

AFPC Rock Check Program

Sample No. 2022-01

	Method #	# of Anal.	Grand Median	Std Dev
Moisture				
Ground Sample AFPC IX.2.A	101	19	1.14	0.256
Other (describe)	102	1	1.10	
Method Group 100		20	1.13	0.22
P₂O₅				
Gravimetric AFPC IX.3.B	201	5	33.05	0.075
ICP-induced coupled plasma AFPC IX.3.D	202	1	33.06	0.000
AOAC 962.02-15th	203	4	33.09	0.049
Photometric-AFPC IX.3.C	204	16	33.05	0.066
Automated -AOAC 978.01-15th	205	2	32.84	0.159
Method Group 200		28	33.06	0.06
P₂O₅ (on Dry Basis)				
Gravimetric AFPC IX.3.B	211	3	33.45	0.052
ICP-induced coupled plasma AFPC IX.3.D	212	1	33.41	0.000
AOAC 962.02-15th	213	4	33.47	0.028
Photometric-AFPC IX.3.C	214	9	33.30	0.181
Automated -AOAC 978.01-15th	215	2	33.08	0.114
Method Group 210		19	33.43	0.16
Fe₂O₃				
Atomic Absorption-AFPC IX.6.B	301	2	1.10	0.000
ICP-induced coupled plasma-AFPC IX.6.C	302	19	1.10	0.027
Other(describe)	303	3	1.25	0.049
Method Group 300		24	1.10	0.02
Al₂O₃				
Atomic Absorption-AFPC IX.7.B	401	2	1.43	0.009
ICP-induced coupled plasma-AFPC IX.7.C	402	19	1.43	0.028
Other(describe)	403	3	1.64	0.047
Method Group 400		24	1.44	0.04
MgO				
Atomic Absorption-AFPC IX.8.A	501	2	0.35	0.000
ICP-induced coupled plasma-AFPC IX.8.B	502	18	0.35	0.013
Other(describe)	503	3	0.40	0.028
Method Group 500		23	0.35	0.01
Acid Insoluble				
Insoluble-AFPC IX.4.A	601	18	3.21	0.104
Other(describe)	602	1	3.24	0.000
Method Group 600		19	3.22	0.10
Carbon Dioxide				
Gasometric-AFPC IX.13.B	651	11	3.50	0.078
Other(describe)	652	4	3.78	0.357
Method Group 650		15	3.55	0.05
CaO				
Gravimetric sulfate-AFPC IX.12.A	701	2	48.09	0.347
ICP-induced coupled plasma-AFPC IX.12.D	702	16	47.72	0.249
Ceric Sulfate volumetric-AFPC IX.12.B	703			
Permanganate	704	2	47.74	0.002
EDTA Volumetric-AFPC IX.12.C	705			
Other(describe)	706	3	48.40	0.263
Method Group 700		23	47.74	0.17
CaO (on Dry Basis)				
Gravimetric sulfate-AFPC IX.12.A	711	1	48.14	0.000
ICP-induced coupled plasma-AFPC IX.12.D	712	11	48.30	0.300
Ceric Sulfate volumetric-AFPC IX.12.B	713			
Permanganate	714	2	48.31	0.000
EDTA Volumetric-AFPC IX.12.C	715			
Other(describe)	716	3	48.77	0.332
Method Group 710		17	48.30	0.20

