

AFPC Rock Check Program

Sample No. 2008-11

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	20	0.69	0.079
Other (describe)	102	8	0.64	0.075
Method Group 100		28	0.67	0.07
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	5	29.03	0.194
ICP-induced coupled plasma	202	3	29.15	0.022
Photometric-AFPC 9-6	203	13	29.09	0.302
Automated -AOAC 978.01-15th	204	12	29.15	0.140
Other(describe)	205	4	28.97	0.142
Method Group 200		37	29.09	0.16
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	6	0.58	0.117
ICP-induced coupled plasma	302	29	0.53	0.022
Other(describe)	303			
Method Group 300		35	0.53	0.03
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	5	0.82	0.146
ICP-induced coupled plasma	402	28	0.84	0.162
Other(describe)	403			
Method Group 400		33	0.82	0.17
MgO				
Atomic Absorption-AFPC 9-18,19	501	7	0.39	0.058
ICP-induced coupled plasma	502	27	0.37	0.015
Other(describe)	503	1	0.29	0.000
Method Group 500		35	0.37	0.02
Acid Insoluble				
Insoluble-AFPC 9-8	601	21	12.97	0.239
Other(describe)	602	1	13.03	0.000
Method Group 600		22	12.99	0.23
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	14	43.22	0.637
Ceric Sulfate volumetric	703			
Permanganate	704	6	42.95	0.614
EDTA Volumetric	705	7	43.19	0.996
Other(describe)	706	7	43.21	0.522
Method Group 700		34	43.14	0.67
Fluorine, F				
Volumetric-AFPC 9-37	801	1	3.24	0.000
Specific Ion Electrode	802	22	3.04	0.137
Oher(describe)	803	2	3.01	0.015
Method Group 800		25	3.03	0.12

	Method #	# of Anal.	Grand Median	Std Dev
Arsenic, As				
Atomic Absorption	911	1	1.0	0.00
ICP-induced coupled plasma	912	8	12.8	5.27
Other(describe)	913	3	8.4	1.69
Method Group 900		12	10.4	4.22
Cadmium, Cd				
Atomic Absorption	921	2	96	4.9
ICP-induced coupled plasma	922	11	90	3.9
Other(describe)	923	2	93	0.1
Method Group 910		15	91	2.9
Cobalt, Co				
Atomic Absorption	931	1	13	0.0
ICP-induced coupled plasma	932	12	1	0.5
Other(describe)	933	2	2	0.0
Method Group 920		15	2	0.7
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942	1	0.5	0.00
Other(describe)	943	1	0.2	0.00
Method Group 930		2	0.3	0.12
Molybdenum, Mo				
Atomic Absorption	951			
ICP-induced coupled plasma	952	9	9	1.2
Other(describe)	953	2	11	1.5
Method Group 940		11	9	2.2
Nickel, Ni				
Atomic Absorption	961	2	106	14.2
ICP-induced coupled plasma	962	13	83	9.3
Other(describe)	963	2	91	1.9
Method Group 950		17	87	10.1
Lead, Pb				
Atomic Absorption	971	2	8	0.4
ICP-induced coupled plasma	972	9	9	1.7
Other(describe)	973	1	5	0.0
Method Group 960		12	8	2.0
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982	4	16	0.7
Other(describe)	983	1	15	0.0
Method Group 970		5	16	1.4
Zinc, Zn				
Atomic Absorption	991	2	817	17
ICP-induced coupled plasma	992	14	792	31
Other(describe)	993	2	776	3
Method Group 980		18	792	29

101 Ground Sample AFPC 9-2			
Lab	%	H ₂ O	
27	0.89	-2.522	
13	0.86	-2.207	
Std Dev	0.76	-1.000	
16	0.74	-0.694	
24	0.73	-0.568	
10	0.73	-0.504	
16	0.72	-0.441	
10	0.72	-0.378	
24	0.71	-0.315	
13	0.69	-0.063	
15	0.69	0.000	
15	0.69	0.000	
Median	0.69	0.000	
6	0.68	0.063	
49	0.68	0.063	
75	0.66	0.378	
75	0.62	0.883	
75	0.62	0.883	
Std Dev	0.61	1.000	
35	0.52	2.081	
30	0.49	2.459	
77	0.49	2.459	
77	0.35	4.225	

102 Other (describe)			
Lab	%	H ₂ O	
9	0.70	-0.737	
9	0.66	-0.268	
21	0.66	-0.268	
21	0.64	0.000	
55	0.64	0.000	
Median	0.64	0.000	
51	0.63	0.134	
Std Dev	0.57	1.000	
55	0.35	3.886	
241	0.29	4.690	

