

AFPC Rock Check Program

Sample No. 2009-10

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	19	1.11	0.151
Other (describe)	102	6	1.22	0.056
Method Group 100		25	1.18	0.15
BPL or P₂O₅				
Gravimetric AFPC 9-5	201	2	32.91	0.067
ICP-induced coupled plasma	202	4	32.42	0.268
Photometric-AFPC 9-6	203	12	32.53	0.061
Automated -AOAC 978.01-15th	204	10	32.69	0.045
Other(describe)	205	2	32.80	0.041
Method Group 200		30	32.63	0.18
BPL or P₂O₅ (on Dry Basis)				
Gravimetric AFPC 9-5	211	1	33.02	0.000
ICP-induced coupled plasma	212	4	32.82	0.264
Photometric-AFPC 9-6	213	8	32.92	0.108
Automated -AOAC 978.01-15th	214	10	33.05	0.071
Other(describe)	215	2	33.15	0.004
Method Group 210		25	33.02	0.19
Fe₂O₃				
Atomic Absorption-AFPC 9-12,13	301	3	0.56	0.241
ICP-induced coupled plasma	302	27	1.15	0.033
Other(describe)	303			
Method Group 300		30	1.15	0.07
Al₂O₃				
Atomic Absorption-AFPC 9-16,17	401	2	0.43	0.231
ICP-induced coupled plasma	402	26	1.18	0.040
Other(describe)	403			
Method Group 400		28	1.18	0.04
MgO				
Atomic Absorption-AFPC 9-18,19	501	3	0.42	0.019
ICP-induced coupled plasma	502	26	0.44	0.015
Other(describe)	503	1	0.53	0.000
Method Group 500		30	0.44	0.01
Acid Insoluble				
Insoluble-AFPC 9-8	601	17	2.98	0.108
Other(describe)	602	1	2.92	0.000
Method Group 600		18	2.97	0.10
CaO				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	15	47.90	1.073
Ceric Sulfate volumetric	703			
Permanganate	704	2	47.77	0.534
EDTA Volumetric	705	6	48.44	1.316
Other(describe)	706	6	48.27	0.420
Method Group 700		29	48.10	0.66
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	12	48.45	0.858
Ceric Sulfate volumetric	713			
Permanganate	714	1	49.02	0.000
EDTA Volumetric	715	6	48.83	1.308
Other(describe)	716	6	48.80	0.334
Method Group 710		25	48.69	0.51

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	17	3.74	0.131
Other (describe)	803	2	3.74	0.056
Method Group 800		19	3.74	0.12
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma	912	4	10.8	2.22
Other(describe)	913	1	7.9	0.00
Method Group 900		5	10.5	2.33
Cadmium, Cd				
Atomic Absorption	921	1	14	0.0
ICP-induced coupled plasma	922	8	4	0.4
Other(describe)	923	2	4	0.7
Method Group 910		11	4	0.5
Cobalt, Co				
Atomic Absorption	931			
ICP-induced coupled plasma	932	7	3	0.4
Other(describe)	933	2	7	1.8
Method Group 920		9	3	0.7
Mercury, Hg				
Atomic Absorption	941			
ICP-induced coupled plasma	942	1	84.0	0.00
Other(describe)	943	1	1.0	0.00
Method Group 930		2	42.5	30.97
Molybdenum, Mo				
Atomic Absorption	951			
ICP-induced coupled plasma	952	6	14	2.6
Other(describe)	953	1	16	0.0
Method Group 940		7	15	2.5
Nickel, Ni				
Atomic Absorption	961	1	64	0.0
ICP-induced coupled plasma	962	7	8	2.1
Other(describe)	963	1	16	0.0
Method Group 950		9	9	6.6
Lead, Pb				
Atomic Absorption	971	1	45	0.0
ICP-induced coupled plasma	972	6	20	4.9
Other(describe)	973	1	19	0.0
Method Group 960		8	21	5.5
Selenium, Se				
Atomic Absorption	981			
ICP-induced coupled plasma	982	2	4	0.4
Other(describe)	983	1	2	0.0
Method Group 970		3	4	0.9
Zinc, Zn				
Atomic Absorption	991	2	53	3
ICP-induced coupled plasma	992	7	44	24
Other(describe)	993	3	43	9
Method Group 980		12	47	19

