

# AFPC Rock Check Program

Sample No. 2007-11

	Method #	# of Anal.	Grand Median	Std Dev
<b>Moisture</b>				
Ground Sample AFPC 9-2	101	18	0.67	0.109
Other (describe)	102	3	0.68	0.086
Method Group 100		21	0.67	0.11
<b>BPL or P<sub>2</sub>O<sub>5</sub></b>				
Gravimetric AFPC 9-5	201	4	29.45	0.222
ICP-induced coupled plasma	202	2	29.32	0.165
Photometric-AFPC 9-6	203	10	29.46	0.376
Automated -AOAC 978.01-15th	204	9	29.48	0.164
Other(describe)	205	4	29.31	5.580
Method Group 200		29	29.44	0.22
<b>BPL or P<sub>2</sub>O<sub>5</sub> (on Dry Basis)</b>				
Gravimetric AFPC 9-5	211	3	29.75	0.101
ICP-induced coupled plasma	212	2	29.54	0.161
Photometric-AFPC 9-6	213	4	30.01	0.289
Automated -AOAC 978.01-15th	214	9	29.65	0.224
Other(describe)	215	3	29.57	11.121
Method Group 210		21	29.65	0.29
<b>Fe<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-12,13	301	5	0.45	0.041
ICP-induced coupled plasma	302	18	0.51	0.034
Other(describe)	303			
Method Group 300		23	0.50	0.04
<b>Al<sub>2</sub>O<sub>3</sub></b>				
Atomic Absorption-AFPC 9-16,17	401	5	0.82	0.276
ICP-induced coupled plasma	402	18	0.82	0.229
Other(describe)	403			
Method Group 400		23	0.82	0.21
<b>MgO</b>				
Atomic Absorption-AFPC 9-18,19	501	6	0.28	0.080
ICP-induced coupled plasma	502	18	0.32	0.013
Other(describe)	503			
Method Group 500		24	0.32	0.02
<b>Acid Insoluble</b>				
Insoluble-AFPC 9-8	601	15	12.56	0.384
Other(describe)	602	1	12.96	0.000
Method Group 600		16	12.58	0.42
<b>CaO</b>				
Gravimetric sulfate	701			
ICP-induced coupled plasma	702	7	43.32	0.369
Ceric Sulfate volumetric	703			
Permanganate	704	2	42.88	0.050
EDTA Volumetric	705	5	43.25	1.634
Other(describe)	706	6	42.98	0.056
Method Group 700		20	43.02	0.38
<b>CaO (on Dry Basis)</b>				
Gravimetric sulfate	711			
ICP-induced coupled plasma	712	2	43.37	0.277
Ceric Sulfate volumetric	713			
Permanganate	714	1	43.22	0.000
EDTA Volumetric	715	4	43.31	0.636
Other(describe)	716	5	43.26	0.074
Method Group 710		18	43.31	0.26

	Method #	# of Anal.	Grand Median	Std Dev
<b>Fluorine, F</b>				
Volumetric-AFPC 9-37	801			
Specific Ion Electrode	802	14	3.04	0.103
Other (describe)	803	2	2.99	0.026
Method Group 800		16	3.02	0.10
<b>Arsenic, As</b>				
Atomic Absorption	911	1	1.7	0.00
ICP-induced coupled plasma	912	5	8.3	0.75
Other(describe)	913	4	7.3	1.57
Method Group 900		10	8.0	2.68
<b>Cadmium, Cd</b>				
Atomic Absorption	921	2	101	6.2
ICP-induced coupled plasma	922	6	97	3.9
Other(describe)	923	2	95	6.0
Method Group 910		10	97	6.7
<b>Cobalt, Co</b>				
Atomic Absorption	931	1	11	0.0
ICP-induced coupled plasma	932	6	2	1.1
Other(describe)	933	1	2	0.0
Method Group 920		8	2	1.3
<b>Mercury, Hg</b>				
Atomic Absorption	941			
ICP-induced coupled plasma	942			
Other(describe)	943	1	0.1	0.00
Method Group 930		1	0.1	0.00
<b>Molybdenum, Mo</b>				
Atomic Absorption	951			
ICP-induced coupled plasma	952	6	12	2.0
Other(describe)	953	1	12	0.0
Method Group 940		7	12	2.0
<b>Nickel, Ni</b>				
Atomic Absorption	961	2	98	3.9
ICP-induced coupled plasma	962	7	96	18.3
Other(describe)	963	1	104	0.0
Method Group 950		10	96	15.8
<b>Lead, Pb</b>				
Atomic Absorption	971	2	11	0.9
ICP-induced coupled plasma	972	5	9	0.4
Other(describe)	973	2	6	0.3
Method Group 960		9	9	1.9
<b>Selenium, Se</b>				
Atomic Absorption	981			
ICP-induced coupled plasma	982	1	16	0.0
Other(describe)	983	1	19	0.0
Method Group 970		2	18	1.4
<b>Zinc, Zn</b>				
Atomic Absorption	991	2	488	328
ICP-induced coupled plasma	992	6	838	59
Other(describe)	993	2	511	332
Method Group 980		10	838	144

