

Sample	AFPC		2016-08	Grade	Feed Phosphate	
	AOAC Ref.	Method #			# of Labs.	Grand Median
AMMONIACAL NITROGEN						
Ammoniacal Nitrogen, Other		001.99	1	30.94	0.00	
Method Group 001.XX PCT			1	30.94	0.00	
TOTAL NITROGEN						
Total Nitrogen, Combustion	993.13	010.60	1	0.10	0.00	
Method Group 010.XX PCT			1	0.10	0.00	
TOTAL PHOSPHATE						
Total Phosphate, Spectrometric	978.02	020.20	10	18.55	0.11	
Total Phosphate, ICP	970.03	020.40	4	18.45	0.06	
Total Phosphate, Other	993.13	020.99	2	18.44	0.37	
Method Group 020.XX PCT			16	18.54	0.15	
INSOLUBLE PHOSPHATE						
Insoluble Phosphate, Spectrometric	963.03C(b)	030.20	2	10.41	0.04	
Insoluble Phosphate, Alka. Quimociac	963.03C(c)	030.30	2	10.43	0.01	
Method Group 030.XX PCT			4	10.43	0.04	
INDIRECT AVAILABLE PHOSPHATE						
Indirect Available Phosphate, Spectrometric	960.02	040.20	2	8.13	0.04	
Indirect Available Phosphate, Automated	960.02	040.40	2	8.02	0.00	
Method Group 040.XX PCT			4	8.05	0.08	
DIRECT AVAILABLE PHOSPHATE						
Direct Available Phosphate, ICP		041.50	1	21.40	0.00	
Direct Available Phosphate, EDTA Extract	993.01	041.60	2	18.82	0.28	
Method Group 041.XX PCT			3	19.20	1.35	
WATER SOLUBLE PHOSPHATE						
Water Soluble Phosphate, Spectrometric	970.01	048.20	2	0.09	0.01	
Water Soluble Phosphate, Other		048.99	2	0.18	0.01	
Method Group 048.XX PCT			4	0.14	0.07	
SOLUBLE POTASH AS K						
Soluble Potash, Other		050.99	5	0.12	0.01	
Method Group 050.XX PCT			5	0.12	0.01	
FREE WATER						
Free Water, Vacuum Oven	965.08B	060.00	6	0.10	0.04	
Free Water, Vacuum Desiccate	965.08A	060.10	2	0.01	0.01	
Free Water, Other		060.99	2	0.10	0.02	
Method Group 060.XX PCT			10	0.08	0.06	
ACID SOLUBLE CALCIUM AS Ca						
Acid Soluble Calcium, ICP		101.30	9	30.49	0.96	
Acid Soluble Calcium, Other		101.99	4	30.52	0.40	
Method Group 101.XX PCT			13	30.49	0.80	
ACID SOLUBLE MAGNESIUM AS Mg						
Acid Soluble Magnesium, ICP		121.30	10	0.79	0.03	
Method Group 121.XX PCT			10	0.79	0.04	
SULFATE SULFUR (S)						
Sulfur, Other		144.99	2	0.02	0.00	
Method Group 144.XX PCT			2	0.02	0.00	
TOTAL ARSENIC						
Total Arsenic, Other		151.99	3	1.07	0.2	
Method Group 151.XX PPM			3	1.07	0.2	
ACID SOLUBLE BORON						
Acid Soluble Boron, Other		165.99	2	10.43	2.5	

