AFPC Rock Check Program

Sample No. 2007-10

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC 9-2	101	18	1.35	0.126
Other (describe)	102	1	1.36	
Method Group 100		19	1.35	0.12
BPL or P_2O_5				
Gravimetric AFPC 9-5	201	3	32.76	0.078
	202			
Photometric-AFPC 9-6	203	9	32.52	0.138
Automated -AOAC 978.01-15th	204	7	32.50	0.088
ICP-inducted coupled plasma	205	9	32.56	0.067
Method Group 200		28	32.56	0.17
BPL or P_2O_5 (on Dry Basis)				
Gravimetric AFPC 9-5	211	2	33.10	0.173
ICP-inducted coupled plasma	212			
Photometric-AFPC 9-6	213	4	32.95	0.056
Automated -AOAC 978.01-15th	214	7	32.92	0.068
Other(describe)	215	6	33.02	0.025
Method Group 210		19	32.96	0.09
Fe_2O_3				
Atomic Absorption-AFPC 9-12,13	301	5	1.07	0.187
ICP-inducted coupled plasma	302	23	1.18	0.032
Other(describe)	303	1	0.40	0.000
Method Group 300		29	1.17	0.07
Al_2O_3				
Atomic Absorption-AFPC 9-16,17	401	4	1.13	0.071
ICP-inducted coupled plasma	402	22	1.17	0.066
Other(describe)	403	1	1.43	0.000
Method Group 400		27	1.17	0.06
MgO				
Atomic Absorption-AFPC 9-18,19	501	6	0.45	0.033
ICP-inducted coupled plasma	502	21	0.44	0.015
Other(describe)	503	1	0.38	0.000
Method Group 500		28	0.44	0.02
Acid Insoluble				
Insoluble-AFPC 9-8	601	15	3.03	0.222
Other(describe)	602	1	11.40	0.000
Method Group 600		16	3.04	0.28
CaO				
Gravimetric sulfate	701			
ICP-inducted coupled plasma	702	9	47.78	0.265
Ceric Sulfate volumetric	703			
Permanganate	704			
EDTA Volumetric	705	8	47.84	0.187
Other(describe)	706	8	47.64	0.382
Method Group 700		25	47.78	0.24
CaO (on Dry Basis)				
Gravimetric sulfate	711			
ICP-inducted coupled plasma	712	2	48.38	0.068
Ceric Sulfate volumetric	713			
Permanganate	714			
EDTA Volumetric	715	6	48.30	0.273
Other(describe)	716	8	48.29	0.458
Method Group 710		18	48.33	0.25

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	16	3.83	0.196
Oher(describe)	803	2	3.95	0.026
Method Group 800		18	3.86	0.18
Arsenic, As				
Atomic Absorption	911			
ICP-inducted coupled plasma	912	6	18.6	25.25
Other(describe)	913	4	6.5	0.85
Method Group 900		10	8.3	11.03
Cadmium, Cd				
Atomic Absorption	921	1	3	0.0
ICP-inducted coupled plasma	922	11	4	0.5
Other(describe)	923	1	4	0.0
Method Group 910		13	4	0.5
Cobalt, Co				
Atomic Absorption	931			
ICP-inducted coupled plasma	932	8	5	0.9
Other(describe)	933	1	4	0.0
Method Group 920		9	4	0.7
Mercury, Hg				
Atomic Absorption	941			
ICP-inducted coupled plasma	942	1	0.1	0.00
Other(describe)	943			
Method Group 930		1	0.1	0.00
Molybdenum, Mo				
Atomic Absorption	951	1	9	0.0
ICP-inducted coupled plasma	952	8	15	1.8
Other(describe)	953	1	17	0.0
Method Group 940		10	15	2.4
Nickel, Ni				
Atomic Absorption	961	1	9	0.0
ICP-inducted coupled plasma	962	7	11	1.5
Other(describe)	963	2	33	16.2
Method Group 950		10	11	1.6
Lead, Pb				
Atomic Absorption	971	1	25	0.0
ICP-inducted coupled plasma	972	6	21	4.6
Other(describe)	973	1	20	0.0
Method Group 960		8	21	4.7
Selenium, Se				
Atomic Absorption	981			
ICP-inducted coupled plasma	982	1	3	0.0
Other(describe)	983	1	2	0.0
Method Group 970		2	2	0.0
Zinc, Zn				
Atomic Absorption	991			
ICP-inducted coupled plasma	992	8	45	8
Other(describe)	993	2	59	3
Method Group 980		10	46	11

