

- Pass 1 Results for 79 Labs - - Pass 2 Results for 78 Labs -

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
Ammoniacal Nitrogen, MgO Distillation	920.03	001.10	4	8.50	0.18	0.18	4	8.50	0.18	0.18
Ammoniacal Nitrogen, Other		001.99	9	8.24	0.53	0.04	8	8.29	0.55	0.03
Method Group 001.XX PCT			13	8.32	0.47	0.08	11	8.30	0.49	0.04
Nitrate Nitrogen, Other		002.99	3	0.04	0.05	0.01	3	0.04	0.05	0.01
Water Insoluble Nitrogen, Other		003.99	1	0.99	0.00	0.00	1	0.99	0.00	0.00
Nitrogen From Urea, Urease (as N)	959.03	005.00	1	0.75	0.11	0.15	1	0.75	0.11	0.15
Nitrogen From Urea, Other		005.99	2	0.46	0.28	0.00	2	0.46	0.28	0.00
Method Group 005.XX PCT			3	0.55	0.27	0.05	3	0.55	0.27	0.05
Ammon & Nitrate N, Devarda	892.01	009.10	1	8.71	0.01	0.01	1	8.71	0.01	0.01
Ammon & Nitrate N, Other		009.99	1	8.93	0.01	0.01	1	8.93	0.01	0.01
Method Group 009.XX PCT			2	8.82	0.13	0.01	2	8.82	0.13	0.01
Total Nitrogen, Modified Comprehensive	978.02	010.11	8	8.93	0.14	0.05	8	8.93	0.14	0.05
Total Nitrogen, Salicylic	955.04D	010.12	3	8.83	0.10	0.05	3	8.83	0.10	0.05
Total Nitrogen, Combustion		010.60	51	8.95	0.13	0.09	49	8.96	0.12	0.08
Total Nitrogen, Other		010.99	6	8.89	0.18	0.10	6	8.89	0.18	0.10
Method Group 010.XX PCT			68	8.94	0.14	0.08	67	8.94	0.14	0.08
Total Phosphate, Grav Quimociac	962.02	020.10	4	23.05	0.27	0.12	4	23.05	0.27	0.12
Total Phosphate, Spectrometric	958.01	020.20	17	22.66	0.64	0.12	15	22.72	0.65	0.09
Total Phosphate, Automated	978.01	020.40	5	23.17	0.12	0.08	5	23.17	0.12	0.08
Total Phosphate, ICP		020.50	7	22.82	0.77	0.35	7	22.82	0.77	0.35
Total Phosphate, Other		020.99	4	23.01	0.66	0.21	4	23.01	0.66	0.21
Method Group 020.XX PCT			38	22.82	0.62	0.19	34	22.88	0.49	0.13
Insoluble Phosphate, Grav Quimociac	963.03C	030.10	1	0.07	0.01	0.01	1	0.07	0.01	0.01
Insoluble Phosphate, Spectrometric	963.03C	030.20	1	0.19	0.04	0.05	1	0.19	0.04	0.05
Insoluble Phosphate, Automated	978.01	030.40	1	0.24	0.04	0.05	1	0.24	0.04	0.05
Insoluble Phosphate, ICP		030.50	1	0.17	0.01	0.01	1	0.17	0.01	0.01
Insoluble Phosphate, Other		030.99	1	0.09	0.00	0.00	1	0.09	0.00	0.00
Method Group 030.XX PCT			5	0.15	0.07	0.02	5	0.15	0.07	0.02
InDir Available Phosphate, Grav Quim	960.02	040.10	1	23.07	0.03	0.04	1	23.07	0.03	0.04
InDir Available Phosphate, Spectrometri	960.02	040.20	1	20.69	0.01	0.02	1	20.69	0.01	0.02
InDir Available Phosphate, Automated	960.02	040.40	2	22.90	0.12	0.04	2	22.90	0.12	0.04
InDir Available Phosphate, ICP		040.50	1	21.70	0.01	0.01	1	21.70	0.01	0.01
InDir Available Phosphate, Other		040.99	2	22.26	0.62	0.02	2	22.26	0.62	0.02
Method Group 040.XX PCT			7	22.25	0.86	0.03	7	22.25	0.86	0.03
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	13	22.77	0.20	0.11	12	22.78	0.20	0.09
Dir Available Phosphate, Automated	978.01	041.40	3	22.94	0.27	0.03	3	22.94	0.27	0.03
Dir Available Phosphate, ICP		041.50	10	22.66	0.33	0.21	10	22.66	0.33	0.21
Dir Available Phosphate, EDTA Extract	993.01	041.60	8	22.83	0.25	0.20	8	22.83	0.25	0.20
Dir Available Phosphate, Other		041.99	3	22.42	0.51	0.05	3	22.42	0.51	0.05

