AFPC Rock Check Program

Sample No. 2020-01

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	24	0.43	0.117
Other (describe)	102	1	0.23	
Method Group 100		25	0.42	0.12
P_2O_5				
Gravimetric AFPC IX.3.B	201	4	25.16	0.087
ICP-inducted coupled plasma AFPC IX.3.D	202	3	25.31	0.272
Photometric-AFPC IX.3.C	203	16	25.31	0.222
Automated -AOAC 978.01-15th	204	7	25.45	0.256
Other(describe)	205	4	24.99	0.204
Method Group 200		34	25.28	0.25
P_2O_5 (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	2	25.23	0.012
ICP-inducted coupled plasma AFPC IX.3.D	212	3	25.42	0.272
Photometric-AFPC IX.3.C	213	12	25.32	0.235
Automated -AOAC 978.01-15th	214	7	25.58	0.280
Other(describe)	215	1	25.47	0.000
Method Group 210		25	25.37	0.25
Fe_2O_3				
Atomic Absorption-AFPC IX.6.B	301			
ICP-inducted coupled plasma-AFPC IX.6.C	302	22	1.59	0.262
Other(describe)	303	4	1.80	0.114
Method Group 300		26	1.61	0.25
Al_2O_3				
Atomic Absorption-AFPC IX.7.B	401			
ICP-inducted coupled plasma-AFPC IX.7.C	402	22	0.73	0.131
Other(describe)	403	4	1.15	0.112
Method Group 400		26	0.73	0.23
MgO				
Atomic Absorption-AFPC IX.8.A	501	2	0.25	0.006
ICP-inducted coupled plasma-AFPC IX.8.B	502	23	0.15	0.019
Other(describe)	503	4	0.16	0.054
Method Group 500		29	0.15	0.02
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	16	30.38	0.875
Other(describe)	602	4	30.11	0.236
Method Group 600		20	30.26	0.74
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	12	1.27	0.246
Other(describe)	652	6	1.02	0.802
Method Group 650		18	1.18	0.26
CaO				
Gravimetric sulfate-AFPC IX.12.A	701			
ICP-inducted coupled plasma-AFPC IX.12.D	702	17	35.39	0.418
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704	3	34.58	0.330
EDTA Volumetric-AFPC IX.12.C	705	1	34.39	0.000
Other(describe)	706	8	35.31	0.772
Method Group 700		29	35.19	0.65
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711			
ICP-inducted coupled plasma-AFPC IX.12.D	712	11	35.42	0.362
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714	3	34.64	0.371
EDTA Volumetric-AFPC IX.12.C	715	1	34.53	0.000
Other(describe)	716	6	35.86	0.541
Method Group 710		21	35.35	0.52

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	21	2.54	0.127
Oher(describe)	803	3	2.72	0.052
Method Group 800		24	2.56	0.13
Arsenic, As				
Atomic Absorption	911			
ICP-inducted coupled plasma-AFPC IX.15.B	912	12	7.6	2.24
Other(describe)	913	1	9.2	0.00
Method Group 900		13	7.6	1.94
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921			
ICP-inducted coupled plasma-AFPC IX.11.B	922	14	1	1.3
Other(describe)	923	1	2	0.0
Method Group 910		15	1	1.3
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931			
ICP-inducted coupled plasma-AFPC IX.16.A	932	11	12	2.1
Other(describe)	933	1	13	0.0
Method Group 920		12	12	1.8
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-inducted coupled plasma-AFPC IX.16.A	942	7	0.2	3.90
Other(describe)	943	1	2.4	0.00
Method Group 930		8	0.3	3.16
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951			
ICP-inducted coupled plasma-AFPC IX.16.A	952	9	2	0.8
Other(describe)	953	1	2	0.0
Method Group 940		10	2	0.8
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961			
ICP-inducted coupled plasma-AFPC IX.16.A	962	12	26	6.0
Other(describe)	963	3	37	15.1
Method Group 950		15	26	7.2
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971			
ICP-inducted coupled plasma-AFPC IX.16.A	972	13	8	2.5
Other(describe)	973	1	9	0.0
Method Group 960		14	8	2.2
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981			
ICP-inducted coupled plasma-AFPC IX.16.A	982	4	1	0.3
Other(describe)	983	2	3	1.3
Method Group 970		6	1	0.5
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991			
ICP-inducted coupled plasma-AFPC IX.16.A	992	12	169	15
Other(describe)	993	3	190	10
Method Group 980		15	171	17