Method Group 165.XX PPM		2	10.43	3.1	
TOTAL CADMIUM					
Total Cadmium, Other	181.99	4	3.08	0.30	
Method Group 181.XX PPM		4	3.08	0.36	
ALUMINUM AS Al					
ICP, %		4	0.48	0.01	
Other	190.99	5	0.48	0.02	
Method Group 190.XX PCT		9	0.48	0.01	
TOTAL CHROMIUM					
Total Chromium, Other	191.99	4	163.09	6.3	
Method Group 191.XX PPM		4	163.09	7.7	
ACID SOLUBLE COBALT					
Acid Soluble Cobalt, Other	202.99	3	3.00	0.4	
Method Group 202.XX PPM		3	3.00	0.5	
ACID SOLUBLE COPPER					
Acid Soluble Copper, Other	221.99	7	0.00	4.6	
Method Group 221.XX PPM		7	4.00	5.6	
ACID SOLUBLE IRON AS Fe					
Acid Soluble Iron, ICP	241.30	5	0.54	0.00	
Acid Soluble Iron, Other	241.99	2	0.63	0.01	
Method Group 241.XX PCT		7	0.55	0.04	
TOTAL LEAD					
Total Lead, Other	251.99	4	1.00	0.0	
Method Group 251.XX PPM		4	1.00	0.0	
ACID SOLUBLE MANGANESE					
Acid Soluble Manganese, Other	261.99	3	40.00	1.2	
Method Group 261.XX PPM		3	40.00	1.5	
TOTAL MERCURY					
Total Mercury, Other	281.99	1	0.04	0.00	
Method Group 281.XX PPM		1	0.04	0.00	
TOTAL MOLYBDENUM					
Total Molybdenum, Other	289.99	3	6.45	0.1	
Method Group 289.XX PPM		3	6.45	0.2	
TOTAL NICKEL					
Total Nickel, Other	291.99	3	29.50	1.4	
Method Group 291.XX PPM		3	29.50	1.7	
TOTAL SELENIUM					
Total Selenium, Other	301.99	2	1.01	0.2	
Method Group 301.XX PPM		2	1.01	0.2	
SODIUM AS Na					
Sodium, Atomic Absorbtion	983.04	311.00	2	5.91	0.01
Sodium, Other		311.99	3	5.62	0.09
Method Group 311.XX PCT			5	5.76	0.26
ACID SOLUBLE ZINC					
Acid Soluble Zinc, Other	321.99	6	152.56	95.7	
Method Group 321.XX PPM		6	152.56	116.5	
FLUORIDE					
Volumentric	325.10	2	0.10	0.00	
Distilled/Electrode	325.99	7	0.08	0.01	
Method Group 325.XX PCT		9	0.08	0.03	

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66 18.30 2.369

020.99	Total Phosphate	
Lab		Other

29	18.93	-1.340
Std Dev	18.81	-1.000
Median	18.44	0.000
Std Dev	18.07	1.000
39	17.95	1.340

010.60	Total Nitrogen	
Lab		Combustion

80	0.10	0.000
Median	0.10	0.000

010.XX	Total Nitrogen	
Lab		Total Method

80	0.10	0.000
Median	0.10	0.000

020.20	Total Phosphate	
Lab		Spectrometric

14	18.69	-1.269
14	18.69	-1.224
Std Dev	18.66	-1.000
61	18.65	-0.907
61	18.60	-0.408
140	18.56	-0.045
Median	18.55	0.000
24	18.55	0.045
24	18.54	0.091
43	18.47	0.714
43	18.45	0.932
Std Dev	18.44	1.000
79	18.38	1.586

020.40	Total Phosphate	
Lab		Automated

31	18.54	-1.359
Std Dev	18.52	-1.000
9	18.47	-0.272
Median	18.45	0.000
9	18.44	0.272
Std Dev	18.39	1.000

020.XX	Total Phosphate	
Lab		Total Method

29	18.93	-3.176
14	18.69	-1.221
14	18.69	-1.181
Std Dev	18.66	-1.000
61	18.65	-0.896
61	18.60	-0.448
140	18.56	-0.122
24	18.55	-0.041
24	18.54	0.000
31	18.54	0.000
Median	18.54	0.000
43	18.47	0.560
9	18.47	0.570
43	18.45	0.755
9	18.44	0.855
Std Dev	18.42	1.000
79	18.38	1.343
66	18.30	1.954
39	17.95	4.845

030.20	Insoluble Phosphate	
Lab		Spectrometric

24	10.46	-1.340
Std Dev	10.45	-1.000
Median	10.41	0.000
Std Dev	10.38	1.000
24	10.37	1.340