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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
Method Group 041.XX PCT			37	22.74	0.30	0.14	34	22.76	0.26	0.12
Water Soluble Phosphate, Spectrometric	970.01	048.20	2	16.87	0.65	0.15	2	16.87	0.65	0.15
Water Soluble Phosphate, ICP		048.50	1	16.31	0.10	0.14	1	16.31	0.10	0.14
Water Soluble Phosphate, Other		048.99	1	23.32	0.05	0.07	1	23.32	0.05	0.07
Method Group 048.XX PCT			4	18.34	3.11	0.13	4	18.34	3.11	0.13
Soluble Potash, STPB Oxalate	958.02	050.00	12	11.15	0.19	0.10	11	11.16	0.18	0.07
Soluble Potash, STPB Citrate	969.04	050.10	2	10.88	0.08	0.05	2	10.88	0.08	0.05
Soluble Potash, AA (Oxalate)		050.30	7	11.15	0.27	0.15	7	11.15	0.27	0.15
Soluble Potash, AA (Citrate)		050.31	2	10.96	0.07	0.02	2	10.96	0.07	0.02
Soluble Potash, ICP (Oxalate)		050.50	7	10.99	0.43	0.09	7	10.99	0.43	0.09
Soluble Potash, ICP (Citrate)		050.51	9	11.38	0.36	0.16	9	11.38	0.36	0.16
Soluble Potash, Flame (Oxalate)	983.02(a)	050.60	5	11.01	0.33	0.11	5	11.01	0.33	0.11
Soluble Potash, Flame (Citrate)	983.02(b)	050.61	10	11.14	0.33	0.23	10	11.14	0.33	0.23
Soluble Potash, Other		050.99	15	11.18	0.42	0.17	13	11.19	0.42	0.07
Method Group 050.XX PCT			70	11.13	0.36	0.15	66	11.15	0.34	0.11
Free Water, Vacuum Oven	965.08B	060.00	2	1.03	0.04	0.03	2	1.03	0.04	0.03
Acid Soluble Calcium, ICP		101.30	14	0.33	0.05	0.01	13	0.34	0.05	0.01
Acid Soluble Magnesium, AA	984.01	121.00	10	5.89	0.42	0.10	10	5.89	0.42	0.10
Acid Soluble Magnesium, ICP		121.30	27	5.94	0.39	0.10	24	5.95	0.27	0.07
Acid Soluble Magnesium, Titrimetric	964.01	121.70	1	6.54	0.01	0.02	1	6.54	0.01	0.02
Acid Soluble Magnesium, Other		121.99	4	6.00	0.19	0.10	4	6.00	0.19	0.10
Method Group 121.XX PCT			42	5.95	0.38	0.09	38	5.96	0.32	0.07
Water Soluble Magnesium, AA		131.00	1	4.84	0.01	0.01	1	4.84	0.01	0.01
Water Soluble Magnesium, ICP		131.30	5	4.09	2.14	0.14	4	3.39	1.75	0.04
Water Soluble Magnesium, Titrimetric		131.70	1	2.61	0.01	0.02	1	2.61	0.01	0.02
Method Group 131.XX PCT			7	3.99	1.89	0.10	6	3.50	1.56	0.03
Sulfur, Gravimetric	980.02a	144.01	14	11.67	0.20	0.09	13	11.66	0.19	0.06
Sulfur, Spectrometric		144.70	1	11.23	0.01	0.02	1	11.23	0.01	0.02
Sulfur, Other		144.99	20	11.42	0.43	0.13	18	11.43	0.41	0.09
Method Group 144.XX PCT			35	11.52	0.37	0.11	32	11.52	0.35	0.08
Arsenic, Atomic Absorption		151.00	1	6.26	0.01	0.02	1	6.26	0.01	0.02
Arsenic, ICP		151.30	5	7.05	2.01	0.30	4	6.94	2.25	0.13
Arsenic, Other		151.99	1	6.85	1.06	1.50	1	6.85	1.06	1.50
Method Group 151.XX PPM			7	6.91	1.72	0.43	6	6.92	1.85	0.26
Acid Soluble Boron, Spectrometric	982.01	165.00	1	0.015	0.000	0.000	1	0.015	0.000	0.000
Acid Soluble Boron, Other		165.99	3	0.026	0.032	0.027	3	0.026	0.032	0.027
Method Group 165.XX PCT			4	0.023	0.027	0.020	3	0.015	0.004	0.000
Cadmium, Atomic Absorption		181.00	2	1.29	0.21	0.28	2	1.29	0.21	0.28
Cadmium, ICP		181.30	6	1.36	0.45	0.13	5	1.34	0.48	0.06

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Method Group 181.XX PPM			8	1.34	0.40	0.17	8	1.34	0.40	0.17
Water Soluble Chlorine, Titrimetric ...	928.02	190.00	1	1.15	0.00	0.00	1	1.15	0.00	0.00
Water Soluble Chlorine, Other		190.99	1	1.27	0.02	0.03	1	1.27	0.02	0.03
Method Group 190.XX PCT			2	1.21	0.07	0.02	2	1.21	0.07	0.02
Chromium, Atomic Absorption		191.00	1	94.50	2.12	3.00	1	94.50	2.12	3.00
Chromium, ICP		191.30	8	88.97	14.88	2.77	8	88.97	14.88	2.77
Chromium, Other		191.99	1	73.14	0.03	0.04	1	73.14	0.03	0.04
Method Group 191.XX PPM			10	87.94	14.26	2.52	10	87.94	14.26	2.52
Acid Soluble Cobalt, AA		202.00	1	11.50	0.71	1.00	1	11.50	0.71	1.00
Acid Soluble Cobalt, ICP	965.11	202.30	7	2.96	0.59	0.28	6	3.04	0.56	0.16
Method Group 202.XX PPM			8	4.03	2.97	0.37	8	4.03	2.97	0.37
Acid Soluble Copper, Atomic Absorption	975.01	221.00	3	0.0016	0.0018	0.0001	3	0.0016	0.0018	0.0001
Acid Soluble Copper, ICP		221.30	10	0.0010	0.0014	0.0002	9	0.0008	0.0012	0.0001
Acid Soluble Copper, Other		221.99	1	0.0001	0.0000	0.0000	1	0.0001	0.0000	0.0000
Method Group 221.XX PCT			14	0.0011	0.0015	0.0001	13	0.0009	0.0014	0.0001
Acid Soluble Iron, Atomic Absorption	980.01	241.00	7	0.54	0.06	0.01	6	0.56	0.03	0.01
Acid Soluble Iron, ICP		241.30	22	0.57	0.06	0.02	21	0.57	0.05	0.01
Acid Soluble Iron, Other		241.99	4	0.56	0.05	0.02	4	0.56	0.05	0.02
Method Group 241.XX PCT			33	0.56	0.06	0.02	32	0.56	0.05	0.01
Lead, Atomic Absorption		251.00	1	10.20	0.85	1.20	1	10.20	0.85	1.20
Lead, ICP		251.30	5	1.47	1.05	0.89	4	1.27	0.60	0.27
Method Group 251.XX PPM			7	5.71	7.81	1.34	7	5.71	7.81	1.34
Acid Soluble Manganese, ICP	972.02a	261.30	10	0.014	0.002	0.000	9	0.014	0.002	0.000
Acid Soluble Manganese, Other		261.99	1	0.016	0.000	0.000	1	0.016	0.000	0.000
Method Group 261.XX PCT			12	0.015	0.002	0.000	10	0.015	0.003	0.000
Mercury, ICP		281.30	2	0.50	0.57	0.00	2	0.50	0.57	0.00
Mercury, Other		281.99	1	0.02	0.00	0.00	1	0.02	0.00	0.00
Method Group 281.XX PPM			3	0.34	0.51	0.00	3	0.34	0.51	0.00
Molybdenum, ICP		289.30	11	6.11	1.73	0.48	9	6.23	1.83	0.19
Nickel, Atomic Absorption		291.00	2	29.50	7.59	2.00	2	29.50	7.59	2.00
Nickel, ICP		291.30	6	26.10	9.30	1.32	6	26.10	9.30	1.32
Nickel, Other		291.99	1	0.00	0.00	0.00	1	0.00	0.00	0.00
Method Group 291.XX PPM			9	23.95	12.01	1.33	9	23.95	12.01	1.33
Selenium, ICP		301.30	2	0.00	0.00	0.00	2	0.00	0.00	0.00
Selenium, Other		301.99	2	0.74	0.59	0.05	2	0.74	0.59	0.05
Method Group 301.XX PPM			4	0.37	0.55	0.03	3	0.08	0.12	0.00
Sodium, Other		311.99	3	0.50	0.11	0.01	3	0.50	0.11	0.01
Acid Soluble Zinc, Atomic Absorption	975.02	321.00	2	0.002	0.000	0.000	2	0.002	0.000	0.000
Acid Soluble Zinc, ICP		321.30	9	0.002	0.001	0.000	8	0.002	0.001	0.000

