

015895

X	X	RRRRR	A
XX	XX	RR RR	AAA
XX	XX	RR RR	AA AA
XXX		RR RR	AA AA
XXX		RRRRR	AAAAAAA
XX	XX	RR RR	AA AA
XX	XX	RR RR	AA AA
X	X	RR R	AA AA

MAJOR ELEMENTS

UNIVERSITY OF TORONTO

TOTAL IRON REPORTED AS FEO
THE CONTRIBUTION OF TOTAL IRON TO THE SUM
IS CALCULATED AS FE2O3

12-FEB-81

SAMPLES RECEIVED FROM REF FILE #5979-G2

... .. ELEMENTS

SAMPLE	SI02	AL2O3	CAO	MGO	NA2O	K2O	FE0	MNO	TIO2	P2O5	L O I.	SUM
DY149	68.7	12.7	0.34	0.81	0.00	1.88	5.99	0.17	0.53	0.09	5.62	97.5
DY150	44.0	26.6	3.64	2.02	0.27	6.20	4.04	0.03	1.09	2.39	6.39	97.1
DY151	63.4	17.2	0.23	1.81	0.02	4.09	5.82	0.08	0.70	0.08	3.31	97.4
DY152	59.3	20.4	0.19	1.92	0.07	4.52	5.32	0.07	0.85	0.09	3.93	97.3
DY153	45.1	13.2	9.01	4.07	0.00	2.85	11.4	0.24	3.38	1.01	7.77	99.3
DY154	49.6	19.2	0.47	2.57	0.00	3.63	12.4	0.20	0.91	0.17	7.16	97.7
DY160	67.3	16.6	0.19	1.33	0.00	4.17	4.33	0.10	0.76	0.10	3.08	98.4
DY161	64.1	15.4	0.26	1.52	0.05	3.85	6.93	0.19	0.70	0.11	3.16	97.0
DY162	44.5	10.8	12.5	5.48	0.00	2.72	9.37	0.31	1.89	0.37	10.85	99.8
DY163	61.4	8.53	0.17	1.70	0.00	2.05	17.8	0.12	0.47	0.07	5.77	100.2
DY164	70.1	9.84	0.36	1.55	0.00	2.34	9.05	0.10	0.47	0.06	4.77	99.6
DY167	61.1	12.5	0.32	2.35	0.07	2.40	14.0	0.27	0.71	0.12	4.54	99.9
DY168	39.2	14.0	10.5	7.05	0.00	1.81	10.8	0.17	2.81	0.46	11.00	99.1
DY169	60.5	14.6	0.24	1.45	0.03	3.17	10.2	0.06	0.80	0.12	5.23	97.5
DY170	60.6	13.2	0.80	1.64	0.03	2.62	10.2	0.13	0.71	0.11	8.39	99.5
DY171	62.6	16.1	0.30	1.68	0.08	3.38	8.60	0.12	1.04	0.17	3.85	98.8
DY173	39.8	31.4	0.20	1.18	0.01	5.52	3.51	0.01	1.84	0.04	13.08	97.0
DY175	50.1	28.3	0.19	1.09	0.23	7.74	3.63	0.04	1.17	0.14	4.39	97.5
DY176	60.1	17.4	0.30	1.99	0.23	3.98	8.82	0.07	0.74	0.13	3.70	98.4
DY261	68.0	13.6	1.97	2.17	0.29	1.93	6.35	0.11	0.62	0.05	4.62	100.4
DY262	63.9	14.1	0.17	3.10	1.61	1.52	9.96	0.06	0.73	0.04	3.54	99.9
DY263	62.9	16.4	0.34	0.63	0.39	4.31	9.92	0.04	0.72	0.08	4.85	101.7
DY264	57.4	18.8	0.24	2.42	0.43	3.01	9.54	0.16	0.90	0.10	5.23	99.3
DY265	60.6	19.7	0.46	1.44	2.73	3.76	7.03	0.21	0.88	0.15	3.08	100.9
DY266	65.3	15.2	0.47	1.15	2.17	2.75	6.38	0.25	1.05	0.15	2.70	98.3
DY267	58.6	21.8	0.16	1.38	0.12	5.95	5.91	0.13	0.89	0.09	4.47	100.1
DY268	49.7	24.7	0.53	2.04	1.01	5.51	7.53	0.12	1.31	0.25	4.31	97.9
SE03	69.1	14.9	0.62	1.96	6.43	0.56	3.47	0.15	0.46	0.14	2.23	100.5
SE08	46.4	16.7	6.75	6.62	4.17	0.81	8.52	0.33	0.81	0.16	8.47	100.7
SE10	72.5	12.5	1.77	1.30	1.00	1.70	2.00	0.01	0.05	0.01	0.00	100.0

SAMPLE	SI02	AL2O3	CAO	MGO	NA2O	K2O	FEO	MNO	TIO2	P2O5	L. O. I.	SUM
SE49	46.8	15.4	7.12	11.7	1.37	0.31	9.87	0.20	0.64	0.06	5.31	99.9
SE100	59.3	17.6	5.95	2.42	3.88	1.67	4.67	0.08	0.87	0.19	0.16	97.3
SE111	68.0	14.3	1.29	1.93	5.94	0.49	3.13	0.16	0.51	0.13	2.08	98.3
SE118	64.7	16.9	0.37	2.97	6.59	0.43	3.95	0.21	0.51	0.11	2.39	99.5
SE121	65.7	14.6	1.17	2.09	5.98	0.27	3.63	0.22	0.50	0.11	5.47	100.2
SE122	71.6	13.3	0.71	1.86	3.45	1.72	2.02	0.07	0.35	0.06	2.31	97.6
SE125	69.9	13.7	0.45	1.91	5.11	0.60	2.45	0.11	0.44	0.09	3.70	98.7
SS03	79.1	8.83	0.81	0.49	3.54	0.58	3.28	0.10	0.20	0.03	2.93	100.2
SS04	72.9	11.2	1.84	0.75	1.38	1.33	3.38	0.20	0.30	0.04	4.47	98.2
SS05	80.0	11.3	0.14	0.27	0.86	1.61	1.91	0.02	0.33	0.05	2.62	99.3
SS06	75.4	11.4	1.11	0.44	2.04	1.62	2.07	0.08	0.22	0.02	3.08	97.7
SS07	74.6	11.1	2.70	0.83	0.69	1.92	2.16	0.18	0.20	0.01	5.62	100.2
SS07A	73.2	11.1	2.27	0.76	0.60	1.87	2.39	0.12	0.23	0.02	5.16	98.0
SS13	80.3	9.38	0.41	0.01	4.88	0.27	1.92	0.02	0.49	0.05	1.77	99.7
SS17	72.9	11.8	0.65	0.73	4.15	1.40	2.38	0.02	0.21	0.01	2.70	97.2
SS18	73.5	10.9	1.19	0.28	3.92	1.38	3.76	0.16	0.30	0.04	4.00	99.8
SS19	74.8	11.3	1.64	0.68	1.19	2.84	2.04	0.04	0.23	0.03	3.70	98.7
SS23	75.0	12.1	0.80	0.49	1.55	2.78	2.44	0.04	0.24	0.01	3.54	99.2
SS25	70.6	9.41	0.17	0.10	0.35	1.94	8.32	0.02	0.25	0.02	6.70	98.8
SS26	73.9	11.5	0.11	2.12	0.40	1.11	7.07	0.06	0.35	0.07	3.39	100.9
SS28	74.6	11.0	0.11	0.95	0.32	1.68	4.56	0.33	0.33	0.04	3.08	97.4
SS30	58.6	24.2	0.07	1.15	0.70	5.03	4.34	0.04	0.48	0.07	4.23	99.4
SS42	72.6	8.43	0.11	1.73	0.00	0.63	10.2	0.09	0.45	0.07	2.70	98.2
SS45	55.1	19.3	1.56	1.33	0.00	4.01	11.5	0.09	1.37	0.27	4.93	100.7
SS49	74.9	9.96	1.83	0.45	2.08	1.73	2.03	0.14	0.28	0.04	4.16	97.8
SS50	71.5	11.3	2.54	0.70	2.65	1.62	4.40	0.08	0.31	0.04	4.54	100.2
SS51	79.4	9.70	0.72	0.17	3.47	1.20	0.86	0.03	0.29	0.05	1.85	97.8
SS52	74.9	12.1	1.03	0.06	4.30	1.42	1.91	0.02	0.36	0.05	2.47	98.8
SS53	72.2	11.0	2.34	0.04	2.12	2.17	2.85	0.12	0.31	0.04	4.00	97.5
SS79	76.4	11.0	2.56	0.11	2.32	1.54	1.97	0.06	0.23	0.03	1.85	98.2

SAMPLE	SI02	AL2O3	CAO	MGO	NA2O	K2O	FED	MNO	TIO2	P2O5	L O. I.	SUM
SS80	73.9	11.5	1.51	0.18	4.91	0.66	3.64	0.10	0.33	0.06	1.31	98.4
SS81	73.0	12.1	1.85	0.12	4.34	1.82	2.98	0.07	0.34	0.04	2.47	99.5
SS116	71.5	11.5	2.48	0.20	3.78	1.80	3.21	0.06	0.36	0.07	2.70	98.0
SS123	72.0	11.1	1.78	0.38	2.64	1.92	4.22	0.05	0.33	0.05	3.08	98.0
SS124	54.3	9.02	3.11	2.48	1.69	0.35	16.9	0.55	0.64	0.14	10.47	101.5

X	X	RRRRR	A
XX	XX	RR RR	AAA
XX	XX	RR RR	AA AA
XXX		RR RR	AA AA
XXX		RRRRR	AAAAAAA
XX	XX	RR RR	AA AA
XX	XX	RR RR	AA AA
X	X	RR R	AA AA

