

AFPC Rock Check Program

Sample No. 2007-02

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	21	0.10	0.037
Other (describe)	102	2	0.10	0.019
Method Group 100		23	0.10	0.03
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	2	29.92	0.007
ICP-induced coupled plasma	202	1	30.20	0.000
Photometric-AFPC 9-6	203	16	30.07	0.174
Automated -AOAC 978.01-15th	204	7	30.14	0.047
Other(describe)	205	2	29.55	0.183
Method Group 200		28	30.08	0.18
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	29.94	0.009
ICP-induced coupled plasma	212			
Photometric-AFPC 9-6	213	13	30.06	0.134
Automated -AOAC 978.01-15th	214	7	30.17	0.050
Other(describe)	215	1	29.34	0.000
Method Group 210		14	30.10	0.16
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	5	0.70	0.071
ICP-induced coupled plasma	302	20	0.70	0.018
Other(describe)	303			
Method Group 300		25	0.70	0.02
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	4	0.43	0.071
ICP-induced coupled plasma	402	19	0.42	0.030
Other(describe)	403			
Method Group 400		23	0.42	0.03
MgO				
Atomic Absorption-AFPC 9-18,19	501	6	0.59	0.041
ICP-induced coupled plasma	502	19	0.61	0.030
Other(describe)	503			
Method Group 500		25	0.61	0.04
Acid Insoluble				
Insoluble-AFPC 9-8	601	18	10.12	0.100
Other(describe)	602			
Method Group 600		18	10.12	0.10
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	10	48.25	0.310
Ceric Sulfate volumetric	703			
Permanganate	704	1	47.80	0.000
EDTA Volumetric	705	6	48.32	0.213
Other(describe)	706	4	47.84	0.666
Method Group 700		21	48.28	0.34
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	5	47.92	0.647
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	6	48.37	0.216
Other(describe)	716	4	47.91	0.685
Method Group 710		11	48.37	0.68

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	14	3.55	0.117
Other(describe)	803	2	3.56	0.037
Method Group 800		16	3.55	0.11
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	1	15.5	0.00
Other(describe)	913	3	11.3	2.05
Method Group 900		4	12.9	3.00
Cadmium, Cd				
Atomic Absorption	921	2	34	0.5
ICP-induced coupled plasma	922	8	38	2.0
Other(describe)	923	1	32	0.0
Method Group 910		11	36	2.9
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	3	1	0.0
Other(describe)	933	1	1	0.0
Method Group 920		4	1	0.0
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943			
Method Group 930		0		
Molybdenum, Mo				
Atomic Absorption	951	1	9	0.0
ICP-induced coupled plasma	952	2	10	1.9
Other(describe)	953	1	8	0.0
Method Group 940		4	8	1.7
Nickel, Ni				
Atomic Absorption	961	1	16	0.0
ICP-induced coupled plasma	962	5	16	2.6
Other(describe)	963	1	17	0.0
Method Group 950		7	16	1.8
Lead, Pb				
Atomic Absorption	971	1	4	0.0
ICP-induced coupled plasma	972	2	2	0.9
Other(describe)	973	1	3	0.0
Method Group 960		4	3	1.0
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982			
Other(describe)	983	2	31	20.5
Method Group 970		2	31	20.5
Zinc, Zn				
Atomic Absorption	991	3	309	103
ICP-induced coupled plasma	992	5	294	10
Other(describe)	993	1	268	0
Method Group 980		9	294	31

101 Ground Sample AFPC 9-2		
Lab	%	H ₂ O
15	0.18	-2.010
15	0.16	-1.608
61	0.15	-1.340
9	0.14	-1.072
9	0.14	-1.072
61	0.14	-1.072
Std Dev	0.14	-1.000
6	0.13	-0.804
13	0.13	-0.804
35	0.13	-0.804
75	0.12	-0.536
5	0.10	0.000
9	0.10	0.000
9	0.10	0.000
270	0.10	0.000
Median	0.10	0.000
13	0.10	0.134
5	0.09	0.268
6	0.09	0.268
34	0.09	0.268
77	0.09	0.268
75	0.08	0.536
77	0.08	0.536

