

AFPC Rock Check Program

Sample No. 2006-08

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	19	0.07	0.035
Other (describe)	102	1	0.05	
Method Group 100		20	0.07	0.04
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	2	30.26	0.131
ICP-induced coupled plasma	202	4	30.12	0.485
Photometric-AFPC 9-6	203	12	30.10	0.133
Automated -AOAC 978.01-15th	204	7	30.01	0.110
Other(describe)	205	1	30.41	0.000
Method Group 200		26	30.09	0.16
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	30.26	0.135
ICP-induced coupled plasma	212	2	29.83	0.107
Photometric-AFPC 9-6	213	9	30.19	0.110
Automated -AOAC 978.01-15th	214	7	30.02	0.102
Other(describe)	215			
Method Group 210		9	30.16	0.14
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	4	0.61	0.034
ICP-induced coupled plasma	302	21	0.71	0.034
Other(describe)	303	1	0.47	0.000
Method Group 300		26	0.70	0.04
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	2	0.26	0.067
ICP-induced coupled plasma	402	21	0.42	0.026
Other(describe)	403	1	0.37	0.000
Method Group 400		24	0.42	0.03
MgO				
Atomic Absorption-AFPC 9-18,19	501	4	0.59	0.049
ICP-induced coupled plasma	502	20	0.62	0.017
Other(describe)	503			
Method Group 500		24	0.62	0.02
Acid Insoluble				
Insoluble-AFPC 9-8	601	13	9.98	0.101
Other(describe)	602			
Method Group 600		13	9.98	0.10
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	14	48.21	0.597
Ceric Sulfate volumetric	703			
Permanganate	704	3	47.95	0.549
EDTA Volumetric	705	3	48.05	0.086
Other(describe)	706	4	48.12	0.480
Method Group 700		24	48.14	0.49
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	6	48.02	0.320
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	3	48.10	0.081
Other(describe)	716	4	48.15	0.502
Method Group 710		10	48.53	0.49

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	14	3.57	0.100
Other (describe)	803	2	3.58	0.011
Method Group 800		16	3.57	0.09
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	3	10.0	1.92
Other(describe)	913	1	21.0	0.00
Method Group 900		4	12.3	4.75
Cadmium, Cd				
Atomic Absorption	921			
ICP-induced coupled plasma	922	9	37	3.1
Other(describe)	923	1	40	0.0
Method Group 910		10	37	4.2
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	5	2	3.7
Other(describe)	933	1	1	0.0
Method Group 920		6	2	3.0
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943			
Method Group 930		0		
Molybdenum, Mo				
Atomic Absorption	951			
ICP-induced coupled plasma	952	4	6	3.0
Other(describe)	953	1	12	0.0
Method Group 940		5	7	5.0
Nickel, Ni				
Atomic Absorption	961			
ICP-induced coupled plasma	962	7	20	3.4
Other(describe)	963	1	24	0.0
Method Group 950		8	20	3.9
Lead, Pb				
Atomic Absorption	971			
ICP-induced coupled plasma	972	4	3	1.3
Other(describe)	973	1	5	0.0
Method Group 960		5	3	1.5
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982	1	3	0.0
Other(describe)	983	1	5	0.0
Method Group 970		2	4	0.7
Zinc, Zn				
Atomic Absorption	991	2	339	0
ICP-induced coupled plasma	992	7	321	38
Other(describe)	993	1	320	0
Method Group 980		10	321	29

101 Ground Sample AFPC 9-2		
Lab	%	H ₂ O
61	0.14	-1.975
9	0.13	-1.693
61	0.13	-1.693
9	0.11	-1.128
24	0.11	-1.128
Std Dev	0.11	-1.000
35	0.10	-0.846
13	0.08	-0.282
75	0.08	-0.282
13	0.08	-0.141
34	0.07	0.000
75	0.07	0.000
Median	0.07	0.000
6	0.06	0.282
24	0.06	0.282
77	0.06	0.282
15	0.06	0.423
78	0.05	0.564
78	0.05	0.564
Std Dev	0.03	1.000
15	0.03	1.269
77	0.01	1.693

102 Other (describe)		
Lab	%	H ₂ O
241	0.05	0.000
Median	0.05	0.000

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
241	30.43	-1.340
Std Dev	30.39	-1.000
Median	30.26	0.000
Std Dev	30.12	1.000
77	30.08	1.340

202 ICP-induced coupled plasma		
Lab	%	P2O5
26	31.23	-2.283
Std Dev	30.61	-1.000
10	30.30	-0.356
Median	30.12	0.000

13	29.95	0.356
13	29.67	0.943

203 Photometric-AFPC 9-6		
Lab	%	P2O5
61	30.23	-0.975
35	30.20	-0.787
61	30.20	-0.787
9	30.17	-0.562
34	30.17	-0.562
6	30.14	-0.337
Median	30.10	0.000
9	30.05	0.337
60	30.00	0.712
60	30.00	0.712
78	30.00	0.750
Std Dev	29.96	1.000
78	29.89	1.537
36	29.84	1.912

