

- Pass 1 Results for 66 Labs - - Pass 2 Results for 65 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
Total Nitrogen, Combustion		010.60	8	2.34	0.12	0.03	7	2.32	0.12	0.02
Total Phosphate, Spectrometric	958.01	020.20	2	0.24	0.16	0.17	2	0.24	0.16	0.17
Total Phosphate, Automated	978.01	020.40	1	0.21	0.01	0.01	1	0.21	0.01	0.01
Total Phosphate, ICP		020.50	3	0.19	0.21	0.01	3	0.19	0.21	0.01
Total Phosphate, Other		020.99	1	0.71	0.26	0.37	1	0.71	0.26	0.37
Method Group 020.XX PCT			7	0.28	0.25	0.10	6	0.21	0.16	0.06
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	1	0.32	0.01	0.01	1	0.32	0.01	0.01
Dir Available Phosphate, ICP		041.50	2	0.26	0.29	0.01	2	0.26	0.29	0.01
Method Group 041.XX PCT			3	0.28	0.23	0.01	3	0.28	0.23	0.01
Soluble Potash, STPB Oxalate	958.02	050.00	1	0.41	0.03	0.04	1	0.41	0.03	0.04
Soluble Potash, ICP (Oxalate)		050.50	3	0.38	0.07	0.04	3	0.38	0.07	0.04
Soluble Potash, ICP (Citrate)		050.51	2	0.35	0.05	0.01	2	0.35	0.05	0.01
Soluble Potash, Flame (Oxalate)		050.60	1	0.51	0.01	0.01	1	0.51	0.01	0.01
Soluble Potash, Flame (Citrate)		050.61	1	0.34	0.00	0.00	1	0.34	0.00	0.00
Soluble Potash, Other		050.99	2	0.33	0.09	0.02	2	0.33	0.09	0.02
Method Group 050.XX PCT			10	0.38	0.07	0.02	9	0.37	0.07	0.02
Free Water, Other		060.99	1	2.60	0.16	0.23	1	2.60	0.16	0.23
Acid Soluble Calcium, AA	945.04	101.00	13	11.56	0.49	0.24	12	11.56	0.49	0.18
Acid Soluble Calcium, ICP		101.30	38	11.78	0.64	0.20	37	11.74	0.59	0.18
Acid Soluble Calcium, Other		101.99	2	11.81	0.24	0.38	2	11.81	0.24	0.38
Method Group 101.XX PCT			53	11.73	0.60	0.22	50	11.74	0.51	0.19
Acid Soluble Magnesium, AA	984.01	121.00	13	11.12	0.39	0.18	13	11.12	0.39	0.18
Acid Soluble Magnesium, ICP		121.30	37	11.27	0.59	0.18	35	11.33	0.51	0.16
Acid Soluble Magnesium, Other		121.99	3	10.99	0.37	0.36	3	10.99	0.37	0.36
Method Group 121.XX PCT			53	11.22	0.54	0.19	50	11.26	0.49	0.17
Water Soluble Magnesium, ICP		131.30	1	11.36	0.10	0.14	1	11.36	0.10	0.14
Sulfur, Gravimetric	980.02a	144.01	15	7.49	0.28	0.07	15	7.49	0.28	0.07
Sulfur, Gravimetric	980.02b	144.02	1	8.07	0.07	0.10	1	8.07	0.07	0.10
Sulfur, Other		144.99	28	7.66	0.42	0.10	27	7.63	0.39	0.09
Method Group 144.XX PCT			44	7.61	0.39	0.09	43	7.59	0.37	0.09
Arsenic, Atomic Absorption		151.00	1	3.00	0.14	0.20	1	3.00	0.14	0.20
Arsenic, ICP		151.30	7	3.52	1.31	0.69	6	3.36	1.19	0.31
Arsenic, Other		151.99	2	2.72	1.88	0.08	2	2.72	1.88	0.08
Method Group 151.XX PPM			10	3.31	1.36	0.52	9	3.18	1.27	0.24
Acid Soluble Boron, Other		165.99	5	0.014	0.010	0.003	4	0.011	0.008	0.001
Cadmium, Atomic Absorption		181.00	1	1.95	0.07	0.10	1	1.95	0.07	0.10
Cadmium, ICP		181.30	11	3.73	3.72	0.43	10	3.36	3.70	0.28
Cadmium, Other		181.99	1	2.76	0.02	0.03	1	2.76	0.02	0.03
Method Group 181.XX PPM			13	3.52	3.45	0.37	12	3.20	3.39	0.24

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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
Water Soluble Chlorine, Titrimetric ...	928.02	190.00	1	0.22	0.03	0.04	1	0.22	0.03	0.04
Water Soluble Chlorine, Other		190.99	2	20.86	23.77	1.23	2	20.86	23.77	1.23
Method Group 190.XX PCT			3	13.98	21.28	0.83	3	13.98	21.28	0.83
Chromium, ICP		191.30	13	149.00	29.45	7.43	13	149.00	29.45	7.43
Chromium, Other		191.99	2	121.58	7.72	4.39	2	121.58	7.72	4.39
Method Group 191.XX PPM			15	145.35	29.05	7.03	15	145.35	29.05	7.03
Acid Soluble Cobalt, AA		202.00	2	68.65	3.69	4.85	2	68.65	3.69	4.85
Acid Soluble Cobalt, ICP	965.11	202.30	11	48.14	13.99	2.26	11	48.14	13.99	2.26
Acid Soluble Cobalt, Other		202.99	1	44.48	1.65	2.34	1	44.48	1.65	2.34
Method Group 202.XX PPM			14	50.81	14.48	2.64	13	49.45	14.07	2.15
Acid Soluble Copper, Atomic Absorption	975.01	221.00	12	1.9075	0.0493	0.0223	12	1.9075	0.0493	0.0223
Acid Soluble Copper, ICP		221.30	38	1.8903	0.1251	0.0647	34	1.8864	0.1166	0.0362
Acid Soluble Copper, Other		221.99	2	2.0250	0.3351	0.0200	2	2.0250	0.3351	0.0200
Method Group 221.XX PCT			54	1.9062	0.1302	0.0585	48	1.8926	0.1077	0.0333
Acid Soluble Iron, Atomic Absorption	980.01	241.00	10	5.96	0.24	0.09	9	5.96	0.25	0.06
Acid Soluble Iron, ICP		241.30	38	5.74	0.58	0.21	35	5.78	0.56	0.13
Acid Soluble Iron, Other		241.99	4	5.53	0.64	0.16	3	5.73	0.59	0.04
Method Group 241.XX PCT			53	5.75	0.56	0.18	50	5.78	0.54	0.13
Lead, Atomic Absorption		251.00	1	111.00	11.31	16.00	1	111.00	11.31	16.00
Lead, ICP		251.30	13	139.33	12.88	4.91	13	139.33	12.88	4.91
Lead, Other		251.99	1	142.34	5.61	7.93	1	142.34	5.61	7.93
Method Group 251.XX PPM			15	137.65	14.20	5.85	15	137.65	14.20	5.85
Acid Soluble Manganese, AA	972.02a	261.00	10	1.684	0.066	0.057	10	1.684	0.066	0.057
Acid Soluble Manganese, AA	972.02b	261.11	1	1.810	0.255	0.360	1	1.810	0.255	0.360
Acid Soluble Manganese, ICP		261.30	31	1.700	0.115	0.049	29	1.710	0.109	0.040
