AFPC Rock Check Program

Sample No. 2012-02

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	20	0.10	0.034
Other (describe)	102	1	0.07	
Method Group 100		21	0.09	0.04
P_2O_5				
Gravimetric AFPC IX.3.B	201	1	29.35	0.000
ICP-inducted coupled plasma AFPC IX.3.D	202	5	29.35	0.045
Photometric-AFPC IX.3.C	203	12	29.26	0.288
Automated -AOAC 978.01-15th	204	9	29.06	0.104
Other(describe)	205			
Method Group 200		27	29.22	0.26
P_2O_5 (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	1	29.35	0.000
ICP-inducted coupled plasma AFPC IX.3.D	212	5	29.38	0.037
Photometric-AFPC IX.3.C	213	6	29.38	0.039
Automated -AOAC 978.01-15th	214	9	29.09	0.132
Other(describe)	215			
Method Group 210		21	29.29	0.17
Fe_2O_3				
Atomic Absorption-AFPC IX.6.B	301	1	0.67	0.000
ICP-inducted coupled plasma-AFPC IX.6.C	302	23	0.76	0.049
Other(describe)	303	2	0.88	0.004
Method Group 300		26	0.76	0.06
Al_2O_3				
Atomic Absorption-AFPC IX.7.B	401			
ICP-inducted coupled plasma-AFPC IX.7.C	402	23	0.43	0.037
Other(describe)	403	2	0.58	0.004
Method Group 400		25	0.43	0.04
MgO				
Atomic Absorption-AFPC IX.8.A	501	3	0.68	0.097
ICP-inducted coupled plasma-AFPC IX.8.B	502	21	0.67	0.019
Other(describe)	503	2	0.66	0.007
Method Group 500		26	0.67	0.02
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	14	10.83	0.100
Other(describe)	602	1	10.70	0.000
Method Group 600		15	10.82	0.10
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	10	2.45	0.183
Other(describe)	652	5	1.45	0.575
Method Group 650		15	2.41	0.30
CaO				
Gravimetric sulfate-AFPC IX.12.A	701			
ICP-inducted coupled plasma-AFPC IX.12.D	702	16	47.56	0.443
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704	1	47.20	0.000
EDTA Volumetric-AFPC IX.12.C	705	3	47.36	0.254
Other(describe)	706	6	47.68	0.354
Method Group 700		26	47.56	0.35
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711			
ICP-inducted coupled plasma-AFPC IX.12.D	712	11	47.58	0.668
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714			
EDTA Volumetric-AFPC IX.12.C	715	3	47.41	0.245
Other(describe)	716	6	47.80	0.357
Method Group 710		20	47.61	0.34

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	14	3.42	0.065
Oher(describe)	803	2	3.65	0.030
Method Group 800		16	3.45	0.11
Arsenic, As				
Atomic Absorption	911			
ICP-inducted coupled plasma-AFPC IX.15.B	912	9	19.4	5.72
Other(describe)	913	2	14.1	3.02
Method Group 900		11	18.1	6.84
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921			
ICP-inducted coupled plasma-AFPC IX.11.B	922	12	32	2.1
Other(describe)	923	1	34	0.0
Method Group 910		13	32	2.4
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931			
ICP-inducted coupled plasma-AFPC IX.16.A	932	12	1	0.4
Other(describe)	933	1	1	0.0
Method Group 920		13	1	0.3
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-inducted coupled plasma-AFPC IX.16.A	942	1		0.00
Other(describe)	943			
Method Group 930		1	0.0	0.00
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951			
ICP-inducted coupled plasma-AFPC IX.16.A	952	8	9	1.1
Other(describe)	953	1	12	0.0
Method Group 940		9	9	1.0
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961			
ICP-inducted coupled plasma-AFPC IX.16.A	962	12	20	2.5
Other(describe)	963	1	24	0.0
Method Group 950		13	20	2.7
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971			
ICP-inducted coupled plasma-AFPC IX.16.A	972	10	3	1.8
Other(describe)	973	1	4	0.0
Method Group 960		11	3	1.8
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981			
ICP-inducted coupled plasma-AFPC IX.16.A	982	5		3.7
Other(describe)	983	1	5	0.0
Method Group 970		6	2	3.7
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991	1	274	0
ICP-inducted coupled plasma-AFPC IX.16.A	992	11	264	23
Other(describe)	993	1	292	0
Method Group 980		13	272	20