101 Ground Sample AFPC 9-2			
Lab	%	H <sub>2</sub> O	
27	0.93		-2.428
55	0.85		-1.695
6	0.82		-1.420
Std Dev	0.77		-1.000
9	0.74		-0.687
10	0.73		-0.596
13	0.73		-0.596
13	0.73		-0.596
9	0.69		-0.229
35	0.67		-0.046
Median	0.67		0.000
49	0.66		0.046
15	0.64		0.275
15	0.64		0.275
24	0.60		0.641
24	0.58		0.779
Std Dev	0.56		1.000
237	0.39		2.520
77	0.35		2.886
77	0.32		3.161
55	0.00		6.093

102 Other (describe)			
Lab	%	H <sub>2</sub> O	
6	0.78		-1.165
Std Dev	0.77		-1.000
26	0.68		0.000
Median	0.68		0.000
Std Dev	0.59		1.000
51	0.55		1.515

201 Gravimetric AFPC 9-5			
Lab	%	P2O5	
77	29.68		-1.036
Std Dev	29.67		-1.000
26	29.55		-0.450
Median	29.45		0.000
51	29.35		0.450
Std Dev	29.23		1.000
241	29.09		1.622

202 ICP-induced coupled plasma			
Lab	%	P2O5	
10	29.54		-1.340
Std Dev	29.49		-1.000
Median	29.32		0.000
Std Dev	29.16		1.000
6	29.10		1.340

203 Photometric-AFPC 9-6			
Lab	%	P2O5	
35	30.17		-1.895
Std Dev	29.83		-1.000
9	29.81		-0.938
9	29.78		-0.858
70	29.52		-0.166
60	29.50		-0.113
Median	29.46		0.000
78	29.42		0.113
70	29.38		0.206
78	29.16		0.805
Std Dev	29.08		1.000
244	29.05		1.084
27	28.60		2.281

204 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
15	30.12		-3.898
15	30.06		-3.502
6	29.65		-1.035
Std Dev	29.64		-1.000
77	29.51		-0.183
237	29.48		0.000
Median	29.48		0.000
13	29.44		0.274
13	29.43		0.305
24	29.33		0.944
Std Dev	29.32		1.000
24	29.23		1.553

205 Other(describe)			
Lab	%	P2O5	
55	29.55		-0.043
49	29.37		-0.011
Median	29.31		0.000

51	29.25		0.011
Std Dev	23.73		1.000
55	0.00		5.252

211 Gravimetric AFPC 9-5			
Lab	%	P2O5	
77	29.78		-0.315
26	29.75		0.000
Median	29.75		0.000
Std Dev	29.65		1.000
51	29.51		2.365

212 ICP-induced coupled plasma			
Lab	%	P2O5	
10	29.76		-1.340
Std Dev	29.71		-1.000
Median	29.54		0.000
Std Dev	29.38		1.000
6	29.33		1.340

213 Photometric-AFPC 9-6			
Lab	%	P2O5	
35	30.37		-1.258
Std Dev	30.30		-1.000
9	30.02		-0.026
Median	30.01		0.000
9	30.00		0.026
Std Dev	29.72		1.000
27	28.87		3.945

214 Automated -AOAC 978.01-15th			
Lab	%	P2O5	
15	30.31		-2.978
15	30.25		-2.685
6	29.90		-1.112
Std Dev	29.87		-1.000
13	29.65		-0.023
13	29.65		0.000
Median	29.65		0.000
77	29.60		0.186
237	29.60		0.228
24	29.50		0.672
Std Dev	29.42		1.000
24	29.40		1.102

215 Other(describe)			
Lab	%	P2O5	dB
55	29.80		-0.021
49	29.57		0.000
Median	29.57		0.000
Std Dev	18.44		1.000
55	0.00		2.659

301 Atomic Absorption-AFPC 9-12,13			
Lab	%	Fe2O3	
241	0.54		-2.315
Std Dev	0.49		-1.000
27	0.48		-0.853
60	0.45		0.000
Median	0.45		0.000
55	0.43		0.487
Std Dev	0.40		1.000
55	0.00		10.842