Acid Soluble Manganese, ICP	972.02b	261.31	3	1.742	0.030	0.050	3	1.742	0.030	0.050
Acid Soluble Manganese, Other		261.99	3	1.683	0.083	0.069	3	1.683	0.083	0.069
Method Group 261.XX PCT			48	1.700	0.105	0.058	47	1.698	0.101	0.052
Mercury, ICP		281.30	1	0.03	0.00	0.00	1	0.03	0.00	0.00
Mercury, Other		281.99	1	0.03	0.00	0.00	1	0.03	0.00	0.00
Method Group 281.XX PPM			2	0.03	0.00	0.00	2	0.03	0.00	0.00
Molybdenum, ICP		289.30	19	103.72	8.27	4.23	18	103.32	8.03	3.46
Method Group 289.XX PPM			19	103.72	8.27	4.23	18	103.32	8.03	3.46
Nickel, Atomic Absorption		291.00	1	103.42	0.93	1.32	1	103.42	0.93	1.32
Nickel, ICP		291.30	12	100.08	22.34	7.11	11	97.99	21.81	5.39
Nickel, Other		291.99	2	103.14	25.58	6.05	2	103.14	25.58	6.05
Method Group 291.XX PPM			15	100.71	21.57	6.58	14	99.11	21.16	5.19
Selenium, ICP		301.30	6	6.67	5.10	1.68	6	6.67	5.10	1.68
Selenium, Other		301.99	2	2.04	1.40	0.31	2	2.04	1.40	0.31

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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 301.XX PPM			8	5.51	4.87	1.34	7	5.41	5.15	0.90
Sodium, Flame Photometric	974.01	311.30	1	0.14	0.07	0.10	1	0.14	0.07	0.10
Sodium, Other		311.99	5	0.09	0.04	0.00	5	0.09	0.04	0.00
Method Group 311.XX PCT			6	0.10	0.05	0.02	5	0.09	0.04	0.00
Acid Soluble Zinc, Atomic Absorption ..	975.02	321.00	13	2.006	0.114	0.067	12	1.983	0.082	0.057
Acid Soluble Zinc, ICP		321.30	40	2.015	0.191	0.081	37	2.024	0.180	0.057
Acid Soluble Zinc, Other		321.99	1	1.600	0.014	0.020	1	1.600	0.014	0.020
Method Group 321.XX PCT			55	2.014	0.192	0.075	52	2.021	0.185	0.058

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 010.60 PCT											
Total Nitrogen											
Combustion											
443	15.13 s	107.75									
450	2.45 R	1.16									
389	2.45	1.04									
292	2.43	.91									
009	2.38	.55									
422	2.36	.31									
Avg	2.32										
325	2.28	-.35									
351	2.27	-.44									
393	2.09	-1.97									
Meth: 020.20 PCT											
Total Phosphate											
Spectrometric											
292	0.34	.62									
Avg	0.24										
450	0.14	-1.05									
Meth: 020.40 PCT											
Total Phosphate											
Automated											
035	0.21	-.71									
Meth: 020.50 PCT											
Total Phosphate											
ICP											
389	0.45	1.24									
Avg	0.19										
422	0.12	-.32									
393	0.00 X	-.92									
Meth: 020.99 PCT											
Total Phosphate											
Other											
443	0.71	-.71									
Meth: 020.50 PCT											
Soluble Potash											
ICP (Oxalate)											
443	0.71 R	3.24									
389	0.45	1.44									
292	0.34	.79									
Avg	0.21										
035	0.21	-.03									
422	0.12	-.51									
450	0.14	-.95									
393	0.00 X	-1.27									
Meth: 041.10 PCT											
Dir Available Phosph											
Grav Quimociac											
009	0.32	.71									
Meth: 041.50 PCT											
Dir Available Phosph											
ICP											
009	0.52	.87									
Avg	0.26										
325	0.01	-.87									
Meth: 041.XX PCT											
Dir Available Phosph											
009	0.52	1.03									
009	0.32	.16									
Avg	0.28										
325	0.01	-1.19									
Meth: 050.50 PCT											
Soluble Potash											
Other											
389	0.40	.85									
Avg	0.33										
325	0.25	-.88									
Meth: 050.XX PCT											
Soluble Potash											
STPB Oxalate											
009	0.41	-.71									
Meth: 050.60 PCT											
Soluble Potash											
Flame (Oxalate)											
443	0.51	.71									
Meth: 050.61 PCT											
Soluble Potash											
Flame (Citrate)											
035	0.34	-.71									
Meth: 050.99 PCT											
Soluble Potash											
Other											
389	0.40	.85									
Avg	0.33										
325	0.25	-.88									
Meth: 050.51 PCT											
Soluble Potash											
ICP (Citrate)											
393	0.40 X	.85									
Avg	0.35										
009	0.31	-.88									
Meth: 050.55 PCT											
Soluble Potash											
ICP											
420	0.39	.37									
Avg	0.37										
035	0.34	-.32									
009	0.31	-.80									
422	0.31	-.86									
325	0.25	-1.63									
Meth: 060.99 PCT											
Free Water											
Other											
443	2.60	.71									
Meth: 101.00 PCT											
Acid Soluble Calcium											
AA											
296	12.30	1.56									
073	12.28	1.50									
040	12.00	.90									
397	11.85	.67									
177	11.79	.49									
371	11.61	.16									
Avg	11.56										
351	11.25	-.64									
028	11.25	-.64									
262	11.26	-.78									
169	11.15	-.83									
043	11.14	-.98									
105	11.54 R	-.99									
055	10.84	-1.49									
457	9.41 s	-4.43									
Meth: 101.30 PCT											
Acid Soluble Calcium											
ICP											
405	29.25 s	29.62									
117	13.25 R	2.65									
354	12.78	1.75									
422	12.66	1.55									

