

AFPC Rock Check Program

Sample No. 2004-03

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	23	1.17	0.219
Other (describe)	102	1	1.22	
Method Group 100		24	1.17	0.21
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	2	29.34	0.138
ICP-induced coupled plasma	202	5	29.33	0.198
Photometric-AFPC 9-6	203	11	29.62	0.190
Automated -AOAC 978.01-15th	204	10	29.49	0.260
Other(describe)	205			
Method Group 200		28	29.49	0.22
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	29.58	0.224
ICP-induced coupled plasma	212	4	29.79	0.119
Photometric-AFPC 9-6	213	8	29.86	0.269
Automated -AOAC 978.01-15th	214	10	29.90	0.317
Other(describe)	215			
Method Group 210		17	29.84	0.37
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	7	1.21	0.063
ICP-induced coupled plasma	302	19	1.21	0.257
Other(describe)	303	2	15.33	10.569
Method Group 300		28	1.21	0.14
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	5	1.23	0.022
ICP-induced coupled plasma	402	19	1.19	0.081
Other(describe)	403	2	1.34	0.052
Method Group 400		26	1.21	0.07
MgO				
Atomic Absorption-AFPC 9-18,19	501	7	0.62	0.007
ICP-induced coupled plasma	502	19	0.64	0.034
Other(describe)	503	2	1.07	0.187
Method Group 500		28	0.63	0.03
Acid Insoluble				
Insoluble-AFPC 9-8	601	14	10.05	0.205
Other(describe)	602	1	0.65	0.000
Method Group 600		15	10.03	0.23
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	13	43.61	1.063
Ceric Sulfate volumetric	703			
Permanganate	704	2	43.88	0.541
EDTA Volumetric	705	5	44.44	0.784
Other(describe)	706	5	43.72	0.239
Method Group 700		25	43.63	0.88
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	4	43.96	0.616
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	3	45.10	0.076
Other(describe)	716	5	44.28	0.126
Method Group 710		15	44.19	0.57

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	17	3.43	0.067
Other (describe)	803	2	3.35	0.037
Method Group 800		19	3.40	0.07
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	4	14.9	6.49
Other(describe)	913	5	20.5	7.46
Method Group 900		9	19.0	7.61
Cadmium, Cd				
Atomic Absorption	921	1	1	0.0
ICP-induced coupled plasma	922	10	3	1.3
Other(describe)	923	2	3	0.3
Method Group 910		13	3	0.7
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	8	6	2.5
Other(describe)	933	2	5	1.1
Method Group 920		10	6	2.6
Mercury, Hg				
Atomic Absorption	941	1	0.1	0.00
ICP-induced coupled plasma	942			
Other(describe)	943			
Method Group 930		1	0.1	0.00
Molybdenum, Mo				
Atomic Absorption	951			
ICP-induced coupled plasma	952	4	15	0.4
Other(describe)	953	1	17	0.0
Method Group 940		5	15	0.2
Nickel, Ni				
Atomic Absorption	961	1	18	0.0
ICP-induced coupled plasma	962	10	17	2.7
Other(describe)	963	2	30	7.3
Method Group 950		13	18	3.0
Lead, Pb				
Atomic Absorption	971	2	12	1.1
ICP-induced coupled plasma	972	4	15	4.2
Other(describe)	973	2	15	0.9
Method Group 960		8	14	3.4
Selenium, Se				
Atomic Absorption	981	1	1	0.0
ICP-induced coupled plasma	982			
Other(describe)	983	2	11	6.9
Method Group 970		3	2	7.2
Zinc, Zn				
Atomic Absorption	991	2	40	10
ICP-induced coupled plasma	992	10	42	20
Other(describe)	993	2	48	3
Method Group 980		14	43	17

101 Ground Sample AFPC 9-2			
Lab	%	H ₂ O	
51	avg		0.000
10	1.47		-1.367
10	1.46		-1.322
13	1.42		-1.139
13	1.39		-1.003
Std Dev	1.39		-1.000
17	1.33		-0.729
5	1.26		-0.410
24	1.26		-0.410
78	1.25		-0.365
78	1.24		-0.296
24	1.21		-0.160
5	1.17		0.000
17	1.17		0.000
Median	1.17		0.000
75	1.06		0.501
75	1.03		0.661
6	1.00		0.775
9	1.00		0.775
9	1.00		0.775
Std Dev	0.95		1.000
35	0.93		1.085
2004-01	0.76		1.869
2004-01	0.72		2.051
77	0.67		2.279
57	0.64		2.416
77	0.46		3.236