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Acid Soluble Zinc, Other .....		321.99	1	0.005	0.000	0.000	1	0.005	0.000	0.000
Method Group 321.XX PCT			14	0.003	0.002	0.001	12	0.003	0.001	0.000

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.10 PCT											
Ammoniacal Nitrogen											
MgO Distillation											
444	8.64	1.16									
090	8.54	.26									
309	8.53	.21									
Avg	8.50										
029	8.29	-1.43									
230	5.08 s	-19.14									
Meth: 001.99 PCT											
Ammoniacal Nitrogen											
Other											
393	8.93	1.17									
450	8.72	.79									
096	8.68	.72									
220	8.53	.44									
372	8.52	.42									
Avg	8.29										
420	7.93	-.66									
234	7.91 R	-.69									
394	7.52	-1.39									
027	7.46	-1.50									
Meth: 001.XX PCT											
Ammoniacal Nitrogen											
393	8.93	1.29									
450	8.72	.86									
096	8.68	.79									
444	8.64 R	.75									
090	8.54	.49									
220	8.53	.47									
309	8.53	.47									
372	8.52	.45									
Avg	8.30										
029	8.29 R	-.30									
420	7.93	-.76									
234	7.91	-.80									
394	7.52	-1.57									
027	7.46	-1.70									
Meth: 002.99 PCT											
Nitrate Nitrogen											
Other											
394	0.10	1.22									
Avg	0.04										
220	0.03	-.36									
393	0.00	-.94									
Meth: 003.99 PCT											
Water Insoluble Nitr											
Other											
027	0.99	.00									
Meth: 005.00 PCT											
Nitrogen From Urea											
Urease (as N)											
220	0.75 X	.71									
Meth: 005.99 PCT											
Nitrogen From Urea											
Other											
309	0.70	.87									
Avg	0.46										
394	0.21	-.87									
Meth: 005.XX PCT											
Nitrogen From Urea											
220	0.75 X	.77									
309	0.70	.55									
Avg	0.55										
394	0.21	-1.27									
Meth: 009.10 PCT											
Ammon & Nitrate N											
Devarda											
169	8.71	.71									
Meth: 009.99 PCT											
Ammon & Nitrate N											
Other											
393	8.93	.71									
Meth: 009.XX PCT											
Ammon & Nitrate N											
Other											
393	8.93	.87									
Avg	8.82										
169	8.71	-.87									
Meth: 010.10 PCT											
Total Nitrogen											
Reduced Iron											
444	9.57 S	.00									
Meth: 010.11 PCT											
Total Nitrogen											
Modified Comprehensive											
309	9.13	1.47									
105	9.03	.82									
220	9.02	.77									
114	9.01	.61									
Avg	8.93										
029	8.90	-.26									
211	8.81	-.91									
090	8.78	-1.12									
322	8.76	-1.24									
Meth: 010.12 PCT											
Total Nitrogen											
Salicylic											
254	9.47 S	6.59									
416	8.93	1.06									
185	8.84	.20									
Avg	8.83										
117	8.73	-1.16									
Meth: 010.12 PCT											
Total Nitrogen											
Other											
292	8.98	.41									
049	9.00	.35									
450	9.00	.31									
106	8.98	.27									
136	8.97	.25									
394	8.97	.24									
393	8.98	.11									
057	8.98	.11									
Avg	8.96										
027	8.96	-.02									
035	8.94	-.24									
177	8.93	-.28									
361	8.96	-.29									
024	8.95	-.32									
162	8.92	-.45									
040	8.93	-.47									
Meth: 010.60 PCT											
Total Nitrogen											
Combustion											
255	15.74 s	54.87									
377	10.02 s	8.57									
034	9.22	2.09									
406	9.13	1.44									
360	9.09	1.31									
025	9.12	1.29									
232	9.12	1.27									
369	9.06	1.25									
390	9.10	1.12									
102	9.07	.96									
131	9.08	.95									
007	9.05	.82									
247	9.06	.78									
043	9.03	.73									
291	9.05	.73									
028	9.02	.67									
073	9.04	.60									
029	9.04	.60									
096	8.98	.48									
095	9.00	.45									
041	9.02	.43									
292	8.98	.41									
049	9.00	.35									
450	9.00	.31									
106	8.98	.27									
136	8.97	.25									
394	8.97	.24									
393	8.98	.11									
057	8.98	.11									
Avg	8.96										
027	8.96	-.02									
035	8.94	-.24									
177	8.93	-.28									
361	8.96	-.29									
024	8.95	-.32									
162	8.92	-.45									
040	8.93	-.47									
Meth: 010.60 PCT											
Total Nitrogen											
Combustion											
233	8.93	-.49									
023	8.90	-.59									
426	8.87	-.76									
428	8.89	-.87									
070	8.87	-.94									
443	8.90	-.95									
452	8.85	-.96									
324	8.85	-.99									
022	8.84	-1.09									
009	8.86	-1.10									
425	8.80	-1.43									
234	8.80	-1.46									
325	8.89 R	-1.55									