* 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: 101.99 PCT														
Acid Soluble Calcium														
Other														
042	11.85	1.08												
Avg	11.81													
234	11.76	- .58												
Meth: 101.99 PCT														
Acid Soluble Calcium														
405	29.25 s	34.62												
117	13.25 R	3.10												
354	12.78	2.06												
422	12.66	1.82												
035	12.65	1.81												
232	12.61	1.74												
291	12.53	1.56												
296	12.30	1.16												
057	12.29	1.14												
073	12.28	1.09												
090	12.23	.98												
106	12.23	.97												
432	12.20	.93												
255	12.16	.83												
300	12.05	.62												
324	12.00	.55												
042	11.85	.54												
009	12.01	.54												
040	12.00	.51												
230	11.95	.43												
397	11.85	.37												
456	11.87	.37												
234	11.76	.26												
231	11.75	.22												
177	11.79	.12												
Avg	11.74													
027	11.73	-.06												
419	11.72	-.08												
360	11.71	-.13												
037	11.68	-.25												
377	11.62	-.27												
Meth: 101.99 PCT														
Acid Soluble Calcium														
095	11.62	-.27												
371	11.61	-.28												
450	11.56	-.38												
389	11.70	-.40												
452	11.52	-.42												
390	11.55	-.48												
157	11.46	-.58												
393	11.41	-.65												
131	11.47	-.67												
330	11.49	-.74												
351	11.25	-.97												
028	11.25	-.97												
105	11.54 R	-1.03												
262	11.26	-1.05												
433	11.18	-1.11												
102	11.27	-1.13												
169	11.15	-1.16												
043	11.14	-1.27												
368	11.09	-1.29												
041	11.12	-1.34												
420	11.06	-1.35												
055	10.84	-1.79												
023	10.71	-2.03												
114	9.93 A	-3.59												
457	9.41 s	-4.61												
065	7.47 s	-8.61												
Meth: 121.00 PCT														
Acid Soluble Magnesi														
177	11.76	1.64												
073	11.58	1.29												
296	11.59	1.24												
262	11.35	.59												
Avg	11.12													
169	11.12	.00												
105	11.12	-.03												
371	11.62	-.27												
Meth: 121.00 PCT														
Acid Soluble Magnesi														
095	11.62	-.27												
371	11.61	-.28												
450	11.56	-.38												
389	11.70	-.40												
452	11.52	-.42												
390	11.55	-.48												
157	11.46	-.58												
393	11.41	-.65												
131	11.47	-.67												
330	11.49	-.74												
351	11.25	-.97												
028	11.25	-.97												
105	11.54 R	-1.03												
262	11.26	-1.05												
433	11.18	-1.11												
102	11.27	-1.13												
169	11.15	-1.16												
043	11.14	-1.27												
368	11.09	-1.29												
041	11.12	-1.34												
420	11.06	-1.35												
055	10.84	-1.79												
023	10.71	-2.03												
114	9.93 A	-3.59												
457	9.41 s	-4.61												
065	7.47 s	-8.61												
Meth: 121.00 PCT														
Acid Soluble Magnesi														
177	11.76	1.64												
073	11.58	1.29												
296	11.59	1.24												
262	11.35	.59												
Avg	11.12													
169	11.12	.00												
105	11.12	-.03												
371	11.11	-.27												
Meth: 121.00 PCT														
Acid Soluble Magnesi														
117	13.28 s	4.30												
300	12.55	2.65												
432	12.35	2.26												
354	12.17	1.94												
057	12.02	1.63												
389	12.05	1.62												
232	11.92	1.37												
177	11.76	1.03												
450	11.70	.90												
452	11.65	.80												
073	11.58	.79												
Meth: 121.99 PCT														
Acid Soluble Magnesi														
234	11.09	.93												
042	11.25	.81												
Avg	10.99													
457	10.62	-.98												
Meth: 121.99 PCT														
Acid Soluble Magnesi														
117	13.28 s	4.30												
300	12.55	2.65												
432	12.35	2.26												
354	12.17	1.94												

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index		
Meth: 121.XX PCT																
<u>Acid Soluble Magnesi</u>																
131	10.70	-1.16													Meth: 151.XX PPM	
255	10.64	-1.27													<u>Arsenic</u>	
457	10.62	-1.32													009	4.65
055	10.33	-1.92													231	4.35
023	10.33	-1.92													096	4.10
041	9.95 s	-2.94													230	4.10
065	9.49 A	-3.63													Avg	3.18
309	7.20 s	-8.33													405	3.00
114	7.17 s	-8.40													136	3.00
Meth: 131.30 PCT																
<u>Water Soluble Magnes</u>																
095	11.36	.71													368	3.10
Meth: 144.01 PCT																
<u>Sulfur</u>																
<u>Gravimetric</u>																
457	8.05	1.97													102	1.23
055	7.95	1.62													457	1.09
