

MAGRUDER - Fertilizer Check Sample No. - 200504 Grade 29-3-5 Turf Bilder

- Pass 1 Results for 79 Labs - - Pass 2 Results for 79 Labs -

Method	AOAC Ref.	Method Code	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups
Ammoniacal Nitrogen, MgO Distillation .	920.03	001.10	5	7.13	0.32	0.05	5	7.13	0.32	0.05
Ammoniacal Nitrogen, Other .....		001.99	7	6.96	0.23	0.05	7	6.96	0.23	0.05
Method Group 001.XX PCT			13	7.10	0.35	0.06	13	7.10	0.35	0.06
Water Insoluble Nitrogen, Meth I .....	945.01	003.10	3	0.99	0.76	0.12	3	0.99	0.76	0.12
Water Insoluble Nitrogen, Other .....		003.99	1	0.72	0.04	0.05	1	0.72	0.04	0.05
Method Group 003.XX PCT			4	0.92	0.65	0.10	4	0.92	0.65	0.10
Nitrogen From Urea, Other .....		005.99	4	13.89	2.83	0.12	4	13.89	2.83	0.12
Ammon & Nitrate N, Devarda .....	892.01	009.10	4	11.99	7.59	0.61	3	7.90	0.26	0.12
Total Nitrogen, Modified Comprehensive	978.02	010.11	5	28.74	0.33	0.20	4	28.72	0.29	0.04
Total Nitrogen, Salicylic .....	955.04D	010.12	3	28.81	0.15	0.08	3	28.81	0.15	0.08
Total Nitrogen, Combustion .....		010.60	52	29.36	0.32	0.13	49	29.38	0.31	0.11
Total Nitrogen, Other .....		010.99	5	29.35	0.64	0.36	5	29.35	0.64	0.36
Method Group 010.XX PCT			65	29.29	0.40	0.15	59	29.29	0.37	0.10
Total Phosphate, Grav Quimociac .....	962.02	020.10	5	3.07	0.14	0.07	5	3.07	0.14	0.07
Total Phosphate, Spectrometric .....	958.01	020.20	21	3.05	0.16	0.06	19	3.03	0.15	0.04
Total Phosphate, Automated .....	978.01	020.40	7	3.02	0.13	0.06	6	3.02	0.13	0.03
Total Phosphate, ICP .....		020.50	7	2.97	0.12	0.06	6	2.99	0.11	0.03
Method Group 020.XX PCT			40	3.03	0.15	0.06	35	3.03	0.14	0.03
Insoluble Phosphate, Grav Quimociac ...	963.03C	030.10	1	0.00	0.00	0.00	1	0.00	0.00	0.00
Insoluble Phosphate, Automated .....	978.01	030.40	1	0.02	0.01	0.01	1	0.02	0.01	0.01
Insoluble Phosphate, ICP .....		030.50	1	0.02	0.01	0.01	1	0.02	0.01	0.01
Insoluble Phosphate, Other .....		030.99	1	0.03	0.00	0.00	1	0.03	0.00	0.00
Method Group 030.XX PCT			4	0.01	0.01	0.01	4	0.01	0.01	0.01
InDir Available Phosphate, Grav Quim ..	960.02	040.10	1	3.05	0.00	0.00	1	3.05	0.00	0.00
InDir Available Phosphate, Spectrometri	960.02	040.20	2	3.03	0.10	0.02	2	3.03	0.10	0.02
InDir Available Phosphate, Automated ..	960.02	040.40	2	3.02	0.04	0.02	2	3.02	0.04	0.02
InDir Available Phosphate, ICP .....		040.50	1	2.97	0.03	0.04	1	2.97	0.03	0.04
Method Group 040.XX PCT			6	3.02	0.06	0.02	6	3.02	0.06	0.02
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	15	3.00	0.07	0.02	14	3.00	0.07	0.02
Dir Available Phosphate, Spectrometric	960.03D	041.20	2	2.79	0.10	0.00	2	2.79	0.10	0.00
Dir Available Phosphate, Automated ....	978.01	041.40	5	2.99	0.11	0.07	5	2.99	0.11	0.07
Dir Available Phosphate, ICP .....		041.50	8	2.92	0.12	0.09	8	2.92	0.12	0.09
Dir Available Phosphate, EDTA Extract .	993.01	041.60	10	3.00	0.06	0.06	9	2.99	0.04	0.04
Method Group 041.XX PCT			42	2.97	0.11	0.05	39	2.97	0.11	0.04
Water Soluble Phosphate, Spectrometric	970.01	048.20	4	2.23	0.16	0.06	4	2.23	0.16	0.06
Soluble Potash, STPB Oxalate .....	958.02	050.00	17	4.19	0.22	0.06	17	4.19	0.22	0.06
Soluble Potash, STPB Citrate .....	969.04	050.10	1	3.61	0.00	0.00	1	3.61	0.00	0.00
Soluble Potash, AA (Oxalate) .....		050.30	9	4.14	0.12	0.05	9	4.14	0.12	0.05
Soluble Potash, AA (Citrate) .....		050.31	1	3.52	0.09	0.13	1	3.52	0.09	0.13

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Method	AOAC Ref.	Method Code	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups
Soluble Potash, ICP (Oxalate) .....		050.50	6	4.11	0.28	0.05	6	4.11	0.28	0.05
Soluble Potash, ICP (Citrate) .....		050.51	9	4.24	0.11	0.09	8	4.24	0.10	0.06
Soluble Potash, Flame (Oxalate) .....	983.02(a)	050.60	8	4.39	0.27	0.11	7	4.35	0.25	0.06
Soluble Potash, Flame (Citrate) .....	983.02(b)	050.61	8	4.16	0.24	0.09	7	4.20	0.21	0.06
Soluble Potash, Other .....		050.99	15	4.13	0.34	0.06	15	4.13	0.34	0.06
Method Group 050.XX PCT			76	4.17	0.29	0.07	72	4.16	0.28	0.06
Free Water, Vacuum Oven .....	965.08B	060.00	7	0.84	0.15	0.09	7	0.84	0.15	0.09
Acid Soluble Calcium, ICP .....		101.30	10	0.14	0.02	0.01	9	0.14	0.02	0.00
Acid Soluble Calcium, Other .....		101.99	1	0.13	0.00	0.00	1	0.13	0.00	0.00
Method Group 101.XX PCT			11	0.14	0.02	0.01	9	0.13	0.01	0.00
Acid Soluble Magnesium, ICP .....		121.30	12	0.14	0.04	0.01	11	0.13	0.03	0.00
Acid Soluble Magnesium, Other .....		121.99	1	0.11	0.00	0.00	1	0.11	0.00	0.00
Method Group 121.XX PCT			13	0.14	0.04	0.01	12	0.13	0.03	0.00
Sulfur, Gravimetric .....	980.02a	144.01	13	9.43	0.12	0.05	13	9.43	0.12	0.05
Sulfur, Gravimetric .....	980.02b	144.02	1	9.60	0.05	0.07	1	9.60	0.05	0.07
Sulfur, Spectrometric .....		144.70	1	9.45	0.01	0.01	1	9.45	0.01	0.01
Sulfur, Other .....		144.99	17	9.31	0.19	0.08	16	9.32	0.18	0.06
Method Group 144.XX PCT			32	9.37	0.17	0.07	31	9.38	0.16	0.05
Arsenic, Atomic Absorption .....		151.00	2	1.19	0.02	0.02	2	1.19	0.02	0.02
Arsenic, ICP .....		151.30	7	1.26	0.64	0.68	6	1.27	0.50	0.42
Arsenic, Other .....		151.99	1	1.45	0.35	0.50	1	1.45	0.35	0.50
Method Group 151.XX PPM			10	1.27	0.54	0.53	9	1.27	0.42	0.34
Acid Soluble Boron, Other .....		165.99	5	0.004	0.005	0.001	4	0.002	0.001	0.000
Cadmium, Atomic Absorption .....		181.00	4	0.52	0.43	0.05	3	0.30	0.07	0.00
Cadmium, ICP .....		181.30	10	0.74	0.50	0.25	9	0.69	0.44	0.13
Cadmium, Other .....		181.99	1	0.35	0.07	0.10	1	0.35	0.07	0.10
Method Group 181.XX PPM			15	0.66	0.47	0.19	14	0.62	0.43	0.11
Water Soluble Chlorine, Titrimetric ...	928.02	190.00	1	0.12	0.03	0.04	1	0.12	0.03	0.04
Chromium, Atomic Absorption .....		191.00	1	0.39	0.04	0.06	1	0.39	0.04	0.06
Chromium, ICP .....		191.30	13	8.58	3.57	0.68	12	8.24	3.41	0.27
Chromium, Other .....		191.99	1	8.95	0.21	0.30	1	8.95	0.21	0.30
Method Group 191.XX PPM			15	8.06	3.91	0.61	13	7.47	3.78	0.12
Acid Soluble Cobalt, ICP .....	965.11	202.30	13	7.61	1.21	0.45	13	7.61	1.21	0.45
Acid Soluble Cobalt, Other .....		202.99	1	7.30	0.14	0.20	1	7.30	0.14	0.20
Method Group 202.XX PPM			14	7.59	1.16	0.43	14	7.59	1.16	0.43
Acid Soluble Copper, Atomic Absorption	975.01	221.00	5	0.0021	0.0002	0.0001	5	0.0021	0.0002	0.0001
Acid Soluble Copper, ICP .....		221.30	16	0.0021	0.0005	0.0003	14	0.0021	0.0004	0.0002
Acid Soluble Copper, Other .....		221.99	1	0.0021	0.0001	0.0001	1	0.0021	0.0001	0.0001
Method Group 221.XX PCT			22	0.0021	0.0004	0.0002	20	0.0021	0.0004	0.0001