	Method #	# of Anal.	Grand Median	Std Dev
Fluorine, F				
Volumetric-AFPC IX.14.A	801			
Specific Ion Electrode-AFPC IX.14.B	802	17	3.78	0.037
Other (describe)	803	3	3.76	0.022
Method Group 800		20	3.77	0.03
Arsenic, As				
Atomic Absorption	911			
ICP-induced coupled plasma-AFPC IX.15.B	912	7	8.0	1.99
Other(describe)	913	2	10.0	0.00
Method Group 900		9	8.3	1.64
Cadmium, Cd				
Atomic Absorption-AFPC IX.11.A	921			
ICP-induced coupled plasma-AFPC IX.11.B	922	11	6	0.4
Other(describe)	923			
Method Group 910		11	6	0.4
Cobalt, Co				
Atomic Absorption-AFPC IX.16.B	931			
ICP-induced coupled plasma-AFPC IX.16.A	932	9	3	0.3
Other(describe)	933			
Method Group 920		9	3	0.3
Mercury, Hg				
Atomic Absorption-AFPC IX.16.B	941			
ICP-induced coupled plasma-AFPC IX.16.A	942	4		0.02
Other(describe)	943			
Method Group 930		4	0.0	0.02
Molybdenum, Mo				
Atomic Absorption-AFPC IX.16.B	951			
ICP-induced coupled plasma-AFPC IX.16.A	952	9	8	1.7
Other(describe)	953			
Method Group 940		9	8	1.7
Nickel, Ni				
Atomic Absorption-AFPC IX.16.B	961	1	9	0.0
ICP-induced coupled plasma-AFPC IX.16.A	962	8	9	1.0
Other(describe)	963			
Method Group 950		9	9	0.8
Lead, Pb				
Atomic Absorption-AFPC IX.16.B	971			
ICP-induced coupled plasma-AFPC IX.16.A	972	10	19	1.3
Other(describe)	973			
Method Group 960		10	19	1.3
Selenium, Se				
Atomic Absorption-AFPC IX.16.B	981	1	4	0.0
ICP-induced coupled plasma-AFPC IX.16.A	982	2	2	1.7
Other(describe)	983			
Method Group 970		3	4	1.7
Zinc, Zn				
Atomic Absorption-AFPC IX.16.B	991			
ICP-induced coupled plasma-AFPC IX.16.A	992	9	61	4
Other(describe)	993			
Method Group 980		9	61	4

101 Ground Sample AFPC IX.2.A			
Lab	%	H ₂ O	
13	1.23	-0.333	
49	1.21	-0.274	
13	1.21	-0.254	
26	1.20	-0.235	
26	1.20	-0.235	
9	1.18	-0.156	
55	1.18	-0.156	
30	1.17	-0.117	
9	1.16	-0.059	
21	1.14	0.000	
Median	1.14	0.000	
21	1.11	0.117	
10	1.07	0.274	
10	1.07	0.274	
77	0.93	0.822	
Std Dev	0.88	1.000	
77	0.77	1.467	
16	0.74	1.559	
16	0.59	2.138	
22	0.56	2.269	
270	0.44	2.758	

102 Other (describe)			
Lab	%	H ₂ O	
275	1.10	0.000	
Median	1.10	0.000	

201 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	
77	33.29	-3.216	
Std Dev	33.12	-1.000	
55	33.06	-0.134	
10	33.05	0.000	
Median	33.05	0.000	
Std Dev	32.98	1.000	
22	32.96	1.206	
241	32.87	2.412	

202 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	
10	33.06	0.000	
Median	33.06	0.000	

203 AOAC 962.02-15th			
Lab	%	P2O5	
270	33.31	-4.484	
Std Dev	33.14	-1.000	
9	33.09	-0.052	
Median	33.09	0.000	
49	33.09	0.052	
9	33.06	0.567	

204 Photometric-AFPC IX.3.C			
Lab	%	P2O5	
45	33.51	-6.975	
10	33.17	-1.744	
13	33.13	-1.137	
Std Dev	33.12	-1.000	
10	33.10	-0.758	
13	33.09	-0.607	
21	33.07	-0.303	
92	33.07	-0.227	
92	33.06	-0.152	
Median	33.05	0.000	
30	33.04	0.152	
51	33.04	0.227	
16	33.03	0.273	
51	33.01	0.682	
16	33.00	0.735	
Std Dev	32.98	1.000	
21	32.93	1.820	
26	32.81	3.639	
26	32.80	3.791	

205 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
22	33.05	-1.340	
Std Dev	33.00	-1.000	
Median	32.84	0.000	
Std Dev	32.68	1.000	
77	32.63	1.340	

211 Gravimetric AFPC IX.3.B			
Lab	%	P2O5	dB
77	33.55	-1.769	
Std Dev	33.51	-1.000	

55	33.45	0.000	
Median	33.45	0.000	
10	33.41	0.911	

212 ICP-induced coupled plasma AFPC IX.3.D			
Lab	%	P2O5	dB
10	33.41	0.000	
Median	33.41	0.000	

213 AOAC 962.02-15th			
Lab	%	P2O5	dB
49	33.49	-0.813	
9	33.49	-0.628	
Median	33.47	0.000	
270	33.45	0.628	
9	33.45	0.780	