MINOR ELEMENTS

UNIVERSITY OF TORONTO

12-FEB-81

SAMPLES RECEIVED FROM REF FILE #5979-G2

SAMPLE	CR203	ZR	SR	RB
DY149	70	20	80	70
DY150	160	100	190	210
DY151	100	40	80	150
DY152	120	90	60	160
DY153	0	190	310	90
DY154	130	100	100	120
DY160	100	80	30	180
DY161	100	100	60	150
DY162	260	170	180	110
DY163	70	40	50	100
DY164	70	40	40	0
DY167	90	140	60	100
DY168	380	210	280	80
DY169	110	70	60	110
DY170	90	70	40	90
DY171	100	170	50	120
DY173	270	210	30	190
DY175	160	130	60	310
DY176	100	70	80	150
DY261	90	50	100	80
DY262	100	70	40	80
DY263	110	70	20	210
DY264	130	80	110	170
DY265	140	90	90	170
DY266	100	180	60	90
DY267	140	90	70	250
DY268	150	160	50	260
SE03	10	90	60	0
SE08	20	20	190	20
SE48	10	110	240	30

SAMPLE	CR203	ZR	SR	RB
SE49	400	10	220	10
SE100	30	120	500	30
SE111	10	60	120	0
SE118	20	120	50	10
SE121	30	100	100	0
SE122	10	100	180	0
SE125	10	80	80	10
SS03	10	270	20	0
SS04	0	430	90	30
SS05	10	440	40	40
SS06	0	320	40	50
SS07	0	350	70	30
SS07A	0	340	40	10
SS13	10	370	20	0
SS17	0	390	110	20
SS18	10	460	70	20
SS19	10	360	50	80
SS23	10	360	20	50
SS25	10	380	0	10
SS26	10	450	60	20
SS28	0	460	40	10
SS30	0	1010	100	120
SS42	10	340	0	0
SS45	0	680	60	80
SS49	0	390	30	50
SS50	10	450	80	40
SS51	10	430	40	30
SS52	0	500	0	60
SS53	0	450	0	40
SS79	0	370	250	50

SAMPLE	CR203	ZR	SR	RB
SS80	10	430	190	0
SS81	0	460	80	30
SS116	0	540	90	40
SS123	0	440	40	40
SS124	40	350	110	10

SAMPLE	CO2 %	S %
DY149	1.9	2.20
DY150	0.6	0.26
DY151	0.2	0.24
DY152	0.3	0.16
DY153	5.4	0.24
DY154	2.9	1.60
DY160	0.4	0.20
DY161	0.1	0.72
DY162	10.1	0.74
DY163	0.4	7.41
DY164	1.7	2.13
DY167	1.6	1.66
DY168	8.2	0.73
DY169	1.3	4.12
DY170	3.5	1.97
DY171	0.6	1.77
DY173	0.6	1.87
DY175	0.4	0.20
DY176	0.4	0.46
DY261	1.3	0.51
DY262	0.3	1.11
DY263	1.2	4.63
DY264	1.3	0.31
DY265	0.4	0.68
DY266	0.2	1.23
DY267	0.6	1.11
DY268	0.2	0.80
SE03	--	--
SE08	--	--
SE48	--	--
SE49	--	--
SE100	--	--
SE111	--	--
SE118	--	--
SE121	--	--
SE122	--	--
SE125	--	--
SS03	1.9	0.49
SS04	2.8	0.55
SS05	0.3	1.00
SS06	1.5	0.20
SS07	3.1	0.04
SS07A	3.7	0.10
SS13	0.1	1.29
SS17	0.1	0.40
SS18	2.6	0.08
SS19	1.6	0.02
SS23	1.1	1.09
SS25	0.2	3.30
SS26	<0.1	0.28
SS28	0.5	0.19
SS30	<0.1	NIL
SS42	0.1	0.02
SS45	1.2	NIL
SS49	4.0	0.22

SAMPLE	CO2 %	S %
SS50	2.9	0.01
SS51	0.8	TRACE
SS52	0.7	0.85
SS53	3.4	NIL
SS79	6.9	NIL
SS80	3.3	NIL
SS81	5.0	NIL
SS116	2.3	NIL
SS123	7.5	NIL
SS124	3.1	0.27

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	19.18	20.38	21.12	13.78	12.03	11.20					FEO
MGO	5.30	4.87	3.17								MGO
MNO	4.87	4.72	4.70								MNO
CAO	24.96	25.15	25.74								CAO
BAO							64.67	64.98	64.97	65.49	BAO
SO3							33.19	32.94	33.23	33.27	SO3
SRO	1.34	1.23	1.25					0.46	0.46		SRO
SUM	55.65	56.35	55.98	13.78	12.03	11.20	97.86	98.38	98.66	98.76	SUM

ATOMIC PROPORTIONS

FE	6.924	7.309	7.754	*****							FE
MG	3.410	3.114	2.075								MG
MN	1.782	1.715	1.749								MN
CA	11.548	11.558	12.105								CA
BA											BA
S											S
SR	0.335	0.205	0.318								SR
O	24.000	24.000	24.000	0.000	0.000	0.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	24.001	24.001	*****							CATSUM
							6.077	6.118	6.077	6.124	
							5.975	5.940	5.954	5.959	
								0.064	0.064		
							12.052	12.122	12.095	12.083	

WEIGHT PERCENT 11 12

FEO	17.93	15.79	FEO
MGO	4.70	6.07	MGO
MNO	5.70	6.71	MNO
CAO	25.42	25.38	CAO
SRO	1.42	0.93	SRO
SUM	55.17	54.88	SUM

ATOMIC PROPORTIONS

FE	6.556	5.693	FE
MG	3.065	3.903	MG
MN	2.110	2.451	MN
CA	11.908	11.720	CA
SR	0.361	0.223	SR
O	24.000	24.000	O
CATSUM	24.000	24.000	CATSUM

1. CQ1-1 DOLOMITE CORE
2. CQ1-2 DOLOMITE RIM
3. CQ1-3 DOL
4. CQ1-4 SPH

5. CQ1-5 SPH
6. CQ1-6 SPH
7. CQ1-7 BAR
8. CQ1- BAR

9. CQ2-1 BAR
10. CQ2 -2 BAR
11. CQ23 DOL
12. CQ2-4 DOL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FE0	7.61	7.00	13.78	8.31	9.36	9.83	13.78	13.78	6.22	10.20	FE0
MGO	14.24	14.18		14.07	12.89	11.32			15.31	12.06	MGO
MNO	3.82	3.77		2.97	2.81	4.24			3.19	3.07	MNO
CAO	27.77	28.70		27.73	27.47	27.56			27.64	26.96	CAO
SRO									0.37		SRO
SUM	53.44	53.65	13.78	53.08	52.53	52.95	13.78	13.78	52.73	52.29	SUM

ATOMIC PROPORTIONS

FE	2.522	2.307*****		2.773	3.191	3.389*****			2.062	3.529	FE
MG	8.408	8.327		8.368	7.835	6.955			9.046	7.438	MG
MN	1.282	1.257		1.085	0.970	1.482			1.070	1.077	MN
CA	11.788	12.110		11.855	12.005	12.175			11.737	11.956	CA
SR									0.086		SR
O	24.000	24.000	0.000	24.000	24.000	24.000	0.000	0.000	24.000	24.000	O
CATSUM	24.000	24.001*****		24.001	24.001	24.001*****			24.001	24.000	CATSUM

WEIGHT PERCENT 11 12 13

FE0	14.83	6.12	10.75	FE0
MGO	10.01	16.12	11.44	MGO
MNO	3.46	3.55	4.97	MNO
CAO	26.90	27.62	26.88	CAO
SRO		0.23		SRO
SUM	55.20	53.64	54.04	SUM

ATOMIC PROPORTIONS

FE	5.039	1.984	3.653	FE
MG	6.064	9.320	6.930	MG
MN	1.191	1.165	1.711	MN
CA	11.707	11.479	11.706	CA
SR		0.053		SR
O	24.000	24.000	24.000	O
CATSUM	24.001	24.001	24.000	CATSUM

- 1. C01-1 DOL AGGRE
- 2. C01-2 DOL AGGREG.
- 3. C01-3 SPH
- 4. C02-1 DOL
- 5. C02-2 ITS MANTLE

- 6. C02-3 DOL ITS RIM
- 7. C03-1 SPH CORE
- 8. C03-2 SPH RIM
- 9. C05 DOL NEAR PY 10U
- 10. C05-2 DOL NEAR PY 20U

- 11. C05-1 DOL COARSE
- 12. C05-2 DOL COARSE
- 13. C05 -3 IBID

WEIGHT PERCENT	1	2	3	4	5	6	7	8	
SI02			5.94	0.38					SI02
AL2O3			3.93						AL2O3
FE0		84.79	79.63	92.71	8.83	8.49	93.94	8.33	FE0
MGO					8.76	7.96		11.89	MGO
MNO					10.65	11.61		6.55	MNO
CAO					24.32	25.00		25.40	CAO
BAO	65.74								BAO
SO3	33.34								SO3
SRO	0.35				1.52	0.56	0.29	1.56	SRO
SUM	99.43	84.79	89.50	93.09	54.08	53.62	94.23	53.73	SUM

ATOMIC PROPORTIONS

SI			1.669	0.118					SI
AL			1.302						AL
FE		23.998	18.708	23.763	3.142	3.047	23.948	2.863	FE
MG					5.557	5.096		7.291	MG
MN					3.838	4.221		2.282	MN
CA					11.089	11.497		11.192	CA
BA	6.119								BA
S	5.945								S
SR	0.048				0.375	0.140	0.051	0.373	SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	12.112	23.998	21.679	23.881	24.001	24.001	23.999	24.001	CATSUM

1. C01-1 BARITE
2. C01-1 SIDERITE?
3. C01 ?

4. C2 -1 MAGNETITE
5. C02-2 DOLOMITE
6. C02-4 DOL

7. C03-1 MAGNETITE
8. C03-3 DOL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	13.78	13.78	13.78	13.78				38.43	38.28	0.20	FEO
MGO								3.16	3.08		MGO
MNO								12.99	12.46		MNO
CAO								0.91	0.81		CAO
BAO					62.75	61.66	61.45				BAO
SO3	14.03	14.03	14.03	14.03	33.67	31.95	32.79		0.22	0.39	SO3
SRO					0.46						SRO
SUM	27.80	27.80	27.80	27.80	96.88	93.61	94.24	55.49	54.85	0.59	SUM

ATOMIC PROPORTIONS

FE	*****							15.798	15.832*****		FE
MG								2.314	2.267		MG
MN								5.411	5.221		MN
CA								0.477	0.429		CA
BA					5.862	6.034	5.983				BA
S	*****				6.025	5.969	6.033		0.083*****		S
SR					0.054						SR
O	0.000	0.000	0.000	0.000	24.000	24.000	24.000	24.000	24.000	0.000	O
CATSUM	*****				11.951	12.023	11.936	24.000	23.832*****		CATSUM

- 1. SPH
- 2.
- 3.
- 4.