102 Other (describe)			
Lab	%	H ₂ O	
51	1.22		0.000
Median	1.22		0.000

201 Gravimetric AFPC 9-5			
Lab	%	P2O5	
51	29.52		-1.340
Std Dev	29.47		-1.000
Median	29.34		0.000
Std Dev	29.20		1.000
77	29.15		1.340

202 ICP-induced coupled plasma			
Lab	%	P2O5	
35	29.54		-1.087
Std Dev	29.52		-1.000
10	29.44		-0.582
10	29.33		0.000
Median	29.33		0.000
26	29.18		0.758
Std Dev	29.13		1.000
6	29.11		1.087

203 Photometric-AFPC 9-6			
Lab	%	P2O5	
36	30.10		-2.522
Std Dev	29.81		-1.000
19	29.72		-0.525
5	29.66		-0.210
60	29.65		-0.158
5	29.62		0.000
9	29.62		0.000
Median	29.62		0.000
78	29.61		0.079
78	29.43		0.998
Std Dev	29.43		1.000
9	29.37		1.314
17	29.10		2.733
17	29.05		2.995

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
2004-01	31.08		-6.100
2004-01	31.05		-5.984
24	29.80		-1.182
Std Dev	29.75		-1.000
24	29.72		-0.874
13	29.54		-0.163
Median	29.49		0.000
57	29.45		0.163
75	29.45		0.163
13	29.43		0.259
75	29.42		0.298
77	29.28		0.816

205 Other(describe)			
Lab	%	P2O5	
Median	0.00		0.000

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
51	29.88		-1.340
Std Dev	29.81		-1.000
Median	29.58		0.000
Std Dev	29.36		1.000
77	29.28		1.340

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
10	29.88		-0.722
35	29.82		-0.233
Median	29.79		0.000
10	29.76		0.233
Std Dev	29.67		1.000
6	29.40		3.243

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
5	30.04		-0.660
78	29.98		-0.425
5	29.97		-0.408
9	29.92		-0.217
Median	29.86		0.000
78	29.80		0.217
9	29.67		0.722
Std Dev	29.59		1.000
17	29.44		1.547
17	29.44		1.558

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
2004-01	31.32		-4.473
2004-01	31.28		-4.338
Std Dev	30.22		-1.000
24	30.18		-0.884
24	30.08		-0.575
13	29.96		-0.190
Median	29.90		0.000
13	29.84		0.190

75	29.77		0.425
75	29.72		0.569
57	29.64		0.822
Std Dev	29.58		1.000
77	29.48		1.333

215 Other(describe)			
Lab	%	P2O5	dB
Median	0.00		0.000

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
36	3.19		-31.214
Std Dev	1.27		-1.000
17	1.27		-0.946
17	1.25		-0.631
5	1.21		0.000
5	1.21		0.000
Median	1.21		0.000
Std Dev	1.15		1.000
51	1.14		1.104
60	1.01		3.153

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
77	1.33		-0.455
77	1.32		-0.416
2004-01	1.24		-0.112
9	1.24		-0.104
78	1.24		-0.096
26	1.24		-0.085
9	1.23		-0.065
6	1.22		-0.026
78	1.22		-0.022
75	1.21		0.000
Median	1.21		0.000
75	1.19		0.072
2004-01	1.17		0.172
35	1.08		0.539
Std Dev	0.96		1.000
24	0.90		1.220
24	0.89		1.279
13	0.87		1.337
13	0.84		1.454

10	0.83	1.493
10	0.82	1.551

2004-01	0.94	3.054
2004-01	0.88	3.765

75	0.57	1.910
75	0.57	1.999
2004-01	0.33	9.094
2004-01	0.32	9.407

2004-01	46.17	-2.409
Std Dev	44.67	-1.000
75	44.64	-0.973
2004-01	44.60	-0.940
75	44.53	-0.874
77	44.30	-0.654
10	43.63	-0.019
10	43.61	0.000
Median	43.61	0.000
77	43.60	0.005
6	43.24	0.343
26	43.11	0.466
Std Dev	42.54	1.000
35	42.30	1.228
78	42.03	1.482
78	41.51	1.976

303 Other(describe)		
Lab	%	Fe2O3
51	29.50	-1.340
Std Dev	25.90	-1.000
Median	15.33	0.000
Std Dev	4.76	1.000
19	1.17	1.340

403 Other(describe)		
Lab	%	Al2O3
19	1.41	-1.340
Std Dev	1.39	-1.000
Median	1.34	0.000
Std Dev	1.29	1.000
51	1.27	1.340

503 Other(describe)		
Lab	%	MgO
51	1.32	-1.340
Std Dev	1.26	-1.000
Median	1.07	0.000
Std Dev	0.88	1.000
19	0.82	1.340

401 Atomic Absorption-AFPC 9-16,17		
Lab	%	Al2O3
51	1.28	-2.233
Std Dev	1.25	-1.000
5	1.23	0.000
17	1.23	0.000
Median	1.23	0.000
Std Dev	1.21	1.000
5	1.20	1.340
17	1.20	1.340