101	Ground Sample AFPC IX.2.A		
Lab	%	H_2O	
13	0.58		-1.286
35	0.58		-1.286
Std Dev	0.55		-1.000
13	0.52		-0.729
15	0.52		-0.729
15	0.51		-0.686
24	0.51		-0.643
49	0.49		-0.515
26	0.47		-0.343
26	0.46		-0.257
21	0.45		-0.172
30	0.45		-0.172
10	0.44		-0.086
Median	0.43		0.000
21	0.42		0.086
10	0.42		0.129
266	0.40		0.257
52	0.37		0.515
69	0.35		0.686
77	0.34		0.772
24	0.33		0.858
35	0.33		0.858
Std Dev	0.31		1.000
77	0.26		1.458
118	0.20		2.015
27	0.16		2.316
27	0.15		2.444

102	Other (describe)		
Lab	%	H_2O	
270	0.23		0.000
Median	0.23		0.000

201	Gravimetric AFPC IX.3.B		
Lab	%	P2O5	
56	25.35		-2.074
Std Dev	25.25		-1.000
118	25.20		-0.388
Median	25.16		0.000
77	25.13		0.388
241	25.08		0.960

202	ICP-inducted coupled plasma AFPC IX.3.D		
Lab	%	P2O5	
266	25.93		-2.295
Std Dev	25.58		-1.000
10	25.31		0.000
Median	25.31		0.000
10	25.20		0.385

203	Photometric-AFPC IX.3.C		
Lab	%	P2O5	
35	25.85		-2.432
51	25.55		-1.081
Std Dev	25.53		-1.000
51	25.50		-0.856
49	25.45		-0.631
27	25.44		-0.586
30	25.42		-0.495
21	25.40		-0.383
92	25.32		-0.045
Median	25.31		0.000
92	25.30		0.045
21	25.26		0.248
27	25.23		0.360
26	25.16		0.676
26	25.10		0.946
Std Dev	25.09		1.000
270	25.07		1.081
52	25.00		1.396
35	2.34		103.462

204	Automated -AOAC 978.01-15th		
Lab	%	P2O5	
15	25.72		-1.076
Std Dev	25.70		-1.000
15	25.58		-0.509
13	25.45		-0.020
13	25.45		0.000
Median	25.45		0.000
24	25.21		0.939
Std Dev	25.19		1.000
24	25.14		1.213
77	24.94		1.976

205	Other(describe)		
Lab	%	P2O5	
69	25.39		-1.958
Std Dev	25.19		-1.000
56	25.03		-0.220
Median	24.99		0.000
241	24.94		0.220
Std Dev	24.78		1.000
19	24.56		2.080

211	Gravimetric AFPC IX.3.B		
Lab	%	P2O5	dB
118	25.25		-1.340
Std Dev	25.24		-1.000
Median	25.23		0.000
Std Dev	25.22		1.000
77	25.22		1.340

212	ICP-inducted coupled plasma AFPC IX.3.D		
Lab	%	P2O5	dB
266	26.03		-2.269
Std Dev	25.69		-1.000
10	25.42		0.000
Median	25.42		0.000
10	25.31		0.411

213	Photometric-AFPC IX.3.C		
Lab	%	P2O5	dB
35	25.94		-2.612
49	25.58		-1.076
Std Dev	25.56		-1.000
30	25.53		-0.904
21	25.50		-0.764
27	25.48		-0.657
21	25.37		-0.198
Median	25.32		0.000
26	25.28		0.198
27	25.27		0.223
26	25.22		0.444
270	25.13		0.831
52	25.09		0.980
Std Dev	25.09		1.000
35	2.35		97.876

214	Automated -AOAC 978.01-15th		
Lab	%	P2O5	dB
15	25.85		-0.965
15	25.71		-0.449
13	25.59		-0.042
13	25.58		0.000
Median	25.58		0.000
Std Dev	25.30		1.000
24	25.29		1.048
24	25.26		1.141
77	25.01		2.061