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 010.XX PCT														
<u>Total Nitrogen</u>														
034	9.22	2.02	035	8.94	-1.14	090	23.14	.35	096	23.04	-1.06	035	23.26	.80
354	9.14	1.48	416	8.93	-.23	Avg	23.05					234	23.21	.69
406	9.13	1.44	162	8.92	-.31							394	23.19	.64
309	9.13	1.35	029	8.90	-.33							090	23.14	.53
025	9.12	1.30	040	8.93	-.35							232	23.13	.52
360	9.09	1.30	233	8.93	-.37							393	23.08	.41
232	9.12	1.29	023	8.90	-.42							425	23.07	.40
369	9.06	1.22	137	8.88	-.44							247	23.06	.37
390	9.10	1.15	426	8.87	-.53							041	23.04	.35
131	9.08	1.01	428	8.89	-.68							406	23.04	.34
102	9.07	1.00	185	8.84	-.70							096	23.04	.32
007	9.05	.87	452	8.85	-.72							220	23.03	.31
402	9.06	.86	070	8.87	-.72							169	23.02	.30
247	9.06	.85	300	8.86 X	-.73							Avg	22.88	
291	9.05	.80	324	8.85	-.75							450	22.83	-.13
043	9.03	.78	443	8.90	-.78							420	22.85	-.33
105	9.03	.73	022	8.84	-.84							137	22.70	-.36
028	9.02	.72	009	8.86	-.88							444	22.67	-.48
073	9.04	.69	211	8.81	-.98							361	22.54	-.69
029	9.04	.69	425	8.80	-1.13							262	22.50	-.77
220	9.02	.68	234	8.80	-1.17							200	22.36	-1.06
041	9.02	.54	090	8.78	-1.18							432	22.50 R	-1.17
095	9.00	.53	322	8.76	-1.31							369	22.21	-1.37
096	8.98	.51	325	8.89 R	-1.33							451	22.20 X	-1.44
114	9.01	.51	372	8.74	-1.46							324	22.20	-1.44
049	9.00	.47	420	8.75	-1.55							444	22.19	-1.49
292	8.98	.46	117	8.73	-1.57							030	22.17	-1.52
450	9.00	.43	262	8.69	-1.91							309	22.10	-1.58
106	8.98	.37	200	8.68	-2.02							117	22.26 R	-1.69
394	8.97	.30	451	8.66 X	-2.08							255	21.86	-2.07
136	8.97	.30	351	8.61	-2.47							372	20.80 A	-4.25
361	8.96	.27	230	8.25 s	-5.08							372	19.04 s	-7.84
024	8.95	.26	030	7.38 s	-11.32									
393	8.98	.25												
057	8.98	.25												
027	8.96	.14												
Avg	8.94													
177	8.93	-.10												

  

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 020.40 PCT											
<u>Total Phosphate</u>											
Automated											
096	23.04	-1.06									
Meth: 020.50 PCT											
<u>Total Phosphate</u>											
ICP											
300	25.85 S	3.94	390	23.85	1.47	426	23.70	1.15	393	23.08	.34
390	23.85	1.47	426	23.70	1.15	Avg	22.82		361	22.54	-.36
426	23.70	1.15	393	23.08	.34	432	22.50	-.69	444	22.19	-.88
393	23.08	.34	Avg	22.82		255	21.86	-1.24	372	19.04 S	-4.92
Meth: 020.99 PCT											
<u>Total Phosphate</u>											
Other											
443	23.63	.95	402	23.53	.81	Avg	23.01		137	22.70	-.46
402	23.53	.81	Avg	23.01		030	22.17	-1.32			
369	22.21	-1.37	137	22.70	-.46						
451	22.20 X	-1.44	030	22.17	-1.32						
324	22.20	-1.44									
444	22.19	-1.49									
030	22.17	-1.52									
309	22.10	-1.58									
117	22.26 R	-1.69									
255	21.86	-2.07									
372	20.80 A	-4.25									
372	19.04 s	-7.84									

  

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 030.10 PCT											
<u>Insoluble Phosphate</u>											
<u>Grav Quimociac</u>											
090	0.07	.71	393	23.30	1.10	035	23.26	1.07	394	23.19	.40
			035	23.26	1.07	394	23.19	.40	Avg	23.17	
			394	23.19	.40	Avg	23.17		247	23.06	-.92
			Avg	23.17		247	23.06	-.92	393	23.30	.86
			247	23.06	-.92	393	23.30	.86			

\* 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
Meth: 030.20 PCT			Meth: 040.20 PCT			Meth: 041.10 PCT			Meth: 041.60 PCT		
Insoluble Phosphate			InDir Available Phos			Dir Available Phosph			Dir Available Phosph		
<u>Spectrometric</u>			<u>Spectrometri</u>			<u>Grav Quimociac</u>			<u>EDTA Extract</u>		
220 0.19 .71			372 20.69 .71			211 23.03 1.24			028 23.73 S 3.64		
Meth: 030.40 PCT			Meth: 040.40 PCT			040 22.94 1.05			106 22.93 1.23		
Insoluble Phosphate			InDir Available Phos			131 22.93 .76			057 23.01 1.08		
<u>Automated</u>			<u>Automated</u>			296 22.88 .62			351 22.96 .50		
096 0.24 .71			394 23.01 .85			322 22.83 .24			073 22.93 .38		
Meth: 030.50 PCT			Avg 22.90			029 22.79 .08			043 22.86 .12		
Insoluble Phosphate			096 22.80 -.88			Avg 22.78			Avg 22.83		
ICP			Meth: 040.50 PCT			102 22.75 -.30			105 22.81 -.41		
255 0.17 .71			InDir Available Phos			177 22.65 -.65			034 22.82 -.64		
Meth: 030.99 PCT			<u>ICP</u>			049 22.60 -.97			177 22.34 -1.96		
Insoluble Phosphate			255 21.70 .71			185 22.61 R -1.30			296 22.11 s -4.21		
<u>Other</u>			Meth: 040.99 PCT			009 22.50 -1.46			Meth: 041.99 PCT		
007 22.20 S .00			InDir Available Phos			254 22.47 -1.62			Dir Available Phosph		
247 0.09 .00			<u>Other</u>			Meth: 041.40 PCT			Dir Available Phosph		
Avg 0.09			InDir Available Phos			Dir Available Phosph			<u>Other</u>		
Meth: 030.XX PCT			220 22.80 .87			Dir Available Phosph			105 22.98 1.11		
Insoluble Phosphate			Avg 22.26			<u>Automated</u>			393 22.42 .02		
007 22.20 s 324.56			027 21.73 -.87			025 23.26 1.20			Avg 22.42		
096 0.24 1.33			Meth: 040.XX PCT			Avg 22.94			230 21.85 -1.12		
220 0.19 .66			<u>InDir Available Phos</u>			131 22.89 -.19			Meth: 041.XX PCT		
255 0.17 .26			090 23.07 .94			029 22.67 -1.01			Dir Available Phosph		
Avg 0.15			394 23.01 .87			Meth: 041.50 PCT			<u>Dir Available Phosph</u>		
247 0.09 -.85			096 22.80 .63			Dir Available Phosph			070 23.74 s 3.75		
090 0.07 -1.22			220 22.80 .63			<u>ICP</u>			028 23.73 s 3.71		
Meth: 040.10 PCT			Avg 22.25			452 23.05 1.26			025 23.26 1.91		
InDir Available Phos			027 21.73 -.61			023 22.85 R 1.33			023 22.85 R 1.33		
<u>Grav Quim</u>			255 21.70 -.65			106 22.93 R 1.28			452 23.05 1.25		
090 23.07 .71			372 20.69 -1.81			Avg 22.96			057 23.01 1.22		
Meth: 041.10 PCT			Meth: 041.10 PCT			360 22.69 .40			105 23.02 1.05		
Dir Available Phosph			Dir Available Phosph			291 22.72 .21			211 23.03 1.02		
<u>Grav Quimociac</u>			<u>Grav Quimociac</u>			Avg 22.66			377 22.96 .86		
070 23.74 s 4.91			105 23.02 1.29			393 22.54 -.50			040 22.94 .85		
105 23.02 1.29			Meth: 041.10 PCT			361 22.35 -.95			105 22.98 .85		
			Dir Available Phosph			354 22.34 -1.01			043 22.97 .81		
			<u>Grav Quimociac</u>			009 22.16 -1.54			351 22.96 .76		
			070 23.74 s 4.91			105 23.02 1.29			131 22.93 .66		
			105 23.02 1.29								