030.30	Insoluble Phosphate	
Lab		Alka. Quimociac

9	10.44	-1.340
Std Dev	10.44	-1.000

Median	10.43	0.000
Std Dev	10.42	1.000
9	10.42	1.340

030.XX	Insoluble Phosphate	
Lab		Total Method

24	10.46	-1.025
Std Dev	10.46	-1.000
9	10.44	-0.394
Median	10.43	0.000
9	10.42	0.394
Std Dev	10.40	1.000
24	10.37	1.971

040.20	Indirect Available Phosphate	
Lab		Spectrometric

24	8.18	-1.340
Std Dev	8.17	-1.000
Median	8.13	0.000
Std Dev	8.09	1.000
24	8.08	1.340

040.40	Indirect Available Phosphate	
Lab		Automated

9	8.02	-1.340
Std Dev	8.02	-1.000
Median	8.02	0.000
Std Dev	8.01	1.000
9	8.01	1.340

040.XX	Indirect Available Phosphate	
Lab		Total Method

24	8.18	-1.991
Std Dev	8.12	-1.000
24	8.08	-0.459
Median	8.05	0.000
9	8.02	0.459
9	8.01	0.613

041.50	Direct Available Phosphate	
Lab		ICP

80	21.40	0.000
Median	21.40	0.000

041.60	Direct Available Phosphate	
Lab		EDTA Extract

103	19.20	-1.340
Std Dev	19.10	-1.000
Median	18.82	0.000
Std Dev	18.53	1.000
77	18.44	1.340

041.XX	Direct Available Phosphate	
Lab		Total Method

80	21.40	-1.993
Std Dev	20.30	-1.000
103	19.20	0.000
Median	19.20	0.000
77	18.44	0.687

048.20	Water Soluble Phosphate	
Lab		Spectrometric

24	0.11	-1.340
Std Dev	0.10	-1.000
Median	0.09	0.000
Std Dev	0.08	1.000
24	0.08	1.340

048.99	Water Soluble Phosphate	
Lab		Other

9	0.19	-1.340
Std Dev	0.19	-1.000
Median	0.18	0.000
Std Dev	0.17	1.000
9	0.17	1.340

048.XX	Water Soluble Phosphate	
Lab		Total Method

9	0.19	-0.999
9	0.17	-0.545
Median	0.14	0.000
24	0.11	0.545
Std Dev	0.08	1.000
24	0.08	1.090

050.99	Soluble Potash	
Lab	%K ₂ O	Other

24	0.13	-0.008
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43	0.12	0.000
43	0.12	0.000
Median	0.12	0.000
Std Dev	0.12	1.000
24	0.12	1.340
80	0.10	3.363

050.XX		Soluble Potash
Lab	%K ₂ O	Total Method
24	0.13	-0.008
43	0.12	0.000
43	0.12	0.000
Median	0.12	0.000
Std Dev	0.12	1.000
24	0.12	1.340
80	0.10	3.363

060.00		Free Water
Lab		Vacuum Oven
14	0.15	-1.049
Std Dev	0.14	-1.000
140	0.13	-0.699
14	0.13	-0.583
Median	0.10	0.000
9	0.08	0.583
79	0.07	0.699
Std Dev	0.06	1.000
9	0.05	1.165

060.10		Free Water
Lab		Vacuum Desiccate
61	0.02	-1.340
Std Dev	0.01	-1.000
Median	0.01	0.000
Std Dev	0.00	1.000
61	0.00	1.340

060.99		Free Water
Lab		Other
24	0.13	-1.340
Std Dev	0.12	-1.000
Median	0.10	0.000
Std Dev	0.08	1.000
24	0.08	1.340

060.XX		Free Water
Lab		Total Method
14	0.15	-1.340
140	0.13	-1.053
Std Dev	0.13	-1.000
14	0.13	-0.957
24	0.13	-0.957
24	0.08	0.000
Median	0.08	0.000
9	0.08	0.000
79	0.07	0.096
9	0.05	0.479
Std Dev	0.02	1.000
61	0.02	1.149
61	0.00	1.426