043	7.78	1.02													457	1.09
324	7.68	.68													457	1.09
095	7.59	.32													457	1.09
262	7.55	.19													457	1.09
102	7.52	.08													457	1.09
Avg	7.49														457	1.09
028	7.41	-.30													457	1.09
405	7.42	-.32													457	1.09
296	7.38	-.46													457	1.09
105	7.36	-.51													457	1.09
371	7.31	-.69													457	1.09
114	7.27	-.83													457	1.09
397	7.19	-1.09													457	1.09
106	6.98	-1.84													457	1.09
Meth: 144.02 PCT																
<u>Sulfur</u>																
<u>Gravimetric</u>																
292	8.07	-.71													393	8.55
Meth: 144.99 PCT																
<u>Sulfur</u>																
<u>Other</u>																
393	8.55	2.32													422	8.52 R
422	8.52 R	2.30													035	8.40
035	8.40	1.95													360	8.09
360	8.09	1.20													292	8.07
291	8.07	1.10													291	8.07
169	7.96	.90													457	8.05
009	7.92	.81													169	7.96
232	7.90	.74													055	7.95
389	7.88	.63													009	7.92
090	7.82	.47													232	7.90
377	7.71	.20													389	7.88
037	7.64	.15													090	7.82
Avg	7.63														043	7.78
452	7.63	-.10													377	7.71
300	7.56	-.18													324	7.68
177	7.55	-.19													037	7.64
049	7.56	-.19													452	7.63
157	7.56	-.19													Avg	7.59
136	7.54	-.23													095	7.59
351	7.52	-.33													300	7.56
023	7.43	-.53													177	7.55
027	7.42	-.55													157	7.56
457	7.40	-.60													049	7.56
368	7.32	-.80													262	7.55
354	7.31	-.81													136	7.54
450	7.30	-.85													351	7.52
255	7.14 X	-1.25													023	7.52
390	7.16	-1.25													102	7.52
419	6.71	-2.35													351	7.52
230	0.57 s	-17.92													023	7.52
Meth: 144.XX PCT																
<u>Sulfur</u>																
450	7.30	-.82													009	4.65
114	7.27	-.91													096	4.10
397	7.19	-1.11													230	4.10
255	7.14 X	-1.25													Avg	3.18
390	7.16	-1.25													405	3.00
106	6.98	-1.69													136	3.00
419	6.71	-2.43													102	1.23
230	0.57 s	-19.19													457	1.09
Meth: 151.00 PPM																
<u>Arsenic</u>																
<u>Atomic Absorption</u>																
136	3.00	.71													106	0.025 R
Meth: 151.30 PPM																
<u>Arsenic</u>																
<u>ICP</u>																
393	15.85 s	10.47													422	0.023
450	4.50 R	1.58													232	0.015
009	4.65	1.08													Avg	0.011
096	4.10	.62													009	0.004
230	4.10	.62													389	0.004
Avg	3.36														Meth: 181.00 PPM	
368	3.10	-.28													Cadmium	
405	3.00	-.30													<u>Atomic Absorption</u>	
102	1.23	-1.84													136	1.95
Meth: 151.99 PPM																
<u>Arsenic</u>																
<u>Other</u>																
231	4.35	.87													Meth: 181.30 PPM	
Avg	2.72														Cadmium	
457	1.09	-.87													<u>ICP</u>	
Meth: 151.XX PPM																
<u>Arsenic</u>																
<u>Other</u>																
393	15.85 s	9.94													452	12.62
450	4.50 R	1.57													065	7.36 R
Meth: 151.XX PPM																
<u>Arsenic</u>																
393	15.85 s	9.94													419	7.25
450	4.50 R	1.57													Avg	3.36
Meth: 151.XX PPM																
<u>Arsenic</u>																
393	15.85 s	9.94													230	3.11
450	4.50 R	1.57													102	2.42
Meth: 151.XX PPM																
<u>Arsenic</u>																
393	15.85 s	9.94													009	2.35
450	4.50 R	1.57													232	2.15
Meth: 151.XX PPM																
<u>Arsenic</u>																
393	15.85 s	9.94													035	1.60
450	4.50 R	1.57													Meth: 181.00 PPM	
Meth: 181.00 PPM																
Cadmium																
<u>ICP</u>																
452	12.62	2.51													Meth: 181.30 PPM	
065	7.36 R	1.11													Cadmium	
419	7.25	1.05													<u>ICP</u>	
Avg	3.36														452	12.62
230	3.11	-.08													065	7.36 R
102	2.42	-.26													419	7.25
009	2.35	-.28													Avg	3.36
232	2.15	-.34													230	3.11
035	1.60	-.48													102	2.42
Meth: 181.30 PPM																
Cadmium																
<u>ICP</u>																
452	12.62	2.51													009	2.35
065	7.36 R	1.11													232	2.15
419	7.25	1.05													035	1.60
Avg	3.36														Meth: 181.00 PPM	
230	3.11	-.08													Cadmium	
102	2.42	-.26													<u>ICP</u>	
009	2.35	-.28													452	12.62
232	2.15	-.34													065	7.36 R
035	1.60	-.48													419	7.25
Meth: 181.00 PPM																
Cadmium																
<u>ICP</u>																
452	12.62	2.51													Avg	3.36
065	7.36 R	1.11													230	3.11
419	7.25	1.05													102	2.42
Avg	3.36														009	2.35
