainty (U)	
Robust sd	
IA at Analyte Value	
Assigned Value Robust Mean	
Raw SD	
Raw Mean	
# Tests in Robust Calculations	
# Tests Submitted	
Analyte Sample # 180812	
Analyte Code	

# magruder fertilizer

## check sample program



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Analyte Proficiency From All Labs

# Analytes: 25

Sample # 180812

Lab Values

# Labs Reporting: 83

0-0-60 Potash

Issue Date : 09/30/2018

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total Nitrogen (%)	0547	0.0600	0.0000	0.1060	0.0493	0.0367	3	-0.93	010.60	0
010	Total Nitrogen (%)	0325	0.1000	0.0000	0.1060	0.0493	0.0367	3	-0.12	010.60	0
010	Total Nitrogen (%)	0354	0.1580	0.1100	0.1060	0.0493	0.0367	3	1.06	010.60	0
020	Total Phosphorus as P2O5 (%)	0515	0.0018	0.0000	19.44	33.65	2.740	3	-0.58	020.99	0
020	Total Phosphorus as P2O5 (%)	0483	0.0200	0.0000	19.44	33.65	2.740	3	-0.58	020.50	0
020	Total Phosphorus as P2O5 (%)	0042	58.29	8.220	19.44	33.65	2.740	3	1.15	020.50	0
020	Total Phosphorus as P2O5 (%)	0547	0.0000	0.0000	19.44	33.65	2.740	3		020.50	4
020	Total Phosphorus as P2O5 (%)	0552	0.0000	0.0000	19.44	33.65	2.740	3		020.50	4
041	Direct Available Phosphorus as P2O5 (%)	0354	0.0320	0.0000				2		041.60	0
041	Direct Available Phosphorus as P2O5 (%)	0325	0.1000	0.0000				2		041.50	0
050	Soluble Potassium as K2O (60%)	0486	48.67†	0.0600	60.32	0.9855	0.6619	84	-11.82	050.52	0
050	Soluble Potassium as K2O (60%)	0292	54.32†	0.1100	60.32	0.9855	0.6619	84	-6.09	050.50	0
050	Soluble Potassium as K2O (60%)	0552	56.02†	1.120	60.32	0.9855	0.6619	84	-4.36	050.99	0
050	Soluble Potassium as K2O (60%)	0390	56.38†	1.290	60.32	0.9855	0.6619	84	-4.00	050.50	0
050	Soluble Potassium as K2O (60%)	0472	57.49†	0.0200	60.32	0.9855	0.6619	84	-2.87	050.31	0
050	Soluble Potassium as K2O (60%)	0419	57.67†	0.6200	60.32	0.9855	0.6619	84	-2.69	050.50	0
050	Soluble Potassium as K2O (60%)	0433	58.37†	0.0450	60.32	0.9855	0.6619	84	-1.98	050.99	0
050	Soluble Potassium as K2O (60%)	0095	58.41†	3.640	60.32	0.9855	0.6619	84	-1.94	050.62	0
050	Soluble Potassium as K2O (60%)	0421	58.65	0.7000	60.32	0.9855	0.6619	84	-1.69	050.99	0
050	Soluble Potassium as K2O (60%)	0073	58.97	1.080	60.32	0.9855	0.6619	84	-1.37	050.30	0
050	Soluble Potassium as K2O (60%)	0389	58.99	0.4800	60.32	0.9855	0.6619	84	-1.35	050.99	0
050	Soluble Potassium as K2O (60%)	0540	59.30	0.8000	60.32	0.9855	0.6619	84	-1.03	050.99	0
050	Soluble Potassium as K2O (60%)	0423	59.32	0.7400	60.32	0.9855	0.6619	84	-1.01	050.52	0