101	Ground Sample AFPC IX.2.A		
Lab	%	H_2O	
15	0.25		-4.616
15	0.25		-4.467
10	0.14		-1.191
Std Dev	0.13		-1.000
13	0.12		-0.744
49	0.12		-0.744
77	0.12		-0.744
13	0.11		-0.447
16	0.10		-0.149
16	0.10		-0.149
266	0.10		-0.149
Median	0.10		0.000
9	0.09		0.149
9	0.09		0.149
75	0.09		0.149
10	0.08		0.447
35	0.08		0.447
Std Dev	0.06		1.000
61	0.06		1.042
61	0.06		1.042
75	0.03		1.936
35	0.03		1.936
77	0.01		2.531

102	Other (describe)		
Lab	%	H_2O	
26	0.07		0.000
Median	0.07		0.000

201	Gravimetric AFPC IX.3.B		
Lab	%	P2O5	
77	29.35		0.000
Median	29.35		0.000

202	ICP-inducted coupled plasma AFPC IX.3.D		
Lab	%	P2O5	
266	29.84		-10.943
Std Dev	29.39		-1.000
16	29.35		0.000
16	29.35		0.000
Median	29.35		0.000
Std Dev	29.31		1.000
10	29.29		1.340
10	29.22		2.903

203	Photometric-AFPC IX.3.C		
Lab	%	P2O5	
35	29.61		-1.207
Std Dev	29.55		-1.000
9	29.39		-0.444
9	29.38		-0.392
35	29.35		-0.305
49	29.33		-0.236
270	29.28		-0.076
Median	29.26		0.000
26	29.24		0.076
92	29.20		0.215
78	28.98		0.996
Std Dev	28.97		1.000
78	28.96		1.065
92	28.90		1.256
60	28.80		1.603

204	Automated -AOAC 978.01-15th		
Lab	%	P2O5	
75	29.27		-2.010
Std Dev	29.16		-1.000
13	29.16		-0.957
15	29.10		-0.431
15	29.09		-0.287
13	29.06		0.000
Median	29.06		0.000
75	29.02		0.335
77	28.96		0.909
Std Dev	28.95		1.000
61	28.08		9.380
61	27.15		18.234

205	Other(describe)		
Lab	%	P2O5	
Median	0.00		0.000

211	Gravimetric AFPC IX.3.B		
Lab	%	P2O5	dB
77	29.35		0.000
Median	29.35		0.000

212	ICP-inducted coupled plasma AFPC IX.3.D		
Lab	%	P2O5	dB
266	29.87		-13.202
Std Dev	29.42		-1.000
16	29.38		0.000
16	29.38		0.000
Median	29.38		0.000
Std Dev	29.34		1.000
10	29.33		1.340
10	29.24		3.660

213	Photometric-AFPC IX.3.C		
Lab	%	P2O5	dB
35	29.63		-6.414
Std Dev	29.42		-1.000
9	29.42		-0.849
9	29.40		-0.464
Median	29.38		0.000
49	29.37		0.464
35	29.36		0.629
Std Dev	29.34		1.000
26	29.26		3.185

214	Automated -AOAC 978.01-15th		
Lab	%	P2O5	dB
75	29.29		-1.550
Std Dev	29.22		-1.000
13	29.19		-0.781
15	29.17		-0.641
15	29.16		-0.538
13	29.09		0.000
Median	29.09		0.000
75	29.03		0.442
77	28.99		0.699
Std Dev	28.96		1.000
61	28.09		7.548
61	27.17		14.567

215	Other(describe)		
Lab	%	P2O5	dB
Median	0.00		0.000

301	Atomic Absorption-AFPC IX.6.B		
Lab	%	Fe2O3	
60	0.67		0.000
Median	0.67		0.000

302	ICP-inducted coupled plasma-AFPC IX.6.C		
Lab	%	Fe2O3	
266	0.83		-1.546
78	0.82		-1.237
78	0.81		-1.031
Std Dev	0.80		-1.000
9	0.79		-0.722
13	0.79		-0.618
16	0.78		-0.515
16	0.77		-0.309
49	0.77		-0.309
10	0.77		-0.206
13	0.77		-0.206
61	0.76		-0.103
9	0.76		0.000
10	0.76		0.000
Median	0.76		0.000
15	0.73		0.515
61	0.72		0.825
75	0.71		0.831
15	0.71		0.928
270	0.71		0.928
Std Dev	0.71		1.000
75	0.69		1.255
92	0.69		1.340
92	0.67		1.752
35	0.40		7.318
35	0.27		9.998

