

AFPC Rock Check Program

Sample No. 2007-07

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	23	1.15	0.181
Other (describe)	102	2	0.87	0.071
Method Group 100		25	1.13	0.22
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	2	32.68	0.049
ICP-induced coupled plasma	202	1	32.58	0.000
Photometric-AFPC 9-6	203	10	32.43	0.220
Automated -AOAC 978.01-15th	204	11	32.55	0.209
Other(describe)	205	3	32.60	1.030
Method Group 200		27	32.54	0.23
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	32.91	0.015
ICP-induced coupled plasma	212	1	32.97	0.000
Photometric-AFPC 9-6	213	9	32.78	0.204
Automated -AOAC 978.01-15th	214	11	32.93	0.188
Other(describe)	215	2	31.80	0.868
Method Group 210		25	32.82	0.25
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	1	1.05	0.000
ICP-induced coupled plasma	302	24	1.13	0.068
Other(describe)	303	1	1.13	0.000
Method Group 300		26	1.12	0.07
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	1	1.40	0.000
ICP-induced coupled plasma	402	24	1.31	0.118
Other(describe)	403	1	1.60	0.000
Method Group 400		26	1.32	0.12
MgO				
Atomic Absorption-AFPC 9-18,19	501	3	0.34	0.022
ICP-induced coupled plasma	502	22	0.35	0.015
Other(describe)	503	1	0.40	0.000
Method Group 500		26	0.35	0.01
Acid Insoluble				
Insoluble-AFPC 9-8	601	13	5.30	0.075
Other(describe)	602	2	5.73	0.246
Method Group 600		15	5.30	0.12
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	12	46.72	0.527
Ceric Sulfate volumetric	703			
Permanganate	704			
EDTA Volumetric	705	4	47.10	0.640
Other(describe)	706	9	47.25	0.190
Method Group 700		25	47.10	0.54
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	3	47.25	0.116
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	4	47.88	1.293
Other(describe)	716	8	47.76	0.156
Method Group 710		23	47.59	0.58

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	17	3.58	0.332
Other (describe)	803	2	3.76	0.019
Method Group 800		19	3.59	0.37
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	4	22.1	3.57
Other(describe)	913	4	13.4	2.88
Method Group 900		8	16.0	5.23
Cadmium, Cd				
Atomic Absorption	921	2	4	0.0
ICP-induced coupled plasma	922	11	5	1.0
Other(describe)	923	1	5	0.0
Method Group 910		14	4	0.7
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	9	7	1.5
Other(describe)	933	1	10	0.0
Method Group 920		10	7	1.8
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942	1		0.00
Other(describe)	943			
Method Group 930		1	0.0	0.00
Molybdenum, Mo				
Atomic Absorption	951	1	8	0.0
ICP-induced coupled plasma	952	6	9	3.9
Other(describe)	953	1	12	0.0
Method Group 940		8	9	2.1
Nickel, Ni				
Atomic Absorption	961	1	22	0.0
ICP-induced coupled plasma	962	9	20	4.1
Other(describe)	963	2	30	1.1
Method Group 950		12	21	3.2
Lead, Pb				
Atomic Absorption	971	1	17	0.0
ICP-induced coupled plasma	972	7	15	1.0
Other(describe)	973	1	18	0.0
Method Group 960		9	15	2.0
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982	1	2	0.0
Other(describe)	983	2	3	0.7
Method Group 970		3	2	0.8
Zinc, Zn				
Atomic Absorption	991	2	56	2
ICP-induced coupled plasma	992	9	54	21
Other(describe)	993	2	71	6
Method Group 980		13	54	11

101 Ground Sample AFPC 9-2		
Lab	%	H ₂ O
35	6.77	-31.082
13	1.47	-1.796
Std Dev	1.33	-1.000
13	1.33	-0.995
24	1.28	-0.746
9	1.26	-0.635
24	1.20	-0.304
61	1.20	-0.304
75	1.19	-0.221
10	1.18	-0.166
9	1.17	-0.138
61	1.17	-0.138
15	1.15	0.000
Median	1.15	0.000
15	1.13	0.083
61	1.11	0.221
34	1.10	0.249
61	1.10	0.276
75	1.01	0.774
Std Dev	0.96	1.000
78	0.91	1.299
78	0.89	1.409
237	0.85	1.630
270	0.80	1.906
77	0.45	3.840
77	0.44	3.896

102 Other (describe)		
Lab	%	H ₂ O
51	0.96	-1.340
Std Dev	0.94	-1.000
Median	0.87	0.000
Std Dev	0.79	1.000
57	0.77	1.340

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
77	32.74	-1.340
Std Dev	32.72	-1.000
Median	32.68	0.000
Std Dev	32.63	1.000
51	32.61	1.340