102 Other (describe)		
Lab	%	H ₂ O
57	0.12	-1.340
Std Dev	0.11	-1.000
Median	0.10	0.000
Std Dev	0.08	1.000
51	0.07	1.340

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
77	29.93	-1.340
Std Dev	29.93	-1.000
Median	29.92	0.000
Std Dev	29.91	1.000
51	29.91	1.340

202 ICP-induced coupled plasma		
Lab	%	P2O5
57	29.30	0.000

10	30.20	0.000
Median	30.20	0.000

203 Photometric-AFPC 9-6		
Lab	%	P2O5
60	30.75	-3.948
6	30.29	-1.297
35	30.28	-1.210
Std Dev	30.24	-1.000
36	30.20	-0.778
6	30.17	-0.605
34	30.14	-0.432
9	30.10	-0.202
9	30.10	-0.202
Median	30.07	0.000
5	30.03	0.202
9	29.97	0.548
9	29.97	0.548
5	29.96	0.605
61	29.90	0.951
Std Dev	29.89	1.000
61	29.88	1.066
270	29.70	2.104
270	29.34	4.178

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
75	30.15	-0.214
13	30.15	-0.107
13	30.15	-0.107
15	30.14	0.000
Median	30.14	0.000
15	30.12	0.536
Std Dev	30.09	1.000
75	30.05	1.930
77	29.73	8.790

205 Other (describe)		
Lab	%	P2O5
51	29.79	-1.340
Std Dev	29.73	-1.000
Median	29.55	0.000
Std Dev	29.36	1.000
57	29.30	1.340

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
77	29.95	-1.340	
Std Dev	29.95	-1.000	
Median	29.94	0.000	
Std Dev	29.93	1.000	
51	29.93	1.340	

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
Median	0.00	0.000	

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
6	30.32	-1.913	
35	30.31	-1.892	
6	30.21	-1.110	
Std Dev	30.19	-1.000	
34	30.17	-0.797	
9	30.14	-0.611	
9	30.14	-0.611	
5	30.06	0.000	
Median	30.06	0.000	
9	30.00	0.447	
9	30.00	0.447	
5	29.99	0.543	
61	29.94	0.856	
Std Dev	29.93	1.000	
61	29.92	1.028	
270	29.73	2.457	

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
15	30.19	-0.386	
75	30.19	-0.253	
13	30.18	-0.213	
13	30.17	0.000	
Median	30.17	0.000	
15	30.16	0.209	
Std Dev	30.12	1.000	
75	30.07	2.005	
77	29.76	8.391	

215 Other (describe)			
Lab	%	P2O5	dB
57	29.34	0.000	
Median	29.34	0.000	

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
36	0.77	-0.987	
5	0.71	-0.141	
5	0.70	0.000	
Median	0.70	0.000	
Std Dev	0.63	1.000	
60	0.62	1.199	
51	0.61	1.269	

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
77	0.80	-5.636	
77	0.80	-5.636	
10	0.73	-1.687	
61	0.72	-1.123	
61	0.72	-1.123	
Std Dev	0.72	-1.000	
9	0.71	-0.559	
9	0.71	-0.559	
13	0.71	-0.559	
34	0.71	-0.559	
75	0.70	-0.006	
Median	0.70	0.000	
9	0.70	0.006	
9	0.70	0.006	
6	0.69	0.570	
6	0.69	0.570	
15	0.69	0.570	
15	0.69	0.852	
Std Dev	0.68	1.000	
51	0.68	1.134	
75	0.68	1.257	
13	0.68	1.416	
35	0.58	6.776	

303 Other (describe)			
Lab	%	Fe2O3	
Median	0.00	0.000	

401 Atomic Absorption-AFPC 9-16,17			
Lab	%		Al2O3

5	0.43		-0.071
51	0.43		-0.071
Median	0.43		0.000
5	0.42		0.071
Std Dev	0.35		1.000
36	0.08		4.866