501 Atomic Absorption-AFPC 9-18,19		
Lab	%	MgO
51	0.67	-6.700
17	0.63	-1.340
17	0.63	-1.340
Std Dev	0.63	-1.000
5	0.62	0.000
36	0.62	0.000
60	0.62	0.000
Median	0.62	0.000
Std Dev	0.61	1.000
5	0.61	1.340

601 Insoluble-AFPC 9-8		
Lab	%	Al
19	10.50	-2.217
9	10.29	-1.194
Std Dev	10.25	-1.000
13	10.17	-0.585
13	10.16	-0.536
24	10.16	-0.536
9	10.07	-0.122
51	10.06	-0.073
Median	10.05	0.000
24	10.03	0.073
6	9.95	0.463
5	9.88	0.804
5	9.88	0.804
Std Dev	9.84	1.000
10	9.82	1.096
10	9.38	3.265
35	9.29	3.679

703 Ceric Sulfate volumetric		
Lab	%	CaO
Median	0.00	0.000

402 ICP-induced coupled plasma		
Lab	%	Al2O3
77	1.53	-4.178
77	1.52	-4.056
78	1.47	-3.496
78	1.40	-2.587
24	1.28	-1.106
Std Dev	1.27	-1.000
24	1.27	-0.983
35	1.24	-0.614
10	1.22	-0.307
10	1.21	-0.184
9	1.19	0.000
Median	1.19	0.000
13	1.19	0.061
6	1.18	0.123
9	1.18	0.123
75	1.17	0.284
26	1.17	0.307
75	1.16	0.408
13	1.15	0.492
Std Dev	1.11	1.000

502 ICP-induced coupled plasma		
Lab	%	MgO
13	0.80	-4.764
13	0.79	-4.616
9	0.68	-1.340
35	0.67	-1.042
Std Dev	0.67	-1.000
9	0.66	-0.744
6	0.64	-0.149
77	0.64	-0.149
10	0.64	0.000
26	0.64	0.000
78	0.64	0.000
Median	0.64	0.000
10	0.63	0.149
77	0.62	0.447
78	0.62	0.462
24	0.61	0.893
24	0.61	0.893
Std Dev	0.60	1.000

602 Other(describe)		
Lab	%	Al
51	0.65	0.000
Median	0.65	0.000

704 Permanganate		
Lab	%	CaO
57	44.60	-1.340
Std Dev	44.42	-1.000
Median	43.88	0.000
Std Dev	43.33	1.000
60	43.15	1.340

705 EDTA Volumetric		
Lab	%	CaO
9	44.74	-0.383
9	44.65	-0.268
51	44.44	0.000
Median	44.44	0.000
Std Dev	43.66	1.000
17	43.60	1.072
17	43.54	1.149

701 Gravimetric sulfate		
Lab	%	CaO
Median	0.00	0.000

706 Other(describe)		
Lab	%	CaO
19	44.30	-2.429
Std Dev	43.96	-1.000
24	43.83	-0.440

24	43.72	0.000
Median	43.72	0.000
13	43.51	0.900
Std Dev	43.48	1.000
13	43.35	1.549

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
10	44.28	-0.507	
10	44.25	-0.466	
Median	43.96	0.000	
6	43.68	0.466	
Std Dev	43.35	1.000	
35	42.70	2.056	

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
Median	0.00		0.000

715 EDTA Volumetric			
Lab	%	CaO	dB
9	45.19	-1.200	
Std Dev	45.18	-1.000	
9	45.10	0.000	
Median	45.10	0.000	
Std Dev	45.03	1.000	
51	44.99	1.480	

716 Other(describe)			
Lab	%	CaO	dB
24	44.36	-0.650	
19	44.30	-0.176	
24	44.28	0.000	
Median	44.28	0.000	
Std Dev	44.15	1.000	
13	44.13	1.164	

13	43.96	2.522
801	Volumetric-AFPC 9-37	
Lab	%	Fluorine, F
Median	0.00	0.000

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
24	3.58	-2.308	
78	3.55	-1.861	
24	3.52	-1.414	
Std Dev	3.49	-1.000	
35	3.47	-0.670	
51	3.45	-0.372	
2004-01	3.45	-0.298	
9	3.44	-0.223	
9	3.44	-0.223	
2004-01	3.43	0.000	
Median	3.43	0.000	
17	3.40	0.372	
78	3.39	0.521	
13	3.38	0.744	
17	3.36	0.968	
Std Dev	3.36	1.000	
75	3.34	1.340	
75	3.33	1.489	
36	3.19	3.499	
13	3.02	6.104	