230	3.11	-.08													232	2.15
102	2.42	-.26													035	1.60
009	2.35	-.28													Meth: 181.00 PPM	
232	2.15	-.34													Cadmium	
035	1.60	-.48													<u>ICP</u>	
Meth: 181.00 PPM																
Cadmium																
<u>ICP</u>																
452	12.62	2.51													452	12.62
065	7.36 R	1.11													065	7.36 R
419	7.25	1.05													419	7.25
Avg	3.36														Avg	3.36
230	3.11	-.08													230	3.11
102	2.42	-.26													102	2.42
009	2.35	-.28													009	2.35
232	2.15	-.34													232	2.15
035	1.60	-.48													035	1.60

* 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: 181.30 PPM																				
Cadmium																				
ICP			Meth: 191.99 PPM																	
393	1.27	- .57	Chromium																	
450	0.88	- .67	102	150.86	.24	Meth: 202.99 PPM														
368	0.00	- .91	450	151.50	.22	Acid Soluble Cobalt														
			230	147.50	.09	Other														
			Avg	145.35		231	44.48	.71	Meth: 221.00 PCT											
			037	138.36	- .32	Acid Soluble Copper														
			419	133.50	- .41	Atomic Absorption														
			232	130.00	- .53	457 1.8550 -1.07														
			105	130.50	- .53	262 1.8550 -1.18														
			457	127.75	- .61	Meth: 221.30 PCT														
			393	127.70	- .61	Acid Soluble Copper														
			231	115.42	- 1.04	ICP														
			027	94.44	- 1.76	419 2.6250 s 7.10														
			Meth: 202.00 PPM																	
			Acid Soluble Cobalt																	
			AA			117 2.0600 R 1.91														
			457	68.80	.10	389 2.1000 1.83														
			Avg	68.65		009 2.0250 1.19														
			136	68.50	- 1.22	456 1.9300 R 1.18														
			Meth: 202.30 PPM																	
			Acid Soluble Cobalt																	
			ICP			377 1.9900 .92														
			452	169.38 s	8.55	452 1.9915 .90														
			057	70.15	1.47	057 1.9820 .84														
			102	62.30	.92	354 1.9825 .82														
			035	55.61	.46	230 1.9600 .68														
			Avg	55.05	.40	232 1.9603 .67														
			231	44.48	- .36	450 1.9550 .63														
			102	39.57	- .70	102 1.9420 .60														
			230	37.45	- .86	027 1.9550 .60														
			393	33.11	- 1.16	106 1.9350 .51														
			232	32.00	- 1.24	390 1.9300 .51														
			419	31.50	- 1.28	095 1.9375 .50														
			Meth: 221.00 PCT																	
			Acid Soluble Copper																	
			ICP			Atomic Absorption														
			452	169.38 s	8.69	231 1.9400 .47														
			057	70.15	1.58	300 1.9300 .41														
			009	65.30	1.24	255 1.9080 .26														
			450	62.30	1.02	360 1.9000 .21														
			037	55.61	.55	291 1.9050 .21														
			035	55.05	.50	037 1.9050 .17														
			Avg	48.14		035 1.9050 .17														
			105	47.49	- .06	324 1.9050 .17														
			102	39.57	- .61	131 1.8950 .15														
			230	37.45	- .78	Avg 1.8864														
			393	33.11	- 1.07	368 1.8668 - .19														
			232	32.00	- 1.16	157 1.8550 - .27														
			419	31.50	- 1.19	330 1.8600 - .34														
			Meth: 190.00 PCT																	
			Water Soluble Chlori																	
			457	127.75	.81	426 1.8800 - .60														
			Avg	121.58																
			231	115.42	- .92															
			Meth: 191.99 PPM																	
			Chromium																	
			065	465.45 s	15.82															
			009	203.00	1.99															
			452	199.68	1.89															
			035	172.50	.95															
			368	157.50	.44															
			Meth: 181.99 PPM																	
			Water Soluble Chlori																	
			065	41.43	.87															
			Avg	20.86																
			009	0.29	- .87															

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 221.30 PCT											
Acid Soluble Copper											
ICP			232	1.9603	.67	065	1.6305	-2.44	027	6.03	.45
402	1.7600	-1.08	450	1.9550	.62	042	1.6050	-2.67	456	5.98	.40
023	1.7500	-1.20	102	1.9420	.61	422	1.2750 s	-5.73	450	5.93	.34
393	1.7390	-1.26	027	1.9550	.60	405	0.0600 s	-17.01	330	5.95	.34
432	1.8500 R	-1.32	055	1.9400	.52	Meth: 241.00 PCT					
090	1.7150	-1.47	106	1.9350	.51	Acid Soluble Iron					
041	1.8550 R	-1.69	390	1.9300	.51	Atomic Absorption					
433	1.6365	-2.14	095	1.9375	.49	177	6.28	1.30	360	5.92	.28
065	1.6305	-2.20	231	1.9400	.45	157	5.89	.21	457	6.17	.73
042	1.6050	-2.41	300	1.9300	.39	055	6.07	.60	433	5.87	.20
422	1.2750 s	-5.24	371	1.9200	.27	028	6.11	.58	255	5.89	.19
405	0.0600 s	-15.66	255	1.9080	.24	296	6.05	.40	368	5.87	.16
Meth: 221.99 PCT											
Acid Soluble Copper											
Other			360	1.9000	.20	371	6.04	.35	Avg	5.78	-.07
428	2.3150 X	.87	291	1.9050	.18	043	5.98	.08	232	5.78	-.28
Avg	2.0250		131	1.8950	.14	Avg	5.96		452	5.63	-.34
114	1.7350	-.87	035	1.9050	.12	073	5.95	-.16	230	5.59	-.51