302 ICP-induced coupled plasma			
Lab	%	Fe2O3	
35	1.01		-14.963
77	0.55		-1.266
77	0.55		-1.266
Std Dev	0.54		-1.000
15	0.53		-0.521
24	0.53		-0.521
78	0.53		-0.521
15	0.52		-0.372
49	0.51		-0.074
78	0.51		-0.074
Median	0.51		0.000
24	0.51		0.074
6	0.50		0.223
26	0.49		0.521
9	0.48		0.819
10	0.48		0.819
237	0.48		0.968
Std Dev	0.47		1.000
9	0.47		1.117
13	0.44		2.010
13	0.42		2.606

303 Other(describe)			
Lab	%	Fe2O3	
Median	0.00		0.000

401 Atomic Absorption-AFPC 9-16,17			
Lab	%	Al2O3	
27	1.16		-1.213
Std Dev	1.10		-1.000
241	0.92		-0.362
51	0.82		0.000
Median	0.82		0.000
55	0.55		0.978
Std Dev	0.54		1.000
55	0.00		2.970

402 ICP-induced coupled plasma			
Lab	%	Al2O3	
77	1.67		-3.699
77	1.61		-3.437
78	1.52		-3.021
78	1.50		-2.934
35	1.13		-1.337
Std Dev	1.05		-1.000
15	0.92		-0.396
15	0.90		-0.308
9	0.84		-0.068
237	0.83		-0.042
Median	0.82		0.000
24	0.82		0.042
26	0.80		0.107
24	0.78		0.195
9	0.77		0.238
49	0.77		0.238
6	0.72		0.457
10	0.66		0.742
13	0.62		0.895
Std Dev	0.60		1.000
13	0.60		1.004

403 Other(describe)			
Lab	%	Al2O3	
Median	0.00		0.000

501 Atomic Absorption-AFPC 9-18,19			
Lab	%	MgO	
35	0.89		-7.666
241	0.36		-1.060
Std Dev	0.36		-1.000
27	0.30		-0.249
Median	0.28		0.000
55	0.26		0.249
60	0.23		0.561
Std Dev	0.19		1.000
55	0.00		3.428

502 ICP-induced coupled plasma			
Lab	%	MgO	
24	0.37		-3.752
24	0.36		-2.603
77	0.34		-1.455
15	0.34		-1.072
Std Dev	0.33		-1.000
15	0.33		-0.689
51	0.33		-0.689
77	0.33		-0.689
78	0.33		-0.306
237	0.32		-0.077
Median	0.32		0.000
6	0.32		0.077
9	0.32		0.077
49	0.32		0.077
78	0.32		0.077
9	0.31		0.842
10	0.31		0.842
26	0.31		0.842
Std Dev	0.31		1.000
13	0.31		1.225
13	0.30		1.608

503 Other(describe)			
Lab	%	MgO	
Median	0.00		0.000

601 Insoluble-AFPC 9-8			
Lab	%	Al	
27	16.10		-9.211
15	15.92		-8.730

15	15.87		-8.599
Std Dev	12.94		-1.000
13	12.80		-0.624
10	12.78		-0.559
13	12.65		-0.221
70	12.59		-0.078
9	12.56		0.000
Median	12.56		0.000
9	12.42		0.364
70	12.39		0.442
24	12.30		0.690
51	12.25		0.807
Std Dev	12.18		1.000
6	11.85		1.847
35	8.82		9.731
55	0.00		32.680

602 Other(describe)			
Lab	%	Al	
26	12.96		0.000
Median	12.96		0.000

701 Gravimetric sulfate			
Lab	%	CaO	
Median	0.00		0.000

702 ICP-induced coupled plasma			
Lab	%	CaO	
10	43.43		-0.284
77	43.40		-0.217
77	43.40		-0.217
49	43.32		0.000
Median	43.32		0.000
237	43.16		0.433
Std Dev	42.95		1.000
6	42.65		1.814
78	42.38		2.545

703 Ceric Sulfate volumetric			
Lab	%	CaO	
Median	0.00		0.000

704 Permanganate			
Lab	%	CaO	

60	42.95		-1.340
Std Dev	42.93		-1.000
Median	42.88		0.000
Std Dev	42.83		1.000
27	42.82		1.340

705 EDTA Volumetric			
Lab	%	CaO	
55	47.07		-2.337
35	45.00		-1.071
Std Dev	44.88		-1.000
51	43.25		0.000
Median	43.25		0.000
9	42.81		0.269
9	42.68		0.349