202 ICP-induced coupled plasma		
Lab	%	P2O5
10	32.58	0.000
Median	32.58	0.000

203 Photometric-AFPC 9-6		
Lab	%	P2O5
35	32.95	-2.373
Std Dev	32.65	-1.000
9	32.57	-0.647
237	32.50	-0.329
6	32.49	-0.284
9	32.44	-0.057
Median	32.43	0.000
61	32.42	0.057
270	32.33	0.443
Std Dev	32.21	1.000
61	32.16	1.215
78	23.80	39.212
78	23.59	40.143

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
15	32.76	-1.005
Std Dev	32.75	-1.000
75	32.68	-0.622
77	32.65	-0.502
15	32.63	-0.407
13	32.62	-0.335
13	32.55	0.000
Median	32.55	0.000
75	32.54	0.048
24	32.43	0.574
Std Dev	32.34	1.000
24	32.30	1.196
61	32.28	1.268
61	32.27	1.340

205 Other(describe)		
Lab	%	P2O5
19	33.16	-0.544
34	32.60	0.000
Median	32.60	0.000

Std Dev	31.57	1.000
57	30.40	2.136

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
51	32.93	-1.340	
Std Dev	32.92	-1.000	
Median	32.91	0.000	
Std Dev	32.89	1.000	
77	32.88	1.340	

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
10	32.97	0.000	
Median	32.97	0.000	

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
35	35.34	-12.566	
9	32.99	-1.014	
Std Dev	32.98	-1.000	
9	32.82	-0.223	
61	32.80	-0.099	
237	32.78	0.000	
Median	32.78	0.000	
270	32.59	0.921	
Std Dev	32.57	1.000	
61	32.55	1.117	
78	24.01	42.978	
78	23.81	43.968	

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
15	33.13	-1.087	
Std Dev	33.11	-1.000	
13	33.10	-0.939	
15	33.01	-0.441	
75	33.01	-0.434	
13	32.98	-0.303	
75	32.93	0.000	
Median	32.93	0.000	
24	32.82	0.566	
77	32.80	0.679	
Std Dev	32.74	1.000	

24	32.71	1.126
61	32.64	1.515
61	32.62	1.613

215 Other(describe)			
Lab	%	P2O5	dB
34	32.96	-1.340	
Std Dev	32.67	-1.000	
Median	31.80	0.000	
Std Dev	30.93	1.000	
57	30.64	1.340	

301 Atomic Absorption-AFPC 9-12,13		
Lab	%	Fe2O3
51	1.05	0.000
Median	1.05	0.000

302 ICP-induced coupled plasma		
Lab	%	Fe2O3
77	1.32	-2.827
77	1.31	-2.680
Std Dev	1.20	-1.000
34	1.18	-0.771
78	1.18	-0.698
75	1.17	-0.660
6	1.17	-0.624
78	1.17	-0.624
270	1.17	-0.624
9	1.16	-0.477
9	1.16	-0.477
15	1.15	-0.330
15	1.15	-0.257
Median	1.13	0.000
61	1.11	0.257
75	1.11	0.309
61	1.11	0.330
13	1.10	0.404
35	1.10	0.404
24	1.08	0.698
13	1.08	0.771
237	1.07	0.844
Std Dev	1.06	1.000
10	1.06	1.065
61	1.05	1.138

24	1.04	1.358
61	1.04	1.358

303 Other(describe)		
Lab	%	Fe2O3
19	1.13	0.000
Median	1.13	0.000

401 Atomic Absorption-AFPC 9-16,17		
Lab	%	Al2O3
51	1.40	0.000
Median	1.40	0.000

402 ICP-induced coupled plasma		
Lab	%	Al2O3
77	1.77	-3.883
77	1.77	-3.883
24	1.54	-1.941
78	1.49	-1.519
78	1.49	-1.477
24	1.47	-1.308
270	1.45	-1.182
75	1.45	-1.158
Std Dev	1.43	-1.000
237	1.40	-0.760
75	1.35	-0.329
9	1.32	-0.084
9	1.31	0.000
61	1.31	0.000
Median	1.31	0.000
10	1.31	0.042
6	1.30	0.084
34	1.30	0.084
35	1.30	0.084
61	1.30	0.084
61	1.28	0.253
61	1.28	0.295
15	1.27	0.338
15	1.27	0.338
13	1.26	0.464
13	1.26	0.464