215	Other(describe)		
Lab	%	P2O5	dB
69	25.47		0.000
Median	25.47		0.000

301	Atomic Absorption-AFPC IX.6.B		
Lab	%	Fe2O3	
Median	0.00		0.000

302	ICP-inducted coupled plasma-AFPC IX.6.C		
Lab	%	Fe2O3	
35	2.03		-1.688
35	1.99		-1.536
Std Dev	1.85		-1.000
13	1.83		-0.925
49	1.83		-0.925
13	1.83		-0.906
266	1.78		-0.734
10	1.77		-0.677
10	1.74		-0.582
24	1.64		-0.181
18	1.61		-0.067
21	1.60		-0.029
Median	1.59		0.000
18	1.58		0.029
52	1.57		0.067
21	1.56		0.124
24	1.53		0.238
51	1.47		0.448
15	1.41		0.677
51	1.41		0.677
15	1.40		0.715

Std Dev	1.33	1.000
92	1.05	2.051
92	1.05	2.051
69	0.91	2.590

303	Other(describe)	
Lab	%	Fe2O3
77	1.87	-0.615
77	1.86	-0.527
Median	1.80	0.000
56	1.74	0.527
Std Dev	1.69	1.000
19	1.62	1.582

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
52	1.30	-4.377
266	1.26	-4.072
35	1.04	-2.389
35	1.00	-2.084
18	0.87	-1.090
Std Dev	0.86	-1.000
18	0.84	-0.822
49	0.81	-0.631
92	0.74	-0.096
92	0.74	-0.096
24	0.74	-0.057
51	0.73	-0.019
Median	0.73	0.000
15	0.73	0.019
15	0.73	0.019
51	0.72	0.057
24	0.71	0.172
21	0.70	0.210
69	0.64	0.684
10	0.63	0.746
10	0.62	0.822
21	0.62	0.860
13	0.60	0.975
Std Dev	0.60	1.000
13	0.60	1.013

403	Other(describe)	
Lab	%	Al2O3
56	1.22	-0.625
77	1.15	0.000
77	1.15	0.000
Median	1.15	0.000
Std Dev	1.04	1.000
19	0.62	4.735

501	Atomic Absorption-AFPC IX.8.A	
Lab	%	MgO
27	0.26	-1.340
Std Dev	0.25	-1.000
Median	0.25	0.000
Std Dev	0.24	1.000
27	0.24	1.340

502	ICP-inducted coupled plasma-AFPC IX.8.B	
Lab	%	MgO
35	0.18	-1.839
35	0.18	-1.839
49	0.17	-1.314
Std Dev	0.16	-1.000
13	0.16	-0.788
92	0.16	-0.788
92	0.16	-0.788
13	0.15	-0.263
18	0.15	-0.263
18	0.15	-0.263
266	0.15	-0.263
15	0.15	0.000
21	0.15	0.000
Median	0.15	0.000
15	0.14	0.263
21	0.14	0.263
24	0.14	0.525
24	0.14	0.525
51	0.13	0.788
69	0.13	0.841
Std Dev	0.13	1.000
10	0.12	1.314
10	0.12	1.314
51	0.12	1.314
52	0.12	1.314
270	0.05	5.255

503	Other(describe)	
Lab	%	MgO
77	0.18	-0.462
77	0.18	-0.462
Median	0.16	0.000
56	0.13	0.462
Std Dev	0.10	1.000
19	0.04	2.126

601	Insoluble-AFPC IX.4.A	
Lab	%	AI
15	31.04	-0.749
26	30.95	-0.651
51	30.95	-0.651
26	30.90	-0.594
51	30.84	-0.526
15	30.79	-0.463
24	30.53	-0.171
69	30.48	-0.114
Median	30.38	0.000
24	30.28	0.114
13	29.97	0.474
13	29.83	0.629
35	29.74	0.731
49	29.51	0.994
Std Dev	29.51	1.000
10	28.50	2.149
10	28.27	2.417
35	27.91	2.823

602	Other(describe)	
Lab	%	AI
19	30.46	-1.472
Std Dev	30.35	-1.000
21	30.23	-0.498
Median	30.11	0.000
21	30.00	0.498
266	29.90	0.900

651	Gasometric-AFPC IX.13.B	
Lab	%	CO2
52	7.40	-24.892
69	1.66	-1.563
Std Dev	1.52	-1.000
24	1.41	-0.568
24	1.41	-0.568
30	1.31	-0.162
21	1.27	0.000
21	1.27	0.000
Median	1.27	0.000
15	1.09	0.751
15	1.09	0.751
13	1.07	0.832
13	1.06	0.853
Std Dev	1.02	1.000
49	0.99	1.137