- 5. BARITE
- 6.
- 7. BAR LARGE XST
- 8. SIDERITE

- 9.
- 10. PY

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	15.90	13.17	13.23				13.78	13.78	13.78		FEO
MGO	5.76	5.14	6.53								MGO
MNO	6.71	9.07	6.90								MNO
CAO	26.21	27.47	26.88								CAO
BAO				53.02	54.98	54.15				64.78	BAO
SO3							14.03	14.03	14.03	33.92	SO3
SRO		0.74		0.45	0.46	0.69					SRO
SUM	54.58	55.59	53.54	53.47	55.44	54.84	27.80	27.80	27.80	98.70	SUM

ATOMIC PROPORTIONS

FE	5.737	4.702	4.788								FE
MG	3.702	3.269	4.216								MG
MN	2.451	3.280	2.530								MN
CA	12.111	12.566	12.467								CA
BA				23.704	23.709	23.555				5.988	BA
S										6.005	S
SR		0.183		0.296	0.291	0.445					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	0.000	0.000	0.000	24.000	O
CATSUM	24.001	24.000	24.001	24.000	24.000	24.000	0.000	0.000	0.000	11.993	CATSUM

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
FEO	3.15	3.15	5.72	13.04	11.42	12.93		3.42	12.43	13.78	FEO
MGO	9.98	9.98	8.12	4.91	7.90	6.73		10.48	5.43		MGO
MNO	4.99	4.99	4.14	8.74	6.22	6.50		4.22	8.33		MNO
CAO	0.55	0.55	0.37	26.95	26.87	26.17		0.39	26.79		CAO
BAO	55.06	55.06	51.60				66.85	53.52			BAO
SO3							33.64			14.03	SO3
SRO	0.53	0.53		0.75	0.43	0.51	0.37				SRO
SUM	74.26	74.26	69.95	54.39	52.84	52.84	100.86	72.03	52.98	27.80	SUM

ATOMIC PROPORTIONS

FE	1.431	1.431	2.799	4.764	4.119	4.747		1.581	4.600		FE
MG	8.076	8.076	7.082	3.200	5.082	4.405		8.631	3.581		MG
MN	2.296	2.296	2.051	3.232	2.273	2.415		1.976	3.123		MN
CA	0.322	0.322	0.235	12.614	12.420	12.304		0.229	12.697		CA
BA	11.710	11.710	11.833				6.155	11.594			BA
S							5.933				S
SR	0.166	0.166		0.191	0.106	0.130	0.050				SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	0.000	O
CATSUM	24.001	24.001	24.000	24.001	24.000	24.001	12.138	24.001	24.001	0.000	CATSUM

1. CIRC 1 DOLM
 2. CIRC 1 DOL
 3.
 4. CQ 1 BAR CLEAN XST
 5.
 6. CQ2 BAR
 7. CQ2 SPH

8. CQ2 SPH
 9.
 10. CQ2 BAR LARGE XST
 11. CQ2 WITHERITE?
 12.
 13.
 14. CQ3 POINT 1 FE-DOL

15. CQ3 PT. 2 FE-DOL
 16. CQ3 PT. 3 FE-DOL
 17. CQ3 PT. 4 BA
 18. CQ3 PT. 5 WITHER
 19. CQ3 PT. 6 DOL
 20. CQ3 SPH

WEIGHT PERCENT	21	22	23	24	25	26	27	28	29	30	
FEO	13.78	0.87	1.04	5.45	5.36	3.78	14.74	8.18	13.78	1.82	FEO
MGO		1.36	1.14	9.49	8.67	10.48	5.39	7.29		12.43	MGO
MNO		0.90	0.87	3.65	3.55	2.94	8.48	10.81		3.75	MNO
CAO		18.43	19.01	0.70	0.34	0.40	25.97	27.18			CAO
BAO		44.71	45.01	50.79	51.52	52.54				54.05	BAO
SO3	14.03								14.03		SO3
SRO		5.15	4.15								SRO
SUM	27.80	71.42	71.22	69.99	69.44	70.14	54.49	53.46	27.80	72.05	SUM

ATOMIC PROPORTIONS

FE	*****	0.398	0.479	2.584	2.628	1.794	5.358	2.934*****		0.822	FE
MG		1.115	0.930	7.950	7.569	8.866	3.430	4.660		10.016	MG
MN		0.416	0.404	1.755	1.764	1.415	3.120	3.924		1.715	MN
CA		10.828	11.132	0.428	0.213	0.244	12.092	12.482			CA
BA		9.605	9.685	11.284	11.827	11.682				11.448	BA
S	*****							*****			S
SR		1.638	1.320								SR
O	0.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	0.000	24.000	O
CATSUM	*****	24.000	24.000	24.001	24.001	24.001	24.000	24.000*****		24.001	CATSUM

WEIGHT PERCENT 31 32

FEO	15.08	0.81	FEO
MGO	2.27	1.37	MGO
MNO	11.24	1.49	MNO
CAO	25.11	15.89	CAO
BAO	0.39	44.67	BAO
SRO		3.66	SRO
SUM	54.09	67.89	SUM

ATOMIC PROPORTIONS

FE	5.757	0.401	FE
MG	1.547	1.207	MG
MN	4.345	0.745	MN
CA	12.281	10.056	CA
BA	0.070	10.339	BA
SR		1.253	SR
O	24.000	24.000	O
CATSUM	24.000	24.001	CATSUM

- 21.
- 22. CQ4 PT. 1 WITHERITE-CA
- 23. CQ4 PT2 CA-WITHER
- 24. CQ4 PT3 WITHER

- 25. CQ4 PT4 WITH
- 26.
- 27. CQ4 PT6 DOL
- 28. CQ4 PT7 DOL

- 29. CQ4 PT. 8 SPH
- 30. CQ5 MG-WITHER
- 31. CQ5 DOL
- 32. CQ5 CA-WITHERITE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	2.87	3.51	1.07	2.55	3.34	2.38	5.77	7.49	5.71	5.40	FEO
MGO	4.60	7.65	2.01	9.64	9.96	10.26	7.46	7.10	7.08	7.53	MGO
MNO	2.93	5.70	1.28	5.10	5.29	4.90	4.73	5.85	5.18	4.77	MNO
CAO	9.20	3.27	15.33	0.52	0.30	0.35	0.27	1.69	0.52		CAO
BAO	52.55	47.34	50.15	52.30	51.66	51.94	50.42	45.42	49.08	49.77	BAO
SRO	0.38	0.61	0.63	0.54	0.53	0.50		0.37	0.53	0.38	SRO
SUM	72.53	68.08	70.47	70.65	71.08	70.33	68.65	67.92	68.10	67.85	SUM

ATOMIC PROPORTIONS

FE	1.358	1.692	0.519	1.214	1.559	1.123	2.893	3.609	2.891	2.741	FE
MG	3.879	6.585	1.736	8.173	8.287	8.649	6.674	6.106	6.361	6.823	MG
MN	1.403	2.787	0.630	2.457	2.503	2.345	2.401	2.857	2.644	2.453	MN
CA	5.578	2.025	9.517	0.320	0.179	0.210	0.176	1.042	0.334		CA
BA	11.655	10.707	11.387	11.658	11.302	11.509	11.856	10.263	11.597	11.850	BA
SR	0.126	0.206	0.212	0.178	0.171	0.165		0.123	0.185	0.134	SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	24.002	24.001	24.000	24.001	24.001	24.000	24.000	24.002	24.001	CATSUM

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
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FEO	0.34	4.30	12.74	11.91	7.65	11.07			5.73	0.85	FEO
MGO	1.51	8.18	2.92	4.83	5.90	6.95			7.42	3.20	MGO
MNO	0.90	5.46	9.94	10.56	12.17	6.34			4.42	1.46	MNO
CAO	18.80	1.54	25.93	25.48	25.59	26.30	18.23	17.83	0.84	15.66	CAO
BAO	48.18	50.52	0.57		1.86		48.24	49.33	50.61	46.84	BAO
SRO	0.87		1.11	0.69	0.58	0.25	0.89	0.50	0.40	2.95	SRO
SUM	70.60	70.00	53.21	53.47	53.75	50.91	67.36	67.66	69.42	70.96	SUM

ATOMIC PROPORTIONS

FE	0.159	2.063	4.910	4.441	2.845	4.166			2.836	0.394	FE
MG	1.260	6.993	2.006	3.213	3.908	4.666			6.548	2.624	MG
MN	0.428	2.651	3.879	3.909	4.583	2.419			2.216	0.683	MN
CA	11.289	0.948	12.805	12.178	12.190	12.684	12.034	11.842	0.530	9.244	CA
BA	10.583	11.346	0.104		0.324		11.648	11.979	11.734	10.113	BA
SR	0.282		0.297	0.178	0.150	0.065	0.319	0.179	0.137	0.943	SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.001	24.001	24.001	23.999	24.000	24.000	24.001	24.000	24.001	24.001	CATSUM

