

# magruder fertilizer

## check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 180211

Grade 14-14-14

### Statistical Summary

# Analytes: 37

# Labs Reporting: 100

Issue Date : 03/31/2018

Analyte Code	Analyte Sample # 180211	# 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)	Honwitz %RSD
001	Ammoniacal Nitrogen (%)	36	34	13.71	0.4996	13.73		0.3762	0.0806	2.74%		0.0900	2.70%
002	Nitrate Nitrogen (%)	1		0.0500									
003	Water Insoluble Nitrogen (%)	1		0.0000									
010	Total Nitrogen (14%)	77	76	13.84	0.3106	13.85	0.6285	0.2124	0.0305	1.53%	0.79	0.1115	2.69%
020	Total Phosphorus as P2O5 (%)	53	52	14.81	0.6902	14.75		0.5464	0.0947	3.71%		0.1995	2.67%
030	Citrate Insoluble Phosphorus as P2O5 (%)	2	2	7.160	10.03								
040	Indirect Available Phosphorus as P2O5 (14%)	3	3	14.71	0.3003	14.71	0.7000	0.3003	0.2167	2.04%	1.00	0.0937	2.67%
041	Direct Available Phosphorus as P2O5 (14%)	55	54	14.39	0.3927	14.40	0.7000	0.3396	0.0578	2.36%	1.13	0.1381	2.68%
048	Water Soluble Phosphorus as P2O5 (%)	6	5	13.20	0.1827	13.20		0.1827	0.1022	1.38%		0.1460	2.71%
050	Soluble Potassium as K2O (14%)	94	92	14.60	0.8323	14.55	0.8893	0.5313	0.0692	3.65%	1.39	0.1695	2.67%
060	Water (Free) (%)	6	6	1.362	1.152	1.271		1.089	0.5555	85.65%		0.2242	3.86%
101	Acid Soluble Calcium (%)	14	13	0.3243	0.0935	0.3004	0.2150	0.0446	0.0155	14.85%	0.48	0.0208	4.79%
121	Acid Soluble Magnesium (1%)	49	48	0.5881	0.1294	0.5800	0.2290	0.0525	0.0095	9.05%	0.53	0.0161	4.34%
131	Water Soluble Magnesium (%)	10	9	0.3312	0.1699	0.3267		0.1768	0.0736	54.10%		0.0236	4.73%
143	Elemental Sulfur (%)	6	5	8.291	4.456	8.291		4.456	2.491	53.75%		0.0420	2.91%
145	Sulfate Sulfur, HCl soluble (%)	11	11	10.28	0.8830	10.46		0.4606	0.1736	4.40%		0.1320	2.81%
148	Total Sulfur (7.75%)	46	45	10.47	0.7354	10.48	0.7239	0.4015	0.0748	3.83%	1.29	0.1959	2.81%
149	Sulfur - HNO3 soluble (%)	4	4	10.01	1.644	10.01		1.644	1.027	16.43%		0.0375	2.83%
151	Acid Soluble Arsenic (ppm)	21	20	150.8	32.16	157.4		17.36	4.851	11.03%		6.333	7.47%
165	Acid Soluble Boron (0.2%)	47	47	0.2046	0.0234	0.2058	0.0339	0.0165	0.0030	8.01%	1.13	0.0068	5.07%
171	Water Soluble Boron (%)	8	8	0.1414	0.0395	0.1404		0.0426	0.0188	30.33%		0.0168	5.37%
181	Acid Soluble Cadmium (ppm)	24	23	185.5	22.04	188.6		16.98	4.425	9.00%		12.92	7.27%
190	Water Soluble Chlorine (%)	2	2	7.333	7.068								
191	Acid Soluble Chromium (ppm)	21	20	560.4	157.3	589.4		75.71	21.16	12.84%		30.47	6.12%
202	Acid Soluble Cobalt (ppm)	22	21	362.5	84.35	375.8	113.7464	26.12	7.124	6.95%	0.53	8.595	6.55%
221	Acid Soluble Copper (0.06%)	53	52	0.1214	0.0345	0.1266	0.0177	0.0173	0.0030	13.66%	2.28	0.0072	5.46%
241	Acid Soluble Iron (1%)	57	56	0.6160	0.1527	0.6342	0.0684	0.1053	0.0176	16.61%	3.59	0.0212	4.28%
251	Acid Soluble Lead (ppm)	25	24	890.5	205.8	923.1		121.2	30.93	13.13%		62.75	5.72%
261	Acid Soluble Manganese (0.16%)	52	49	0.1621	0.0143	0.1623	0.0212	0.0120	0.0022	7.42%	1.32	0.0072	5.26%
271	Water Soluble Manganese (%)	6	5	0.0287	0.0403	0.0287		0.0403	0.0225	140.12%		0.0045	6.82%
281	Acid Soluble Mercury (ppm)	7	7	40.98	20.07	40.98		22.76	10.75	55.55%		1.584	9.15%

Analyte Code	Analyte Sample # 180211	# 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)	Howitz %RSD
289	Acid Soluble Molybdenum (50ppm)	29	27	780.1	313.7	826.5	248.9441	115.4	27.76	13.96%	1.08	29.96	5.82%
291	Acid Soluble Nickel (ppm)	26	24	13.13	3.250	13.41		2.824	0.7205	21.05%		1.343	10.82%
301	Acid Soluble Selenium (ppm)	16	16	301.2	57.65	310.5		38.14	11.92	12.28%		22.47	6.74%
311	Sodium (%)	12	12	0.4636	0.0510	0.4599	0.0510	0.0488	0.0176	10.61%	2.23	0.0223	4.50%
321	Acid Soluble Zinc (0.13%)	56	55	0.1814	0.0389	0.1844	0.0234	0.0198	0.0033	10.76%	1.97	0.0086	5.16%
325	Water Soluble Zinc (%)	8	7	0.1251	0.1465	0.1032		0.1111	0.0525	107.62%		0.0530	5.63%

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.