101 Ground Sample AFPC 9-2		
Lab	% H_2O	
55	1.65	-2.382
61	1.48	-1.032
Std Dev	1.48	-1.000
13	1.47	-0.953
13	1.44	-0.675
61	1.43	-0.635
34	1.39	-0.318
34	1.39	-0.318
34	1.39	-0.318
24	1.35	0.000
24	1.35	0.000
Median	1.35	0.000
15	1.29	0.516
9	1.27	0.635
15	1.26	0.754
9	1.25	0.794
Std Dev	1.22	1.000
33	1.22	1.032
55	0.95	3.176
77	0.59	6.035
77	0.33	8.100

102 Other (describe)		
Lab	% H_2O	
51	1.36	0.000
Median	1.36	0.000

201 Gravimetric AFPC 9-5		
Lab	% P2O5	
51	32.88	-1.531
Std Dev	32.84	-1.000
77	32.76	0.000
Median	32.76	0.000
Std Dev	32.68	1.000
26	32.67	1.149

202 ICP-inducted coupled plasma		
Lab	% P2O5	
Median	0.00	0.000

203 Photometric-AFPC 9-6		
Lab	% P2O5	
36	32.84	-2.318
9	32.71	-1.376
Std Dev	32.66	-1.000
78	32.61	-0.616
9	32.55	-0.217
78	32.52	0.000
Median	32.52	0.000
61	32.46	0.471
61	32.42	0.724
Std Dev	32.38	1.000
35	32.30	1.594
270	32.15	2.680

204 Automated -AOAC 978.01-15th		
Lab	% P2O5	
77	32.72	-2.509
13	32.60	-1.083
Std Dev	32.59	-1.000
15	32.50	0.000
24	32.50	0.000
Median	32.50	0.000
13	32.47	0.342
Std Dev	32.41	1.000
33	32.39	1.254
15	32.36	1.597

205 ICP-inducted coupled plasma		
Lab	% P2O5	
55	32.80	-3.573
55	32.75	-2.829
6	32.64	-1.191
Std Dev	32.63	-1.000
34	32.56	0.000
34	32.56	0.000
34	32.56	0.000
Median	32.56	0.000
24	32.55	0.149
Std Dev	32.49	1.000
51	32.43	1.936
19	30.90	24.716

211 Gravimetric AFPC 9-5		
Lab	% P2O5	dB
51	33.33	-1.340
Std Dev	33.27	-1.000
Median	33.10	0.000
Std Dev	32.93	1.000
77	32.87	1.340

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

213 Photometric-AFPC 9-6		
Lab	% P2O5	dB
9	33.13	-3.201
Std Dev	33.01	-1.000
9	32.96	-0.175
Median	32.95	0.000
61	32.94	0.175
Std Dev	32.90	1.000
61	32.89	1.111

214 Automated -AOAC 978.01-15th		
Lab	% P2O5	dB
13	33.08	-2.314
Std Dev	32.99	-1.000
24	32.94	-0.317
13	32.94	-0.288
15	32.92	0.000
Median	32.92	0.000
77	32.91	0.130
Std Dev	32.85	1.000
33	32.79	1.945
15	32.77	2.220

215 ICP-inducted coupled plasma		
Lab	% P2O5	dB
55	33.35	-13.112
55	33.06	-1.787
Std Dev	33.04	-1.000
34	33.02	0.000
34	33.02	0.000
34	33.02	0.000
Median	33.02	0.000
24	33.00	0.931

301 Atomic Absorption-AFPC 9-12,13		
Lab	% Fe2O3	
241	1.35	-1.501
Std Dev	1.26	-1.000
36	1.23	-0.858
51	1.07	0.000
Median	1.07	0.000
55	0.98	0.482
55	0.91	0.858

302 ICP-inducted coupled plasma		
Lab	% Fe2O3	
77	1.24	-2.049
51	1.23	-1.734
61	1.21	-1.104
Std Dev	1.21	-1.000
15	1.21	-0.946
13	1.20	-0.788
15	1.20	-0.631
61	1.20	-0.631
77	1.19	-0.473
34	1.18	-0.158
34	1.18	-0.158
34	1.18	-0.158
13	1.18	0.000
Median	1.18	0.000
6	1.17	0.158
26	1.17	0.158
78	1.17	0.315
9	1.16	0.473
78	1.16	0.631
9	1.15	0.788
Std Dev	1.14	1.000
24	1.11	2.049
33	1.10	2.365
24	1.06	3.626
270	1.06	3.626
35	0.52	20.809

303 Other(describe)		
Lab	% Fe2O3	
19	0.40	0.000
Median	0.40	0.000

401	Atomic Absorption-AFPC 9-16,17	
Lab	%	Al2O3
241	1.18	-0.776
55	1.17	-0.635
Median	1.13	0.000
55	1.08	0.635
51	1.07	0.776