Meth: 221.22 PCT											
Acid Soluble Copper											
419	2.6250 s	7.64	037	1.9050	.12	351	5.81	-.62	422	5.50	-.84
428	2.3150 A	3.92	324	1.9050	.12	105	5.96 R	-.63	042	5.65 R	-.91
040	2.0800 R	2.23	296	1.8950	.05	397	5.39	-2.33	426	5.31	-.94
117	2.0600 R	2.03	Avg	1.8926		262	4.85 s	-4.53	090	5.25	-.94
389	2.1000	1.93	105	1.8890	-.03	Meth: 241.30 PCT					
177	2.0840	1.83	169	1.8780	-.14	Acid Soluble Iron					
456	1.9300 R	1.26	234	1.8800	-.22	ICP					
009	2.0250	1.23	368	1.8668	-.25	405	8.46 s	4.79	393	4.55	-2.20
377	1.9900	.95	043	1.8555	-.34	117	6.66	1.57	114	4.39	-2.50
452	1.9915	.92	457	1.8550	-.35	106	6.42	1.15	300	4.13	-2.95
073	1.9900	.91	157	1.8550	-.35	035	6.31	.94	402	3.72 s	-3.68
057	1.9820	.85	330	1.8600	-.41	324	6.29	.92	419	3.70 s	-3.72
354	1.9825	.83	262	1.8550	-.42	131	6.19	.74	Meth: 241.99 PCT		
028	1.9700	.72	426	1.8800	-.66	402	1.7600	.71	Acid Soluble Iron		
230	1.9600	.68	402	1.7600	-1.23	009	6.18	.68	360	5.92	.29
351	1.9625	.68	023	1.7500	-1.35	390	6.14	.68	157	5.89	.23
			393	1.7390	-1.43	354	6.10	.67	433	5.87	.21
			432	1.8500 R	-1.45	377	6.11	.61	255	5.89	.20
			114	1.7350	-1.46	057	6.03	.57	368	5.87	.17
			090	1.7150	-1.65	095	6.07	.53	Avg	5.73	
			041	1.8550 R	-1.84	291	6.07	.51	234	4.97	-1.29
			433	1.6365	-2.38	389	6.05	.49	428	4.93 R	-1.42

* 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: 241.XX PCT											
Acid Soluble Iron											
452	5.63	-.29									
230	5.59	-.35									
422	5.50	-.53									
397	5.39	-.72									
042	5.65 R	-.87									
426	5.31	-.94									
090	5.25	-.98									
065	5.68 R	-1.07									
231	5.20	-1.09									
023	5.13	-1.24									
234	4.97	-1.51									
428	4.93 X	-1.66									
262	4.85	-1.73									
041	4.71 R	-2.28									
393	4.55	-2.29									
114	4.39	-2.61									
300	4.13	-3.08									
402	3.72 s	-3.84									
419	3.70 s	-3.88									
Meth: 251.00 PPM											
Lead											
136	111.00	.71									
Atomic Absorption											
419	240.50 s	7.25									
035	237.50 s	7.03									
452	166.73	2.05									
405	152.00	1.01									
450	151.00	.96									
009	141.00	.48									
231	142.34	.43									
102	140.63	.42									
368	143.00	.40									
037	142.29	.34									
230	141.50	.29									
Avg	137.65										
389	130.00	-.54									
232	128.50	-.65									
105	126.95	-.79									
393	126.25	-.81									
065	121.50	-1.25									
136	111.00	-1.96									
Meth: 261.00 PCT											
Acid Soluble Manganese											
AA	457	1.815	1.99								
073	1.735	.86									
177	1.727	.67									
Avg	1.684										
351	1.656	-.46									
055	1.680	-.46									
028	1.655	-.58									
262	1.665	-.74									
043	1.655	-.94									
105	1.621	-.99									
296	1.630	-1.11									
Meth: 261.11 PCT											
Acid Soluble Manganese											
AA	040	1.810	-.71								
Meth: 261.30 PCT											
Acid Soluble Manganese											
ICP	095	1.738	.28								
131	1.730	.18									
368	1.720	.10									
Avg	1.710										
330	1.710	-.18									
360	1.685	-.24									
232	1.652	-.55									
390	1.685	-.55									
291	1.645	-.61									
393	1.600	-1.01									
426	1.600	-1.07									
433	1.588	-1.13									
402	1.581	-1.19									
042	1.560	-1.38									
041	1.570 R	-1.53									
023	1.520 R	-1.89									
114	1.490	-2.03									
065	1.047 s	-6.08									
Meth: 261.31 PCT											
Acid Soluble Manganese											
ICP	230	1.750	1.04								
324	1.745	.51									
Avg	1.742										
157	1.730	-1.07									
Meth: 261.99 PCT											
Acid Soluble Manganese											
Other	234	1.770	1.06								
Avg	1.683										
255	1.659	-.82									
037	1.620	-.84									
Meth: 251.30 PPM											
Lead											
397	2.215 s	8.01									
Meth: 261.30 PCT											
Acid Soluble Manganese											
AA	397	2.215 s	8.01								
Meth: 261.XX PCT											
Acid Soluble Manganese											
419	4.115 s	24.26									
397	2.215 s	5.11									
432	2.000 s	3.15									
117	1.910 s	2.75									
354	1.966	2.65									
040	1.810 R	2.10									
057	1.832	1.42									
035	1.825	1.30									
457	1.815	1.17									
106	1.810	1.15									
389	1.810	1.11									
102	1.780	1.00									
452	1.789	.95									
231	1.775	.80									
234	1.770	.72									
377	1.770	.72									
009	1.760	.62									
450	1.760	.62									
027	1.760	.61									
230	1.750	.59									
300	1.740	.51									
324	1.745	.49									
073	1.735	.44									
090	1.730	.43									
157	1.730	.43									
095	1.738	.41									
131	1.730	.32									
177	1.727	.31									
330	1.710	.23									
368	1.720	.22									
Avg	1.698										
360	1.685	-.14									
055	1.680	-.34									
351	1.656	-.43									
232	1.652	-.48									