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Lab Values

# Labs Reporting: 100

Grade 14-14-14

Issue Date : 03/31/2018

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				
001	Ammoniacal Nitrogen (%)	0117	12.14	0.1000	13.73	0.3762	0.0900	34	-4.22	001.10	0
001	Ammoniacal Nitrogen (%)	0309	12.68	0.1400	13.73	0.3762	0.0900	34	-2.79	001.10	0
001	Ammoniacal Nitrogen (%)	0368	13.06	0.1000	13.73	0.3762	0.0900	34	-1.78	001.99	0
001	Ammoniacal Nitrogen (%)	0524	13.24	0.1100	13.73	0.3762	0.0900	34	-1.31	001.99	0
001	Ammoniacal Nitrogen (%)	0444	13.38	0.2200	13.73	0.3762	0.0900	34	-0.93	001.10	0
001	Ammoniacal Nitrogen (%)	0544	13.39	0.0100	13.73	0.3762	0.0900	34	-0.91	001.99	0
001	Ammoniacal Nitrogen (%)	0546	13.42	0.0900	13.73	0.3762	0.0900	34	-0.83	001.99	0
001	Ammoniacal Nitrogen (%)	0177	13.42	0.0022	13.73	0.3762	0.0900	34	-0.82	001.10	0
001	Ammoniacal Nitrogen (%)	0486	13.44	0.0500	13.73	0.3762	0.0900	34	-0.78	001.10	0
001	Ammoniacal Nitrogen (%)	0169	13.52	0.0000	13.73	0.3762	0.0900	34	-0.56	001.10	0
001	Ammoniacal Nitrogen (%)	0027	13.53	0.2500	13.73	0.3762	0.0900	34	-0.54	001.99	0
001	Ammoniacal Nitrogen (%)	0394	13.54	0.2190	13.73	0.3762	0.0900	34	-0.51	001.99	0
001	Ammoniacal Nitrogen (%)	0255	13.63	0.2900	13.73	0.3762	0.0900	34	-0.28	001.99	0
001	Ammoniacal Nitrogen (%)	0405	13.66	0.0500	13.73	0.3762	0.0900	34	-0.20	001.99	0
001	Ammoniacal Nitrogen (%)	0451	13.67	0.0900	13.73	0.3762	0.0900	34	-0.17	001.10	0
001	Ammoniacal Nitrogen (%)	0096	13.69	0.1500	13.73	0.3762	0.0900	34	-0.12	001.99	0
001	Ammoniacal Nitrogen (%)	0416	13.70	0.0100	13.73	0.3762	0.0900	34	-0.09	001.99	0
001	Ammoniacal Nitrogen (%)	0533	13.72	0.1200	13.73	0.3762	0.0900	34	-0.02	001.99	0
001	Ammoniacal Nitrogen (%)	0522	13.78	0.0400	13.73	0.3762	0.0900	34	0.14	001.99	0
001	Ammoniacal Nitrogen (%)	0541	13.83	0.3200	13.73	0.3762	0.0900	34	0.27	001.99	0
001	Ammoniacal Nitrogen (%)	0531	13.91	0.0100	13.73	0.3762	0.0900	34	0.47	001.10	0
001	Ammoniacal Nitrogen (%)	0531	13.93	0.0200	13.73	0.3762	0.0900	34	0.53	001.99	0
001	Ammoniacal Nitrogen (%)	0538	13.93	0.0400	13.73	0.3762	0.0900	34	0.53	001.99	0
001	Ammoniacal Nitrogen (%)	0536	13.96	0.0800	13.73	0.3762	0.0900	34	0.61	001.10	0
001	Ammoniacal Nitrogen (%)	0536	13.97	0.0600	13.73	0.3762	0.0900	34	0.64	001.99	0
001	Ammoniacal Nitrogen (%)	0535	13.98	0.0500	13.73	0.3762	0.0900	34	0.65	001.10	0
001	Ammoniacal Nitrogen (%)	0550	13.98	0.0100	13.73	0.3762	0.0900	34	0.65	001.99	0
001	Ammoniacal Nitrogen (%)	0537	14.01	0.1300	13.73	0.3762	0.0900	34	0.73	001.99	0
001	Ammoniacal Nitrogen (%)	0535	14.02	0.0600	13.73	0.3762	0.0900	34	0.77	001.99	0
001	Ammoniacal Nitrogen (%)	0539	14.08	0.0500	13.73	0.3762	0.0900	34	0.92	001.99	0
001	Ammoniacal Nitrogen (%)	0519	14.21	0.0100	13.73	0.3762	0.0900	34	1.27	001.99	0
001	Ammoniacal Nitrogen (%)	0532	14.25	0.1300	13.73	0.3762	0.0900	34	1.37	001.99	0
001	Ammoniacal Nitrogen (%)	0545	14.61	0.0500	13.73	0.3762	0.0900	34	2.33	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 Nitrogen (%)	0506	14.90	0.0000	13.73	0.3762	0.0900	34	3.11	001.99	0
001	Ammoniacal Nitrogen (%)	0230	14.40	1.000	13.73	0.3762	0.0900	34	1.78	001.10	1
001	Ammoniacal Nitrogen (%)	0511	7.690	0.0000	13.73	0.3762	0.0900	34	-16.05	001.99	2
002	Nitrate Nitrogen (%)	0511	0.0500	0.0000				1		002.99	0
003	Water Insoluble Nitrogen (%)	0511	0.0000	0.0000				0		003.10	4
010	Total Nitrogen (14%)	0309	12.44†	0.2100	13.85	0.2124	0.1115	76	-6.66	010.11	0
010	Total Nitrogen (14%)	0117	13.00†	0.2000	13.85	0.2124	0.1115	76	-4.00	010.12	0
010	Total Nitrogen (14%)	0521	13.31	0.0000	13.85	0.2124	0.1115	76	-2.55	010.60	0
010	Total Nitrogen (14%)	0493	13.40	0.1000	13.85	0.2124	0.1115	76	-2.11	010.99	0
010	Total Nitrogen (14%)	0027	13.45	0.4000	13.85	0.2124	0.1115	76	-1.88	010.60	0
010	Total Nitrogen (14%)	0029	13.46	0.0500	13.85	0.2124	0.1115	76	-1.85	010.60	0
010	Total Nitrogen (14%)	0421	13.52	0.1900	13.85	0.2124	0.1115	76	-1.57	010.60	0
010	Total Nitrogen (14%)	0041	13.59	0.0800	13.85	0.2124	0.1115	76	-1.22	010.60	0
010	Total Nitrogen (14%)	0043	13.61	0.0700	13.85	0.2124	0.1115	76	-1.15	010.60	0
010	Total Nitrogen (14%)	0034	13.62	0.0900	13.85	0.2124	0.1115	76	-1.10	010.60	0
010	Total Nitrogen (14%)	0157	13.65	0.1000	13.85	0.2124	0.1115	76	-0.94	010.60	0
010	Total Nitrogen (14%)	0397	13.67	0.1370	13.85	0.2124	0.1115	76	-0.82	010.12	0
010	Total Nitrogen (14%)	0368	13.67	0.2230	13.85	0.2124	0.1115	76	-0.82	010.60	0
010	Total Nitrogen (14%)	0389	13.69	0.0100	13.85	0.2124	0.1115	76	-0.77	010.60	0
010	Total Nitrogen (14%)	0055	13.69	0.5400	13.85	0.2124	0.1115	76	-0.75	010.60	0
010	Total Nitrogen (14%)	0095	13.69	0.0400	13.85	0.2124	0.1115	76	-0.75	010.60	0
010	Total Nitrogen (14%)	0300	13.70	0.0100	13.85	0.2124	0.1115	76	-0.72	010.99	0
010	Total Nitrogen (14%)	0543	13.71	0.0240	13.85	0.2124	0.1115	76	-0.65	010.60	0
010	Total Nitrogen (14%)	0231	13.72	0.0600	13.85	0.2124	0.1115	76	-0.61	010.60	0
010	Total Nitrogen (14%)	0177	13.74	0.0300	13.85	0.2124	0.1115	76	-0.54	010.60	0
010	Total Nitrogen (14%)	0105	13.74	0.0200	13.85	0.2124	0.1115	76	-0.51	010.11	0
010	Total Nitrogen (14%)	0007	13.75	0.1000	13.85	0.2124	0.1115	76	-0.46	010.60	0
010	Total Nitrogen (14%)	0482	13.75	0.1000	13.85	0.2124	0.1115	76	-0.46	010.60	0
010	Total Nitrogen (14%)	0102	13.76	0.0500	13.85	0.2124	0.1115	76	-0.44	010.60	0
010	Total Nitrogen (14%)	0105	13.76	0.0100	13.85	0.2124	0.1115	76	-0.44	010.60	0
010	Total Nitrogen (14%)	0451	13.77	0.0200	13.85	0.2124	0.1115	76	-0.37	010.60	0
010	Total Nitrogen (14%)	0472	13.78	0.0700	13.85	0.2124	0.1115	76	-0.35	010.60	0
010	Total Nitrogen (14%)	0049	13.78	0.0800	13.85	0.2124	0.1115	76	-0.32	010.60	0
010	Total Nitrogen (14%)	0073	13.79	0.0100	13.85	0.2124	0.1115	76	-0.30	010.60	0
010	Total Nitrogen (14%)	0483	13.79	0.0000	13.85	0.2124	0.1115	76	-0.28	010.60	0
010	Total Nitrogen (14%)	0324	13.80	0.2000	13.85	0.2124	0.1115	76	-0.23	010.60	0
010	Total Nitrogen (14%)	0405	13.80	0.0200	13.85	0.2124	0.1115	76	-0.23	010.60	0
010	Total Nitrogen (14%)	0516	13.80	0.0000	13.85	0.2124	0.1115	76	-0.23	010.60	0
010	Total Nitrogen (14%)	0542	13.80	0.1380	13.85	0.2124	0.1115	76	-0.22	010.60	0
010	Total Nitrogen (14%)	0136	13.83	0.0100	13.85	0.2124	0.1115	76	-0.11	010.60	0
010	Total Nitrogen (14%)	0042	13.84	0.1900	13.85	0.2124	0.1115	76	-0.06	010.60	0
010	Total Nitrogen (14%)	0360	13.84	0.0500	13.85	0.2124	0.1115	76	-0.06	010.60	0
010	Total Nitrogen (14%)	0096	13.84	0.0200	13.85	0.2124	0.1115	76	-0.04	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 Nitrogen (14%)	0234	13.84	0.0400	13.85	0.2124	0.1115	76	-0.04	010.60	0
010	Total Nitrogen (14%)	0547	13.84	0.0600	13.85	0.2124	0.1115	76	-0.04	010.60	0
010	Total Nitrogen (14%)	0325	13.85	0.3000	13.85	0.2124	0.1115	76	0.01	010.60	0
010	Total Nitrogen (14%)	0040	13.85	0.1000	13.85	0.2124	0.1115	76	0.01	010.60	0
010	Total Nitrogen (14%)	0230	13.85	0.1000	13.85	0.2124	0.1115	76	0.01	010.60	0
010	Total Nitrogen (14%)	0390	13.86	0.0000	13.85	0.2124	0.1115	76	0.05	010.60	0
010	Total Nitrogen (14%)	0356	13.88	0.1800	13.85	0.2124	0.1115	76	0.15	010.60	0
010	Total Nitrogen (14%)	0037	13.88	0.1700	13.85	0.2124	0.1115	76	0.16	010.60	0
010	Total Nitrogen (14%)	0549	13.89	0.0300	13.85	0.2124	0.1115	76	0.17	010.11	0
010	Total Nitrogen (14%)	0292	13.89	0.0300	13.85	0.2124	0.1115	76	0.17	010.60	0
010	Total Nitrogen (14%)	0494	13.89	0.1300	13.85	0.2124	0.1115	76	0.17	010.60	0
010	Total Nitrogen (14%)	0035	13.89	0.2400	13.85	0.2124	0.1115	76	0.19	010.60	0
010	Total Nitrogen (14%)	0377	13.90	0.0400	13.85	0.2124	0.1115	76	0.24	010.60	0
010	Total Nitrogen (14%)	0523	13.90	0.0000	13.85	0.2124	0.1115	76	0.24	010.60	0
010	Total Nitrogen (14%)	0524	13.90	0.0200	13.85	0.2124	0.1115	76	0.24	010.99	0
010	Total Nitrogen (14%)	0531	13.92	0.0100	13.85	0.2124	0.1115	76	0.31	010.11	0
010	Total Nitrogen (14%)	0423	13.94	0.0100	13.85	0.2124	0.1115	76	0.41	010.60	0
010	Total Nitrogen (14%)	0501	13.95	0.0700	13.85	0.2124	0.1115	76	0.45	010.60	0
010	Total Nitrogen (14%)	0307	13.97	0.0600	13.85	0.2124	0.1115	76	0.57	010.60	0
010	Total Nitrogen (14%)	0025	13.99	0.0700	13.85	0.2124	0.1115	76	0.64	010.60	0
010	Total Nitrogen (14%)	0527	13.99	0.0320	13.85	0.2124	0.1115	76	0.65	010.60	0
010	Total Nitrogen (14%)	0291	14.00	0.0100	13.85	0.2124	0.1115	76	0.69	010.60	0
010	Total Nitrogen (14%)	0452	14.00	0.1000	13.85	0.2124	0.1115	76	0.71	010.10	0
010	Total Nitrogen (14%)	0114	14.04	0.1400	13.85	0.2124	0.1115	76	0.90	010.11	0
010	Total Nitrogen (14%)	0185	14.05	0.1800	13.85	0.2124	0.1115	76	0.95	010.60	0
010	Total Nitrogen (14%)	0518	14.07	0.2600	13.85	0.2124	0.1115	76	1.04	010.99	0
010	Total Nitrogen (14%)	0485	14.08	0.4546	13.85	0.2124	0.1115	76	1.08	010.60	0
010	Total Nitrogen (14%)	0535	14.15	0.1000	13.85	0.2124	0.1115	76	1.42	010.11	0
010	Total Nitrogen (14%)	0354	14.15	0.1000	13.85	0.2124	0.1115	76	1.42	010.60	0
010	Total Nitrogen (14%)	0519	14.17	0.1000	13.85	0.2124	0.1115	76	1.51	010.99	0
010	Total Nitrogen (14%)	0534	14.20	0.0900	13.85	0.2124	0.1115	76	1.63	010.60	0
010	Total Nitrogen (14%)	0550	14.22	0.1300	13.85	0.2124	0.1115	76	1.72	010.60	0
010	Total Nitrogen (14%)	0511	14.22	0.0000	13.85	0.2124	0.1115	76	1.75	010.60	0
010	Total Nitrogen (14%)	0402	14.32	0.3200	13.85	0.2124	0.1115	76	2.22	010.60	0
010	Total Nitrogen (14%)	0443	14.39	0.1400	13.85	0.2124	0.1115	76	2.55	010.60	0
010	Total Nitrogen (14%)	0255	14.47	0.5740	13.85	0.2124	0.1115	76	2.91	010.60	0
010	Total Nitrogen (14%)	0476	14.54‡	0.0309	13.85	0.2124	0.1115	76	3.25	010.99	0
010	Total Nitrogen (14%)	0506	14.70‡	0.4000	13.85	0.2124	0.1115	76	4.01	010.99	0
010	Total Nitrogen (14%)	0023	14.48‡	0.7470	13.85	0.2124	0.1115	76	2.97	010.60	1
020	Total Phosphorus as P2O5 (%)	0389	13.68	0.2100	14.75	0.5464	0.1995	52	-1.96	020.50	0
020	Total Phosphorus as P2O5 (%)	0521	13.68	0.0000	14.75	0.5464	0.1995	52	-1.95	020.50	0
020	Total Phosphorus as P2O5 (%)	0472	13.83	0.0400	14.75	0.5464	0.1995	52	-1.68	020.50	0
020	Total Phosphorus as P2O5 (%)	0476	13.98	0.2246	14.75	0.5464	0.1995	52	-1.40	020.20	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 Phosphorus as P2O5 (%)	0501	14.01	0.0800	14.75	0.5464	0.1995	52	-1.35	020.50	0
020	Total Phosphorus as P2O5 (%)	0542	14.03	0.3428	14.75	0.5464	0.1995	52	-1.31	020.50	0
020	Total Phosphorus as P2O5 (%)	0523	14.10	0.2000	14.75	0.5464	0.1995	52	-1.18	020.50	0
020	Total Phosphorus as P2O5 (%)	0527	14.13	0.0700	14.75	0.5464	0.1995	52	-1.14	020.50	0
020	Total Phosphorus as P2O5 (%)	0534	14.21	0.1200	14.75	0.5464	0.1995	52	-0.98	020.20	0
020	Total Phosphorus as P2O5 (%)	0444	14.26	0.0900	14.75	0.5464	0.1995	52	-0.90	020.50	0
020	Total Phosphorus as P2O5 (%)	0444	14.35	0.0500	14.75	0.5464	0.1995	52	-0.74	020.10	0
020	Total Phosphorus as P2O5 (%)	0027	14.39	0.0300	14.75	0.5464	0.1995	52	-0.66	020.20	0
020	Total Phosphorus as P2O5 (%)	0415	14.40	0.0045	14.75	0.5464	0.1995	52	-0.63	020.20	0
020	Total Phosphorus as P2O5 (%)	0234	14.41	0.6800	14.75	0.5464	0.1995	52	-0.62	020.50	0
020	Total Phosphorus as P2O5 (%)	0096	14.44	0.0000	14.75	0.5464	0.1995	52	-0.56	020.40	0
020	Total Phosphorus as P2O5 (%)	0550	14.48	0.1000	14.75	0.5464	0.1995	52	-0.49	020.20	0
020	Total Phosphorus as P2O5 (%)	0421	14.50	0.2000	14.75	0.5464	0.1995	52	-0.45	020.50	0
