

Appendix 2: Percent abundance of minerals, organized stratigraphically, according to analysis of XRD spectra.

Sample Name	#	Quartz	Calcite	Mg-calcite	Aragonite	Dolomite	Fe-Dolomite	Ankerite	Magnesite	Siderite	Halite	Pyrite	Anhydrite	Magnetite	Hematite	Goethite
E10	18	15.2	71.9	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	1.4	0.0
D20	17	0.2	85.6	3.6	0.0	0.6	0.0	0.6	0.1	0.0	0.2	0.0	0.0	0.0	1.1	0.0
D10	16	5.4	82.7	2.8	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.0	1.3	0.0
F0	15	6.4	0.4	2.1	0.0	32.5	32.8	15.3	0.0	0.3	0.3	0.1	0.0	0.0	0.3	3.0
C116	14	25.3	0.2	1.2	0.0	8.3	1.8	9.1	5.3	1.3	0.2	0.0	0.2	3.1	10.6	1.5
C114	13	17.8	40.8	9.1	0.0	0.2	0.0	0.4	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
C108b	12	45.5	2.2	0.5	0.0	2.9	0.0	5.7	2.1	0.5	0.2	0.0	0.1	1.3	7.1	1.6
C108a	11	11.7	11.4	10.8	1.6	3.7	11.9	31.5	0.4	0.6	0.2	0.2	0.0	0.0	0.3	1.4
C104b	10	53.6	0.3	0.0	0.9	0.5	0.0	0.0	3.9	1.1	0.1	0.0	0.4	3.8	7.2	1.6
C102	9	0.0	0.8	42.0	0.0	11.1	0.0	1.4	0.6	0.7	0.6	0.1	1.4	1.0	0.0	3.5
B180b	8	3.2	2.6	3.3	0.2	60.7	0.0	23.6	0.2	0.5	0.4	0.1	0.0	0.0	0.6	0.0
B180a	7	5.5	2.3	5.6	1.7	36.7	12.8	33.6	0.6	0.5	0.0	0.2	0.0	0.0	0.5	0.0
B53	6	0.0	1.4	23.0	0.0	0.0	5.7	67.0	0.3	0.1	0.2	0.0	0.0	0.0	0.2	0.3
A220b	5	10.8	0.5	4.5	0.8	25.9	14.4	22.5	0.6	0.8	0.6	0.3	0.0	0.0	0.1	9.0
A220a	4	11.3	0.9	3.5	0.0	45.2	5.4	13.7	1.1	0.8	0.5	0.2	0.0	0.0	0.8	1.0
A182	3	0.0	1.1	3.4	0.3	86.5	0.0	3.5	0.1	0.9	0.9	0.0	0.0	0.0	0.5	0.2
A29	2	0.1	0.7	3.3	0.0	62.3	5.9	16.1	0.5	1.2	1.2	0.2	0.0	0.0	0.2	0.2
G4	1	0.0	0.3	2.0	0.0	62.7	22.1	11.2	0.0	0.7	0.9	0.0	0.0	0.0	0.0	0.0

Anatase	Rutile	ordered Microcline feldspar	intermediate Microcline feldspar	Sanidine feldspar	Orthoclase feldspar	Oligoclase feldspar (North Carolina)	Total non-clays	Na-Smectite (Wyo)	Ca-smectite (Wyo)	1Md illite (+ dioct mica & smectite)
0.0	0.2	0.0	0.1	0.5	0.0	4.3	96.8			
0.0	0.2	0.4	0.3	0.0	0.3	1.4	94.6			
0.1	0.2	0.1	0.1	0.5	0.5	1.6	95.8			1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.7	94.0			1.6
0.0	0.0	0.8	1.8	2.5	0.4	1.2	74.8			0.0
0.0	0.0	0.0	2.0	7.6	4.7	0.3	83.4			0.3
0.0	0.0	0.2	3.0	2.7	0.5	0.2	76.2			1.7
0.0	0.0	0.0	0.8	1.2	0.8	0.5	89.0			0.8
0.0	0.0	0.0	2.3	0.5	0.4	1.6	78.1			
0.0	0.0	0.0	7.8	3.5	8.5	2.4	85.4			
0.0	0.0	0.0	0.0	0.0	0.0	0.2	95.6			1.1
0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0			
0.0	0.0	0.0	0.0	0.1	0.2	0.0	98.6			0.7
0.0	0.0	0.1	0.1	0.0	0.5	0.5	91.8			2.8
0.0	0.0	0.3	1.2	0.0	0.0	0.9	86.8			2.4
0.0	0.0	0.0	0.0	0.4	0.0	0.6	98.5			
0.0	0.0	0.0	0.0	0.7	0.0	0.5	93.0			0.8
0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0			

1M Illite (R>2; 88%)	1M illite (R>1, 70- 80%)	Glauconite	Biotite (2M1)	Berthierine	Muscovite (2M1)	Illite (1M, PD3B)	Montmorillonite (Webster Pass)	Chlorite	Fe-chlorite	Total clays	Total detrital component	Other clays	Stratigraphic height in meters
1.4		1.0						1.8		3.2	4.9	3.2	932
		0.4		0.0			0.7	2.3		3.3	2.4	2.3	880
	0.0	5.2		4.4	3.1			1.3		3.5	2.8	3.0	870
6.3		7.7		1.3		0.6		0.2		4.9	0.7	4.9	808
		4.0		6.1	3.7			4.0		20.9	6.7	11.3	660
		3.7		4.8				6.3	2.9	14.5	14.5	5.5	658
1.4		5.3		2.5				1.0		21.0	6.7	11.0	652
				14.6			1.2	3.5		10.3	3.2	1.8	652
				0.0				3.5		13.9	4.7	6.1	648
										14.6	22.3	0.0	646
								1.7		2.9	0.2	2.9	474
										0.0	0.0	0.0	474
										0.7	0.3	0.7	347
		2.0		2.0				0.3		7.1	1.2	3.1	258
		3.7		4.0						10.0	2.4	2.4	258
0.6		0.1		0.2				0.2		1.1	1.0	0.8	220
		3.8		1.4						6.0	1.2	0.8	67
										0.0	0.0	0.0	4