402 ICP-induced coupled plasma			
Lab	%		Al2O3

77	0.53		-3.678
77	0.52		-3.343
Std Dev	0.45		-1.000
9	0.45		-0.998
9	0.45		-0.998
9	0.45		-0.998
9	0.45		-0.998
13	0.45		-0.831
13	0.44		-0.496
10	0.43		-0.161
75	0.42		0.000
Median	0.42		0.000
75	0.42		0.025
61	0.42		0.174
15	0.41		0.342
34	0.41		0.342
35	0.41		0.342
61	0.41		0.342
15	0.40		0.677
Std Dev	0.39		1.000
6	0.36		2.017
6	0.36		2.017

403 Other(describe)			
Lab	%		Al2O3

Median	0.00		0.000
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501 Atomic Absorption-AFPC 9-18,19			
Lab	%		MgO

5	0.64		-1.218
Std Dev	0.63		-1.000
51	0.62		-0.731

5	0.61		-0.487
Median	0.59		0.000
60	0.57		0.487
35	0.56		0.731
36	0.56		0.731

502 ICP-induced coupled plasma			
Lab	%		MgO

9	0.64		-1.005
9	0.64		-1.005
Std Dev	0.64		-1.000
9	0.63		-0.670
9	0.63		-0.670
61	0.63		-0.670
61	0.63		-0.670
10	0.62		-0.335
34	0.62		-0.335
77	0.62		-0.335
13	0.61		0.000
15	0.61		0.000
77	0.61		0.000
Median	0.61		0.000
15	0.60		0.335
51	0.60		0.335
Std Dev	0.58		1.000
6	0.58		1.005
6	0.58		1.005
13	0.58		1.005
75	0.53		2.711
75	0.52		3.075

503 Other(describe)			
Lab	%		MgO

Median	0.00		0.000
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601 Insoluble-AFPC 9-8			
Lab	%		Al

57	10.70		-5.786
5	10.38		-2.580
61	10.32		-1.929
61	10.29		-1.678
Std Dev	10.22		-1.000
9	10.20		-0.776
9	10.20		-0.776

9	10.15		-0.276
9	10.15		-0.276
5	10.14		-0.175
Median	10.12		0.000
13	10.11		0.175
6	10.07		0.526
15	10.07		0.526
15	10.07		0.526
10	10.07		0.576
6	10.05		0.726
13	10.04		0.827
Std Dev	10.02		1.000
51	10.02		1.027
35	9.70		4.233

602 Other(describe)			
Lab	%		Al

Median	0.00		0.000
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701 Gravimetric sulfate			
Lab	%		CaO

Median	0.00		0.000
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702 ICP-induced coupled plasma			
Lab	%		CaO

6	48.51		-0.846
77	48.50		-0.813
34	48.40		-0.491
6	48.37		-0.395
77	48.30		-0.169
Median	48.25		0.000
75	48.20		0.169
75	48.15		0.327
Std Dev	47.94		1.000
10	47.92		1.055
61	47.50		2.424
61	47.33		2.955

703 Ceric Sulfate volumetric			
Lab	%		CaO

Median	0.00		0.000
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704 Permanganate			
Lab	%		CaO

60	47.80		0.000
Median	47.80		0.000

705 EDTA Volumetric			
Lab	%		CaO

9	48.33		-0.047
9	48.33		-0.047
9	48.32		0.000
9	48.32		0.000
Median	48.32		0.000
Std Dev	48.11		1.000
35	47.95		1.740
51	47.88		2.069

706 Other(describe)			
Lab	%		CaO

15	48.33		-0.736
15	48.28		-0.661
Median	47.84		0.000
13	47.40		0.661
13	47.40		0.661

711 Gravimetric sulfate			
Lab	%		CaO dB

Median	0.00		0.000
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712 ICP-induced coupled plasma			
Lab	%		CaO dB

6	48.55		-0.980
6	48.43		-0.793
10	47.92		0.000
Median	47.92		0.000
61	47.57		0.547
61	47.40		0.810