403 Other(describe)		
Lab	%	Al2O3

19	1.60	0.000
Median	1.60	0.000

501 Atomic Absorption-AFPC 9-18,19		
Lab	%	MgO
35	0.38	-1.787
Std Dev	0.36	-1.000
57	0.34	0.000
Median	0.34	0.000
51	0.32	0.893

502 ICP-induced coupled plasma		
Lab	%	MgO
78	1.57	-83.492
78	1.56	-82.805
13	0.43	-5.154
13	0.41	-3.779
Std Dev	0.36	-1.000
6	0.36	-0.687
9	0.36	-0.687
9	0.36	-0.687
77	0.36	-0.687
61	0.36	-0.344
61	0.36	-0.344
10	0.35	0.000
15	0.35	0.000
15	0.35	0.000
34	0.35	0.000
77	0.35	0.000
Median	0.35	0.000
237	0.34	0.550
24	0.34	0.687
Std Dev	0.34	1.000
61	0.33	1.374
61	0.33	1.374
24	0.33	1.718
75	0.29	3.987
75	0.27	5.201

503 Other(describe)		
Lab	%	MgO
19	0.40	0.000
Median	0.40	0.000

601 Insoluble-AFPC 9-8		
Lab	%	Al
35	5.78	-6.499
61	5.48	-2.412
51	5.46	-2.211
Std Dev	5.37	-1.000
13	5.37	-0.938
13	5.35	-0.670
15	5.30	-0.067
15	5.30	0.000
Median	5.30	0.000
24	5.29	0.067
24	5.29	0.134
61	5.27	0.402
Std Dev	5.22	1.000
10	5.02	3.752
9	4.96	4.489
9	4.91	5.159

602 Other(describe)		
Lab	%	Al
57	6.06	-1.340
Std Dev	5.98	-1.000
Median	5.73	0.000
Std Dev	5.48	1.000
19	5.40	1.340

701 Gravimetric sulfate		
Lab	%	CaO
Median	0.00	0.000

702 ICP-induced coupled plasma		
Lab	%	CaO
75	51.16	-8.426
75	48.93	-4.203
Std Dev	47.24	-1.000
34	47.10	-0.730
77	47.10	-0.730
10	46.75	-0.057
237	46.73	-0.028
Median	46.72	0.000
61	46.70	0.028
6	46.64	0.142
61	46.43	0.550

77	46.30	0.787
Std Dev	46.19	1.000
78	35.46	21.355
78	35.10	22.038

703 Ceric Sulfate volumetric		
Lab	%	CaO
Median	0.00	0.000

704 Permanganate		
Lab	%	CaO
Median	0.00	0.000

705 EDTA Volumetric		
Lab	%	CaO
51	47.95	-1.336
Std Dev	47.73	-1.000
35	47.45	-0.555
Median	47.10	0.000
9	46.74	0.555
9	46.65	0.695

706 Other(describe)		
Lab	%	CaO
19	47.80	-2.916
270	47.71	-2.444
Std Dev	47.44	-1.000
13	47.38	-0.709
24	47.29	-0.236
24	47.25	0.000
Median	47.25	0.000
15	47.18	0.342
15	47.13	0.631
Std Dev	47.05	1.000
13	46.89	1.865
57	45.60	8.644

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
10	47.30		-0.412

61	47.25	0.000
Median	47.25	0.000
Std Dev	47.14	1.000
61	46.99	2.268

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	50.90		-2.336
Std Dev	49.17		-1.000
51	48.41		-0.417
Median	47.88		0.000
9	47.34		0.417
9	47.20		0.521

716 Other(describe)			
Lab	%	CaO	dB
13	48.02		-1.647
Std Dev	47.92		-1.000
24	47.86		-0.672
24	47.86		-0.629
19	47.80		-0.259
Median	47.76		0.000
15	47.72		0.259
15	47.67		0.570
Std Dev	47.60		1.000
13	47.59		1.092
57	45.95		11.591

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
51	3.98		-1.204
Std Dev	3.91		-1.000

9	3.83	-0.753
9	3.78	-0.602
13	3.77	-0.557
13	3.68	-0.286
34	3.67	-0.271
24	3.64	-0.166
75	3.59	-0.015
24	3.58	0.000
Median	3.58	0.000
75	3.55	0.105
270	3.35	0.693
15	3.27	0.933
Std Dev	3.25	1.000
15	3.23	1.054
237	3.22	1.084
78	2.84	2.243
78	2.82	2.289
35	2.69	2.680

803 Other(describe)			
Lab	%	Fluorine, F	
77	3.78		-1.340
Std Dev	3.77		-1.000
Median	3.76		0.000
Std Dev	3.74		1.000
77	3.73		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	
78	24.0		-0.520
78	24.0		-0.520
Median	22.1		0.000
6	20.3		0.520
Std Dev	18.6		1.000
270	16.0		1.722