402	ICP-inducted coupled plasma	
Lab	%	Al2O3
77	1.49	-4.832
33	1.44	-4.077
77	1.44	-4.077
78	1.38	-3.171
78	1.34	-2.567
Std Dev	1.24	-1.000
24	1.23	-0.906
24	1.21	-0.604
270	1.21	-0.604
9	1.20	-0.453
13	1.19	-0.226
61	1.18	-0.075
Median	1.17	0.000
61	1.17	0.075
6	1.15	0.302
9	1.15	0.302
35	1.15	0.377
15	1.14	0.453
13	1.14	0.528
15	1.14	0.528
26	1.13	0.604
34	1.13	0.604
34	1.13	0.604
34	1.13	0.604

403	Other(describe)	
Lab	%	Al2O3
19	1.43	0.000
Median	1.43	0.000

501	Atomic Absorption-AFPC 9-18,19	
Lab	%	MgO
241	0.50	-1.455
Std Dev	0.49	-1.000
55	0.48	-0.842
35	0.47	-0.383
Median	0.45	0.000
55	0.44	0.383
51	0.43	0.689
Std Dev	0.42	1.000
36	0.38	2.221

502	ICP-inducted coupled plasma	
Lab	%	MgO
13	0.48	-2.680
9	0.46	-1.340
34	0.46	-1.340
34	0.46	-1.340
34	0.46	-1.340
61	0.46	-1.340
61	0.46	-1.005
Std Dev	0.45	-1.000
13	0.45	-0.670
26	0.45	-0.670
78	0.45	-0.335
9	0.44	0.000
15	0.44	0.000
15	0.44	0.000
51	0.44	0.000
77	0.44	0.000
78	0.44	0.000
Median	0.44	0.000
6	0.43	0.670
24	0.43	0.670
24	0.43	0.670
Std Dev	0.43	1.000
77	0.42	1.340
33	0.41	2.010

503	Other(describe)	
Lab	%	MgO
19	0.38	0.000
Median	0.38	0.000

601	Insoluble-AFPC 9-8	
Lab	%	AI
26	3.68	-2.928
55	3.43	-1.802
51	3.27	-1.081
Std Dev	3.25	-1.000
9	3.25	-0.991
61	3.11	-0.338
61	3.05	-0.090
24	3.04	-0.045
9	3.03	0.000
24	3.03	0.000
Median	3.03	0.000
13	2.90	0.586
15	2.88	0.676
33	2.88	0.676
15	2.83	0.901
13	2.83	0.923
6	2.81	0.991

602	Other(describe)	
Lab	%	AI
19	11.40	0.000
Median	11.40	0.000

701	Gravimetric sulfate	
Lab	%	CaO
Median	0.00	0.000

702	ICP-inducted coupled plasma	
Lab	%	CaO
78	49.68	-7.153
Std Dev	48.04	-1.000
34	47.82	-0.151
34	47.82	-0.151
34	47.82	-0.151
61	47.78	0.000
Median	47.78	0.000
61	47.58	0.774
Std Dev	47.52	1.000
78	47.47	1.189
77	46.90	3.322
77	46.80	3.699

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
55	48.75	-4.904
35	48.16	-1.742
Std Dev	48.02	-1.000
26	47.93	-0.509
6	47.89	-0.295
Median	47.84	0.000
55	47.78	0.295
51	47.74	0.509
9	47.73	0.563
9	47.66	0.938

706	Other(describe)	
Lab	%	CaO
24	48.59	-2.484
24	48.37	-1.909
Std Dev	48.02	-1.000
13	47.78	-0.366
15	47.70	-0.157
Median	47.64	0.000
13	47.58	0.157
15	47.52	0.301
Std Dev	47.25	1.000
33	47.08	1.451
19	43.80	10.027

711	Gravimetric sulfate		
Lab	%	CaO	dB
Median	0.00		0.000

712	ICP-inducted coupled plasma		
Lab	%	CaO	dB
61	48.47		-1.340
Std Dev	48.45		-1.000
Median	48.38		0.000
Std Dev	48.31		1.000
61	48.29		1.340

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
55	49.22		-3.342
Std Dev	48.58		-1.000
51	48.40		-0.346
9	48.33		-0.112
Median	48.30		0.000
9	48.27		0.112
Std Dev	48.03		1.000
26	47.93		1.366
6	47.89		1.513

716 Other(describe)			
Lab	%	CaO	dB
24	49.25		-2.090
24	49.03		-1.604
Std Dev	48.75		-1.000
13	48.49		-0.428
15	48.32		-0.053
Median	48.29		0.000
13	48.27		0.053
15	48.12		0.366
Std Dev	47.83		1.000
33	47.66		1.375
19	43.80		9.800

