

Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 132

Sample # 230411

Regular PT Scheme

Labs Reporting: 68

Grade 1-3-2

Statistical Summary

Issue Date : 05/31/2023

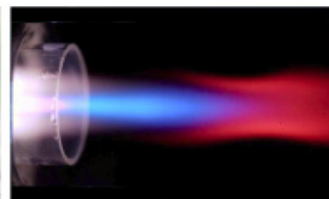
Method Code	Analyte & Method Sample # 230411	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
001.10	Ammoniacal N, Magnesium Oxide Method (%)	3	3	1.433	0.0481	1.433		0.0480	0.0347	3.35%		0.0533	3.79%
001.99	Ammoniacal N, Other (%)	8	7	1.363	0.2959	1.337		0.3517	0.1662	26.30%		0.0418	3.83%
002.99	Nitrate N, Other (%)	2	2	0.0188	0.0088								
005.99	Urea N, Other (%)	1		0.1650									
007.99	Urea, Other (%)	1		0.1700									
009.10	Ammoniacal Plus Nitrate N, Devarda (%)	1		1.990									
010.11	Total N, Modified Comprehensive (1%)	2	2	1.363	0.3287								
010.12	Total N, Salicylic (1%)	1		1.594									
010.60	Total N, Combustion (1%)	42	40	1.683	0.2979	1.632	0.4900	0.0957	0.0189	5.86%	0.45	0.0601	3.72%
010.99	Total N, Other (1%)	8	8	1.780	0.1617	1.780	0.4900	0.1834	0.0810	10.30%	0.87	0.0578	3.67%
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	2	2	4.410	0.0495								
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	4	4	3.833	0.6673	3.833		0.6673	0.4170	17.41%		0.3130	3.27%
020.40	Total P2O5, Automated (%)	2	2	5.425	2.298								
020.50	Total P2O5, ICP (%)	19	18	3.556	1.357	3.869		0.7129	0.2100	18.43%		0.1340	3.26%
020.99	Total P2O5, Other (%)	7	7	3.709	0.6764	3.709		0.7670	0.3624	20.68%		0.0974	3.28%
040.20	Indirect Available P2O5, Spectrophotometric (3%)	1		4.217									
041.10	Direct Available P2O5, Gravimetric Quinolinium (3%)	2	2	4.335	0.0990								
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA	6	6	4.250	0.1579	4.254	0.6700	0.1688	0.0861	3.97%	0.59	0.0900	3.22%
041.20	Direct Available P2O5, Spectrophotometric (3%)	3	3	3.799	0.2374	3.799	0.6700	0.2374	0.1713	6.25%	0.83	0.0800	3.27%
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	7	7	4.048	1.073	4.127	0.6700	1.029	0.4862	24.94%	3.58	0.1217	3.23%
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (3%)	3	3	4.409	0.0716	4.409	0.6700	0.0716	0.0517	1.62%	0.25	0.0487	3.20%
041.50	Direct Available P2O5, ICP (3%)	1		4.205									
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	8	8	4.106	0.2533	4.106	0.6700	0.2872	0.1269	6.99%	1.00	0.1633	3.23%
041.99	Direct Available P2O5, Other (3%)	6	6	3.234	0.6716	3.032	0.6700	0.2279	0.1163	7.52%	0.79	0.0478	3.38%
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	1		4.199									
048.20	Water Soluble P2O5, Spectrophotometric (%)	1		2.360									
050.00	Soluble K2O, STPB Oxalate (2%)	7	7	1.840	0.3457	1.875	0.4100	0.3024	0.1429	16.13%	1.72	0.0560	3.64%
050.30	Soluble K2O, AA (Oxalate) (2%)	2	2	1.859	0.1999								
050.32	Soluble K2O, AA (Citrate-EDTA) (2%)	1		1.915									

Method Code	Analyte & Method Sample # 230411	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Howitz %RSD
050.50	Soluble K2O, ICP (Oxalate) (2%)	9	9	1.865	0.1286	1.859	0.4100	0.1338	0.0558	7.20%	0.76	0.0606	3.64%
050.51	Soluble K2O, ICP (Citrate) (2%)	2	2	1.873	0.1803								
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	10	10	2.058	0.5129	1.920	0.4100	0.1282	0.0507	6.68%	0.73	0.0873	3.63%
050.60	Soluble K2O, Flame Photometric (Oxalate) (2%)	2	2	1.718	0.4848								
050.61	Soluble K2O, Flame Photometric (Citrate) (2%)	2	2	2.053	0.0035								
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	5	5	2.176	0.3233	2.176	0.4100	0.3233	0.1807	14.86%	1.84	0.0657	3.56%
050.99	Soluble K2O, Other (2%)	28	26	2.637	3.309	1.993	0.4100	0.1513	0.0371	7.59%	0.86	0.0665	3.61%
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g samp	1		2.830									
060.99	Water (Free), Other (%)	1		3,986									
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	2	2	0.6048	0.1488								
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	5	5	5.543	11.27	5.543	0.4771	11.27	6.299	203.30%	55.03	0.3280	3.09%
101.99	Acid Soluble Ca, Other (%)	3	3	0.6652	0.2943	0.6652	0.2333	0.2943	0.2124	44.25%	2.94	0.0303	4.25%
121.00	Acid Soluble Mg, AA, inorganic 965.09 (2%)	2	2	0.3522	0.0104								
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	12	11	0.3438	0.0276	0.3441	0.2172	0.0325	0.0123	9.45%	0.35	0.0130	4.70%
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (2%)	3	3	0.3198	0.0380	0.3198	0.2160	0.0380	0.0274	11.88%	0.41	0.0065	4.75%
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	13	12	1.304	2.305	0.3713	0.2186	0.0523	0.0189	14.09%	0.56	0.0206	4.64%
121.99	Acid Soluble Mg, Other (2%)	12	11	0.5561	0.5033	0.3562	0.2178	0.0289	0.0109	8.12%	0.31	0.0177	4.67%
131.00	Water Soluble Mg, AA (%)	2	2	0.4003	0.1764								
131.30	Water Soluble Mg, ICP (%)	3	3	0.2858	0.0072	0.2858		0.0072	0.0052	2.52%		0.0145	4.83%
131.70	Water Soluble Mg, Titrimetric (EDTA) (%)	1		1.999									
131.99	Water Soluble Mg, Other (%)	3	3	0.4208	0.1253	0.4208		0.1253	0.0905	29.79%		0.0103	4.56%
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfu	1		2.120									
143.99	Elemental S, Other (%)	3	3	4.092	4.402	4.092		4.402	3.177	107.57%		0.0103	3.24%
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	4	4	8.360	0.4268	8.360		0.4268	0.2667	5.10%		0.1650	2.91%
145.99	Sulfate S, HCl soluble, Other (%)	2	2	7.768	0.5130								
148.00	Total S, Combustion (2%)	4	4	7.858	0.3372	7.858	0.5929	0.3372	0.2107	4.29%	1.33	0.1950	2.93%
148.01	Total S, Gravimetric - sulfate and elemental (2%)	4	4	8.310	0.3758	8.310	0.6155	0.3758	0.2349	4.52%	1.42	0.1350	2.91%
148.07	Total S, ICP, test portion as in 2017.02 (2%)	11	10	7.394	1.860	7.756	0.5878	1.068	0.4223	13.77%	4.23	0.3075	2.94%
148.99	Total S, Other (2%)	14	13	6.794	3.483	6.551	0.5276	3.556	1.233	54.28%	15.70	0.0792	3.01%
149.04	S - HNO3 soluble, ICP (%)	1		7.805									
151.30	Acid Soluble As, ICP (ppm)	5	5	556.4	352.9	556.4		352.9	197.3	63.42%		94.88	6.18%
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	2	2	888.0	125.2								
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	5	5	884.4	314.3	884.4		314.3	175.7	35.54%		30.27	5.76%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	1		646.5									
151.99	Acid Soluble As, Other (ppm)	2	2	816.8	77.34								
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	2	2	0.0094	0.0008								
165.99	Acid Soluble B, Other (%)	7	5	0.1561	0.3426	0.2144	0.0352	0.4014	0.2244	187.21%	26.60	0.0873	5.04%
181.30	Acid Soluble Cd, ICP (ppm)	5	5	1,291	725.8	1,291		725.8	405.7	56.20%		184.3	5.44%
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	2	2	1,678	253.5								
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	6	6	1,385	419.8	1,443		334.3	170.6	23.16%		77.69	5.35%

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181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	1		2,231									
181.99	Acid Soluble Cd, Other (ppm)	2	2	1,956	317.5								
191.30	Acid Soluble Cr, ICP (ppm)	4	4	370.6	648.7	370.6		648.7	405.4	175.03%		10.11	6.57%
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	2	200.3	222.3								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	4	4	140.2	185.9	140.2		185.9	116.2	132.54%		18.99	7.60%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	1		34.53									
191.99	Acid Soluble Cr, Other (ppm)	2	2	41.81	4.724								
202.30	Acid Soluble Co, ICP (ppm)	4	4	66.93	22.85	66.93	21.0779	22.85	14.28	34.14%	2.53	2.570	8.50%
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	2	2	79.20	4.525								
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	5	5	84.05	10.81	84.05	26.2148	10.81	6.043	12.86%	0.96	10.88	8.21%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	1		64.10									
202.99	Acid Soluble Co, Other (ppm)	3	3	67.34	24.78	67.34	21.2021	24.78	17.89	36.80%	2.72	10.31	8.49%
221.00	Acid Soluble Cu, AA, inorganic 965.09 (4%)	4	4	3.415	0.3408	3.415	0.3465	0.3408	0.2130	9.98%	2.29	0.1663	3.32%
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	15	15	3.389	0.1630	3.407	0.3457	0.1411	0.0455	4.14%	0.95	0.1087	3.33%
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (4%)	3	3	3.238	0.0635	3.238	0.3288	0.0635	0.0458	1.96%	0.45	0.0967	3.35%
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	15	15	3.104	0.9125	3.258	0.3308	0.3007	0.0970	9.23%	2.12	0.1067	3.35%
221.99	Acid Soluble Cu, Other (4%)	13	13	3.531	0.3141	3.543	0.3593	0.2791	0.0968	7.88%	1.81	0.0935	3.31%
241.00	Acid Soluble Fe, AA, inorganic 965.09 (35%)	3	3	30.94	3.485	30.94	1.0000	3.485	2.515	11.26%	8.12	1.100	1.80%
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	14	14	24.82	8.360	26.18	1.0000	6.557	2.190	25.04%	15.28	1.186	1.95%
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (35%)	2	2	20.72	4.101								
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	13	13	22.27	7.354	22.27	1.0000	8.339	2.891	37.44%	19.43	0.6179	2.12%
241.99	Acid Soluble Fe, Other (35%)	11	11	19.51	9.107	19.51	1.0000	10.33	3.892	52.94%	24.06	0.3836	2.26%
251.30	Acid Soluble Pb, ICP (ppm)	5	5	6,526	3,828	6,526		3,828	2,140	58.65%		1,147	4.27%
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	1		7,178									
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	6	6	7,338	3,301	7,735		2,775	1,416	35.87%		213.4	4.16%
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	1		11,178									
251.99	Acid Soluble Pb, Other (ppm)	1		11,743									
261.12	Acid Soluble Mn, AA, inorganic 965.09 (0.5%)	2	2	0.2189	0.0073								
261.30	Acid Soluble Mn, ICP, test portion 972.02a (0.5%)	4	4	0.1943	0.0248	0.1943	0.0244	0.0248	0.0155	12.76%	2.36	0.0180	5.12%
261.31	Acid Soluble Mn, ICP, test portion 972.02b (0.5%)	2	2	0.2143	0.0011								
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	6	6	0.2096	0.0357	0.2062	0.0256	0.0323	0.0165	15.67%	2.94	0.0084	5.07%
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (0.5%)	2	2	0.2138	0.0124								
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	13	12	0.4396	0.5563	0.2146	0.0265	0.0171	0.0062	7.97%	1.51	0.0145	5.04%
261.99	Acid Soluble Mn, Other (0.5%)	12	12	0.2141	0.0495	0.2141	0.0264	0.0561	0.0202	26.21%	4.95	0.0359	5.04%
271.00	Water Soluble Mn, AA (%)	1		0.4555									
271.30	Water Soluble Mn, ICP, Ext. 972.03 (%)	1		0.1505									
271.99	Water Soluble Mn, Other (%)	1		0.1505									
281.30	Acid Soluble Hg, ICP (ppm)	5	4	1,088	1,020	1,360		945.5	590.9	69.50%		88.87	5.40%
281.99	Acid Soluble Hg, Other (ppm)	1		2,882									
289.30	Acid Soluble Mo, ICP (ppm)	5	5	8.130	9.928	8.130	3.4389	9.928	5.550	122.13%	6.73	1.161	11.67%