\* 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
Meth: 048.50 PCT											
Water Soluble Phosph											
ICP											
393	16.31	.71									
Meth: 048.99 PCT											
Water Soluble Phosph											
Other											
247	23.32	.71									
Meth: 048.XX PCT											
Water Soluble Phosph											
247	23.32	1.60									
Avg	18.34										
420	17.43	-.29									
393	16.31	-.65									
393	16.31	-.65									
Meth: 050.00 PCT											
Soluble Potash											
STPB Oxalate											
049	21.73 s	57.58									
416	11.37	1.13									
090	11.33	1.02									
114	11.29	.87									
057	11.30	.77									
029	11.25	.48									
043	11.23	.38									
102	11.17	.07									
Avg	11.16										
211	11.07	-.51									
009	11.00	-.90									
372	10.99	-.92									
220	11.04 R	-1.46									
073	10.78	-2.14									
230	10.30 s	-4.95									
Meth: 050.10 PCT											
Soluble Potash											
STPB Citrate											
117	12.86 S	25.32									
322	10.94	.76									
Avg	10.88										
444	10.83	-.96									
Meth: 050.30 PCT											
Soluble Potash											
AA (Oxalate)											
428	13.50 s	8.76									
369	11.69	2.03									
185	11.20	.42									
Avg	11.15										
136	11.12	-.20									
040	11.15	-.20									
234	10.96	-.71									
351	10.91	-.88									
451	11.00 X	-.92									
425	9.57 s	-5.84									
Meth: 050.31 PCT											
Soluble Potash											
AA (Citrate)											
095	11.02	.86									
Avg	10.96										
254	10.90	-.87									
Meth: 050.50 PCT											
Soluble Potash											
ICP (Oxalate)											
354	11.72	1.69									
426	11.17	.41									
324	11.10	.34									
106	11.11	.26									
Avg	10.99										
372	10.94	-.13									
444	10.56	-1.04									
420	10.36	-1.47									
Meth: 050.51 PCT											
Soluble Potash											
ICP (Citrate)											
452	11.97	1.66									
023	11.80	1.27									
007	11.66	.79									
Avg	11.38										
291	11.36	-.14									
043	11.24	-.39									
393	11.20	-.50									
377	11.20	-.51									
009	11.05	-1.10									
361	10.91	-1.28									
Meth: 050.60 PCT											
Soluble Potash											
Flame (Oxalate)											
309	12.50 S	4.54									
169	11.25	.75									
406	11.24	.72									
443	11.17	.49									
Avg	11.01										
105	10.94	-.41									
200	10.44	-1.74									
Meth: 050.61 PCT											
Soluble Potash											
Flame (Citrate)											
028	11.72	1.88									
057	11.34	.75									
034	11.26	.54									
131	11.21	.23									
Avg	11.14										
105	11.10	-.12									
025	11.08	-.18									
041	11.06	-.38									
035	11.04	-.50									
030	11.05	-1.10									
029	10.54	-1.85									
Meth: 050.99 PCT											
Soluble Potash											
Other											
247	13.69 s	5.96									
432	11.87	1.65									
042	11.25 R	1.08									
300	11.56	.88									
131	11.43	.59									
402	11.42	.54									
232	11.40	.50									
325	11.35	.40									
360	11.24	.25									
177	11.28	.22									
105	11.20	.18									
Avg	11.19										
027	10.90	-.69									
255	10.84	-.83									
137	10.80	-.92									
390	10.95 R	-1.01									
394	10.18	-2.41									
262	9.78 s	-3.35									
Meth: 050.XX PCT											
Soluble Potash											
049	21.73 s	30.67									
247	13.69 s	7.39									
428	13.50 s	6.83									
117	12.86 s	4.96									
309	12.50 s	3.93									
452	11.97	2.41									
432	11.87	2.13									
028	11.80	1.97									
023	11.72	1.76									
354	11.72	1.67									
369	11.69	1.58									
007	11.66	1.49									
042	11.25 R	1.34									
300	11.56	1.20									
131	11.43	.84									
402	11.42	.78									
Meth: 050.XX PCT											
Soluble Potash											
049	21.73 s	30.67									
247	13.69 s	7.39									
428	13.50 s	6.83									
117	12.86 s	4.96									
309	12.50 s	3.93									
452	11.97	2.41									
432	11.87	2.13									
028	11.80	1.97									
023	11.72	1.76									
354	11.72	1.67									
369	11.69	1.58									
007	11.66	1.49									
042	11.25 R	1.34									
300	11.56	1.20									
131	11.43	.84									
402	11.42	.78									