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
15	30.19	-1.635
15	30.12	-1.045
Std Dev	30.12	-1.000
75	30.10	-0.863
24	30.01	0.000
Median	30.01	0.000
77	29.97	0.318
24	29.96	0.454
75	29.95	0.500

205 Other(describe)		
Lab	%	P2O5
241	30.41	0.000
Median	30.41	0.000

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
241	30.45	-1.340	
Std Dev	30.40	-1.000	
Median	30.26	0.000	
Std Dev	30.13	1.000	
77	30.08	1.340	

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
13	29.97	-1.340	
Std Dev	29.94	-1.000	
Median	29.83	0.000	
Std Dev	29.72	1.000	
13	29.69	1.340	

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
61	30.27	-0.694	
61	30.24	-0.439	
35	30.23	-0.356	
9	30.21	-0.165	
34	30.19	0.000	
Median	30.19	0.000	
6	30.16	0.301	
9	30.08	0.984	
Std Dev	30.08	1.000	
78	30.01	1.650	
78	29.90	2.606	

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
15	30.20	-1.756	
15	30.13	-1.027	
Std Dev	30.12	-1.000	
75	30.12	-0.964	
24	30.02	0.000	
Median	30.02	0.000	
77	29.99	0.344	
24	29.99	0.344	
75	29.97	0.482	

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

301 Atomic Absorption-AFPC 9-12,13		
Lab	%	Fe2O3
36	0.63	-0.744
60	0.61	0.000
60	0.61	0.000

Median	0.61	0.000
Std Dev	0.57	1.000
241	0.45	4.616

302 ICP-induced coupled plasma		
Lab	%	Fe2O3
77	0.84	-3.871
26	0.82	-3.276
77	0.81	-2.978
78	0.78	-2.084
78	0.77	-1.787
Std Dev	0.74	-1.000
10	0.73	-0.596
9	0.72	-0.298
34	0.72	-0.298
61	0.72	-0.298
61	0.72	-0.298
9	0.71	0.000
Median	0.71	0.000
13	0.70	0.298
13	0.70	0.298
15	0.69	0.596
24	0.69	0.596
15	0.69	0.744
75	0.68	0.860
6	0.68	0.893
75	0.68	0.905
Std Dev	0.68	1.000
24	0.66	1.638
35	0.65	1.787

303 Other(describe)		
Lab	%	Fe2O3
241	0.47	0.000
Median	0.47	0.000

401 Atomic Absorption-AFPC 9-16,17		
Lab	%	Al2O3
241	0.35	-1.340
Std Dev	0.33	-1.000
Median	0.26	0.000
Std Dev	0.19	1.000
36	0.17	1.340

402 ICP-induced coupled plasma			
Lab	%	Al2O3	
78	0.61		-7.274
78	0.61		-7.274
77	0.55		-4.977
77	0.52		-3.829
9	0.46		-1.531
Std Dev	0.45		-1.000
9	0.44		-0.766
13	0.44		-0.766
35	0.44		-0.766
13	0.43		-0.191
24	0.43		-0.191
15	0.42		0.000
34	0.42		0.000
61	0.42		0.000
Median	0.42		0.000
15	0.42		0.191
24	0.41		0.383
10	0.41		0.574
75	0.40		0.592
75	0.39		0.972
Std Dev	0.39		1.000
61	0.39		1.149
6	0.36		2.297
26	0.35		2.680

403 Other(describe)			
Lab	%	Al2O3	
241	0.37		0.000
Median	0.37		0.000

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
35	0.62		-0.670
36	0.62		-0.670
Median	0.59		0.000
60	0.56		0.670
60	0.56		0.670

502 ICP-induced coupled plasma			
Lab	%	MgO	
9	0.67		-2.978
9	0.66		-2.382

78	0.65		-1.787
78	0.65		-1.489
13	0.64		-1.191
Std Dev	0.64		-1.000
61	0.63		-0.596
10	0.62		0.000
13	0.62		0.000
15	0.62		0.000
15	0.62		0.000
26	0.62		0.000
61	0.62		0.000
77	0.62		0.000
Median	0.62		0.000
6	0.61		0.596
34	0.61		0.596
77	0.61		0.596
Std Dev	0.60		1.000
24	0.58		2.680
24	0.58		2.680
75	0.53		5.593
75	0.51		6.828

503 Other(describe)			
Lab	%	MgO	
Median	0.00		0.000

601 Insoluble-AFPC 9-8			
Lab	%	Al	
9	10.41		-4.268
61	10.17		-1.836
6	10.12		-1.390
Std Dev	10.08		-1.000
61	10.08		-0.993
13	10.04		-0.546
24	10.03		-0.447
9	9.98		0.000
Median	9.98		0.000
13	9.97		0.099
15	9.95		0.298
24	9.95		0.347
10	9.93		0.546
Std Dev	9.88		1.000
15	9.87		1.092
35	3.84		60.945

602 Other(describe)			
Lab	%	Al	
Median	0.00		0.000

701 Gravimetric sulfate			
Lab	%	CaO	
Median	0.00		0.000

702 ICP-induced coupled plasma			
Lab	%	CaO	
77	49.15		-1.570
Std Dev	48.81		-1.000
78	48.78		-0.942
78	48.77		-0.925
34	48.76		-0.917
77	48.65		-0.733
26	48.33		-0.188
61	48.23		-0.021
Median	48.21		0.000
6	48.20		0.021
75	48.10		0.182
10	48.09		0.205
61	47.88		0.557
13	47.67		0.909
13	47.65		0.942
75	47.62		0.991