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289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	1		4.500									
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	5	2	2.906	1.956	3.488	2.0463	1.397	1.235	40.05%	1.59	0.5628	13.25%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	1		0.1780									
289.99	Acid Soluble Mo, Other (ppm)	1		3.771									
291.30	Acid Soluble Ni, ICP (ppm)	5	5	37.26	39.00	37.26		39.00	21.80	104.66%		1.520	9.28%
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	1		22.00									
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	6	5	17.92	10.93	21.50		7.323	4.094	34.07%		1.354	10.08%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	1		10.76									
291.99	Acid Soluble Ni, Other (ppm)	2	2	36.06	23.57								
301.30	Acid Soluble Se, ICP (ppm)	4	4	5,823	4,059	5,823		4,059	2,537	69.72%		506.0	4.34%
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	4	4	5,448	3,694	5,448		3,694	2,309	67.81%		957.7	4.38%
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	1		8,338									
301.99	Acid Soluble Se, Other (ppm)	3	3	6,871	1,751	6,871		1,751	1,264	25.49%		802.1	4.23%
311.33	Sodium, ICP, test portion as in 2017.02 (%)	3	3	0.2507	0.0108	0.2507	0.0301	0.0108	0.0078	4.32%	0.84	0.0089	4.93%
311.99	Sodium, Other (%)	2	2	0.2765	0.0403								
321.00	Acid Soluble Zn, AA, inorganic 965.09 (7%)	4	4	6.577	0.4581	6.577	0.6627	0.4581	0.2863	6.96%	1.61	0.3183	3.01%
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	15	15	6.362	0.5490	6.367	0.6417	0.6101	0.1969	9.58%	2.22	0.3192	3.03%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (7%)	2	2	6.568	0.7460								
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	15	14	7.093	4.933	6.263	0.6313	0.6161	0.2058	9.84%	2.27	0.2389	3.03%
321.99	Acid Soluble Zn, Other (7%)	15	15	6.348	0.8377	6.447	0.6497	0.6641	0.2143	10.30%	2.38	0.1897	3.02%
325.00	Water Soluble Zn, AA (%)	2	2	5.853	1.283								
325.30	Water Soluble Zn, ICP (%)	1		5.815									
325.99	Water Soluble Zn, Other (%)	2	2	6.348	0.7531								

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



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Sample # 230411

Regular PT Scheme

Grade 1-3-2

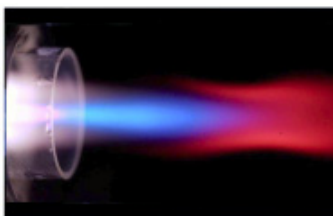
Method Precision Report

Issue Date : 05/31/2023

Method Code	Analyte & Method	# Tests Submitted	# Tests Used in Precision Calcs	Mean	SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
001.99	Ammoniacal N, Other (%)	8	7	1.337	0.3101	0.3092	0.0349	0.3111	23.12%	2.61%	23.26%	8.922
010.60	Total N, Combustion (1%)	42	38	1.620	0.0950	0.0901	0.0426	0.0996	5.56%	2.63%	6.15%	2.340
010.99	Total N, Other (1%)	8	8	1.780	0.1617	0.1584	0.0459	0.1649	8.90%	2.58%	9.26%	3.597
020.50	Total P2O5, ICP (%)	19	17	3.760	1.112	1.109	0.1180	1.115	29.50%	3.14%	29.67%	9.457
020.99	Total P2O5, Other (%)	7	7	3.709	0.6764	0.6729	0.0976	0.6799	18.14%	2.63%	18.33%	6.969
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA E	6	6	4.250	0.1579	0.1517	0.0619	0.1638	3.57%	1.46%	3.85%	2.646
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (:	7	7	4.048	1.073	1.071	0.0892	1.075	26.47%	2.20%	26.56%	12.05
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	8	7	4.045	0.1991	0.1857	0.1016	0.2117	4.59%	2.51%	5.23%	2.083
041.99	Direct Available P2O5, Other (3%)	6	5	2.964	0.1242	0.1206	0.0420	0.1277	4.07%	1.42%	4.31%	3.044
050.00	Soluble K2O, STPB Oxalate (2%)	7	7	1.840	0.3457	0.3441	0.0464	0.3473	18.70%	2.52%	18.87%	7.477
050.50	Soluble K2O, ICP (Oxalate) (2%)	9	9	1.865	0.1286	0.1237	0.0496	0.1333	6.64%	2.66%	7.15%	2.687
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	10	8	1.884	0.0905	0.0802	0.0593	0.0998	4.26%	3.15%	5.30%	1.682
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	5	5	2.176	0.3233	0.3212	0.0515	0.3253	14.76%	2.37%	14.95%	6.314
050.99	Soluble K2O, Other (2%)	28	25	2.014	0.1692	0.1648	0.0542	0.1735	8.18%	2.69%	8.61%	3.201
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	12	11	0.3442	0.0289	0.0278	0.0108	0.0299	8.09%	3.13%	8.67%	2.772
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	13	10	0.3571	0.0352	0.0341	0.0125	0.0363	9.55%	3.50%	10.17%	2.903
121.99	Acid Soluble Mg, Other (2%)	12	11	0.4225	0.2080	0.2078	0.0139	0.2082	49.17%	3.29%	49.28%	14.99
148.07	Total S, ICP, test portion as in 2017.02 (2%)	11	9	7.935	0.8011	0.7742	0.2913	0.8272	9.76%	3.67%	10.43%	2.840
148.99	Total S, Other (2%)	14	11	5.903	2.858	2.858	0.0478	2.859	48.42%	0.81%	48.42%	59.76
151.30	Acid Soluble As, ICP (ppm)	5	5	556.4	352.9	348.3	80.26	357.4	62.59%	14.42%	64.23%	4.453
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	6	5	1,543	182.2	171.2	88.21	192.6	11.09%	5.72%	12.48%	2.183
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	15	14	3.416	0.1282	0.1099	0.0935	0.1443	3.22%	2.74%	4.22%	1.543
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	15	14	3.326	0.3212	0.3143	0.0940	0.3280	9.45%	2.83%	9.86%	3.488
221.99	Acid Soluble Cu, Other (4%)	13	13	3.531	0.3141	0.3089	0.0803	0.3192	8.75%	2.27%	9.04%	3.976
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	14	13	24.52	8.624	8.594	1.009	8.653	35.04%	4.11%	35.28%	8.575
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	13	12	22.82	7.396	7.390	0.4398	7.403	32.38%	1.93%	32.44%	16.83

Method Code	Analyte & Method	# Tests Submitted	# Tests Used in Precision Calcs	Mean	SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
241.99	Acid Soluble Fe, Other (35%)	11	10	20.43	9.037	9.035	0.3024	9.040	44.21%	1.48%	44.24%	29.89
251.30	Acid Soluble Pb, ICP (ppm)	5	5	6,526	3,828	3,766	966.8	3,888	57.71%	14.81%	59.58%	4.022
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	6	6	7,338	3,301	3,298	198.7	3,304	44.94%	2.71%	45.03%	16.63
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	6	6	0.2096	0.0357	0.0354	0.0060	0.0359	16.90%	2.87%	17.15%	5.966
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	13	12	0.3283	0.4023	0.4022	0.0117	0.4023	122.50%	3.55%	122.55%	34.53
261.99	Acid Soluble Mn, Other (0.5%)	12	11	0.2076	0.0463	0.0428	0.0250	0.0496	20.62%	12.03%	23.87%	1.985
289.30	Acid Soluble Mo, ICP (ppm)	5	5	8.130	9.928	9.901	1.040	9.955	121.79%	12.79%	122.46%	9.577
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	6	5	21.50	7.323	7.282	1.092	7.363	33.88%	5.08%	34.26%	6.741
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	15	14	6.408	0.5381	0.5124	0.2325	0.5627	8.00%	3.63%	8.78%	2.420
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	15	12	5.779	1.865	1.861	0.1729	1.869	32.20%	2.99%	32.33%	10.81
321.99	Acid Soluble Zn, Other (7%)	15	13	6.560	0.5343	0.5216	0.1634	0.5466	7.95%	2.49%	8.33%	3.345

Notes: Precision data calculated when 5 or more Tests included.