214 Photometric-AFPC IX.3.C			
Lab	%	P2O5	dB
13	33.54	-1.303	
13	33.49	-1.070	
Std Dev	33.48	-1.000	
21	33.45	-0.837	
30	33.43	-0.726	
21	33.30	0.000	
Median	33.30	0.000	
16	33.28	0.115	
26	33.21	0.503	
16	33.20	0.558	
26	33.20	0.559	

215 Automated -AOAC 978.01-15th			
Lab	%	P2O5	dB
22	33.24	-1.340	
Std Dev	33.20	-1.000	
Median	33.08	0.000	
Std Dev	32.97	1.000	
77	32.93	1.340	

301 Atomic Absorption-AFPC IX.6.B			
Lab	%	Fe2O3	
30	1.10	0.000	
55	1.10	0.000	
Median	1.10	0.000	

302 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Fe2O3	
22	1.15	-2.062	
Std Dev	1.12	-1.000	
13	1.12	-0.750	
21	1.12	-0.750	
45	1.12	-0.750	
270	1.12	-0.750	
49	1.11	-0.562	
9	1.10	0.000	
10	1.10	0.000	
10	1.10	0.000	
21	1.10	0.000	
51	1.10	0.000	
Median	1.10	0.000	
9	1.09	0.375	
275	1.08	0.412	
16	1.08	0.618	
51	1.08	0.750	
16	1.08	0.750	
13	1.07	0.937	
Std Dev	1.07	1.000	
92	1.03	2.624	
92	1.02	2.999	

303 Other(describe)			
Lab	%	Fe2O3	
77	1.26	-0.309	
77	1.25	0.000	
Median	1.25	0.000	
Std Dev	1.20	1.000	
22	1.13	2.371	

401 Atomic Absorption-AFPC IX.6.B			
Lab	%	Al2O3	
30	1.45	-1.340	
Std Dev	1.44	-1.000	
Median	1.43	0.000	
Std Dev	1.42	1.000	
55	1.42	1.340	

402 ICP-induced coupled plasma-AFPC IX.6.C			
Lab	%	Al2O3	

270	1.57	-4.824
51	1.52	-3.037
51	1.49	-1.965
92	1.46	-1.072
Std Dev	1.46	-1.000
92	1.46	-0.893
21	1.45	-0.715
275	1.45	-0.715
10	1.44	-0.357
45	1.44	-0.357
22	1.43	0.000
Median	1.43	0.000
10	1.42	0.357
13	1.42	0.357
49	1.42	0.357
9	1.42	0.536
21	1.42	0.536
Std Dev	1.40	1.000
9	1.40	1.072
13	1.38	1.965
16	1.36	2.680
16	1.35	3.037

403 Other(describe)		
Lab	%	Al2O3
77	1.65	-0.214
77	1.64	0.000
Median	1.64	0.000
Std Dev	1.59	1.000
22	1.53	2.466

501 Atomic Absorption-AFPC IX.8.A		
Lab	%	MgO
30	0.35	0.000
55	0.35	0.000
Median	0.35	0.000

502 ICP-induced coupled plasma-AFPC IX.8.B		
Lab	%	MgO
10	0.37	-1.531
21	0.37	-1.531
22	0.37	-1.531
21	0.37	-1.149
Std Dev	0.36	-1.000

49	0.36	-0.766
45	0.36	-0.383
92	0.36	-0.383
9	0.35	0.000
9	0.35	0.000
13	0.35	0.000
Median	0.35	0.000
10	0.35	0.383
13	0.35	0.383
51	0.35	0.383
92	0.34	0.766
16	0.34	0.919
16	0.34	0.988
Std Dev	0.34	1.000
51	0.34	1.149
270	0.33	1.531

503 Other(describe)			
Lab	%	MgO	
77	0.41	-0.536	
77	0.40	0.000	
Median	0.40	0.000	
Std Dev	0.37	1.000	
22	0.34	2.144	

601 Insoluble-AFPC IX.4.A			
Lab	%	Al	
21	3.36	-1.449	
22	3.36	-1.449	
10	3.35	-1.400	
45	3.34	-1.304	
Std Dev	3.31	-1.000	
16	3.28	-0.676	
26	3.25	-0.435	
26	3.25	-0.435	
16	3.23	-0.193	
51	3.22	-0.145	
Median	3.21	0.000	
30	3.19	0.145	
55	3.19	0.145	
51	3.18	0.290	
49	3.15	0.579	
9	3.13	0.773	
9	3.12	0.821	