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Method	AOAC Ref.	Method Code	No. of Labs	Grand Avg.	Std. Dev.	Average Range of Dups	No. of Labs	Grand Avg.	Std. Dev.	Average Range of Dups
Acid Soluble Iron, Atomic Absorption ..	980.01	241.00	14	1.02	0.09	0.03	14	1.02	0.09	0.03
Acid Soluble Iron, ICP .....		241.30	26	1.10	0.07	0.02	26	1.10	0.07	0.02
Acid Soluble Iron, Other .....		241.99	5	1.03	0.12	0.03	4	1.08	0.05	0.01
Method Group 241.XX PCT			46	1.07	0.10	0.02	44	1.08	0.09	0.02
Lead, Atomic Absorption .....		251.00	2	1.40	0.29	0.38	2	1.40	0.29	0.38
Lead, ICP .....		251.30	7	3.07	0.76	0.15	7	3.07	0.76	0.15
Lead, Other .....		251.99	1	2.55	0.35	0.50	1	2.55	0.35	0.50
Method Group 251.XX PPM			10	2.68	0.94	0.23	10	2.68	0.94	0.23
Acid Soluble Manganese, AA .....	972.02a	261.00	13	0.524	0.027	0.015	13	0.524	0.027	0.015
Acid Soluble Manganese, AA .....	972.02b	261.11	3	0.533	0.026	0.012	3	0.533	0.026	0.012
Acid Soluble Manganese, ICP .....	972.02a	261.30	20	0.554	0.043	0.012	19	0.553	0.044	0.010
Acid Soluble Manganese, ICP .....	972.02b	261.31	5	0.561	0.029	0.002	4	0.572	0.019	0.000
Acid Soluble Manganese, Spectrometric .	940.02	261.50	1	0.485	0.007	0.010	1	0.485	0.007	0.010
Acid Soluble Manganese, Other .....		261.99	3	0.534	0.011	0.009	3	0.534	0.011	0.009
Method Group 261.XX PCT			45	0.542	0.038	0.011	43	0.542	0.038	0.010
Water Soluble Manganese, Atomic Abs ...	972.03	271.00	1	0.173	0.010	0.014	1	0.173	0.010	0.014
Water Soluble Manganese, Other .....		271.99	1	0.216	0.000	0.000	1	0.216	0.000	0.000
Method Group 271.XX PCT			2	0.194	0.026	0.007	2	0.194	0.026	0.007
Mercury, Other .....		281.99	1	0.09	0.02	0.03	1	0.09	0.02	0.03
Molybdenum, ICP .....		289.30	7	0.74	0.37	0.11	7	0.74	0.37	0.11
Molybdenum, Other .....		289.99	2	0.71	0.80	0.10	2	0.71	0.80	0.10
Method Group 289.XX PPM			10	0.87	0.63	0.18	9	0.73	0.47	0.11
Nickel, ICP .....		291.30	7	6.81	0.55	0.43	7	6.81	0.55	0.43
Nickel, Other .....		291.99	2	6.91	0.40	0.28	2	6.91	0.40	0.28
Method Group 291.XX PPM			9	6.83	0.51	0.39	9	6.83	0.51	0.39
Selenium, Atomic Absorption .....		301.00	1	0.08	0.04	0.05	1	0.08	0.04	0.05
Selenium, ICP .....		301.30	1	1.19	0.58	0.82	1	1.19	0.58	0.82
Selenium, Other .....		301.99	1	0.10	0.00	0.00	1	0.10	0.00	0.00
Method Group 301.XX PPM			3	0.46	0.63	0.29	3	0.46	0.63	0.29
Sodium, Flame Photometric .....	974.01	311.30	1	0.04	0.00	0.00	1	0.04	0.00	0.00
Sodium, Other .....		311.99	7	0.04	0.00	0.00	6	0.04	0.00	0.00
Method Group 311.XX PCT			8	0.04	0.00	0.00	7	0.04	0.00	0.00
Acid Soluble Zinc, Atomic Absorption ..	975.02	321.00	5	0.010	0.001	0.001	5	0.010	0.001	0.001
Acid Soluble Zinc, Zincon Ion Exchange	973.01	321.20	1	0.010	0.000	0.001	1	0.010	0.000	0.001
Acid Soluble Zinc, ICP .....		321.30	18	0.010	0.001	0.001	17	0.010	0.001	0.001
Acid Soluble Zinc, Other .....		321.99	1	0.009	0.001	0.001	1	0.009	0.001	0.001
Method Group 321.XX PCT			25	0.010	0.001	0.001	24	0.010	0.001	0.001

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.10 PCT Ammoniacal Nitrogen <u>MgO Distillation</u>			Meth: 003.10 PCT Water Insoluble Nitr <u>Meth I</u>			Meth: 010.11 PCT Total Nitrogen <u>Modified Comprehensi</u>			Meth: 010.60 PCT Total Nitrogen <u>Combustion</u>			Meth: 010.99 PCT Total Nitrogen <u>Other</u>		
415	7.64	1.61	397	1.96 X	1.29	029	28.84 R	1.51	037	29.43	.20	354	30.10	1.34
090	7.19	.22	Avg	0.99		090	29.06	1.20	247	29.39	.18	420	29.87	.92
Avg	7.13		029	0.52	-.63	415	28.88	.56	049	29.42	.14	Avg	29.35	
029	7.06	-.25	023	0.50	-.66	Avg	28.72		043	29.39	.13	376	29.25	-.17
309	7.05	-.30	Meth: 003.99 PCT Water Insoluble Nitr <u>Other</u>			309	28.55	-.60	296	29.42	.11	397	28.91	-.69
324	6.72	-1.30	027	0.72	.71	322	28.37	-1.18	406	29.39	.07	300	28.62	-1.17
Meth: 001.99 PCT Ammoniacal Nitrogen <u>Other</u>			Meth: 003.XX PCT Water Insoluble Nitr <u>Other</u>			Meth: 010.12 PCT Total Nitrogen <u>Salicylic</u>			025 29.38 -.03			Meth: 010.XX PCT Total Nitrogen <u>Other</u>		
193	7.90 s	4.17	397	1.96 X	1.60	254	28.99	1.35	096	29.37	-.05	114	30.71 s	3.87
234	7.24	1.24	Avg	0.92		Avg	28.81		024	29.36	-.12	351	30.23	2.57
096	7.18	.96	027	0.72	-.32	185	28.74	-.45	028	29.34	-.17	354	30.10 R	2.47
397	7.05	.43	029	0.52	-.63	211	28.71	-.68	040	29.29	-.30	420	29.87 R	1.75
394	6.97	.07	023	0.50	-.65	Meth: 010.60 PCT Total Nitrogen <u>Combustion</u>			023	29.31	-.33	426	29.92	1.73
Avg	6.96		Meth: 005.99 PCT Nitrogen From Urea <u>Other</u>			114	30.71 s	4.34	232	29.28	-.34	034	29.90	1.69
420	6.88	-.39	027	17.98	1.45	351	30.23	2.78	009	29.28	-.37	095	29.91	1.69
409	6.89	-.39	029	14.31	.15	426	29.92	1.77	393	29.25	-.44	425	29.84	1.51
027	6.54	-1.88	Avg	13.89		034	29.90	1.72	177	29.25	-.46	057	29.82	1.50
Meth: 001.XX PCT Ammoniacal Nitrogen <u>Other</u>			394	12.25	-.58	057	29.82	1.50	136	29.28	-.49	035	29.78	1.36
193	7.90	2.28	234	11.00	-1.02	425	29.84	1.50	162	29.24	-.54	422	29.76	1.30
415	7.64	1.53	Meth: 009.10 PCT Ammon & Nitrate N <u>Devarda</u>			035	29.78	1.33	394	29.20	-.62	233	29.69	1.10
234	7.24	.41	309	24.25 R	62.62	073	29.20	-.64	007	29.20	-.62	390	29.63	.98
090	7.19	.28	258	8.15	1.04	131	29.10	-.93	073	29.20	-.64	377	29.57	.81
096	7.18	.23	392	7.95	.27	231	29.10	-.95	106	29.49	.71	106	29.49	.71
Avg	7.10		Avg	7.90		360	29.26 R	-1.06	055	29.48	.62	055	29.48	.62
029	7.06	-.14	200	7.60	-1.16	325	29.04	-1.12	389	29.50	.58	389	29.50	.58
397	7.05	-.18	Meth: 009.10 PCT Ammon & Nitrate N <u>Devarda</u>			029	29.04	-1.19	330	29.46	.48	330	29.46	.48
309	7.05	-.20	309	24.25 R	62.62	422	29.76	1.24	234	29.45	.43	234	29.45	.43
394	6.97	-.38	258	8.15	1.04	233	29.69	1.01	142	29.43	.41	142	29.43	.41
409	6.89	-.62	392	7.95	.27	390	29.63	.89	037	29.43	.40	037	29.43	.40
420	6.88	-.62	Avg	7.90		377	29.57	.68	049	29.42	.37	049	29.42	.37
324	6.72	-1.07	200	7.60	-1.16	106	29.49	.63	296	29.42	.35	296	29.42	.35
027	6.54	-1.59	Meth: 009.10 PCT Ammon & Nitrate N <u>Devarda</u>			055	29.48	.51	247	29.39	.31	247	29.39	.31
			309	24.25 R	62.62	389	29.50	.38	043	29.39	.30	043	29.39	.30
			Avg	7.90		330	29.46	.28	324	29.36	.30	324	29.36	.30
			200	7.60	-1.16	234	29.45	.20	406	29.39	.29	406	29.39	.29
			Meth: 009.10 PCT Ammon & Nitrate N <u>Devarda</u>			142	29.43	.20	025	29.38	.24	025	29.38	.24

\* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 010.XX PCT			Meth: 010.XX PCT			Meth: 020.20 PCT			Meth: 020.XX PCT			Meth: 030.10 PCT		
<u>Total Nitrogen</u>			<u>Total Nitrogen</u>			<u>Total Phosphate</u>			<u>Total Phosphate</u>			<u>Insoluble Phosphate</u>		
096	29.37	.23	322	28.37	-2.48	<u>Spectrometric</u>			422	3.20	1.22	<u>Grav Quimociac</u>		
024	29.36	.22	368	28.00 s	-3.63	262	2.70 X	-2.22	257	3.16 R	1.20	090	0.00	.00
023	29.31	.20	Meth: 020.10 PCT			369	2.81 s	-2.35	234	3.19	1.19	Meth: 030.40 PCT		
028	29.34	.17	<u>Total Phosphate</u>			Meth: 020.40 PCT			142	3.16	.94	<u>Insoluble Phosphate</u>		
040	29.29	.01	<u>Grav Quimociac</u>			<u>Total Phosphate</u>			409	3.04 R	.80	<u>Automated</u>		
Avg	29.29		095	3.31	1.68	<u>Automated</u>			406	3.12	.68	096	0.02	.71
232	29.28	-.03	Avg	3.07		394	4.29 s	9.59	392	3.11	.62	Meth: 030.50 PCT		
393	29.25	-.11	090	3.05	-.11	193	3.22	1.60	231	3.11	.57	<u>Insoluble Phosphate</u>		
177	29.25	-.13	157	3.01	-.44	409	3.04 R	.85	258	3.09	.48	<u>ICP</u>		
009	29.28	-.14	114	3.01	-.45	096	3.07	.41	096	3.07	.32	409	0.02	.71
376	29.25	-.17	300	2.95	-1.12	247	3.03	.13	418	3.03 X	.29	Meth: 030.99 PCT		
394	29.20	-.25	Meth: 020.20 PCT			320	3.03	.10	363	3.06	.25	<u>Insoluble Phosphate</u>		
007	29.20	-.26	<u>Total Phosphate</u>			Avg	3.02		090	3.05	.17	<u>Other</u>		
162	29.24	-.27	<u>Spectrometric</u>			024	2.95	-.54	320	3.03	.02	423	0.03	.71
136	29.28	-.29	042	3.55 s	4.00	035	2.81	-1.56	Avg	3.03		Meth: 030.XX PCT		
073	29.20	-.30	425	3.34 R	2.27	Meth: 020.50 PCT			177	3.02	-.09	<u>Insoluble Phosphate</u>		
131	29.10	-.50	362	3.27	1.61	<u>Total Phosphate</u>			247	3.03	-.11	<u>Other</u>		
231	29.10	-.53	309	3.20	1.16	<u>ICP</u>			232	3.01	-.14	Meth: 030.99 PCT		
090	29.06	-.62	257	3.16 R	1.11	422	3.20	1.87	423	3.00	-.25	<u>Insoluble Phosphate</u>		
325	29.04	-.67	234	3.19	1.10	423	3.00	.21	114	3.01	-.25	423	0.03	1.17
423	29.02	-.73	142	3.16	.87	330	2.99	.09	157	3.01	-.27	409	0.02	.46
029	29.04	-.74	406	3.12	.62	Avg	2.99		200	2.99	-.27	096	0.02	.46
360	29.26 R	-.82	392	3.11	.57	389	2.96	-.27	376	2.99	-.28	Avg	0.01	
157	28.98	-.83	231	3.11	.53	426	2.94	-.47	330	2.99	-.28	090	0.00	-1.30
254	28.99	-.87	258	3.09	.44	307	2.85	-1.29	390	3.00	-.46	Meth: 040.10 PCT		
042	28.95	-.92	418	3.03 X	.27	368	2.87 R	-1.65	389	2.96	-.49	<u>InDir Available Phos</u>		
369	28.97	-.92	363	3.06	.22	Meth: 020.XX PCT			024	2.95	-.60	<u>Grav Quim</u>		
027	28.93	-1.00	Avg	3.03		<u>Total Phosphate</u>			426	2.94	-.65	Meth: 040.20 PCT		
397	28.91	-1.02	177	3.02	-.09	394	4.29 s	9.12	397	2.90	-.90	<u>InDir Available Phos</u>		
041	29.05 R	-1.03	232	3.01	-.14	042	3.55 s	4.28	300	2.95 R	-.97	<u>Grav Quim</u>		
415	28.88	-1.11	200	2.99	-.26	425	3.34 R	2.44	324	2.87	-1.28	090 3.05 .00		
307	28.82	-1.37	376	2.99	-.27	095	3.31	2.01	307	2.85	-1.31	Meth: 040.20 PCT		
185	28.74	-1.48	390	3.00	-.44	362	3.27	1.73	307	2.85	-1.31	<u>InDir Available Phos</u>		
211	28.71	-1.58	397	2.90	-.85	193	3.22	1.46	368	2.87 R	-1.53	<u>Spectrometri</u>		
029	28.84 R	-1.66	324	2.87	-1.20	309	3.20	1.25	035	2.81	-1.57	397 3.11 .86		
262	28.70 R	-1.79	420	2.74	-1.95	* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits			262	2.70 X	-2.37	Avg 3.03		
300	28.62	-1.85							369	2.81 s	-2.51	363 2.95 -.87		
309	28.55	-2.00												