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

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
24	3.93		-0.485
24	3.92		-0.459
34	3.89		-0.306
34	3.89		-0.306
34	3.89		-0.306
35	3.89		-0.306
51	3.88		-0.255
9	3.84		-0.051
Median	3.83		0.000
9	3.82		0.051
13	3.72		0.562
33	3.66		0.868
270	3.65		0.919
Std Dev	3.63		1.000
13	3.56		1.378
36	3.31		2.654
15	3.30		2.731
15	3.26		2.910

803 Oher(describe)			
Lab	%	Fluorine, F	
77	3.98		-1.340
Std Dev	3.97		-1.000
Median	3.95		0.000
Std Dev	3.92		1.000
77	3.91		1.340

911 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Arsenic, As	
Median	0.0		0.000

912 ICP-inducted coupled plasma			
Lab	ppm	Arsenic, As	
78	88.5		-2.769
78	51.0		-1.284
Std Dev	43.8		-1.000
33	24.0		-0.215
Median	18.6		0.000
6	13.2		0.215
270	9.5		0.359
24	6.4		0.484

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	7.0		-0.585
77	7.0		-0.585
Median	6.5		0.000
51	6.0		0.585
Std Dev	5.6		1.000
13	5.4		1.264

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
51	3		0.000
Median	3		0.000

922 ICP-inducted coupled plasma			
Lab	ppm	Cadmium, Cd	
78	7		-4.881
78	6		-3.446
6	5		-1.149
33	5		-1.149
Std Dev	5		-1.000
61	5		-0.861
61	4		0.000
Median	4		0.000
26	4		0.191
51	4		0.191
77	4		0.191
77	4		0.191
270	4		0.670

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	4		0.000
Median	4		0.000

931 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Cobalt, Co	
Median	0		0.000

932 ICP-inducted coupled plasma			
Lab	ppm	Cobalt, Co	
270	7		-2.814
78	6		-1.474
Std Dev	6		-1.000
51	5		-0.402
78	5		-0.402
Median	5		0.000
6	4		0.402
26	4		0.670
77	4		0.670

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	4		0.000
Median	4		0.000

941 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Mercury, Hg	
Median	0.0		0.000

942 ICP-inducted coupled plasma			
Lab	ppm	Mercury, Hg	
33	0.1		0.000
Median	0.1		0.000

943 Other(describe)			
Lab	ppm	Mercury, Hg	
13	<0.12		0.000
26	<.05		0.000
Median			0.000

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

952 ICP-inducted coupled plasma			
Lab	ppm	lolybdenum, Mo	
270	18		-1.347
Std Dev	17		-1.000
6	17		-0.819
77	16		-0.514
77	16		-0.514
Median	15		0.000
78	14		0.514
51	14		0.597
Std Dev	13		1.000
78	13		1.208
26	11		2.263

953 Other(describe)			
Lab	ppm	lolybdenum, Mo	
13	17		0.000

Median	17	0.000

961 Atomic Absorption-AFPC 9-12,13

Lab	ppm	Nickel, Ni
51	9	0.000
Median	9	0.000

962 ICP-inducted coupled plasma

Lab	ppm	Nickel, Ni
78	12	-0.335
51	11	0.000
78	11	0.000
270	11	0.000
Median	11	0.000
6	10	0.670
Std Dev	10	1.000
77	8	2.010
77	8	2.010

963 Other(describe)

Lab	ppm	Nickel, Ni
19	55	-1.340
Std Dev	50	-1.000
Median	33	0.000
Std Dev	17	1.000
13	12	1.340

971 Atomic Absorption-AFPC 9-16,17

Lab	ppm	Lead, Pb
51	25	0.000
Median	25	0.000

972 ICP-inducted coupled plasma

Lab	ppm	Lead, Pb
78	<1	0.000
6	31	-2.221
33	26	-1.149
Std Dev	25	-1.000
270	23	-0.383
Median	21	0.000
77	19	0.383
77	19	0.383
Std Dev	16	1.000
78	13	1.805

973 Other(describe)

Lab	ppm	Lead, Pb
13	20	0.000
Median	20	0.000

981 Atomic Absorption-AFPC 9-18,19

Lab	ppm	Selenium, Se
Median	0	0.000

982 ICP-inducted coupled plasma

Lab	ppm	Selenium, Se
270	3	0.000
Median	3	0.000

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
Median	0	0.000

992 ICP-inducted coupled plasma

Lab	ppm	Zinc, Zn
33	87	-5.281
Std Dev	53	-1.000
51	50	-0.615
78	47	-0.173
6	46	-0.142
Median	45	0.000
270	44	0.142
Std Dev	37	1.000
77	37	1.025
77	36	1.151
78	26	2.475

993 Other(describe)

Lab	ppm	Zinc, Zn
19	63	-1.340
Std Dev	62	-1.000
Median	59	0.000
Std Dev	56	1.000

13	56	1.340