101.30		Acid Soluble Calcium
Lab	%CaO	ICP
66	30.85	-0.367
14	30.70	-0.211
14	30.67	-0.180
31	30.63	-0.138
9	30.49	0.000
Median	30.49	0.000
9	30.09	0.424
Std Dev	29.53	1.000
43	29.38	1.160
61	29.12	1.434
43	29.10	1.451

101.99		Acid Soluble Calcium
Lab	%CaO	Other
140	30.96	-1.097
Std Dev	30.92	-1.000
24	30.69	-0.411
Median	30.52	0.000
24	30.36	0.411
Std Dev	30.12	1.000
61	29.80	1.795

101.XX		Acid Soluble Calcium
Lab	%CaO	Total Method
140	30.96	-0.708

66	30.85	-0.534
14	30.70	-0.307
24	30.69	-0.291
14	30.67	-0.261
31	30.63	-0.201
9	30.49	0.000
Median	30.49	0.000
24	30.36	0.208
9	30.09	0.617
Std Dev	29.83	1.000
61	29.80	1.049
43	29.38	1.688
61	29.12	2.086
43	29.10	2.110

121.30		Acid Soluble Magnesium
Lab	%MgO	ICP
61	0.81	-0.601
9	0.81	-0.450
9	0.80	-0.150
24	0.80	-0.150
24	0.79	0.000
61	0.79	0.000
Median	0.79	0.000
66	0.78	0.255
Std Dev	0.76	1.000
31	0.74	1.501
14	0.69	3.003
14	0.69	3.003

121.XX		Acid Soluble Magnesium
Lab	%MgO	Total Method
61	0.81	-0.601
9	0.81	-0.450
9	0.80	-0.150
24	0.80	-0.150
24	0.79	0.000
61	0.79	0.000
Median	0.79	0.000
66	0.78	0.255
Std Dev	0.76	1.000
31	0.74	1.501
14	0.69	3.003
14	0.69	3.003

144.99		Sulfate Sulfur (S)
Lab		Other
24	ND	0.000
24	ND	0.000
9	0.02	-1.340
Std Dev	0.02	-1.000
Median	0.02	0.000
9	0.02	1.340

144.XX		Sulfate Sulfur (S)
Lab		Total Method
24	ND	0.000
24	ND	0.000
9	0.02	-1.340
Std Dev	0.02	-1.000
Median	0.02	0.000
9	0.02	1.340

151.99		Total Arsenic
Lab		Other
43	1.20	-0.774
24	1.07	0.000
Median	1.07	0.000
Std Dev	0.90	1.000
43	0.75	1.906

151.XX		Total Arsenic
Lab		Total Method
43	1.20	-0.774
24	1.07	0.000
Median	1.07	0.000
Std Dev	0.90	1.000
43	0.75	1.906

165.99		Acid Soluble Boron
Lab	PPM	Other
24	13.80	-1.340
Std Dev	12.95	-1.000
Median	10.43	0.000
Std Dev	7.92	1.000
140	7.07	1.340

65.XX, ppm		
Lab	PPM	Acid Soluble Boron Total Method
24	13.80	-1.340
Std Dev	12.95	-1.000
Median	10.43	0.000
Std Dev	7.92	1.000
140	7.07	1.340

181.99		
Lab		Total Cadmium Other
140	3.91	-2.798
Std Dev	3.38	-1.000
43	3.19	-0.347
Median	3.08	0.000
24	2.98	0.347
43	2.94	0.482

181.XX		
Lab	PPM	Total Cadmium Total Method
140	3.91	-2.798
Std Dev	3.38	-1.000
43	3.19	-0.347
Median	3.08	0.000
24	2.98	0.347
43	2.94	0.482

190.00		
Lab	%Al ₂ O ₃	Aluminum ICP
14	0.50	-2.233
Std Dev	0.49	-1.000
14	0.49	-0.447
Median	0.48	0.000
61	0.48	0.447
61	0.48	0.447