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 040.40 PCT			Meth: 041.10 PCT			Meth: 041.60 PCT			Meth: 041.XX PCT			Meth: 050.00 PCT		
<u>InDir Available Phos</u>			<u>Dir Available Phosph</u>			<u>Dir Available Phosph</u>			<u>Dir Available Phosph</u>			<u>Soluble Potash</u>		
<u>Automated</u>			<u>Grav Quimociac</u>			<u>EDTA Extract</u>			106 2.99 .27			<u>STPB Oxalate</u>		
096	3.06	.90	260	2.87	-1.95	034	3.26 s	6.50	043	2.99	.27	095	4.48	1.30
Avg	3.02					037	3.10 R	3.56	055	3.00	.27	257	4.40	1.00
394	2.99	-.83	Meth: 041.20 PCT			057	3.04	1.22	325	2.99	.19	090	4.38	.92
Meth: 040.50 PCT			<u>Dir Available Phosph</u>			377	3.02	.85	029	2.99	.17	009	4.36	.76
<u>InDir Available Phos</u>			<u>Spectrometric</u>			296	3.01	.36	131	2.98	.15	055	4.34	.67
<u>ICP</u>			055	3.33 S	5.15	073	3.01	.36	024	2.98	.08	114	4.20	.27
423	2.97	.71	415	2.88	.87	Avg	2.99		233	2.97	.03	Avg	4.19	
Meth: 040.XX PCT			Avg 2.79			024	2.98	-.26	Avg	2.97		029	4.18	-.08
<u>InDir Available Phos</u>			262 2.70 X -.87			106	2.99	-.62	041	2.97	-.02	211	4.18	-.08
397	3.11	1.52	Meth: 041.40 PCT			043	2.99	-.62	322	2.97	-.03	258	4.17	-.10
096	3.06	.61	<u>Dir Available Phosph</u>			351	2.93	-1.61	027	2.93	-.45	392	4.16	-.17
090	3.05	.48	<u>Automated</u>			095	2.98	-1.61	049	2.93	-.47	418	4.13 X	-.31
Avg	3.02		025	3.12	1.16	028	2.78 s	-5.24	351	2.93	-.47	296	4.07	-.54
394	2.99	-.57	409	3.03	1.00	Meth: 041.XX PCT			007	2.92	-.75	049	4.02	-.80
423	2.97	-.86	131	3.02	.35	<u>Dir Available Phosph</u>			415	2.88	-.87	397	3.86	-1.50
363	2.95	-1.23	Avg	2.99		055	3.33 s	3.35	260	2.87	-1.04	233	3.86	-1.52
Meth: 041.10 PCT			027	2.93	-.54	034	3.26	2.74	360	2.85	-1.21	231	3.87	-1.53
<u>Dir Available Phosph</u>			029	2.85	-1.31	254	3.16	1.78	029	2.85	-1.28	Meth: 050.10 PCT		
<u>Grav Quimociac</u>			393	2.52 s	-4.58	037	3.10 R	1.53	393	2.83 R	-1.83	<u>Soluble Potash</u>		
254	3.16	2.43	Meth: 041.50 PCT			025	3.12	1.36	028	2.78	-1.88	<u>STPB Citrate</u>		
185	3.06	1.00	<u>Dir Available Phosph</u>			409	3.03 R	1.12	354	2.74	-2.16	322 3.61 .71		
211	3.05	.81	<u>ICP</u>			185	3.06	.86	262	2.70 X	-2.58	Meth: 050.30 PCT		
009	3.03 R	.78	009	3.03	1.01	023	3.00 X	.74	393	2.52 s	-4.75	<u>Soluble Potash</u>		
136	3.02	.30	023	3.00 X	.94	211	3.05	.74	Meth: 048.20 PCT			<u>Soluble Potash</u>		
296	3.01	.16	043	2.99	.72	009	3.03	.67	<u>Water Soluble Phosph</u>			<u>AA (Oxalate)</u>		
055	3.00	.07	325	2.99	.60	057	3.04	.64	<u>Spectrometric</u>			262	4.63 s	4.06
Avg	3.00		007	2.92	.52	009	3.03	.62	096	2.43	1.25	073	4.27	1.07
029	2.99	-.08	Avg	2.92		095	2.98	.62	363	2.30	.45	369	4.23	.80
233	2.97	-.31	360	2.85	-.63	377	3.02	.49	Avg	2.23		136	4.21	.60
131	2.98	-.37	393	2.83	-1.34	131	3.02	.47	193	2.13	-.71	142	4.19	.43
041	2.97	-.37	354	2.74	-1.50	043	2.99	.42	420	2.05	-1.11	234	4.17	.35
322	2.97	-.39	Meth: 041.10 PCT			136	3.02	.41	Meth: 050.00 PCT			040	4.16	.30
040	2.98	-.60	<u>Dir Available Phosph</u>			040	2.98	.33	<u>Soluble Potash</u>			351	4.16	.19
049	2.93	-1.06	<u>Grav Quimociac</u>			296	3.01	.32	<u>STPB Oxalate</u>			Avg	4.14	
* X=Excluded from lab performance			254 3.16 2.43			073	3.01	.32	043	4.63	1.98	185	3.95	-1.58
			185 3.06 1.00			095	3.01	.32				095	3.91	-1.85
			211 3.05 .81			* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits								

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index		
Meth: 050.31 PCT			Meth: 050.60 PCT			Meth: 050.XX PCT			Meth: 050.XX PCT							
Soluble Potash			Soluble Potash			<u>Soluble Potash</u>			<u>Soluble Potash</u>			<u>Soluble Potash</u>				
<u>AA (Citrate)</u>			<u>Flame (Oxalate)</u>			390	5.23 s	4.61	177	4.22	.23	096	3.41	-2.71		
254	3.52	.71	042	4.24	-.46	300	4.79	2.29	260	4.22	.23	426	3.36	-2.87		
Meth: 050.50 PCT			200			3.91	-1.76	406	4.64 R	1.90	136	4.21	.20	Meth: 060.00 PCT		
Soluble Potash			Meth: 050.61 PCT			309			4.65	1.78	034	4.19	.18	Free Water		
<u>ICP (Oxalate)</u>			Soluble Potash			262			4.63 R	1.74	024	4.21	.17	<u>Vacuum Oven</u>		
307	4.39	1.04	043			4.63	1.70	043	4.63	1.70	142	4.19	.13	409	1.06	1.50
420	4.23	.44	037			4.59	1.59	037	4.59	1.59	234	4.17	.12	362	0.98	1.04
106	4.23	.44	041			4.54	1.37	041	4.54	1.37	040	4.16	.11	096	0.86	.56
324	4.23	.43	055			4.51	1.26	055	4.51	1.26	392	4.16	.07	320	0.87	.15
Avg	4.11		095			4.48	1.16	095	4.48	1.16	029	4.18	.06	Avg	0.84	
422	4.00	-.41	415			4.46	1.08	415	4.46	1.08	211	4.18	.06	363	0.76	-.68
354	3.57	-1.92	257			4.40	.92	257	4.40	.92	131	4.17	.06	193	0.74	-.74
Meth: 050.51 PCT			307			4.39	.87	307	4.39	.87	351	4.16	.05	007	0.65	-1.35
Soluble Potash			090			4.38	.85	090	4.38	.85	258	4.17	.04	Meth: 101.30 PCT		
<u>ICP (Citrate)</u>			009			4.39	.83	009	4.39	.83	360	4.16	.04	Acid Soluble Calcium		
023	4.27 R	1.60	025			4.02	-.88	025	4.02	-.88	Avg	4.16		<u>ICP</u>		
009	4.39	1.44	035			3.90	-1.43	035	3.90	-1.43	423	4.14	-.10	422	1.79 s	72.26
007	4.31	1.01	029			3.87 R	-1.75	029	3.87 R	-1.75	418	4.13 X	-.12	409	0.20	2.56
393	4.31	.66	Meth: 050.99 PCT			055			4.34	.66	376	4.12	-.15	320	0.16 R	.96
377	4.27	.27	Soluble Potash			007			4.31	.62	296	4.07	-.30	065	0.14	.28
Avg	4.24		Other			330			4.28	.54	368	4.07	-.33	Avg	0.14	
043	4.23	-.22	390			5.23 s	3.84	325	4.31	.54	027	4.03	-.46	307	0.14	-.03
389	4.23	-.29	300			4.79	1.97	393	4.31	.54	025	4.02	-.51	131	0.14	-.07
423	4.14	-.99	325			4.31	.53	232	4.29	.48	049	4.02	-.52	009	0.14	-.14
368	4.07	-1.67	330			4.28	.52	394	4.28	.44	422	4.00	-.60	232	0.13	-.41
096	3.41 s	-8.02	232			4.29	.49	057	4.28	.43	185	3.95	-.77	035	0.13	-.43
Meth: 050.60 PCT			394			4.28	.46	362	4.27	.43	095	3.91	-.89	102	0.13	-.44
Soluble Potash			362			4.27	.44	377	4.27	.39	200	3.91	-.91	423	0.12	-1.13
<u>Flame (Oxalate)</u>			131			4.23	.32	028	4.24	.30	035	3.90	-.94	Meth: 101.99 PCT		
406	4.64 R	1.44	260			4.22	.28	369	4.23	.29	397	3.86	-1.07	Acid Soluble Calcium		
309	4.65	1.20	177			4.22	.28	131	4.23	.28	233	3.86	-1.09	<u>Other</u>		
041	4.54	.76	360			4.16	.11	042	4.24	.28	231	3.87	-1.10	420		
055	4.51	.64	Avg			4.13		106	4.23	.27	029	3.87 R	-1.20	0.13		
415	4.46	.45	376			4.12	-.06	043	4.23	.27	425	3.81	-1.27	.71		
Avg	4.35		027			4.03	-.28	114	4.20	.26	322	3.61	-1.97			
* X=Excluded from lab performance			425			3.81	-.94	420	4.23	.26	354	3.57	-2.13			
			247			3.53	-1.78	389	4.23	.26	247	3.53	-2.29			
			426			3.36	-2.25	324	4.23	.25	254	3.52	-2.33			
			S/s=Screened Outlier											A=Analysis beyond 3-s limits		
			R=Duplicate Range too large													