020	Total Phosphorus as P2O5 (%)	0547	14.55	0.1000	14.75	0.5464	0.1995	52	-0.36	020.20	0
020	Total Phosphorus as P2O5 (%)	0105	14.63	0.0800	14.75	0.5464	0.1995	52	-0.21	020.40	0
020	Total Phosphorus as P2O5 (%)	0105	14.64	0.2200	14.75	0.5464	0.1995	52	-0.20	020.10	0
020	Total Phosphorus as P2O5 (%)	0291	14.68	0.0100	14.75	0.5464	0.1995	52	-0.13	020.50	0
020	Total Phosphorus as P2O5 (%)	0455	14.69	0.0700	14.75	0.5464	0.1995	52	-0.11	020.99	0
020	Total Phosphorus as P2O5 (%)	0169	14.70	0.0400	14.75	0.5464	0.1995	52	-0.09	020.20	0
020	Total Phosphorus as P2O5 (%)	0356	14.71	0.1700	14.75	0.5464	0.1995	52	-0.08	020.20	0
020	Total Phosphorus as P2O5 (%)	0451	14.72	0.3400	14.75	0.5464	0.1995	52	-0.05	020.50	0
020	Total Phosphorus as P2O5 (%)	0042	14.74	0.3300	14.75	0.5464	0.1995	52	-0.02	020.50	0
020	Total Phosphorus as P2O5 (%)	0231	14.74	0.0400	14.75	0.5464	0.1995	52	-0.01	020.20	0
020	Total Phosphorus as P2O5 (%)	0493	14.75	0.1000	14.75	0.5464	0.1995	52	0.01	020.10	0
020	Total Phosphorus as P2O5 (%)	0324	14.80	0.4000	14.75	0.5464	0.1995	52	0.10	020.20	0
020	Total Phosphorus as P2O5 (%)	0292	14.81	0.0700	14.75	0.5464	0.1995	52	0.11	020.20	0
020	Total Phosphorus as P2O5 (%)	0516	14.81	0.1300	14.75	0.5464	0.1995	52	0.11	020.20	0
020	Total Phosphorus as P2O5 (%)	0390	14.83	0.3200	14.75	0.5464	0.1995	52	0.15	020.50	0
020	Total Phosphorus as P2O5 (%)	0482	14.85	0.1000	14.75	0.5464	0.1995	52	0.19	020.50	0
020	Total Phosphorus as P2O5 (%)	0394	14.89	0.0860	14.75	0.5464	0.1995	52	0.26	020.20	0
020	Total Phosphorus as P2O5 (%)	0035	14.91	0.3300	14.75	0.5464	0.1995	52	0.29	020.40	0
020	Total Phosphorus as P2O5 (%)	0114	14.95	0.0500	14.75	0.5464	0.1995	52	0.36	020.10	0
020	Total Phosphorus as P2O5 (%)	0300	14.96	0.1200	14.75	0.5464	0.1995	52	0.39	020.20	0
020	Total Phosphorus as P2O5 (%)	0522	15.02	0.1500	14.75	0.5464	0.1995	52	0.49	020.20	0
020	Total Phosphorus as P2O5 (%)	0402	15.04	0.3000	14.75	0.5464	0.1995	52	0.54	020.50	0
020	Total Phosphorus as P2O5 (%)	0546	15.12	0.0280	14.75	0.5464	0.1995	52	0.68	020.50	0
020	Total Phosphorus as P2O5 (%)	0423	15.13	0.1500	14.75	0.5464	0.1995	52	0.69	020.50	0
020	Total Phosphorus as P2O5 (%)	0309	15.21	0.0400	14.75	0.5464	0.1995	52	0.85	020.20	0
020	Total Phosphorus as P2O5 (%)	0541	15.24	0.2600	14.75	0.5464	0.1995	52	0.90	020.20	0
020	Total Phosphorus as P2O5 (%)	0511	15.28	0.0000	14.75	0.5464	0.1995	52	0.97	020.50	0
020	Total Phosphorus as P2O5 (%)	0416	15.31	0.0400	14.75	0.5464	0.1995	52	1.03	020.20	0
020	Total Phosphorus as P2O5 (%)	0433	15.41	0.1000	14.75	0.5464	0.1995	52	1.21	020.50	0
020	Total Phosphorus as P2O5 (%)	0368	15.50	0.4322	14.75	0.5464	0.1995	52	1.37	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 Phosphorus as P2O5 (%)	0255	15.89	1.417	14.75	0.5464	0.1995	52	2.09	020.50	0
020	Total Phosphorus as P2O5 (%)	0483	15.92	1.450	14.75	0.5464	0.1995	52	2.14	020.50	0
020	Total Phosphorus as P2O5 (%)	0524	16.14	0.1604	14.75	0.5464	0.1995	52	2.56	020.50	0
020	Total Phosphorus as P2O5 (%)	0307	16.33	0.3000	14.75	0.5464	0.1995	52	2.90	020.50	0
020	Total Phosphorus as P2O5 (%)	0443	17.54	0.0000	14.75	0.5464	0.1995	52	5.11	020.99	0
020	Total Phosphorus as P2O5 (%)	0515	13.83	2.946	14.75	0.5464	0.1995	52	-1.68	020.99	1
030	Citrate Insoluble Phosphorus as P2O5 (%)	0096	0.0700	0.0600				2		030.40	0
030	Citrate Insoluble Phosphorus as P2O5 (%)	0506	14.25	0.7000				2		030.20	0
040	Indirect Available Phosphorus as P2O5 (14%)	0096	14.38	0.0700	14.71	0.3003	0.0937	3	-1.10	040.40	0
040	Indirect Available Phosphorus as P2O5 (14%)	0394	14.79	0.0910	14.71	0.3003	0.0937	3	0.26	040.99	0
040	Indirect Available Phosphorus as P2O5 (14%)	0300	14.96	0.1200	14.71	0.3003	0.0937	3	0.84	040.20	0
041	Direct Available Phosphorus as P2O5 (14%)	0423	12.98†	0.2600	14.40	0.3396	0.1381	54	-4.19	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0230	13.60†	0.0000	14.40	0.3396	0.1381	54	-2.36	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0472	13.64†	0.0200	14.40	0.3396	0.1381	54	-2.25	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0519	13.91	0.0200	14.40	0.3396	0.1381	54	-1.45	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0539	14.00	0.0400	14.40	0.3396	0.1381	54	-1.19	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0511	14.02	0.0000	14.40	0.3396	0.1381	54	-1.13	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0526	14.03	0.0000	14.40	0.3396	0.1381	54	-1.10	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0532	14.07	0.1900	14.40	0.3396	0.1381	54	-1.00	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0522	14.07	0.1000	14.40	0.3396	0.1381	54	-0.98	041.21	0
041	Direct Available Phosphorus as P2O5 (14%)	0043	14.11	0.0300	14.40	0.3396	0.1381	54	-0.88	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0531	14.14	0.0600	14.40	0.3396	0.1381	54	-0.77	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0522	14.16	0.0200	14.40	0.3396	0.1381	54	-0.72	041.11	0
041	Direct Available Phosphorus as P2O5 (14%)	0377	14.17	0.0400	14.40	0.3396	0.1381	54	-0.69	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0549	14.18	0.0500	14.40	0.3396	0.1381	54	-0.67	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0397	14.18	0.2170	14.40	0.3396	0.1381	54	-0.67	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0518	14.20	0.2000	14.40	0.3396	0.1381	54	-0.60	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0185	14.22	0.2400	14.40	0.3396	0.1381	54	-0.54	041.11	0
041	Direct Available Phosphorus as P2O5 (14%)	0535	14.25	0.1000	14.40	0.3396	0.1381	54	-0.45	041.20	0
041	Direct Available Phosphorus as P2O5 (14%)	0535	14.25	0.1000	14.40	0.3396	0.1381	54	-0.45	041.21	0
041	Direct Available Phosphorus as P2O5 (14%)	0535	14.25	0.1000	14.40	0.3396	0.1381	54	-0.45	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0538	14.25	0.2000	14.40	0.3396	0.1381	54	-0.45	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0117	14.33	0.2700	14.40	0.3396	0.1381	54	-0.23	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0533	14.34	0.2700	14.40	0.3396	0.1381	54	-0.20	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0537	14.34	0.2000	14.40	0.3396	0.1381	54	-0.19	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0494	14.35	0.4100	14.40	0.3396	0.1381	54	-0.17	041.10	0
041	Direct Available Phosphorus as P2O5 (14%)	0536	14.35	0.1600	14.40	0.3396	0.1381	54	-0.16	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0354	14.35	0.1000	14.40	0.3396	0.1381	54	-0.16	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0073	14.37	0.4300	14.40	0.3396	0.1381	54	-0.11	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0041	14.39	0.2900	14.40	0.3396	0.1381	54	-0.05	041.10	0
041	Direct Available Phosphorus as P2O5 (14%)	0023	14.40	0.0300	14.40	0.3396	0.1381	54	-0.02	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0325	14.45	0.1000	14.40	0.3396	0.1381	54	0.14	041.50	0
041	Direct Available Phosphorus as P2O5 (14%)	0055	14.46	0.2000	14.40	0.3396	0.1381	54	0.17	041.60	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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041	Direct Available Phosphorus as P2O5 (14%)	0105	14.48	0.2600	14.40	0.3396	0.1381	54	0.23	041.11	0
041	Direct Available Phosphorus as P2O5 (14%)	0040	14.50	0.2000	14.40	0.3396	0.1381	54	0.29	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0177	14.50	0.0124	14.40	0.3396	0.1381	54	0.30	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0105	14.52	0.1400	14.40	0.3396	0.1381	54	0.34	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0486	14.55	0.1000	14.40	0.3396	0.1381	54	0.43	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0049	14.58	0.3600	14.40	0.3396	0.1381	54	0.52	041.10	0
041	Direct Available Phosphorus as P2O5 (14%)	0231	14.59	0.0800	14.40	0.3396	0.1381	54	0.55	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0025	14.64	0.0700	14.40	0.3396	0.1381	54	0.68	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0055	14.69	0.0200	14.40	0.3396	0.1381	54	0.84	041.10	0
041	Direct Available Phosphorus as P2O5 (14%)	0394	14.69	0.1540	14.40	0.3396	0.1381	54	0.85	041.21	0
041	Direct Available Phosphorus as P2O5 (14%)	0177	14.72	0.2173	14.40	0.3396	0.1381	54	0.92	041.10	0
041	Direct Available Phosphorus as P2O5 (14%)	0545	14.73	0.0500	14.40	0.3396	0.1381	54	0.95	041.99	0
041	Direct Available Phosphorus as P2O5 (14%)	0360	14.73	0.2400	14.40	0.3396	0.1381	54	0.96	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0029	14.74	0.1400	14.40	0.3396	0.1381	54	0.99	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0027	14.75	0.3000	14.40	0.3396	0.1381	54	1.02	041.20	0
041	Direct Available Phosphorus as P2O5 (14%)	0544	14.80	0.1300	14.40	0.3396	0.1381	54	1.15	041.21	0
041	Direct Available Phosphorus as P2O5 (14%)	0034	14.82	0.0490	14.40	0.3396	0.1381	54	1.22	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0452	14.89	0.0100	14.40	0.3396	0.1381	54	1.42	041.50	0
041	Direct Available Phosphorus as P2O5 (14%)	0037	14.94	0.2600	14.40	0.3396	0.1381	54	1.58	041.51	0
041	Direct Available Phosphorus as P2O5 (14%)	0485	14.97	0.0710	14.40	0.3396	0.1381	54	1.68	041.11	0
041	Direct Available Phosphorus as P2O5 (14%)	0136	15.01	0.1100	14.40	0.3396	0.1381	54	1.77	041.60	0
041	Direct Available Phosphorus as P2O5 (14%)	0368	15.41‡	0.0360	14.40	0.3396	0.1381	54	2.97	041.50	0
041	Direct Available Phosphorus as P2O5 (14%)	0494	14.51	0.8100	14.40	0.3396	0.1381	54	0.30	041.51	1
048	Water Soluble Phosphorus as P2O5 (%)	0444	13.07	0.1100	13.20	0.1827	0.1460	5	-0.65	048.50	0
048	Water Soluble Phosphorus as P2O5 (%)	0096	13.09	0.1900	13.20	0.1827	0.1460	5	-0.55	048.40	0
048	Water Soluble Phosphorus as P2O5 (%)	0444	13.13	0.1700	13.20	0.1827	0.1460	5	-0.36	048.10	0
048	Water Soluble Phosphorus as P2O5 (%)	0309	13.22	0.0400	13.20	0.1827	0.1460	5	0.09	048.20	0
048	Water Soluble Phosphorus as P2O5 (%)	0522	13.51	0.2200	13.20	0.1827	0.1460	5	1.48	048.20	0
048	Water Soluble Phosphorus as P2O5 (%)	0543	13.84	1.133	13.20	0.1827	0.1460	5	3.03	048.50	1
050	Soluble Potassium as K2O (14%)	0472	10.50†	0.7900	14.55	0.5313	0.1695	92	-7.63	050.31	0
050	Soluble Potassium as K2O (14%)	0390	13.68	0.1500	14.55	0.5313	0.1695	92	-1.65	050.50	0
050	Soluble Potassium as K2O (14%)	0114	13.74	0.1100	14.55	0.5313	0.1695	92	-1.53	050.00	0
050	Soluble Potassium as K2O (14%)	0486	13.74	0.2300	14.55	0.5313	0.1695	92	-1.53	050.52	0
050	Soluble Potassium as K2O (14%)	0506	13.75	0.3000	14.55	0.5313	0.1695	92	-1.51	050.99	0
050	Soluble Potassium as K2O (14%)	0521	13.77	0.0000	14.55	0.5313	0.1695	92	-1.48	050.99	0
050	Soluble Potassium as K2O (14%)	0522	13.86	0.1100	14.55	0.5313	0.1695	92	-1.31	050.00	0
050	Soluble Potassium as K2O (14%)	0523	13.90	0.4000	14.55	0.5313	0.1695	92	-1.22	050.99	0
050	Soluble Potassium as K2O (14%)	0518	13.91	0.2100	14.55	0.5313	0.1695	92	-1.21	050.99	0
050	Soluble Potassium as K2O (14%)	0519	13.94	0.0700	14.55	0.5313	0.1695	92	-1.16	050.99	0
050	Soluble Potassium as K2O (14%)	0485	13.95	0.2200	14.55	0.5313	0.1695	92	-1.13	050.52	0
050	Soluble Potassium as K2O (14%)	0040	14.00	0.0000	14.55	0.5313	0.1695	92	-1.04	050.30	0
050	Soluble Potassium as K2O (14%)	0535	14.00	0.0000	14.55	0.5313	0.1695	92	-1.04	050.99	0
050	Soluble Potassium as K2O (14%)	0533	14.01	0.0800	14.55	0.5313	0.1695	92	-1.02	050.99	0



Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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050	Soluble Potassium as K2O (14%)	0501	14.05	0.3000	14.55	0.5313	0.1695	92	-0.94	050.99	0
050	Soluble Potassium as K2O (14%)	0309	14.06	0.3300	14.55	0.5313	0.1695	92	-0.93	050.30	0
050	Soluble Potassium as K2O (14%)	0531	14.08	0.0500	14.55	0.5313	0.1695	92	-0.89	050.99	0
050	Soluble Potassium as K2O (14%)	0539	14.09	0.0300	14.55	0.5313	0.1695	92	-0.88	050.99	0
050	Soluble Potassium as K2O (14%)	0532	14.09	0.0400	14.55	0.5313	0.1695	92	-0.87	050.99	0
050	Soluble Potassium as K2O (14%)	0549	14.09	0.0200	14.55	0.5313	0.1695	92	-0.87	050.99	0
050	Soluble Potassium as K2O (14%)	0547	14.13	0.0500	14.55	0.5313	0.1695	92	-0.80	050.51	0
050	Soluble Potassium as K2O (14%)	0234	14.15	0.0900	14.55	0.5313	0.1695	92	-0.76	050.99	0
050	Soluble Potassium as K2O (14%)	0389	14.18	0.1100	14.55	0.5313	0.1695	92	-0.71	050.99	0
050	Soluble Potassium as K2O (14%)	0536	14.18	0.0500	14.55	0.5313	0.1695	92	-0.71	050.99	0
050	Soluble Potassium as K2O (14%)	0494	14.20	0.3800	14.55	0.5313	0.1695	92	-0.66	050.52	0
050	Soluble Potassium as K2O (14%)	0325	14.20	0.8000	14.55	0.5313	0.1695	92	-0.66	050.99	0
050	Soluble Potassium as K2O (14%)	0511	14.21	0.0000	14.55	0.5313	0.1695	92	-0.64	050.51	0
050	Soluble Potassium as K2O (14%)	0292	14.23	0.0100	14.55	0.5313	0.1695	92	-0.61	050.50	0
050	Soluble Potassium as K2O (14%)	0538	14.25	0.1000	14.55	0.5313	0.1695	92	-0.57	050.99	0
050	Soluble Potassium as K2O (14%)	0136	14.32	0.0800	14.55	0.5313	0.1695	92	-0.43	050.30	0
050	Soluble Potassium as K2O (14%)	0356	14.33	0.1200	14.55	0.5313	0.1695	92	-0.41	050.30	0
050	Soluble Potassium as K2O (14%)	0037	14.34	0.0600	14.55	0.5313	0.1695	92	-0.40	050.52	0
050	Soluble Potassium as K2O (14%)	0117	14.34	0.4800	14.55	0.5313	0.1695	92	-0.40	050.52	0
050	Soluble Potassium as K2O (14%)	0105	14.34	0.0600	14.55	0.5313	0.1695	92	-0.40	050.60	0
050	Soluble Potassium as K2O (14%)	0096	14.38	0.1200	14.55	0.5313	0.1695	92	-0.32	050.99	0
050	Soluble Potassium as K2O (14%)	0394	14.41	0.0020	14.55	0.5313	0.1695	92	-0.26	050.99	0
050	Soluble Potassium as K2O (14%)	0055	14.44	0.2100	14.55	0.5313	0.1695	92	-0.22	050.50	0
050	Soluble Potassium as K2O (14%)	0537	14.45	0.0500	14.55	0.5313	0.1695	92	-0.20	050.99	0
050	Soluble Potassium as K2O (14%)	0482	14.45	0.1000	14.55	0.5313	0.1695	92	-0.19	050.99	0
050	Soluble Potassium as K2O (14%)	0544	14.46	0.0200	14.55	0.5313	0.1695	92	-0.17	050.00	0
050	Soluble Potassium as K2O (14%)	0416	14.47	0.0500	14.55	0.5313	0.1695	92	-0.16	050.00	0
050	Soluble Potassium as K2O (14%)	0023	14.48	0.7900	14.55	0.5313	0.1695	92	-0.14	050.52	0
050	Soluble Potassium as K2O (14%)	0405	14.50	0.0500	14.55	0.5313	0.1695	92	-0.10	050.00	0
050	Soluble Potassium as K2O (14%)	0360	14.52	0.0700	14.55	0.5313	0.1695	92	-0.07	050.52	0
050	Soluble Potassium as K2O (14%)	0043	14.54	0.0300	14.55	0.5313	0.1695	92	-0.03	050.52	0
050	Soluble Potassium as K2O (14%)	0476	14.54	0.1937	14.55	0.5313	0.1695	92	-0.02	050.99	0
050	Soluble Potassium as K2O (14%)	0324	14.55	0.7000	14.55	0.5313	0.1695	92	0.00	050.50	0
050	Soluble Potassium as K2O (14%)	0535	14.55	0.1000	14.55	0.5313	0.1695	92	0.00	050.61	0
050	Soluble Potassium as K2O (14%)	0231	14.57	0.0500	14.55	0.5313	0.1695	92	0.03	050.00	0
050	Soluble Potassium as K2O (14%)	0220	14.58	0.0100	14.55	0.5313	0.1695	92	0.05	050.00	0
050	Soluble Potassium as K2O (14%)	0105	14.58	0.0500	14.55	0.5313	0.1695	92	0.05	050.62	0
050	Soluble Potassium as K2O (14%)	0377	14.59	0.1300	14.55	0.5313	0.1695	92	0.07	050.52	0
050	Soluble Potassium as K2O (14%)	0055	14.61	0.0800	14.55	0.5313	0.1695	92	0.11	050.00	0
050	Soluble Potassium as K2O (14%)	0444	14.64	0.0100	14.55	0.5313	0.1695	92	0.16	050.50	0
050	Soluble Potassium as K2O (14%)	0034	14.64	0.0270	14.55	0.5313	0.1695	92	0.16	050.62	0
050	Soluble Potassium as K2O (14%)	0550	14.66	0.0500	14.55	0.5313	0.1695	92	0.20	050.00	0
050	Soluble Potassium as K2O (14%)	0545	14.66	0.0000	14.55	0.5313	0.1695	92	0.21	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 (14%)	0027	14.67	0.2600	14.55	0.5313	0.1695	92	0.23	050.99	0
050	Soluble Potassium as K2O (14%)	0029	14.72	0.4200	14.55	0.5313	0.1695	92	0.32	050.62	0
050	Soluble Potassium as K2O (14%)	0041	14.72	0.1600	14.55	0.5313	0.1695	92	0.32	050.60	0
050	Soluble Potassium as K2O (14%)	0169	14.74	0.1000	14.55	0.5313	0.1695	92	0.36	050.60	0
050	Soluble Potassium as K2O (14%)	0433	14.74	0.0600	14.55	0.5313	0.1695	92	0.36	050.99	0
050	Soluble Potassium as K2O (14%)	0177	14.74	0.0668	14.55	0.5313	0.1695	92	0.37	050.99	0
050	Soluble Potassium as K2O (14%)	0493	14.75	0.1000	14.55	0.5313	0.1695	92	0.38	050.99	0
050	Soluble Potassium as K2O (14%)	0035	14.82	0.0200	14.55	0.5313	0.1695	92	0.51	050.61	0
050	Soluble Potassium as K2O (14%)	0527	14.83	0.0700	14.55	0.5313	0.1695	92	0.52	050.99	0
050	Soluble Potassium as K2O (14%)	0354	14.85	0.1000	14.55	0.5313	0.1695	92	0.56	050.52	0
050	Soluble Potassium as K2O (14%)	0049	14.86	0.0100	14.55	0.5313	0.1695	92	0.57	050.00	0
050	Soluble Potassium as K2O (14%)	0402	14.89	0.0400	14.55	0.5313	0.1695	92	0.64	050.99	0
050	Soluble Potassium as K2O (14%)	0157	14.95	0.1000	14.55	0.5313	0.1695	92	0.75	050.30	0
050	Soluble Potassium as K2O (14%)	0451	14.96	0.0900	14.55	0.5313	0.1695	92	0.76	050.99	0
050	Soluble Potassium as K2O (14%)	0494	15.00	0.0100	14.55	0.5313	0.1695	92	0.84	050.00	0
050	Soluble Potassium as K2O (14%)	0095	15.05	0.6300	14.55	0.5313	0.1695	92	0.93	050.62	0
050	Soluble Potassium as K2O (14%)	0415	15.05	0.0483	14.55	0.5313	0.1695	92	0.94	050.30	0
050	Soluble Potassium as K2O (14%)	0455	15.05	0.1000	14.55	0.5313	0.1695	92	0.94	050.60	0
050	Soluble Potassium as K2O (14%)	0421	15.05	0.3000	14.55	0.5313	0.1695	92	0.94	050.99	0
050	Soluble Potassium as K2O (14%)	0185	15.11	0.0500	14.55	0.5313	0.1695	92	1.04	050.32	0
050	Soluble Potassium as K2O (14%)	0444	15.11	0.1200	14.55	0.5313	0.1695	92	1.05	050.99	0
050	Soluble Potassium as K2O (14%)	0255	15.14	0.9060	14.55	0.5313	0.1695	92	1.11	050.99	0
050	Soluble Potassium as K2O (14%)	0452	15.16	0.0100	14.55	0.5313	0.1695	92	1.14	050.51	0
050	Soluble Potassium as K2O (14%)	0291	15.17	0.0100	14.55	0.5313	0.1695	92	1.16	050.51	0
050	Soluble Potassium as K2O (14%)	0368	15.19	0.0717	14.55	0.5313	0.1695	92	1.20	050.99	0
050	Soluble Potassium as K2O (14%)	0300	15.21	0.1100	14.55	0.5313	0.1695	92	1.23	050.99	0
050	Soluble Potassium as K2O (14%)	0516	15.25	0.3750	14.55	0.5313	0.1695	92	1.31	050.99	0
050	Soluble Potassium as K2O (14%)	0025	15.39	0.3600	14.55	0.5313	0.1695	92	1.58	050.52	0
050	Soluble Potassium as K2O (14%)	0546	15.49‡	0.2870	14.55	0.5313	0.1695	92	1.77	050.99	0
050	Soluble Potassium as K2O (14%)	0073	15.63‡	0.5000	14.55	0.5313	0.1695	92	2.03	050.30	0
050	Soluble Potassium as K2O (14%)	0042	15.83‡	0.8600	14.55	0.5313	0.1695	92	2.41	050.99	0
050	Soluble Potassium as K2O (14%)	0524	16.05‡	0.0121	14.55	0.5313	0.1695	92	2.83	050.99	0
050	Soluble Potassium as K2O (14%)	0483	16.38‡	0.0000	14.55	0.5313	0.1695	92	3.44	050.51	0
050	Soluble Potassium as K2O (14%)	0443	17.51‡	0.2900	14.55	0.5313	0.1695	92	5.56	050.60	0
050	Soluble Potassium as K2O (14%)	0423	18.24‡	0.2200	14.55	0.5313	0.1695	92	6.94	050.52	0
050	Soluble Potassium as K2O (14%)	0543	14.22	1.119	14.55	0.5313	0.1695	92	-0.63	050.50	1
050	Soluble Potassium as K2O (14%)	0541	15.61‡	1.940	14.55	0.5313	0.1695	92	1.99	050.99	1
060	Water (Free) (%)	0007	0.4850	0.2100	1.271	1.089	0.2242	6	-0.64	060.00	0
060	Water (Free) (%)	0055	0.7200	0.4600	1.271	1.089	0.2242	6	-0.45	060.99	0
060	Water (Free) (%)	0416	0.7620	0.0250	1.271	1.089	0.2242	6	-0.42	060.00	0
060	Water (Free) (%)	0096	0.7700	0.1200	1.271	1.089	0.2242	6	-0.41	060.00	0
060	Water (Free) (%)	0518	1.985	0.2300	1.271	1.089	0.2242	6	0.58	060.30	0
060	Water (Free) (%)	0055	3.450	0.3000	1.271	1.089	0.2242	6	1.78	060.30	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				
101	Acid Soluble Calcium (%)	0472	0.2350	0.0100	0.3004	0.0446	0.0208	13	-1.47	101.30	0
101	Acid Soluble Calcium (%)	0389	0.2600	0.0000	0.3004	0.0446	0.0208	13	-0.91	101.99	0
101	Acid Soluble Calcium (%)	0482	0.2750	0.0100	0.3004	0.0446	0.0208	13	-0.57	101.30	0
101	Acid Soluble Calcium (%)	0521	0.2796	0.0000	0.3004	0.0446	0.0208	13	-0.47	101.32	0
101	Acid Soluble Calcium (%)	0494	0.2810	0.0051	0.3004	0.0446	0.0208	13	-0.44	101.33	0
101	Acid Soluble Calcium (%)	0117	0.2829	0.0014	0.3004	0.0446	0.0208	13	-0.39	101.33	0
101	Acid Soluble Calcium (%)	0511	0.2900	0.0000	0.3004	0.0446	0.0208	13	-0.23	101.30	0
101	Acid Soluble Calcium (%)	0096	0.2955	0.0190	0.3004	0.0446	0.0208	13	-0.11	101.30	0
101	Acid Soluble Calcium (%)	0354	0.3150	0.0100	0.3004	0.0446	0.0208	13	0.33	101.30	0
101	Acid Soluble Calcium (%)	0035	0.3235	0.0970	0.3004	0.0446	0.0208	13	0.52	101.30	0
101	Acid Soluble Calcium (%)	0527	0.3330	0.0060	0.3004	0.0446	0.0208	13	0.73	101.33	0
101	Acid Soluble Calcium (%)	0423	0.4780	0.0240	0.3004	0.0446	0.0208	13	3.98	101.32	0
101	Acid Soluble Calcium (%)	0483	0.5670	0.0880	0.3004	0.0446	0.0208	13	5.98	101.30	0
101	Acid Soluble Calcium (%)	0324	0.3285	0.2170	0.3004	0.0446	0.0208	13	0.63	101.30	1
121	Acid Soluble Magnesium (1%)	0506	0.0500†	0.0000	0.5800	0.0525	0.0161	48	-10.10	121.99	0
121	Acid Soluble Magnesium (1%)	0230	0.4490	0.0100	0.5800	0.0525	0.0161	48	-2.50	121.30	0
121	Acid Soluble Magnesium (1%)	0476	0.4549	0.0057	0.5800	0.0525	0.0161	48	-2.39	121.99	0
121	Acid Soluble Magnesium (1%)	0486	0.4950	0.0100	0.5800	0.0525	0.0161	48	-1.62	121.33	0
121	Acid Soluble Magnesium (1%)	0035	0.5015	0.0190	0.5800	0.0525	0.0161	48	-1.50	121.30	0
121	Acid Soluble Magnesium (1%)	0451	0.5280	0.0140	0.5800	0.0525	0.0161	48	-0.99	121.30	0
121	Acid Soluble Magnesium (1%)	0394	0.5325	0.0090	0.5800	0.0525	0.0161	48	-0.91	121.32	0
121	Acid Soluble Magnesium (1%)	0360	0.5355	0.0090	0.5800	0.0525	0.0161	48	-0.85	121.30	0
121	Acid Soluble Magnesium (1%)	0541	0.5400	0.0000	0.5800	0.0525	0.0161	48	-0.76	121.32	0
121	Acid Soluble Magnesium (1%)	0524	0.5400	0.0000	0.5800	0.0525	0.0161	48	-0.76	121.99	0
121	Acid Soluble Magnesium (1%)	0516	0.5456	0.0180	0.5800	0.0525	0.0161	48	-0.66	121.00	0
121	Acid Soluble Magnesium (1%)	0324	0.5565	0.0070	0.5800	0.0525	0.0161	48	-0.45	121.30	0
121	Acid Soluble Magnesium (1%)	0389	0.5570	0.0100	0.5800	0.0525	0.0161	48	-0.44	121.99	0
121	Acid Soluble Magnesium (1%)	0023	0.5620	0.0040	0.5800	0.0525	0.0161	48	-0.34	121.33	0
121	Acid Soluble Magnesium (1%)	0521	0.5624	0.0000	0.5800	0.0525	0.0161	48	-0.34	121.32	0
121	Acid Soluble Magnesium (1%)	0102	0.5626	0.0323	0.5800	0.0525	0.0161	48	-0.33	121.30	0
121	Acid Soluble Magnesium (1%)	0354	0.5650	0.0100	0.5800	0.0525	0.0161	48	-0.29	121.30	0
121	Acid Soluble Magnesium (1%)	0444	0.5650	0.0100	0.5800	0.0525	0.0161	48	-0.29	121.30	0
121	Acid Soluble Magnesium (1%)	0482	0.5650	0.0100	0.5800	0.0525	0.0161	48	-0.29	121.30	0
121	Acid Soluble Magnesium (1%)	0177	0.5662	0.0112	0.5800	0.0525	0.0161	48	-0.26	121.33	0
121	Acid Soluble Magnesium (1%)	0494	0.5679	0.0100	0.5800	0.0525	0.0161	48	-0.23	121.33	0
121	Acid Soluble Magnesium (1%)	0040	0.5700	0.0000	0.5800	0.0525	0.0161	48	-0.19	121.00	0
121	Acid Soluble Magnesium (1%)	0096	0.5700	0.0200	0.5800	0.0525	0.0161	48	-0.19	121.30	0
121	Acid Soluble Magnesium (1%)	0055	0.5700	0.0200	0.5800	0.0525	0.0161	48	-0.19	121.33	0
121	Acid Soluble Magnesium (1%)	0433	0.5735	0.0010	0.5800	0.0525	0.0161	48	-0.12	121.30	0