050	Soluble Potassium as K2O (60%)	0535	59.55	0.1000	60.32	0.9855	0.6619	84	-0.78	050.62	0
050	Soluble Potassium as K2O (60%)	0368	59.56	0.0614	60.32	0.9855	0.6619	84	-0.77	050.99	0
050	Soluble Potassium as K2O (60%)	0522	59.59	0.2300	60.32	0.9855	0.6619	84	-0.75	050.00	0
050	Soluble Potassium as K2O (60%)	0482	59.60	2.600	60.32	0.9855	0.6619	84	-0.73	050.99	0
050	Soluble Potassium as K2O (60%)	0535	59.65	0.1000	60.32	0.9855	0.6619	84	-0.68	050.99	0
050	Soluble Potassium as K2O (60%)	0169	59.66	0.1200	60.32	0.9855	0.6619	84	-0.67	050.60	0
050	Soluble Potassium as K2O (60%)	0096	59.71	0.1100	60.32	0.9855	0.6619	84	-0.62	050.99	0
050	Soluble Potassium as K2O (60%)	0523	59.75	0.9000	60.32	0.9855	0.6619	84	-0.58	050.99	0
050	Soluble Potassium as K2O (60%)	0023	59.77	0.4200	60.32	0.9855	0.6619	84	-0.56	050.52	0
050	Soluble Potassium as K2O (60%)	0007	59.85	2.900	60.32	0.9855	0.6619	84	-0.48	050.51	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
050	Soluble Potassium as K2O (60%)	0550	59.95	0.1000	60.32	0.9855	0.6619	84	-0.38	050.00	0
050	Soluble Potassium as K2O (60%)	0544	59.98	0.1100	60.32	0.9855	0.6619	84	-0.35	050.00	0
050	Soluble Potassium as K2O (60%)	0545	59.99	0.0000	60.32	0.9855	0.6619	84	-0.33	050.99	0
050	Soluble Potassium as K2O (60%)	0231	60.01	0.1100	60.32	0.9855	0.6619	84	-0.32	050.00	0
050	Soluble Potassium as K2O (60%)	0309	60.03	0.4500	60.32	0.9855	0.6619	84	-0.30	050.30	0
050	Soluble Potassium as K2O (60%)	0105	60.05	0.0500	60.32	0.9855	0.6619	84	-0.28	050.60	0
050	Soluble Potassium as K2O (60%)	0536	60.05	0.1000	60.32	0.9855	0.6619	84	-0.27	050.99	0
050	Soluble Potassium as K2O (60%)	0537	60.07	0.3200	60.32	0.9855	0.6619	84	-0.25	050.99	0
050	Soluble Potassium as K2O (60%)	0549	60.08	0.1500	60.32	0.9855	0.6619	84	-0.25	050.99	0
050	Soluble Potassium as K2O (60%)	0533	60.09	0.2400	60.32	0.9855	0.6619	84	-0.23	050.99	0
050	Soluble Potassium as K2O (60%)	0494	60.10	0.3500	60.32	0.9855	0.6619	84	-0.23	050.00	0
050	Soluble Potassium as K2O (60%)	0539	60.11	0.2300	60.32	0.9855	0.6619	84	-0.22	050.99	0
050	Soluble Potassium as K2O (60%)	0531	60.15	0.1000	60.32	0.9855	0.6619	84	-0.17	050.99	0
050	Soluble Potassium as K2O (60%)	0481	60.17	0.4700	60.32	0.9855	0.6619	84	-0.16	050.99	0
050	Soluble Potassium as K2O (60%)	0483	60.17	3.500	60.32	0.9855	0.6619	84	-0.15	050.51	0
050	Soluble Potassium as K2O (60%)	0102	60.20	0.0000	60.32	0.9855	0.6619	84	-0.12	050.00	0