101 Ground Sample AFPC 9-2		
Lab	%	H ₂ O
266	1.30	-1.257
Std Dev	1.26	-1.000
75	1.25	-0.893
10	1.23	-0.794
6	1.22	-0.728
10	1.22	-0.728
24	1.22	-0.728
49	1.22	-0.728
24	1.18	-0.430
75	1.12	-0.066
27	1.11	0.000
Median	1.11	0.000
6	1.08	0.199
16	1.08	0.199
16	1.05	0.397
15	1.03	0.562
15	1.01	0.662
Std Dev	0.96	1.000
237	0.92	1.257
35	0.88	1.522
77	0.60	3.375
77	0.46	4.301

102 Other (describe)		
Lab	%	H ₂ O
9	1.40	-3.127
13	1.30	-1.429
Std Dev	1.28	-1.000
13	1.22	0.000
50	1.22	0.000
Median	1.22	0.000
9	1.20	0.357
Std Dev	1.16	1.000
26	0.73	8.755

201 Gravimetric AFPC 9-5		
Lab	%	P2O5
50	33.00	-1.340
Std Dev	32.98	-1.000
Median	32.91	0.000
Std Dev	32.84	1.000
77	32.82	1.340

202 ICP-induced coupled plasma		
Lab	%	P2O5
6	32.79	-1.391
Std Dev	32.69	-1.000
10	32.45	-0.103
Median	32.42	0.000
10	32.39	0.103
Std Dev	32.15	1.000
266	31.52	3.352

203 Photometric-AFPC 9-6		
Lab	%	P2O5
35	32.91	-6.267
9	32.70	-2.804
Std Dev	32.59	-1.000
26	32.59	-0.907
6	32.58	-0.825
9	32.55	-0.330
16	32.55	-0.330
Median	32.53	0.000
16	32.51	0.330
60	32.50	0.495
92	32.50	0.495
92	32.50	0.495
Std Dev	32.47	1.000
27	32.22	5.113
36	31.35	19.461

204 Automated -AOAC 978.01-15th		
Lab	%	P2O5
50	32.90	-4.690
77	32.79	-2.233
Std Dev	32.73	-1.000
15	32.73	-0.893
15	32.72	-0.558
75	32.71	-0.335
Median	32.69	0.000
24	32.68	0.335
75	32.67	0.447
24	32.67	0.558
Std Dev	32.65	1.000
13	32.56	2.903
13	32.19	11.167

205 Other(describe)		
Lab	%	P2O5
237	32.85	-1.340
Std Dev	32.84	-1.000
Median	32.80	0.000
Std Dev	32.75	1.000
49	32.74	1.340

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	dB
77	33.02		0.000
Median	33.02		0.000

212 ICP-induced coupled plasma			
Lab	%	P2O5	dB
6	33.19		-1.420
Std Dev	33.08		-1.000
10	32.85		-0.099
Median	32.82		0.000
10	32.79		0.099
Std Dev	32.56		1.000
266	31.94		3.346

213 Photometric-AFPC 9-6			
Lab	%	P2O5	dB
35	33.20		-2.652
9	33.16		-2.286
Std Dev	33.02		-1.000
9	32.95		-0.276
6	32.94		-0.186
Median	32.92		0.000
16	32.90		0.186
16	32.86		0.468
26	32.82		0.842
Std Dev	32.81		1.000
27	32.58		3.090

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
50	33.31		-3.618
Std Dev	33.12		-1.000
75	33.12		-0.939
24	33.08		-0.389

15	33.07	-0.253
24	33.05	-0.032
Median	33.05	0.000
15	33.05	0.032
75	33.04	0.156
Std Dev	32.98	1.000
13	32.96	1.261
77	32.94	1.553
13	32.61	6.195