1. C02-1 BARYTOCALC

2. C02-2

3. C02-3

4. C02-4

5. C02-5

6. C02-6

7. C02-7

8. C02-8

9. C02-9

10. C02-10

11. C02-11

12. C02-12

13. C02-13

14. C02-14

15. C03-1 IMPURE?

16. C03-2

17. C03-3

18. C03-4

19. C03-5

20. C03-6 IMPURE?

WEIGHT PERCENT	21	22	23	24	25	26	27	28	29	30	
FEO	12.73	11.86	10.72		2.30	12.20	1.78	6.09		3.08	FEO
MGO	5.32	8.12	6.52		10.09	5.22	10.76	3.79		12.16	MGO
MNO	8.73	6.25	6.48	0.69	3.78	8.46	3.53	6.27	0.51	2.85	MNO
CAO	25.04	25.47	26.04	17.61	0.68	25.93	2.11	14.53	16.72	0.42	CAO
BAO				45.68	50.54		51.35	30.60	49.69	53.90	BAO
SRO	0.42	0.35	0.46	1.86		0.56	0.72	0.55	0.71	0.49	SRO
SUM	52.24	52.05	50.22	65.84	67.39	52.37	70.25	61.83	67.63	72.90	SUM

ATOMIC PROPORTIONS

FE	4.816	4.342	4.111		1.134	4.598	0.826	2.781		1.373	FE
MG	3.590	5.302	4.458		8.871	3.507	8.986	3.086		9.675	MG
MN	3.345	2.320	2.517	0.365	1.886	3.230	1.657	2.902	0.272	1.290	MN
CA	12.139	11.948	12.732	11.783	0.431	12.518	1.254	8.504	11.245	0.240	CA
BA				11.176	11.679		11.147	6.552	12.225	11.271	BA
SR	0.111	0.089	0.123	0.675		0.147	0.232	0.176	0.258	0.152	SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.001	24.001	24.001	23.999	24.001	24.000	24.002	24.001	24.000	24.001	CATSUM

WEIGHT PERCENT 31

FEO	2.07	FEO
MGO	10.95	MGO
MNO	2.85	MNO
CAO	0.26	CAO
BAO	51.90	BAO
SRO	0.54	SRO
SUM	68.47	SUM

ATOMIC PROPORTIONS

FE	1.003	FE
MG	9.468	MG
MN	1.403	MN
CA	0.165	CA
BA	11.779	BA
SR	0.183	SR
O	24.000	O
CATSUM	24.001	CATSUM

21. CQ3-7
 22. CQ3-8
 23. CQ3-9
 24. CQ3-10

25. CQ3-11
 26. CQ3-12
 27. CQ3-13
 28. CQ3-14 NIX

29. CQ3-15
 30. CQ3-16
 31. CQ3-17

WEIGHT PERCENT	1.	2	3	
FE0	5.23	5.22	3.63	FE0
CU0	37.52	39.01	38.47	CU0
ZNO	3.81	3.56	6.06	ZNO
S03	57.80	58.02	57.93	S03
AG0	3.17	3.59	2.92	AG0
AS0	2.73	1.38	1.08	AS0
SB205	28.98	31.27	31.10	SB205
SUM	139.24	142.05	141.19	SUM

ATOMIC PROPORTIONS

FE	0.533	0.526	0.368	FE
CU	3.454	3.556	3.521	CU
ZN	0.343	0.317	0.542	ZN
S	5.286	5.256	5.269	S
AG	0.200	0.225	0.184	AG
AS	0.174	0.087	0.068	AS
SB	1.312	1.402	1.400	SB
O	24.000	24.000	24.000	O
CATSUM	11.302	11.369	11.352	CATSUM

1. CQ1-1 TETRAHEDRITE

2. CQ1-2 TETRAHEDR.

3. CQ1-3 TET

WEIGHT PERCENT	1	2	3	4	5	6
FE0		56.35	53.38	57.54	17.57	17.32
MGO		0.73	1.45	0.70	6.48	7.40
MNO		0.78	1.74		4.69	4.56
CAO		1.19	2.21	1.11	25.68	26.05
BAO	64.13					
S03	32.97					
SR0	0.34	0.28			0.27	0.43
SUM	97.44	59.33	58.78	59.45	54.61	55.76

FE0
MGO
MNO
CAO
BAO
S03
SR0
SUM

ATOMIC PROPORTIONS

FE	22.490	21.150	22.939	6.308	6.042	FE
MG	0.516	1.027	0.493	4.144	4.599	MG
MN	0.316	0.698		1.705	1.610	MN
CA	0.609	1.123	0.566	11.777	11.645	CA
BA	6.058					BA
S	5.966					S
SR	0.048	0.078		0.067	0.103	SR
O	24.000	24.000	24.000	24.000	24.000	O
CATSUM	12.072	23.999	23.998	24.001	23.999	CATSUM

- 1. C01-1 BAR
- 2. C01-2 SIDERITE

- 3. C01-3 SID
- 4. C01-3 IBID

- 5. C01-5 DOLOMITE
- 6. C01-6 DOL

(AG file)

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20		
SI02			0.22								27.24	SI02
AL203											25.18	AL203
FE0	91.18	9.75		9.20	10.04	8.98	8.78	18.98	18.77		23.51	FE0
MGO		8.33		12.70	12.49	13.96	12.25	5.04	5.94		7.31	MGO
MNO		6.33		4.09	2.12	3.32	4.84	5.46	4.44		0.22	MNO
CA0		24.75		27.95	28.64	28.39	27.58	25.71	25.90			CA0
K2O											1.90	K2O
SRO		0.29						0.53	0.32			SRO
SUM	91.18	49.45	0.22	53.94	53.29	54.65	53.45	55.72	55.37		85.36	SUM

ATOMIC PROPORTIONS

SI			0.395								4.991	SI
AL											5.440	AL
FE	23.998	3.719		3.077	3.397	2.929	2.974	6.819	6.697		3.603	FE
MG		5.665		7.569	7.510	8.114	7.396	3.230	3.781		1.997	MG
MN		2.447		1.385	0.724	1.098	1.661	1.986	1.604		0.035	MN
CA		12.093		11.970	12.379	11.860	11.970	11.832	11.839			CA
K											0.444	K
SR		0.077						0.133	0.079			SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.998	24.001	0.395	24.001	24.000	24.001	24.001	24.000	24.000		16.510	CATSUM

11. STD HEMATITE 69.84
 12. DY258 C03-3 OOL??
 13. SAME
 14. DY259 C02-1 DOL

15. DY259 C02-2 DOLOMITE
 16. DY259 C02-3 DOL
 17. DY259 C02-4 DOL
 18. DY260 C010-1 DOL

19. DY260 C010-2 DOL
~~20. DY264 CHL~~

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FE	16.45	17.88	15.88	15.47	18.18	5.50	17.59	10.52	11.06		FE
MGO	8.03	5.67	6.47	4.80	5.44	15.17	5.33	5.98	8.24	22.51	MG
MNO	5.44	6.09	7.08	9.21	6.76	4.13	7.10	10.47	6.08		MN
CAO	27.50	26.42	26.11	26.57	25.67	29.73	25.86	24.22	24.23	30.29	CA
SRO	0.30		0.40	0.44	0.20		0.41	0.73			SR
SUM	57.72	56.06	55.94	56.49	56.25	54.53	56.29	51.92	49.61	52.80	SUM

ATOMIC PROPORTIONS

FE	5.505	6.312	5.560	5.483	6.440	1.766	6.234	3.989	4.216		FE
MG	4.788	3.566	4.051	3.032	3.435	8.675	3.371	4.038	5.600	12.202	MG
MN	1.845	2.176	2.520	3.308	2.426	1.343	2.548	4.020	2.348		MN
CA	11.792	11.947	11.753	12.069	11.650	12.217	11.746	11.763	11.837	11.799	CA
SR	0.070		0.097	0.108	0.049		0.101	0.191			SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.000	24.001	24.001	24.000	24.000	24.001	24.000	24.001	24.001	24.001	CATSUM

- 1. DY257 C01-1 DOLOMITE
- 2. DY257 C01-2 DOLOMITE
- 3. DY257 C02-1 DOLOMITE
- 4. DY257 C02-2 DOLOMITE
- 5. DY257 C02-3 DOLOMITE
- 6. DY257 C03-1 DOLOMITE
- 7. DY257 C03-2 DOLOMITE
- 8. DY258 C03-1 DOLOMITE ???
- 9. DY258 DOLOMITE???
- 10. STD DOL 21.73;13.18

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	24.14	25.15	0.39	23.44	46.59	45.50	44.65	23.39	24.33	23.14	SI02
AL203	22.55	22.67		22.06	34.76	35.68	36.43	22.91	22.15	21.88	AL203
TI02			100.07								TI02
FE0	25.05	22.58		26.35	1.21	0.99	1.18	28.51	27.65	27.83	FE0
MGO	12.33	15.70		12.12				11.23	10.70	9.86	MGO
MNO	0.40	0.53		0.66		1.32	3.29	0.23	0.43	0.31	MNO
CA0			0.11								CA0
K2O					9.01	7.04	5.88		0.15		K2O
SUM	84.47	86.63	100.57	84.63	91.57	90.53	91.43	86.27	85.42	83.02	SUM

ATOMIC PROPORTIONS

SI	4.533	4.534	0.062	4.446	6.928	6.796	6.630	4.384	4.584	4.507	SI
AL	4.991	4.918		4.931	6.092	6.282	6.375	5.060	4.920	5.025	AL
TI			11.930								TI
FE	3.922	3.405		4.179	0.151	0.123	0.147	4.468	4.360	4.534	FE
MG	3.451	4.220		3.426				3.127	3.006	2.864	MG
MN	0.062	0.081		0.106		0.381	0.946	0.037	0.068	0.050	MN
CA			0.020								CA
K					1.709	1.342	1.114		0.026		K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	16.971	17.058	12.012	17.038	14.880	14.924	15.212	17.086	16.974	16.980	CATSUM