050	Soluble Potassium as K2O (60%)	0157	60.20	6.200	60.32	0.9855	0.6619	84	-0.12	050.50	0
050	Soluble Potassium as K2O (60%)	0043	60.21	0.2500	60.32	0.9855	0.6619	84	-0.12	050.52	0
050	Soluble Potassium as K2O (60%)	0476	60.22	0.4223	60.32	0.9855	0.6619	84	-0.11	050.99	0
050	Soluble Potassium as K2O (60%)	0538	60.23	0.1600	60.32	0.9855	0.6619	84	-0.09	050.99	0
050	Soluble Potassium as K2O (60%)	0416	60.24	0.1000	60.32	0.9855	0.6619	84	-0.08	050.00	0
050	Soluble Potassium as K2O (60%)	0501	60.28	0.0500	60.32	0.9855	0.6619	84	-0.05	050.99	0
050	Soluble Potassium as K2O (60%)	0220	60.29	0.0900	60.32	0.9855	0.6619	84	-0.04	050.00	0
050	Soluble Potassium as K2O (60%)	0360	60.33	0.3800	60.32	0.9855	0.6619	84	0.01	050.52	0
050	Soluble Potassium as K2O (60%)	0518	60.35	0.3000	60.32	0.9855	0.6619	84	0.03	050.99	0
050	Soluble Potassium as K2O (60%)	0049	60.38	0.1500	60.32	0.9855	0.6619	84	0.06	050.00	0
050	Soluble Potassium as K2O (60%)	0354	60.45	0.3000	60.32	0.9855	0.6619	84	0.13	050.52	0
050	Soluble Potassium as K2O (60%)	0444	60.46	0.0100	60.32	0.9855	0.6619	84	0.14	050.99	0
050	Soluble Potassium as K2O (60%)	0027	60.51	0.5870	60.32	0.9855	0.6619	84	0.19	050.99	0
050	Soluble Potassium as K2O (60%)	0494	60.53	0.0150	60.32	0.9855	0.6619	84	0.21	050.52	0
050	Soluble Potassium as K2O (60%)	0405	60.56	0.0400	60.32	0.9855	0.6619	84	0.24	050.00	0
050	Soluble Potassium as K2O (60%)	0510	60.69	0.2350	60.32	0.9855	0.6619	84	0.37	050.60	0
050	Soluble Potassium as K2O (60%)	0114	60.75	1.830	60.32	0.9855	0.6619	84	0.43	050.00	0
050	Soluble Potassium as K2O (60%)	0498	60.75	0.3000	60.32	0.9855	0.6619	84	0.44	050.31	0
050	Soluble Potassium as K2O (60%)	0532	60.79	1.382	60.32	0.9855	0.6619	84	0.48	050.99	0
050	Soluble Potassium as K2O (60%)	0040	60.80	0.4000	60.32	0.9855	0.6619	84	0.49	050.30	0
050	Soluble Potassium as K2O (60%)	0377	60.84	0.3100	60.32	0.9855	0.6619	84	0.52	050.52	0
050	Soluble Potassium as K2O (60%)	0325	60.85	0.1000	60.32	0.9855	0.6619	84	0.54	050.99	0
050	Soluble Potassium as K2O (60%)	0452	60.86	0.0100	60.32	0.9855	0.6619	84	0.54	050.51	0
050	Soluble Potassium as K2O (60%)	0546	60.88	0.1200	60.32	0.9855	0.6619	84	0.57	050.99	0
050	Soluble Potassium as K2O (60%)	0485	60.89	2.090	60.32	0.9855	0.6619	84	0.57	050.52	0
050	Soluble Potassium as K2O (60%)	0055	60.91	0.3300	60.32	0.9855	0.6619	84	0.59	050.00	0
050	Soluble Potassium as K2O (60%)	0307	60.91	2.039	60.32	0.9855	0.6619	84	0.60	050.99	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				