028	1.655	-.49									
291	1.645	-.54									
262	1.665	-.55									

* 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.XX PCT														
<u>Acid Soluble Manganese</u>														
390	1.685	-.56												
043	1.655	-.69												
255	1.659	-.73												
105	1.621	-.78												
037	1.620	-.82												
296	1.630	-.83												
393	1.600	-.97												
426	1.600	-1.04												
433	1.588	-1.09												
422	1.581	-1.16												
402	1.560	-1.36												
042	1.570	-1.55												
041	1.520	-1.93												
023	1.505	-1.94												
114	1.490	-2.06												
065	1.047 s	-6.44												
Meth: 281.30 PPM														
<u>Mercury</u>														
ICP														
230	0.03	.71												
Meth: 281.99 PPM														
<u>Mercury</u>														
Other														
009	0.03	.71												
Meth: 281.XX PPM														
<u>Mercury</u>														
230	0.03	.87												
Avg	0.03													
009	0.03	-.87												
Meth: 289.30 PPM														
<u>Molybdenum</u>														
393	118.50 s	2.98												
117	120.95	2.22												
419	111.00 R	1.47												
009	114.00	1.42												
452	109.98	.84												
057	108.10	.60												
450	105.00	.43												
035	105.00	.43												
255	106.00	.42												
037	105.62	.40												
433	106.10	.35												
065	104.10	.27												
368	104.00	.09												
230	103.50	.07												
Avg	103.32													
102	99.74	-.45												
105	96.47	-.90												
232	94.65	-1.08												
389	95.00	-1.21												
296	91.50 X	-1.48												
027	90.00	-1.66												
114	50.00 s	-6.64												
Meth: 289.30 PPM														
<u>Molybdenum</u>														
ICP														
419	111.00 R	1.47												
009	114.00	1.42												
452	109.98	.84												
057	108.10	.60												
450	105.00	.43												
035	105.00	.43												
255	106.00	.42												
037	105.62	.40												
433	106.10	.35												
065	104.10	.27												
368	104.00	.09												
230	103.50	.07												
Avg	103.32													
102	99.74	-.45												
105	96.47	-.90												
232	94.65	-1.08												
389	95.00	-1.21												
296	91.50 X	-1.48												
027	90.00	-1.66												
Meth: 289.99 PPM														
<u>Molybdenum</u>														
Other														
114	50.00 S	.00												
Meth: 289.XX PPM														
<u>Molybdenum</u>														
393	118.50 s	2.98												
117	120.95	2.22												
419	111.00 R	1.47												
009	114.00	1.42												
452	109.98	.84												
057	108.10	.60												
450	105.00	.43												
035	105.00	.43												
255	106.00	.42												
037	105.62	.40												
433	106.10	.35												
065	104.10	.27												
368	104.00	.09												
230	103.50	.07												
Avg	103.32													
102	99.74	-.45												
105	96.47	-.90												
232	94.65	-1.08												
389	95.00	-1.21												
296	91.50 X	-1.48												
027	90.00	-1.66												
Meth: 291.00 PPM														
<u>Nickel</u>														
136	174.00 S	75.65												
457	103.42	.71												
Avg	103.42													
Meth: 291.30 PPM														
<u>Nickel</u>														
ICP														
065	259.05 s	10.47												
230	123.00 R	1.29												
009	122.00	1.11												
105	121.45	1.08												
450	115.00	.80												
368	112.00	.68												
419	102.00	.49												
102	105.16	.36												
Avg	97.99													
035	97.70	-.02												
232	89.35	-.40												
037	89.74	-.40												
393	75.51	-1.03												
405	48.00	-2.29												
Meth: 291.30 PPM														
<u>Nickel</u>														
ICP														
065	259.05 s	10.47												
230	123.00 R	1.29												
009	122.00	1.11												
105	121.45	1.08												
450	115.00	.80												
368	112.00	.68												
419	102.00	.49												
102	105.16	.36												
Avg	97.99													
035	97.70	-.02												
232	89.35	-.40												
037	89.74	-.40												
393	75.51	-1.03												
405	48.00	-2.29												
Meth: 291.30 PPM														
<u>Selenium</u>														
ICP														
368	13.85	1.42												
037	11.80	1.02												
Avg	6.67													
230	5.31	-.27												
065	6.23 X	-.44												
393	1.81	-.95												
450	1.00	-1.13												
Meth: 301.30 PPM														
<u>Selenium</u>														
ICP														
422	0.15	1.74												
Avg	0.09													
232	0.08	-.11												
009	0.08	-.13												
102	0.07	-.44												
035	0.04	-1.11												
Meth: 311.30 PCT														
<u>Sodium</u>														
Flame Photometric														
450	0.14	-.71												