190.99		
Lab	%Al ₂ O ₃	Aluminum Atomic Absorption
24	0.49	-0.670
31	0.49	-0.670
9	0.48	0.000
Median	0.48	0.000
9	0.46	0.670
24	0.46	0.670

190.XX		
Lab	%Al ₂ O ₃	Aluminum Total Method
14	0.50	-1.340
Std Dev	0.49	-1.000
24	0.49	-0.893
31	0.49	-0.893
14	0.49	-0.447
61	0.48	0.000
61	0.48	0.000
Median	0.48	0.000
9	0.48	0.447
Std Dev	0.47	1.000
9	0.46	1.787
24	0.46	1.787

191.99		
Lab	PPM	Total Chromium Other
43	171.50	-1.327
Std Dev	169.43	-1.000
43	165.50	-0.380
Median	163.09	0.000
140	160.68	0.380
Std Dev	156.75	1.000
24	152.00	1.750

191.XX		
Lab	PPM	Total Chromium Total Method
43	171.50	-1.327
Std Dev	169.43	-1.000
43	165.50	-0.380
Median	163.09	0.000
140	160.68	0.380
Std Dev	156.75	1.000
24	152.00	1.750

202.99		
Lab		Acid Soluble Cobalt Other
43	3.50	-1.229
Std Dev	3.41	-1.000
43	3.00	0.000
Median	3.00	0.000
Std Dev	2.59	1.000
24	2.41	1.451

202.XX		
Lab	PPM	Acid Soluble Cobalt Total Method
43	3.50	-1.229
Std Dev	3.41	-1.000
43	3.00	0.000
Median	3.00	0.000
Std Dev	2.59	1.000
24	2.41	1.451

221.00		
Lab		Acid Soluble Copper Atomic Absorption
140	9.43	-1.186
24	8.97	-1.085
Std Dev	8.58	-1.000
43	4.50	-0.109
43	4.00	0.000
Median	4.00	0.000
9	0.61	0.740
9	0.59	0.746
31	0.53	0.759

221.99		
Lab		Acid Soluble Copper Other
140	9.43	-1.186
24	8.97	-1.085
Std Dev	8.58	-1.000
43	4.50	-0.109
43	4.00	0.000
Median	4.00	0.000
9	0.61	0.740
9	0.59	0.746
31	0.53	0.759

221.XX		
Lab	PPM	Acid Soluble Copper Total Method
140	9.43	-1.186
24	8.97	-1.085
Std Dev	8.58	-1.000
43	4.50	-0.109
43	4.00	0.000
Median	4.00	0.000
9	0.61	0.740
9	0.59	0.746
31	0.53	0.759

241.30		
Lab	%Fe ₂ O ₃	Acid Soluble Iron ICP
14	0.55	-2.144
Std Dev	0.55	-1.000
61	0.55	-0.804
66	0.54	0.000
Median	0.54	0.000
14	0.54	0.536

61 0.54 0.536

241.99		
Lab	%Fe ₂ O ₃	Acid Soluble Iron Other
24	0.64	-1.340
Std Dev	0.64	-1.000
Median	0.63	0.000
Std Dev	0.61	1.000
24	0.61	1.340

241.XX		
Lab	%Fe ₂ O ₃	Acid Soluble Iron Total Method
24	0.64	-3.264
24	0.61	-2.233
Std Dev	0.57	-1.000
14	0.55	-0.172
61	0.55	0.000
Median	0.55	0.000
66	0.54	0.103
14	0.54	0.172
61	0.54	0.172

251.99		
Lab		Total Lead Other
24	1.05	-4.873
Std Dev	1.01	-1.000
43	1.00	0.000
43	1.00	0.000
Median	1.00	0.000
140	1.00	0.487

251.XX		
Lab	PPM	Total Lead Total Method
24	1.05	-4.873
Std Dev	1.01	-1.000
43	1.00	0.000
43	1.00	0.000
Median	1.00	0.000
140	1.00	0.487