201 Gravimetric AFPC 9-5			
Lab	%	P ₂ O ₅	
51	29.06	-0.155	
241	29.06	-0.155	
77	29.03	0.000	

Median	29.03	0.000	
Std Dev	28.84	1.000	
50	28.80	1.185	
26	28.80	1.211	

202 ICP-induced coupled plasma			
Lab	%	P ₂ O ₅	
10	29.20	-2.010	
Std Dev	29.17	-1.000	
55	29.15	0.000	
Median	29.15	0.000	
10	29.14	0.670	

203 Photometric-AFPC 9-6			
Lab	%	P ₂ O ₅	
36	32.39	-10.919	
Std Dev	29.39	-1.000	
30	29.34	-0.827	
16	29.23	-0.447	
16	29.21	-0.380	
78	29.17	-0.265	
60	29.15	-0.199	
78	29.09	0.000	
Median	29.09	0.000	
9	29.09	0.017	
9	28.95	0.463	
35	28.80	0.960	
Std Dev	28.79	1.000	
244	28.74	1.158	
270	28.67	1.390	
27	28.50	1.969	

204 Automated -AOAC 978.01-15th			
Lab	%	P ₂ O ₅	
15	29.53	-2.698	
15	29.52	-2.626	
Std Dev	29.29	-1.000	
13	29.27	-0.875	
13	29.17	-0.161	
75	29.15	-0.018	
75	29.15	-0.018	
Median	29.15	0.000	
24	29.15	0.018	
21	29.13	0.125	

6	29.02	0.911	
Std Dev	29.01	1.000	
77	28.97	1.269	
21	28.95	1.411	
24	28.95	1.411	

205 Other(describe)			
Lab	%	P ₂ O ₅	
55	29.35	-2.680	
Std Dev	29.11	-1.000	
49	29.01	-0.282	
Median	28.97	0.000	
244	28.93	0.282	
51	28.83	0.987	

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe ₂ O ₃	
30	0.67	-0.750	
27	0.63	-0.407	
241	0.61	-0.236	
Median	0.58	0.000	
55	0.56	0.236	
Std Dev	0.47	1.000	
51	0.44	1.222	
60	0.44	1.222	

302 ICP-induced coupled plasma			
Lab	%	Fe ₂ O ₃	
35	1.46	-41.540	
77	0.59	-2.680	
77	0.58	-2.233	
55	0.57	-1.563	
78	0.57	-1.563	
Std Dev	0.55	-1.000	
78	0.55	-0.893	
6	0.54	-0.447	
15	0.54	-0.447	
51	0.54	-0.447	
51	0.54	-0.447	
75	0.54	-0.385	
50	0.54	-0.384	
9	0.53	0.000	
15	0.53	0.000	
49	0.53	0.000	
270	0.53	0.000	

Median	0.53	0.000	
75	0.52	0.417	
75	0.52	0.417	
9	0.52	0.670	
10	0.52	0.670	
26	0.52	0.670	
10	0.51	0.893	
13	0.51	0.893	
16	0.51	0.893	
Std Dev	0.51	1.000	
13	0.50	1.340	
16	0.50	1.340	
24	0.49	1.787	
24	0.49	1.787	
21	0.45	3.573	
21	0.44	4.020	

303 Other(describe)			
Lab	%	Fe ₂ O ₃	
Median	0.00	0.000	

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al ₂ O ₃	
30	1.07	-1.718	
51	1.01	-1.306	
Std Dev	0.97	-1.000	
241	0.82	0.000	
Median	0.82	0.000	
55	0.82	0.034	
27	0.78	0.309	

402 ICP-induced coupled plasma			
Lab	%	Al ₂ O ₃	
78	1.72	-5.423	
78	1.70	-5.299	
77	1.54	-4.310	
77	1.51	-4.125	
51	1.10	-1.591	
Std Dev	1.00	-1.000	
21	0.95	-0.664	
270	0.95	-0.664	
35	0.93	-0.541	
15	0.90	-0.324	
15	0.90	-0.324	

21	0.89	-0.294
9	0.88	-0.232
6	0.87	-0.170
26	0.87	-0.139
Median	0.84	0.000
9	0.82	0.139
55	0.82	0.139
75	0.80	0.236
24	0.77	0.479
24	0.75	0.572
75	0.72	0.741
75	0.72	0.741
16	0.71	0.850
16	0.69	0.942
49	0.69	0.942
Std Dev	0.68	1.000
10	0.68	1.004
10	0.67	1.097
13	0.65	1.190
13	0.57	1.684

403 Other(describe)		
Lab	%	Al ₂ O ₃
Median	0.00	0.000

501 Atomic Absorption-AFPC 9-18,19		
Lab	%	MgO
35	0.99	-10.374
36	0.50	-1.902
Std Dev	0.45	-1.000
27	0.40	-0.086
30	0.39	0.000
55	0.39	0.000
Median	0.39	0.000
51	0.35	0.692
Std Dev	0.33	1.000
60	0.33	1.124