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 132

Sample # 230411

Regular PT Scheme

Labs Reporting: 68

Grade 1-3-2

Lab Values

Issue Date : 05/31/2023

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0389	1.390	0.0600	1.433	0.0480	0.0533	3	-0.90		0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0451	1.425	0.0700	1.433	0.0480	0.0533	3	-0.17		0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0587	1.485	0.0300	1.433	0.0480	0.0533	3	1.08		0
001.99	Ammoniacal N, Other (%)	0584	0.9350	0.0100	1.337	0.3517	0.0418	7	-1.03	NA	0
001.99	Ammoniacal N, Other (%)	0510	0.9596	0.0004	1.337	0.3517	0.0418	7	-0.97	NA	0
001.99	Ammoniacal N, Other (%)	0220	1.155	0.0500	1.337	0.3517	0.0418	7	-0.47	NA	0
001.99	Ammoniacal N, Other (%)	0572	1.512	0.0320	1.337	0.3517	0.0418	7	0.45	NA	0
001.99	Ammoniacal N, Other (%)	0419	1.580	0.0600	1.337	0.3517	0.0418	7	0.62	NA	0
001.99	Ammoniacal N, Other (%)	0605	1.585	0.0700	1.337	0.3517	0.0418	7	0.64	NA	0
001.99	Ammoniacal N, Other (%)	0255	1.635	0.0700	1.337	0.3517	0.0418	7	0.77	NA	0
001.99	Ammoniacal N, Other (%)	0027	1.540	0.2800	1.337	0.3517	0.0418	7	0.52	NA	1
002.99	Nitrate N, Other (%)	0220	0.0125	0.0010				2			0
002.99	Nitrate N, Other (%)	0605	0.0250	0.0100				2			0
005.99	Urea N, Other (%)	0027	0.1650	0.0500				1			0
007.99	Urea, Other (%)	0220	0.1700	0.0000				1			0
009.10	Ammoniacal Plus Nitrate N, Devarda (%)	0587	1.990	0.0400				1			0
010.11	Total N, Modified Comprehensive (1%)	0510	1.130	0.0002				2			0
010.11	Total N, Modified Comprehensive (1%)	0419	1.595	0.0500				2			0
010.12	Total N, Salicylic (1%)	0572	1.594	0.1210				1			0
010.60	Total N, Combustion (1%)	0588	1.340	0.1000	1.632	0.0957	0.0601	40	-3.06	OK	0
010.60	Total N, Combustion (1%)	0452	1.445	0.0300	1.632	0.0957	0.0601	40	-1.96	OK	0
010.60	Total N, Combustion (1%)	0527	1.456	0.0600	1.632	0.0957	0.0601	40	-1.84	OK	0
010.60	Total N, Combustion (1%)	0234	1.530	0.0200	1.632	0.0957	0.0601	40	-1.07	OK	0
010.60	Total N, Combustion (1%)	0043	1.535	0.0300	1.632	0.0957	0.0601	40	-1.02	OK	0
010.60	Total N, Combustion (1%)	0324	1.540	0.0000	1.632	0.0957	0.0601	40	-0.97	OK	0
010.60	Total N, Combustion (1%)	0609	1.540	0.0400	1.632	0.0957	0.0601	40	-0.97	OK	0
010.60	Total N, Combustion (1%)	0049	1.545	0.0300	1.632	0.0957	0.0601	40	-0.91	OK	0
010.60	Total N, Combustion (1%)	0136	1.555	0.0100	1.632	0.0957	0.0601	40	-0.81	OK	0
010.60	Total N, Combustion (1%)	0260	1.555	0.0500	1.632	0.0957	0.0601	40	-0.81	OK	0
010.60	Total N, Combustion (1%)	0624	1.575	0.0100	1.632	0.0957	0.0601	40	-0.60	OK	0
010.60	Total N, Combustion (1%)	0035	1.600	0.0000	1.632	0.0957	0.0601	40	-0.34	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010.60	Total N, Combustion (1%)	0231	1.600	0.0400	1.632	0.0957	0.0601	40	-0.34	OK	0
010.60	Total N, Combustion (1%)	0354	1.600	0.0400	1.632	0.0957	0.0601	40	-0.34	OK	0
010.60	Total N, Combustion (1%)	0086	1.601	0.0355	1.632	0.0957	0.0601	40	-0.32	OK	0
010.60	Total N, Combustion (1%)	0472	1.605	0.0100	1.632	0.0957	0.0601	40	-0.29	OK	0
010.60	Total N, Combustion (1%)	0360	1.610	0.0800	1.632	0.0957	0.0601	40	-0.23	OK	0
010.60	Total N, Combustion (1%)	0389	1.610	0.0200	1.632	0.0957	0.0601	40	-0.23	OK	0
010.60	Total N, Combustion (1%)	0055	1.615	0.1500	1.632	0.0957	0.0601	40	-0.18	OK	0
010.60	Total N, Combustion (1%)	0095	1.620	0.0000	1.632	0.0957	0.0601	40	-0.13	OK	0
010.60	Total N, Combustion (1%)	0619	1.620	0.0400	1.632	0.0957	0.0601	40	-0.13	OK	0
010.60	Total N, Combustion (1%)	0422	1.635	0.0300	1.632	0.0957	0.0601	40	0.03	OK	0
010.60	Total N, Combustion (1%)	0485	1.640	0.0200	1.632	0.0957	0.0601	40	0.08	OK	0
010.60	Total N, Combustion (1%)	0612	1.640	0.0200	1.632	0.0957	0.0601	40	0.08	OK	0
010.60	Total N, Combustion (1%)	0177	1.644	0.0450	1.632	0.0957	0.0601	40	0.12	OK	0
010.60	Total N, Combustion (1%)	0451	1.647	0.0790	1.632	0.0957	0.0601	40	0.15	OK	0
010.60	Total N, Combustion (1%)	0534	1.665	0.0500	1.632	0.0957	0.0601	40	0.34	OK	0
010.60	Total N, Combustion (1%)	0106	1.675	0.0500	1.632	0.0957	0.0601	40	0.45	OK	0
010.60	Total N, Combustion (1%)	0233	1.676	0.0290	1.632	0.0957	0.0601	40	0.45	OK	0
010.60	Total N, Combustion (1%)	0494	1.690	0.0000	1.632	0.0957	0.0601	40	0.60	OK	0
010.60	Total N, Combustion (1%)	0029	1.692	0.0290	1.632	0.0957	0.0601	40	0.62	OK	0
010.60	Total N, Combustion (1%)	0042	1.700	0.0000	1.632	0.0957	0.0601	40	0.71	OK	0
010.60	Total N, Combustion (1%)	0543	1.706	0.1430	1.632	0.0957	0.0601	40	0.76	OK	0
010.60	Total N, Combustion (1%)	0023	1.737	0.0800	1.632	0.0957	0.0601	40	1.09	OK	0
010.60	Total N, Combustion (1%)	0521	1.750	0.0400	1.632	0.0957	0.0601	40	1.23	OK	0
010.60	Total N, Combustion (1%)	0291	1.775	0.0100	1.632	0.0957	0.0601	40	1.49	OK	0
010.60	Total N, Combustion (1%)	0073	1.780	0.0000	1.632	0.0957	0.0601	40	1.54	OK	0
010.60	Total N, Combustion (1%)	0255	1.813	0.1900	1.632	0.0957	0.0601	40	1.89	OK	0
010.60	Total N, Combustion (1%)	0027	1.850	0.2000	1.632	0.0957	0.0601	40	2.27	OK	0
010.60	Total N, Combustion (1%)	0034	2.095	0.2320	1.632	0.0957	0.0601	40	4.83	OK	0
010.60	Total N, Combustion (1%)	0220	1.770	0.3400	1.632	0.0957	0.0601	40	1.44	OK	1
010.60	Total N, Combustion (1%)	0102	3.400	0.0800	1.632	0.0957	0.0601	40	18.47	High	2
010.99	Total N, Other (1%)	0508	1.595	0.0900	1.780	0.1834	0.0578	8	-0.92	OK	0
010.99	Total N, Other (1%)	0605	1.615	0.0900	1.780	0.1834	0.0578	8	-0.82	OK	0
010.99	Total N, Other (1%)	0619	1.620	0.0400	1.780	0.1834	0.0578	8	-0.80	OK	0
010.99	Total N, Other (1%)	0558	1.758	0.0122	1.780	0.1834	0.0578	8	-0.11	OK	0
010.99	Total N, Other (1%)	0587	1.780	0.0800	1.780	0.1834	0.0578	8	0.00	OK	0
010.99	Total N, Other (1%)	0559	1.950	0.0200	1.780	0.1834	0.0578	8	0.85	OK	0
010.99	Total N, Other (1%)	0600	1.960	0.0800	1.780	0.1834	0.0578	8	0.90	OK	0
010.99	Total N, Other (1%)	0562	1.965	0.0500	1.780	0.1834	0.0578	8	0.92	OK	0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0157	4.375	0.1500				2			0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0619	4.445	0.2700				2			0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0534	3.025	0.0100	3.833	0.6673	0.3130	4	-1.21		0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0510	3.766	0.0019	3.833	0.6673	0.3130	4	-0.10		0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0324	3.885	1.210	3.833	0.6673	0.3130	4	0.08		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0405	4.655	0.0300	3.833	0.6673	0.3130	4	1.23		0
020.40	Total P2O5, Automated (%)	0035	3.800	0.2000				2			0
020.40	Total P2O5, Automated (%)	0042	7.050	0.1000				2			0
020.50	Total P2O5, ICP (%)	0255	0.8035	0.0370	3.869	0.7129	0.1340	18	-4.30	NA	0
020.50	Total P2O5, ICP (%)	0605	1.905	0.0100	3.869	0.7129	0.1340	18	-2.75	NA	0
020.50	Total P2O5, ICP (%)	0521	3.052	0.0040	3.869	0.7129	0.1340	18	-1.15	NA	0
020.50	Total P2O5, ICP (%)	0433	3.325	0.2300	3.869	0.7129	0.1340	18	-0.76	NA	0
020.50	Total P2O5, ICP (%)	0472	3.415	0.1300	3.869	0.7129	0.1340	18	-0.64	NA	0
020.50	Total P2O5, ICP (%)	0260	3.643	0.5310	3.869	0.7129	0.1340	18	-0.32	NA	0
020.50	Total P2O5, ICP (%)	0543	3.654	0.0930	3.869	0.7129	0.1340	18	-0.30	NA	0
020.50	Total P2O5, ICP (%)	0588	3.772	0.3730	3.869	0.7129	0.1340	18	-0.14	NA	0
020.50	Total P2O5, ICP (%)	0389	3.890	0.0400	3.869	0.7129	0.1340	18	0.03	NA	0
020.50	Total P2O5, ICP (%)	0527	4.016	0.0156	3.869	0.7129	0.1340	18	0.21	NA	0
020.50	Total P2O5, ICP (%)	0619	4.020	0.0800	3.869	0.7129	0.1340	18	0.21	NA	0
020.50	Total P2O5, ICP (%)	0231	4.055	0.0900	3.869	0.7129	0.1340	18	0.26	NA	0
020.50	Total P2O5, ICP (%)	0291	4.240	0.0200	3.869	0.7129	0.1340	18	0.52	NA	0
020.50	Total P2O5, ICP (%)	0234	4.295	0.0300	3.869	0.7129	0.1340	18	0.60	NA	0
020.50	Total P2O5, ICP (%)	0307	4.320	0.0400	3.869	0.7129	0.1340	18	0.63	NA	0
020.50	Total P2O5, ICP (%)	0552	4.620	0.4000	3.869	0.7129	0.1340	18	1.05	NA	0
020.50	Total P2O5, ICP (%)	0451	4.789	0.0150	3.869	0.7129	0.1340	18	1.29	NA	0
020.50	Total P2O5, ICP (%)	0542	5.743	0.2730	3.869	0.7129	0.1340	18	2.63	NA	0
020.50	Total P2O5, ICP (%)	0422	0.0000	0.0000	3.869	0.7129	0.1340	18			4
020.99	Total P2O5, Other (%)	0559	2.935	0.0100	3.709	0.7670	0.0974	7	-0.91	NA	0
020.99	Total P2O5, Other (%)	0562	2.940	0.0200	3.709	0.7670	0.0974	7	-0.91	NA	0
020.99	Total P2O5, Other (%)	0600	3.150	0.1000	3.709	0.7670	0.0974	7	-0.66	NA	0
020.99	Total P2O5, Other (%)	0619	4.020	0.0800	3.709	0.7670	0.0974	7	0.37	NA	0
020.99	Total P2O5, Other (%)	0587	4.135	0.0100	3.709	0.7670	0.0974	7	0.50	NA	0
020.99	Total P2O5, Other (%)	0515	4.271	0.1620	3.709	0.7670	0.0974	7	0.66	NA	0
020.99	Total P2O5, Other (%)	0572	4.514	0.3000	3.709	0.7670	0.0974	7	0.95	NA	0
040.20	Indirect Available P2O5, Spectrophotometric (3%)	0558	4.217	0.0118				1			0
041.10	Direct Available P2O5, Gravimetric Quinolinium (3%)	0494	4.265	0.0900				2			0
041.10	Direct Available P2O5, Gravimetric Quinolinium (3%)	0102	4.405	0.1900				2			0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0049	3.975	0.1100	4.254	0.1688	0.0900	6	-1.47	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0055	4.195	0.0100	4.254	0.1688	0.0900	6	-0.31	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0485	4.220	0.0000	4.254	0.1688	0.0900	6	-0.18	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0220	4.335	0.0700	4.254	0.1688	0.0900	6	0.43	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0073	4.385	0.1700	4.254	0.1688	0.0900	6	0.69	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0405	4.390	0.0000	4.254	0.1688	0.0900	6	0.72	OK	0
041.20	Direct Available P2O5, Spectrophotometric (3%)	0553	3.542	0.0300	3.799	0.2374	0.0800	3	-1.08		0
041.20	Direct Available P2O5, Spectrophotometric (3%)	0027	3.845	0.1900	3.799	0.2374	0.0800	3	0.19		0
041.20	Direct Available P2O5, Spectrophotometric (3%)	0452	4.010	0.0200	3.799	0.2374	0.0800	3	0.89		0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0354	2.030	0.0000	4.127	1.029	0.1217	7	-1.84	Low	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0472	3.625	0.1100	4.127	1.029	0.1217	7	-0.44	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (3%)	0419	4.025	0.1500	4.127	1.029	0.1217	7	-0.09	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (3%)	0106	4.040	0.0600	4.127	1.029	0.1217	7	-0.08	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (3%)	0095	4.430	0.1800	4.127	1.029	0.1217	7	0.27	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (3%)	0055	4.685	0.0300	4.127	1.029	0.1217	7	0.49	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (3%)	0609	5.500	0.2000	4.127	1.029	0.1217	7	1.21	High	0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (3%)	0018	4.335	0.1300	4.409	0.0716	0.0487	3	-1.03		0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (3%)	0029	4.413	0.0030	4.409	0.0716	0.0487	3	0.06		0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (3%)	0034	4.478	0.0130	4.409	0.0716	0.0487	3	0.97		0
