

AFPC Rock Check Program

Sample No. 2006-07

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	23	0.42	0.104
Other (describe)	102	4	0.19	0.179
Method Group 100		27	0.38	0.12
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	2	37.07	0.011
ICP-induced coupled plasma	202	3	36.57	0.101
Photometric-AFPC 9-6	203	16	36.61	0.164
Automated -AOAC 978.01-15th	204	7	36.64	0.071
Other(describe)	205	1	36.46	0.000
Method Group 200		29	36.61	0.16
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	37.11	0.025
ICP-induced coupled plasma	212	3	36.73	0.060
Photometric-AFPC 9-6	213	15	36.77	0.124
Automated -AOAC 978.01-15th	214	7	36.77	0.098
Other(describe)	215			
Method Group 210		16	36.77	0.13
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	5	0.10	0.022
ICP-induced coupled plasma	302	22	0.10	0.014
Other(describe)	303	2	0.09	0.000
Method Group 300		29	0.10	0.01
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	5	0.32	0.015
ICP-induced coupled plasma	402	24	0.30	0.022
Other(describe)	403			
Method Group 400		29	0.30	0.03
MgO				
Atomic Absorption-AFPC 9-18,19	501	6	0.11	0.011
ICP-induced coupled plasma	502	23	0.11	0.004
Other(describe)	503			
Method Group 500		29	0.11	0.00
Acid Insoluble				
Insoluble-AFPC 9-8	601	22	3.60	0.126
Other(describe)	602			
Method Group 600		22	3.60	0.13
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	18	52.62	0.461
Ceric Sulfate volumetric	703			
Permanganate	704	1	50.95	0.000
EDTA Volumetric	705	2	53.21	0.160
Other(describe)	706	4	51.90	0.364
Method Group 700		25	52.57	0.47
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	13	52.70	0.445
Ceric Sulfate volumetric	713			
Permanganate	714	1	51.27	0.000
EDTA Volumetric	715	2	53.33	0.101
Other(describe)	716	4	52.11	0.404
Method Group 710		14	52.36	0.70

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	14	3.97	0.279
Other(describe)	803	2	4.10	0.000
Method Group 800		16	3.98	0.21
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	3	13.5	0.13
Other(describe)	913	2	14.9	0.63
Method Group 900		5	13.9	0.37
Cadmium, Cd				
Atomic Absorption	921	2	39	0.7
ICP-induced coupled plasma	922	9	39	1.2
Other(describe)	923	3	36	0.9
Method Group 910		14	39	2.0
Cobalt, Co				
Atomic Absorption	931	1	7	0.0
ICP-induced coupled plasma	932	5	1	0.4
Other(describe)	933	3	1	0.1
Method Group 920		9	1	0.1
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943	1	0.1	0.00
Method Group 930		1	0.1	0.00
Molybdenum, Mo				
Atomic Absorption	951			
ICP-induced coupled plasma	952	2	1	0.0
Other(describe)	953	3	7	2.0
Method Group 940		5	2	4.4
Nickel, Ni				
Atomic Absorption	961	2	15	5.6
ICP-induced coupled plasma	962	5	6	0.7
Other(describe)	963	3	7	0.6
Method Group 950		10	7	1.6
Lead, Pb				
Atomic Absorption	971	1	5	0.0
ICP-induced coupled plasma	972	3	2	1.4
Other(describe)	973	4	2	2.2
Method Group 960		8	3	2.4
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982			
Other(describe)	983	1	1	0.0
Method Group 970		1	1	0.0
Zinc, Zn				
Atomic Absorption	991	1	69	0
ICP-induced coupled plasma	992	6	64	10
Other(describe)	993	3	63	24
Method Group 980		10	65	5

101 Ground Sample AFPC 9-2			
Lab	%	H ₂ O	
27	0.62		-1.914
13	0.54		-1.101
Std Dev	0.52		-1.000
61	0.50		-0.766
61	0.50		-0.766
61	0.50		-0.766
61	0.50		-0.766
24	0.48		-0.526
5	0.46		-0.383
24	0.45		-0.287
75	0.45		-0.239
5	0.43		-0.096
75	0.42		0.000
Median	0.42		0.000
6	0.38		0.383
35	0.38		0.383
6	0.36		0.574
15	0.36		0.574
15	0.36		0.622
34	0.34		0.766
6	0.33		0.861
Std Dev	0.32		1.000
6	0.31		1.101
13	0.19		2.201
77	0.18		2.297
77	0.16		2.489