\* 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
Meth: 050.XX PCT											
<u>Soluble Potash</u>											
322	10.94	-.58									
372	10.94	-.60									
351	10.91	-.68									
361	10.91	-.69									
105	10.94	-.69									
027	10.90	-.71									
451	11.00 X	-.72									
009	11.05	-.72									
254	10.90	-.73									
220	11.04	-.76									
255	10.84	-.89									
444	10.83	-.94									
137	10.80	-1.00									
030	11.05 R	-1.05									
073	10.78	-1.10									
390	10.95 R	-1.16									
444	10.56	-1.73									
029	10.54	-1.78									
200	10.44	-2.06									
420	10.36	-2.28									
230	10.30 R	-2.60									
394	10.18	-2.81									
262	9.78 s	-3.96									
425	9.57 s	-4.56									
Meth: 060.00 PCT											
<u>Free Water</u>											
007	1.06	.89									
Avg	1.03										
416	1.00	-.84									
Meth: 101.30 PCT											
<u>Acid Soluble Calcium</u>											
ICP			117	8.23 s	8.35						
232	5.02 s	99.67	049	6.77 R	3.07						
247	0.45	2.37	041	6.44	1.76						
390	0.38	.99	432	6.30	1.27						
* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits											
Meth: 101.30 PCT											
<u>Acid Soluble Magnesi</u>											
ICP			023	6.27	1.19						
450	0.36	.50	390	6.26	1.10						
393	0.36	.37	433	6.21	.93						
096	0.35	.17	452	6.20	.93						
420	0.34	.07	426	6.20	.88						
Avg	0.34		057	6.07 R	.82						
131	0.33	-.21	361	6.10	.53						
065	0.33	-.23	354	6.07	.53						
057	0.33	-.23	450	5.97	.28						
106	0.33	-.31	247	6.03	.26						
433	0.31	-.61	096	6.00	.15						
102	0.31	-.68	Avg	5.95							
027	0.24	-2.10	444	5.95	-.22						
372	0.23 R	-2.44	065	5.89	-.25						
Meth: 121.00 PCT											
<u>Acid Soluble Magnesi</u>											
AA			291	5.90	-.28						
309	8.60 s	6.49	420	5.85	-.41						
200	6.92	2.47	360	5.84	-.44						
177	6.16	.65	131	5.83	-.46						
034	5.98	.25	102	5.81	-.53						
043	5.93	.12	027	5.78	-.66						
Avg	5.89		022	5.64	-1.28						
351	5.81	-.19	106	5.57	-1.41						
040	5.79	-.28	393	5.49	-1.71						
095	5.71	-.46	255	5.36	-2.21						
220	5.70	-.52	114	4.75 A	-4.42						
029	5.46	-1.03	372	3.95 s	-7.36						
262	5.43	-1.12	232	0.47 s	-20.12						
Meth: 121.30 PCT											
<u>Acid Soluble Magnesi</u>											
ICP			Meth: 121.70 PCT								
117	8.23 s	8.35	Acid Soluble Magnesi								
049	6.77 R	3.07	Titrimetric								
041	6.44	1.76	372	6.54	.71						
432	6.30	1.27									
Meth: 121.99 PCT											
<u>Acid Soluble Magnesi</u>											
ICP			Other								
232	5.02 s	99.67	Avg	6.00							
247	0.45	2.37	137	5.94	-.33						
390	0.38	.99	028	5.93	-.38						
Meth: 121.XX PCT											
<u>Acid Soluble Magnesi</u>											
131	5.83	-.40	042	5.87	-1.09						
102	5.81	-.46	042	5.87 R	-.58						
351	5.81	-.47	095	5.71	-.81						
040	5.79	-.56	220	5.70	-.88						
027	5.78	-.57	022	5.64	-1.10						
042	5.87 R	-.58	106	5.57	-1.21						
095	5.71	-.81	393	5.49	-1.46						
220	5.70	-.88	029	5.46	-1.55						
022	5.64	-1.10	262	5.43	-1.68						
106	5.57	-1.21	255	5.36	-1.88						
393	5.49	-1.46	114	4.75 A	-3.76						
029	5.46	-1.55	372	3.95 s	-6.23						
262	5.43	-1.68	232	0.47 s	-17.02						
114	4.75 A	-3.76									
372	3.95 s	-6.23									
232	0.47 s	-17.02									
Meth: 131.00 PCT											
<u>Water Soluble Magnes</u>											
AA			433	6.21	.77						
029	4.84	.71	452	6.20	.77						
Meth: 131.30 PCT											
<u>Water Soluble Magnes</u>											
ICP			426	6.20	.73						
117	6.91 R	2.02	057	6.07 R	.69						
452	6.13	1.57	177	6.16	.62						
Avg	3.39		361	6.10	.43						
027	3.07	-.19	354	6.07	.43						
393	2.46	-.54	450	5.97	.23						
432	1.91	-.85	247	6.03	.20						
Meth: 131.70 PCT											
<u>Water Soluble Magnes</u>											
ICP			034	5.98	.18						
117	6.91 R	2.02	096	6.00	.11						
452	6.13	1.57	Avg	5.96							
Avg	3.39		137	5.94	-.06						
027	3.07	-.19	028	5.93	-.10						
393	2.46	-.54	043	5.93	-.15						
432	1.91	-.85	444	5.95	-.19						
Meth: 131.70 PCT											
<u>Water Soluble Magnes</u>											
ICP			065	5.89	-.23						
117	6.91 R	2.02	291	5.90	-.25						
452	6.13	1.57	420	5.85	-.41						
Avg	3.39		360	5.84	-.44						
027	3.07	-.19	131	5.83	-.46						
393	2.46	-.54	102	5.81	-.53						
432	1.91	-.85	027	5.78	-.66						
Meth: 121.99 PCT											
<u>Acid Soluble Magnesi</u>											
ICP			022	5.64	-1.28						
117	8.23 s	8.35	106	5.57	-1.41						
049	6.77 R	3.07	393	5.49	-1.71						
041	6.44	1.76	255	5.36	-2.21						
432	6.30	1.27	114	4.75 A	-4.42						
Meth: 121.30 PCT											
<u>Acid Soluble Calcium</u>											
ICP			372	3.95 s	-7.36						
232	5.02 s	99.67	232	0.47 s	-20.12						
247	0.45	2.37									
390	0.38	.99									