652	Other(describe)	
Lab	%	CO2
35	27.91	-33.519
35	2.34	-1.645
Std Dev	1.82	-1.000
51	1.07	-0.062
Median	1.02	0.000
51	0.97	0.062
56	0.94	0.100
266	0.49	0.661

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
69	36.41	-2.441
51	35.87	-1.149
Std Dev	35.81	-1.000
51	35.80	-0.981
49	35.66	-0.646
92	35.65	-0.622
13	35.63	-0.574
21	35.56	-0.395
13	35.46	-0.156

92	35.39	0.000
Median	35.39	0.000
10	35.27	0.299
10	35.19	0.479
21	35.19	0.479
35	35.09	0.718
35	35.03	0.861
Std Dev	34.97	1.000
270	34.79	1.448
18	34.41	2.357
18	33.64	4.188

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

704	Permanganate	
Lab	%	CaO
30	35.04	-1.393
Std Dev	34.91	-1.000
27	34.58	0.000
Median	34.58	0.000
Std Dev	34.25	1.000
27	34.16	1.287

705	EDTA Volumetric-AFPC IX.12.C	
Lab	%	CaO
266	34.39	0.000
Median	34.39	0.000

706	Other(describe)	
Lab	%	CaO
77	36.00	-0.893
77	36.00	-0.893
15	35.69	-0.492
15	35.66	-0.453
Median	35.31	0.000
24	34.96	0.453
24	34.81	0.647
Std Dev	34.54	1.000
56	34.50	1.049
19	34.31	1.295

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
69	36.54		-3.088
13	35.84		-1.153
49	35.84		-1.146
Std Dev	35.78		-1.000
21	35.70		-0.785
13	35.64		-0.602
10	35.42		0.000
Median	35.42		0.000
21	35.35		0.198
10	35.34		0.233
35	35.23		0.515
35	35.21		0.593
Std Dev	35.06		1.000
270	34.87		1.536

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

714	Permanganate		
Lab	%	CaO	dB
30	35.20		-1.518
Std Dev	35.01		-1.000
27	34.64		0.000
Median	34.64		0.000
Std Dev	34.26		1.000
27	34.20		1.162

715	EDTA Volumetric-AFPC IX.12.C		
Lab	%	CaO	dB
266	34.53		0.000
Median	34.53		0.000

716	Other(describe)		
Lab	%	CaO	dB
77	36.12		-0.488
77	36.09		-0.435
15	35.87		-0.026
Median	35.86		0.000
15	35.84		0.026
Std Dev	35.32		1.000
24	35.14		1.334
24	34.93		1.727

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
30	3.16	-4.887
35	3.04	-3.941
Std Dev	2.67	-1.000
21	2.63	-0.670
21	2.63	-0.670
49	2.62	-0.631
15	2.60	-0.473
24	2.60	-0.434
26	2.59	-0.394
26	2.56	-0.158
13	2.55	-0.079
15	2.54	0.000
Median	2.54	0.000
13	2.53	0.079
51	2.51	0.236
51	2.48	0.473
270	2.45	0.709
24	2.43	0.867
Std Dev	2.41	1.000
27	2.33	1.655
266	2.31	1.780
52	2.26	2.207
27	2.20	2.680
69	0.23	18.248

803	Oher(describe)	
Lab	%	Fluorine, F
19	2.77	-0.957
77	2.72	0.000
Median	2.72	0.000
Std Dev	2.67	1.000
77	2.63	1.723

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

912	ICP-inducted coupled plasma-AFPC IX.15.I	
Lab	ppm	Arsenic, As
35	11.0	-1.519
24	10.3	-1.184
24	10.2	-1.161
Std Dev	9.8	-1.000
270	9.6	-0.893
35	9.6	-0.893
18	7.6	0.000
18	7.6	0.000
Median	7.6	0.000
69	7.3	0.154
51	7.0	0.268
51	6.0	0.715
52	5.9	0.759
266	5.9	0.759