215 Other(describe)			
Lab	%	P2O5	dB
237	33.16		-1.340
Std Dev	33.15		-1.000
Median	33.15		0.000
Std Dev	33.15		1.000
49	33.14		1.340

301 Atomic Absorption-AFPC 9-12,13		
Lab	%	Fe2O3
60	1.03	-1.932
Std Dev	0.80	-1.000
27	0.56	0.000
Median	0.56	0.000
36	0.38	0.748

302 ICP-induced coupled plasma		
Lab	%	Fe2O3
35	1.46	-9.243
266	1.28	-3.823
77	1.25	-2.920
77	1.24	-2.619
16	1.22	-1.867
16	1.20	-1.264
Std Dev	1.19	-1.000
49	1.18	-0.813
13	1.17	-0.512
10	1.16	-0.211
13	1.16	-0.211
15	1.16	-0.211
15	1.16	-0.211
26	1.16	-0.211
50	1.15	0.000
Median	1.15	0.000

6	1.15	0.090
9	1.15	0.090
10	1.15	0.090
75	1.15	0.116
92	1.14	0.391
9	1.14	0.542
75	1.13	0.813
Std Dev	1.12	1.000
92	1.10	1.596
237	1.06	2.800
24	1.05	3.101
24	1.05	3.101
50	1.00	4.606
6	0.95	6.112

303 Other(describe)			
Lab	%	Fe2O3	
Median	0.00		0.000

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	
27	0.74		-1.340
Std Dev	0.66		-1.000
Median	0.43		0.000
Std Dev	0.20		1.000
36	0.12		1.340

402 ICP-induced coupled plasma			
Lab	%	Al2O3	
266	1.44		-6.411
6	1.43		-6.161
77	1.40		-5.413
77	1.37		-4.666
50	1.30		-2.920
Std Dev	1.22		-1.000
24	1.22		-0.801
24	1.22		-0.801
35	1.21		-0.677
237	1.21		-0.552
75	1.20		-0.446
6	1.19		-0.178
13	1.19		-0.178
26	1.19		-0.178
Median	1.18		0.000

75	1.18	0.178
16	1.18	0.196
9	1.17	0.321
13	1.17	0.321
92	1.17	0.321
10	1.16	0.570
15	1.16	0.570
9	1.16	0.694
10	1.15	0.819
92	1.15	0.819
15	1.15	0.944
Std Dev	1.14	1.000
16	1.13	1.318
49	1.12	1.567

403 Other(describe)			
Lab	%	Al2O3	
Median	0.00		0.000

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
35	0.47		-2.680
Std Dev	0.44		-1.000
27	0.42		0.000
60	0.42		0.000
Median	0.42		0.000

502 ICP-induced coupled plasma			
Lab	%	MgO	
92	0.51		-4.690
92	0.49		-3.350
26	0.48		-2.680
13	0.46		-1.340
266	0.46		-1.340
Std Dev	0.45		-1.000
13	0.45		-0.670
15	0.45		-0.670
49	0.45		-0.670
9	0.45		-0.335
15	0.45		-0.335
6	0.44		0.000
10	0.44		0.000
16	0.44		0.000
16	0.44		0.000

50	0.44	0.000
Median	0.44	0.000
9	0.44	0.335
10	0.44	0.335
50	0.43	0.395
24	0.43	0.670
24	0.43	0.670
77	0.43	0.670
77	0.43	0.670
Std Dev	0.43	1.000
237	0.43	1.005
75	0.40	2.892
6	0.39	3.350
75	0.38	3.808