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 131.XX PCT														
<u>Water Soluble Magnes</u>														
117	6.91 R	2.20												
452	6.13	1.69												
029	4.84	.86												
Avg	3.50													
027	3.07	-.28												
372	2.61	-.57												
393	2.46	-.67												
432	1.91	-1.02												
Meth: 144.01 PCT														
<u>Sulfur</u>														
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
452	12.05 X	2.00												
452	12.05	1.52												
Meth: 144.70 PCT														
<u>Sulfur</u>														
393	11.23	.71												
Meth: 144.99 PCT														
<u>Sulfur</u>														
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												
177	11.59	.38												
027	11.55	.28												
247	11.55	.27												
117	11.48	.13												
Avg	11.43													
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												
177	11.59	.38												
027	11.55	.28												
247	11.55	.27												
117	11.48	.13												
Avg	11.43													
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												
177	11.59	.38												
027	11.55	.28												
247	11.55	.27												
117	11.48	.13												
Avg	11.43													
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												
177	11.59	.38												
027	11.55	.28												
247	11.55	.27												
117	11.48	.13												
Avg	11.43													
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												
177	11.59	.38												
027	11.55	.28												
247	11.55	.27												
117	11.48	.13												
Avg	11.43													
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												
177	11.59	.38												
027	11.55	.28												
247	11.55	.27												
117	11.48	.13												
Avg	11.43													
023	11.41	-.16												
360	11.40	-.30												
354	11.31	-.36												
351	11.28	-.38												
361	11.17	-.64												
450	11.02	-1.01												
137	10.97	-1.12												
096	10.96	-1.15												
049	10.83 R	-1.57												
255	10.56	-2.11												
232	0.57 s	-26.25												
Meth: 144.XX PCT														
<u>Sulfur</u>														
300	12.26 X	2.11												
043	12.14	1.75												
452	12.05	1.55												
220	11.89 R	1.27												
230	11.85 R	1.18												
390	11.90	1.09												
324	11.85	.95												
200	11.75	.67												
057	11.72	.57												
291	11.70	.53												
029	11.70	.51												
040	11.68	.46												
296	11.64	.41												
136	11.66	.41												
Meth: 144.99 PCT														
<u>Sulfur</u>														
220	11.89 R	1.26												
390	11.90	1.13												
291	11.70	.65												
136	11.66	.55												

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 190.99 PCT											
Water Soluble Chlori											
Other											
009	1.27	-.71									
Meth: 190.99 PCT											
Water Soluble Chlori											
009	1.27	.88									
Avg	1.21										
102	1.15	-.85									
Meth: 191.00 PPM											
Chromium											
220	94.50	.71									
Meth: 191.30 PPM											
Chromium											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 191.99 PPM											
Chromium											
Other											
027	73.14	.71									
Meth: 191.00 PPM											
Chromium											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Acid Soluble Cobalt											
AA											
136	11.50	.71									
Meth: 202.30 PPM											
Chromium											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									
Meth: 202.00 PPM											
Chromium											
220	94.50	.71									
Meth: 202.30 PPM											
Acid Soluble Cobalt											
ICP											
452	113.75	1.68									
450	97.50	.60									
390	96.15	.48									
049	90.81	.12									
065	90.65	.12									
Avg	88.97										
102	84.24	-.33									
444	76.04	-.91									
372	62.65	-1.77									
393	0.00 s	-5.98									

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 241.XX PCT											
<u>Acid Soluble Iron</u>											
255	0.59	.55									
402	0.58	.27									
291	0.57	.25									
432	0.57	.17									
351	0.57	.16									
Avg	0.56										
247	0.56	-.02									
040	0.56	-.24									
095	0.54	-.35									
177	0.54	-.36									
444	0.56	-.37									
042	0.54	-.41									
300	0.54 X	-.43									
232	0.53	-.52									
041	0.53	-.58									
262	0.53	-.58									
452	0.52	-.98									
426	0.51	-1.00									
234	0.50	-1.20									
433	0.50	-1.21									
027	0.44	-2.23									
029	0.42	-2.66									
372	0.35 s	-3.95									
428	0.24 s	-5.94									
Meth: 251.00 PPM											
<u>Lead</u>											
136	10.20	.71									
<u>Atomic Absorption</u>											
220	23.00	-.87									
444	39.33	1.43									
065	28.00	.21									
450	27.50	.16									
102	26.94	.10									
Avg	26.10										
049	25.77	-.12									
232	9.05	-1.83									
372	0.00	-.63									
049	0.01	-.66									
Meth: 261.99 PCT											
<u>Acid Soluble Manganese</u>											
402	0.016	.00									
065	2.29 R	3.27									
393	1.91	1.06									
450	1.50	.91									
Avg	1.27										
Meth: 251.30 PPM											
<u>Lead</u>											
102	1.14	-.23									
372	0.54	-1.22									
Meth: 251.XX PPM											
<u>Lead</u>											
452	22.37	2.15									
136	10.20	.58									
Avg	5.71										
393	1.91	-.49									
065	2.29 X	-.49									
450	1.50	-.54									
102	1.14	-.59									
372	0.54	-.66									
Meth: 261.30 PCT											
<u>Acid Soluble Manganese</u>											
106	0.020 s	3.42									
065	0.016	.95									
102	0.015	.65									
444	0.015	.65									
049	0.015	.51									
096	0.015	.46									
131	0.014	.29									
057	0.014 R	.28									
Avg	0.014										
433	0.014	-.09									
232	0.011	-1.31									
372	0.010	-2.11									
Meth: 261.99 PCT											
<u>Acid Soluble Manganese</u>											
402	0.016	.00									
Meth: 289.30 PPM											
<u>Molybdenum</u>											
450	8.00	.97									
102	7.37	.62									
Meth: 281.99 PPM											
<u>Mercury</u>											
450	1.00	1.29									
Avg	0.34										
220	0.02	-.63									
372	0.01	-.66									
Meth: 281.XX PPM											
<u>Mercury</u>											
450	1.00	1.29									
Avg	0.34										
220	0.02	.71									
372	0.01	-.87									
Meth: 281.30 PPM											
<u>Mercury</u>											
450	1.00	.87									
Avg	0.50										
372	0.01	-.87									
Meth: 281.99 PPM											
<u>Mercury</u>											
450	1.00	1.29									
Other											
220	0.02	.71									
Meth: 281.30 PPM											
<u>Mercury</u>											
450	1.00	.87									
Avg	0.50										
372	0.01	-.87									
Meth: 291.99 PPM											
<u>Nickel</u>											
444	39.33	1.43									
065	28.00	.21									
450	27.50	.16									
102	26.94	.10									
Avg	26.10										
049	25.77	-.12									
232	9.05	-1.83									
372	0.00	-.63									
049	0.01	-.66									
Meth: 291.30 PPM											
<u>Nickel</u>											
444	39.33	1.29									
136	36.00	1.01									
065	28.00	.34									
450	27.50	.30									
102	26.94	.25									
049	25.77	.17									
Avg	23.95										
220	23.00	-.12									
232	9.05	-1.24									
393	0.00	-2.00									
Meth: 301.30 PPM											
<u>Selenium</u>											
372	0.00	.00									
450	0.00	.00									
Avg	0.00										
Meth: 301.99 PPM											
<u>Selenium</u>											
220	1.25	.87									
Avg	0.74										
393	0.23	-.86									
Meth: 301.XX PPM											
<u>Selenium</u>											
220	1.25 R	9.75									
393	0.23	1.29									
Avg	0.08										
450	0.00	-.65									
372	0.00	-.65									
Meth: 311.99 PCT											
<u>Sodium</u>											
232	0.64	1.29									
Avg	0.50										