121	Acid Soluble Magnesium (1%)	0368	0.5737	0.0206	0.5800	0.0525	0.0161	48	-0.12	121.99	0
121	Acid Soluble Magnesium (1%)	0421	0.5750	0.0100	0.5800	0.0525	0.0161	48	-0.10	121.33	0
121	Acid Soluble Magnesium (1%)	0231	0.5800	0.0000	0.5800	0.0525	0.0161	48	0.00	121.30	0
121	Acid Soluble Magnesium (1%)	0423	0.5895	0.0030	0.5800	0.0525	0.0161	48	0.18	121.32	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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121	Acid Soluble Magnesium (1%)	0117	0.5899	0.0093	0.5800	0.0525	0.0161	48	0.19	121.33	0
121	Acid Soluble Magnesium (1%)	0390	0.5900	0.0020	0.5800	0.0525	0.0161	48	0.19	121.30	0
121	Acid Soluble Magnesium (1%)	0472	0.5900	0.0000	0.5800	0.0525	0.0161	48	0.19	121.30	0
121	Acid Soluble Magnesium (1%)	0511	0.5900	0.0000	0.5800	0.0525	0.0161	48	0.19	121.30	0
121	Acid Soluble Magnesium (1%)	0523	0.6000	0.0000	0.5800	0.0525	0.0161	48	0.38	121.99	0
121	Acid Soluble Magnesium (1%)	0255	0.6005	0.0210	0.5800	0.0525	0.0161	48	0.39	121.30	0
121	Acid Soluble Magnesium (1%)	0029	0.6028	0.0311	0.5800	0.0525	0.0161	48	0.43	121.00	0
121	Acid Soluble Magnesium (1%)	0234	0.6100	0.0200	0.5800	0.0525	0.0161	48	0.57	121.30	0
121	Acid Soluble Magnesium (1%)	0043	0.6100	0.0000	0.5800	0.0525	0.0161	48	0.57	121.32	0
121	Acid Soluble Magnesium (1%)	0527	0.6120	0.0020	0.5800	0.0525	0.0161	48	0.61	121.33	0
121	Acid Soluble Magnesium (1%)	0546	0.6230	0.0100	0.5800	0.0525	0.0161	48	0.82	121.33	0
121	Acid Soluble Magnesium (1%)	0169	0.6550	0.0300	0.5800	0.0525	0.0161	48	1.43	121.00	0
121	Acid Soluble Magnesium (1%)	0220	0.6550	0.0300	0.5800	0.0525	0.0161	48	1.43	121.31	0
121	Acid Soluble Magnesium (1%)	0307	0.6950	0.0000	0.5800	0.0525	0.0161	48	2.19	121.30	0
121	Acid Soluble Magnesium (1%)	0550	0.7000	0.0400	0.5800	0.0525	0.0161	48	2.29	121.00	0
121	Acid Soluble Magnesium (1%)	0483	0.7075	0.0530	0.5800	0.0525	0.0161	48	2.43	121.30	0
121	Acid Soluble Magnesium (1%)	0519	0.8600‡	0.0400	0.5800	0.0525	0.0161	48	5.34	121.99	0
121	Acid Soluble Magnesium (1%)	0309	0.9000‡	0.0200	0.5800	0.0525	0.0161	48	6.10	121.00	0
121	Acid Soluble Magnesium (1%)	0515	1.033‡	0.1887	0.5800	0.0525	0.0161	48	8.64	121.99	0
121	Acid Soluble Magnesium (1%)	0515	2.571‡	1.439	0.5800	0.0525	0.0161	48	37.96	121.33	2
131	Water Soluble Magnesium (%)	0506	0.0500	0.0000	0.3267	0.1768	0.0236	9	-1.45	131.99	0
131	Water Soluble Magnesium (%)	0394	0.1915	0.0070	0.3267	0.1768	0.0236	9	-0.71	131.30	0
131	Water Soluble Magnesium (%)	0231	0.2750	0.0100	0.3267	0.1768	0.0236	9	-0.27	131.30	0
131	Water Soluble Magnesium (%)	0117	0.2882	0.0203	0.3267	0.1768	0.0236	9	-0.20	131.30	0
131	Water Soluble Magnesium (%)	0444	0.3000	0.0600	0.3267	0.1768	0.0236	9	-0.14	131.30	0
131	Water Soluble Magnesium (%)	0029	0.3363	0.0562	0.3267	0.1768	0.0236	9	0.05	131.00	0
131	Water Soluble Magnesium (%)	0027	0.4210	0.0360	0.3267	0.1768	0.0236	9	0.49	131.30	0
131	Water Soluble Magnesium (%)	0220	0.4750	0.0100	0.3267	0.1768	0.0236	9	0.77	131.99	0
131	Water Soluble Magnesium (%)	0543	0.6435	0.0130	0.3267	0.1768	0.0236	9	1.65	131.30	0
131	Water Soluble Magnesium (%)	0550	0.3700	0.3400	0.3267	0.1768	0.0236	9	0.23	131.00	1
143	Elemental Sulfur (%)	0095	0.3650	0.0100	8.291	4.456	0.0420	5	-1.55	143.00	0
143	Elemental Sulfur (%)	0472	9.500	0.0800	8.291	4.456	0.0420	5	0.24	143.99	0
143	Elemental Sulfur (%)	0390	10.28	0.0800	8.291	4.456	0.0420	5	0.39	143.99	0
143	Elemental Sulfur (%)	0291	10.58	0.0100	8.291	4.456	0.0420	5	0.45	143.99	0
143	Elemental Sulfur (%)	0389	10.74	0.0300	8.291	4.456	0.0420	5	0.48	143.99	0
143	Elemental Sulfur (%)	0255	10.07	0.3990	8.291	4.456	0.0420	5	0.35	143.99	1
145	Sulfate Sulfur, HCl soluble (%)	0518	7.820	0.0400	10.46	0.4606	0.1320	11	-5.36	145.99	0
145	Sulfate Sulfur, HCl soluble (%)	0444	9.780	0.2600	10.46	0.4606	0.1320	11	-1.38	145.99	0
145	Sulfate Sulfur, HCl soluble (%)	0444	10.14	0.0200	10.46	0.4606	0.1320	11	-0.65	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0544	10.45	0.0100	10.46	0.4606	0.1320	11	-0.03	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0522	10.48	0.0500	10.46	0.4606	0.1320	11	0.03	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0095	10.49	0.0900	10.46	0.4606	0.1320	11	0.05	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0511	10.68	0.0000	10.46	0.4606	0.1320	11	0.45	145.00	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				
145	Sulfate Sulfur, HCl soluble (%)	0550	10.75	0.5000	10.46	0.4606	0.1320	11	0.59	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0043	10.77	0.1400	10.46	0.4606	0.1320	11	0.63	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0027	10.78	0.2600	10.46	0.4606	0.1320	11	0.65	145.00	0
145	Sulfate Sulfur, HCl soluble (%)	0397	10.99	0.0820	10.46	0.4606	0.1320	11	1.07	145.00	0
148	Total Sulfur (7.75%)	0102	7.996†	0.4731	10.48	0.4015	0.1959	45	-6.18	148.07	0
148	Total Sulfur (7.75%)	0023	9.099†	1.695	10.48	0.4015	0.1959	45	-3.44	148.07	0
148	Total Sulfur (7.75%)	0523	9.250†	0.1000	10.48	0.4015	0.1959	45	-3.06	148.99	0
148	Total Sulfur (7.75%)	0444	9.435†	0.2100	10.48	0.4015	0.1959	45	-2.60	148.07	0
148	Total Sulfur (7.75%)	0541	9.865	0.0100	10.48	0.4015	0.1959	45	-1.53	148.99	0
148	Total Sulfur (7.75%)	0506	9.980	0.2400	10.48	0.4015	0.1959	45	-1.24	148.99	0
148	Total Sulfur (7.75%)	0394	10.01	0.1900	10.48	0.4015	0.1959	45	-1.18	148.07	0
148	Total Sulfur (7.75%)	0117	10.15	0.0500	10.48	0.4015	0.1959	45	-0.83	148.07	0
148	Total Sulfur (7.75%)	0534	10.17	0.0300	10.48	0.4015	0.1959	45	-0.78	148.01	0
148	Total Sulfur (7.75%)	0494	10.30	0.7526	10.48	0.4015	0.1959	45	-0.45	148.07	0
148	Total Sulfur (7.75%)	0231	10.30	0.0000	10.48	0.4015	0.1959	45	-0.44	148.01	0
148	Total Sulfur (7.75%)	0368	10.31	0.3813	10.48	0.4015	0.1959	45	-0.43	148.99	0
148	Total Sulfur (7.75%)	0114	10.38	0.0100	10.48	0.4015	0.1959	45	-0.26	148.01	0
148	Total Sulfur (7.75%)	0177	10.38	0.1776	10.48	0.4015	0.1959	45	-0.24	148.07	0
148	Total Sulfur (7.75%)	0486	10.39	0.1500	10.48	0.4015	0.1959	45	-0.23	148.07	0
148	Total Sulfur (7.75%)	0037	10.39	0.0750	10.48	0.4015	0.1959	45	-0.23	148.07	0
148	Total Sulfur (7.75%)	0444	10.39	0.0200	10.48	0.4015	0.1959	45	-0.22	148.01	0
148	Total Sulfur (7.75%)	0402	10.39	0.0800	10.48	0.4015	0.1959	45	-0.22	148.07	0
148	Total Sulfur (7.75%)	0157	10.40	0.0000	10.48	0.4015	0.1959	45	-0.20	148.00	0
148	Total Sulfur (7.75%)	0354	10.40	0.0000	10.48	0.4015	0.1959	45	-0.20	148.99	0
148	Total Sulfur (7.75%)	0105	10.41	0.0100	10.48	0.4015	0.1959	45	-0.18	148.01	0
148	Total Sulfur (7.75%)	0292	10.41	0.0600	10.48	0.4015	0.1959	45	-0.17	148.07	0
148	Total Sulfur (7.75%)	0405	10.42	0.1200	10.48	0.4015	0.1959	45	-0.15	148.01	0
148	Total Sulfur (7.75%)	0419	10.43	0.0000	10.48	0.4015	0.1959	45	-0.12	148.04	0
148	Total Sulfur (7.75%)	0451	10.45	0.1000	10.48	0.4015	0.1959	45	-0.07	148.00	0
148	Total Sulfur (7.75%)	0029	10.49	0.0600	10.48	0.4015	0.1959	45	0.03	148.01	0
148	Total Sulfur (7.75%)	0040	10.50	0.2000	10.48	0.4015	0.1959	45	0.05	148.99	0
148	Total Sulfur (7.75%)	0096	10.52	0.1200	10.48	0.4015	0.1959	45	0.10	148.99	0
148	Total Sulfur (7.75%)	0025	10.54	0.0500	10.48	0.4015	0.1959	45	0.14	148.00	0
148	Total Sulfur (7.75%)	0230	10.55	0.1000	10.48	0.4015	0.1959	45	0.18	148.01	0
148	Total Sulfur (7.75%)	0029	10.58	0.2300	10.48	0.4015	0.1959	45	0.24	148.00	0
148	Total Sulfur (7.75%)	0433	10.63	0.0300	10.48	0.4015	0.1959	45	0.37	148.99	0
148	Total Sulfur (7.75%)	0049	10.66	0.3000	10.48	0.4015	0.1959	45	0.45	148.00	0
148	Total Sulfur (7.75%)	0476	10.67	0.0706	10.48	0.4015	0.1959	45	0.48	148.01	0
148	Total Sulfur (7.75%)	0421	10.75	0.3000	10.48	0.4015	0.1959	45	0.68	148.07	0
148	Total Sulfur (7.75%)	0055	10.82	0.0100	10.48	0.4015	0.1959	45	0.84	148.01	0
148	Total Sulfur (7.75%)	0095	10.85	0.0800	10.48	0.4015	0.1959	45	0.93	148.01	0
148	Total Sulfur (7.75%)	0136	10.92	0.3100	10.48	0.4015	0.1959	45	1.09	148.00	0
148	Total Sulfur (7.75%)	0324	10.95	0.3000	10.48	0.4015	0.1959	45	1.17	148.01	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 Sulfur (7.75%)	0482	10.95	0.1000	10.48	0.4015	0.1959	45	1.17	148.99	0
148	Total Sulfur (7.75%)	0220	11.05	0.0900	10.48	0.4015	0.1959	45	1.41	148.99	0
148	Total Sulfur (7.75%)	0546	11.25‡	0.0060	10.48	0.4015	0.1959	45	1.92	148.07	0
148	Total Sulfur (7.75%)	0483	11.30‡	1.200	10.48	0.4015	0.1959	45	2.05	148.07	0
148	Total Sulfur (7.75%)	0527	12.36‡	0.0750	10.48	0.4015	0.1959	45	4.69	148.07	0
148	Total Sulfur (7.75%)	0307	12.87‡	0.2500	10.48	0.4015	0.1959	45	5.94	148.99	0
148	Total Sulfur (7.75%)	0515	8.339†	3.090	10.48	0.4015	0.1959	45	-5.33	148.07	1
149	Sulfur - HNO3 soluble (%)	0519	7.860	0.0800	10.01	1.644	0.0375	4	-1.31	149.04	0
149	Sulfur - HNO3 soluble (%)	0521	9.998	0.0000	10.01	1.644	0.0375	4	-0.01	149.04	0
149	Sulfur - HNO3 soluble (%)	0423	10.33	0.0500	10.01	1.644	0.0375	4	0.19	149.04	0
149	Sulfur - HNO3 soluble (%)	0524	11.85	0.0200	10.01	1.644	0.0375	4	1.12	149.04	0
151	Acid Soluble Arsenic (ppm)	0476	45.43	0.3364	157.4	17.36	6.333	20	-6.45	151.99	0
151	Acid Soluble Arsenic (ppm)	0550	89.50	3.270	157.4	17.36	6.333	20	-3.91	151.00	0
151	Acid Soluble Arsenic (ppm)	0444	126.5	3.000	157.4	17.36	6.333	20	-1.78	151.30	0
151	Acid Soluble Arsenic (ppm)	0394	141.3	3.200	157.4	17.36	6.333	20	-0.93	151.30	0
151	Acid Soluble Arsenic (ppm)	0136	145.0	4.000	157.4	17.36	6.333	20	-0.72	151.00	0
151	Acid Soluble Arsenic (ppm)	0220	148.0	12.00	157.4	17.36	6.333	20	-0.54	151.99	0
151	Acid Soluble Arsenic (ppm)	0515	149.2	5.280	157.4	17.36	6.333	20	-0.47	151.34	0
151	Acid Soluble Arsenic (ppm)	0515	154.4	9.017	157.4	17.36	6.333	20	-0.17	151.33	0
151	Acid Soluble Arsenic (ppm)	0368	155.0	10.00	157.4	17.36	6.333	20	-0.14	151.30	0
151	Acid Soluble Arsenic (ppm)	0096	161.7	7.300	157.4	17.36	6.333	20	0.24	151.30	0
151	Acid Soluble Arsenic (ppm)	0255	161.9	3.681	157.4	17.36	6.333	20	0.26	151.30	0
151	Acid Soluble Arsenic (ppm)	0389	164.9	0.1400	157.4	17.36	6.333	20	0.43	151.30	0
151	Acid Soluble Arsenic (ppm)	0541	166.0	30.00	157.4	17.36	6.333	20	0.49	151.30	0
151	Acid Soluble Arsenic (ppm)	0519	167.7	0.6500	157.4	17.36	6.333	20	0.59	151.99	0
151	Acid Soluble Arsenic (ppm)	0511	170.0	0.0000	157.4	17.36	6.333	20	0.73	151.30	0
151	Acid Soluble Arsenic (ppm)	0527	170.4	0.5060	157.4	17.36	6.333	20	0.75	151.33	0
151	Acid Soluble Arsenic (ppm)	0117	172.7	6.000	157.4	17.36	6.333	20	0.88	151.33	0
151	Acid Soluble Arsenic (ppm)	0037	172.8	8.634	157.4	17.36	6.333	20	0.89	151.33	0
151	Acid Soluble Arsenic (ppm)	0102	173.6	12.08	157.4	17.36	6.333	20	0.93	151.30	0
151	Acid Soluble Arsenic (ppm)	0494	179.8	7.566	157.4	17.36	6.333	20	1.29	151.33	0
151	Acid Soluble Arsenic (ppm)	0230	149.0	36.00	157.4	17.36	6.333	20	-0.49	151.34	1
165	Acid Soluble Boron (0.2%)	0537	0.1025†	0.0030	0.2058	0.0165	0.0068	47	-6.27	165.00	0
165	Acid Soluble Boron (0.2%)	0230	0.1655†	0.0030	0.2058	0.0165	0.0068	47	-2.45	165.99	0
165	Acid Soluble Boron (0.2%)	0476	0.1698†	0.0007	0.2058	0.0165	0.0068	47	-2.19	165.99	0
165	Acid Soluble Boron (0.2%)	0309	0.1750	0.0100	0.2058	0.0165	0.0068	47	-1.87	165.00	0
165	Acid Soluble Boron (0.2%)	0524	0.1850	0.0100	0.2058	0.0165	0.0068	47	-1.26	165.99	0
165	Acid Soluble Boron (0.2%)	0324	0.1860	0.0000	0.2058	0.0165	0.0068	47	-1.20	165.30	0
165	Acid Soluble Boron (0.2%)	0029	0.1870	0.0020	0.2058	0.0165	0.0068	47	-1.14	165.00	0
165	Acid Soluble Boron (0.2%)	0397	0.1880	0.0042	0.2058	0.0165	0.0068	47	-1.08	165.00	0