102 Other (describe)			
Lab	%	H ₂ O	
69	0.30		-0.614
69	0.30		-0.614
Median	0.19		0.000
51	0.08		0.614
Std Dev	0.01		1.000
10	0.00		1.061

201 Gravimetric AFPC 9-5			
Lab	%	P2O5	
77	37.08		-1.340
Std Dev	37.08		-1.000
Median	37.07		0.000
Std Dev	37.05		1.000

202 ICP-induced coupled plasma			
Lab	%	P2O5	
10	36.80		-2.283
Std Dev	36.67		-1.000
13	36.57		0.000
Median	36.57		0.000
13	36.53		0.397

203 Photometric-AFPC 9-6			
Lab	%	P2O5	
69	36.79		-1.127
69	36.79		-1.096
Std Dev	36.77		-1.000
6	36.75		-0.853
6	36.73		-0.761
6	36.73		-0.761
6	36.67		-0.365
35	36.64		-0.213
5	36.61		-0.030
Median	36.61		0.000
5	36.60		0.030
34	36.56		0.274
61	36.52		0.518
61	36.52		0.518
61	36.48		0.761
61	36.48		0.761
Std Dev	36.44		1.000
36	36.34		1.614
27	36.25		2.162

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
75	36.75		-1.622
Std Dev	36.71		-1.000
15	36.69		-0.776
75	36.65		-0.212
15	36.64		0.000
Median	36.64		0.000
77	36.61		0.353
Std Dev	36.56		1.000
24	36.54		1.340
24	36.44		2.821

205 Other(describe)			
Lab	%	P2O5	
51	36.46		0.000
Median	36.46		0.000

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
77	37.15		-1.340
Std Dev	37.14		-1.000
Median	37.11		0.000
Std Dev	37.09		1.000
51	37.08		1.340

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
10	36.80		-1.228
Std Dev	36.79		-1.000
13	36.73		0.000
Median	36.73		0.000
Std Dev	36.67		1.000
13	36.64		1.452

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
69	36.90		-1.062
69	36.90		-1.022
Std Dev	36.89		-1.000
6	36.87		-0.815
6	36.86		-0.756
6	36.86		-0.713
6	36.79		-0.139
35	36.78		-0.086
5	36.77		0.000
Median	36.77		0.000
5	36.77		0.008
61	36.70		0.530
61	36.70		0.530
34	36.68		0.682
61	36.66		0.855
61	36.66		0.855
Std Dev	36.65		1.000
27	36.48		2.366

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
75	36.91		-1.424
Std Dev	36.86		-1.000
15	36.82		-0.582
75	36.81		-0.493
15	36.77		0.000
Median	36.77		0.000
24	36.71		0.616
77	36.67		0.989
Std Dev	36.67		1.000
24	36.61		1.599

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

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
5	0.13		-1.340
Std Dev	0.12		-1.000
5	0.12		-0.893
27	0.10		0.000
Median	0.10		0.000
36	0.09		0.447
Std Dev	0.08		1.000
51	0.07		1.340

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
77	0.14		-2.680
77	0.12		-1.251
Std Dev	0.12		-1.000
6	0.12		-0.893
35	0.12		-0.893
75	0.11		-0.575
15	0.11		-0.536
15	0.11		-0.536
34	0.11		-0.536
51	0.11		-0.536
75	0.11		-0.467
6	0.11		-0.179
Median	0.10		0.000
10	0.10		0.179

24	0.10	0.179
61	0.10	0.179
61	0.10	0.179
24	0.10	0.536
6	0.09	0.893
6	0.09	0.893
13	0.09	0.893
61	0.09	0.893
61	0.09	0.893
Std Dev	0.09	1.000
13	0.06	3.037

303 Other(describe)		
Lab	%	Fe2O3
69	0.09	-1.340
Std Dev	0.09	-1.000
Median	0.09	0.000
Std Dev	0.09	1.000
69	0.09	1.340

401 Atomic Absorption-AFPC 9-16,17		
Lab	%	Al2O3
27	0.59	-18.090
Std Dev	0.33	-1.000
36	0.33	-0.670
51	0.32	0.000
Median	0.32	0.000
5	0.31	0.670
5	0.31	0.670

402 ICP-induced coupled plasma		
Lab	%	Al2O3
35	0.37	-3.480
51	0.36	-3.016
77	0.34	-2.088
24	0.33	-1.624
77	0.33	-1.624
24	0.33	-1.392
Std Dev	0.32	-1.000
15	0.32	-0.928
15	0.31	-0.464
69	0.30	-0.445
69	0.30	-0.436
34	0.30	-0.232