261.99		
Lab	PPM	Acid Soluble Manganese Other
24	41.20	-1.005
Std Dev	41.19	-1.000

43	40.00	0.000
Median	40.00	0.000
Std Dev	38.81	1.000
43	38.00	1.675

261.XX Acid Soluble Manganese		
Lab	PPM	Total Method
24	41.20	-1.005
Std Dev	41.19	-1.000
43	40.00	0.000
Median	40.00	0.000
Std Dev	38.81	1.000
43	38.00	1.675

281.99 Total Mercury		
Lab	PPM	Other
24	0.04	0.000
Median	0.04	0.000

281.XX Total Mercury		
Lab	PPM	Total Method
24	0.04	0.000
Median	0.04	0.000

289.30 Total Molybdenum		
Lab	PPM	ICP
Median		

289.99 Total Molybdenum		
Lab	PPM	Other
43	6.55	-0.766
43	6.45	0.000
Median	6.45	0.000
Std Dev	6.32	1.000
24	6.20	1.914

289.XX Total Molybdenum		
Lab	PPM	Total Method
43	6.55	-0.766
43	6.45	0.000
Median	6.45	0.000
Std Dev	6.32	1.000
24	6.20	1.914

291.99 Total Nickel		
Lab	PPM	Other
43	30.00	-0.362
43	29.50	0.000
Median	29.50	0.000
Std Dev	28.12	1.000
24	26.30	2.318

291.XX Total Nickel		
Lab	PPM	Total Method
43	30.00	-0.362
43	29.50	0.000
Median	29.50	0.000
Std Dev	28.12	1.000
24	26.30	2.318

301.99 Total Selenium		
Lab	PPM	Other
24	1.23	-1.340
Std Dev	1.17	-1.000
Median	1.01	0.000
Std Dev	0.84	1.000
140	0.78	1.340

301.XX Total Selenium		
Lab	PPM	Total Mthod
24	1.23	-1.340
Std Dev	1.17	-1.000
Median	1.01	0.000
Std Dev	0.84	1.000
140	0.78	1.340

311.00 Sodium		
Lab	%Na ₂ O	Atomic Absorbtion
61	5.92	-1.340
Std Dev	5.92	-1.000
Median	5.91	0.000
Std Dev	5.91	1.000
61	5.91	1.340

311.99 Sodium		
Lab	%Na ₂ O	Other
31	5.76	-1.540
Std Dev	5.71	-1.000

24	5.62	0.000
Median	5.62	0.000
Std Dev	5.53	1.000
24	5.52	1.140

311.XX Sodium		
Lab	%Na ₂ O	Total Method
61	5.92	-0.776
61	5.91	-0.705
31	5.76	0.000
Median	5.76	0.000
24	5.62	0.635
Std Dev	5.54	1.000
24	5.52	1.105

321.99 Acid Soluble Zinc		
Lab		Other
43	168.50	-0.167
43	166.00	-0.141
140	160.12	-0.079
Median	152.56	0.000
24	145.00	0.079
Std Dev	56.88	1.000
9	0.10	1.594
9	0.08	1.594

321.XX Acid Soluble Zinc		
Lab	PPM	Total Method
43	168.50	-0.167
43	166.00	-0.141
140	160.12	-0.079
Median	152.56	0.000
24	145.00	0.079
Std Dev	56.88	1.000
9	0.10	1.594
9	0.08	1.594

325.10 Fluoride		
Lab	%	Electrode
14	0.11	-1.340
Median	0.10	0.000
14	0.10	1.340

325.99 Fluoride		
Lab	%	Other
140	0.12	-3.634
61	0.09	-0.908
31	0.08	0.000
61	0.08	0.000
Median	0.08	0.000
79	0.07	0.863
24	0.07	0.908
24	0.07	0.908

325.XX Fluoride		
Lab	%	Total Method
140	0.12	-1.817
14	0.11	-1.136
14	0.10	-0.908
61	0.09	-0.454
31	0.08	0.000
61	0.08	0.000
Median	0.08	0.000
79	0.07	0.432
24	0.07	0.454
24	0.07	0.454