703 Ceric Sulfate volumetric			
Lab	%	CaO	
Median	0.00		0.000

704 Permanganate			
Lab	%	CaO	
241	49.42		-2.680
Std Dev	48.50		-1.000
60	47.95		0.000
60	47.95		0.000
Median	47.95		0.000

705 EDTA Volumetric			
Lab	%	CaO	
35	48.17		-1.398
Std Dev	48.14		-1.000

9	48.05		0.000
Median	48.05		0.000
Std Dev	47.96		1.000
9	47.94		1.282

706 Other(describe)			
Lab	%	CaO	
24	48.57		-0.931
24	48.42		-0.630
Median	48.12		0.000
15	47.82		0.630
15	47.81		0.650

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
61	48.29		-0.863
6	48.23		-0.664
10	48.09		-0.230
Median	48.02		0.000
61	47.94		0.230
13	47.71		0.969
Std Dev	47.70		1.000
13	47.69		1.024

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
35	48.22		-1.432
Std Dev	48.18		-1.000
9	48.10		0.000
Median	48.10		0.000
Std Dev	48.02		1.000
9	48.00		1.248

716 Other(describe)			
Lab	%	CaO	dB
24	48.59		-0.879
24	48.47		-0.639
Median	48.15		0.000
15	47.83		0.639
15	47.83		0.648

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
35	3.77		-2.004
Std Dev	3.67		-1.000
9	3.60		-0.301
78	3.60		-0.250
9	3.58		-0.100
15	3.58		-0.100
24	3.58		-0.050
15	3.57		0.000
78	3.57		0.000
Median	3.57		0.000
24	3.53		0.401
Std Dev	3.47		1.000
13	3.47		1.052
13	3.44		1.302
75	3.44		1.302
75	3.42		1.503
36	2.93		6.412

803 Other(describe)			
Lab	%	Fluorine, F	
77	3.59		-1.340
Std Dev	3.59		-1.000
Median	3.58		0.000
Std Dev	3.56		1.000
77	3.56		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	
24	14.7		-2.420
Std Dev	11.9		-1.000
78	10.0		0.000
Median	10.0		0.000
78	9.5		0.260

913 Other(describe)			
Lab	ppm	Arsenic, As	
13	21.0		0.000
Median	21.0		0.000

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
Median	0		0.000

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
78	42		-1.695
78	41		-1.518
Std Dev	40		-1.000
77	38		-0.484
61	38		-0.387
24	37		0.000
Median	37		0.000
75	34		0.807
24	34		0.856
75	34		0.969
Std Dev	33		1.000
61	33		1.195

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	40		0.000
Median	40		0.000

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	6		-1.072
78	6		-1.072
Std Dev	6		-1.000
77	2		0.000
Median	2		0.000
75	1		0.268
75	1		0.268

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	1		0.000
Median	1		0.000

941 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Mercury, Hg	
Median	0.0		0.000

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

943 Other(describe)			
Lab	ppm	Mercury, Hg	
13	<.05		0.000
Median	0.0		0.000

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

952 ICP-induced coupled plasma			
Lab	ppm	Molybdenum, Mo	
24	14		-2.812
Std Dev	9		-1.000
77	7		-0.362
Median	6		0.000
78	5		0.362
78	5		0.378

953 Other(describe)			
Lab	ppm	Molybdenum, Mo	
13	12		0.000
Median	12		0.000

961 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Nickel, Ni	
Median	0		0.000

962 ICP-induced coupled plasma			
Lab	ppm	Nickel, Ni	
78	22		-0.744
78	22		-0.744
24	20		-0.149
24	20		0.000
Median	20		0.000
77	17		0.744
Std Dev	16		1.000
75	16		1.042
75	16		1.042

963 Other(describe)			
Lab	ppm	Nickel, Ni	
13	24		0.000
Median	24		0.000

971 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Lead, Pb	
Median	0		0.000

972 ICP-induced coupled plasma			
Lab	ppm	Lead, Pb	
24	7		-3.612
Std Dev	4		-1.000
78	3		-0.194
Median	3		0.000
78	3		0.194
77	2		0.583

973 Other(describe)			
Lab	ppm	Lead, Pb	
13	5		0.000
Median	5		0.000

981 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Selenium, Se	
Median	0		0.000

982 ICP-induced coupled plasma		
Lab	ppm	Selenium, Se
24	3	0.000
Median	3	0.000

983 Other(describe)		
Lab	ppm	Selenium, Se
13	5	0.000
Median	5	0.000

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
60	339	0.000
60	339	0.000
Median	339	0.000

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
78	365	-1.169
78	365	-1.169
Std Dev	359	-1.000
24	322	-0.039
24	321	0.000
Median	321	0.000
75	293	0.723
77	292	0.749
75	286	0.906

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	320	0.000
Median	320	0.000