050	Soluble Potassium as K2O (60%)	0547	61.00	0.4000	60.32	0.9855	0.6619	84	0.69	050.51	0
050	Soluble Potassium as K2O (60%)	0177	61.06	0.0742	60.32	0.9855	0.6619	84	0.75	050.99	0
050	Soluble Potassium as K2O (60%)	0035	61.08	0.5000	60.32	0.9855	0.6619	84	0.77	050.61	0
050	Soluble Potassium as K2O (60%)	0513	61.10	0.1900	60.32	0.9855	0.6619	84	0.79	050.62	0
050	Soluble Potassium as K2O (60%)	0371	61.13	1.130	60.32	0.9855	0.6619	84	0.82	050.99	0
050	Soluble Potassium as K2O (60%)	0527	61.42	0.0800	60.32	0.9855	0.6619	84	1.12	050.99	0
050	Soluble Potassium as K2O (60%)	0117	61.46	1.830	60.32	0.9855	0.6619	84	1.15	050.52	0
050	Soluble Potassium as K2O (60%)	0234	61.60	1.000	60.32	0.9855	0.6619	84	1.30	050.99	0
050	Soluble Potassium as K2O (60%)	0055	61.75	0.2000	60.32	0.9855	0.6619	84	1.45	050.50	0
050	Soluble Potassium as K2O (60%)	0451	61.83	0.7000	60.32	0.9855	0.6619	84	1.53	050.99	0
050	Soluble Potassium as K2O (60%)	0029	61.87	1.330	60.32	0.9855	0.6619	84	1.57	050.62	0
050	Soluble Potassium as K2O (60%)	0025	62.75‡	1.300	60.32	0.9855	0.6619	84	2.47	050.52	0
050	Soluble Potassium as K2O (60%)	0230	64.50‡	0.2000	60.32	0.9855	0.6619	84	4.24	050.50	0
050	Soluble Potassium as K2O (60%)	0422	64.57‡	1.570	60.32	0.9855	0.6619	84	4.31	050.50	0
050	Soluble Potassium as K2O (60%)	0255	64.99‡	0.2690	60.32	0.9855	0.6619	84	4.74	050.99	0
050	Soluble Potassium as K2O (60%)	0521	65.74‡	0.0000	60.32	0.9855	0.6619	84	5.50	050.99	0
050	Soluble Potassium as K2O (60%)	0324	65.85‡	2.040	60.32	0.9855	0.6619	84	5.61	050.50	0
050	Soluble Potassium as K2O (60%)	0402	72.99‡	0.0600	60.32	0.9855	0.6619	84	12.86	050.99	0
050	Soluble Potassium as K2O (60%)	0515	51.35†	29.06	60.32	0.9855	0.6619	84	-9.10	050.99	1
060	Water (Free) (%)	0007	0.0300	0.0200	0.2959	0.2055	0.0362	12	-1.29	060.00	0
060	Water (Free) (%)	0416	0.1174	0.0150	0.2959	0.2055	0.0362	12	-0.87	060.00	0
060	Water (Free) (%)	0405	0.1345	0.0090	0.2959	0.2055	0.0362	12	-0.79	060.99	0
060	Water (Free) (%)	0550	0.1350	0.0040	0.2959	0.2055	0.0362	12	-0.78	060.99	0
060	Water (Free) (%)	0481	0.1850	0.0100	0.2959	0.2055	0.0362	12	-0.54	060.99	0
060	Water (Free) (%)	0510	0.2445	0.0062	0.2959	0.2055	0.0362	12	-0.25	060.99	0
060	Water (Free) (%)	0220	0.3400	0.0600	0.2959	0.2055	0.0362	12	0.21	060.99	0
060	Water (Free) (%)	0055	0.3500	0.1000	0.2959	0.2055	0.0362	12	0.26	060.30	0
060	Water (Free) (%)	0096	0.4500	0.0600	0.2959	0.2055	0.0362	12	0.75	060.00	0
