

AFPC Rock Check Program

Sample No. 2010-07

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	22	1.13	0.100
Other (describe)	102	6	1.03	0.059
Method Group 100		28	1.11	0.12
P₂O₅				
Gravimetric AFPC IX.3.B	201	1	33.03	0.000
ICP-induced coupled plasma AFPC IX.3.D	202	5	33.05	0.060
Photometric-AFPC IX.3.C	203	12	33.06	0.066
Automated -AOAC 978.01-15th	204	10	33.00	0.213
Other(describe)	205	5	33.13	0.022
Method Group 200		33	33.05	0.10
P₂O₅ (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	1	33.21	0.000
ICP-induced coupled plasma AFPC IX.3.D	212	4	33.44	0.027
Photometric-AFPC IX.3.C	213	8	33.45	0.077
Automated -AOAC 978.01-15th	214	10	33.40	0.250
Other(describe)	215	5	33.48	0.009
Method Group 210		26	33.43	0.15
Fe₂O₃				
Atomic Absorption-AFPC IX.6.B	301	2	1.04	0.022
ICP-induced coupled plasma-AFPC IX.6.C	302	25	1.10	0.034
Other(describe)	303	4	0.95	0.013
Method Group 300		31	1.08	0.06
Al₂O₃				
Atomic Absorption-AFPC IX.7.B	401	1	1.36	0.000
ICP-induced coupled plasma-AFPC IX.7.C	402	25	1.42	0.034
Other(describe)	403	2	1.19	0.159
Method Group 400		28	1.41	0.03
MgO				
Atomic Absorption-AFPC IX.8.A	501	2	0.34	0.013
ICP-induced coupled plasma-AFPC IX.8.B	502	25	0.35	0.007
Other(describe)	503	4	0.36	0.057
Method Group 500		31	0.35	0.02
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	15	3.12	0.123
Other(describe)	602	6	3.17	0.083
Method Group 600		21	3.15	0.12
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	13	3.18	0.358
Other(describe)	652	5	3.84	2.433
Method Group 650		18	3.50	0.32
CaO				
Gravimetric sulfate-AFPC IX.12.A	701			
ICP-induced coupled plasma-AFPC IX.12.D	702	18	47.74	0.964
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704	2	47.53	0.056
EDTA Volumetric-AFPC IX.12.C	705	2	47.28	0.302
Other(describe)	706	9	47.81	0.157
Method Group 700		31	47.73	0.47
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711			
ICP-induced coupled plasma-AFPC IX.12.D	712	16	48.31	0.258
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714	1	48.01	0.000
EDTA Volumetric-AFPC IX.12.C	715	1	48.26	0.000
Other(describe)	716	9	48.34	0.131
Method Group 710		18	48.32	0.20

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	15	3.80	0.155
Other (describe)	803	6	3.82	0.310
Method Group 800		21	3.80	0.08
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma-AFPC IX.15.B	912	7	7.7	2.48
Other(describe)	913	2	14.8	2.80
Method Group 900		9	7.9	3.54
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921			
ICP-induced coupled plasma-AFPC IX.11.B	922	9	6	1.0
Other(describe)	923	2	5	0.8
Method Group 910		11	6	0.6
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931			
ICP-induced coupled plasma-AFPC IX.16.A	932	7	3	0.7
Other(describe)	933	2	4	0.0
Method Group 920		9	3	0.7
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-induced coupled plasma-AFPC IX.16.A	942	1	0.1	0.00
Other(describe)	943	1	0.5	0.00
Method Group 930		2	0.3	0.15
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951			
ICP-induced coupled plasma-AFPC IX.16.A	952	7	8	6.0
Other(describe)	953	2	12	3.2
Method Group 940		9	8	7.2
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961			
ICP-induced coupled plasma-AFPC IX.16.A	962	9	9	3.8
Other(describe)	963	2	15	3.3
Method Group 950		11	10	4.3
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971			
ICP-induced coupled plasma-AFPC IX.16.A	972	7	21	4.7
Other(describe)	973	2	12	5.3
Method Group 960		9	20	3.8
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981			
ICP-induced coupled plasma-AFPC IX.16.A	982	4	5	1.6
Other(describe)	983			
Method Group 970		4	5	1.6
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991	1	74	0
ICP-induced coupled plasma-AFPC IX.16.A	992	9	70	9
Other(describe)	993	2	59	5
Method Group 980		12	70	10