165	Acid Soluble Boron (0.2%)	0521	0.1897	0.0000	0.2058	0.0165	0.0068	47	-0.98	165.30	0
165	Acid Soluble Boron (0.2%)	0486	0.1900	0.0000	0.2058	0.0165	0.0068	47	-0.96	165.99	0
165	Acid Soluble Boron (0.2%)	0506	0.1950	0.0100	0.2058	0.0165	0.0068	47	-0.66	165.00	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
165	Acid Soluble Boron (0.2%)	0539	0.1950	0.0300	0.2058	0.0165	0.0068	47	-0.66	165.00	0
165	Acid Soluble Boron (0.2%)	0055	0.1960	0.0100	0.2058	0.0165	0.0068	47	-0.59	165.00	0
165	Acid Soluble Boron (0.2%)	0527	0.1995	0.0030	0.2058	0.0165	0.0068	47	-0.38	165.99	0
165	Acid Soluble Boron (0.2%)	0531	0.2000	0.0200	0.2058	0.0165	0.0068	47	-0.35	165.00	0
165	Acid Soluble Boron (0.2%)	0472	0.2000	0.0000	0.2058	0.0165	0.0068	47	-0.35	165.99	0
165	Acid Soluble Boron (0.2%)	0421	0.2005	0.0010	0.2058	0.0165	0.0068	47	-0.32	165.99	0
165	Acid Soluble Boron (0.2%)	0394	0.2032	0.0033	0.2058	0.0165	0.0068	47	-0.16	165.30	0
165	Acid Soluble Boron (0.2%)	0169	0.2040	0.0100	0.2058	0.0165	0.0068	47	-0.11	165.00	0
165	Acid Soluble Boron (0.2%)	0368	0.2042	0.0013	0.2058	0.0165	0.0068	47	-0.10	165.99	0
165	Acid Soluble Boron (0.2%)	0220	0.2050	0.0100	0.2058	0.0165	0.0068	47	-0.05	165.00	0
165	Acid Soluble Boron (0.2%)	0535	0.2050	0.0100	0.2058	0.0165	0.0068	47	-0.05	165.00	0
165	Acid Soluble Boron (0.2%)	0234	0.2050	0.0100	0.2058	0.0165	0.0068	47	-0.05	165.30	0
165	Acid Soluble Boron (0.2%)	0519	0.2050	0.0100	0.2058	0.0165	0.0068	47	-0.05	165.99	0
165	Acid Soluble Boron (0.2%)	0040	0.2075	0.0010	0.2058	0.0165	0.0068	47	0.10	165.30	0
165	Acid Soluble Boron (0.2%)	0023	0.2090	0.0000	0.2058	0.0165	0.0068	47	0.19	165.30	0
165	Acid Soluble Boron (0.2%)	0389	0.2097	0.0018	0.2058	0.0165	0.0068	47	0.24	165.30	0
165	Acid Soluble Boron (0.2%)	0354	0.2100	0.0000	0.2058	0.0165	0.0068	47	0.25	165.30	0
165	Acid Soluble Boron (0.2%)	0444	0.2100	0.0000	0.2058	0.0165	0.0068	47	0.25	165.30	0
165	Acid Soluble Boron (0.2%)	0482	0.2100	0.0000	0.2058	0.0165	0.0068	47	0.25	165.99	0
165	Acid Soluble Boron (0.2%)	0511	0.2100	0.0000	0.2058	0.0165	0.0068	47	0.25	165.99	0
165	Acid Soluble Boron (0.2%)	0136	0.2100	0.0200	0.2058	0.0165	0.0068	47	0.25	165.30	0
165	Acid Soluble Boron (0.2%)	0360	0.2110	0.0020	0.2058	0.0165	0.0068	47	0.32	165.99	0
165	Acid Soluble Boron (0.2%)	0423	0.2115	0.0010	0.2058	0.0165	0.0068	47	0.35	165.99	0
165	Acid Soluble Boron (0.2%)	0515	0.2136	0.0255	0.2058	0.0165	0.0068	47	0.47	165.99	0
165	Acid Soluble Boron (0.2%)	0117	0.2149	0.0011	0.2058	0.0165	0.0068	47	0.55	165.99	0
165	Acid Soluble Boron (0.2%)	0255	0.2175	0.0090	0.2058	0.0165	0.0068	47	0.71	165.99	0
165	Acid Soluble Boron (0.2%)	0390	0.2176	0.0069	0.2058	0.0165	0.0068	47	0.71	165.30	0
165	Acid Soluble Boron (0.2%)	0494	0.2186	0.0010	0.2058	0.0165	0.0068	47	0.78	165.30	0
165	Acid Soluble Boron (0.2%)	0433	0.2240	0.0020	0.2058	0.0165	0.0068	47	1.10	165.30	0
165	Acid Soluble Boron (0.2%)	0546	0.2240	0.0080	0.2058	0.0165	0.0068	47	1.10	165.99	0
165	Acid Soluble Boron (0.2%)	0550	0.2250	0.0100	0.2058	0.0165	0.0068	47	1.17	165.00	0
165	Acid Soluble Boron (0.2%)	0042	0.2295	0.0130	0.2058	0.0165	0.0068	47	1.44	165.99	0
165	Acid Soluble Boron (0.2%)	0231	0.2400‡	0.0000	0.2058	0.0165	0.0068	47	2.08	165.99	0
165	Acid Soluble Boron (0.2%)	0307	0.2415‡	0.0110	0.2058	0.0165	0.0068	47	2.17	165.30	0
165	Acid Soluble Boron (0.2%)	0534	0.2450‡	0.0300	0.2058	0.0165	0.0068	47	2.38	165.00	0
165	Acid Soluble Boron (0.2%)	0483	0.2490‡	0.0140	0.2058	0.0165	0.0068	47	2.62	165.99	0
171	Water Soluble Boron (%)	0533	0.1005	0.0050	0.1404	0.0426	0.0168	8	-0.86	171.10	0
171	Water Soluble Boron (%)	0536	0.1095	0.0210	0.1404	0.0426	0.0168	8	-0.66	171.10	0
171	Water Soluble Boron (%)	0538	0.1100	0.0040	0.1404	0.0426	0.0168	8	-0.65	171.10	0
171	Water Soluble Boron (%)	0532	0.1140	0.0320	0.1404	0.0426	0.0168	8	-0.57	171.10	0
171	Water Soluble Boron (%)	0220	0.1550	0.0100	0.1404	0.0426	0.0168	8	0.31	171.10	0
171	Water Soluble Boron (%)	0444	0.1550	0.0100	0.1404	0.0426	0.0168	8	0.31	171.99	0
171	Water Soluble Boron (%)	0550	0.1750	0.0500	0.1404	0.0426	0.0168	8	0.74	171.10	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
171	Water Soluble Boron (%)	0402	0.2120	0.0020	0.1404	0.0426	0.0168	8	1.54	171.99	0
181	Acid Soluble Cadmium (ppm)	0506	126.5	27.00	188.6	16.98	12.92	23	-3.66	181.99	0
181	Acid Soluble Cadmium (ppm)	0444	137.5	3.000	188.6	16.98	12.92	23	-3.01	181.30	0
181	Acid Soluble Cadmium (ppm)	0476	152.3	0.8220	188.6	16.98	12.92	23	-2.14	181.99	0
181	Acid Soluble Cadmium (ppm)	0035	171.0	16.00	188.6	16.98	12.92	23	-1.04	181.30	0
181	Acid Soluble Cadmium (ppm)	0255	173.3	4.369	188.6	16.98	12.92	23	-0.90	181.30	0
181	Acid Soluble Cadmium (ppm)	0519	173.5	0.9700	188.6	16.98	12.92	23	-0.89	181.99	0
181	Acid Soluble Cadmium (ppm)	0368	182.5	3.000	188.6	16.98	12.92	23	-0.36	181.30	0
181	Acid Soluble Cadmium (ppm)	0389	185.0	6.000	188.6	16.98	12.92	23	-0.21	181.30	0
181	Acid Soluble Cadmium (ppm)	0230	187.0	70.00	188.6	16.98	12.92	23	-0.10	181.34	0
181	Acid Soluble Cadmium (ppm)	0541	188.0	14.00	188.6	16.98	12.92	23	-0.04	181.30	0
181	Acid Soluble Cadmium (ppm)	0117	188.9	7.900	188.6	16.98	12.92	23	0.01	181.33	0
181	Acid Soluble Cadmium (ppm)	0515	190.1	33.57	188.6	16.98	12.92	23	0.09	181.33	0
181	Acid Soluble Cadmium (ppm)	0220	191.5	25.00	188.6	16.98	12.92	23	0.17	181.99	0
181	Acid Soluble Cadmium (ppm)	0096	192.0	18.10	188.6	16.98	12.92	23	0.20	181.30	0
181	Acid Soluble Cadmium (ppm)	0524	192.0	6.070	188.6	16.98	12.92	23	0.20	181.30	0
181	Acid Soluble Cadmium (ppm)	0037	199.0	11.02	188.6	16.98	12.92	23	0.61	181.33	0
181	Acid Soluble Cadmium (ppm)	0136	200.0	2.000	188.6	16.98	12.92	23	0.67	181.00	0
181	Acid Soluble Cadmium (ppm)	0515	200.2	1.210	188.6	16.98	12.92	23	0.68	181.34	0
181	Acid Soluble Cadmium (ppm)	0527	203.0	1.306	188.6	16.98	12.92	23	0.85	181.33	0
181	Acid Soluble Cadmium (ppm)	0482	204.5	15.00	188.6	16.98	12.92	23	0.94	181.30	0
181	Acid Soluble Cadmium (ppm)	0102	206.2	13.00	188.6	16.98	12.92	23	1.03	181.30	0
181	Acid Soluble Cadmium (ppm)	0494	207.0	17.91	188.6	16.98	12.92	23	1.08	181.33	0
181	Acid Soluble Cadmium (ppm)	0511	216.5	0.0000	188.6	16.98	12.92	23	1.64	181.30	0
181	Acid Soluble Cadmium (ppm)	0550	179.5	135.4	188.6	16.98	12.92	23	-0.53	181.00	1
190	Water Soluble Chlorine (%)	0185	2.335	0.0100				2		190.00	0
190	Water Soluble Chlorine (%)	0511	12.33	0.0000				2		190.99	0
191	Acid Soluble Chromium (ppm)	0506	10.51	1.980	589.4	75.71	30.47	20	-7.65	191.99	0
191	Acid Soluble Chromium (ppm)	0096	315.4	21.40	589.4	75.71	30.47	20	-3.62	191.30	0
191	Acid Soluble Chromium (ppm)	0444	467.0	12.00	589.4	75.71	30.47	20	-1.62	191.30	0
191	Acid Soluble Chromium (ppm)	0476	532.4	6.975	589.4	75.71	30.47	20	-0.75	191.99	0
191	Acid Soluble Chromium (ppm)	0482	549.5	37.00	589.4	75.71	30.47	20	-0.53	191.30	0
191	Acid Soluble Chromium (ppm)	0102	552.3	34.90	589.4	75.71	30.47	20	-0.49	191.30	0
191	Acid Soluble Chromium (ppm)	0230	561.5	57.00	589.4	75.71	30.47	20	-0.37	191.34	0
191	Acid Soluble Chromium (ppm)	0035	585.0	18.00	589.4	75.71	30.47	20	-0.06	191.30	0
191	Acid Soluble Chromium (ppm)	0220	587.0	26.00	589.4	75.71	30.47	20	-0.03	191.99	0
191	Acid Soluble Chromium (ppm)	0368	590.0	12.00	589.4	75.71	30.47	20	0.01	191.30	0
191	Acid Soluble Chromium (ppm)	0389	592.5	3.000	589.4	75.71	30.47	20	0.04	191.30	0
191	Acid Soluble Chromium (ppm)	0527	593.3	3.204	589.4	75.71	30.47	20	0.05	191.33	0
191	Acid Soluble Chromium (ppm)	0494	603.8	16.94	589.4	75.71	30.47	20	0.19	191.33	0
191	Acid Soluble Chromium (ppm)	0037	630.0	12.96	589.4	75.71	30.47	20	0.54	191.33	0
191	Acid Soluble Chromium (ppm)	0515	633.5	102.6	589.4	75.71	30.47	20	0.58	191.33	0
191	Acid Soluble Chromium (ppm)	0117	637.2	10.60	589.4	75.71	30.47	20	0.63	191.33	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				
191	Acid Soluble Chromium (ppm)	0511	655.0	0.0000	589.4	75.71	30.47	20	0.87	191.30	0
191	Acid Soluble Chromium (ppm)	0519	667.1	0.9500	589.4	75.71	30.47	20	1.03	191.99	0
191	Acid Soluble Chromium (ppm)	0541	687.5	107.0	589.4	75.71	30.47	20	1.30	191.30	0
191	Acid Soluble Chromium (ppm)	0515	758.4	124.8	589.4	75.71	30.47	20	2.23	191.34	0
191	Acid Soluble Chromium (ppm)	0550	502.1	274.0	589.4	75.71	30.47	20	-1.15	191.00	1
202	Acid Soluble Cobalt (ppm)	0550	29.12	6.770	375.8	26.12	8.595	21	-13.28	202.33	0
202	Acid Soluble Cobalt (ppm)	0476	309.0	20.43	375.8	26.12	8.595	21	-2.56	202.99	0
202	Acid Soluble Cobalt (ppm)	0482	315.5	23.00	375.8	26.12	8.595	21	-2.31	202.30	0
202	Acid Soluble Cobalt (ppm)	0423	350.5	5.000	375.8	26.12	8.595	21	-0.97	202.32	0
202	Acid Soluble Cobalt (ppm)	0515	355.4	1.880	375.8	26.12	8.595	21	-0.78	202.33	0
202	Acid Soluble Cobalt (ppm)	0389	367.0	2.100	375.8	26.12	8.595	21	-0.34	202.30	0
202	Acid Soluble Cobalt (ppm)	0255	367.5	6.643	375.8	26.12	8.595	21	-0.32	202.99	0
202	Acid Soluble Cobalt (ppm)	0527	368.4	0.8720	375.8	26.12	8.595	21	-0.29	202.33	0
202	Acid Soluble Cobalt (ppm)	0546	374.5	25.00	375.8	26.12	8.595	21	-0.05	202.33	0
202	Acid Soluble Cobalt (ppm)	0220	375.0	6.000	375.8	26.12	8.595	21	-0.03	202.99	0
202	Acid Soluble Cobalt (ppm)	0368	375.5	21.00	375.8	26.12	8.595	21	-0.01	202.30	0
202	Acid Soluble Cobalt (ppm)	0515	377.1	16.79	375.8	26.12	8.595	21	0.05	202.34	0
202	Acid Soluble Cobalt (ppm)	0524	381.8	0.1700	375.8	26.12	8.595	21	0.23	202.30	0
202	Acid Soluble Cobalt (ppm)	0096	387.1	4.600	375.8	26.12	8.595	21	0.43	202.30	0
202	Acid Soluble Cobalt (ppm)	0511	395.0	0.0000	375.8	26.12	8.595	21	0.73	202.30	0
202	Acid Soluble Cobalt (ppm)	0037	395.3	9.700	375.8	26.12	8.595	21	0.75	202.33	0
202	Acid Soluble Cobalt (ppm)	0494	395.4	10.33	375.8	26.12	8.595	21	0.75	202.33	0
202	Acid Soluble Cobalt (ppm)	0117	395.7	9.700	375.8	26.12	8.595	21	0.76	202.33	0
202	Acid Soluble Cobalt (ppm)	0506	400.0	0.0000	375.8	26.12	8.595	21	0.93	202.99	0
202	Acid Soluble Cobalt (ppm)	0102	406.3	10.45	375.8	26.12	8.595	21	1.17	202.30	0
202	Acid Soluble Cobalt (ppm)	0519	491.0	0.0700	375.8	26.12	8.595	21	4.41	202.99	0
202	Acid Soluble Cobalt (ppm)	0035	394.5	61.00	375.8	26.12	8.595	21	0.72	202.30	1
221	Acid Soluble Copper (0.06%)	0550	0.00365†	0.0005	0.1266	0.0173	0.0072	52	-7.11	221.99	0
221	Acid Soluble Copper (0.06%)	0506	0.01000†	0.0000	0.1266	0.0173	0.0072	52	-6.74	221.99	0
221	Acid Soluble Copper (0.06%)	0550	0.02800†	0.0000	0.1266	0.0173	0.0072	52	-5.70	221.30	0
221	Acid Soluble Copper (0.06%)	0519	0.04500†	0.0100	0.1266	0.0173	0.0072	52	-4.72	221.99	0
221	Acid Soluble Copper (0.06%)	0234	0.09000†	0.0200	0.1266	0.0173	0.0072	52	-2.11	221.30	0
221	Acid Soluble Copper (0.06%)	0042	0.09150†	0.0050	0.1266	0.0173	0.0072	52	-2.03	221.99	0
221	Acid Soluble Copper (0.06%)	0027	0.1015†	0.0130	0.1266	0.0173	0.0072	52	-1.45	221.99	0
221	Acid Soluble Copper (0.06%)	0521	0.1017†	0.0000	0.1266	0.0173	0.0072	52	-1.44	221.32	0
221	Acid Soluble Copper (0.06%)	0476	0.1069†	0.0122	0.1266	0.0173	0.0072	52	-1.14	221.99	0
221	Acid Soluble Copper (0.06%)	0516	0.1074†	0.0196	0.1266	0.0173	0.0072	52	-1.11	221.00	0
221	Acid Soluble Copper (0.06%)	0230	0.1110	0.0000	0.1266	0.0173	0.0072	52	-0.90	221.30	0
221	Acid Soluble Copper (0.06%)	0324	0.1145	0.0050	0.1266	0.0173	0.0072	52	-0.70	221.30	0
221	Acid Soluble Copper (0.06%)	0389	0.1154	0.0016	0.1266	0.0173	0.0072	52	-0.65	221.99	0
221	Acid Soluble Copper (0.06%)	0527	0.1155	0.0010	0.1266	0.0173	0.0072	52	-0.64	221.33	0
221	Acid Soluble Copper (0.06%)	0472	0.1200	0.0000	0.1266	0.0173	0.0072	52	-0.38	221.30	0