1. C01-1 CHL AGGREG.
2. C01-2 CHL
3. C01-3 RUTILE
4. C02-1LITE REFL. PT. CHL

5. C02-2DARKER PT=SER
6. C02-3 SER
7. C02-4 SER
8. C03-1 CHL BETH. LAY. 1-3

9. C03-2 CHL
10. C03-4 LOWER PART , CHL

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	23.24	46.04	46.21			23.50	23.54				SI02
AL2O3	22.47	35.02	32.98			22.42	22.31				AL2O3
TI02				91.29							TI02
FE0	23.59	1.26	1.43		4.98	26.92	26.78	0.25	0.32	1.34	FE0
MGO	10.56				2.24	11.25	11.60				MGO
MNO	0.26				1.24	0.33	0.34	0.68	0.40	1.69	MNO
CA0					41.26			48.86	49.41	53.36	CA0
K2O		9.07	8.90								K2O
SRO					1.51			0.25			SRO
SUM	85.12	91.39	90.42	91.29	51.23	84.42	84.57	50.04	50.13	56.29	SUM

ATOMIC PROPORTIONS

SI	4.423	6.870	6.961			4.469	4.466				SI
AL	5.041	6.160	6.033			5.025	4.989				AL
TI				12.001							TI
FE	4.552	0.158	0.181		1.862	4.281	4.248	0.093	0.120	0.450	FE
MG	2.997				1.493	3.190	3.282				MG
MN	0.042				0.472	0.054	0.055	0.259	0.152	0.574	MN
CA					19.782			23.582	23.729	22.976	CA
K		1.726	1.692								K
SR					0.391			0.066			SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.055	14.914	14.867	12.001	24.000	17.019	17.040	24.000	24.001	24.000	CATSUM

11. C03-5 IBID CHL

12. C03-6 GREEN DISP. MUSCOV.

13. MUSCOVITE

14. C03-7 RUTILE IN MUSCOV LAYER

15. C04-1 FE-CALCITE

16. C04-2 CHL IN OTZ

17. IBID CHL

18. C05-1 CAL 50U OFF F0

19. C05-2 30U OFF F0. CAL

20. C05-3 CAL 10 U OFF

WEIGHT PERCENT	21	22	23	24	25	26	27	28	
SI02			44.79	45.59	23.62	23.87	45.73	46.28	SI02
AL203			34.69	35.47	21.75	22.09	32.63	34.27	AL203
FE0	1.22	0.27	0.89	1.41	29.46	29.41	2.60	1.54	FE0
MGO					10.36	9.90			MGO
MNO	1.40		1.34	1.50					MNO
CA0	49.19								CA0
K20			8.82	8.30			8.26	9.02	K20
S03		0.23							S03
SRO	1.22								SRO
SUM	53.03	0.56	90.52	92.27	85.20	85.27	90.22	91.11	SUM

ATOMIC PROPORTIONS

SI			6.779	6.761	4.506	4.540	6.930	6.934	SI
AL			6.187	6.201	4.834	4.954	6.008	6.051	AL
FE	0.442*****		0.113	0.174	4.700	4.679	0.329	0.192	FE
MG					2.947	2.809			MG
MN	0.513		0.394	0.431					MN
CA	22.740								CA
K			1.702	1.571			1.596	1.723	K
S		*****							S
SR	0.305								SR
O	24.000	0.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.000*****		15.175	15.138	17.047	16.992	14.863	14.900	CATSUM

21. 005-4 CAL 10U OFF PO

22. 005-5 PO

23. 007-1 ORANGE DISP. MUSCOV

24. 007-2 IBID MUSC.

25. 008-1 CHL

26. 008-2 CHL

27. 008-3 MUSC IN CHL

28. 008-4 MUSC IN CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	45.84	45.71	0.59	0.74	1.99		3.67	46.30	24.05	23.68	SI02
AL2O3	33.77	34.47			0.71		3.13	34.05	21.37	22.31	AL2O3
TI02			50.94	54.33	82.75	96.76	47.91				TI02
FE0	1.11	1.19	45.03	42.36	7.08	0.32	41.76	1.17	28.62	27.98	FE0
MGO									10.54	11.85	MGO
MNO			1.35	1.19	0.28		1.26			0.24	MNO
CAO					0.23	0.53					CAO
K2O	9.47	9.01	0.24		0.24			10.21			K2O
SUM	90.19	90.38	98.15	98.62	93.28	97.61	97.73	91.74	84.58	86.06	SUM

ATOMIC PROPORTIONS

SI	6.947	6.894	0.122	0.149	0.351		0.728	6.921	4.598	4.438	SI
AL	6.032	6.129			0.148		0.731	6.011	4.817	4.927	AL
TI			7.875	8.197	10.963	11.932	7.153				TI
FE	0.141	0.150	7.741	7.107	1.043	0.044	6.932	0.147	4.576	4.384	FE
MG									3.003	3.311	MG
MN			0.235	0.202	0.042		0.211			0.039	MN
CA					0.043	0.093					CA
K	1.831	1.734	0.054		0.054			1.950			K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	14.951	14.907	16.037	15.655	12.644	12.069	15.755	15.039	16.994	17.099	CATSUM

1. C01-1 GREEN DISPS. MUSCOV
2. C01-2 MUSCOV
3. C01-3 ILMENITE IN MUSC
4. C01 IBID

5. C01-5 RUTILE
6. C01-6 LARGE RUTILE
7. C02-1 ILM IN MUSC
8. C02-3MUSC HOST

9. C02-4 PTIGMATIC CHL
10. C02 IBID CHL

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	23.56	44.99	66.84	45.47	1.76			68.66	23.49	23.74	SI02
AL2O3	21.55	34.24	21.93	35.89	1.17			19.59	22.48	21.57	AL2O3
TI02					92.94	52.48	95.61				TI02
FE0	28.69	1.75		1.17	1.64	44.22	0.26		26.92	27.19	FE0
MGO	10.23								12.22	12.03	MGO
MNO						1.51					MNO
NA2O			12.91					16.55			NA2O
K2O		9.22	0.99	9.35							K2O
SUM	84.03	90.19	102.58	91.79	97.51	98.21	95.87	104.71	85.03	84.53	SUM

ATOMIC PROPORTIONS

SI	4.543	6.829	8.545	6.770	0.289			8.772	4.428	4.512	SI
AL	4.898	6.136	3.344	6.284	0.225			2.937	4.978	4.831	AL
TI					11.431	8.893	11.983				TI
FE	4.627	0.223		0.146	0.224	7.573	0.036		4.244	4.321	FE
MG	2.941								3.434	3.409	MG
MN						0.262					MN
NA			3.227					4.100			NA
K		1.789	0.149	1.775							K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.009	14.987	15.375	14.975	12.169	15.918	12.019	15.809	17.084	17.073	CATSUM

11. C02 IBID

12. C03-NORMAL SER

13. C03-2 ALBITE IN SER

14. C03 NORMAL SER

15. C03 OPAQUE RUTILE

16. C03 ILMENITE

17. C04-1 RUTILE

18. C04 ALBITE

19. C04 CHL IN MUSCOV

20. C04 IBID

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	45.28	45.51	24.99	24.66	67.40	65.34	24.58	28.46	45.46	47.29	SI02
AL203	33.18	34.98	20.53	21.11	19.46	17.68	22.50	24.30	34.89	34.87	AL203
FEO	1.77	1.41	22.95	23.53			25.17	20.79	1.09	1.30	FEO
MGO			14.83	13.65			14.30	12.95			MGO
MNO				0.41			0.46	0.49			MNO
NA2O					12.68	13.64					NA2O
K2O	9.58	9.27							9.86	9.48	K2O
SUM	89.81	91.17	83.29	83.36	99.54	97.66	87.01	86.99	91.30	92.94	SUM

ATOMIC PROPORTIONS

SI	6.929	6.828	4.699	4.659	8.911	8.986	4.479	4.995	6.826	6.947	SI
AL	5.986	6.186	4.554	4.702	3.833	2.824	4.833	5.018	6.177	6.038	AL
FE	0.226	0.177	3.611	3.718			3.837	3.046	0.137	0.160	FE
MG			4.160	3.845			3.884	3.383			MG
MN				0.066			0.071	0.073			MN
NA					3.252	3.582					NA
K	1.871	1.775							1.898	1.778	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.012	14.966	17.024	16.990	15.196	15.392	17.104	16.505	15.028	14.923	CATSUM

1. C01-1 SERICITE
2. C01-2 IBID
3. C01-3 BROWN CHL
4. C01-4 CHL

5. C02-1ALBITIZED PLG
6. IBID
7. C02-2 CHL
8. C02-3 CHL

9. C02-4 SER
10. C03-1 SER

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	46.61	3.98					45.88	30.04	45.93	24.27	SI02
AL203	33.96	2.77					34.36	26.62	34.40	21.50	AL203
TI02		80.69									TI02
FE0	1.38	2.82	8.04	7.54	7.03	11.61	1.36	16.25	1.27	25.87	FE0
MGO			12.57	11.89	12.98	11.35		10.36		12.15	MGO
MNO			1.10	1.54	1.10	0.65		0.25		0.40	MNO
CA0			33.98	33.63	33.85	29.66					CA0
K2O	9.11						9.73		9.40		K2O
SRO			0.25								SRO
SUM	91.05	90.26	55.94	54.60	54.96	53.27	91.33	83.52	91.00	84.19	SUM

ATOMIC PROPORTIONS

SI	6.992	0.699					6.898	5.286	6.900	4.599	SI
AL	5.995	0.573					6.081	5.521	6.092	4.802	AL
TI		10.655									TI
FE	0.173	0.415	2.563	2.466	2.261	3.953	0.171	2.391	0.160	4.100	FE
MG			7.144	6.934	7.440	6.887		2.718		3.424	MG
MN			0.356	0.511	0.358	0.226		0.037		0.064	MN
CA			13.892	14.090	13.943	12.935					CA
K	1.740						1.863		1.802		K
SR			0.055								SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	14.890	12.352	24.000	24.001	24.002	24.001	15.003	15.953	14.954	16.999	CATSUM

11. C03-2 IBIO
 12. C03-3 RUTILE
 13. C04-1 DOL??
 14. C4-2 DOL??

15. C04-3 DOL??
 16. C04-5 DOL IN SER
 17. C05-1 FIBROUS MUSC
 18. C06-1 CHL

19. C07-1 SER
 20. C07-2 CHL

WEIGHT PERCENT		21	22
SiO2	23.84		SiO2
Al2O3	21.58		Al2O3
TiO2		95.36	TiO2
FeO	24.72		FeO
MgO	13.45		MgO
MnO	0.54		MnO
SUM	84.13	95.36	SUM