101 Ground Sample AFPC IX.2.A			
Lab	%	H ₂ O	
61	1.23		-0.977
75	1.23		-0.977
24	1.22		-0.877
13	1.21		-0.776
75	1.21		-0.776
13	1.20		-0.676
266	1.20		-0.676
24	1.19		-0.526
10	1.18		-0.476
16	1.16		-0.225
16	1.15		-0.125
Median	1.13		0.000
10	1.12		0.125
49	1.10		0.326
61	1.10		0.326
9	1.08		0.526
15	1.07		0.626
9	1.07		0.676
15	1.07		0.676
Std Dev	1.03		1.000
6	0.94		1.929
30	0.85		2.830
77	0.56		5.736
77	0.53		6.036

102 Other (describe)			
Lab	%	H ₂ O	
21	1.15		-2.127
21	1.13		-1.702
Std Dev	1.08		-1.000
35	1.03		0.000
35	1.03		0.000
Median	1.03		0.000
69	1.02		0.085
26	1.02		0.170

201 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	
77	33.03		0.000
Median	33.03		0.000

202 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	
15	33.16		-1.843
6	33.12		-1.173
Std Dev	33.11		-1.000
10	33.05		0.000
Median	33.05		0.000
10	33.04		0.167
266	33.03		0.335

203 Photometric-AFPC IX.3.C			
Lab	%	P2O5	
60	34.15		-16.457
6	33.24		-2.718
9	33.19		-1.887
Std Dev	33.13		-1.000
16	33.09		-0.377
16	33.08		-0.302
49	33.07		-0.151
Median	33.06		0.000
9	33.05		0.151
92	33.05		0.151
92	33.03		0.453
26	33.00		0.981
Std Dev	32.99		1.000
30	32.97		1.359
270	32.68		5.737

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
75	34.05		-4.949
Std Dev	33.21		-1.000
75	33.14		-0.646
13	33.06		-0.294
13	33.05		-0.247
24	33.02		-0.082
Median	33.00		0.000
24	32.98		0.082
77	32.84		0.741
Std Dev	32.78		1.000
61	32.75		1.164
61	32.75		1.164
15	18.15		69.809

205 Other(describe)			
Lab	%	P2O5	
35	33.14		-0.670
35	33.14		-0.670
21	33.13		0.000
Median	33.13		0.000
21	33.11		0.670
Std Dev	33.10		1.000
69	32.90		10.050

211 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	dB
77	33.21		0.000
Median	33.21		0.000

212 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	dB
15	33.52		-2.988
Std Dev	33.46		-1.000
10	33.44		-0.249
Median	33.44		0.000
266	33.43		0.249
10	33.41		0.876

213 Photometric-AFPC IX.3.C			
Lab	%	P2O5	dB
6	33.56		-1.367
9	33.55		-1.261
Std Dev	33.53		-1.000
16	33.47		-0.275
16	33.46		-0.165
Median	33.45		0.000
49	33.44		0.165
9	33.41		0.582
Std Dev	33.37		1.000
26	33.33		1.526
30	33.25		2.577

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
75	34.47		-4.303
Std Dev	33.65		-1.000
75	33.54		-0.567
13	33.46		-0.250

13	33.45		-0.223
24	33.41		-0.047
Median	33.40		0.000
24	33.39		0.047
61	33.16		0.966
Std Dev	33.15		1.000
61	33.11		1.140
77	33.02		1.498
15	18.35		60.269

215 Other(describe)			
Lab	%	P2O5	dB
21	33.50		-2.089
21	33.50		-1.340
Std Dev	33.49		-1.000
35	33.48		0.000
35	33.48		0.000
Median	33.48		0.000
Std Dev	33.47		1.000
69	33.24		27.283

301 Atomic Absorption-AFPC IX.6.B			
Lab	%	Fe2O3	
30	1.07		-1.340
Std Dev	1.06		-1.000
Median	1.04		0.000
Std Dev	1.02		1.000
60	1.01		1.340

302 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Fe2O3	
77	1.24		-4.169
77	1.24		-4.169
266	1.17		-2.084
Std Dev	1.13		-1.000
15	1.11		-0.298
15	1.11		-0.298
61	1.11		-0.149
6	1.10		0.000
9	1.10		0.000
10	1.10		0.000
10	1.10		0.000
16	1.10		0.000
16	1.10		0.000