041.50	Direct Available P2O5, ICP (3%)	0605	4.205	0.1500				1			0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0494	3.770	0.3200	4.106	0.2872	0.1633	8	-1.07	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0231	3.870	0.1200	4.106	0.2872	0.1633	8	-0.75	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0136	3.905	0.0300	4.106	0.2872	0.1633	8	-0.64	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0023	4.069	0.1520	4.106	0.2872	0.1633	8	-0.12	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0025	4.175	0.0500	4.106	0.2872	0.1633	8	0.22	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0043	4.260	0.0200	4.106	0.2872	0.1633	8	0.49	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0360	4.265	0.0300	4.106	0.2872	0.1633	8	0.51	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (3%)	0233	4.536	0.5840	4.106	0.2872	0.1633	8	1.37	OK	0
041.99	Direct Available P2O5, Other (3%)	0559	2.875	0.0100	3.032	0.2279	0.0478	6	-0.62	OK	0
041.99	Direct Available P2O5, Other (3%)	0600	2.875	0.0500	3.032	0.2279	0.0478	6	-0.62	OK	0
041.99	Direct Available P2O5, Other (3%)	0562	2.885	0.0500	3.032	0.2279	0.0478	6	-0.58	OK	0
041.99	Direct Available P2O5, Other (3%)	0536	3.035	0.0500	3.032	0.2279	0.0478	6	0.01	OK	0
041.99	Direct Available P2O5, Other (3%)	0518	3.150	0.1000	3.032	0.2279	0.0478	6	0.46	OK	0
041.99	Direct Available P2O5, Other (3%)	0584	4.587	0.0270	3.032	0.2279	0.0478	6	6.07	High	0
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	0086	4.199	0.1286				1			0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0472	2.360	0.0600				1			0
050.00	Soluble K2O, STPB Oxalate (2%)	0494	1.180	0.1000	1.875	0.3024	0.0560	7	-2.08	Low	0
050.00	Soluble K2O, STPB Oxalate (2%)	0485	1.740	0.1400	1.875	0.3024	0.0560	7	-0.40	OK	0
050.00	Soluble K2O, STPB Oxalate (2%)	0102	1.810	0.0000	1.875	0.3024	0.0560	7	-0.19	OK	0
050.00	Soluble K2O, STPB Oxalate (2%)	0055	1.890	0.0200	1.875	0.3024	0.0560	7	0.04	OK	0
050.00	Soluble K2O, STPB Oxalate (2%)	0220	1.955	0.0100	1.875	0.3024	0.0560	7	0.24	OK	0
050.00	Soluble K2O, STPB Oxalate (2%)	0619	1.980	0.0000	1.875	0.3024	0.0560	7	0.31	OK	0
050.00	Soluble K2O, STPB Oxalate (2%)	0405	2.325	0.0100	1.875	0.3024	0.0560	7	1.35	High	0
050.30	Soluble K2O, AA (Oxalate) (2%)	0558	1.717	0.0084				2			0
050.30	Soluble K2O, AA (Oxalate) (2%)	0073	2.000	0.0000				2			0
050.32	Soluble K2O, AA (Citrate-EDTA) (2%)	0472	1.915	0.0700				1			0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0422	1.750	0.0181	1.859	0.1338	0.0606	9	-0.76	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0055	1.755	0.0700	1.859	0.1338	0.0606	9	-0.72	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0324	1.770	0.1200	1.859	0.1338	0.0606	9	-0.62	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0106	1.795	0.0700	1.859	0.1338	0.0606	9	-0.44	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0619	1.825	0.0100	1.859	0.1338	0.0606	9	-0.24	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0117	1.854	0.0447	1.859	0.1338	0.0606	9	-0.04	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0419	1.880	0.0400	1.859	0.1338	0.0606	9	0.14	OK	0
050.50	Soluble K2O, ICP (Oxalate) (2%)	0231	2.045	0.1100	1.859	0.1338	0.0606	9	1.28	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			#	Magruder PT	Method IA	Flag
			Value	Range	Rob Mean	Rob SD	R-bar	Tests	Z Score	Status	
050.50	Soluble K2O, ICP (Oxalate) (2%)	0086	2.107	0.0630	1.859	0.1338	0.0606	9	1.71	OK	0
050.51	Soluble K2O, ICP (Citrate) (2%)	0452	1.745	0.0500				2			0
050.51	Soluble K2O, ICP (Citrate) (2%)	0291	2.000	0.0200				2			0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0543	1.755	0.0940	1.920	0.1282	0.0873	10	-1.20	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0025	1.800	0.1400	1.920	0.1282	0.0873	10	-0.87	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0494	1.845	0.1500	1.920	0.1282	0.0873	10	-0.54	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0023	1.871	0.0260	1.920	0.1282	0.0873	10	-0.36	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0233	1.888	0.0330	1.920	0.1282	0.0873	10	-0.24	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0043	1.890	0.0400	1.920	0.1282	0.0873	10	-0.22	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0136	2.000	0.0400	1.920	0.1282	0.0873	10	0.58	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0360	2.020	0.0200	1.920	0.1282	0.0873	10	0.72	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0485	2.020	0.2800	1.920	0.1282	0.0873	10	0.72	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (2%)	0354	3.495	0.0500	1.920	0.1282	0.0873	10	11.42	High	0
050.60	Soluble K2O, Flame Photometric (Oxalate) (2%)	0609	1.375	0.0100				2			0
050.60	Soluble K2O, Flame Photometric (Oxalate) (2%)	0510	2.061	0.0051				2			0
050.61	Soluble K2O, Flame Photometric (Citrate) (2%)	0035	2.050	0.1000				2			0
050.61	Soluble K2O, Flame Photometric (Citrate) (2%)	0584	2.055	0.0100				2			0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	0018	1.845	0.0700	2.176	0.3233	0.0657	5	-1.02		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	0029	1.902	0.0980	2.176	0.3233	0.0657	5	-0.85		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	0095	2.230	0.0200	2.176	0.3233	0.0657	5	0.17		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	0034	2.252	0.0406	2.176	0.3233	0.0657	5	0.24		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (2%)	0609	2.650	0.1000	2.176	0.3233	0.0657	5	1.47		0
050.99	Soluble K2O, Other (2%)	0027	1.775	0.0700	1.993	0.1513	0.0665	26	-1.44	OK	0
050.99	Soluble K2O, Other (2%)	0521	1.785	0.0300	1.993	0.1513	0.0665	26	-1.38	OK	0
050.99	Soluble K2O, Other (2%)	0619	1.825	0.0100	1.993	0.1513	0.0665	26	-1.11	OK	0
050.99	Soluble K2O, Other (2%)	0389	1.850	0.0200	1.993	0.1513	0.0665	26	-0.95	OK	0
050.99	Soluble K2O, Other (2%)	0605	1.860	0.0400	1.993	0.1513	0.0665	26	-0.88	OK	0
050.99	Soluble K2O, Other (2%)	0588	1.889	0.2110	1.993	0.1513	0.0665	26	-0.69	OK	0
050.99	Soluble K2O, Other (2%)	0307	1.890	0.2200	1.993	0.1513	0.0665	26	-0.68	OK	0
050.99	Soluble K2O, Other (2%)	0536	1.915	0.0300	1.993	0.1513	0.0665	26	-0.52	OK	0
050.99	Soluble K2O, Other (2%)	0255	1.918	0.0730	1.993	0.1513	0.0665	26	-0.50	OK	0
050.99	Soluble K2O, Other (2%)	0559	1.925	0.0100	1.993	0.1513	0.0665	26	-0.45	OK	0
050.99	Soluble K2O, Other (2%)	0177	1.927	0.0307	1.993	0.1513	0.0665	26	-0.43	OK	0
050.99	Soluble K2O, Other (2%)	0562	1.930	0.0600	1.993	0.1513	0.0665	26	-0.42	OK	0
050.99	Soluble K2O, Other (2%)	0600	1.930	0.0600	1.993	0.1513	0.0665	26	-0.42	OK	0
050.99	Soluble K2O, Other (2%)	0234	2.015	0.1300	1.993	0.1513	0.0665	26	0.14	OK	0
050.99	Soluble K2O, Other (2%)	0231	2.025	0.0100	1.993	0.1513	0.0665	26	0.21	OK	0
050.99	Soluble K2O, Other (2%)	0587	2.035	0.0500	1.993	0.1513	0.0665	26	0.28	OK	0
050.99	Soluble K2O, Other (2%)	0624	2.045	0.1100	1.993	0.1513	0.0665	26	0.34	OK	0
050.99	Soluble K2O, Other (2%)	0542	2.072	0.0672	1.993	0.1513	0.0665	26	0.52	OK	0
050.99	Soluble K2O, Other (2%)	0451	2.082	0.0360	1.993	0.1513	0.0665	26	0.59	OK	0
050.99	Soluble K2O, Other (2%)	0527	2.095	0.1704	1.993	0.1513	0.0665	26	0.67	OK	0
050.99	Soluble K2O, Other (2%)	0518	2.110	0.0000	1.993	0.1513	0.0665	26	0.77	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
050.99	Soluble K2O, Other (2%)	0508	2.125	0.0300	1.993	0.1513	0.0665	26	0.87	OK	0
050.99	Soluble K2O, Other (2%)	0553	2.139	0.0240	1.993	0.1513	0.0665	26	0.96	OK	0
050.99	Soluble K2O, Other (2%)	0042	2.305	0.0900	1.993	0.1513	0.0665	26	2.06	OK	0
050.99	Soluble K2O, Other (2%)	0552	2.320	0.0200	1.993	0.1513	0.0665	26	2.16	OK	0
050.99	Soluble K2O, Other (2%)	0515	2.456	0.0600	1.993	0.1513	0.0665	26	3.06	High	0
050.99	Soluble K2O, Other (2%)	0260	2.104	0.3610	1.993	0.1513	0.0665	26	0.73	OK	1
050.99	Soluble K2O, Other (2%)	0433	19.50	0.1200	1.993	0.1513	0.0665	26	115.68	High	2
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g sample)	0518	2.830	0.1000				1			0
060.99	Water (Free), Other (%)	0510	3,986	7,970				1			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0035	0.4995	0.0590				2			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0354	0.7100	0.0000				2			0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0527	0.4606	0.0315	5.543	11.27	0.3280	5	-0.45		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0472	0.5000	0.0200	5.543	11.27	0.3280	5	-0.45		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0624	0.5190	0.0000	5.543	11.27	0.3280	5	-0.45		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0494	0.5342	0.0603	5.543	11.27	0.3280	5	-0.44		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0630	25.70	1.200	5.543	11.27	0.3280	5	1.79		0
101.99	Acid Soluble Ca, Other (%)	0307	0.4950	0.0100	0.6652	0.2943	0.0303	3	-0.58		0
101.99	Acid Soluble Ca, Other (%)	0572	0.4955	0.0110	0.6652	0.2943	0.0303	3	-0.58		0
101.99	Acid Soluble Ca, Other (%)	0552	1.005	0.0700	0.6652	0.2943	0.0303	3	1.15		0
121.00	Acid Soluble Mg, AA, inorganic 965.09 (2%)	0029	0.3449	0.0335				2			0
121.00	Acid Soluble Mg, AA, inorganic 965.09 (2%)	0485	0.3595	0.0090				2			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0023	0.3000	0.0120	0.3441	0.0325	0.0130	11	-1.36	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0255	0.3055	0.0130	0.3441	0.0325	0.0130	11	-1.19	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0049	0.3250	0.0300	0.3441	0.0325	0.0130	11	-0.59	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0354	0.3300	0.0200	0.3441	0.0325	0.0130	11	-0.43	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0619	0.3310	0.0100	0.3441	0.0325	0.0130	11	-0.40	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0360	0.3510	0.0015	0.3441	0.0325	0.0130	11	0.21	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0451	0.3519	0.0164	0.3441	0.0325	0.0130	11	0.24	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0234	0.3600	0.0200	0.3441	0.0325	0.0130	11	0.49	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0324	0.3630	0.0080	0.3441	0.0325	0.0130	11	0.58	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0231	0.3750	0.0100	0.3441	0.0325	0.0130	11	0.95	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0291	0.3940	0.0020	0.3441	0.0325	0.0130	11	1.53	OK	0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (2%)	0035	0.3395	0.0690	0.3441	0.0325	0.0130	11	-0.14	OK	1
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (2%)	0405	0.2845	0.0030	0.3198	0.0380	0.0065	3	-0.93		0
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (2%)	0095	0.3150	0.0100	0.3198	0.0380	0.0065	3	-0.13		0
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (2%)	0220	0.3600	0.0000	0.3198	0.0380	0.0065	3	1.06		0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0543	0.3110	0.0040	0.3713	0.0523	0.0206	12	-1.15	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0177	0.3196	0.0003	0.3713	0.0523	0.0206	12	-0.99	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0472	0.3300	0.0400	0.3713	0.0523	0.0206	12	-0.79	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0419	0.3350	0.0100	0.3713	0.0523	0.0206	12	-0.69	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0106	0.3515	0.0056	0.3713	0.0523	0.0206	12	-0.38	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0136	0.3550	0.0300	0.3713	0.0523	0.0206	12	-0.31	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0260	0.3720	0.0140	0.3713	0.0523	0.0206	12	0.01	OK	0