803 Other(describe)			
Lab	%	Fluorine, F	
77	3.40	-1.340	
Std Dev	3.39	-1.000	
Median	3.35	0.000	
Std Dev	3.31	1.000	
77	3.30	1.340	

911 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Arsenic, As	
Median	0.0	0.000	

912 ICP-induced coupled plasma			
Lab	ppm	Arsenic, As	
51	avg	0.000	

78	21.0	-0.940
78	19.0	-0.631
Median	14.9	0.000
9	10.8	0.631
9	10.8	0.631

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	24.0	-0.469	
77	23.0	-0.335	
51	20.5	0.000	
Median	20.5	0.000	
Std Dev	13.0	1.000	
13	13.0	1.005	
57	3.6	2.265	

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	1	0.000	
Median	1	0.000	

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
2004-01	6	-2.240	
2004-01	6	-2.240	
77	5	-1.474	
Std Dev	4	-1.000	
77	4	-0.708	
78	3	-0.057	
Median	3	0.000	
9	3	0.057	
75	3	0.057	
75	3	0.057	
9	3	0.134	
78	3	0.172	

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
57	4	-1.340	
Std Dev	4	-1.000	
Median	3	0.000	
Std Dev	3	1.000	
13	3	1.340	

931 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Cobalt, Co	
Median	0	0.000	

932 ICP-induced coupled plasma			
Lab	ppm	Cobalt, Co	
78	9	-1.092	
Std Dev	9	-1.000	
78	9	-0.893	
77	8	-0.695	
77	7	-0.298	
Median	6	0.000	
75	6	0.298	
75	5	0.496	
2004-01	4	0.893	
2004-01	4	0.893	

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	6	-1.340	
Std Dev	6	-1.000	
Median	5	0.000	
Std Dev	3	1.000	
51	3	1.340	

941 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Mercury, Hg	
57	0.1	0.000	
Median	0.1	0.000	

942 ICP-induced coupled plasma			
Lab	ppm	Mercury, Hg	
Median	0.0	0.000	

943 Other(describe)			
Lab	ppm	Mercury, Hg	
13	<.07	0.000	
Median	0.0	0.000	

951 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Iolybdenum, Mo	
Median	0	0.000	

952 ICP-induced coupled plasma		
Lab	ppm	lolybdenum, Mo
77	15	-0.466
78	15	-0.117
Median	15	0.000
78	15	0.117
Std Dev	14	1.000
77	13	4.195

953 Other(describe)		
Lab	ppm	lolybdenum, Mo
51	<8	0.000
13	17	0.000
Median	17	0.000

961 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Nickel, Ni
51	18	0.000
Median	18	0.000

962 ICP-induced coupled plasma		
Lab	ppm	Nickel, Ni
77	27	-3.697
78	21	-1.479
78	21	-1.479
Std Dev	20	-1.000
77	18	-0.370
75	17	0.000
75	17	0.000
2004-01	17	0.000
Median	17	0.000
24	17	0.185
24	17	0.185
2004-01	17	0.185

963 Other(describe)		
Lab	ppm	Nickel, Ni
19	40	-1.340
Std Dev	38	-1.000
Median	30	0.000
Std Dev	23	1.000
13	21	1.340

971 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Lead, Pb
51	14	-1.340
Std Dev	13	-1.000
Median	12	0.000
Std Dev	11	1.000
57	11	1.340

972 ICP-induced coupled plasma		
Lab	ppm	Lead, Pb
78	18	-0.676
78	18	-0.652
Median	15	0.000
9	12	0.652
9	12	0.771

973 Other(describe)		
Lab	ppm	Lead, Pb
13	16	-1.340
Std Dev	16	-1.000
Median	15	0.000
Std Dev	14	1.000
51	14	1.340

981 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Selenium, Se
57	1	0.000
Median	1	0.000

982 ICP-induced coupled plasma		
Lab	ppm	Selenium, Se
Median	0	0.000

983 Other(describe)		
Lab	ppm	Selenium, Se
51	21	-1.340
Std Dev	18	-1.000
Median	11	0.000
Std Dev	4	1.000
13	2	1.340

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
60	54	-1.340

Std Dev	50	-1.000
Median	40	0.000
Std Dev	30	1.000
51	27	1.340

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
24	165	-6.161
24	164	-6.111
2004-01	67	-1.277
2004-01	67	-1.252
Std Dev	61	-1.000
75	42	-0.025
Median	42	0.000
77	41	0.025
78	41	0.050
78	40	0.075
75	39	0.125
77	39	0.125

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	52	-1.340
Std Dev	51	-1.000
Median	48	0.000
Std Dev	44	1.000
19	43	1.340