61	1.10	0.000
Median	1.10	0.000
9	1.10	0.149
49	1.09	0.298
92	1.08	0.596
270	1.08	0.596
Std Dev	1.07	1.000
92	1.06	1.191
24	1.06	1.340
75	1.04	1.641
75	1.04	1.830
24	1.03	2.233
13	1.02	2.382
13	0.99	3.276
69	0.90	5.828

303 Other(describe)			
Lab	%	Fe2O3	
21	0.96		-1.010
Std Dev	0.96		-1.000
21	0.96		-0.621
Median	0.95		0.000
35	0.94		0.621
35	0.94		0.621

401 Atomic Absorption-AFPC IX.6.B			
Lab	%	Al2O3	
30	1.36		0.000
Median	1.36		0.000

402 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Al2O3	
266	1.70		-8.487
77	1.59		-5.211
77	1.59		-5.211
270	1.59		-5.211
24	1.49		-2.233
24	1.46		-1.340
Std Dev	1.45		-1.000
92	1.44		-0.744
92	1.44		-0.744
13	1.43		-0.447
6	1.42		-0.149
16	1.42		-0.149

10	1.42	0.000
10	1.42	0.000
16	1.42	0.000
Median	1.42	0.000
9	1.41	0.149
69	1.41	0.208
9	1.40	0.447
49	1.40	0.447
15	1.40	0.596
15	1.40	0.596
13	1.39	0.744
Std Dev	1.38	1.000
75	1.36	1.683
75	1.36	1.692
61	1.14	8.189
61	1.05	10.869

403 Other(describe)			
Lab	%	Al2O3	
21	1.41		-1.340
Std Dev	1.35		-1.000
Median	1.19		0.000
Std Dev	1.03		1.000
21	0.98		1.340

501 Atomic Absorption-AFPC IX.8.A			
Lab	%	MgO	
30	0.36		-1.340
Std Dev	0.36		-1.000
Median	0.34		0.000
Std Dev	0.33		1.000
60	0.33		1.340

502 ICP-induced coupled plasma-AFPC IX.8.B			
Lab	%	MgO	
92	0.40		-6.700
92	0.40		-6.700
61	0.38		-3.350
13	0.37		-2.680
49	0.37		-2.680
61	0.36		-1.340
Std Dev	0.36		-1.000
6	0.35		0.000
9	0.35		0.000

9	0.35	0.000
10	0.35	0.000
10	0.35	0.000
13	0.35	0.000
15	0.35	0.000
15	0.35	0.000
16	0.35	0.000
16	0.35	0.000
Median	0.35	0.000
24	0.35	0.670
Std Dev	0.34	1.000
77	0.34	1.340
266	0.34	1.340
24	0.34	2.010
77	0.33	2.680
75	0.32	4.665
69	0.31	4.985
75	0.31	4.998
270	0.24	14.740

503 Other(describe)			
Lab	%	MgO	
35	0.40		-0.659
35	0.40		-0.659
Median	0.36		0.000
21	0.33		0.659
21	0.32		0.747

601 Insoluble-AFPC IX.4.A			
Lab	%	Al	
16	3.32		-1.584
16	3.29		-1.381
15	3.28		-1.259
15	3.26		-1.137
Std Dev	3.24		-1.000
9	3.23		-0.893
9	3.22		-0.812
24	3.15		-0.244
10	3.12		0.000
Median	3.12		0.000
10	3.11		0.081
69	3.11		0.081
13	3.10		0.162
13	3.06		0.487

26	3.05	0.568
30	3.05	0.568
Std Dev	3.00	1.000
24	2.97	1.218

602 Other(describe)			
Lab	%	Al	
266	3.20		-0.391
35	3.18		-0.151

651 Gasometric-AFPC IX.13.B			
Lab	%	CO2	
13	3.62		-1.228
49	3.54		-1.005
Std Dev	3.54		-1.000
9	3.51		-0.921
9	3.51		-0.921
6	3.50		-0.893
13	3.50		-0.893
15	3.18		0.000
Median	3.18		0.000
15	3.18		0.014
77	3.17		0.028
30	3.03		0.419
69	3.01		0.475
61	2.94		0.684
Std Dev	2.82		1.000
61	2.79		1.103

652 Other(describe)			
Lab	%	CO2	
35	7.10		-1.340
35	7.10		-1.340
Std Dev	6.27		-1.000
21	3.84		0.000
21	3.84		0.000
Median	3.84		0.000
266	3.39		0.185