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			Value	Range	Rob Mean	Rob SD	R-bar				
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0612	0.3750	0.0100	0.3713	0.0523	0.0206	12	0.07	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0494	0.4080	0.0094	0.3713	0.0523	0.0206	12	0.70	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0527	0.4141	0.0100	0.3713	0.0523	0.0206	12	0.82	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0055	0.4350	0.0900	0.3713	0.0523	0.0206	12	1.22	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0515	6.993	0.0240	0.3713	0.0523	0.0206	12	126.58	High	0
121.33	Acid Soluble Mg, ICP, 2017.02 (2%)	0630	5.958	0.1580	0.3713	0.0523	0.0206	12	106.80	High	1
121.99	Acid Soluble Mg, Other (2%)	0572	0.3220	0.0100	0.3562	0.0289	0.0177	11	-1.18	OK	0
121.99	Acid Soluble Mg, Other (2%)	0619	0.3310	0.0100	0.3562	0.0289	0.0177	11	-0.87	OK	0
121.99	Acid Soluble Mg, Other (2%)	0307	0.3350	0.0100	0.3562	0.0289	0.0177	11	-0.73	OK	0
121.99	Acid Soluble Mg, Other (2%)	0389	0.3450	0.0100	0.3562	0.0289	0.0177	11	-0.39	OK	0
121.99	Acid Soluble Mg, Other (2%)	0521	0.3460	0.0080	0.3562	0.0289	0.0177	11	-0.35	OK	0
121.99	Acid Soluble Mg, Other (2%)	0042	0.3500	0.0200	0.3562	0.0289	0.0177	11	-0.21	OK	0
121.99	Acid Soluble Mg, Other (2%)	0027	0.3600	0.0000	0.3562	0.0289	0.0177	11	0.13	OK	0
121.99	Acid Soluble Mg, Other (2%)	0587	0.3600	0.0000	0.3562	0.0289	0.0177	11	0.13	OK	0
121.99	Acid Soluble Mg, Other (2%)	0605	0.3700	0.0400	0.3562	0.0289	0.0177	11	0.48	OK	0
121.99	Acid Soluble Mg, Other (2%)	0552	0.4950	0.0100	0.3562	0.0289	0.0177	11	4.80	OK	0
121.99	Acid Soluble Mg, Other (2%)	0558	1.034	0.0410	0.3562	0.0289	0.0177	11	23.42	High	0
121.99	Acid Soluble Mg, Other (2%)	0600	2.025	0.1500	0.3562	0.0289	0.0177	11	57.70	High	1
131.00	Water Soluble Mg, AA (%)	0029	0.2756	0.0249				2			0
131.00	Water Soluble Mg, AA (%)	0536	0.5250	0.0300				2			0
131.30	Water Soluble Mg, ICP (%)	0619	0.2775	0.0090	0.2858	0.0072	0.0145	3	-1.15		0
131.30	Water Soluble Mg, ICP (%)	0220	0.2900	0.0000	0.2858	0.0072	0.0145	3	0.58		0
131.30	Water Soluble Mg, ICP (%)	0027	0.2900	0.0200	0.2858	0.0072	0.0145	3	0.58		0
131.70	Water Soluble Mg, Titrimetric (EDTA) (%)	0510	1.999	0.0498				1			0
131.99	Water Soluble Mg, Other (%)	0619	0.2775	0.0090	0.4208	0.1253	0.0103	3	-1.14		0
131.99	Water Soluble Mg, Other (%)	0558	0.4749	0.0018	0.4208	0.1253	0.0103	3	0.43		0
131.99	Water Soluble Mg, Other (%)	0536	0.5100	0.0200	0.4208	0.1253	0.0103	3	0.71		0
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfur	0584	2.120	0.0400				1			0
143.99	Elemental S, Other (%)	0405	0.0625	0.0050	4.092	4.402	0.0103	3	-0.92		0
143.99	Elemental S, Other (%)	0255	3.424	0.0060	4.092	4.402	0.0103	3	-0.15		0
143.99	Elemental S, Other (%)	0291	8.790	0.0200	4.092	4.402	0.0103	3	1.07		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0405	7.940	0.2400	8.360	0.4268	0.1650	4	-0.98		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0106	8.070	0.2800	8.360	0.4268	0.1650	4	-0.68		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0220	8.585	0.0300	8.360	0.4268	0.1650	4	0.53		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0027	8.845	0.1100	8.360	0.4268	0.1650	4	1.14		0
145.99	Sulfate S, HCl soluble, Other (%)	0619	7.405	0.0300				2			0
145.99	Sulfate S, HCl soluble, Other (%)	0419	8.131	0.2870				2			0
148.00	Total S, Combustion (2%)	0029	7.567	0.1680	7.858	0.3372	0.1950	4	-0.86		0
148.00	Total S, Combustion (2%)	0049	7.585	0.1300	7.858	0.3372	0.1950	4	-0.81		0
148.00	Total S, Combustion (2%)	0609	8.035	0.4300	7.858	0.3372	0.1950	4	0.52		0
148.00	Total S, Combustion (2%)	0451	8.246	0.0520	7.858	0.3372	0.1950	4	1.15		0
148.01	Total S, Gravimetric - sulfate and elemental (2%)	0055	7.970	0.0400	8.310	0.3758	0.1350	4	-0.90		0
148.01	Total S, Gravimetric - sulfate and elemental (2%)	0405	8.000	0.2400	8.310	0.3758	0.1350	4	-0.82		0

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148.01	Total S, Gravimetric - sulfate and elemental (2%)	0324	8.615	0.0300	8.310	0.3758	0.1350	4	0.81		0
148.01	Total S, Gravimetric - sulfate and elemental (2%)	0485	8.655	0.2300	8.310	0.3758	0.1350	4	0.92		0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0624	2.224	0.3560	7.756	1.068	0.3075	10	-4.82	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0260	6.738	0.8835	7.756	1.068	0.3075	10	-0.89	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0177	7.127	0.1271	7.756	1.068	0.3075	10	-0.55	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0543	7.311	0.4270	7.756	1.068	0.3075	10	-0.39	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0472	7.615	0.1500	7.756	1.068	0.3075	10	-0.12	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0117	7.824	0.2259	7.756	1.068	0.3075	10	0.06	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0494	8.342	0.0952	7.756	1.068	0.3075	10	0.51	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0619	8.695	0.0100	7.756	1.068	0.3075	10	0.82	High	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0612	8.795	0.1300	7.756	1.068	0.3075	10	0.90	High	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0136	8.965	0.6700	7.756	1.068	0.3075	10	1.05	High	0
148.07	Total S, ICP, test portion as in 2017.02 (2%)	0515	7.696	4.333	7.756	1.068	0.3075	10	-0.05	OK	1
148.99	Total S, Other (2%)	0600	1.915	0.0700	6.551	3.556	0.0792	13	-1.30	Low	0
148.99	Total S, Other (2%)	0559	1.930	0.0200	6.551	3.556	0.0792	13	-1.30	Low	0
148.99	Total S, Other (2%)	0562	1.930	0.0600	6.551	3.556	0.0792	13	-1.30	Low	0
148.99	Total S, Other (2%)	0521	4.878	0.0450	6.551	3.556	0.0792	13	-0.47	Low	0
148.99	Total S, Other (2%)	0354	5.190	0.0600	6.551	3.556	0.0792	13	-0.38	Low	0
148.99	Total S, Other (2%)	0558	7.394	0.0160	6.551	3.556	0.0792	13	0.24	High	0
148.99	Total S, Other (2%)	0307	7.590	0.1000	6.551	3.556	0.0792	13	0.29	High	0
148.99	Total S, Other (2%)	0605	8.345	0.3300	6.551	3.556	0.0792	13	0.50	High	0
148.99	Total S, Other (2%)	0220	8.425	0.1100	6.551	3.556	0.0792	13	0.53	High	0
148.99	Total S, Other (2%)	0433	8.437	0.1000	6.551	3.556	0.0792	13	0.53	High	0
148.99	Total S, Other (2%)	0023	8.553	0.0580	6.551	3.556	0.0792	13	0.56	High	0
148.99	Total S, Other (2%)	0619	8.695	0.0100	6.551	3.556	0.0792	13	0.60	High	0
148.99	Total S, Other (2%)	0422	14.85	0.0510	6.551	3.556	0.0792	13	2.33	High	0
148.99	Total S, Other (2%)	0572	6.989	0.7600	6.551	3.556	0.0792	13	0.12	OK	1
149.04	S - HNO3 soluble, ICP (%)	0231	7.805	0.0900				1			0
151.30	Acid Soluble As, ICP (ppm)	0630	1.619	0.0040	556.4	352.9	94.88	5	-1.57		0
151.30	Acid Soluble As, ICP (ppm)	0255	455.6	204.4	556.4	352.9	94.88	5	-0.29		0
151.30	Acid Soluble As, ICP (ppm)	0419	687.7	27.10	556.4	352.9	94.88	5	0.37		0
151.30	Acid Soluble As, ICP (ppm)	0035	706.0	148.0	556.4	352.9	94.88	5	0.42		0
151.30	Acid Soluble As, ICP (ppm)	0605	931.2	0.0000	556.4	352.9	94.88	5	1.06		0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	799.5	111.0				2			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	976.5	15.00				2			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0527	698.6	8.209	884.4	314.3	30.27	5	-0.59		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	728.8	33.50	884.4	314.3	30.27	5	-0.50		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0117	758.0	2.780	884.4	314.3	30.27	5	-0.40		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0515	793.7	25.20	884.4	314.3	30.27	5	-0.29		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0624	1,443	81.67	884.4	314.3	30.27	5	1.78		0
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0515	646.5	50.40				1			0
151.99	Acid Soluble As, Other (ppm)	0572	762.1	185.6				2			0
151.99	Acid Soluble As, Other (ppm)	0220	871.5	7.000				2			0