303	Other(describe)		
Lab	%	Fe2O3	
77	0.88		-1.340
Std Dev	0.88		-1.000
Median	0.88		0.000
Std Dev	0.87		1.000
77	0.87		1.340

401	Atomic Absorption-AFPC IX.6.B		
Lab	%	Al2O3	

Median	0.00	0.000

402	ICP-inducted coupled plasma-AFPC IX.6.C	
Lab	%	Al2O3
266	0.63	-5.525
78	0.54	-2.965
78	0.50	-1.887
61	0.47	-1.078
61	0.47	-1.078
Std Dev	0.46	-1.000
270	0.46	-0.943
92	0.45	-0.674
92	0.44	-0.404
9	0.44	-0.270
16	0.43	-0.135
15	0.43	0.000
15	0.43	0.000
Median	0.43	0.000
9	0.42	0.135
16	0.42	0.135
13	0.41	0.404
49	0.41	0.404
75	0.41	0.524
10	0.41	0.539
10	0.40	0.674
13	0.40	0.674
75	0.40	0.758
Std Dev	0.39	1.000
35	0.20	6.064
35	0.20	6.064

403	Other(describe)	
Lab	%	Al2O3
77	0.58	-1.340
Std Dev	0.58	-1.000
Median	0.58	0.000
Std Dev	0.57	1.000
77	0.57	1.340

501	Atomic Absorption-AFPC IX.8.A	
Lab	%	MgO
35	0.92	-2.474
Std Dev	0.78	-1.000
35	0.68	0.000
Median	0.68	0.000
60	0.66	0.206

502	ICP-inducted coupled plasma-AFPC IX.8.B	
Lab	%	MgO
92	0.75	-4.288
92	0.74	-3.752
61	0.73	-3.216
49	0.69	-1.072
Std Dev	0.69	-1.000
10	0.69	-0.804
16	0.68	-0.536
16	0.68	-0.536
10	0.68	-0.268
9	0.67	0.000
13	0.67	0.000
15	0.67	0.000
Median	0.67	0.000
9	0.67	0.268
61	0.67	0.268
78	0.67	0.268
15	0.66	0.536
78	0.66	0.804
Std Dev	0.65	1.000
13	0.63	2.144
270	0.62	2.546
75	0.60	3.617
75	0.59	4.421
266	0.01	35.376

503	Other(describe)	
Lab	%	MgO
77	0.67	-1.340
Std Dev	0.67	-1.000
Median	0.66	0.000
Std Dev	0.65	1.000
77	0.65	1.340

601	Insoluble-AFPC IX.4.A	
Lab	%	Al
35	11.16	-3.356
15	10.93	-1.052
Std Dev	10.92	-1.000
15	10.89	-0.651
49	10.89	-0.651
16	10.87	-0.451
26	10.84	-0.100
35	10.83	-0.050
Median	10.83	0.000
9	10.82	0.050
16	10.82	0.050
10	10.76	0.701
13	10.75	0.751
9	10.74	0.852
Std Dev	10.73	1.000
10	10.72	1.102
13	10.67	1.553

602	Other(describe)	
Lab	%	Al
266	10.70	0.000
Median	10.70	0.000

651	Gasometric-AFPC IX.13.B	
Lab	%	CO2
61	3.38	-5.100
Std Dev	2.63	-1.000
61	2.59	-0.793
49	2.57	-0.670
13	2.52	-0.397
13	2.49	-0.205
Median	2.45	0.000
9	2.41	0.205
9	2.41	0.205
15	2.28	0.916
Std Dev	2.26	1.000
77	2.24	1.135
15	2.23	1.190

652	Other(describe)	
Lab	%	CO2
35	3.50	-3.568
35	2.06	-1.062
Std Dev	2.02	-1.000
78	1.45	0.000
Median	1.45	0.000
266	1.29	0.278
78	1.25	0.348