503 Other(describe)			
Lab	%	MgO	
36	0.53		0.000
Median	0.53		0.000

601 Insoluble-AFPC 9-8			
Lab	%	Al	
16	3.41		-3.974
16	3.19		-1.941
27	3.18		-1.802
26	3.11		-1.155
Std Dev	3.09		-1.000
24	3.06		-0.693
6	3.02		-0.370
10	3.02		-0.370
9	3.02		-0.323
35	2.98		0.000
Median	2.98		0.000
15	2.96		0.231
10	2.95		0.277
15	2.94		0.416
24	2.91		0.647
9	2.88		0.970
Std Dev	2.87		1.000
6	2.79		1.756
13	2.67		2.865
13	2.58		3.697

602 Other(describe)			
Lab	%	Al	
266	2.92		0.000
Median	2.92		0.000

701 Gravimetric sulfate			
Lab	%	CaO	
Median	0.00		0.000

702 ICP-induced coupled plasma			
Lab	%	CaO	
75	49.06		-1.078
Std Dev	48.97		-1.000
77	48.84		-0.876
75	48.72		-0.764
77	48.70		-0.746
50	48.62		-0.671
237	48.10		-0.186
6	47.92		-0.019
92	47.90		0.000
Median	47.90		0.000
49	47.80		0.093
10	47.49		0.387
10	47.30		0.559
16	47.15		0.704
16	47.05		0.792
6	47.00		0.839
Std Dev	46.83		1.000
92	46.70		1.119

703 Ceric Sulfate volumetric			
Lab	%	CaO	
Median	0.00		0.000

704 Permanganate			
Lab	%	CaO	
27	48.48		-1.340
Std Dev	48.30		-1.000
Median	47.77		0.000
Std Dev	47.23		1.000
60	47.05		1.340

705 EDTA Volumetric			
Lab	%	CaO	

50	53.96	-4.198
266	49.99	-1.181
Std Dev	49.75	-1.000
26	48.61	-0.133
Median	48.44	0.000
35	48.26	0.133
9	47.76	0.517
9	47.73	0.536

706 Other(describe)		
Lab	%	CaO
15	48.44	-0.417
24	48.44	-0.417
15	48.42	-0.357
Median	48.27	0.000
24	48.12	0.357
Std Dev	47.85	1.000
13	47.79	1.132
13	47.74	1.251

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00	0.000	

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
75	49.67	-1.426	
Std Dev	49.31	-1.000	
75	49.27	-0.957	
77	49.13	-0.797	
77	48.93	-0.553	
237	48.55	-0.111	
6	48.51	-0.071	
Median	48.45	0.000	
49	48.39	0.071	
10	48.07	0.443	
10	47.89	0.655	
16	47.65	0.939	
Std Dev	47.59	1.000	
16	47.56	1.035	
6	47.51	1.094	

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB

Median	0.00	0.000
---------------	-------------	--------------

714 Permanganate			
Lab	%	CaO	dB
27	49.02	0.000	
Median	49.02	0.000	

715 EDTA Volumetric			
Lab	%	CaO	dB
50	54.63	-4.435	
266	50.65	-1.392	
Std Dev	50.14	-1.000	
26	48.97	-0.107	
Median	48.83	0.000	
35	48.69	0.107	
9	48.41	0.323	
9	48.34	0.377	

716 Other(describe)			
Lab	%	CaO	dB
24	49.04	-0.720	
15	48.94	-0.430	
15	48.91	-0.333	
Median	48.80	0.000	
24	48.69	0.333	
Std Dev	48.46	1.000	
13	48.42	1.135	
13	48.33	1.404	

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
24	3.90	-1.187	
Std Dev	3.87	-1.000	
24	3.86	-0.919	
9	3.85	-0.842	
9	3.83	-0.651	
13	3.82	-0.613	
13	3.80	-0.459	
237	3.77	-0.191	
49	3.76	-0.153	

75	3.74	0.000
Median	3.74	0.000
15	3.74	0.038
15	3.71	0.268
266	3.69	0.383
75	3.65	0.727
Std Dev	3.61	1.000
35	3.60	1.072
50	3.35	2.986
27	3.25	3.790
36	2.65	8.346