502 ICP-induced coupled plasma		
Lab	%	MgO
78	0.40	-2.010
9	0.39	-1.340
78	0.39	-1.340
55	0.39	-1.005

Std Dev	0.38	-1.000
9	0.38	-0.670
13	0.38	-0.670
13	0.38	-0.670
15	0.38	-0.670
15	0.38	-0.670
24	0.38	-0.335
6	0.37	0.000
24	0.37	0.000
49	0.37	0.000
51	0.37	0.000
Median	0.37	0.000
26	0.37	0.335
50	0.36	0.436
10	0.36	0.670
16	0.36	0.670
16	0.36	0.670
77	0.36	0.670
77	0.36	0.670
Std Dev	0.36	1.000
10	0.36	1.005
21	0.35	1.340
75	0.34	1.723
21	0.34	2.010
75	0.33	2.945
75	0.33	2.945

503 Other(describe)		
Lab	%	MgO
270	0.29	0.000
Median	0.29	0.000

601 Insoluble-AFPC 9-8		
Lab	%	Al
55	16.70	-15.640
55	16.55	-15.012
15	15.90	-12.269
15	15.87	-12.165
16	13.23	-1.110
Std Dev	13.20	-1.000
21	13.18	-0.900
26	13.14	-0.733
27	13.10	-0.544
13	13.07	-0.440

16	13.01	-0.188
24	12.97	0.000
Median	12.97	0.000
9	12.95	0.063
51	12.92	0.188
13	12.90	0.272
9	12.89	0.314
21	12.86	0.440
24	12.86	0.440
10	12.81	0.649
10	12.76	0.858
Std Dev	12.73	1.000
30	12.47	2.073
35	10.63	9.778

602 Other(describe)		
Lab	%	Al
6	13.03	0.000
Median	13.03	0.000

701 Gravimetric sulfate		
Lab	%	CaO
Median	0.00	0.000

702 ICP-induced coupled plasma		
Lab	%	CaO
75	44.25	-1.619
Std Dev	43.86	-1.000
78	43.84	-0.969
78	43.72	-0.781
75	43.69	-0.740
75	43.69	-0.740
49	43.38	-0.247
6	43.35	-0.200
Median	43.22	0.000
16	43.10	0.200
10	42.94	0.443
10	42.93	0.459
16	42.81	0.647
50	42.74	0.757
77	42.60	0.977
77	42.60	0.977

703 Ceric Sulfate volumetric			
Lab	%	CaO	
Median	0.00		0.000

704 Permanganate		
Lab	%	CaO
26	45.33	-3.877
30	43.82	-1.417
Std Dev	43.56	-1.000
21	43.05	-0.163
Median	42.95	0.000
60	42.85	0.163
21	42.79	0.261
27	42.62	0.546

705 EDTA Volumetric		
Lab	%	CaO
270	45.99	-2.816
35	44.85	-1.671
Std Dev	44.18	-1.000
51	43.46	-0.276
9	43.19	0.000
Median	43.19	0.000
9	42.93	0.261
55	42.72	0.472
55	42.45	0.738

706 Other(describe)		
Lab	%	CaO
241	49.00	-11.093
Std Dev	43.73	-1.000
24	43.52	-0.593
24	43.48	-0.526
15	43.21	0.000
Median	43.21	0.000
15	42.89	0.613
13	42.71	0.948
Std Dev	42.68	1.000
13	42.67	1.024

801 Volumetric-AFPC 9-37			
Lab	%	Fluorine, F	
30	3.24		0.000
Median	3.24		0.000

802 Specific Ion Electrode		
Lab	%	Fluorine, F
35	3.48	-3.190
21	3.33	-2.097
36	3.32	-2.024
Std Dev	3.18	-1.000
15	3.14	-0.711
51	3.11	-0.492
15	3.11	-0.456
21	3.10	-0.419
55	3.10	-0.383
9	3.08	-0.237
9	3.07	-0.201
49	3.06	-0.128
Median	3.04	0.000
24	3.03	0.128
55	3.00	0.310
24	2.95	0.675
75	2.95	0.675
270	2.95	0.675
13	2.91	0.966
Std Dev	2.91	1.000
13	2.90	1.039
6	2.88	1.185
75	2.88	1.185
75	2.88	1.185
27	2.82	1.623

803 Other(describe)		
Lab	%	Fluorine, F
77	3.03	-1.340
Std Dev	3.02	-1.000
Median	3.01	0.000
Std Dev	3.00	1.000
77	2.99	1.340

911 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Arsenic, As
27	1.0	0.000
Median	1.0	0.000

912 ICP-induced coupled plasma		
Lab	ppm	Arsenic, As

78	24.5	-2.223
78	22.5	-1.844
Std Dev	18.1	-1.000
6	17.0	-0.800
55	13.1	-0.054
Median	12.8	0.000
270	12.5	0.054
55	12.3	0.101
77	8.5	0.813
24	8.4	0.841