706 Other(describe)			
Lab	%	CaO	
15	43.17		-3.395
Std Dev	43.04		-1.000
15	43.03		-0.804
24	43.01		-0.536
Median	42.98		0.000
24	42.95		0.536
13	42.95		0.625
Std Dev	42.92		1.000
13	42.83		2.680

711 Gravimetric sulfate			
Lab	%	CaO	dB
Median	0.00		0.000

712 ICP-induced coupled plasma			
Lab	%	CaO	dB
10	43.74		-1.340
Std Dev	43.65		-1.000
Median	43.37		0.000
Std Dev	43.10		1.000
6	43.00		1.340

713 Ceric Sulfate volumetric			
Lab	%	CaO	dB
Median	0.00		0.000

714 Permanganate			
Lab	%	CaO	dB
27	43.22		0.000
<b>Median</b>	<b>43.22</b>		<b>0.000</b>

715 EDTA Volumetric			
Lab	%	CaO	dB
35	45.30		-3.137
<b>Std Dev</b>	<b>43.94</b>		<b>-1.000</b>
51	43.49		-0.283
<b>Median</b>	<b>43.31</b>		<b>0.000</b>
9	43.13		0.283
9	42.98		0.523

716 Other(describe)			
Lab	%	CaO	dB
15	43.45		-2.495
<b>Std Dev</b>	<b>43.33</b>		<b>-1.000</b>
15	43.30		-0.528
13	43.26		0.000
<b>Median</b>	<b>43.26</b>		<b>0.000</b>
24	43.20		0.812
<b>Std Dev</b>	<b>43.19</b>		<b>1.000</b>
13	43.14		1.562

801 Volumetric-AFPC 9-37			
Lab	%	Fluorine, F	
<b>Median</b>	<b>0.00</b>		<b>0.000</b>

802 Specific Ion Electrode			
Lab	%	Fluorine, F	
35	3.49		-4.410
13	3.19		-1.437
<b>Std Dev</b>	<b>3.14</b>		<b>-1.000</b>
51	3.13		-0.901
9	3.12		-0.804
9	3.11		-0.707
237	3.10		-0.609
49	3.05		-0.122
<b>Median</b>	<b>3.04</b>		<b>0.000</b>
24	3.03		0.122
6	3.00		0.365
13	2.98		0.560
27	2.98		0.560

<b>Std Dev</b>	<b>2.93</b>	<b>1.000</b>
24	2.93	1.096
15	2.79	2.412
15	2.77	2.656

803 Other( describe)			
Lab	%	Fluorine, F	
77	3.02		-1.340
<b>Std Dev</b>	<b>3.01</b>		<b>-1.000</b>
<b>Median</b>	<b>2.99</b>		<b>0.000</b>
<b>Std Dev</b>	<b>2.96</b>		<b>1.000</b>
77	2.95		1.340

911 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Arsenic, As	
27	1.7		0.000
<b>Median</b>	<b>1.7</b>		<b>0.000</b>

912 ICP-induced coupled plasma			
Lab	ppm	Arsenic, As	
6	13.0		-6.298
<b>Std Dev</b>	<b>9.0</b>		<b>-1.000</b>
78	9.0		-0.938
24	8.3		0.000
<b>Median</b>	<b>8.3</b>		<b>0.000</b>
78	8.0		0.402
<b>Std Dev</b>	<b>7.6</b>		<b>1.000</b>
26	3.0		7.102

913 Other(describe)			
Lab	ppm	Arsenic, As	
77	8.0		-0.468
77	8.0		-0.468
<b>Median</b>	<b>7.3</b>		<b>0.000</b>
13	6.5		0.468
<b>Std Dev</b>	<b>5.7</b>		<b>1.000</b>
51	4.0		2.081

921 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Cadmium, Cd	
27	110		-1.340
<b>Std Dev</b>	<b>107</b>		<b>-1.000</b>
<b>Median</b>	<b>101</b>		<b>0.000</b>
<b>Std Dev</b>	<b>95</b>		<b>1.000</b>

51	93		1.340
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922 ICP-induced coupled plasma			
Lab	ppm	Cadmium, Cd	
51	103		-1.471
<b>Std Dev</b>	<b>101</b>		<b>-1.000</b>
78	100		-0.742
78	99		-0.320
<b>Median</b>	<b>97</b>		<b>0.000</b>
6	96		0.320
77	94		0.832
<b>Std Dev</b>	<b>93</b>		<b>1.000</b>
237	77		5.181