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

702	ICP-inducted coupled plasma-AFPC IX.12.I	
Lab	%	CaO
78	48.96	-3.153
270	48.69	-2.532
92	48.20	-1.438
Std Dev	48.01	-1.000
16	47.68	-0.265
9	47.67	-0.243
9	47.65	-0.186
10	47.60	-0.085
16	47.58	-0.039
Median	47.56	0.000
10	47.55	0.039
92	47.53	0.073
49	47.41	0.344
78	47.15	0.942
Std Dev	47.12	1.000
75	46.88	1.542
61	46.64	2.081
75	45.24	5.239
61	42.50	11.420

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

704	Permanganate	
Lab	%	CaO
60	47.20	0.000
Median	47.20	0.000

705	EDTA Volumetric-AFPC IX.12.C	
Lab	%	CaO
35	47.72	-1.419
Std Dev	47.61	-1.000
266	47.36	0.000
Median	47.36	0.000
Std Dev	47.11	1.000
35	47.04	1.261

706 Other(describe)			
Lab	%	CaO	
77	48.70		-2.885
Std Dev	48.03		-1.000
77	48.00		-0.910
15	47.69		-0.035
Median	47.68		0.000
15	47.67		0.035
13	47.38		0.853
Std Dev	47.32		1.000
13	47.29		1.107

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

712 ICP-inducted coupled plasma-AFPC IX.12.D			
Lab	%	CaO	dB
16	47.73		-0.216
9	47.71		-0.194
9	47.69		-0.157
10	47.66		-0.122
16	47.63		-0.067
10	47.58		0.000
Median	47.58		0.000
49	47.47		0.174
Std Dev	46.91		1.000
75	46.89		1.032
61	46.67		1.369
75	45.28		3.445
61	42.53		7.567

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

714 Permanganate			
Lab	%	CaO	dB
Median	0.00		0.000

715 EDTA Volumetric-AFPC IX.12.C			
Lab	%	CaO	dB
35	47.73		-1.334
Std Dev	47.65		-1.000
266	47.41		0.000
Median	47.41		0.000
Std Dev	47.16		1.000
35	47.08		1.346

716 Other(describe)			
Lab	%	CaO	dB
77	48.70		-2.546
Std Dev	48.15		-1.000
77	48.06		-0.733
15	47.81		-0.032
Median	47.80		0.000
15	47.78		0.032
Std Dev	47.44		1.000
13	47.43		1.032
13	47.34		1.271

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
35	4.04	-9.457
35	3.61	-2.871
49	3.52	-1.493
Std Dev	3.49	-1.000
26	3.48	-0.804
9	3.47	-0.651
9	3.47	-0.651
13	3.43	-0.038
Median	3.42	0.000
13	3.42	0.038
266	3.42	0.038
270	3.40	0.345
15	3.38	0.651
15	3.37	0.881
75	3.36	0.957
Std Dev	3.36	1.000
75	3.33	1.493

803 Oher(describe)		
Lab	%	Fluorine, F
77	3.69	-1.340
Std Dev	3.68	-1.000
Median	3.65	0.000
Std Dev	3.62	1.000
77	3.61	1.340

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

912 ICP-inducted coupled plasma-AFPC IX.15.B		
Lab	ppm	Arsenic, As
266	23.7	-0.760
78	22.6	-0.568
61	21.7	-0.405
270	20.7	-0.227
78	19.4	0.000
Median	19.4	0.000
61	18.1	0.218
35	14.0	0.935
Std Dev	13.6	1.000
35	10.0	1.634
77	9.0	1.808

913 Other(describe)		
Lab	ppm	Arsenic, As
13	18.1	-1.340
Std Dev	17.1	-1.000
Median	14.1	0.000
Std Dev	11.0	1.000
77	10.0	1.340

921 Atomic Absorption-AFPC IX.11.A		
Lab	ppm	Cadmium, Cd
Median	0	0.000

922 ICP-inducted coupled plasma-AFPC IX.11.B		
Lab	ppm	Cadmium, Cd
78	35	-1.608
77	34	-1.182
78	34	-1.068
Std Dev	34	-1.000
35	33	-0.695
77	33	-0.695
270	32	-0.427
Median	32	0.000
75	31	0.427
61	31	0.449
61	31	0.493
75	30	0.727
Std Dev	30	1.000
266	28	1.740
35	26	2.714