13	0.30	0.000
13	0.30	0.000
61	0.30	0.000
61	0.30	0.000
Median	0.30	0.000
10	0.29	0.232
61	0.29	0.232
61	0.29	0.232
75	0.28	0.488
75	0.28	0.716
Std Dev	0.27	1.000
6	0.27	1.392
6	0.25	2.088
6	0.25	2.320
6	0.24	2.552

403 Other(describe)		
Lab	%	Al2O3
Median	0.00	0.000

501 Atomic Absorption-AFPC 9-18,19		
Lab	%	MgO
35	0.16	-4.020
5	0.13	-1.787
Std Dev	0.12	-1.000
5	0.11	0.000
27	0.11	0.000
36	0.11	0.000
51	0.11	0.000
Median	0.11	0.000

502 ICP-induced coupled plasma		
Lab	%	MgO
13	0.15	-9.380
51	0.14	-8.040
Std Dev	0.11	-1.000
6	0.11	0.000
6	0.11	0.000
6	0.11	0.000
10	0.11	0.000
15	0.11	0.000
15	0.11	0.000
61	0.11	0.000
61	0.11	0.000

61	0.11	0.000
61	0.11	0.000
77	0.11	0.000
77	0.11	0.000
Median	0.11	0.000
34	0.11	0.268
Std Dev	0.11	1.000
13	0.11	1.340
24	0.11	1.340
24	0.11	1.340
6	0.10	4.020
69	0.06	12.542
69	0.06	12.569
75	0.06	14.150
75	0.06	14.217

503 Other(describe)		
Lab	%	MgO
Median	0.00	0.000

601 Insoluble-AFPC 9-8		
Lab	%	Al
27	4.44	-6.670
6	3.77	-1.310
5	3.75	-1.191
Std Dev	3.73	-1.000
6	3.73	-0.993
61	3.70	-0.794
61	3.70	-0.794
5	3.69	-0.715
6	3.69	-0.715
6	3.63	-0.238
10	3.61	-0.079
61	3.60	0.000
61	3.60	0.000
Median	3.60	0.000
51	3.58	0.159
24	3.57	0.238
13	3.57	0.278
13	3.54	0.476
15	3.53	0.596
Std Dev	3.47	1.000
15	3.46	1.151
35	3.38	1.747

24	3.37	1.826
69	0.04	28.281
69	0.04	28.301

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
75	53.68	-2.302
75	53.56	-2.059
77	53.30	-1.486
77	53.20	-1.269
Std Dev	53.08	-1.000
10	52.71	-0.195
61	52.71	-0.195
61	52.71	-0.195
6	52.66	-0.087
61	52.62	0.000
61	52.62	0.000
Median	52.62	0.000
6	52.50	0.250
6	52.25	0.792
Std Dev	52.15	1.000
6	52.11	1.096
13	52.08	1.161
34	52.07	1.183
13	52.04	1.248
69	50.70	4.156
69	50.66	4.242

703 Ceric Sulfate volumetric		
Lab	%	CaO
Median	0.00	0.000

704 Permanganate		
Lab	%	CaO
27	50.95	0.000
Median	50.95	0.000

705 EDTA Volumetric			
Lab	%	CaO	dB
51	53.42		-1.340
Std Dev	53.37		-1.000
Median	53.21		0.000
Std Dev	53.04		1.000
35	52.99		1.340

706 Other(describe)			
Lab	%	CaO	dB
24	52.57		-1.849
Std Dev	52.26		-1.000
24	52.08		-0.488
Median	51.90		0.000
15	51.72		0.488
15	51.69		0.584

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
61	52.97		-0.605
61	52.97		-0.605
61	52.88		-0.402
61	52.88		-0.402
6	52.82		-0.260
10	52.71		-0.011
6	52.70		0.000
Median	52.70		0.000
6	52.44		0.587
13	52.32		0.854
6	52.28		0.938
Std Dev	52.25		1.000
13	52.18		1.170
69	50.85		4.148
69	50.81		4.238

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
27	51.27		0.000
Median	51.27		0.000

715 EDTA Volumetric			
Lab	%	CaO	dB
51	53.46		-1.340
Std Dev	53.43		-1.000
Median	53.33		0.000
Std Dev	53.23		1.000
35	53.19		1.340