060	Water (Free) (%)	0055	0.4650	0.1100	0.2959	0.2055	0.0362	12	0.82	060.99	0
060	Water (Free) (%)	0513	0.4950	0.0100	0.2959	0.2055	0.0362	12	0.97	060.99	0
060	Water (Free) (%)	0518	0.6950	0.0300	0.2959	0.2055	0.0362	12	1.94	060.30	0
101	Acid Soluble Calcium (%)	0117	0.0699	0.0046	0.1505	0.1252	0.0184	6	-0.57	101.33	0
101	Acid Soluble Calcium (%)	0105	0.0743	0.0087	0.1505	0.1252	0.0184	6	-0.54	101.03	0
101	Acid Soluble Calcium (%)	0482	0.0750	0.0100	0.1505	0.1252	0.0184	6	-0.54	101.30	0
101	Acid Soluble Calcium (%)	0354	0.1150	0.0100	0.1505	0.1252	0.0184	6	-0.25	101.30	0
101	Acid Soluble Calcium (%)	0483	0.2305	0.0470	0.1505	0.1252	0.0184	6	0.57	101.30	0
101	Acid Soluble Calcium (%)	0552	0.3850	0.0300	0.1505	0.1252	0.0184	6	1.67	101.99	0
121	Acid Soluble Magnesium (%)	0515	0.1141	0.0054	0.1479	0.0329	0.0090	8	-0.94	121.99	0
121	Acid Soluble Magnesium (%)	0354	0.1250	0.0100	0.1479	0.0329	0.0090	8	-0.64	121.30	0
121	Acid Soluble Magnesium (%)	0105	0.1350	0.0004	0.1479	0.0329	0.0090	8	-0.36	121.03	0
121	Acid Soluble Magnesium (%)	0117	0.1352	0.0015	0.1479	0.0329	0.0090	8	-0.35	121.33	0
121	Acid Soluble Magnesium (%)	0482	0.1450	0.0100	0.1479	0.0329	0.0090	8	-0.08	121.30	0
121	Acid Soluble Magnesium (%)	0515	0.1457	0.0048	0.1479	0.0329	0.0090	8	-0.06	121.33	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
121	Acid Soluble Magnesium (%)	0483	0.1860	0.0100	0.1479	0.0329	0.0090	8	1.06	121.30	0
121	Acid Soluble Magnesium (%)	0552	0.2650	0.0300	0.1479	0.0329	0.0090	8	3.25	121.99	0
131	Water Soluble Magnesium (%)	0510	0.3588	0.0475				1		131.70	0
148	Total Sulfur (%)	0354	0.0100	0.0000	0.0201	0.0068	0.0052	5	-1.48	148.99	0
148	Total Sulfur (%)	0117	0.0179	0.0007	0.0201	0.0068	0.0052	5	-0.33	148.07	0
148	Total Sulfur (%)	0515	0.0202	0.0059	0.0201	0.0068	0.0052	5	0.01	148.07	0
148	Total Sulfur (%)	0482	0.0250	0.0100	0.0201	0.0068	0.0052	5	0.72	148.99	0
148	Total Sulfur (%)	0483	0.0274	0.0092	0.0201	0.0068	0.0052	5	1.08	148.07	0
151	Acid Soluble Arsenic (ppm)	0515	0.0000	0.0000				0		151.33	4
151	Acid Soluble Arsenic (ppm)	0515	0.9780	1.956				0		151.34	4
165	Acid Soluble Boron (%)	0354	0.0100	0.0000				1		165.30	0
165	Acid Soluble Boron (%)	0515	0.0000	0.0000				1		165.99	4
165	Acid Soluble Boron (%)	0552	0.0000	0.0000				1		165.99	4
181	Acid Soluble Cadmium (ppm)	0515	0.0000	0.0000				0		181.33	4
181	Acid Soluble Cadmium (ppm)	0515	0.0000	0.0000				0		181.34	4
190	Water Soluble Chlorine (%)	0550	45.01	0.0200	47.33	0.7104	0.1706	13	-3.26	190.00	0