Std Dev	3.10	1.000
10	3.06	1.449
13	3.05	1.497
13	2.97	2.270

602 Other(describe)		
Lab	%	Al
21	3.24	0.000
Median	3.24	0.000

651 Gasometric-AFPC IX.13.B		
Lab	%	CO2
16	3.58	-1.021
Std Dev	3.58	-1.000

30	3.58	-0.957
9	3.57	-0.893
9	3.56	-0.766
49	3.52	-0.255
16	3.50	0.000
21	3.50	0.000
21	3.50	0.000
Median	3.50	0.000
Std Dev	3.42	1.000
13	3.42	1.021
13	3.42	1.021
77	3.21	3.701

652 Other(describe)		
Lab	%	CO2
51	4.10	-0.889
51	4.01	-0.637
Median	3.78	0.000
55	3.55	0.637
22	3.55	0.651

701 Gravimetric sulfate-AFPC IX.12.A		
Lab	%	CaO
22	48.56	-1.340
Std Dev	48.44	-1.000
Median	48.09	0.000
Std Dev	47.74	1.000
10	47.63	1.340

702 ICP-induced coupled plasma-AFPC IX.12.I		
Lab	%	CaO
10	47.94	-0.903
92	47.93	-0.863
51	47.89	-0.683
21	47.88	-0.642
51	47.82	-0.401
9	47.77	-0.201
9	47.74	-0.100
13	47.73	-0.040
Median	47.72	0.000
13	47.71	0.040
49	47.69	0.100
92	47.69	0.100
21	47.53	0.763
Std Dev	47.47	1.000
16	47.41	1.225
45	47.33	1.546
16	47.23	1.967
270	46.24	5.922

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

704 Permanganate		
Lab	%	CaO
30	47.75	-1.340
Std Dev	47.74	-1.000
Median	47.74	0.000
Std Dev	47.74	1.000
55	47.74	1.340

705 EDTA Volumetric-AFPC IX.12.C		
Lab	%	CaO
Median	0.00	0.000

706 Other(describe)		
Lab	%	CaO
77	48.47	-0.285
77	48.40	0.000
Median	48.40	0.000
Std Dev	48.13	1.000
22	47.77	2.395

711 Gravimetric sulfate-AFPC IX.12.A			
Lab	%	CaO	dB
10	48.14		0.000
Median	48.14		0.000

712 ICP-induced coupled plasma-AFPC IX.12.D			
Lab	%	CaO	dB
10	48.46		-0.539
21	48.41		-0.385
9	48.34		-0.129
13	48.31		-0.035
9	48.30		-0.004
13	48.30		0.000
Median	48.30		0.000
49	48.27		0.075
21	48.07		0.744
Std Dev	48.00		1.000
16	47.76		1.772
16	47.51		2.628
270	46.44		6.172

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

714 Permanganate			
Lab	%	CaO	dB
30	48.31		-1.340
Std Dev	48.31		-1.000
Median	48.31		0.000
Std Dev	48.31		1.000
55	48.31		1.340

715 EDTA Volumetric-AFPC IX.12.C			
Lab	%	CaO	dB
Median	0.00		0.000

716 Other(describe)			
Lab	%	CaO	dB
77	48.93		-0.472
77	48.77		0.000
Median	48.77		0.000
Std Dev	48.44		1.000

22	48.03		2.208
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	
9	3.87		-2.546
9	3.84		-1.608
Std Dev	3.81		-1.000
21	3.81		-0.938
16	3.81		-0.804
270	3.80		-0.670
16	3.79		-0.268
21	3.79		-0.268
51	3.79		-0.268
13	3.78		0.000
Median	3.78		0.000
55	3.77		0.134
30	3.77		0.268
51	3.76		0.402
49	3.75		0.670
13	3.74		0.938
Std Dev	3.74		1.000
22	3.62		4.154
26	3.57		5.494
26	3.56		5.762

803 Other(describe)			
Lab	%	Fluorine, F	
77	3.77		-0.447
77	3.76		0.000
Median	3.76		0.000
Std Dev	3.73		1.000
22	3.71		2.233