716 Other(describe)			
Lab	%	CaO	dB
24	52.82		-1.765
Std Dev	52.51		-1.000
24	52.31		-0.502
Median	52.11		0.000
15	51.90		0.502
15	51.87		0.583

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	dB
69	56.36		#####
69	56.26		#####
24	4.41		-1.560
24	4.32		-1.255
Std Dev	4.25		-1.000
51	4.15		-0.645
75	3.99		-0.072
75	3.98		-0.018
Median	3.97		0.000
15	3.97		0.018
15	3.92		0.179
13	3.92		0.197
27	3.90		0.251
Std Dev	3.69		1.000
13	3.23		2.671
35	3.19		2.814

803 Other(describe)			
Lab	%	Fluorine, F	dB
77	4.10		0.000
77	4.10		0.000
Median	4.10		0.000

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

912 ICP-induced coupled plasma			
Lab	ppm	Arsenic, As	dB
24	13.9		-2.603
Std Dev	13.6		-1.000
69	13.5		0.000
Median	13.5		0.000
69	13.5		0.077

913 Other(describe)			
Lab	ppm	Arsenic, As	dB
13	15.7		-1.340
Std Dev	15.5		-1.000
Median	14.9		0.000
Std Dev	14.2		1.000
51	14.0		1.340

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	dB
27	40		-1.340
Std Dev	40		-1.000
Median	39		0.000
Std Dev	38		1.000
51	38		1.340

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	dB
77	41		-1.513
Std Dev	40		-1.000
61	40		-0.259
61	40		-0.259
61	39		0.000
61	39		0.000

923 Other(describe)		
Lab	ppm	Cadmium, Cd
13	39	-2.659
Std Dev	37	-1.000
69	36	0.000
Median	36	0.000
69	36	0.021

931 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Cobalt, Co
27	7	0.000
Median	7	0.000

932 ICP-induced coupled plasma		
Lab	ppm	Cobalt, Co
51	1	0.000
77	1	0.000
77	1	0.000
Median	1	0.000
Std Dev	1	1.000
75	1	1.340
75	1	1.340

933 Other(describe)		
Lab	ppm	Cobalt, Co
69	1	-0.365
69	1	0.000
Median	1	0.000
Std Dev	1	1.000
13	1	2.315

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
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943 Other(describe)		
Lab	ppm	Mercury, Hg
69	<0.1	0.000
69	<0.1	0.000
13	0.1	0.000
Median		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
77	1	0.000
77	1	0.000
Median	1	0.000

953 Other(describe)		
Lab	ppm	Molybdenum, Mo
69	7	-0.020
69	7	0.000
Median	7	0.000
Std Dev	5	1.000
13	2	2.660

961 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Nickel, Ni
27	22	-1.340
Std Dev	20	-1.000
Median	15	0.000
Std Dev	9	1.000
51	7	1.340

962 ICP-induced coupled plasma		
Lab	ppm	Nickel, Ni
51	10	-5.360
77	7	-1.340
Std Dev	7	-1.000
75	6	0.000
75	6	0.000
77	6	0.000
Median	6	0.000

963 Other(describe)			
Lab	ppm	Nickel, Ni	
13	9	-2.397	
Std Dev	8	-1.000	
69	7	0.000	
Median	7	0.000	
69	7	0.283	

971 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Lead, Pb	
51	5	0.000	
Median	5	0.000	

972 ICP-induced coupled plasma			
Lab	ppm	Lead, Pb	
24	5	-1.975	
Std Dev	3	-1.000	
77	2	0.000	
Median	2	0.000	
77	1	0.705	

973 Other(describe)			
Lab	ppm	Lead, Pb	
13	4	-0.804	
27	4	-0.648	
Median	2	0.000	
69	1	0.648	
69	1	0.669	

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

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

983 Other(describe)			
Lab	ppm	Selenium, Se	
69	<0.1	0.000	
69	<0.1	0.000	
13	1	0.000	
Median		0.000	

991 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Zinc, Zn	
27	69	0.000	
Median	69	0.000	

992 ICP-induced coupled plasma			
Lab	ppm	Zinc, Zn	
24	86	-2.171	
24	77	-1.313	
Std Dev	74	-1.000	
77	66	-0.225	
Median	64	0.000	
75	62	0.225	
75	61	0.324	
Std Dev	54	1.000	
77	53	1.073	

993 Other(describe)			
Lab	ppm	Zinc, Zn	
13	66	-0.129	
69	63	0.000	
Median	63	0.000	
Std Dev	39	1.000	
69	1	2.551	