923 Other(describe)			
Lab	ppm	Cadmium, Cd	
13	103		-1.340
<b>Std Dev</b>	<b>101</b>		<b>-1.000</b>
<b>Median</b>	<b>95</b>		<b>0.000</b>
<b>Std Dev</b>	<b>89</b>		<b>1.000</b>
26	87		1.340

931 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Cobalt, Co	
27	11		0.000
<b>Median</b>	<b>11</b>		<b>0.000</b>

932 ICP-induced coupled plasma			
Lab	ppm	Cobalt, Co	
78	4		-1.787
78	4		-1.340
<b>Std Dev</b>	<b>3</b>		<b>-1.000</b>
51	2		0.000
77	2		0.000
<b>Median</b>	<b>2</b>		<b>0.000</b>
6	2		0.447
237	1		0.893

933 Other(describe)			
Lab	ppm	Cobalt, Co	
13	2		0.000
<b>Median</b>	<b>2</b>		<b>0.000</b>

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

942 ICP-induced coupled plasma			
Lab	ppm	Mercury, Hg	
<b>Median</b>	<b>0.0</b>		<b>0.000</b>

943 Other(describe)			
Lab	ppm	Mercury, Hg	
26	<.05		0.000
13	0.1		0.000
<b>Median</b>	<b>0.1</b>		<b>0.000</b>

951 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Iolybdenum, Mo	
<b>Median</b>	<b>0</b>		<b>0.000</b>

952 ICP-induced coupled plasma			
Lab	ppm	Iolybdenum, Mo	
51	15		-1.352
<b>Std Dev</b>	<b>14</b>		<b>-1.000</b>
78	14		-0.762
78	14		-0.615
<b>Median</b>	<b>12</b>		<b>0.000</b>
6	11		0.615
77	11		0.615
<b>Std Dev</b>	<b>10</b>		<b>1.000</b>
237	8		1.992

953 Other(describe)			
Lab	ppm	Iolybdenum, Mo	
13	12		0.000
<b>Median</b>	<b>12</b>		<b>0.000</b>

961 Atomic Absorption-AFPC 9-12,13			
Lab	ppm	Nickel, Ni	
27	104		-1.340
<b>Std Dev</b>	<b>102</b>		<b>-1.000</b>
<b>Median</b>	<b>98</b>		<b>0.000</b>
<b>Std Dev</b>	<b>94</b>		<b>1.000</b>
51	93		1.340

962 ICP-induced coupled plasma			
Lab	ppm	Nickel, Ni	
78	101	-0.246	
51	98	-0.109	
6	96	0.000	
78	96	0.000	
Median	96	0.000	
Std Dev	78	1.000	
237	74	1.203	
77	71	1.367	
77	71	1.367	

963 Other(describe)			
Lab	ppm	Nickel, Ni	
13	104	0.000	
Median	104	0.000	

971 Atomic Absorption-AFPC 9-16,17			
Lab	ppm	Lead, Pb	
51	12	-1.340	
Std Dev	12	-1.000	
Median	11	0.000	
Std Dev	10	1.000	
27	10	1.340	

972 ICP-induced coupled plasma			
Lab	ppm	Lead, Pb	
78	10	-3.484	
Std Dev	9	-1.000	
237	9	-0.804	
6	9	0.000	
Median	9	0.000	
78	9	0.536	
Std Dev	8	1.000	
77	7	4.556	

973 Other(describe)			
Lab	ppm	Lead, Pb	
26	6	-1.340	
Std Dev	6	-1.000	
Median	6	0.000	
Std Dev	5	1.000	
13	5	1.340	

981 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Selenium, Se	
Median	0	0.000	

982 ICP-induced coupled plasma			
Lab	ppm	Selenium, Se	
6	16	0.000	
Median	16	0.000	

983 Other(describe)			
Lab	ppm	Selenium, Se	
13	19	0.000	
Median	19	0.000	

991 Atomic Absorption-AFPC 9-18,19			
Lab	ppm	Zinc, Zn	
60	927	-1.340	
Std Dev	815	-1.000	
Median	488	0.000	
Std Dev	160	1.000	
27	48	1.340	

992 ICP-induced coupled plasma			
Lab	ppm	Zinc, Zn	
6	900	-1.058	
Std Dev	897	-1.000	
51	885	-0.803	
78	838	-0.004	
Median	838	0.000	
78	838	0.004	
237	780	0.981	
Std Dev	779	1.000	
77	678	2.714	

993 Other(describe)			
Lab	ppm	Zinc, Zn	
13	956	-1.340	
Std Dev	843	-1.000	
Median	511	0.000	
Std Dev	178	1.000	
26	65	1.340	