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

912 ICP-induced coupled plasma-AFPC IX.15.B			
Lab	ppm	Arsenic, As	
270	9.2		-0.605

55	9.0		-0.504
16	8.3		-0.164
51	8.0		0.000
Median	8.0		0.000
51	7.0		0.504
Std Dev	6.0		1.000
16	5.0		1.509
22	3.5		2.285

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	10.0		0.000
77	10.0		0.000
Median	10.0		0.000

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

922 ICP-induced coupled plasma-AFPC IX.11.B			
Lab	ppm	Cadmium, Cd	
77	10		-10.505
77	7		-2.424
22	7		-1.131
Std Dev	6		-1.000
16	6		-0.471
16	6		-0.215
55	6		0.000
Median	6		0.000
45	6		0.269
51	6		0.269
270	6		0.808
Std Dev	6		1.000
275	5		2.483
51	5		2.963

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
Median	0		0.000

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

932 ICP-induced coupled plasma-AFPC IX.16.			
Lab	ppm	Cobalt, Co	
77	4		-4.165
Std Dev	3		-1.000
45	3		-0.543
55	3		-0.362
16	3		-0.127
270	3		0.000
Median	3		0.000
275	3		0.435
16	3		0.978
Std Dev	3		1.000
22	2		2.282
77	2		4.889

933 Other(describe)			
Lab	ppm	Cobalt, Co	
Median	0		0.000

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

942 ICP-induced coupled plasma-AFPC IX.16.			
Lab	ppm	Mercury, Hg	
270	0.1		-5.360
Std Dev	0.0		-1.000
16	0.0		0.000
16	0.0		0.000
22	0.0		0.000
Median	0.0		0.000

943 Other(describe)			
Lab	ppm	Mercury, Hg	
Median	0.0		0.000

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

952 ICP-induced coupled plasma-AFPC IX.16.			
Lab	ppm	Iolybdenum, Mo	
77	14		-3.510
77	12		-2.345

Std Dev	10	-1.000	
	55	9	-0.597
	16	8	-0.288
	16	8	0.000
Median	8	0.000	
	45	8	0.277
	270	7	0.743
	22	7	0.766
Std Dev	6	1.000	
	275	6	1.081

953	Other(describe)	
Lab	ppm	lolybdenum, Mo
Median	0	0.000

961	Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Nickel, Ni	
	77	9	0.000
Median	9	0.000	

962	ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Nickel, Ni	
	275	11	-1.898
	45	10	-1.038
Std Dev	10	-1.000	
	16	10	-0.598
	16	9	-0.515
Median	9	0.000	
	55	9	0.515
	270	9	0.515
	22	8	0.981
Std Dev	8	1.000	
	77	7	2.069

963	Other(describe)	
Lab	ppm	Nickel, Ni
Median	0	0.000

971	Atomic Absorption-AFPC IX.16.B	
Lab	ppm	Lead, Pb
Median	0	0.000

972	ICP-induced coupled plasma-AFPC IX.16.A	
Lab	ppm	Lead, Pb

	16	20	-1.097
Std Dev	20	-1.000	
	77	20	-0.476
	270	20	-0.476
	16	19	-0.398
	22	19	-0.301
Median	19	0.000	
	51	19	0.301
	55	19	0.301
Std Dev	18	1.000	
	51	18	1.078
	77	17	1.466
	275	15	3.338

973	Other(describe)	
Lab	ppm	Lead, Pb
Median	0	0.000

981	Atomic Absorption-AFPC IX.16.B		
Lab	ppm	Selenium, Se	
	16	4	0.000
Median	4	0.000	

982	ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Selenium, Se	
	16	5	-1.340
Std Dev	4	-1.000	
Median	2	0.000	
Std Dev	1	1.000	
	22	0	1.340

983	Other(describe)	
Lab	ppm	Selenium, Se
Median	0	0.000

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

992	ICP-induced coupled plasma-AFPC IX.16.A		
Lab	ppm	Zinc, Zn	
	77	74	-3.401
	77	68	-1.882
Std Dev	65	-1.000	

	16	62	-0.182
	16	62	-0.113
	275	61	0.000
Median	61	0.000	
	55	61	0.191
Std Dev	58	1.000	
	45	57	1.158
	270	54	2.125
	22	53	2.260

993	Other(describe)	
Lab	ppm	Zinc, Zn
Median	0	0.000