913	Other(describe)	
Lab	ppm	Arsenic, As
13	9.2	0.000
Median	9.2	0.000

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

922	ICP-inducted coupled plasma-AFPC IX.11.I	
Lab	ppm	Cadmium, Cd
270	13	-9.243
Std Dev	2	-1.000
51	2	-0.735
18	2	-0.657
18	2	-0.657
266	1	-0.139
35	1	-0.039
35	1	-0.039
Median	1	0.000
51	1	0.039
77	1	0.039

24	0	0.812
24	0	0.812
52	0	0.812
69	0	0.812
77	0	0.812

923	Other(describe)	
Lab	ppm	Cadmium, Cd
13	2	0.000
Median	2	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.A	
Lab	ppm	Cobalt, Co
77	18	-2.924
18	16	-1.973
18	16	-1.852
Std Dev	14	-1.000
266	12	-0.195
35	12	0.000
35	12	0.000
77	12	0.000
Median	12	0.000
24	11	0.292
24	11	0.341
69	11	0.631
Std Dev	10	1.000
270	9	1.437

933	Other(describe)	
Lab	ppm	Cobalt, Co
13	13	0.000
Median	13	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
24	10.0	-2.523
24	10.0	-2.523
Std Dev	4.1	-1.000
35	0.5	-0.090
35	0.2	0.000
Median	0.2	0.000
270	0.0	0.032
266	0.0	0.035
69	0.0	0.044

943	Other(describe)	
Lab	ppm	Mercury, Hg
13	2.4	0.000
Median	2.4	0.000

951	Atomic Absorption-AFPC IX.16.B	
Lab	ppm	Iolybdenum, Mo
Median	0	0.000

952	ICP-inducted coupled plasma-AFPC IX.16.A	
Lab	ppm	Iolybdenum, Mo
18	3	-1.196
Std Dev	3	-1.000
266	3	-0.869
18	3	-0.693
270	2	-0.504
77	2	0.000
Median	2	0.000
24	2	0.567
69	1	0.647
24	1	0.693
Std Dev	1	1.000
77	0	2.519

953	Other(describe)	
Lab	ppm	Iolybdenum, Mo
13	2	0.000
Median	2	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
35	41	-2.458
35	36	-1.624
Std Dev	32	-1.000
77	28	-0.288
18	27	-0.163
18	26	-0.021
24	26	-0.013
Median	26	0.000
24	26	0.013
266	25	0.246
Std Dev	20	1.000
77	20	1.048
69	18	1.441
52	17	1.548
270	16	1.799

963	Other(describe)	
Lab	ppm	Nickel, Ni
19	66	-1.917
Std Dev	52	-1.000
19	37	0.000
Median	37	0.000
13	25	0.763

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
270	15	-2.798
77	12	-1.537
266	11	-1.182
Std Dev	11	-1.000
18	10	-0.906
18	10	-0.650
51	9	-0.355
35	8	0.000
Median	8	0.000
51	8	0.039
35	8	0.079
77	7	0.434
24	7	0.552
24	7	0.591
Std Dev	6	1.000
69	0	3.192

973	Other(describe)	
Lab	ppm	Lead, Pb
13	9	0.000
Median	9	0.000

981	Atomic Absorption-AFPC IX.16.B	
Lab	ppm	Selenium, Se
Median	0	0.000

982	ICP-inducte	coupled plasma-AFPC IX.16.A
Lab	ppm	Selenium, Se
69	2	-2.965
Std Dev	1	-1.000
18	1	-0.184
Median	1	0.000
18	1	0.184
Std Dev	1	1.000
266	1	1.290

983	Other(describe)	
Lab	ppm	Selenium, Se
270	5	-1.340
Std Dev	4	-1.000
Median	3	0.000
Std Dev	2	1.000
13	1	1.340

991	Atomic Absorption-AFPC IX.16.B	
Lab	ppm	Zinc, Zn
Median	0	0.000

992	ICP-inducted coupled plasma-AFPC IX.16.A	
Lab	ppm	Zinc, Zn
24	226	-3.727
24	223	-3.552
Std Dev	184	-1.000
77	180	-0.745
18	179	-0.674
18	179	-0.671
35	171	-0.162
Median	169	0.000

77	166	0.162
266	165	0.227
35	160	0.551
52	154	0.940
Std Dev	153	1.000
69	148	1.329
270	103	4.278

993	Other(describe)		
Lab	ppm	Zinc, Zn	
13	196		-0.596
19	190		0.000
Median	190		0.000
Std Dev	180		1.000
19	169		2.084