ATOMIC PROPORTIONS

SI	4.504		SI
AL	4.807		AL
TI		12.001	TI
FE	3.906		FE
MG	3.787		MG
MN	0.087		MN
O	24.000	24.000	O
CATSUM	17.091	12.001	CATSUM

21. C07-3 CHL

22. C07-4 RUTILE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02							46.63	45.36	45.46	47.45	SI02
AL2O3							39.50	38.73	39.44	40.40	AL2O3
FE0	52.81	53.12	54.35	44.02	41.40	40.61	1.09	2.64	1.58	0.82	FE0
MGO	1.45		0.75	11.88	10.86	13.15					MGO
MNO	3.06	4.45	3.01	0.40	0.39	0.46					MNO
CAO	2.04	1.41	1.46	0.75	2.27	1.59					CAO
NA2O										1.66	NA2O
K2O							9.16	8.23	8.83	8.24	K2O
SRO	0.34				0.54	0.33					SRO
SUM	59.70	58.98	59.57	57.05	55.46	56.14	96.38	94.96	95.31	98.57	SUM

ATOMIC PROPORTIONS

SI							6.589	6.532	6.509	6.549	SI
AL							6.579	6.574	6.657	6.573	AL
FE	20.661	21.450	21.521	15.871	15.421	14.594	0.128	0.318	0.189	0.095	FE
MG	1.012		0.523	7.636	7.209	8.428					MG
MN	1.212	1.819	1.207	0.145	0.145	0.166					MN
CA	1.021	0.730	0.742	0.348	1.085	0.730					CA
NA										0.444	NA
K							1.651	1.513	1.613	1.451	K
SR	0.092				0.139	0.082					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	23.999	23.999	24.000	23.999	24.000	14.947	14.937	14.968	15.112	CATSUM

1. Q01-1 SIDERITE BAND
2. Q01-2 SIDERITE BAND
3. Q01-3 IBID
4. Q01-4 DOL+SID? NO SI

5. Q01-5 10U OFF 1-4
6. Q01-6 20U OFF 1-4
7. Q01-7 MUSCOV
8. Q01-8 IBID

9. Q01-9 20U OFF 1-8. MUSCOV
10. Q01-10 SER. NA-BEAR.

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	
SI02	47.71	45.50					45.64		45.63	SI02
AL203	40.24	36.37					37.10		36.35	AL203
FEO	1.09	1.08	52.22	49.79	43.15	42.81	0.85	48.45	0.88	FEO
MGO			4.75	4.24	11.07	12.22		4.52		MGO
MNO			1.51	3.15	0.98	0.37		1.88		MNO
CAO			0.94	0.78	2.38	0.51		1.13		CAO
NA2O	1.21									NA2O
K2O	3.99	9.08					8.84		9.04	K2O
SRO			0.61							SRO
SUM	99.24	92.13	60.03	57.96	57.48	55.91	92.43	55.98	91.95	SUM

ATOMIC PROPORTIONS

SI	6.566	6.747					6.710		6.762	SI
AL	6.528	6.343					6.431		6.342	AL
FE	0.125	0.133	19.627	19.418	15.499	15.658	0.104	19.427	0.110	FE
MG			3.185	2.947	7.085	7.966		3.228		MG
MN			0.575	1.243	0.321	0.139		0.764		MN
CA			0.454	0.391	1.094	0.237		0.580		CA
NA	0.323									NA
K	1.578	1.714					1.658		1.707	K
SR			0.158							SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.120	14.937	23.999	23.999	23.999	24.000	14.903	23.999	14.921	CATSUM

11. C01-X ??

12. C01-11 SER

13. C02-1 SID

14. C02-2 10U OFF 1-1

15. C02-3 SID NOTE HETEROGEN.

16. C02-5 NEARBY SID

17. C02-6 GREEN DISPERS. MUSCOV

18. C02-1 SID

19. C02-2 RED DISPS. MUSCOV

WEIGHT PERCENT	31	32	
SI02	28.31	25.26	SI02
AL203	20.56	24.37	AL203
TI02	0.27		TI02
FE0	25.00	27.96	FE0
MGO	5.95	7.68	MGO
MNO	0.21	0.33	MNO
K2O	0.23	0.43	K2O
SUM	80.53	86.03	SUM

ATOMIC PROPORTIONS

SI	5.503	4.700	SI
AL	4.710	5.344	AL
TI	0.032		TI
FE	4.064	4.351	FE
MG	1.724	2.130	MG
MN	0.035	0.052	MN
K	0.058	0.101	K
O	24.000	24.000	O
CATSUM	16.133	16.678	CATSUM

31. DY264 C01-2 CHL

32. DY264 C01-3 CHL

WEIGHT PERCENT	21	22	23	24	25	26	27	28	29	30	
SI02	23.50	26.67	25.70	26.54	23.30	22.38	23.50	22.46	22.28	23.77	SI02
AL203	22.57	25.37	24.76	25.51	22.62	21.57	22.36	22.40	22.48	22.87	AL203
FE0	28.98	26.73	28.54	26.30	30.18	29.20	29.20	29.07	29.23	28.74	FE0
MGO	9.87	7.61	9.01	8.42	9.83	8.31	8.61	8.56	8.67	8.53	MGO
MNO	0.26	0.19	0.25		0.32	0.37	0.32		0.19		MNO
K2O	0.17	1.02	0.55	0.97	0.13				0.16	0.28	K2O
SUM	85.35	87.59	88.81	87.74	86.38	81.68	83.99	82.49	83.01	84.19	SUM

ATOMIC PROPORTIONS

SI	4.470	4.823	4.635	4.776	4.408	4.474	4.547	4.433	4.384	4.567	SI
AL	5.059	5.409	5.266	5.412	5.045	5.095	5.098	5.211	5.216	5.180	AL
FE	4.610	4.043	4.306	3.959	4.777	4.894	4.724	4.798	4.811	4.619	FE
MG	2.798	2.051	2.422	2.259	2.774	2.452	2.483	2.518	2.545	2.442	MG
MN	0.042	0.029	0.039		0.051	0.062	0.052		0.032		MN
K	0.040	0.235	0.127	0.223	0.030				0.040	0.070	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.019	16.590	16.795	16.629	17.085	16.977	16.904	16.960	17.028	16.878	CATSUM

21. DY264 CHL

22. DY264 CHL

23. DY264 CHL

24. DY264 CHL

25. DY264 CHL

~~26.~~ DY264 CHL

27. DY264 C03-1 CHL

28. DY264 C03-2 CHL

29. DY264 C03-3 CHL

30. DY264 C01-1 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	68.61	35.27	35.02	34.57	27.66	45.40	2.29	2.25	2.24	31.89	SI02
AL2O3	19.32	18.64	20.46	19.67	22.76	33.85	0.61	1.05	1.92	19.24	AL2O3
TIO2		1.17	1.21	1.27			56.88	71.75	93.62	0.51	TIO2
FE0		24.16	24.31	23.58	29.88	1.56	30.54	1.09	0.50	25.82	FE0
MGO		6.20	5.96	5.04	7.42					5.35	MGO
MNO		0.36	0.40	0.39	0.85		4.77	1.53		0.37	MNO
CAO					0.20			8.85	0.20		CAO
NA2O	12.52				1.34						NA2O
K2O		8.35	7.35	7.88		10.13				6.64	K2O
SUM	100.45	94.15	94.71	92.40	90.11	90.94	95.29	86.52	98.48	89.82	SUM

ATOMIC PROPORTIONS

SI	8.972	6.031	5.988	5.994	4.959	6.878	0.453	0.428	0.360	5.768	SI
AL	12.978	3.758	4.067	4.020	4.810	6.045	0.183	0.235	0.364	4.102	AL
TI		0.150	0.154	0.165			8.475	10.283	11.317	0.069	TI
FE		3.455	3.429	3.420	4.481	0.197	5.060	0.173	0.067	3.905	FE
MG		1.581	1.498	1.302	1.982					1.442	MG
MN		0.052	0.056	0.057	0.129		0.800	0.246		0.057	MN
CA					0.028			1.807	0.035		CA
NA	3.175				0.467						NA
K		1.821	1.582	1.743		1.957				1.532	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.125	16.848	16.694	16.701	16.866	15.077	14.977	13.172	12.143	16.875	CATSUM

1. Q01-1 ALBITE
2. Q01-2 BIOTITE
3. Q01-3 BIOTITE
4. Q01-4 BIOTITE

5. Q01-5 CHL REPLACING BIOT
6. Q01-6 MUSCOV
7. Q01-7 MN-ILMENITE
8. PROBABLY RUTILDE+SPHENE

9. Q01-9 RUTILE
10. Q02-1 BIOT

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	24.84	37.11	23.14	36.66	24.38	45.81			68.09		SI02
AL2O3	18.83	17.61	21.46	18.26	19.88	35.26			18.31		AL2O3
TIO2	0.92	1.32		0.68		0.29	61.64	94.53		62.24	TIO2
FE0	23.80	21.99	32.65	22.73	31.61	1.30	27.39	1.02		29.18	FE0
MGO	5.52	5.70	7.45	5.69	8.93						MGO
MNO	0.48	0.44	1.03	0.47	0.74		4.61			4.48	MNO
CAO				0.20			0.21	0.23			CAO
NA2O									13.90		NA2O
K2O	8.26	8.81		8.13		9.37					K2O
SUM	92.65	92.98	85.74	92.82	85.54	92.03	93.85	95.83	100.30	95.90	SUM

ATOMIC PROPORTIONS

SI	6.052	6.351	4.495	6.288	4.707	6.809			8.376		SI
AL	3.855	3.553	4.916	3.692	4.526	6.177			2.846		AL
TI	0.120	0.169		0.087		0.032	9.291	11.904		9.223	TI
FE	3.457	3.147	5.307	3.261	5.104	0.162	4.591	0.143		4.808	FE
MG	1.430	1.455	2.157	1.455	2.572						MG
MN	0.071	0.063	0.169	0.068	0.121		0.783			0.747	MN
CA				0.037			0.046	0.051			CA
NA									3.554		NA
K	1.830	1.924		1.779		1.779					K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	16.815	16.662	17.045	16.667	17.030	14.958	14.711	12.098	15.376	14.778	CATSUM