923 Other(describe)		
Lab	ppm	Cadmium, Cd
13	34	0.000
Median	34	0.000

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

932 ICP-inducted coupled plasma-AFPC IX.16.		
Lab	ppm	Cobalt, Co
78	2	-2.703
78	2	-2.703
Std Dev	1	-1.000
35	1	0.000
35	1	0.000
77	1	0.000
77	1	0.000
266	1	0.000
Median	1	0.000
61	1	0.811
Std Dev	1	1.000
270	1	1.081
75	0	2.116
75	0	2.589
61	0	2.703

933 Other(describe)		
Lab	ppm	Cobalt, Co
13	1	0.000
Median	1	0.000

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

942 ICP-inducted coupled plasma-AFPC IX.16.A

Lab	ppm	Mercury, Hg
35	<1	0.000
35	<1	0.000
266	<0.005	0.000
270		0.000
Median		0.000

943 Other(describe)

Lab	ppm	Mercury, Hg
13	<0.07	0.000
Median	0.0	0.000

951 Atomic Absorption-AFPC IX.16.B

Lab	ppm	lolybdenum, Mo
Median	0	0.000

952 ICP-inducted coupled plasma-AFPC IX.16.A

Lab	ppm	lolybdenum, Mo
266	12	-2.549
61	10	-1.157
Std Dev	10	-1.000
61	10	-0.942
78	9	-0.115
Median	9	0.000
78	9	0.115
270	9	0.115
Std Dev	8	1.000
77	8	1.033
77	7	1.952

953 Other(describe)

Lab	ppm	lolybdenum, Mo
13	12	0.000
Median	12	0.000

961 Atomic Absorption-AFPC IX.16.B

Lab	ppm	Nickel, Ni
Median	0	0.000

962 ICP-inducted coupled plasma-AFPC IX.16.A

Lab	ppm	Nickel, Ni
270	32	-4.437
266	27	-2.724
35	24	-1.449
35	23	-1.050
Std Dev	23	-1.000
78	21	-0.054
61	20	-0.034
Median	20	0.000
61	20	0.034
77	20	0.145
77	20	0.145
75	20	0.325
75	19	0.482
78	19	0.544

963 Other(describe)

Lab	ppm	Nickel, Ni
13	24	0.000
Median	24	0.000

971 Atomic Absorption-AFPC IX.16.B

Lab	ppm	Lead, Pb
Median	0	0.000

972 ICP-inducted coupled plasma-AFPC IX.16.A

Lab	ppm	Lead, Pb
61	5	-1.214
Std Dev	4	-1.000
266	4	-0.946
35	4	-0.740
270	3	-0.349
35	3	-0.181
Median	3	0.000
61	2	0.181
78	2	0.572
78	1	0.740
Std Dev	1	1.000
77	0	1.494
77	0	1.494

973 Other(describe)

Lab	ppm	Lead, Pb
13	4	0.000
Median	4	0.000

981 Atomic Absorption-AFPC IX.16.B

Lab	ppm	Selenium, Se
Median	0	0.000

982 ICP-inducted ed coupled plasma-AFPC IX.16.A

Lab	ppm	Selenium, Se
61	5	-1.414
266	5	-1.340
Std Dev	4	-1.000
61	0	0.000
77	0	0.000
77	0	0.000
Median	0	0.000

983 Other(describe)

Lab	ppm	Selenium, Se
13	5	0.000
Median	5	0.000

991 Atomic Absorption-AFPC IX.16.B

Lab	ppm	Zinc, Zn
60	274	0.000
Median	274	0.000

992 ICP-inducted coupled plasma-AFPC IX.16.A

Lab	ppm	Zinc, Zn
78	297	-1.407
61	294	-1.277
Std Dev	288	-1.000
78	285	-0.888
61	282	-0.759
75	272	-0.326
75	264	0.000
Median	264	0.000
266	260	0.192
77	258	0.279
77	247	0.754
Std Dev	241	1.000
35	227	1.619
35	218	2.008

993 Other(describe)

Lab	ppm	Zinc, Zn
13	292	0.000
Median	292	0.000