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	16.0		-0.893
77	15.0		-0.546

Median	13.4	0.000
13	11.9	0.546
Std Dev	10.5	1.000
51	10.0	1.188

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	4		0.000
57	4		0.000
Median	4		0.000

922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
270	5		-0.680
75	5		-0.400
75	5		-0.400
77	5		-0.400
77	5		-0.400
61	5		0.000
Median	5		0.000
61	4		0.250
237	4		0.480
Std Dev	4		1.000
78	3		1.400
78	3		1.450
6	2		2.760

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	5		0.000
Median	5		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	
270	8		-0.771
77	8		-0.670
75	7		0.000
75	7		0.000
77	7		0.000
Median	7		0.000

237	6	0.442
Std Dev	6	1.000
78	5	1.340
78	5	1.340
6	4	1.876

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	10		0.000
Median	10		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	
270	0.0		0.000
Median	0.0		0.000

943 Other(describe)			
Lab	ppm	Mercury, Hg	
13	<0.12		0.000
Median	0.0		0.000

951 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Iolybdenum, Mo	
51	8		0.000
Median	8		0.000

952 ICP-induced coupled plasma			
Lab	ppm	Iolybdenum, Mo	
6	10		-0.357
270	9		-0.112
77	9		-0.048
Median	9		0.000
237	9		0.048
Std Dev	5		1.000
78	2		1.643
78	2		1.655

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

Median	12	0.000
--------	----	-------

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

51	22	0.000
----	----	-------

Median	22	0.000
--------	----	-------

962 ICP-induced coupled plasma
Lab ppm Nickel, Ni

270	25	-1.157
-----	----	--------

Std Dev	24	-1.000
---------	----	--------

75	21	-0.244
----	----	--------

77	21	-0.244
----	----	--------

75	20	0.000
----	----	-------

77	20	0.000
----	----	-------

Median	20	0.000
--------	----	-------

237	19	0.171
-----	----	-------

Std Dev	16	1.000
---------	----	-------

78	16	1.096
----	----	-------

6	15	1.218
---	----	-------

78	15	1.218
----	----	-------

963 Other(describe)
Lab ppm Nickel, Ni

13	31	-1.340
----	----	--------

Std Dev	31	-1.000
---------	----	--------

Median	30	0.000
--------	----	-------

Std Dev	28	1.000
---------	----	-------

19	28	1.340
----	----	-------

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

51	17	0.000
----	----	-------

Median	17	0.000
--------	----	-------

972 ICP-induced coupled plasma
Lab ppm Lead, Pb

270	19	-4.786
-----	----	--------

Std Dev	15	-1.000
---------	----	--------

77	15	-0.504
----	----	--------

77	15	-0.504
----	----	--------

78	15	0.000
----	----	-------

Median	15	0.000
--------	----	-------

237	14	0.161
-----	----	-------

Std Dev	14	1.000
---------	----	-------

78	13	1.511
----	----	-------

6	12	2.317
---	----	-------

973 Other(describe)
Lab ppm Lead, Pb

13	18	0.000
----	----	-------

Median	18	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

270	2	0.000
-----	---	-------

Median	2	0.000
--------	---	-------

983 Other(describe)
Lab ppm Selenium, Se

13	4	-1.340
----	---	--------

Std Dev	4	-1.000
---------	---	--------

Median	3	0.000
--------	---	-------

Std Dev	2	1.000
---------	---	-------

77	2	1.340
----	---	-------

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

57	59	-1.340
----	----	--------

Std Dev	58	-1.000
---------	----	--------

Median	56	0.000
--------	----	-------

Std Dev	55	1.000
---------	----	-------

51	54	1.340
----	----	-------

992 ICP-induced coupled plasma
Lab ppm Zinc, Zn

270	67	-0.610
-----	----	--------

75	64	-0.479
----	----	--------

75	59	-0.239
----	----	--------

77	54	0.000
----	----	-------

77	54	0.000
----	----	-------

Median	54	0.000
--------	----	-------

237	48	0.275
-----	----	-------

Std Dev	33	1.000
---------	----	-------

78	31	1.101
----	----	-------

78	31	1.101
----	----	-------

6	18	1.704
---	----	-------

993 Other(describe)
Lab ppm Zinc, Zn

13	79	-1.340
----	----	--------

Std Dev	77	-1.000
---------	----	--------

Median	71	0.000
--------	----	-------

Std Dev	65	1.000
---------	----	-------

19	63	1.340
----	----	-------