Meth: 311.99 PCT														
<u>Sodium</u>														
Other														
422	0.15	1.74												
Avg	0.09													
232	0.08	-.11												
009	0.08	-.13												
102	0.07	-.44												
035	0.04	-1.11												
Meth: 301.99 PPM														
<u>Selenium</u>														
Other														
231	3.23	.88												
Avg	2.04													
296	0.84	-.85												
Meth: 301.XX PPM														
<u>Selenium</u>														
Other														
368	13.85	1.65												
037	11.80	1.25												
065	6.23 R	.46												
Avg	5.41													
230	5.31	-.06												
231	3.23	-.43												
393	1.81	-.70												
450	1.00	-.88												
296	0.84	-.89												
Meth: 311.99 PCT														
<u>Sodium</u>														
Flame Photometric														
450	0.14	-.71												
Meth: 311.99 PCT														
<u>Sodium</u>														
Other														
422	0.15	1.74												
Avg	0.09													
232	0.08	-.11												
009	0.08	-.13												
102	0.07	-.44												
035	0.04	-1.11												
Meth: 311.XX PCT														
<u>Sodium</u>														
Other														
450	0.14 R	1.88												
422	0.15	1.74												
Avg	0.09													
232	0.08	-.11												

* 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.XX PCT														
Sodium														
009	0.08	-.13										Meth: 321.XX PCT		
102	0.07	-.44										Acid Soluble Zinc		
035	0.04	-1.11										371	1.970	-.32
Meth: 321.00 PCT														
Acid Soluble Zinc														
255	2.060 X	.21										231	1.955	-.37
360	2.025	.19										296	1.950	-.47
330	2.025	.19										073	1.915	-.58
377	2.030	.17										027	1.910	-.60
291	2.050	.15										043	1.885	-.74
131	2.050	.14										368	1.881	-.76
035	2.045	.12										090	1.875	-.80
393	2.033	.09										262	1.850	-.92
324	2.025	.03										023	1.825	-1.07
Avg	2.024											432	2.000 R	-1.09
230	2.010	-.10										042	1.805	-1.17
300	2.010	-.10										402	1.800	-1.20
095	2.006	-.11										433	1.728	-1.59
390	2.020	-.11										114	1.665	-1.93
037	2.000	-.15										041	1.675	-1.96
232	1.994	-.23										426	1.640 R	-2.22
292	1.965	-.33										428	1.600 X	-2.28
231	1.955	-.39										422	1.131 s	-4.83
027	1.910	-.64										405	1.000 s	-5.53
368	1.881	-.80										065	0.978 s	-5.65
090	1.875	-.84												
023	1.825	-1.12												
432	2.000 R	-1.12												
042	1.805	-1.22												
402	1.800	-1.25												
433	1.728	-1.65												
114	1.665	-2.00												
041	1.675	-2.03												
426	1.640 R	-2.29												
422	1.131 s	-4.97												
405	1.000 s	-5.69												
065	0.978 s	-5.82												
117	2.165	.97												
452	2.172	.83												
102	2.101	.58												
419	2.115	.51												
157	2.035	.37												
Meth: 321.99 PCT														
Acid Soluble Zinc														
428	1.600 X	.71												

* 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
010.60	9	12.09	35.88	0.30	221.99	2	0.0000	1.2238	0.0334
010.XX	9	12.09	35.88	0.30	221.XX	57	- 0.160	2.7831	0.6551
020.20	2	0.00	0.85	0.62	241.00	11	- 0.41	1.64	0.26
020.50	3	0.00	1.12	0.02	241.30	41	- 0.12	1.48	0.30
020.XX	7	0.43	1.45	0.54	241.99	4	- 0.34	1.13	0.23
041.50	2	0.00	1.22	0.01	241.XX	56	- 0.09	1.39	0.28
041.XX	2	-	1.26	0.31	251.30	15	1.03	2.87	0.25
050.50	3	0.00	1.03	0.36	251.XX	17	0.84	2.54	0.27
050.51	2	0.00	1.21	0.14	261.00	11	0.728	2.556	0.470
050.99	2	0.00	1.20	0.16	261.30	35	0.497	4.043	0.786
050.XX	10	0.77	2.27	0.44	261.31	3	0.000	0.348	0.868
101.00	14	- 0.32	1.49	0.35	261.99	3	0.000	0.941	0.492
101.30	40	0.62	4.95	0.34	261.XX	53	0.543	3.613	0.753
101.99	2	0.00	0.27	0.84	281.XX	2	0.000	0.548	0.775
101.XX	56	0.37	4.96	0.39	289.30	20	0.14	1.03	0.63
121.00	14	- 0.71	2.83	0.28	289.XX	21	- 0.18	1.79	0.61
121.30	40	- 0.29	1.84	0.33	291.00	2	37.81	53.47	1.60
121.99	3	0.00	0.87	0.57	291.30	13	0.66	2.24	2.07
121.XX	57	- 0.35	1.97	0.33	291.99	2	0.00	1.21	0.14
144.01	15	0.00	1.01	0.15	291.XX	16	0.72	2.23	1.93
144.99	29	- 0.54	3.50	0.18	301.30	6	0.00	1.02	0.21
144.XX	44	- 0.39	3.08	0.22	301.99	2	0.00	1.21	0.15
151.30	8	1.43	3.77	0.48	301.XX	8	0.02	0.96	0.18
151.99	2	0.00	1.22	0.03	311.99	5	0.00	1.06	0.07
151.XX	11	1.00	3.12	0.38	311.XX	6	0.23	1.10	0.53
165.99	5	0.319	1.170	0.285	321.00	14	0.699	2.039	0.507
165.XX	5	0.319	1.170	0.285	321.30	43	- 0.431	1.704	0.355
181.30	11	0.10	1.03	0.10	321.XX	57	- 0.312	1.543	0.321
181.XX	13	0.09	1.04	0.10					
190.99	2	0.00	1.22	0.04					
190.XX	3	0.00	1.12	0.03					
191.30	14	0.77	3.03	2.99					
191.99	2	0.00	1.13	0.34					
191.XX	16	0.69	2.92	2.84					
202.00	2	0.00	0.06	0.87					
202.30	12	0.72	2.68	0.20					
202.XX	15	0.66	2.40	0.20					
221.00	14	0.5056	1.5660	0.8938					
221.30	41	- 0.324	2.9288	0.6780					