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165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0260	0.0088	0.0000				2			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	0.0100	0.0000				2			0
165.99	Acid Soluble B, Other (%)	0605	0.0100	0.0000	0.2144	0.4014	0.0873	5	-0.44		0
165.99	Acid Soluble B, Other (%)	0472	0.0200	0.0000	0.2144	0.4014	0.0873	5	-0.42		0
165.99	Acid Soluble B, Other (%)	0624	0.0265	0.0010	0.2144	0.4014	0.0873	5	-0.41		0
165.99	Acid Soluble B, Other (%)	0552	0.0850	0.0300	0.2144	0.4014	0.0873	5	-0.28		0
165.99	Acid Soluble B, Other (%)	0515	0.9306	0.2308	0.2144	0.4014	0.0873	5	1.56		0
165.99	Acid Soluble B, Other (%)	0527	< 0.01		0.2144	0.4014	0.0873	5			5
165.99	Acid Soluble B, Other (%)	0572	< 0.0107		0.2144	0.4014	0.0873	5			5
181.30	Acid Soluble Cd, ICP (ppm)	0630	0.0485	0.0030	1,291	725.8	184.3	5	-1.78		0
181.30	Acid Soluble Cd, ICP (ppm)	0605	1,521	0.0000	1,291	725.8	184.3	5	0.32		0
181.30	Acid Soluble Cd, ICP (ppm)	0255	1,565	556.0	1,291	725.8	184.3	5	0.38		0
181.30	Acid Soluble Cd, ICP (ppm)	0035	1,662	158.0	1,291	725.8	184.3	5	0.51		0
181.30	Acid Soluble Cd, ICP (ppm)	0419	1,710	23.00	1,291	725.8	184.3	5	0.58		0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	1,499	126.0				2			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	1,858	29.00				2			0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0494	595.5	1.000	1,443	334.3	77.69	6	-2.26	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0515	1,318	203.0	1,443	334.3	77.69	6	-0.33	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0624	1,410	18.79	1,443	334.3	77.69	6	-0.09	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0527	1,594	3.346	1,443	334.3	77.69	6	0.40	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	1,613	59.00	1,443	334.3	77.69	6	0.45	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0117	1,781	181.0	1,443	334.3	77.69	6	0.90	NA	0
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0515	2,231	60.00				1			0
181.99	Acid Soluble Cd, Other (ppm)	0220	1,732	21.00				2			0
181.99	Acid Soluble Cd, Other (ppm)	0572	2,180	168.0				2			0
191.30	Acid Soluble Cr, ICP (ppm)	0035	36.70	0.2000	370.6	648.7	10.11	4	-0.51		0
191.30	Acid Soluble Cr, ICP (ppm)	0605	44.98	0.0000	370.6	648.7	10.11	4	-0.50		0
191.30	Acid Soluble Cr, ICP (ppm)	0419	57.23	9.130	370.6	648.7	10.11	4	-0.48		0
191.30	Acid Soluble Cr, ICP (ppm)	0630	1,344	21.00	370.6	648.7	10.11	4	1.50		0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	43.15	0.7000				2			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	357.5	329.0				2			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0515	35.12	41.11	140.2	185.9	18.99	4	-0.57		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	38.57	0.2200	140.2	185.9	18.99	4	-0.55		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0527	69.15	0.9611	140.2	185.9	18.99	4	-0.38		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0624	418.1	33.67	140.2	185.9	18.99	4	1.49		0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0515	34.53	2.170				1			0
191.99	Acid Soluble Cr, Other (ppm)	0572	38.47	2.769				2			0
191.99	Acid Soluble Cr, Other (ppm)	0220	45.15	0.1000				2			0
202.30	Acid Soluble Co, ICP (ppm)	0630	43.80	2.070	66.93	22.85	2.570	4	-1.01		0
202.30	Acid Soluble Co, ICP (ppm)	0605	60.74	0.0000	66.93	22.85	2.570	4	-0.27		0
202.30	Acid Soluble Co, ICP (ppm)	0035	64.80	3.800	66.93	22.85	2.570	4	-0.09		0
202.30	Acid Soluble Co, ICP (ppm)	0419	98.37	1.840	66.93	22.85	2.570	4	1.38		0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	76.00	2.000				2			0

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202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	82.40	3.400				2			0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	73.89	1.380	84.05	10.81	10.88	5	-0.94		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0494	77.40	1.600	84.05	10.81	10.88	5	-0.62		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0515	77.55	50.90	84.05	10.81	10.88	5	-0.60		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0117	93.95	0.2120	84.05	10.81	10.88	5	0.92		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0527	97.46	0.2950	84.05	10.81	10.88	5	1.24		0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0515	64.10	12.58				1			0
202.99	Acid Soluble Co, Other (ppm)	0255	38.77	21.90	67.34	24.78	10.31	3	-1.15		0
202.99	Acid Soluble Co, Other (ppm)	0572	80.20	7.538	67.34	24.78	10.31	3	0.52		0
202.99	Acid Soluble Co, Other (ppm)	0220	83.05	1.500	67.34	24.78	10.31	3	0.63		0
221.00	Acid Soluble Cu, AA, inorganic 965.09 (4%)	0029	3.164	0.2950	3.415	0.3408	0.1663	4	-0.74		0
221.00	Acid Soluble Cu, AA, inorganic 965.09 (4%)	0553	3.205	0.0100	3.415	0.3408	0.1663	4	-0.62		0
221.00	Acid Soluble Cu, AA, inorganic 965.09 (4%)	0485	3.385	0.2100	3.415	0.3408	0.1663	4	-0.09		0
221.00	Acid Soluble Cu, AA, inorganic 965.09 (4%)	0580	3.905	0.1500	3.415	0.3408	0.1663	4	1.44		0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0324	3.005	0.2500	3.407	0.1411	0.1087	15	-2.85	Low	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0255	3.111	0.1340	3.407	0.1411	0.1087	15	-2.10	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0291	3.250	0.0200	3.407	0.1411	0.1087	15	-1.12	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0354	3.310	0.0200	3.407	0.1411	0.1087	15	-0.69	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0619	3.345	0.0900	3.407	0.1411	0.1087	15	-0.44	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0035	3.390	0.0400	3.407	0.1411	0.1087	15	-0.12	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0157	3.405	0.2100	3.407	0.1411	0.1087	15	-0.02	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0451	3.440	0.0660	3.407	0.1411	0.1087	15	0.23	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0234	3.465	0.1700	3.407	0.1411	0.1087	15	0.41	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0049	3.472	0.3430	3.407	0.1411	0.1087	15	0.45	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0360	3.485	0.1100	3.407	0.1411	0.1087	15	0.55	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0552	3.495	0.0500	3.407	0.1411	0.1087	15	0.62	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0023	3.530	0.0170	3.407	0.1411	0.1087	15	0.87	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0231	3.545	0.0700	3.407	0.1411	0.1087	15	0.98	OK	0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (4%)	0433	3.588	0.0400	3.407	0.1411	0.1087	15	1.28	OK	0
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (4%)	0405	3.165	0.1500	3.238	0.0635	0.0967	3	-1.15		0
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (4%)	0095	3.275	0.0300	3.238	0.0635	0.0967	3	0.58		0
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (4%)	0220	3.275	0.1100	3.238	0.0635	0.0967	3	0.58		0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0630	0.0015	0.0001	3.258	0.3007	0.1067	15	-10.83	Low	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0543	2.905	0.0830	3.258	0.3007	0.1067	15	-1.18	Low	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0624	3.098	0.0540	3.258	0.3007	0.1067	15	-0.53	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0055	3.105	0.1500	3.258	0.3007	0.1067	15	-0.51	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0106	3.129	0.0105	3.258	0.3007	0.1067	15	-0.43	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0472	3.135	0.0500	3.258	0.3007	0.1067	15	-0.41	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0177	3.156	0.1671	3.258	0.3007	0.1067	15	-0.34	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0419	3.200	0.1200	3.258	0.3007	0.1067	15	-0.19	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0527	3.243	0.0401	3.258	0.3007	0.1067	15	-0.05	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0494	3.318	0.1568	3.258	0.3007	0.1067	15	0.20	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0136	3.350	0.1000	3.258	0.3007	0.1067	15	0.30	OK	0