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 101.XX PCT			Meth: 121.XX PCT			Meth: 144.02 PCT			Meth: 144.XX PCT			Meth: 151.00 PPM		
<u>Acid Soluble Calcium</u>			<u>Acid Soluble Magnesi</u>			<u>Sulfur</u>			<u>Sulfur</u>			<u>Arsenic</u>		
422	1.79 s	188.06	422	0.65 s	20.28	<u>Gravimetric</u>			354	9.67	1.76	<u>Atomic Absorption</u>		
409	0.20 A	7.55	409	0.23 R	3.74	029	9.60	.71	043	9.67	1.76	136	1.20	.50
320	0.16 R	3.34	330	0.21	3.14	Meth: 144.70 PCT			027	9.60	1.33	Avg	1.19	
065	0.14	1.39	423	0.13	.13	<u>Sulfur</u>			029	9.60	1.32	040	1.19	-1.12
307	0.14	.85	Avg	0.13		<u>Spectrometric</u>			102	9.54	.97	Meth: 151.30 PPM		
131	0.14	.77	102	0.13	-.04	200	10.10 S	92.63	324	9.51	.78	<u>Arsenic</u>		
009	0.14	.57	307	0.13	-.06	Avg	9.45		296	9.50	.78	<u>ICP</u>		
Avg	0.13		035	0.13	-.16	393	9.45	-.71	330	9.50	.72	037	4.85 s	9.17
232	0.13	-.16	131	0.13	-.21	Meth: 144.99 PCT			037	9.47	.64	247	4.00 S	5.51
035	0.13	-.19	065	0.13	-.22	<u>Sulfur</u>			095	9.48	.61	102	1.63	.74
102	0.13	-.21	232	0.12	-.29	<u>Other</u>			157	9.46	.53	106	1.50	.62
420	0.13	-.88	009	0.12	-.46	354	9.67	1.92	177	9.42	.50	376	1.55	.58
423	0.12	-2.01	320	0.12	-.50	027	9.60	1.53	262	9.45 X	.40	Avg	1.27	
Meth: 121.30 PCT			096	0.12	-.64	330	9.50	.98	393	9.45	.39	096	1.25	-.11
<u>Acid Soluble Magnesi</u>			420	0.11	-.76	037	9.47	.87	233	9.42	.22	043	0.76	-1.04
<u>ICP</u>			Meth: 144.01 PCT			177	9.42	.67	Avg	9.38		368	0.90	-1.77
422	0.65 s	19.87	<u>Sulfur</u>			028	9.38	.32	028	9.38	-.06	065	1.26 R	-2.26
409	0.23 R	3.61	<u>Gravimetric</u>			029	9.36	-.22	029	9.36	-.22	Meth: 151.99 PPM		
330	0.21	3.01	193	18.51 s	78.57	397	9.36	-.23	397	9.36	-.23	<u>Arsenic</u>		
423	0.13	.08	043	9.67	2.04	131	9.34	.11	131	9.34	-.26	<u>Other</u>		
Avg	0.13		102	9.54	.94	Avg	9.32		389	9.35	-.36	409		
102	0.13	-.11	296	9.50	.69	394	9.27	-.26	040	9.36	-.37	1.45		
307	0.13	-.12	324	9.51	.66	422	9.29	-.27	055	9.31	-.48	.71		
035	0.13	-.22	095	9.48	.43	376	9.25	-.48	422	9.29	-.61	Meth: 151.XX PPM		
131	0.13	-.27	157	9.46	.41	368	9.20	-.71	394	9.27	-.65	<u>Arsenic</u>		
065	0.13	-.27	262	9.45 X	.16	009	9.17	-.91	376	9.25	-.86	037		
232	0.12	-.35	Avg	9.43		035	9.13	-1.07	106	9.24	-.96	4.85 s		
009	0.12	-.52	233	9.42	-.14	368	9.20	-1.14	368	9.20	-1.14	10.97		
320	0.12	-.56	397	9.36	-.69	009	9.17	-1.35	009	9.17	-1.35	247		
096	0.12	-.69	029	9.36	-.72	035	9.13	-1.55	035	9.13	-1.55	4.00 s		
Meth: 121.99 PCT			040	9.36	-.83	360	9.08 R	-1.73	009	9.17	-1.35	.88		
<u>Acid Soluble Magnesi</u>			055	9.31	-1.12	023	8.74 S	-3.28	035	9.13	-1.55	.74		
<u>Other</u>			106	9.24	-1.79	423	8.41 s	-5.01	351	9.08	-1.85	.73		
420	0.11	.71	Meth: 144.XX PCT			<u>Sulfur</u>			096	9.04	-2.08	.69		
						193	18.51 s	55.69	360	9.08 R	-2.21	Avg		
						200	10.10 s	4.38	023	8.74 s	-3.98	1.27		
									423	8.41 s	-5.90	-.13		
												136		
												1.20		
												-.17		
												040		
												1.19		
												-.21		
												043		
												0.76		
												-1.26		
												368		
												0.90		
												-2.12		



Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	
Meth: 151.XX PPM			Meth: 181.99 PPM			Meth: 191.30 PPM			Meth: 202.00 PPM			Meth: 202.XX PPM			
<u>Arsenic</u>			Cadmium			Chromium			Acid Soluble Cobalt			<u>Acid Soluble Cobalt</u>			
065	1.26 R	-2.70	<u>Other</u>			<u>ICP</u>			<u>AA</u>			409	7.30	-.26	
			409	0.35	.71	009	11.05	.88	262	0.05 S	.00	320	7.50	-.44	
Meth: 165.99 PCT			Meth: 181.XX PPM			096 11.00 .81			Meth: 202.30 PPM			232 6.70 -.78			
Acid Soluble Boron			Cadmium			102 9.99 .52			Acid Soluble Cobalt			233 6.32 -1.17			
<u>Other</u>			<u>ICP</u>			324 9.95 .50			<u>ICP</u>			368 5.02 -2.22			
409	6.550 s	8640.82	065	3.04 s	5.73	232	9.30	.31	096	10.00	1.98	262	0.05 s	-6.48	
307	0.013 R	14.36	324	1.55	2.20	037	9.20	.28	037	8.77	.98	Meth: 221.00 PCT			
422	0.003	1.33	368	1.26 R	2.12	376	8.90	.20	009	8.20	.52	Acid Soluble Copper			
423	0.002	.10	193	1.20	1.39	233	8.47	.08	106	7.70	.50	<u>Atomic Absorption</u>			
Avg	0.002		035	1.05	1.10	Avg	8.24		040	8.10	.41	029	0.0032 s	5.58	
330	0.002	-.57	037	0.84	.55	247	6.85	-.41	065	7.93	.28	043	0.0024	1.59	
232	0.001	-1.17	376	0.80	.43	368	2.83	-1.59	102	7.69	.08	233	0.0022	.51	
Meth: 181.00 PPM			Avg	0.62		393	0.01	-2.41	Avg	7.61		Avg	0.0021		
Cadmium			247	0.60	-.04	Meth: 191.99 PPM			324	7.45	-.14	040	0.0020	-.42	
<u>Atomic Absorption</u>			232	0.48	-.34	Chromium			035	7.54	-.26	193	0.0020	-.70	
193	1.20 R	12.36	009	0.47	-.42	<u>Other</u>			320	7.50	-.42	028	0.0019	-1.02	
040	0.35	.68	409	0.35	-.64	409 8.95 .71			232	6.70	-.77	Meth: 221.30 PCT			
394	0.34	.61	040	0.35	-.64	Meth: 191.XX PPM			233	6.32	-1.14	Acid Soluble Copper			
Avg	0.30		394	0.34	-.65	Chromium			368	5.02	-2.16	<u>ICP</u>			
136	0.20	-1.29	106	0.40	-.69	065 12.64 R 1.55			Meth: 202.99 PPM			307	0.0041 s	4.89	
Meth: 181.30 PPM			136	0.20	-.98	035 11.30 1.01			Acid Soluble Cobalt			102	0.0030	1.98	
Cadmium			393	0.00	-1.45	009 11.05 R .99			<u>Other</u>			065	0.0026 R	1.62	
<u>ICP</u>			Meth: 190.00 PCT			096 11.00 .93			409 7.30 -.71			330	0.0025	1.17	
065	3.04 s	5.37	Water Soluble Chlori			102 9.99 .67			Meth: 202.XX PPM			057	0.0025	1.05	
324	1.55	1.96	<u>Titrimetric</u>			324 9.95 .65			<u>Acid Soluble Cobalt</u>			423	0.0023	.45	
368	1.26 R	1.93	422 0.12 .71			232 9.30 .48			096 10.00 2.07			324	0.0021	.21	
035	1.05	.91	Meth: 191.00 PPM			037 9.20 .46			037 8.77 1.03			096	0.0022	.18	
037	0.84	.37	Chromium			409 8.95 .39			009 8.20 .55			Avg	0.0021		
376	0.80	.26	<u>Atomic Absorption</u>			376 8.90 .38			106 7.70 .52			009	0.0021	-.08	
Avg	0.69		262 0.39 X -.71			233 8.47 .27			040 8.10 .44			035	0.0021	-.14	
247	0.60	-.20	Meth: 191.30 PPM			Avg 7.47			065 7.93 .30			232	0.0021	-.25	
232	0.48	-.48	Chromium			247 6.85 -.17			102 7.69 .10			106	0.0020	-.34	
009	0.47	-.54	<u>ICP</u>			368 2.83 -1.23			Avg 7.59			422	0.0019	-.41	
106	0.40	-.79	065 12.64 R 1.53			262 0.39 X -1.87			324 7.45 -.13			393	0.0019	-.65	
393	0.00	-1.56	035 11.30 .90	Meth: 191.00 PCT			393 0.01 -1.97			035 7.54 -.26			426	0.0018	-.73
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits			354 0.0015 R -1.77			