803 Other(describe)		
Lab	%	Fluorine, F
77	3.81	-1.340
Std Dev	3.79	-1.000
Median	3.74	0.000
Std Dev	3.68	1.000
77	3.66	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
6	12.0	-0.563
26	11.0	-0.113
Median	10.8	0.000
266	10.5	0.113
Std Dev	8.5	1.000
77	1.6	4.121

913 Other(describe)		
Lab	ppm	Arsenic, As
13	7.9	0.000
Median	7.9	0.000

921 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Cadmium, Cd
27	14	0.000
Median	14	0.000

922 ICP-induced coupled plasma		
Lab	ppm	Cadmium, Cd
75	4	-0.447
75	4	-0.447
77	4	-0.447
77	4	-0.447
Median	4	0.000
266	4	0.447
26	4	0.670
Std Dev	3	1.000
6	3	1.563
237	3	1.787

923 Other(describe)		
Lab	ppm	Cadmium, Cd
13	5	-1.340
Std Dev	5	-1.000
Median	4	0.000
Std Dev	3	1.000
50	3	1.340

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	4	-2.436
266	4	-2.436
Std Dev	3	-1.000
6	3	-0.244
75	3	0.000
77	3	0.000
77	3	0.000
Median	3	0.000
Std Dev	3	1.000
237	2	2.436

933 Other(describe)		
Lab	ppm	Cobalt, Co
27	9	-1.340
Std Dev	8	-1.000
Median	7	0.000
Std Dev	5	1.000

13 4 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
266	84.0	0.000
Median	84.0	0.000

943 Other(describe)		
Lab	ppm	Mercury, Hg
13	<0.07	0.000
26	1.0	0.000
Median	1.0	0.000

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

952 ICP-induced coupled plasma		
Lab	ppm	lolybdenum, Mo
6	17	-1.121
50	17	-1.121
Std Dev	17	-1.000
266	15	-0.399
Median	14	0.000
77	13	0.399
77	13	0.399
Std Dev	11	1.000
237	11	1.159

953 Other(describe)		
Lab	ppm	lolybdenum, Mo
13	16	0.000
Median	16	0.000

961 Atomic Absorption-AFPC 9-12,13		
Lab	ppm	Nickel, Ni
27	64	0.000
Median	64	0.000

962 ICP-induced coupled plasma		
Lab	ppm	Nickel, Ni
266	80	-34.889
6	11	-1.462
Std Dev	10	-1.000
75	9	-0.487
75	8	0.000
Median	8	0.000
237	8	0.244
77	7	0.487
77	7	0.487

963 Other(describe)		
Lab	ppm	Nickel, Ni
13	16	0.000
Median	16	0.000

971 Atomic Absorption-AFPC 9-16,17		
Lab	ppm	Lead, Pb
27	45	0.000
Median	45	0.000

972 ICP-induced coupled plasma		
Lab	ppm	Lead, Pb
266	27	-1.464
Std Dev	25	-1.000
6	24	-0.825
26	23	-0.515
Median	20	0.000
237	18	0.515
77	17	0.618
77	16	0.825

973 Other(describe)		
Lab	ppm	Lead, Pb
13	19	0.000
Median	19	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

266	5	-1.340
Std Dev	5	-1.000
Median	4	0.000
Std Dev	4	1.000
6	4	1.340

983 Other(describe)		
Lab	ppm	Selenium, Se
13	2	0.000
Median	2	0.000

991 Atomic Absorption-AFPC 9-18,19		
Lab	ppm	Zinc, Zn
60	57	-1.340
Std Dev	56	-1.000
Median	53	0.000
Std Dev	50	1.000
27	50	1.340

992 ICP-induced coupled plasma		
Lab	ppm	Zinc, Zn
50	84	-1.701
24	69	-1.071
24	69	-1.050
Std Dev	67	-1.000
6	44	0.000
Median	44	0.000
266	38	0.244
77	36	0.315
77	35	0.357

993 Other(describe)		
Lab	ppm	Zinc, Zn
13	64	-2.507
Std Dev	51	-1.000
75	43	0.000
Median	43	0.000
75	41	0.173