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221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0260	3.405	0.0900	3.258	0.3007	0.1067	15	0.49	OK	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0609	3.605	0.1100	3.258	0.3007	0.1067	15	1.15	High	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0612	3.795	0.1900	3.258	0.3007	0.1067	15	1.78	High	0
221.33	Acid Soluble Cu, ICP, 2017.02 (4%)	0515	4.121	0.2790	3.258	0.3007	0.1067	15	2.87	High	0
221.99	Acid Soluble Cu, Other (4%)	0558	2.837	0.0079	3.543	0.2791	0.0935	13	-2.53	Low	0
221.99	Acid Soluble Cu, Other (4%)	0515	3.255	0.0800	3.543	0.2791	0.0935	13	-1.03	OK	0
221.99	Acid Soluble Cu, Other (4%)	0587	3.325	0.0100	3.543	0.2791	0.0935	13	-0.78	OK	0
221.99	Acid Soluble Cu, Other (4%)	0619	3.345	0.0900	3.543	0.2791	0.0935	13	-0.71	OK	0
221.99	Acid Soluble Cu, Other (4%)	0389	3.435	0.0100	3.543	0.2791	0.0935	13	-0.39	OK	0
221.99	Acid Soluble Cu, Other (4%)	0605	3.490	0.1400	3.543	0.2791	0.0935	13	-0.19	OK	0
221.99	Acid Soluble Cu, Other (4%)	0572	3.524	0.1080	3.543	0.2791	0.0935	13	-0.07	OK	0
221.99	Acid Soluble Cu, Other (4%)	0027	3.585	0.1700	3.543	0.2791	0.0935	13	0.15	OK	0
221.99	Acid Soluble Cu, Other (4%)	0042	3.650	0.1600	3.543	0.2791	0.0935	13	0.38	OK	0
221.99	Acid Soluble Cu, Other (4%)	0559	3.775	0.0100	3.543	0.2791	0.0935	13	0.83	OK	0
221.99	Acid Soluble Cu, Other (4%)	0600	3.785	0.1300	3.543	0.2791	0.0935	13	0.87	OK	0
221.99	Acid Soluble Cu, Other (4%)	0562	3.800	0.1000	3.543	0.2791	0.0935	13	0.92	OK	0
221.99	Acid Soluble Cu, Other (4%)	0584	4.100	0.2000	3.543	0.2791	0.0935	13	2.00	High	0
241.00	Acid Soluble Fe, AA, inorganic 965.09 (35%)	0029	27.89	2.100	30.94	3.485	1.100	3	-0.88		0
241.00	Acid Soluble Fe, AA, inorganic 965.09 (35%)	0485	30.20	0.6000	30.94	3.485	1.100	3	-0.21		0
241.00	Acid Soluble Fe, AA, inorganic 965.09 (35%)	0580	34.74	0.6000	30.94	3.485	1.100	3	1.09		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0255	8.824	0.6640	26.18	6.557	1.186	14	-2.65	Low	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0619	9.655	0.0100	26.18	6.557	1.186	14	-2.52	Low	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0035	11.50	1.200	26.18	6.557	1.186	14	-2.24	Low	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0049	22.33	4.653	26.18	6.557	1.186	14	-0.59	Low	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0231	27.45	0.1300	26.18	6.557	1.186	14	0.19	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0433	27.71	0.5000	26.18	6.557	1.186	14	0.23	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0354	28.50	0.0000	26.18	6.557	1.186	14	0.35	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0157	28.70	5.200	26.18	6.557	1.186	14	0.38	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0324	29.55	1.100	26.18	6.557	1.186	14	0.51	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0360	29.63	0.0800	26.18	6.557	1.186	14	0.53	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0023	30.37	0.8510	26.18	6.557	1.186	14	0.64	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0234	30.54	0.1700	26.18	6.557	1.186	14	0.66	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0552	30.99	0.0200	26.18	6.557	1.186	14	0.73	High	0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (35%)	0451	31.76	0.8400	26.18	6.557	1.186	14	0.85	High	0
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (35%)	0095	17.82	0.8800				2			0
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (35%)	0405	23.62	0.6000				2			0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0472	11.14	0.0800	22.27	8.339	0.6179	13	-1.33	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0136	14.90	0.2000	22.27	8.339	0.6179	13	-0.88	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0419	15.13	1.040	22.27	8.339	0.6179	13	-0.86	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0630	15.67	2.020	22.27	8.339	0.6179	13	-0.79	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0543	16.51	0.0300	22.27	8.339	0.6179	13	-0.69	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0106	21.10	0.9498	22.27	8.339	0.6179	13	-0.14	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0055	21.24	0.9600	22.27	8.339	0.6179	13	-0.12	Low	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0494	24.44	0.2329	22.27	8.339	0.6179	13	0.26	High	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0177	26.48	0.1165	22.27	8.339	0.6179	13	0.50	High	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0515	27.78	0.5900	22.27	8.339	0.6179	13	0.66	High	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0527	28.31	0.3030	22.27	8.339	0.6179	13	0.72	High	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0612	32.30	0.6100	22.27	8.339	0.6179	13	1.20	High	0
241.33	Acid Soluble Fe, ICP, 2017.02 (35%)	0609	34.55	0.9000	22.27	8.339	0.6179	13	1.47	High	0
241.99	Acid Soluble Fe, Other (35%)	0619	9.655	0.0100	19.51	10.33	0.3836	11	-0.89	Low	0
241.99	Acid Soluble Fe, Other (35%)	0042	10.25	1.450	19.51	10.33	0.3836	11	-0.84	Low	0
241.99	Acid Soluble Fe, Other (35%)	0515	11.57	0.0500	19.51	10.33	0.3836	11	-0.72	Low	0
241.99	Acid Soluble Fe, Other (35%)	0572	12.47	1.078	19.51	10.33	0.3836	11	-0.64	Low	0
241.99	Acid Soluble Fe, Other (35%)	0558	12.64	0.0313	19.51	10.33	0.3836	11	-0.62	Low	0
241.99	Acid Soluble Fe, Other (35%)	0605	13.33	0.0500	19.51	10.33	0.3836	11	-0.56	Low	0
241.99	Acid Soluble Fe, Other (35%)	0389	27.30	0.6000	19.51	10.33	0.3836	11	0.71	High	0
241.99	Acid Soluble Fe, Other (35%)	0559	29.10	0.2100	19.51	10.33	0.3836	11	0.87	High	0
241.99	Acid Soluble Fe, Other (35%)	0600	29.10	0.4000	19.51	10.33	0.3836	11	0.87	High	0
241.99	Acid Soluble Fe, Other (35%)	0562	29.16	0.3100	19.51	10.33	0.3836	11	0.87	High	0
241.99	Acid Soluble Fe, Other (35%)	0587	30.04	0.0300	19.51	10.33	0.3836	11	0.95	High	0
251.30	Acid Soluble Pb, ICP (ppm)	0630	1,585	0.1810	6,526	3,828	1,147	5	-1.70		0
251.30	Acid Soluble Pb, ICP (ppm)	0035	6,800	2,255	6,526	3,828	1,147	5	0.07		0
251.30	Acid Soluble Pb, ICP (ppm)	0255	7,710	2,044	6,526	3,828	1,147	5	0.31		0
251.30	Acid Soluble Pb, ICP (ppm)	0605	8,131	0.0000	6,526	3,828	1,147	5	0.42		0
251.30	Acid Soluble Pb, ICP (ppm)	0419	9,988	289.0	6,526	3,828	1,147	5	0.90		0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	7,178	584.0				1			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0494	1,192	3.000	7,735	2,775	213.4	6	-2.10	NA	0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0624	6,952	299.8	7,735	2,775	213.4	6	-0.25	NA	0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0515	7,020	289.0	7,735	2,775	213.4	6	-0.23	NA	0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0527	8,894	6.559	7,735	2,775	213.4	6	0.37	NA	0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	9,909	525.0	7,735	2,775	213.4	6	0.70	NA	0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0117	10,063	157.3	7,735	2,775	213.4	6	0.75	NA	0
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0515	11,178	175.0				1			0
251.99	Acid Soluble Pb, Other (ppm)	0572	11,743	2,327				1			0
261.12	Acid Soluble Mn, AA, inorganic 965.09 (0.5%)	0029	0.2137	0.0134				2			0
261.12	Acid Soluble Mn, AA, inorganic 965.09 (0.5%)	0485	0.2240	0.0120				2			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (0.5%)	0035	0.1590	0.0020	0.1943	0.0248	0.0180	4	-1.42		0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (0.5%)	0234	0.1950	0.0100	0.1943	0.0248	0.0180	4	0.03		0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (0.5%)	0354	0.2100	0.0400	0.1943	0.0248	0.0180	4	0.64		0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (0.5%)	0157	0.2130	0.0200	0.1943	0.0248	0.0180	4	0.76		0
261.31	Acid Soluble Mn, ICP, test portion 972.02b (0.5%)	0324	0.2135	0.0150				2			0
261.31	Acid Soluble Mn, ICP, test portion 972.02b (0.5%)	0360	0.2150	0.0100				2			0
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	0049	0.1700	0.0140	0.2062	0.0323	0.0084	6	-1.00	Low	0
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	0451	0.1938	0.0019	0.2062	0.0323	0.0084	6	-0.34	OK	0
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	0619	0.1940	0.0000	0.2062	0.0323	0.0084	6	-0.34	OK	0
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	0023	0.2100	0.0060	0.2062	0.0323	0.0084	6	0.10	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			#	Magruder PT	Method IA	Flag
			Value	Range	Rob Mean	Rob SD	R-bar	Tests	Z Score	Status	
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	0231	0.2150	0.0100	0.2062	0.0323	0.0084	6	0.24	OK	0
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (0.5%)	0552	0.2750	0.0100	0.2062	0.0323	0.0084	6	1.90	High	0
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (0.5%)	0095	0.2050	0.0100				2			0
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (0.5%)	0405	0.2225	0.0130				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0177	0.1894	0.0241	0.2146	0.0171	0.0145	12	-1.48	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0055	0.2050	0.0100	0.2146	0.0171	0.0145	12	-0.56	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0260	0.2050	0.0040	0.2146	0.0171	0.0145	12	-0.56	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0472	0.2050	0.0100	0.2146	0.0171	0.0145	12	-0.56	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0494	0.2074	0.0290	0.2146	0.0171	0.0145	12	-0.42	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0543	0.2085	0.0130	0.2146	0.0171	0.0145	12	-0.36	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0136	0.2100	0.0200	0.2146	0.0171	0.0145	12	-0.27	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0106	0.2155	0.0068	0.2146	0.0171	0.0145	12	0.05	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0419	0.2200	0.0000	0.2146	0.0171	0.0145	12	0.32	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0527	0.2339	0.0022	0.2146	0.0171	0.0145	12	1.13	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0612	0.2350	0.0100	0.2146	0.0171	0.0145	12	1.20	OK	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0630	1.605	0.0300	0.2146	0.0171	0.0145	12	81.35	High	0
261.35	Acid Soluble Mn, ICP, 2017.02 (0.5%)	0515	1.776	0.1530	0.2146	0.0171	0.0145	12	91.33	High	1
261.99	Acid Soluble Mn, Other (0.5%)	0558	0.1481	0.0014	0.2141	0.0561	0.0359	12	-1.18	Low	0
261.99	Acid Soluble Mn, Other (0.5%)	0255	0.1555	0.0010	0.2141	0.0561	0.0359	12	-1.04	Low	0
261.99	Acid Soluble Mn, Other (0.5%)	0042	0.1800	0.0200	0.2141	0.0561	0.0359	12	-0.61	Low	0
261.99	Acid Soluble Mn, Other (0.5%)	0572	0.1865	0.0110	0.2141	0.0561	0.0359	12	-0.49	Low	0
261.99	Acid Soluble Mn, Other (0.5%)	0619	0.1940	0.0000	0.2141	0.0561	0.0359	12	-0.36	OK	0
261.99	Acid Soluble Mn, Other (0.5%)	0389	0.2000	0.0000	0.2141	0.0561	0.0359	12	-0.25	OK	0