11. C02-2 BIOT

12. C02-3 SMALL BIOT

13. C02-4 CHL NEAR BIOT

14. C02-5 GREEN BIOT?

15. C02-6 CHL

16. C03-1 MUSCOVITE GREEN D.

17. C03-1 MN-ILMENITE

18. C03-2 RUTILE

19. C04-1 ALBITE

20. C04-2 MN-ILM

WEIGHT PERCENT	21	22	23	24	25	26	27	28	
SI02		23.05	23.98	23.49	34.97	23.11	24.26	36.50	SI02
AL2O3		21.82	21.14	20.56	18.29	21.47	20.74	17.53	AL2O3
TI02	70.53				0.74			0.53	TI02
FE0	1.89	32.54	32.65	32.90	22.29	30.48	30.47	21.92	FE0
MGO		8.32	7.86	7.35	6.77	9.80	9.28	7.35	MGO
MNO	1.26	0.96	0.68	0.59	0.31	0.66	0.55	0.39	MNO
CAO	10.11								CAO
K2O					8.40			8.49	K2O
SUM	83.79	86.69	86.31	84.89	91.77	85.52	85.30	92.71	SUM

ATOMIC PROPORTIONS

SI		4.421	4.607	4.609	6.093	4.442	4.659	6.264	SI
AL		4.933	4.785	4.755	3.756	4.866	4.695	3.547	AL
TI	10.648				0.097			0.069	TI
FE	0.317	5.221	5.244	5.400	3.248	4.900	4.893	3.146	FE
MG		2.280	2.251	2.150	1.759	2.809	2.656	1.881	MG
MN	0.214	0.157	0.111	0.097	0.045	0.108	0.090	0.056	MN
CA	2.174								CA
K					1.868			1.859	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	13.353	17.112	16.999	17.011	16.866	17.125	16.993	16.822	CATSUM

21. C04-3 RUTILE+SPHENE
 22. C04-4 CHL MASS
 23. C05-1 CHL PTIGM. VEIN

24. C05-2 CHL IN VEIN
 25. C06-1 BIOTITE
 26. C06-2 CHL AFT? BIOT

27. C06-3 CHL AFT? BIOT
 28. C06-4 BIOT

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	24.09	24.04	23.29	66.29	45.70			22.99	31.31	27.46	SI02
AL203	21.43	21.59	21.06	18.08	33.99			21.00	18.44	19.98	AL203
TI02			0.23			52.70	67.41		0.98		TI02
FE0	30.46	31.50	31.36		1.45	36.18	10.17	30.61	24.22	23.30	FE0
MGO	9.42	9.69	7.57					8.83	7.96	8.09	MGO
MNO	1.70	1.58	1.67			8.04	5.05	1.76	0.78	1.02	MNO
CA0				0.35				3.50			CA0
NA20				11.29							NA20
K20				0.45	9.37				5.71	0.64	K20
SUM	87.10	88.40	85.09	96.46	90.51	96.92	86.13	85.19	89.40	85.39	SUM

ATOMIC PROPORTIONS

SI	4.552	4.494	4.530	9.031	6.912			4.472	5.645	5.186	SI
AL	4.773	4.758	4.847	2.903	6.059			4.815	3.919	4.425	AL
TI			0.034			8.176	10.318		0.132		TI
FE	4.813	4.925	5.120		0.183	6.243	1.732	4.981	3.651	4.470	FE
MG	2.652	2.700	2.204					2.560	2.138	2.279	MG
MN	0.271	0.250	0.275			1.406	0.870	0.290	0.120	0.163	MN
CA				0.052				0.764			CA
NA				2.983							NA
K				0.079	1.809				1.313	0.154	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.061	17.127	17.010	15.049	14.963	15.825	13.694	17.119	16.918	16.677	CATSUM

1. C01-1CHL 50U FROM PO
2. C01-2 CHL 30U FROM POX
3. CHL 10U PO
4. C02-1 ALBITE AT CREST

5. C02-2 MUSCOV
6. C02-3 ILM
7. C02-4 MIX ILM+RUT
8. C04-1 CHL

9. C04-2 CHL AFT? BIOT
10. C04-1 CHL

WEIGHT PERCENT	11	12	13	14	15	
SI02	24.12	24.32			23.71	SI02
AL203	21.16	21.02			21.09	AL203
FE0	30.58	29.63	1.69	1.12	31.01	FE0
NG0	10.37	8.44	0.66		8.76	NG0
MNO	1.72	1.68	5.37	4.93	1.23	MNO
CA0			48.97	48.67		CA0
SUM	87.95	85.09	56.69	54.72	85.80	SUM

ATOMIC PROPORTIONS

SI	4.518	4.625			4.561	SI
AL	4.671	4.773			4.784	AL
FE	4.790	4.773	0.542	0.393	4.989	FE
MG	2.896	2.422	0.397		2.513	MG
MN	0.272	0.274	1.840	1.751	0.200	MN
CA			21.221	21.856		CA
O	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.147	16.927	24.000	24.000	17.047	CATSUM

11. C05-1 RADIAL CHL

12. C05-2 RADIAL CHL RIM

13. C07-1 CALCITE

14. C07-2 CALCITE VEIN

15. C07-3 CHL VEIN

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02				24.12	32.76				22.21	22.55	SI02
AL203				20.61	18.00				21.46	21.63	AL203
TI02			68.33		0.64						TI02
FE0	13.78	13.78	9.65	30.42	23.38	1.55	1.61	1.40	35.33	34.83	FE0
MGO				8.92	9.03	0.74		0.63	4.54	6.41	MGO
MNO			2.50	1.11	0.80	3.84	5.61	5.44	1.25	1.23	MNO
ZNO	78.36	79.57									ZNO
CA0						48.07	47.04	46.35			CA0
K2O				0.27	5.31						K2O
SO3	85.53	86.92									SO3
SUM	177.66	180.26	80.48	85.45	89.92	54.20	54.26	53.82	84.79	86.65	SUM

ATOMIC PROPORTIONS

SI				4.648	5.807				4.452	4.397	SI
AL				4.682	3.761				5.069	4.972	AL
TI			10.918		0.086						TI
FE	*****		1.715	4.903	3.466	0.545	0.571	0.498	5.923	5.680	FE
MG				2.562	2.385	0.461		0.399	1.357	1.863	MG
MN			0.450	0.182	0.120	1.365	2.018	1.962	0.212	0.283	MN
ZN	*****										ZN
CA						21.630	21.411	21.142			CA
K				0.067	1.202						K
S	*****										S
O	0.000	0.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	*****		13.082	17.044	16.827	24.001	24.000	24.001	17.013	17.115	CATSUM

- 1. C01-1 SPH
- 2. C01-2 SPH
- 3. C01-3 RUTILE+ILM
- 4. C02-1 CHL

- 5. C02-2 CHL AFT BIOT
- 6. C02-4 CALCITE
- 7. C03-1 CAL
- 8. C03-2 CAL

- 9. C03-3 CHL VEIN
- 10. C03-4 CHL VEIN

WEIGHT PERCENT		11	12	
SI02		22.84		SI02
AL2O3		21.01		AL2O3
TIO2			88.51	TIO2
FE0		34.85	4.95	FE0
MGO		6.20		MGO
MNO		1.25	1.52	MNO
SUM		86.16	94.99	SUM

ATOMIC PROPORTIONS

SI	4.483		SI
AL	4.860		AL
TI		11.530	TI
FE	5.722	0.717	FE
MG	1.815		MG
MN	0.207	0.225	MN
O	24.000	24.000	O
CATSUM	17.087	12.472	CATSUM

11. C02-5 SMOOTH SURFACE SCHL

12. C05-1 RUTILE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	67.36	66.51			23.08	45.75					SI02
AL203	19.09	17.67			21.91	34.07					AL203
TI02				50.61		0.33					TI02
FE0			0.27	43.16	30.92	1.63	13.78	13.78	13.78	13.78	FE0
MGO					10.58	0.53					MGO
MNO				3.71							MNO
ZNO							85.15	82.90	87.10	77.60	ZNO
NA2O	10.86	10.08									NA2O
K2O						9.11					K2O
SO3			0.29				92.39	91.83	95.94	87.65	SO3
SUM	97.22	94.26	0.56	97.48	86.49	91.42	191.32	188.40	196.81	179.83	SUM

ATOMIC PROPORTIONS

SI	9.039	9.171			4.377	6.854					SI
AL	3.005	2.872			4.899	6.015					AL
TI				7.919		0.037					TI
FE		*****		7.509	4.904	0.204*****					FE
MG					2.992	0.119					MG
MN				0.654							MN
ZN							*****				ZN
NA	2.827	2.695									NA
K						1.741					K
S		*****					*****				S
O	24.000	24.000	0.000	24.000	24.000	24.000	0.000	0.000	0.000	0.000	O
CATSUM	14.871	14.738*****		16.092	17.172	14.971*****					CATSUM

- 1. C01-1 ALSITE
- 2. C01-2 ALB
- 3. C01-3 PO
- 4. C01-4 ILM

- 5. C01-5 CHL
- 6. C01-7 MUSCOV
- 7. C02-1 SPH
- 8. SPH

- 9. SPH
- 10. SPH

WEIGHT PERCENT	11	12	13	
SI02	22.64	22.74		SI02
AL2O3	21.97	22.50		AL2O3
TI02			51.74	TI02
FE0	33.81	32.78	44.97	FE0
MGO	7.55	8.71		MGO
MNO	0.31	0.49	3.85	MNO
SUM	86.28	87.22	100.57	SUM

ATOMIC PROPORTIONS

SI	4.384	4.329		SI
AL	5.015	5.049		AL
TI			7.868	TI
FE	5.477	5.218	7.604	FE
MG	2.180	2.471		MG
MN	0.052	0.080	0.661	MN
O	24.000	24.000	24.000	O
CATSUM	17.188	17.147	16.133	CATSUM