\* 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
Meth: 311.99 PCT											
Sodium											
Other			402	0.005	2.13						
102	0.43	-.61	393	0.004	1.26						
057	0.42	-.69	324	0.003	.35						
Avg 0.003											
Meth: 321.00 PCT											
Acid Soluble Zinc											
065	0.003	-.04	065	0.003	-.04						
433	0.002	-.14	433	0.002	-.14						
<u>Atomic Absorption</u>											
043	0.009 S	130.88	450	0.002	-.16						
095	0.002	.50	057	0.002	-.19						
Avg	0.002		027	0.002	-.21						
220	0.002	-1.12	232	0.002	-.22						
			095	0.002	-.22						
			220	0.002	-.27						
Meth: 321.30 PCT											
Acid Soluble Zinc											
<u>ICP</u>											
354	0.006 s	3.65	372	0.000	-2.22						
041	0.005 s	3.17									
393	0.004	1.62									
324	0.003 R	.55									
065	0.003	.22									
450	0.002	.21									
057	0.002	.14									
433	0.002	.09									
027	0.002	.04									
232	0.002	.01									
Avg	0.002										
372	0.000	-2.18									
Meth: 321.99 PCT											
Acid Soluble Zinc											
Other			402	0.005	.00						
402	0.005	.00									
Meth: 321.XX PCT											
Acid Soluble Zinc											
043	0.009 s	5.46									
354	0.006 R	3.13									
041	0.005 R	2.76									

\* 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	- 3.82	8.57	0.76	050.61	10	0.00	0.90	0.47
001.99	9	- 0.08	0.99	0.06	050.99	17	0.13	1.92	0.36
001.XX	14	- 0.42	1.98	0.17	050.XX	68	0.65	4.14	0.38
002.99	3	0.00	1.11	0.12	060.00	2	0.00	1.11	0.36
002.XX	3	0.00	1.11	0.12	060.XX	2	0.00	1.11	0.36
005.99	2	0.00	1.22	0.00	101.30	15	6.48	25.80	0.30
005.XX	3	0.00	1.10	0.16	101.XX	15	6.48	25.80	0.30
009.XX	2	0.00	1.22	0.04	121.00	11	0.59	2.18	0.13
010.11	8	0.00	1.01	0.23	121.30	30	- 0.67	4.42	0.26
010.12	4	1.65	3.41	0.23	121.99	4	0.00	0.96	0.42
010.60	54	1.00	7.66	0.45	121.XX	45	- 0.16	3.25	0.63
010.99	7	- 1.20	3.29	0.34	131.30	5	0.40	1.30	0.07
010.XX	73	- 0.66	6.12	0.40	131.XX	7	0.31	1.27	0.07
020.10	5	- 0.59	1.60	0.94	144.01	14	0.07	1.00	0.41
020.20	18	0.23	1.68	0.27	144.99	21	- 1.27	5.81	0.23
020.40	5	0.00	0.95	0.42	144.XX	36	- 0.86	5.28	0.25
020.50	9	- 0.11	2.38	0.29	151.30	5	0.05	0.94	0.10
020.99	4	0.00	1.05	0.20	151.XX	7	- 0.01	0.95	0.19
020.XX	38	0.20	2.10	0.49	165.99	3	0.000	0.666	0.733
030.99	2	0.00	0.00	0.00	165.XX	4	2.201	4.496	4.966
030.XX	6	54.09	132.48	2.29	181.00	2	0.00	0.25	0.85
040.40	2	0.00	1.20	0.18	181.30	7	0.67	1.86	0.22
040.99	2	0.00	1.22	0.02	181.XX	9	0.59	1.98	0.31
040.XX	7	0.00	1.04	0.02	190.XX	2	0.00	1.20	0.17
041.10	14	0.28	1.61	0.40	191.30	9	- 0.66	2.21	0.13
041.40	3	0.00	1.12	0.06	191.XX	11	- 0.56	2.10	0.12
041.50	11	- 1.53	5.16	0.41	202.30	8	6.44	18.63	0.57
041.60	10	0.07	1.71	1.10	202.XX	9	1.06	3.34	0.12
041.99	3	0.00	1.12	0.06	221.00	3	0.0000	1.1174	0.0312
041.XX	32	- 0.52	4.06	0.66	221.30	10	0.2232	1.2004	0.1346
048.20	2	0.00	1.21	0.12	221.XX	14	0.1341	1.1009	0.1031
048.XX	3	0.22	1.21	0.02	241.00	8	- 1.72	3.60	0.34
050.00	14	3.73	15.57	0.61	241.30	23	- 0.10	1.37	0.35
050.10	3	8.43	14.62	0.78	241.99	4	0.00	1.05	0.22
050.30	9	0.32	3.80	0.33	241.XX	35	- 0.23	1.56	0.29
050.31	2	0.00	1.20	0.17	251.30	6	6.13	14.22	1.75
050.50	7	0.00	1.03	0.14	251.XX	7	0.00	1.03	0.13
050.51	9	0.00	0.98	0.30	261.30	11	0.332	1.379	0.058
050.60	6	0.76	2.07	0.18	261.XX	12	- 0.021	0.931	0.038

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
281.30	2	0.00	1.22	0.00					
281.XX	3	0.00	1.12	0.00					
289.30	11	-	0.94	0.23					
289.XX	11	-	0.94	0.23					
291.00	2	0.00	1.21	0.13					
291.30	6	0.00	1.04	0.09					
291.XX	9	0.00	1.03	0.07					
301.30	2	0.00	0.00	0.00					
301.99	2	0.00	1.22	0.06					
301.XX	4	2.44	4.96	0.21					
311.99	3	0.00	1.12	0.05					
311.XX	3	0.00	1.12	0.05					
321.00	3	43.500	75.346	5.802					
321.30	11	0.551	1.454	0.780					
321.XX	14	0.731	1.869	0.644					