190	Water Soluble Chlorine (%)	0029	45.09	0.0200	47.33	0.7104	0.1706	13	-3.15	190.99	0
190	Water Soluble Chlorine (%)	0029	46.93	0.0100	47.33	0.7104	0.1706	13	-0.57	190.00	0
190	Water Soluble Chlorine (%)	0546	47.12	0.4680	47.33	0.7104	0.1706	13	-0.29	190.00	0
190	Water Soluble Chlorine (%)	0105	47.28	0.4500	47.33	0.7104	0.1706	13	-0.08	190.00	0
190	Water Soluble Chlorine (%)	0498	47.30	0.0000	47.33	0.7104	0.1706	13	-0.04	190.00	0
190	Water Soluble Chlorine (%)	0405	47.36	0.0200	47.33	0.7104	0.1706	13	0.04	190.00	0
190	Water Soluble Chlorine (%)	0220	47.41	0.1100	47.33	0.7104	0.1706	13	0.11	190.00	0
190	Water Soluble Chlorine (%)	0055	47.42	0.1400	47.33	0.7104	0.1706	13	0.13	190.00	0
190	Water Soluble Chlorine (%)	0444	47.42	0.0000	47.33	0.7104	0.1706	13	0.13	190.00	0
190	Water Soluble Chlorine (%)	0513	47.74	0.2300	47.33	0.7104	0.1706	13	0.57	190.00	0
190	Water Soluble Chlorine (%)	0476	49.53	0.4928	47.33	0.7104	0.1706	13	3.10	190.00	0
190	Water Soluble Chlorine (%)	0368	50.79	0.2570	47.33	0.7104	0.1706	13	4.87	190.99	0
191	Acid Soluble Chromium (ppm)	0515	0.5875	1.175				0		191.33	4
191	Acid Soluble Chromium (ppm)	0515	1.764	3.528				0		191.34	4
202	Acid Soluble Cobalt (ppm)	0515	0.0000	0.0000				0		202.33	4
202	Acid Soluble Cobalt (ppm)	0515	0.0000	0.0000				0		202.34	4
221	Acid Soluble Copper (%)	0515	0.0002	0.0001	0.0241	0.0409	0.0177	4	-0.58	221.33	0
221	Acid Soluble Copper (%)	0515	0.0011	0.0005	0.0241	0.0409	0.0177	4	-0.56	221.99	0
221	Acid Soluble Copper (%)	0354	0.0100	0.0000	0.0241	0.0409	0.0177	4	-0.34	221.30	0
221	Acid Soluble Copper (%)	0552	0.0850	0.0700	0.0241	0.0409	0.0177	4	1.49	221.30	0
241	Acid Soluble Iron (%)	0117	0.0099	0.0001	0.0109	0.0018	0.0055	6	-0.53	241.33	0
241	Acid Soluble Iron (%)	0105	0.0099	0.0008	0.0109	0.0018	0.0055	6	-0.50	241.03	0
241	Acid Soluble Iron (%)	0354	0.0100	0.0000	0.0109	0.0018	0.0055	6	-0.45	241.30	0
241	Acid Soluble Iron (%)	0482	0.0100	0.0000	0.0109	0.0018	0.0055	6	-0.45	241.30	0
241	Acid Soluble Iron (%)	0515	0.0122	0.0051	0.0109	0.0018	0.0055	6	0.60	241.99	0
241	Acid Soluble Iron (%)	0515	0.0470	0.0271	0.0109	0.0018	0.0055	6	17.64	241.33	0
241	Acid Soluble Iron (%)	0552	0.2300	0.1800	0.0109	0.0018	0.0055	6	107.29	241.30	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				
251	Acid Soluble Lead (ppm)	0515	0.0000	0.0000				0	251.33	4	
251	Acid Soluble Lead (ppm)	0515	0.0000	0.0000				0	251.34	4	