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 221.30 PCT			Meth: 241.00 PCT			Meth: 241.30 PCT			Meth: 241.XX PCT			Meth: 251.00 PPM		
Acid Soluble Copper			Acid Soluble Iron			Acid Soluble Iron			Acid Soluble Iron			Lead		
<u>ICP</u>			<u>Atomic Absorption</u>			<u>ICP</u>						<u>Atomic Absorption</u>		
368 0.0011 -2.35			193 1.16 1.54			096 1.07 -.39			422 1.13 .57			040 1.56 .68		
			351 1.13 1.23			027 1.06 -.45			351 1.13 .54			Avg 1.40		
Meth: 221.99 PCT			043 1.10 .91			393 1.05 -.65			409 1.12 .45			136 1.25 -1.02		
Acid Soluble Copper			095 1.10 .86			095 1.05 -.69			009 1.11 .37					
<u>Other</u>			037 1.08 .62			423 1.05 -.70			043 1.10 .24			Meth: 251.30 PPM		
409 0.0021 .71			055 1.07 .61			247 1.03 -1.03			095 1.10 .23			Lead		
			029 1.03 .12			300 1.02 -1.04			131 1.09 .18			<u>ICP</u>		
Meth: 221.XX PCT			Avg 1.02			368 1.00 -1.31			231 1.10 .17			035 4.88 s 3.40		
Acid Soluble Copper			296 1.01 -.20			426 0.98 -1.59			307 1.08 .05			368 4.37 1.70		
307 0.0041 s 5.67			397 0.99 -.31			232 0.97 -1.66			023 1.08 .04			065 3.44 .50		
029 0.0032 s 3.07			177 0.97 -.60						Avg 1.08			324 3.35 .42		
102 0.0030 2.30			040 0.97 -.65			Meth: 241.99 PCT			037 1.08 -.08			Avg 3.07		
065 0.0026 R 1.88			028 0.92 -1.20			Acid Soluble Iron			360 1.08 -.11			102 2.99 -.10		
330 0.0025 1.36			262 0.91 X -1.27			<u>Other</u>			096 1.07 -.16			247 2.80 -.38		
057 0.0025 1.22			233 0.86 -1.82			362 1.48 S 7.57			234 1.07 -.18			106 2.75 -.46		
043 0.0024 .87						394 1.17 1.59			027 1.06 -.19			043 1.79 -1.68		
423 0.0023 .53			Meth: 241.30 PCT			Avg 1.08			055 1.07 -.25					
233 0.0022 .28			Acid Soluble Iron			234 1.07 -.33			420 1.06 -.29			Meth: 251.99 PPM		
324 0.0021 .25			<u>ICP</u>			420 1.06 -.51			393 1.05 -.35			Lead		
096 0.0022 .22			057 1.34 s 3.20			065 1.04 -.78			423 1.05 -.40			<u>Other</u>		
Avg 0.0021			389 1.27 2.34			390 0.83 R -4.89			095 1.05 -.40			376 2.55 .71		
009 0.0021 -.09			102 1.25 2.08			393 0.53 S -10.47			065 1.04 -.44					
035 0.0021 -.16			106 1.20 1.39						029 1.03 -.60			Meth: 251.XX PPM		
409 0.0021 -.19			354 1.15 .79			Meth: 241.XX PCT			300 1.02 -.67			Lead		
040 0.0020 -.23			035 1.15 .74			Acid Soluble Iron			247 1.03 -.67			035 4.88 s 3.07		
232 0.0021 -.28			330 1.15 .67			362 1.48 s 4.42			296 1.01 -.82			368 4.37 1.80		
106 0.0020 -.38			320 1.14 .60			057 1.34 2.82			368 1.00 -.89			065 3.44 .81		
193 0.0020 -.38			324 1.14 .59			389 1.27 2.11			397 0.99 -.97			324 3.35 .73		
422 0.0019 -.47			422 1.13 .48			102 1.25 1.90			426 0.98 -1.13			102 2.99 .33		
028 0.0019 -.56			409 1.12 .34			106 1.20 1.33			232 0.97 -1.18			106 2.75 .18		
393 0.0019 -.74			009 1.11 .24			394 1.17 .94			177 0.97 -1.26			247 2.80 .16		
426 0.0018 -.84			Avg 1.10			193 1.16 .87			040 0.97 -1.27			Avg 2.68		
354 0.0015 R -2.04			231 1.10 -.07			354 1.15 .82			262 0.91 X -1.91			376 2.55 -.30		
368 0.0011 -2.72			131 1.09 -.12			035 1.15 .78			233 0.86 -2.48			043 1.79 -.96		
			023 1.08 -.18			330 1.15 .73			390 0.83 R -2.84			040 1.56 -1.21		
			307 1.08 -.19			320 1.14 .68			393 0.53 s -6.09			136 1.25 -1.55		
			360 1.08 -.27			324 1.14 .67								

\* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 261.00 PCT			Meth: 261.30 PCT			Meth: 261.XX PCT			Meth: 261.XX PCT			Meth: 289.30 PPM		
Acid Soluble Manganese			Acid Soluble Manganese			<u>Acid Soluble Manganese</u>			<u>Acid Soluble Manganese</u>			Molybdenum		
<u>AA</u>			<u>ICP</u>			102 0.642 2.63			233 0.510 -.84			<u>ICP</u>		
037	0.567	1.59				057	0.635	2.45	065	0.504	-.98	102	0.75	.39
392	0.555	1.15	131	0.541	-.29	106	0.600	1.53	426	0.504	-1.00	Avg	0.74	
351	0.549	.92	360	0.540	-.30	354	0.596	1.47	368	0.495	-1.23	324	0.60	-.39
397	0.542	.77	423	0.540	-.31	035	0.595	1.40	320	0.486	-1.47	106	0.45	-.81
257	0.525	.19	393	0.535	-.43	330	0.580 R	1.13	420	0.485	-1.49	065	0.13 X	-1.68
055	0.525	.19	232	0.515	-.88	307	0.581	1.06	028	0.483	-1.55	Meth: 289.99 PPM		
Avg	0.524		065	0.504	-1.11	422	0.577	.93	258	0.475	-1.79	Molybdenum		
177	0.522	-.14	426	0.504	-1.12	389	0.573	.81	393	0.170 s	-9.75	Other		
043	0.523	-.28	368	0.495	-1.33	324	0.570	.74	Meth: 271.00 PCT			409	1.40	.87
296	0.520	-.49	320	0.486	-1.53	027	0.569	.70	Water Soluble Mangan			Avg	0.71	
233	0.510	-.55	Meth: 261.31 PCT			037	0.567	.67	<u>Atomic Abs</u>			393	0.01	-.86
262	0.520 X	-.75	Acid Soluble Manganese			029	0.565	.61	029 0.173 -.71			Meth: 289.XX PPM		
028	0.483	-1.54	<u>ICP</u>			392	0.555	.37	Meth: 271.99 PCT			Molybdenum		
258	0.475	-1.89	106	0.600	1.46	009	0.555	.35	Water Soluble Mangan			368	2.14 R	3.13
Meth: 261.11 PCT			Avg	0.572		023	0.549	.33	Other			409	1.40	1.44
Acid Soluble Manganese			324	0.570	-.11	231	0.547	.26	027 0.216 .00			037	1.12	.83
<u>AA</u>			027	0.569	-.19	394	0.550	.22	Meth: 271.XX PCT			232	1.10	.78
029	0.565	1.24	394	0.550	-1.15	351	0.549	.19	Water Soluble Mangan			247	1.05	.68
Avg	0.533		095	0.515 R	-2.99	234	0.545	.16	027 0.216 .84			102	0.75	.31
040	0.520	-.64	Meth: 261.50 PCT			Avg	0.542		Avg 0.194			Avg	0.73	
095	0.515	-.74	Acid Soluble Manganese			360	0.540	-.04	029 0.173 -.89			324	0.60	-.29
Meth: 261.30 PCT			<u>Spectrometric</u>			423	0.540	-.06	Meth: 281.99 PPM			106	0.45	-.62
Acid Soluble Manganese			420	0.485	.71	131	0.541	-.11	Mercury			065	0.13 X	-1.30
<u>ICP</u>			Meth: 261.99 PCT			393	0.535	-.22	<u>Other</u>			393	0.01	-1.55
102	0.642	2.02	Acid Soluble Manganese			397	0.542	-.30	409 0.09 .71			Meth: 291.30 PPM		
057	0.635	1.87	<u>Other</u>			409	0.529	-.35	Meth: 289.30 PPM			Nickel		
354	0.596	1.03	234	0.545	1.15	390	0.528	-.43	Molybdenum			<u>ICP</u>		
035	0.595	.96	Avg	0.534		055	0.525	-.46	ICP			096	7.50	1.55
330	0.580 R	.76	409	0.529	-.48	257	0.525	-.46	368 2.14 s 3.96			065	6.95	.36
307	0.581	.67	390	0.528	-.97	177	0.522	-.52	037 1.12 1.03			106	7.00	.35
422	0.577	.55	393	0.170 S	-33.73	043	0.523	-.54	232 1.10 .97			102	6.85	.07
389	0.573	.45	Meth: 261.99 PCT			040	0.520	-.63	232 1.10 .97			Avg	6.81	
009	0.555	.06	Acid Soluble Manganese			296	0.520	-.67	247 1.05 .85			232	6.75	-.14
Avg	0.553		<u>Other</u>			095	0.515	-.71	Meth: 289.30 PPM			324	6.70	-.58
231	0.547	-.25	234	0.545	1.15	232	0.515	-.71	Molybdenum			Analysis beyond 3-s limits		
* X=Excluded from lab performance			Avg	0.534		095	0.515	-.72	ICP					
S/s=Screened Outlier			409	0.529	-.48	262	0.520 R	-.77	368 2.14 s 3.96					
R=Duplicate Range too large			390	0.528	-.97	Meth: 261.99 PCT			037 1.12 1.03					
A=Analysis beyond 3-s limits			393	0.170 S	-33.73	Acid Soluble Manganese			232 1.10 .97					
			<u>Other</u>			Other			247 1.05 .85					
			234	0.545	1.15	Other			Meth: 289.30 PPM					
			Avg	0.534		Other			Molybdenum					
			409	0.529	-.48	Other			ICP					
			390	0.528	-.97	Other			368 2.14 s 3.96					
			393	0.170 S	-33.73	Other			037 1.12 1.03					
			Meth: 261.99 PCT			Other			232 1.10 .97					
			Acid Soluble Manganese			Other			247 1.05 .85					
			<u>Other</u>			Other			Meth: 289.30 PPM					
			234	0.545	1.15	Other			Molybdenum					
			Avg	0.534		Other			ICP					
			409	0.529	-.48	Other			368 2.14 s 3.96					
			390	0.528	-.97	Other			037 1.12 1.03					
			393	0.170 S	-33.73	Other			232 1.10 .97					
			Meth: 261.99 PCT			Other			247 1.05 .85					
			Acid Soluble Manganese			Other			Meth: 289.30 PPM					
			<u>Other</u>			Other			Molybdenum					
			234	0.545	1.15	Other			ICP					
			Avg	0.534		Other			368 2.14 s 3.96					
			409	0.529	-.48	Other			037 1.12 1.03					
			390	0.528	-.97	Other			232 1.10 .97					
			393	0.170 S	-33.73	Other			247 1.05 .85					
			Meth: 261.99 PCT			Other			Meth: 289.30 PPM					
			Acid Soluble Manganese			Other			Molybdenum					
			<u>Other</u>			Other			ICP					
			234	0.545	1.15	Other			368 2.14 s 3.96					
			Avg	0.534		Other			037 1.12 1.03					
			409	0.529	-.48	Other			232 1.10 .97					
			390	0.528	-.97	Other			247 1.05 .85					
			393	0.170 S	-33.73	Other			Meth: 289.30 PPM					
			Meth: 261.99 PCT			Other			Molybdenum					
			Acid Soluble Manganese			Other			ICP					
			<u>Other</u>			Other			368 2.14 s 3.96					
			234	0.545	1.15	Other			037 1.12 1.03					
			Avg	0.534		Other			232 1.10 .97					
			409	0.529	-.48	Other			247 1.05 .85					
			390	0.528	-.97	Other			Meth: 289.30 PPM					
			393	0.170 S	-33.73	Other			Molybdenum					
			Meth: 261.99 PCT			Other			ICP					
			Acid Soluble Manganese			Other			368 2.14 s 3.96					
			<u>Other</u>			Other			037 1.12 1.03					
			234	0.545	1.15	Other			232 1.10 .97					
			Avg	0.534		Other			247 1.05 .85					
			409	0.529	-.48	Other			Meth: 289.30 PPM					
			390	0.528	-.97	Other			Molybdenum					
			393	0.170 S	-33.73	Other			ICP					
			Meth: 261.99 PCT			Other			368 2.14 s 3.96					
			Acid Soluble Manganese			Other			037 1.12 1.03					
			<u>Other</u>			Other			232 1.10 .97					
			234	0.545	1.15	Other			247 1.05 .85					
			Avg	0.534		Other			Meth: 289.30 PPM					
			409	0.529	-.48	Other			Molybdenum					
			390	0.528	-.97	Other			ICP					
			393	0.170 S	-33.73	Other			368 2.14 s 3.96					
			Meth: 261.99 PCT			Other			037 1.12 1.03					
			Acid Soluble Manganese			Other			232 1.10 .97					
			<u>Other</u>			Other			247 1.05 .85					
			234	0.545	1.15	Other			Meth: 289.30 PPM					
			Avg	0.534		Other			Molybdenum					
			409	0.529	-.48	Other			ICP					
			390	0.528	-.97	Other			368 2.14 s 3.96					
			393	0.170 S	-33.73	Other			037 1.12 1.03					
			Meth: 261.99 PCT			Other			232 1.10 .97					
			Acid Soluble Manganese			Other			247 1.05 .85					
			<u>Other</u>			Other			Meth: 289.30 PPM					
			234	0.545	1.15	Other			Molybdenum					
			Avg	0.534		Other			ICP					
			409	0.529	-.48	Other			368 2.14 s 3.96					
			390	0.528	-.97	Other			037 1.12 1.03					
			393	0.170 S	-33.73	Other			232 1.10 .97					
			Meth: 261.99 PCT			Other			247 1.05 .85					
			Acid Soluble Manganese			Other			Meth: 289.30 PPM					
			<u>Other</u>			Other			Molybdenum					
			234	0.545	1.15	Other			ICP					
			Avg	0.534		Other			368 2.14 s 3.96					
			409	0.529	-.48	Other			037 1.12 1.03					
			390	0.528	-.97	Other			232 1.10 .97					
			393	0.170 S	-33.73	Other			247 1.05 .85					
			Meth: 261.99 PCT			Other			Meth: 289.30 PPM					
			Acid Soluble Manganese			Other			Molybdenum					
			<u>Other</u>			Other			ICP					
			234	0.545	1.15	Other			368 2.14 s 3.96					