701 Gravimetric sulfate-AFPC IX.12.A			
Lab	%	CaO	
Median	0.00		0.000

702 ICP-induced coupled plasma-AFPC IX.12.			
Lab	%	CaO	

61	48.85	-1.152
Std Dev	48.70	-1.000
77	48.53	-0.820
77	48.43	-0.716
61	48.15	-0.425
6	48.13	-0.405
9	48.04	-0.311
9	47.97	-0.233
15	47.81	-0.073
49	47.75	-0.010
Median	47.74	0.000
16	47.73	0.010
10	47.73	0.016
16	47.72	0.026
10	47.71	0.036
Std Dev	46.78	1.000
92	46.52	1.266
92	46.35	1.442
75	44.72	3.131
75	43.86	4.024
69	43.53	4.369

703 Ceric Sulfate volumetric-AFPC IX.12.B		
Lab	%	CaO
Median	0.00	0.000

704 Permanganate		
Lab	%	CaO
30	47.60	-1.340
Std Dev	47.58	-1.000
Median	47.53	0.000
Std Dev	47.47	1.000
60	47.45	1.340

705 EDTA Volumetric-AFPC IX.12.C		
Lab	%	CaO
266	47.68	-1.340
Std Dev	47.58	-1.000
Median	47.28	0.000
Std Dev	46.97	1.000
270	46.87	1.340

706 Other(describe)		
Lab	%	CaO

24	48.71	-5.743
24	48.63	-5.232
Std Dev	47.96	-1.000
21	47.89	-0.542
13	47.83	-0.160
15	47.81	0.000
Median	47.81	0.000
21	47.78	0.160
13	47.68	0.798
Std Dev	47.65	1.000
35	47.30	3.222
35	47.30	3.222

711 Gravimetric sulfate-AFPC IX.12.A			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma-AFPC IX.12.D			
Lab	%	CaO	dB
61	49.39	-4.188	
77	48.80	-1.905	
61	48.75	-1.697	
77	48.69	-1.459	
6	48.59	-1.067	
Std Dev	48.57	-1.000	
9	48.56	-0.952	
9	48.49	-0.688	
15	48.33	-0.062	
Median	48.31	0.000	
10	48.29	0.062	
16	48.28	0.109	
49	48.28	0.116	
16	48.27	0.149	
10	48.25	0.254	
Std Dev	48.05	1.000	
75	45.28	11.729	
75	44.40	15.136	
69	43.98	16.764	

713 Ceric Sulfate volumetric-AFPC IX.12.B			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
30	48.01		0.000
Median	48.01		0.000

715 EDTA Volumetric-AFPC IX.12.C			
Lab	%	CaO	dB
266	48.26		0.000
Median	48.26		0.000

716 Other(describe)			
Lab	%	CaO	dB
24	49.31		-7.399
24	49.21		-6.649
Std Dev	48.47		-1.000
21	48.43		-0.755
13	48.42		-0.610
21	48.34		0.000
Median	48.34		0.000
15	48.32		0.124
13	48.26		0.585
Std Dev	48.20		1.000
35	47.79		4.162
35	47.79		4.162

801 Volumetric-AFPC IX.14.A			
Lab	%	Fluorine, F	
Median	0.00		0.000

802 Specific Ion Electrode-AFPC IX.14.B			
Lab	%	Fluorine, F	
69	4.64		-5.425
Std Dev	3.95		-1.000
24	3.88		-0.517
24	3.85		-0.291
13	3.82		-0.129
49	3.82		-0.129
9	3.82		-0.097
13	3.80		0.000
270	3.80		0.000
Median	3.80		0.000
9	3.78		0.129
30	3.75		0.323
Std Dev	3.65		1.000

15	3.62	1.195
15	3.61	1.227
75	3.48	2.067
266	3.43	2.389
75	3.31	3.164

803 Other(describe)		
Lab	%	Fluorine, F
35	4.31	-1.582
35	4.31	-1.582
Std Dev	4.13	-1.000
77	3.84	-0.065
Median	3.82	0.000
21	3.80	0.065
77	3.77	0.161
21	3.73	0.291

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

912 ICP-induced coupled plasma-AFPC IX.15.			
Lab	ppm	Arsenic, As	
61	13.9		-2.487
61	12.3		-1.843
Std Dev	10.2		-1.000
266	7.9		-0.089
69	7.7		0.000
Median	7.7		0.000
270	7.5		0.072
77	6.0		0.676
Std Dev	5.2		1.000
77	5.0		1.079