261.99	Acid Soluble Mn, Other (0.5%)	0587	0.2100	0.0000	0.2141	0.0561	0.0359	12	-0.07	OK	0
261.99	Acid Soluble Mn, Other (0.5%)	0605	0.2150	0.0100	0.2141	0.0561	0.0359	12	0.02	OK	0
261.99	Acid Soluble Mn, Other (0.5%)	0027	0.2150	0.0300	0.2141	0.0561	0.0359	12	0.02	OK	0
261.99	Acid Soluble Mn, Other (0.5%)	0600	0.2850	0.1300	0.2141	0.0561	0.0359	12	1.26	High	0
261.99	Acid Soluble Mn, Other (0.5%)	0562	0.2850	0.1100	0.2141	0.0561	0.0359	12	1.26	High	0
261.99	Acid Soluble Mn, Other (0.5%)	0559	0.2950	0.0100	0.2141	0.0561	0.0359	12	1.44	High	0
271.00	Water Soluble Mn, AA (%)	0536	0.4555	0.0470				1			0
271.30	Water Soluble Mn, ICP, Ext. 972.03 (%)	0619	0.1505	0.0030				1			0
271.99	Water Soluble Mn, Other (%)	0619	0.1505	0.0030				1			0
281.30	Acid Soluble Hg, ICP (ppm)	0630	0.6700	0.1400	1,360	945.5	88.87	4	-1.44		0
281.30	Acid Soluble Hg, ICP (ppm)	0405	1,551	254.0	1,360	945.5	88.87	4	0.20		0
281.30	Acid Soluble Hg, ICP (ppm)	0605	1,707	0.0000	1,360	945.5	88.87	4	0.37		0
281.30	Acid Soluble Hg, ICP (ppm)	0527	2,183	12.48	1,360	945.5	88.87	4	0.87		0
281.30	Acid Soluble Hg, ICP (ppm)	0515	< 0.1		1,360	945.5	88.87	4			5
281.99	Acid Soluble Hg, Other (ppm)	0572	2,882	524.8				1			0
289.30	Acid Soluble Mo, ICP (ppm)	0234	0.0006	0.0001	8.130	9.928	1.161	5	-0.82		0
289.30	Acid Soluble Mo, ICP (ppm)	0255	1.166	0.3250	8.130	9.928	1.161	5	-0.70		0
289.30	Acid Soluble Mo, ICP (ppm)	0605	4.590	0.0000	8.130	9.928	1.161	5	-0.36		0
289.30	Acid Soluble Mo, ICP (ppm)	0419	10.61	2.990	8.130	9.928	1.161	5	0.25		0
289.30	Acid Soluble Mo, ICP (ppm)	0630	24.29	1.327	8.130	9.928	1.161	5	1.63		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	4.500	1.000				1			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0106	2.500	1.000				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0527	4.476	0.1256				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0515	< 0.056					2			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	< 2.5					2			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0117	< 5					2			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0515	< 0.178					0			5
289.99	Acid Soluble Mo, Other (ppm)	0572	3.771	0.4840				1			0
291.30	Acid Soluble Ni, ICP (ppm)	0035	14.80	0.4000	37.26	39.00	1.520	5	-0.58		0
291.30	Acid Soluble Ni, ICP (ppm)	0605	18.09	0.0000	37.26	39.00	1.520	5	-0.49		0
291.30	Acid Soluble Ni, ICP (ppm)	0027	19.26	0.4500	37.26	39.00	1.520	5	-0.46		0
291.30	Acid Soluble Ni, ICP (ppm)	0419	27.65	4.630	37.26	39.00	1.520	5	-0.25		0
291.30	Acid Soluble Ni, ICP (ppm)	0630	106.5	0.6000	37.26	39.00	1.520	5	1.78		0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	22.00	0.0000				1			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0624	13.85	0.8400	21.50	7.323	1.354	5	-0.91		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	17.97	2.750	21.50	7.323	1.354	5	-0.42		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0494	19.55	1.500	21.50	7.323	1.354	5	-0.23		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0527	22.88	0.8224	21.50	7.323	1.354	5	0.16		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0117	33.24	0.8580	21.50	7.323	1.354	5	1.40		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0515	< 0.049		21.50	7.323	1.354	5			5
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0515	10.76	3.446				1			0
291.99	Acid Soluble Ni, Other (ppm)	0572	19.39	0.3610				2			0
291.99	Acid Soluble Ni, Other (ppm)	0255	52.73	16.47				2			0
301.30	Acid Soluble Se, ICP (ppm)	0630	4.779	0.0470	5,823	4,059	506.0	4	-1.43		0
301.30	Acid Soluble Se, ICP (ppm)	0605	6,181	0.0000	5,823	4,059	506.0	4	0.09		0
301.30	Acid Soluble Se, ICP (ppm)	0419	8,025	501.0	5,823	4,059	506.0	4	0.54		0
301.30	Acid Soluble Se, ICP (ppm)	0035	9,080	1,017	5,823	4,059	506.0	4	0.80		0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0494	6.595	0.9020	5,448	3,694	957.7	4	-1.47		0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0515	6,712	3,568	5,448	3,694	957.7	4	0.34		0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0527	6,826	74.62	5,448	3,694	957.7	4	0.37		0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0117	8,247	187.2	5,448	3,694	957.7	4	0.76		0
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0515	8,338	1,834				1			0
301.99	Acid Soluble Se, Other (ppm)	0255	5,451	778.0	6,871	1,751	802.1	3	-0.81		0
301.99	Acid Soluble Se, Other (ppm)	0405	6,335	218.0	6,871	1,751	802.1	3	-0.31		0
301.99	Acid Soluble Se, Other (ppm)	0572	8,828	1,410	6,871	1,751	802.1	3	1.12		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0494	0.2422	0.0158	0.2507	0.0108	0.0089	3	-0.78		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0035	0.2470	0.0040	0.2507	0.0108	0.0089	3	-0.34		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	0.2629	0.0068	0.2507	0.0108	0.0089	3	1.13		0
311.99	Sodium, Other (%)	0572	0.2480	0.0100				2			0
311.99	Sodium, Other (%)	0354	0.3050	0.0300				2			0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (7%)	0485	5.990	0.5600	6.577	0.4581	0.3183	4	-1.28		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (7%)	0029	6.494	0.4430	6.577	0.4581	0.3183	4	-0.18		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (7%)	0580	6.750	0.1200	6.577	0.4581	0.3183	4	0.38		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
321.00	Acid Soluble Zn, AA, inorganic 965.09 (7%)	0553	7.075	0.1500	6.577	0.4581	0.3183	4	1.09		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0231	5.365	0.0100	6.367	0.6101	0.3192	15	-1.64	Low	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0324	5.710	1.280	6.367	0.6101	0.3192	15	-1.08	Low	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0255	5.902	0.3750	6.367	0.6101	0.3192	15	-0.76	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0360	5.935	0.1100	6.367	0.6101	0.3192	15	-0.71	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0157	5.965	0.8700	6.367	0.6101	0.3192	15	-0.66	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0023	6.016	0.1110	6.367	0.6101	0.3192	15	-0.58	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0291	6.240	0.0200	6.367	0.6101	0.3192	15	-0.21	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0433	6.289	0.0320	6.367	0.6101	0.3192	15	-0.13	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0552	6.410	0.4600	6.367	0.6101	0.3192	15	0.07	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0234	6.775	0.0900	6.367	0.6101	0.3192	15	0.67	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0049	6.785	0.3300	6.367	0.6101	0.3192	15	0.68	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0619	6.800	0.0000	6.367	0.6101	0.3192	15	0.71	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0035	6.945	0.4300	6.367	0.6101	0.3192	15	0.95	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0354	7.125	0.0900	6.367	0.6101	0.3192	15	1.24	High	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (7%)	0451	7.164	0.2610	6.367	0.6101	0.3192	15	1.30	High	0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (7%)	0095	6.040	0.3600				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (7%)	0220	7.095	0.1100				2			0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0630	0.0076	0.0004	6.263	0.6161	0.2389	14	-10.15	Low	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0055	5.790	0.1200	6.263	0.6161	0.2389	14	-0.77	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0260	5.810	1.380	6.263	0.6161	0.2389	14	-0.73	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0177	5.853	0.0102	6.263	0.6161	0.2389	14	-0.67	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0136	5.965	0.0700	6.263	0.6161	0.2389	14	-0.48	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0419	6.045	0.2500	6.263	0.6161	0.2389	14	-0.35	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0543	6.103	0.0320	6.263	0.6161	0.2389	14	-0.26	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0472	6.155	0.0700	6.263	0.6161	0.2389	14	-0.17	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0117	6.255	0.1364	6.263	0.6161	0.2389	14	-0.01	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0106	6.521	0.2178	6.263	0.6161	0.2389	14	0.42	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0612	6.725	0.2700	6.263	0.6161	0.2389	14	0.75	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0527	6.751	0.0221	6.263	0.6161	0.2389	14	0.79	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0609	7.180	0.7000	6.263	0.6161	0.2389	14	1.49	High	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0494	23.82	0.0660	6.263	0.6161	0.2389	14	28.50	High	0
321.33	Acid Soluble Zn, ICP, 2017.02 (7%)	0515	7.415	2.100	6.263	0.6161	0.2389	14	1.87	High	1
321.99	Acid Soluble Zn, Other (7%)	0508	3.965	0.0500	6.447	0.6641	0.1897	15	-3.74	Low	0
321.99	Acid Soluble Zn, Other (7%)	0307	5.510	0.6200	6.447	0.6641	0.1897	15	-1.41	Low	0
321.99	Acid Soluble Zn, Other (7%)	0558	5.671	0.0055	6.447	0.6641	0.1897	15	-1.17	Low	0
321.99	Acid Soluble Zn, Other (7%)	0405	5.980	0.7200	6.447	0.6641	0.1897	15	-0.70	OK	0
321.99	Acid Soluble Zn, Other (7%)	0605	6.095	0.0100	6.447	0.6641	0.1897	15	-0.53	OK	0
321.99	Acid Soluble Zn, Other (7%)	0587	6.435	0.0700	6.447	0.6641	0.1897	15	-0.02	OK	0
321.99	Acid Soluble Zn, Other (7%)	0042	6.480	0.2400	6.447	0.6641	0.1897	15	0.05	OK	0
321.99	Acid Soluble Zn, Other (7%)	0389	6.490	0.1000	6.447	0.6641	0.1897	15	0.06	OK	0
321.99	Acid Soluble Zn, Other (7%)	0027	6.555	0.1500	6.447	0.6641	0.1897	15	0.16	OK	0
321.99	Acid Soluble Zn, Other (7%)	0619	6.800	0.0000	6.447	0.6641	0.1897	15	0.53	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
321.99	Acid Soluble Zn, Other (7%)	0572	6.874	0.4400	6.447	0.6641	0.1897	15	0.64	OK	0
321.99	Acid Soluble Zn, Other (7%)	0559	7.070	0.0200	6.447	0.6641	0.1897	15	0.94	OK	0
321.99	Acid Soluble Zn, Other (7%)	0600	7.085	0.0700	6.447	0.6641	0.1897	15	0.96	OK	0
321.99	Acid Soluble Zn, Other (7%)	0562	7.100	0.0400	6.447	0.6641	0.1897	15	0.98	High	0
321.99	Acid Soluble Zn, Other (7%)	0515	7.114	0.1200	6.447	0.6641	0.1897	15	1.00	High	0
325.00	Water Soluble Zn, AA (%)	0536	4.945	0.0100				2			0
325.00	Water Soluble Zn, AA (%)	0518	6.760	0.0800				2			0
325.30	Water Soluble Zn, ICP (%)	0619	5.815	0.0100				1			0
325.99	Water Soluble Zn, Other (%)	0619	5.815	0.0100				2			0
325.99	Water Soluble Zn, Other (%)	0584	6.880	0.0400				2			0

Interpreting Z Scores and Flags:

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

Notes:

Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. IA Status describes where your result is relative to the Assigned Value ± IA. Red indicates Higher or Lower and Green indicates within the IA range about the Robust mean. Method 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.