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 291.30 PPM			Meth: 301.99 PPM			Meth: 311.XX PCT			Meth: 321.30 PCT			Meth: 321.XX PCT		
<u>Nickel</u>			<u>Selenium</u>			<u>Sodium</u>			<u>Acid Soluble Zinc</u>			<u>Acid Soluble Zinc</u>		
<u>ICP</u>			<u>Other</u>			423	0.03	-1.11	<u>ICP</u>			233	0.009	-1.11
009	5.90	-1.87	368	0.10	.00	102	0.03	-1.40	422	0.009	-1.38	422	0.009	-1.34
247	1.80 s	-9.06	Meth: 301.XX PPM			Meth: 321.00 PCT			389	0.008	-1.74	389	0.008	-1.69
Meth: 291.99 PPM			<u>Selenium</u>			<u>Acid Soluble Zinc</u>			106	0.007 A	-3.02	106	0.007 R	-2.92
<u>Nickel</u>			065	1.19 X	1.34	<u>Atomic Absorption</u>			Meth: 321.99 PCT			<u>Acid Soluble Zinc</u>		
<u>Other</u>			Avg	0.46		029	0.012	1.49	<u>Other</u>			234		
035	7.23	.90	368	0.10	-.57	043	0.011	.61	234	4.300	S7585.49	Avg		
Avg	6.91		040	0.08	-.61	Avg	0.010		409	0.009		409		
409	6.60	-.83	Meth: 311.30 PCT			262	0.010 X	-.17	Meth: 321.XX PCT			<u>Acid Soluble Zinc</u>		
Meth: 291.XX PPM			<u>Sodium</u>			028	0.009	-.90	<u>Acid Soluble Zinc</u>			234		
<u>Nickel</u>			<u>Flame Photometric</u>			233	0.009	-1.04	<u>Acid Soluble Zinc</u>			037		
096	7.50	1.63	320	0.04	.71	Meth: 321.20 PCT			<u>Acid Soluble Zinc</u>			029		
035	7.23	.84	Meth: 311.99 PCT			<u>Acid Soluble Zinc</u>			<u>Acid Soluble Zinc</u>			065		
065	6.95	.35	<u>Sodium</u>			<u>Zincon Ion Exchange</u>			<u>Acid Soluble Zinc</u>			354		
106	7.00	.33	<u>Other</u>			096	0.010	.71	<u>Acid Soluble Zinc</u>			330		
102	6.85	.03	422	0.19 s	45.59	Meth: 321.30 PCT			<u>Acid Soluble Zinc</u>			035		
Avg	6.83		035	0.04 R	2.10	<u>Acid Soluble Zinc</u>			<u>Acid Soluble Zinc</u>			043		
232	6.75	-.18	409	0.04	1.35	<u>ICP</u>			<u>Acid Soluble Zinc</u>			102		
409	6.60	-.49	307	0.04	.83	037			037			131		
324	6.70	-.64	232	0.04	.43	065			065			394		
009	5.90	-2.06	Avg	0.04		354			354			423		
247	1.80 s	-9.80	009	0.04	-.10	330			330			426		
Meth: 301.00 PPM			423	0.03	-1.04	035			035			Avg		
<u>Selenium</u>			102	0.03	-1.31	102			102			040		
<u>Atomic Absorption</u>			Meth: 311.XX PCT			131			131			262		
040	0.08	-.71	<u>Sodium</u>			394			394			096		
Meth: 301.30 PPM			422	0.19 s	47.95	423			423			262		
<u>Selenium</u>			035	0.04 R	2.20	426			426			096		
<u>ICP</u>			409	0.04	1.40	Avg			Avg			009		
065	1.19 X	.71	409	0.04	.85	040			040			324		
Meth: 301.00 PPM			307	0.04	.64	009			009			393		
<u>Selenium</u>			320	0.04	.44	324			324			320		
<u>ICP</u>			232	0.04	.44	393			393			409		
Meth: 301.30 PPM			Avg	0.04		320			320			028		
<u>Selenium</u>			009	0.04	-.13	232			232			009		
<u>ICP</u>			423	0.03	-1.04	035			035			009		
Meth: 301.30 PPM			102	0.03	-1.31	102			102			009		
<u>Selenium</u>			Meth: 311.XX PCT			131			131			009		
<u>Atomic Absorption</u>			<u>Sodium</u>			394			394			009		
040	0.08	-.71	422	0.19 s	47.95	423			423			009		
Meth: 301.00 PPM			035	0.04 R	2.20	426			426			009		
<u>Selenium</u>			409	0.04	1.40	Avg			Avg			009		
<u>ICP</u>			409	0.04	.85	040			040			009		
Meth: 301.30 PPM			307	0.04	.64	009			009			009		
<u>Selenium</u>			320	0.04	.44	324			324			009		
<u>ICP</u>			232	0.04	.44	393			393			009		
Meth: 301.30 PPM			Avg	0.04		320			320			009		
<u>Selenium</u>			009	0.04	-.13	232			232			009		
<u>ICP</u>			423	0.03	-1.04	035			035			009		
Meth: 301.30 PPM			102	0.03	-1.31	102			102			009		
<u>Selenium</u>			Meth: 311.XX PCT			131			131			009		
<u>Atomic Absorption</u>			<u>Sodium</u>			394			394			009		
040	0.08	-.71	422	0.19 s	47.95	423			423			009		
Meth: 301.00 PPM			035	0.04 R	2.20	426			426			009		
<u>Selenium</u>			409	0.04	1.40	Avg			Avg			009		
<u>ICP</u>			409	0.04	.85	040			040			009		
Meth: 301.30 PPM			307	0.04	.64	009			009			009		
<u>Selenium</u>			320	0.04	.44	324			324			009		
<u>ICP</u>			232	0.04	.44	393			393			009		
Meth: 301.30 PPM			Avg	0.04		320			320			009		
<u>Selenium</u>			009	0.04	-.13	232			232			009		
<u>ICP</u>			423	0.03	-1.04	035			035			009		
Meth: 301.30 PPM			102	0.03	-1.31	102			102			009		
<u>Selenium</u>			Meth: 311.XX PCT			131			131			009		
<u>Atomic Absorption</u>			<u>Sodium</u>			394			394			009		
040	0.08	-.71	422	0.19 s	47.95	423			423			009		
Meth: 301.00 PPM			035	0.04 R	2.20	426			426			009		
<u>Selenium</u>			409	0.04	1.40	Avg			Avg			009		
<u>ICP</u>			409	0.04	.85	040			040			009		
Meth: 301.30 PPM			307	0.04	.64	009			009			009		
<u>Selenium</u>			320	0.04	.44	324			324			009		
<u>ICP</u>			232	0.04	.44	393			393			009		
Meth: 301.30 PPM			Avg	0.04		320			320			009		
<u>Selenium</u>			009	0.04	-.13	232			232			009		
<u>ICP</u>			423	0.03	-1.04	035			035			009		
Meth: 301.30 PPM			102	0.03	-1.31	102			102			009		
<u>Selenium</u>			Meth: 311.XX PCT			131			131			009		
<u>Atomic Absorption</u>			<u>Sodium</u>			394			394			009		

\* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits

## Method Evaluation - Z Values Based on 1 Reports

Method Code	Number Of Labs	Avg Bias of Labs	Std Dev of Biases	Std Dev Within Labs	Method Code	Number Of Labs	Avg Bias of Labs	Std Dev of Biases	Std Dev Within Labs
001.10	5	0.00	1.05	0.10	060.00	7	0.00	0.97	0.34
001.99	8	0.52	1.75	0.16	060.XX	7	0.00	0.97	0.34
001.XX	13	0.00	1.02	0.10	101.30	11	6.65	21.78	0.25
003.10	3	0.00	1.11	0.10	101.XX	12	16.55	54.06	0.61
003.XX	4	0.00	1.07	0.10	121.30	13	1.80	5.59	0.22
005.99	4	0.00	1.08	0.03	121.XX	14	1.71	5.51	0.21
005.XX	4	0.00	1.08	0.03	144.01	14	5.61	21.02	0.41
009.10	4	15.62	31.26	2.02	144.70	2	46.32	65.50	0.50
009.XX	4	15.62	31.26	2.02	144.99	19	- 0.50	1.62	0.35
010.11	6	- 0.34	1.35	0.79	144.XX	35	1.37	9.60	0.36
010.12	3	0.00	0.99	0.43	151.00	2	0.00	0.71	0.71
010.60	53	0.01	1.17	0.32	151.30	9	1.41	2.89	2.11
010.99	5	0.00	0.98	0.36	151.XX	12	1.26	3.05	2.20
010.XX	66	0.02	1.20	0.34	165.99	6	1430.5	3497.0	454.10
020.10	5	0.00	0.97	0.38	165.XX	6	1430.5	3497.0	454.10
020.20	23	0.22	1.28	0.63	181.00	4	3.07	6.21	0.68
020.40	8	1.22	3.49	0.34	181.30	11	0.60	1.85	0.52
020.50	7	- 0.16	1.04	0.48	181.XX	16	0.45	1.72	0.45
020.XX	43	0.30	1.80	0.55	191.30	13	0.10	1.04	0.24
030.XX	4	0.00	1.01	0.33	191.XX	15	0.15	1.03	0.20
040.20	2	0.00	1.21	0.12	202.30	13	0.00	0.99	0.25
040.40	2	0.00	1.17	0.26	202.XX	15	- 0.43	1.92	0.24
040.XX	6	0.00	1.03	0.20	221.00	6	0.8565	2.2776	0.9399
041.10	15	0.03	0.97	0.25	221.30	17	0.2574	1.4963	0.6043
041.20	3	1.71	3.09	0.14	221.XX	24	0.3296	1.5629	0.6439
041.40	6	- 0.70	1.90	0.86	241.00	14	0.00	0.99	0.22
041.50	8	0.00	0.88	0.51	241.30	27	0.12	1.16	0.16
041.60	12	0.32	2.67	0.96	241.99	7	- 1.10	5.55	0.32
041.XX	37	- 0.01	1.15	0.56	241.XX	46	- 0.06	1.36	0.46
048.20	4	0.00	1.05	0.21	251.00	2	0.00	0.75	0.69
048.XX	4	0.00	1.05	0.21	251.30	8	0.30	1.27	0.87
050.00	17	0.00	0.99	0.20	251.XX	11	0.21	1.19	0.62
050.30	10	0.39	1.56	0.38	261.00	13	0.000	0.957	0.340
050.50	6	0.00	1.04	0.11	261.11	3	0.000	1.072	0.260
050.51	10	- 0.78	2.68	0.60	261.30	20	0.031	0.986	0.170
050.60	8	0.14	1.03	0.34	261.31	5	- 0.596	1.629	0.094
050.61	8	- 0.19	1.09	0.34	261.99	4	- 8.432	16.880	0.458
050.99	16	0.20	1.27	0.53	261.XX	44	- 0.083	1.243	0.748
050.XX	71	0.06	1.10	0.40	271.XX	2	0.000	1.192	0.199

## Method Evaluation - Z Values Based on 1 Reports

Method Code	Number Of Labs	Avg Bias of Labs	Std Dev of Biases	Std Dev Within Labs	Method Code	Number Of Labs	Avg Bias of Labs	Std Dev of Biases	Std Dev Within Labs
289.30	8	0.47	1.64	0.44					
289.99	2	0.00	1.22	0.09					
289.XX	10	0.30	1.35	0.32					
291.30	8	- 1.13	3.30	0.50					
291.99	2	0.00	1.11	0.36					
291.XX	10	- 0.98	3.20	0.50					
301.XX	3	0.00	1.02	0.38					
311.99	8	5.83	16.09	0.70					
311.XX	9	5.45	15.96	0.72					
321.00	5	0.000	1.016	0.271					
321.30	19	0.255	2.022	0.640					
321.99	2	3792.7	5363.7	0.500					
321.XX	26	138.85	707.13	0.555					