913 Other(describe)			
Lab	ppm	Arsenic, As	
13	18.5		-1.340
Std Dev	17.5		-1.000
Median	14.8		0.000
Std Dev	12.0		1.000
6	11.0		1.340

921 Atomic Absorption-AFPC IX.11.A			
Lab	ppm	Cadmium, Cd	

Median	0	0.000
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922 ICP-induced coupled plasma-AFPC IX.11.B		
Lab	ppm	Cadmium, Cd
61	12	-5.808
61	10	-3.837
69	7	-1.266
Std Dev	7	-1.000
75	6	0.000
77	6	0.000
77	6	0.000
Median	6	0.000
75	6	0.074
266	6	0.259
270	6	0.311

923 Other(describe)		
Lab	ppm	Cadmium, Cd
6	6	-1.340
Std Dev	6	-1.000
Median	5	0.000
Std Dev	4	1.000
13	4	1.340

931 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Cobalt, Co
Median	0	0.000

932 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Cobalt, Co
69	5	-2.177
Std Dev	4	-1.000
266	4	-0.689
270	3	-0.069
77	3	0.000
77	3	0.000
Median	3	0.000
Std Dev	2	1.000
75	2	1.922
75	2	2.068

933 Other(describe)		
Lab	ppm	Cobalt, Co
13	4	-1.340

Std Dev	4	-1.000
Median	4	0.000
Std Dev	4	1.000
6	4	1.340

941 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Mercury, Hg
Median	0.0	0.000

942 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Mercury, Hg
69	<0.10	0.000
266	0.1	0.000
Median	0.1	0.000

943 Other(describe)		
Lab	ppm	Mercury, Hg
13	<0.07	0.000
270	0.5	0.000
Median	0.5	0.000

951 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Iolybdenum, Mo
Median	0	0.000

952 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Iolybdenum, Mo
61	21	-2.263
61	18	-1.750
Std Dev	14	-1.000
69	11	-0.490
266	8	0.000
Median	8	0.000
270	7	0.179
77	6	0.262
77	6	0.262

953 Other(describe)		
Lab	ppm	Iolybdenum, Mo
13	16	-1.340
Std Dev	15	-1.000
Median	12	0.000
Std Dev	9	1.000
6	8	1.340

961 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Nickel, Ni
Median	0	0.000

962 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Nickel, Ni
266	19	-2.739
61	15	-1.686
69	14	-1.198
Std Dev	13	-1.000
270	10	-0.263
75	9	0.000
77	9	0.000
Median	9	0.000
75	8	0.142
77	8	0.263
61	7	0.579

963 Other(describe)		
Lab	ppm	Nickel, Ni
13	20	-1.340
Std Dev	18	-1.000
Median	15	0.000
Std Dev	12	1.000
6	11	1.340

971 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Lead, Pb
Median	0	0.000

972 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Lead, Pb
61	29	-1.717
61	27	-1.298
Std Dev	26	-1.000
266	22	-0.236
270	21	0.000
Median	21	0.000
69	20	0.288
77	17	0.858
Std Dev	16	1.000
77	15	1.287

973 Other(describe)		
Lab	ppm	Lead, Pb
6	19	-1.340
Std Dev	17	-1.000
Median	12	0.000
Std Dev	7	1.000
13	5	1.340

981 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Selenium, Se
Median	0	0.000

982 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Selenium, Se
77	ND	0.000
77	ND	0.000
69	<0.10	0.000
61	10	-2.767
Std Dev	7	-1.000
61	5	-0.040
Median	5	0.000
266		0.040
270		2.355

983 Other(describe)		
Lab	ppm	Selenium, Se
13	<0.50	0.000
Median	0	0.000

991 Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Zinc, Zn
60	74	0.000
Median	74	0.000

992 ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Zinc, Zn
270	72	-0.190
61	72	-0.184
75	71	-0.078
61	71	-0.028
75	70	0.000
266	70	0.000
Median	70	0.000
Std Dev	61	1.000

77	59	1.262
77	57	1.485
69	54	1.813

993 Other(describe)		
Lab	ppm	Zinc, Zn
6	66	-1.340
Std Dev	64	-1.000
Median	59	0.000
Std Dev	54	1.000
13	52	1.340