713 Ceric Sulfate volumetric			
Lab	%		CaO dB

Median	0.00		0.000
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714 Permanganate			
Lab	%		CaO dB

Median	0.00		0.000
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715 EDTA Volumetric			
Lab	%	CaO	dB
9	48.40		-0.136
9	48.40		-0.136
9	48.37		0.000
9	48.37		0.000
Median	48.37		0.000
Std Dev	48.15		1.000
35	48.01		1.650
51	47.91		2.109

716 Other(describe)			
Lab	%	CaO	dB
15	48.41		-0.722
15	48.36		-0.659
Median	47.91		0.000
13	47.46		0.659
13	47.45		0.683

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
9	3.68		-1.158
9	3.68		-1.158
Std Dev	3.66		-1.000
9	3.59		-0.386
9	3.59		-0.386
75	3.58		-0.300
75	3.57		-0.214
51	3.56		-0.129
Median	3.55		0.000
34	3.53		0.129
13	3.46		0.772
15	3.45		0.815
Std Dev	3.43		1.000
15	3.43		1.029
35	3.41		1.158
13	3.35		1.715
36	1.75		15.394

803 Oher(describe)			
Lab	%	Fluorine, F	
77	3.61		-1.340
Std Dev	3.60		-1.000
Median	3.56		0.000
Std Dev	3.52		1.000
77	3.51		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	
270	15.5		0.000
Median	15.5		0.000

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	14.5		-1.559
Std Dev	13.4		-1.000
13	11.3		0.000
Median	11.3		0.000
Std Dev	9.2		1.000
51	9.0		1.121

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	35		-1.340
Std Dev	35		-1.000
Median	34		0.000
Std Dev	34		1.000
57	34		1.340

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
270	38		-0.281
270	38		-0.281
51	38		-0.230
77	38		-0.230
Median	38		0.000
61	37		0.230
61	36		0.944
Std Dev	36		1.000

75	35		1.557
75	34		2.067

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	32		0.000
Median	32		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	
75	1		0.000
75	1		0.000
77	1		0.000
Median	1		0.000

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	<0.07		0.000
Median	0.0		0.000

951 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Molybdenum, Mo	
51	9		0.000
Median	9		0.000

952 ICP-induced coupled plasma			
Lab	ppm	Molybdenum, Mo	

51	12		-1.340
Std Dev	11		-1.000
Median	10		0.000
Std Dev	8		1.000
77	7		1.340

953 Other(describe)			
Lab	ppm	Iolybdenum, Mo	
13	8		0.000
Median	8		0.000

961 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Nickel, Ni	
51	16		0.000
Median	16		0.000

962 ICP-induced coupled plasma			
Lab	ppm	Nickel, Ni	
51	20		-1.531
270	19		-1.149
Std Dev	19		-1.000
75	16		0.000
Median	16		0.000
75	16		0.191
77	14		0.766

963 Other(describe)			
Lab	ppm	Nickel, Ni	
13	17		0.000
Median	17		0.000

971 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Lead, Pb	
51	4		0.000
Median	4		0.000

972 ICP-induced coupled plasma			
Lab	ppm	Lead, Pb	
270	4		-1.340
Std Dev	3		-1.000
Median	2		0.000
Std Dev	1		1.000
77	1		1.340

973 Other(describe)		
Lab	ppm	Lead, Pb
13	3	0.000
Median	3	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
Median	0	0.000

983 Other(describe)		
Lab	ppm	Selenium, Se
57	58	-1.340
Std Dev	51	-1.000
Median	31	0.000
Std Dev	10	1.000
13	3	1.340

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
60	340	-0.300
51	309	0.000
Median	309	0.000
Std Dev	206	1.000
57	63	2.380

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
270	374	-7.657
Std Dev	304	-1.000
51	299	-0.479
75	294	0.000
Median	294	0.000
75	285	0.861
Std Dev	284	1.000
77	254	3.829

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	268	0.000
Median	268	0.000