261	Acid Soluble Manganese (%)	0354	0.0100	0.0000				2	261.30	0	
261	Acid Soluble Manganese (%)	0552	0.0800	0.0000				2	261.32	0	
261	Acid Soluble Manganese (%)	0515	0.0000	0.0000				2	261.35	4	
261	Acid Soluble Manganese (%)	0515	0.0000	0.0000				2	261.99	4	
281	Acid Soluble Mercury (ppm)	0515	0.0000	0.0000				0	281.30	4	
289	Acid Soluble Molybdenum (ppm)	0515	0.0000	0.0000				0	289.33	4	
289	Acid Soluble Molybdenum (ppm)	0515	0.0000	0.0000				0	289.34	4	
291	Acid Soluble Nickel (ppm)	0515	0.0000	0.0000				0	291.33	4	
291	Acid Soluble Nickel (ppm)	0515	0.0000	0.0000				0	291.34	4	
301	Acid Soluble Selenium (ppm)	0515	0.0000	0.0000				0	301.33	4	
301	Acid Soluble Selenium (ppm)	0515	0.0000	0.0000				0	301.34	4	
311	Sodium (%)	0220	0.6280	0.0100	1.226	0.1605	0.0359	19	-3.72	311.32	0
311	Sodium (%)	0481	0.9950	0.0100	1.226	0.1605	0.0359	19	-1.44	311.99	0
311	Sodium (%)	0476	1.043	0.0900	1.226	0.1605	0.0359	19	-1.14	311.30	0
311	Sodium (%)	0521	1.102	0.0000	1.226	0.1605	0.0359	19	-0.77	311.32	0
311	Sodium (%)	0255	1.110	0.1420	1.226	0.1605	0.0359	19	-0.72	311.99	0
311	Sodium (%)	0515	1.158	0.0857	1.226	0.1605	0.0359	19	-0.42	311.32	0
311	Sodium (%)	0498	1.195	0.0100	1.226	0.1605	0.0359	19	-0.19	311.00	0
311	Sodium (%)	0482	1.205	0.0700	1.226	0.1605	0.0359	19	-0.13	311.99	0
311	Sodium (%)	0231	1.210	0.0200	1.226	0.1605	0.0359	19	-0.10	311.32	0
311	Sodium (%)	0405	1.226	0.0040	1.226	0.1605	0.0359	19	0.00	311.00	0
311	Sodium (%)	0354	1.245	0.0100	1.226	0.1605	0.0359	19	0.12	311.99	0
311	Sodium (%)	0105	1.255	0.0300	1.226	0.1605	0.0359	19	0.18	311.30	0
311	Sodium (%)	0368	1.260	0.0286	1.226	0.1605	0.0359	19	0.21	311.99	0
311	Sodium (%)	0117	1.270	0.0000	1.226	0.1605	0.0359	19	0.27	311.33	0
311	Sodium (%)	0510	1.338	0.0102	1.226	0.1605	0.0359	19	0.70	311.30	0
311	Sodium (%)	0527	1.366	0.0010	1.226	0.1605	0.0359	19	0.87	311.33	0
311	Sodium (%)	0513	1.395	0.0100	1.226	0.1605	0.0359	19	1.05	311.30	0
311	Sodium (%)	0096	1.555	0.1500	1.226	0.1605	0.0359	19	2.05	311.99	0
311	Sodium (%)	0444	2.100	0.0000	1.226	0.1605	0.0359	19	5.45	311.32	0
311	Sodium (%)	0550	1.425	0.5900	1.226	0.1605	0.0359	19	1.24	311.00	1
321	Acid Soluble Zinc (%)	0354	0.0100	0.0000				2	321.30	0	
321	Acid Soluble Zinc (%)	0552	0.0700	0.0600				2	321.30	0	
321	Acid Soluble Zinc (%)	0515	0.0000	0.0000				2	321.33	4	
321	Acid Soluble Zinc (%)	0515	0.0000	0.0000				2	321.99	4	

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 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.