221	Acid Soluble Copper (0.06%)	0523	0.1200	0.0000	0.1266	0.0173	0.0072	52	-0.38	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 Copper (0.06%)	0368	0.1208	0.0033	0.1266	0.0173	0.0072	52	-0.34	221.99	0
221	Acid Soluble Copper (0.06%)	0494	0.1216	0.0095	0.1266	0.0173	0.0072	52	-0.29	221.33	0
221	Acid Soluble Copper (0.06%)	0433	0.1245	0.0010	0.1266	0.0173	0.0072	52	-0.12	221.30	0
221	Acid Soluble Copper (0.06%)	0402	0.1250	0.0020	0.1266	0.0173	0.0072	52	-0.09	221.30	0
221	Acid Soluble Copper (0.06%)	0486	0.1250	0.0100	0.1266	0.0173	0.0072	52	-0.09	221.33	0
221	Acid Soluble Copper (0.06%)	0390	0.1258	0.0135	0.1266	0.0173	0.0072	52	-0.05	221.31	0
221	Acid Soluble Copper (0.06%)	0515	0.1279	0.0103	0.1266	0.0173	0.0072	52	0.07	221.33	0
221	Acid Soluble Copper (0.06%)	0394	0.1285	0.0080	0.1266	0.0173	0.0072	52	0.11	221.32	0
221	Acid Soluble Copper (0.06%)	0220	0.1295	0.0050	0.1266	0.0173	0.0072	52	0.17	221.32	0
221	Acid Soluble Copper (0.06%)	0354	0.1300	0.0000	0.1266	0.0173	0.0072	52	0.20	221.30	0
221	Acid Soluble Copper (0.06%)	0055	0.1300	0.0000	0.1266	0.0173	0.0072	52	0.20	221.33	0
221	Acid Soluble Copper (0.06%)	0040	0.1305	0.0030	0.1266	0.0173	0.0072	52	0.23	221.00	0
221	Acid Soluble Copper (0.06%)	0360	0.1310	0.0040	0.1266	0.0173	0.0072	52	0.26	221.30	0
221	Acid Soluble Copper (0.06%)	0535	0.1325	0.0050	0.1266	0.0173	0.0072	52	0.34	221.00	0
221	Acid Soluble Copper (0.06%)	0029	0.1334	0.0067	0.1266	0.0173	0.0072	52	0.39	221.00	0
221	Acid Soluble Copper (0.06%)	0023	0.1340	0.0000	0.1266	0.0173	0.0072	52	0.43	221.03	0
221	Acid Soluble Copper (0.06%)	0546	0.1340	0.0020	0.1266	0.0173	0.0072	52	0.43	221.33	0
221	Acid Soluble Copper (0.06%)	0444	0.1350	0.0100	0.1266	0.0173	0.0072	52	0.49	221.30	0
221	Acid Soluble Copper (0.06%)	0043	0.1350	0.0100	0.1266	0.0173	0.0072	52	0.49	221.32	0
221	Acid Soluble Copper (0.06%)	0421	0.1350	0.0100	0.1266	0.0173	0.0072	52	0.49	221.33	0
221	Acid Soluble Copper (0.06%)	0035	0.1355	0.0070	0.1266	0.0173	0.0072	52	0.52	221.30	0
221	Acid Soluble Copper (0.06%)	0511	0.1360	0.0000	0.1266	0.0173	0.0072	52	0.55	221.30	0
221	Acid Soluble Copper (0.06%)	0037	0.1365	0.0110	0.1266	0.0173	0.0072	52	0.58	221.33	0
221	Acid Soluble Copper (0.06%)	0515	0.1366	0.0126	0.1266	0.0173	0.0072	52	0.58	221.99	0
221	Acid Soluble Copper (0.06%)	0117	0.1367	0.0070	0.1266	0.0173	0.0072	52	0.59	221.33	0
221	Acid Soluble Copper (0.06%)	0255	0.1375	0.0110	0.1266	0.0173	0.0072	52	0.63	221.30	0
221	Acid Soluble Copper (0.06%)	0550	0.1400	0.0200	0.1266	0.0173	0.0072	52	0.78	221.00	0
221	Acid Soluble Copper (0.06%)	0231	0.1400	0.0000	0.1266	0.0173	0.0072	52	0.78	221.03	0
221	Acid Soluble Copper (0.06%)	0482	0.1400	0.0000	0.1266	0.0173	0.0072	52	0.78	221.30	0
221	Acid Soluble Copper (0.06%)	0136	0.1400	0.0000	0.1266	0.0173	0.0072	52	0.78	221.33	0
221	Acid Soluble Copper (0.06%)	0524	0.1400	0.0400	0.1266	0.0173	0.0072	52	0.78	221.99	0
221	Acid Soluble Copper (0.06%)	0096	0.1458‡	0.0073	0.1266	0.0173	0.0072	52	1.11	221.30	0
221	Acid Soluble Copper (0.06%)	0423	0.1555‡	0.0010	0.1266	0.0173	0.0072	52	1.67	221.32	0
221	Acid Soluble Copper (0.06%)	0307	0.1565‡	0.0110	0.1266	0.0173	0.0072	52	1.73	221.30	0
221	Acid Soluble Copper (0.06%)	0483	0.1570‡	0.0240	0.1266	0.0173	0.0072	52	1.76	221.30	0
221	Acid Soluble Copper (0.06%)	0543	0.2080‡	0.0220	0.1266	0.0173	0.0072	52	4.71	221.30	0
221	Acid Soluble Copper (0.06%)	0541	1,210‡	100.0	0.1266	0.0173	0.0072	52	69971.43	221.30	2
241	Acid Soluble Iron (1%)	0506	0.00250†	0.0010	0.6342	0.1053	0.0212	56	-6.00	241.99	0
241	Acid Soluble Iron (1%)	0550	0.00410†	0.0004	0.6342	0.1053	0.0212	56	-5.98	241.99	0
241	Acid Soluble Iron (1%)	0516	0.4219†	0.0036	0.6342	0.1053	0.0212	56	-2.02	241.00	0
241	Acid Soluble Iron (1%)	0402	0.4400†	0.0000	0.6342	0.1053	0.0212	56	-1.84	241.30	0
241	Acid Soluble Iron (1%)	0519	0.4400†	0.0200	0.6342	0.1053	0.0212	56	-1.84	241.99	0
241	Acid Soluble Iron (1%)	0307	0.4550†	0.0300	0.6342	0.1053	0.0212	56	-1.70	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 Iron (1%)	0501	0.4750†	0.0300	0.6342	0.1053	0.0212	56	-1.51	241.99	0
241	Acid Soluble Iron (1%)	0532	0.4950†	0.0500	0.6342	0.1053	0.0212	56	-1.32	241.99	0
241	Acid Soluble Iron (1%)	0230	0.4955†	0.0030	0.6342	0.1053	0.0212	56	-1.32	241.30	0
241	Acid Soluble Iron (1%)	0389	0.5000†	0.0040	0.6342	0.1053	0.0212	56	-1.27	241.99	0
241	Acid Soluble Iron (1%)	0521	0.5101†	0.0000	0.6342	0.1053	0.0212	56	-1.18	241.32	0
241	Acid Soluble Iron (1%)	0515	0.5216†	0.0858	0.6342	0.1053	0.0212	56	-1.07	241.99	0
241	Acid Soluble Iron (1%)	0476	0.5296†	0.0138	0.6342	0.1053	0.0212	56	-0.99	241.99	0
241	Acid Soluble Iron (1%)	0472	0.5300†	0.0000	0.6342	0.1053	0.0212	56	-0.99	241.30	0
241	Acid Soluble Iron (1%)	0523	0.5850	0.0100	0.6342	0.1053	0.0212	56	-0.47	241.99	0
241	Acid Soluble Iron (1%)	0394	0.5863	0.0238	0.6342	0.1053	0.0212	56	-0.45	241.32	0
241	Acid Soluble Iron (1%)	0043	0.5950	0.0500	0.6342	0.1053	0.0212	56	-0.37	241.32	0
241	Acid Soluble Iron (1%)	0527	0.5995	0.0050	0.6342	0.1053	0.0212	56	-0.33	241.33	0
241	Acid Soluble Iron (1%)	0535	0.6100	0.0200	0.6342	0.1053	0.0212	56	-0.23	241.00	0
241	Acid Soluble Iron (1%)	0231	0.6100	0.0000	0.6342	0.1053	0.0212	56	-0.23	241.30	0
241	Acid Soluble Iron (1%)	0486	0.6150	0.0300	0.6342	0.1053	0.0212	56	-0.18	241.33	0
241	Acid Soluble Iron (1%)	0423	0.6175	0.0050	0.6342	0.1053	0.0212	56	-0.16	241.32	0
241	Acid Soluble Iron (1%)	0035	0.6360	0.0580	0.6342	0.1053	0.0212	56	0.02	241.30	0
241	Acid Soluble Iron (1%)	0550	0.6400	0.1200	0.6342	0.1053	0.0212	56	0.06	241.00	0
241	Acid Soluble Iron (1%)	0029	0.6552	0.0387	0.6342	0.1053	0.0212	56	0.20	241.00	0
241	Acid Soluble Iron (1%)	0541	0.6600	0.0000	0.6342	0.1053	0.0212	56	0.25	241.99	0
241	Acid Soluble Iron (1%)	0255	0.6620	0.0280	0.6342	0.1053	0.0212	56	0.26	241.30	0
241	Acid Soluble Iron (1%)	0177	0.6666	0.0189	0.6342	0.1053	0.0212	56	0.31	241.33	0
241	Acid Soluble Iron (1%)	0433	0.6685	0.0010	0.6342	0.1053	0.0212	56	0.33	241.30	0
241	Acid Soluble Iron (1%)	0515	0.6699	0.0669	0.6342	0.1053	0.0212	56	0.34	241.33	0
241	Acid Soluble Iron (1%)	0157	0.6740	0.0100	0.6342	0.1053	0.0212	56	0.38	241.30	0
241	Acid Soluble Iron (1%)	0102	0.6878	0.0321	0.6342	0.1053	0.0212	56	0.51	241.30	0
241	Acid Soluble Iron (1%)	0354	0.6900	0.0000	0.6342	0.1053	0.0212	56	0.53	241.30	0
241	Acid Soluble Iron (1%)	0511	0.6900	0.0000	0.6342	0.1053	0.0212	56	0.53	241.30	0
241	Acid Soluble Iron (1%)	0136	0.6900	0.0400	0.6342	0.1053	0.0212	56	0.53	241.33	0
241	Acid Soluble Iron (1%)	0027	0.6915	0.0070	0.6342	0.1053	0.0212	56	0.54	241.99	0
241	Acid Soluble Iron (1%)	0037	0.6940	0.0140	0.6342	0.1053	0.0212	56	0.57	241.33	0
241	Acid Soluble Iron (1%)	0444	0.6950	0.0100	0.6342	0.1053	0.0212	56	0.58	241.30	0
241	Acid Soluble Iron (1%)	0524	0.7000	0.0000	0.6342	0.1053	0.0212	56	0.62	241.99	0
241	Acid Soluble Iron (1%)	0494	0.7003	0.0163	0.6342	0.1053	0.0212	56	0.63	241.33	0
241	Acid Soluble Iron (1%)	0096	0.7025	0.0070	0.6342	0.1053	0.0212	56	0.65	241.30	0
241	Acid Soluble Iron (1%)	0117	0.7028‡	0.0462	0.6342	0.1053	0.0212	56	0.65	241.33	0
241	Acid Soluble Iron (1%)	0421	0.7050‡	0.0100	0.6342	0.1053	0.0212	56	0.67	241.33	0
241	Acid Soluble Iron (1%)	0360	0.7055‡	0.0010	0.6342	0.1053	0.0212	56	0.68	241.30	0
241	Acid Soluble Iron (1%)	0324	0.7075‡	0.0230	0.6342	0.1053	0.0212	56	0.70	241.30	0
241	Acid Soluble Iron (1%)	0390	0.7139‡	0.0055	0.6342	0.1053	0.0212	56	0.76	241.30	0
241	Acid Soluble Iron (1%)	0220	0.7150‡	0.0500	0.6342	0.1053	0.0212	56	0.77	241.32	0
241	Acid Soluble Iron (1%)	0451	0.7155‡	0.0310	0.6342	0.1053	0.0212	56	0.77	241.30	0
241	Acid Soluble Iron (1%)	0368	0.7184‡	0.0259	0.6342	0.1053	0.0212	56	0.80	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 Iron (1%)	0040	0.7200‡	0.0400	0.6342	0.1053	0.0212	56	0.81	241.00	0
241	Acid Soluble Iron (1%)	0482	0.7200‡	0.0200	0.6342	0.1053	0.0212	56	0.81	241.30	0
241	Acid Soluble Iron (1%)	0055	0.7300‡	0.0200	0.6342	0.1053	0.0212	56	0.91	241.33	0
241	Acid Soluble Iron (1%)	0023	0.7310‡	0.0180	0.6342	0.1053	0.0212	56	0.92	241.33	0
241	Acid Soluble Iron (1%)	0546	0.7390‡	0.0240	0.6342	0.1053	0.0212	56	1.00	241.33	0
241	Acid Soluble Iron (1%)	0042	0.8275‡	0.0090	0.6342	0.1053	0.0212	56	1.84	241.99	0
241	Acid Soluble Iron (1%)	0483	0.8350‡	0.0100	0.6342	0.1053	0.0212	56	1.91	241.30	0
241	Acid Soluble Iron (1%)	0234	0.9700‡	0.1800	0.6342	0.1053	0.0212	56	3.19	241.30	1
251	Acid Soluble Lead (ppm)	0476	120.3	0.6114	923.1	121.2	62.75	24	-6.62	251.99	0
251	Acid Soluble Lead (ppm)	0506	594.0	48.00	923.1	121.2	62.75	24	-2.71	251.99	0
251	Acid Soluble Lead (ppm)	0444	675.5	27.00	923.1	121.2	62.75	24	-2.04	251.30	0
251	Acid Soluble Lead (ppm)	0482	745.5	61.00	923.1	121.2	62.75	24	-1.46	251.30	0
251	Acid Soluble Lead (ppm)	0394	838.0	50.00	923.1	121.2	62.75	24	-0.70	251.30	0
251	Acid Soluble Lead (ppm)	0524	879.6	10.27	923.1	121.2	62.75	24	-0.36	251.30	0
251	Acid Soluble Lead (ppm)	0527	883.1	13.47	923.1	121.2	62.75	24	-0.33	251.33	0
251	Acid Soluble Lead (ppm)	0230	885.0	186.0	923.1	121.2	62.75	24	-0.31	251.34	0
251	Acid Soluble Lead (ppm)	0519	888.0	0.8600	923.1	121.2	62.75	24	-0.29	251.99	0
251	Acid Soluble Lead (ppm)	0035	918.0	92.00	923.1	121.2	62.75	24	-0.04	251.30	0
251	Acid Soluble Lead (ppm)	0136	927.5	21.00	923.1	121.2	62.75	24	0.04	251.00	0
251	Acid Soluble Lead (ppm)	0096	936.0	60.80	923.1	121.2	62.75	24	0.11	251.30	0
251	Acid Soluble Lead (ppm)	0494	938.1	9.368	923.1	121.2	62.75	24	0.12	251.33	0
251	Acid Soluble Lead (ppm)	0037	945.5	72.11	923.1	121.2	62.75	24	0.18	251.33	0
251	Acid Soluble Lead (ppm)	0511	947.0	0.0000	923.1	121.2	62.75	24	0.20	251.30	0
251	Acid Soluble Lead (ppm)	0389	949.5	81.00	923.1	121.2	62.75	24	0.22	251.30	0
251	Acid Soluble Lead (ppm)	0117	952.7	65.30	923.1	121.2	62.75	24	0.24	251.33	0
251	Acid Soluble Lead (ppm)	0220	969.5	11.00	923.1	121.2	62.75	24	0.38	251.99	0
251	Acid Soluble Lead (ppm)	0102	1,003	21.63	923.1	121.2	62.75	24	0.66	251.30	0
251	Acid Soluble Lead (ppm)	0255	1,013	56.11	923.1	121.2	62.75	24	0.74	251.30	0
251	Acid Soluble Lead (ppm)	0368	1,034	81.00	923.1	121.2	62.75	24	0.91	251.30	0
251	Acid Soluble Lead (ppm)	0541	1,072	103.0	923.1	121.2	62.75	24	1.22	251.30	0
251	Acid Soluble Lead (ppm)	0515	1,101	206.6	923.1	121.2	62.75	24	1.47	251.33	0
251	Acid Soluble Lead (ppm)	0515	1,158	227.9	923.1	121.2	62.75	24	1.94	251.34	0
251	Acid Soluble Lead (ppm)	0550	843.6	624.7	923.1	121.2	62.75	24	-0.66	251.00	1
261	Acid Soluble Manganese (0.16%)	0027	0.1180†	0.0040	0.1623	0.0120	0.0072	49	-3.68	261.99	0
261	Acid Soluble Manganese (0.16%)	0535	0.1225†	0.0050	0.1623	0.0120	0.0072	49	-3.31	261.12	0
261	Acid Soluble Manganese (0.16%)	0230	0.1445	0.0090	0.1623	0.0120	0.0072	49	-1.48	261.31	0
261	Acid Soluble Manganese (0.16%)	0421	0.1450	0.0100	0.1623	0.0120	0.0072	49	-1.44	261.35	0
261	Acid Soluble Manganese (0.16%)	0519	0.1450	0.0100	0.1623	0.0120	0.0072	49	-1.44	261.99	0
261	Acid Soluble Manganese (0.16%)	0521	0.1474	0.0000	0.1623	0.0120	0.0072	49	-1.24	261.34	0
261	Acid Soluble Manganese (0.16%)	0476	0.1477	0.0031	0.1623	0.0120	0.0072	49	-1.22	261.99	0
261	Acid Soluble Manganese (0.16%)	0527	0.1480	0.0020	0.1623	0.0120	0.0072	49	-1.19	261.35	0
261	Acid Soluble Manganese (0.16%)	0360	0.1545	0.0050	0.1623	0.0120	0.0072	49	-0.65	261.31	0
261	Acid Soluble Manganese (0.16%)	0029	0.1550	0.0252	0.1623	0.0120	0.0072	49	-0.61	261.12	0



Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
261	Acid Soluble Manganese (0.16%)	0234	0.1550	0.0100	0.1623	0.0120	0.0072	49	-0.61	261.31	0
261	Acid Soluble Manganese (0.16%)	0394	0.1550	0.0040	0.1623	0.0120	0.0072	49	-0.61	261.34	0
261	Acid Soluble Manganese (0.16%)	0486	0.1550	0.0100	0.1623	0.0120	0.0072	49	-0.61	261.35	0
261	Acid Soluble Manganese (0.16%)	0389	0.1550	0.0100	0.1623	0.0120	0.0072	49	-0.61	261.99	0
261	Acid Soluble Manganese (0.16%)	0177	0.1562	0.0108	0.1623	0.0120	0.0072	49	-0.51	261.35	0
261	Acid Soluble Manganese (0.16%)	0523	0.1565	0.0030	0.1623	0.0120	0.0072	49	-0.49	261.99	0
261	Acid Soluble Manganese (0.16%)	0324	0.1570	0.0040	0.1623	0.0120	0.0072	49	-0.44	261.31	0
261	Acid Soluble Manganese (0.16%)	0451	0.1575	0.0010	0.1623	0.0120	0.0072	49	-0.40	261.32	0
261	Acid Soluble Manganese (0.16%)	0494	0.1579	0.0015	0.1623	0.0120	0.0072	49	-0.37	261.35	0
261	Acid Soluble Manganese (0.16%)	0501	0.1590	0.0020	0.1623	0.0120	0.0072	49	-0.28	261.99	0
261	Acid Soluble Manganese (0.16%)	0444	0.1600	0.0200	0.1623	0.0120	0.0072	49	-0.20	261.32	0
261	Acid Soluble Manganese (0.16%)	0483	0.1615	0.0050	0.1623	0.0120	0.0072	49	-0.07	261.32	0
261	Acid Soluble Manganese (0.16%)	0023	0.1615	0.0030	0.1623	0.0120	0.0072	49	-0.07	261.35	0
261	Acid Soluble Manganese (0.16%)	0035	0.1625	0.0110	0.1623	0.0120	0.0072	49	0.01	261.30	0
261	Acid Soluble Manganese (0.16%)	0037	0.1625	0.0010	0.1623	0.0120	0.0072	49	0.01	261.35	0
261	Acid Soluble Manganese (0.16%)	0368	0.1629	0.0024	0.1623	0.0120	0.0072	49	0.05	261.99	0
261	Acid Soluble Manganese (0.16%)	0040	0.1640	0.0020	0.1623	0.0120	0.0072	49	0.14	261.12	0
261	Acid Soluble Manganese (0.16%)	0117	0.1648	0.0052	0.1623	0.0120	0.0072	49	0.20	261.35	0
261	Acid Soluble Manganese (0.16%)	0402	0.1650	0.0100	0.1623	0.0120	0.0072	49	0.22	261.32	0
261	Acid Soluble Manganese (0.16%)	0220	0.1650	0.0100	0.1623	0.0120	0.0072	49	0.22	261.34	0
261	Acid Soluble Manganese (0.16%)	0136	0.1650	0.0100	0.1623	0.0120	0.0072	49	0.22	261.35	0
261	Acid Soluble Manganese (0.16%)	0524	0.1650	0.0100	0.1623	0.0120	0.0072	49	0.22	261.99	0
261	Acid Soluble Manganese (0.16%)	0433	0.1660	0.0020	0.1623	0.0120	0.0072	49	0.30	261.30	0
261	Acid Soluble Manganese (0.16%)	0102	0.1685	0.0159	0.1623	0.0120	0.0072	49	0.51	261.30	0
261	Acid Soluble Manganese (0.16%)	0354	0.1700	0.0000	0.1623	0.0120	0.0072	49	0.64	261.30	0
261	Acid Soluble Manganese (0.16%)	0472	0.1700	0.0000	0.1623	0.0120	0.0072	49	0.64	261.30	0
261	Acid Soluble Manganese (0.16%)	0511	0.1700	0.0000	0.1623	0.0120	0.0072	49	0.64	261.31	0
261	Acid Soluble Manganese (0.16%)	0231	0.1700	0.0000	0.1623	0.0120	0.0072	49	0.64	261.32	0
261	Acid Soluble Manganese (0.16%)	0055	0.1700	0.0000	0.1623	0.0120	0.0072	49	0.64	261.35	0
261	Acid Soluble Manganese (0.16%)	0307	0.1710	0.0020	0.1623	0.0120	0.0072	49	0.72	261.30	0
261	Acid Soluble Manganese (0.16%)	0096	0.1722	0.0069	0.1623	0.0120	0.0072	49	0.81	261.30	0
261	Acid Soluble Manganese (0.16%)	0546	0.1730	0.0040	0.1623	0.0120	0.0072	49	0.88	261.35	0
261	Acid Soluble Manganese (0.16%)	0043	0.1750	0.0100	0.1623	0.0120	0.0072	49	1.05	261.34	0
261	Acid Soluble Manganese (0.16%)	0423	0.1790	0.0020	0.1623	0.0120	0.0072	49	1.38	261.34	0
261	Acid Soluble Manganese (0.16%)	0255	0.1795	0.0270	0.1623	0.0120	0.0072	49	1.42	261.99	0
261	Acid Soluble Manganese (0.16%)	0042	0.1865‡	0.0010	0.1623	0.0120	0.0072	49	2.01	261.99	0
261	Acid Soluble Manganese (0.16%)	0390	0.1886‡	0.0217	0.1623	0.0120	0.0072	49	2.18	261.30	0
261	Acid Soluble Manganese (0.16%)	0550	0.1900‡	0.0400	0.1623	0.0120	0.0072	49	2.30	261.12	0
261	Acid Soluble Manganese (0.16%)	0482	0.1900‡	0.0000	0.1623	0.0120	0.0072	49	2.30	261.31	0
261	Acid Soluble Manganese (0.16%)	0515	0.1224†	0.0637	0.1623	0.0120	0.0072	49	-3.32	261.99	1
261	Acid Soluble Manganese (0.16%)	0515	0.1690	0.0841	0.1623	0.0120	0.0072	49	0.55	261.35	1
261	Acid Soluble Manganese (0.16%)	0506	0.00300†	0.0000	0.1623	0.0120	0.0072	49	-13.23	261.99	2
271	Water Soluble Manganese (%)	0117	0.0051	0.0006	0.0287	0.0403	0.0045	5	-0.51	271.99	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				
271	Water Soluble Manganese (%)	0444	0.0085	0.0010	0.0287	0.0403	0.0045	5	-0.44	271.30	0
271	Water Soluble Manganese (%)	0550	0.0096	0.0001	0.0287	0.0403	0.0045	5	-0.42	271.00	0
271	Water Soluble Manganese (%)	0027	0.0205	0.0010	0.0287	0.0403	0.0045	5	-0.18	271.00	0
271	Water Soluble Manganese (%)	0532	0.1000	0.0200	0.0287	0.0403	0.0045	5	1.55	271.00	0
271	Water Soluble Manganese (%)	0543	0.2950	0.1820	0.0287	0.0403	0.0045	5	5.77	271.30	1
281	Acid Soluble Mercury (ppm)	0515	15.58	0.6300	40.98	22.76	1.584	7	-1.01	281.30	0
281	Acid Soluble Mercury (ppm)	0519	16.65	0.3900	40.98	22.76	1.584	7	-0.97	281.99	0
281	Acid Soluble Mercury (ppm)	0394	39.17	3.410	40.98	22.76	1.584	7	-0.07	281.30	0
281	Acid Soluble Mercury (ppm)	0511	40.00	0.0000	40.98	22.76	1.584	7	-0.04	281.00	0
281	Acid Soluble Mercury (ppm)	0476	45.39	0.3160	40.98	22.76	1.584	7	0.18	281.99	0
281	Acid Soluble Mercury (ppm)	0541	65.00	4.000	40.98	22.76	1.584	7	0.95	281.30	0
281	Acid Soluble Mercury (ppm)	0527	65.06	2.341	40.98	22.76	1.584	7	0.96	281.30	0
289	Acid Soluble Molybdenum (50ppm)	0543	0.1925†	0.0090	826.5	115.4	29.96	27	-7.16	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0519	48.50†	5.000	826.5	115.4	29.96	27	-6.74	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0027	66.00†	2.000	826.5	115.4	29.96	27	-6.59	289.99	0
289	Acid Soluble Molybdenum (50ppm)	0550	647.0	8.000	826.5	115.4	29.96	27	-1.56	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0521	672.7	0.0000	826.5	115.4	29.96	27	-1.33	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0042	719.6	42.50	826.5	115.4	29.96	27	-0.93	289.99	0
289	Acid Soluble Molybdenum (50ppm)	0230	753.0	110.0	826.5	115.4	29.96	27	-0.64	289.34	0
289	Acid Soluble Molybdenum (50ppm)	0476	771.5	13.96	826.5	115.4	29.96	27	-0.48	289.99	0
289	Acid Soluble Molybdenum (50ppm)	0035	785.5	1.000	826.5	115.4	29.96	27	-0.36	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0423	830.0	18.00	826.5	115.4	29.96	27	0.03	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0394	838.0	42.00	826.5	115.4	29.96	27	0.10	289.32	0
289	Acid Soluble Molybdenum (50ppm)	0389	843.6	0.3000	826.5	115.4	29.96	27	0.15	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0494	844.5	55.00	826.5	115.4	29.96	27	0.16	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0368	856.0	40.00	826.5	115.4	29.96	27	0.26	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0255	856.7	11.94	826.5	115.4	29.96	27	0.26	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0292	857.0	9.400	826.5	115.4	29.96	27	0.26	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0096	864.7	51.50	826.5	115.4	29.96	27	0.33	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0546	879.5	63.00	826.5	115.4	29.96	27	0.46	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0444	885.0	30.00	826.5	115.4	29.96	27	0.51	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0511	906.0	0.0000	826.5	115.4	29.96	27	0.69	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0524	907.6	1.850	826.5	115.4	29.96	27	0.70	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0117	910.9	87.50	826.5	115.4	29.96	27	0.73	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0527	919.2	10.08	826.5	115.4	29.96	27	0.80	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0037	930.0	0.0000	826.5	115.4	29.96	27	0.90	289.33	0
289	Acid Soluble Molybdenum (50ppm)	0220	935.0	6.000	826.5	115.4	29.96	27	0.94	289.32	0
289	Acid Soluble Molybdenum (50ppm)	0541	936.0	200.0	826.5	115.4	29.96	27	0.95	289.30	0
289	Acid Soluble Molybdenum (50ppm)	0506	1,600‡	0.0000	826.5	115.4	29.96	27	6.70	289.99	0
289	Acid Soluble Molybdenum (50ppm)	0515	684.4	448.3	826.5	115.4	29.96	27	-1.23	289.34	1
289	Acid Soluble Molybdenum (50ppm)	0515	718.5	439.5	826.5	115.4	29.96	27	-0.94	289.33	1
291	Acid Soluble Nickel (ppm)	0476	2.455	0.1265	13.41	2.824	1.343	24	-3.88	291.99	0
291	Acid Soluble Nickel (ppm)	0521	9.720	0.0000	13.41	2.824	1.343	24	-1.31	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 Nickel (ppm)	0096	9.750	0.5000	13.41	2.824	1.343	24	-1.30	291.30	0
291	Acid Soluble Nickel (ppm)	0519	10.25	0.0300	13.41	2.824	1.343	24	-1.12	291.99	0
291	Acid Soluble Nickel (ppm)	0444	10.25	0.6800	13.41	2.824	1.343	24	-1.12	291.30	0
291	Acid Soluble Nickel (ppm)	0482	11.10	0.0000	13.41	2.824	1.343	24	-0.82	291.30	0
291	Acid Soluble Nickel (ppm)	0524	11.94	0.1100	13.41	2.824	1.343	24	-0.52	291.30	0
291	Acid Soluble Nickel (ppm)	0394	12.40	1.000	13.41	2.824	1.343	24	-0.36	291.30	0
291	Acid Soluble Nickel (ppm)	0220	12.50	1.000	13.41	2.824	1.343	24	-0.32	291.99	0
291	Acid Soluble Nickel (ppm)	0102	12.65	0.8830	13.41	2.824	1.343	24	-0.27	291.30	0
291	Acid Soluble Nickel (ppm)	0230	12.70	4.400	13.41	2.824	1.343	24	-0.25	291.34	0
291	Acid Soluble Nickel (ppm)	0389	13.34	0.2100	13.41	2.824	1.343	24	-0.03	291.30	0
291	Acid Soluble Nickel (ppm)	0515	13.64	1.420	13.41	2.824	1.343	24	0.08	291.34	0
291	Acid Soluble Nickel (ppm)	0527	13.75	0.2630	13.41	2.824	1.343	24	0.12	291.33	0
291	Acid Soluble Nickel (ppm)	0255	13.98	0.8850	13.41	2.824	1.343	24	0.20	291.99	0
291	Acid Soluble Nickel (ppm)	0136	15.50	1.000	13.41	2.824	1.343	24	0.74	291.00	0
291	Acid Soluble Nickel (ppm)	0515	15.56	6.635	13.41	2.824	1.343	24	0.76	291.33	0
291	Acid Soluble Nickel (ppm)	0511	15.69	0.0000	13.41	2.824	1.343	24	0.81	291.30	0
291	Acid Soluble Nickel (ppm)	0117	15.76	1.280	13.41	2.824	1.343	24	0.83	291.33	0
291	Acid Soluble Nickel (ppm)	0368	16.00	2.000	13.41	2.824	1.343	24	0.92	291.30	0
291	Acid Soluble Nickel (ppm)	0037	16.24	1.508	13.41	2.824	1.343	24	1.00	291.33	0
291	Acid Soluble Nickel (ppm)	0506	16.50	2.800	13.41	2.824	1.343	24	1.09	291.99	0
291	Acid Soluble Nickel (ppm)	0035	16.60	3.800	13.41	2.824	1.343	24	1.13	291.30	0
291	Acid Soluble Nickel (ppm)	0494	16.96	1.691	13.41	2.824	1.343	24	1.26	291.33	0
291	Acid Soluble Nickel (ppm)	0550	19.41	31.64	13.41	2.824	1.343	24	2.12	291.00	1
291	Acid Soluble Nickel (ppm)	0541	31.50	37.00	13.41	2.824	1.343	24	6.40	291.30	1
301	Acid Soluble Selenium (ppm)	0541	122.5	1.000	310.5	38.14	22.47	16	-4.93	301.30	0
301	Acid Soluble Selenium (ppm)	0524	239.1	16.85	310.5	38.14	22.47	16	-1.87	301.30	0
301	Acid Soluble Selenium (ppm)	0506	250.0	100.0	310.5	38.14	22.47	16	-1.59	301.99	0
301	Acid Soluble Selenium (ppm)	0515	285.7	39.14	310.5	38.14	22.47	16	-0.65	301.34	0
301	Acid Soluble Selenium (ppm)	0230	289.0	48.00	310.5	38.14	22.47	16	-0.56	301.34	0
301	Acid Soluble Selenium (ppm)	0220	310.5	21.00	310.5	38.14	22.47	16	0.00	301.99	0
301	Acid Soluble Selenium (ppm)	0519	311.7	0.2500	310.5	38.14	22.47	16	0.03	301.99	0
301	Acid Soluble Selenium (ppm)	0494	318.1	1.352	310.5	38.14	22.47	16	0.20	301.33	0
301	Acid Soluble Selenium (ppm)	0515	318.7	69.58	310.5	38.14	22.47	16	0.21	301.33	0
301	Acid Soluble Selenium (ppm)	0476	331.8	13.79	310.5	38.14	22.47	16	0.56	301.99	0
301	Acid Soluble Selenium (ppm)	0511	332.0	0.0000	310.5	38.14	22.47	16	0.56	301.30	0
301	Acid Soluble Selenium (ppm)	0527	338.9	2.854	310.5	38.14	22.47	16	0.75	301.33	0
301	Acid Soluble Selenium (ppm)	0368	339.5	15.00	310.5	38.14	22.47	16	0.76	301.30	0
301	Acid Soluble Selenium (ppm)	0255	341.9	1.635	310.5	38.14	22.47	16	0.82	301.99	0
301	Acid Soluble Selenium (ppm)	0117	343.8	6.800	310.5	38.14	22.47	16	0.87	301.33	0
301	Acid Soluble Selenium (ppm)	0037	346.3	22.28	310.5	38.14	22.47	16	0.94	301.33	0
311	Sodium (%)	0324	0.3890	0.0460	0.4599	0.0488	0.0223	12	-1.45	311.32	0
311	Sodium (%)	0494	0.4064	0.0456	0.4599	0.0488	0.0223	12	-1.10	311.33	0
311	Sodium (%)	0389	0.4200	0.0000	0.4599	0.0488	0.0223	12	-0.82	311.33	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				
311	Sodium (%)	0527	0.4345	0.0090	0.4599	0.0488	0.0223	12	-0.52	311.33	0
311	Sodium (%)	0035	0.4455	0.0710	0.4599	0.0488	0.0223	12	-0.30	311.33	0
311	Sodium (%)	0521	0.4575	0.0000	0.4599	0.0488	0.0223	12	-0.05	311.32	0
311	Sodium (%)	0511	0.4700	0.0000	0.4599	0.0488	0.0223	12	0.21	311.99	0
311	Sodium (%)	0482	0.4750	0.0100	0.4599	0.0488	0.0223	12	0.31	311.99	0
311	Sodium (%)	0096	0.4850	0.0300	0.4599	0.0488	0.0223	12	0.51	311.99	0
311	Sodium (%)	0354	0.4900	0.0000	0.4599	0.0488	0.0223	12	0.62	311.99	0
311	Sodium (%)	0117	0.5129	0.0423	0.4599	0.0488	0.0223	12	1.09	311.33	0
311	Sodium (%)	0423	0.5770	0.0140	0.4599	0.0488	0.0223	12	2.40	311.33	0
321	Acid Soluble Zinc (0.13%)	0506	0.00250†	0.0010	0.1844	0.0198	0.0086	55	-9.17	321.99	0
321	Acid Soluble Zinc (0.13%)	0516	0.1122†	0.0093	0.1844	0.0198	0.0086	55	-3.64	321.00	0
321	Acid Soluble Zinc (0.13%)	0042	0.1145†	0.0050	0.1844	0.0198	0.0086	55	-3.52	321.99	0
321	Acid Soluble Zinc (0.13%)	0519	0.1200†	0.0200	0.1844	0.0198	0.0086	55	-3.25	321.99	0
321	Acid Soluble Zinc (0.13%)	0533	0.1280†	0.0020	0.1844	0.0198	0.0086	55	-2.84	321.00	0
321	Acid Soluble Zinc (0.13%)	0027	0.1355†	0.0130	0.1844	0.0198	0.0086	55	-2.47	321.99	0
321	Acid Soluble Zinc (0.13%)	0523	0.1530†	0.0080	0.1844	0.0198	0.0086	55	-1.58	321.99	0
321	Acid Soluble Zinc (0.13%)	0234	0.1600†	0.0200	0.1844	0.0198	0.0086	55	-1.23	321.30	0
321	Acid Soluble Zinc (0.13%)	0476	0.1622	0.0181	0.1844	0.0198	0.0086	55	-1.12	321.99	0
321	Acid Soluble Zinc (0.13%)	0230	0.1640	0.0040	0.1844	0.0198	0.0086	55	-1.03	321.30	0
321	Acid Soluble Zinc (0.13%)	0531	0.1650	0.0100	0.1844	0.0198	0.0086	55	-0.98	321.00	0
321	Acid Soluble Zinc (0.13%)	0389	0.1720	0.0000	0.1844	0.0198	0.0086	55	-0.63	321.99	0
321	Acid Soluble Zinc (0.13%)	0539	0.1735	0.0030	0.1844	0.0198	0.0086	55	-0.55	321.00	0
321	Acid Soluble Zinc (0.13%)	0551	0.1750	0.0100	0.1844	0.0198	0.0086	55	-0.47	321.00	0
321	Acid Soluble Zinc (0.13%)	0220	0.1750	0.0100	0.1844	0.0198	0.0086	55	-0.47	321.32	0
321	Acid Soluble Zinc (0.13%)	0486	0.1750	0.0100	0.1844	0.0198	0.0086	55	-0.47	321.33	0
321	Acid Soluble Zinc (0.13%)	0177	0.1777	0.0036	0.1844	0.0198	0.0086	55	-0.34	321.33	0
321	Acid Soluble Zinc (0.13%)	0515	0.1779	0.0027	0.1844	0.0198	0.0086	55	-0.33	321.99	0
321	Acid Soluble Zinc (0.13%)	0040	0.1795	0.0010	0.1844	0.0198	0.0086	55	-0.25	321.00	0
321	Acid Soluble Zinc (0.13%)	0096	0.1797	0.0086	0.1844	0.0198	0.0086	55	-0.24	321.30	0
321	Acid Soluble Zinc (0.13%)	0394	0.1800	0.0020	0.1844	0.0198	0.0086	55	-0.22	321.32	0
321	Acid Soluble Zinc (0.13%)	0117	0.1808	0.0027	0.1844	0.0198	0.0086	55	-0.18	321.33	0
321	Acid Soluble Zinc (0.13%)	0360	0.1820	0.0100	0.1844	0.0198	0.0086	55	-0.12	321.30	0
321	Acid Soluble Zinc (0.13%)	0535	0.1825	0.0050	0.1844	0.0198	0.0086	55	-0.10	321.00	0
321	Acid Soluble Zinc (0.13%)	0029	0.1830	0.0184	0.1844	0.0198	0.0086	55	-0.07	321.00	0
321	Acid Soluble Zinc (0.13%)	0354	0.1850	0.0100	0.1844	0.0198	0.0086	55	0.03	321.30	0
321	Acid Soluble Zinc (0.13%)	0402	0.1850	0.0080	0.1844	0.0198	0.0086	55	0.03	321.30	0
321	Acid Soluble Zinc (0.13%)	0444	0.1850	0.0100	0.1844	0.0198	0.0086	55	0.03	321.30	0
321	Acid Soluble Zinc (0.13%)	0023	0.1850	0.0120	0.1844	0.0198	0.0086	55	0.03	321.33	0
321	Acid Soluble Zinc (0.13%)	0527	0.1850	0.0000	0.1844	0.0198	0.0086	55	0.03	321.33	0
321	Acid Soluble Zinc (0.13%)	0102	0.1870	0.0122	0.1844	0.0198	0.0086	55	0.13	321.30	0
321	Acid Soluble Zinc (0.13%)	0035	0.1885	0.0010	0.1844	0.0198	0.0086	55	0.21	321.30	0
321	Acid Soluble Zinc (0.13%)	0433	0.1900	0.0020	0.1844	0.0198	0.0086	55	0.28	321.30	0
321	Acid Soluble Zinc (0.13%)	0472	0.1900	0.0000	0.1844	0.0198	0.0086	55	0.28	321.30	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				
321	Acid Soluble Zinc (0.13%)	0524	0.1900	0.0000	0.1844	0.0198	0.0086	55	0.28	321.99	0
321	Acid Soluble Zinc (0.13%)	0390	0.1935	0.0253	0.1844	0.0198	0.0086	55	0.46	321.30	0
321	Acid Soluble Zinc (0.13%)	0169	0.1940	0.0080	0.1844	0.0198	0.0086	55	0.48	321.00	0
321	Acid Soluble Zinc (0.13%)	0324	0.1945	0.0070	0.1844	0.0198	0.0086	55	0.51	321.30	0
321	Acid Soluble Zinc (0.13%)	0292	0.1950	0.0100	0.1844	0.0198	0.0086	55	0.53	321.30	0
321	Acid Soluble Zinc (0.13%)	0482	0.1950	0.0100	0.1844	0.0198	0.0086	55	0.53	321.30	0
321	Acid Soluble Zinc (0.13%)	0055	0.1950	0.0100	0.1844	0.0198	0.0086	55	0.53	321.33	0
321	Acid Soluble Zinc (0.13%)	0494	0.1956	0.0018	0.1844	0.0198	0.0086	55	0.56	321.33	0
321	Acid Soluble Zinc (0.13%)	0511	0.1970	0.0000	0.1844	0.0198	0.0086	55	0.63	321.30	0
321	Acid Soluble Zinc (0.13%)	0368	0.1993	0.0099	0.1844	0.0198	0.0086	55	0.75	321.99	0
321	Acid Soluble Zinc (0.13%)	0521	0.1995	0.0000	0.1844	0.0198	0.0086	55	0.76	321.32	0
321	Acid Soluble Zinc (0.13%)	0255	0.2000	0.0160	0.1844	0.0198	0.0086	55	0.79	321.30	0
321	Acid Soluble Zinc (0.13%)	0043	0.2000	0.0200	0.1844	0.0198	0.0086	55	0.79	321.32	0
321	Acid Soluble Zinc (0.13%)	0037	0.2010	0.0140	0.1844	0.0198	0.0086	55	0.84	321.33	0
321	Acid Soluble Zinc (0.13%)	0136	0.2050	0.0100	0.1844	0.0198	0.0086	55	1.04	321.33	0
321	Acid Soluble Zinc (0.13%)	0231	0.2100‡	0.0000	0.1844	0.0198	0.0086	55	1.29	321.30	0
321	Acid Soluble Zinc (0.13%)	0483	0.2225‡	0.0010	0.1844	0.0198	0.0086	55	1.92	321.30	0
321	Acid Soluble Zinc (0.13%)	0546	0.2240‡	0.0180	0.1844	0.0198	0.0086	55	1.99	321.33	0
321	Acid Soluble Zinc (0.13%)	0515	0.2256‡	0.0315	0.1844	0.0198	0.0086	55	2.07	321.33	0
321	Acid Soluble Zinc (0.13%)	0307	0.2485‡	0.0090	0.1844	0.0198	0.0086	55	3.23	321.30	0
321	Acid Soluble Zinc (0.13%)	0423	0.3000‡	0.0200	0.1844	0.0198	0.0086	55	5.82	321.32	0
321	Acid Soluble Zinc (0.13%)	0550	0.1600†	0.0600	0.1844	0.0198	0.0086	55	-1.23	321.00	1
325	Water Soluble Zinc (%)	0117	0.0015	0.0003	0.1032	0.1111	0.0530	7	-0.83	325.30	0
325	Water Soluble Zinc (%)	0550	0.0037	0.0018	0.1032	0.1111	0.0530	7	-0.81	325.00	0
325	Water Soluble Zinc (%)	0027	0.0500	0.0020	0.1032	0.1111	0.0530	7	-0.43	325.00	0
325	Water Soluble Zinc (%)	0539	0.1040	0.0120	0.1032	0.1111	0.0530	7	0.01	325.00	0
325	Water Soluble Zinc (%)	0532	0.1085	0.0230	0.1032	0.1111	0.0530	7	0.04	325.00	0
325	Water Soluble Zinc (%)	0541	0.1850	0.0300	0.1032	0.1111	0.0530	7	0.67	325.30	0
325	Water Soluble Zinc (%)	0543	0.4230	0.3020	0.1032	0.1111	0.0530	7	2.60	325.30	0
325	Water Soluble Zinc (%)	0537	0.5430	0.8760	0.1032	0.1111	0.0530	7	3.58	325.00	1

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value submitted. 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.