913 Other(describe)		
Lab	ppm	Arsenic, As
13	8.5	-0.083
77	8.4	0.000
Median	8.4	0.000
Std Dev	6.7	1.000
51	4.0	2.597

921 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Cadmium, Cd
27	102	-1.340
Std Dev	100	-1.000
Median	96	0.000
Std Dev	91	1.000
51	89	1.340

922 ICP-induced coupled plasma		
Lab	ppm	Cadmium, Cd
78	94	-1.100
Std Dev	93	-1.000
55	93	-0.906
6	93	-0.854
78	93	-0.790
55	91	-0.427
75	90	0.000
Median	90	0.000
77	89	0.129
77	89	0.129
75	86	0.906
75	86	0.906
Std Dev	86	1.000
270	78	3.017

923 Other(describe)		
Lab	ppm	Cadmium, Cd
51	93	-1.340
Std Dev	93	-1.000
Median	93	0.000
Std Dev	93	1.000
13	93	1.340

931 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Cobalt, Co
27	13	0.000
Median	13	0.000

932 ICP-induced coupled plasma		
Lab	ppm	Cobalt, Co
6	2	-2.561
77	2	-1.687
55	2	-1.191
Std Dev	2	-1.000
55	2	-0.993
50	2	-0.735
270	1	-0.298
Median	1	0.000
75	1	0.298
75	1	0.298
75	1	0.298
77	1	0.298
78	1	0.298
78	1	0.298

933 Other(describe)		
Lab	ppm	Cobalt, Co
51	2	-1.340
Std Dev	2	-1.000
Median	2	0.000
Std Dev	2	1.000
13	2	1.340

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	0.5	0.000
Median	0.5	0.000

943 Other(describe)		
Lab	ppm	Mercury, Hg
13	0.2	0.000
Median	0.2	0.000

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

952 ICP-induced coupled plasma		
Lab	ppm	Iolybdenum, Mo
78	14	-3.811
78	12	-2.596
Std Dev	10	-1.000
6	10	-0.377
50	9	-0.226
55	9	0.000
Median	9	0.000
77	8	0.963
270	8	0.963
Std Dev	8	1.000
77	7	1.801
55	7	2.178

953 Other(describe)		
Lab	ppm	Iolybdenum, Mo
51	13	-1.340
Std Dev	13	-1.000
Median	11	0.000
Std Dev	10	1.000
13	9	1.340

961 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Nickel, Ni
27	125	-1.340
Std Dev	120	-1.000
Median	106	0.000
Std Dev	92	1.000
51	87	1.340

962 ICP-induced coupled plasma		
Lab	ppm	Nickel, Ni
6	94	-1.179
55	93	-1.072
78	93	-1.072
Std Dev	92	-1.000
78	92	-0.965
55	89	-0.718
270	87	-0.482
75	83	0.000
Median	83	0.000
	83	0.000
75	79	0.375
75	79	0.375
Std Dev	73	1.000
77	73	1.018
77	71	1.233
26	38	4.770

963 Other(describe)		
Lab	ppm	Nickel, Ni
51	93	-1.340
Std Dev	92	-1.000
Median	91	0.000
Std Dev	89	1.000
13	88	1.340

971 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Lead, Pb
51	8	-1.340
Std Dev	8	-1.000
Median	8	0.000
Std Dev	7	1.000
27	7	1.340

972 ICP-induced coupled plasma		
Lab	ppm	Lead, Pb
6	12	-1.923
26	11	-1.165
78	11	-1.165
Std Dev	10	-1.000
270	9	-0.291
78	9	0.000
Median	9	0.000
55	8	0.117

55	8	0.175
Std Dev	7	1.000
77	6	1.457
77	5	2.039

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
55	16	-0.344
55	16	-0.344
Median	16	0.000
6	16	0.344
Std Dev	15	1.000
270	14	2.955

983 Other(describe)		
Lab	ppm	Selenium, Se
13	15	0.000
Median	15	0.000

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
27	840	-1.340
Std Dev	834	-1.000
Median	817	0.000
Std Dev	800	1.000
60	794	1.340

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
270	1127	-10.949
55	842	-1.649
Std Dev	823	-1.000
55	809	-0.556
6	806	-0.458
78	806	-0.458

78	802	-0.310
75	792	0.000
Median	792	0.000
	792	0.000
50	788	0.137
75	765	0.882
75	765	0.882
Std Dev	761	1.000
77	655	4.478
77	635	5.131
26	0	25.884

993 Other(describe)		
Lab	ppm	Zinc, Zn
51	780	-1.340
Std Dev	779	-1.000
Median	776	0.000
Std Dev	773	1.000
13	772	1.340