11. C03-1 CHL

12. C03-2 CHL

13. C03-3 ILMENITE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02		28.09	23.51	60.17	56.52				5.06		SI02
AL2O3		20.61	19.14								AL2O3
TI02									46.97	79.08	TI02
FE0	4.98	10.99	11.79	7.58	12.40	0.27	0.05	15.95	42.07	2.99	FE0
MGO	19.17	26.58	26.31	26.20	22.41						MGO
MNO	0.26								0.69		MNO
COO							0.01	3.63			COO
NI0							0.09	26.89			NI0
CA0	29.05									4.57	CA0
SO3						0.29	0.14	44.92			SO3
ASO							0.12	54.90			ASO
SUM	53.46	86.27	85.75	93.95	91.33	0.56	0.41	146.29	94.79	86.64	SUM

ATOMIC PROPORTIONS

SI		4.766	4.830	8.713	8.650				1.042		SI
AL		4.123	3.869								AL
TI									7.275	11.299	TI
FE	1.561	1.560	1.691	0.918	1.587*****			1.519	7.247	0.474	FE
MG	10.701	6.723	6.726	5.655	5.112						MG
MN	0.083								0.120		MN
CO						*****		0.331			CO
NI						-0.000		2.462			NI
CA	11.656									0.929	CA
S						0.000	0.000	3.839			S
AS							0.000	3.269			AS
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.001	17.172	17.176	15.236	15.349*****			11.420	15.684	12.702	CATSUM

- 1. CQ1-1 DOLOMITE
- 2. CQ1-2 CHLORITE
- 3. CQ1-3 CHL
- 4. CQ1-4 TALC

- 5. CQ1-5 TALC
- 6. CQ1-6 PO
- 7. FE-NI-AS-S MIN SEMI-QUAN.
- 8. CQ1-8 IBID

- 9. CQ1-9 ILM
- 10. CQ1-10 RUTILE

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	
SI02								29.46	29.94	SI02
AL203								17.08	17.54	AL203
FE0	4.70	4.60	4.68	4.88	7.39	4.99	4.45	12.57	10.77	FE0
MGO	19.06	18.83	19.00	20.09	19.66	19.58	20.26	25.99	26.25	MGO
MNO	0.19	0.19	0.16	0.20	0.21	0.23				MNO
CA0	28.54	28.67	29.40	30.06	24.34	29.81	27.86			CA0
SRO	0.22	0.20			1.47	0.26				SRO
SUM	52.71	52.49	53.24	55.23	53.07	54.87	52.57	85.10	84.50	SUM

ATOMIC PROPORTIONS

SI								5.109	5.169	SI
AL								3.491	3.568	AL
FE	1.494	1.467	1.469	1.475	2.370	1.526	1.400	1.823	1.555	FE
MG	10.736	10.708	10.642	10.824	11.236	10.673	11.366	6.721	6.755	MG
MN	0.061	0.061	0.051	0.061	0.068	0.071				MN
CA	11.612	11.720	11.839	11.640	9.999	11.678	11.236			CA
SR	0.048	0.044			0.328	0.054				SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.001	24.000	24.001	24.000	24.001	24.002	24.002	17.144	17.047	CATSUM

11. C02-1 DOLOMITE CORE

12. C02-2 DOL INNER MANTLE

13. C02-3 DOL MARGIN

14. C01-4 DOL RIM

15. C03-1 DOL

16. C03-3 DOL

17. C04-1 DOLOMITE

18. C04-2 CHL

19. C04-3 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02				0.67	23.22	24.30	23.70	23.85			SI02
AL203					23.63	22.51	24.17	23.26			AL203
TI02				96.87							TI02
FE0	1.62	1.37	1.18	0.37	29.42	27.63	29.17	27.86	15.58	0.62	FE0
MGO		0.73			10.94	12.15	11.87	12.18	10.98		MGO
MNO	1.65	1.40	1.08			0.23	0.21		0.95	0.93	MNO
CA0	49.48	50.21	50.15						27.22	53.99	CA0
K2O					0.12						K2O
SUM	52.75	53.71	52.41	97.91	87.33	86.82	89.12	87.15	54.73	55.54	SUM

ATOMIC PROPORTIONS

SI				0.109	4.313	4.492	4.296	4.393			SI
AL					5.173	4.905	5.164	5.051			AL
TI				11.867							TI
FE	0.584	0.490	0.427	0.051	4.570	4.273	4.422	4.292	5.269	0.211	FE
MG		0.457			3.029	3.349	3.207	3.345	6.616		MG
MN	0.600	0.498	0.396			0.036	0.032		0.324	0.319	MN
CA	22.816	22.565	23.177						11.791	23.470	CA
K					0.030						K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.000	24.000	24.000	12.027	17.115	17.055	17.121	17.081	24.000	24.000	CATSUM

WEIGHT PERCENT 11

FE0	16.05	FE0
MGO	10.27	MGO
MNO	1.25	MNO
CA0	27.19	CA0
SUM	54.77	SUM

ATOMIC PROPORTIONS

FE	5.471	FE
MG	6.223	MG
MN	0.432	MN
CA	11.865	CA
O	24.000	O
CATSUM	24.001	CATSUM

1. C01-1 CALCITE
2. C01-2 CALCITE
3. C01-3 CALCITE
4. C02-1 RUTILE

5. C02-1 CHL
6. C02-2 CHL
7. C02-3 CHL
8. C02-4 CHL

9. C03-1 DOLOMITE
10. C03-2 CAL COEX W DOL
11. C03-4 DOL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	23.99	45.12	45.98	44.85	44.39	23.58	23.99		24.37		SI02
AL2O3	23.90	35.85	35.90	34.22	34.99	22.14	22.84		22.42		AL2O3
TI02		0.40	0.48	0.49	0.31						TI02
FE0	28.54	1.09	0.87	1.66	2.72	28.51	27.88	18.67	24.53	11.75	FE0
MGO	11.52				0.60	10.53	10.97		14.51	11.71	MGO
MNO		1.81			1.00					0.50	MNO
CO0								7.85			CO0
NI0								21.60			NI0
CA0										30.79	CA0
K2O	0.17	7.08	7.88	8.40	7.03	0.16					K2O
SO3								47.27			SO3
AS0								53.59			AS0
SRO										0.21	SRO
SUM	88.12	91.35	91.11	89.62	91.04	84.92	85.68	148.98	85.83	54.96	SUM

ATOMIC PROPORTIONS

SI	4.381	6.709	6.815	5.826	6.668	4.493	4.498		4.481		SI
AL	5.146	6.283	6.273	5.140	6.197	4.973	5.046		4.858		AL
TI		0.044	0.054	0.055	0.035						TI
FE	4.360	0.135	0.108	0.211	0.341	4.543	4.371	1.737	3.772	3.878	FE
MG	3.138				0.135	2.991	3.064		3.978	6.888	MG
MN		0.523			0.292					0.166	MN
CO								0.700			CO
NI								1.933			NI
CA										13.021	CA
K	0.040	1.343	1.490	1.631	1.348	0.029					K
S								3.946			S
AS								3.117			AS
SR										0.048	SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.065	15.037	14.740	14.864	15.016	17.039	16.979	11.433	17.089	24.001	CATSUM

1. C01-1 CHL
2. C01-2 PARAGONITIC SER
3. C01-3 SER, NO NA
4. C01-4 SER

5. C01-5 PARAGONITIC SER
6. C01-6 CHL
7. C01-6 CHL
8. C01-7 FE-NI-AS-S MIN

9. C02-1 CHL NEAR PO
10. C03-1 CA-RICH?? DOL

WEIGHT PERCENT	11	12	13	14	
SI02				22.81	SI02
ZR02				55.27	ZR02
FE0	4.64	6.50	3.27		FE0
MGO	15.21	15.53	5.70		MGO
MNO	0.51	0.73	0.62		MNO
CA0	33.05	30.38	46.39		CA0
SR0		1.29			SR0
SUM	54.42	54.43	55.98	88.08	SUM

ATOMIC PROPORTIONS

SI				6.587	SI
ZR				5.412	ZR
FE	1.458	2.087	1.069		FE
MG	9.077	8.822	3.318		MG
MN	0.164	0.232	0.295		MN
CA	13.303	12.499	19.482		CA
SR		0.233			SR
O	24.000	24.000	24.000	24.000	O
CATSUM	24.002	24.001	24.001	11.999	CATSUM

11. C03-2 DOL

12. C03-4 SR-DOLomite

13. C03-5 MIX OF DOL+CAL

14. C05-1 ZIRCON

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02								38.68	40.62	42.07	SI02
AL2O3								28.97	29.61	29.81	AL2O3
TI02								3.65	1.81	1.98	TI02
FE0	40.31	34.73	10.80	9.63	40.86	9.50	10.20	3.58	3.48	2.37	FE0
MGO	8.77	12.14	10.78	10.87	9.35	10.75	10.98		0.89	0.30	MGO
MNO	3.74	3.87	2.55	3.63	3.07	2.78	3.12				MNO
CA0	2.34	3.28	30.00	28.84	1.74	29.60	30.17				CA0
K2O								6.66	6.85	6.68	K2O
SR0	0.56	0.95			0.53						SR0
SUM	55.72	54.97	54.13	52.97	55.55	52.63	54.47	81.54	83.26	83.21	SUM

ATOMIC PROPORTIONS

SI								6.569	6.727	6.892	SI
AL								5.800	5.780	5.756	AL
TI								0.466	0.226	0.243	TI
FE	15.328	12.797	3.649	3.319	15.505	3.285	3.420	0.508	0.482	0.325	FE
MG	5.945	7.972	6.491	6.677	6.326	6.628	6.562		0.220	0.072	MG
MN	1.439	1.442	0.872	1.268	1.181	0.972	1.058				MN
CA	1.140	1.547	12.987	12.736	0.848	13.115	12.961				CA
K								1.444	1.448	1.396	K
SR	0.147	0.242			0.140						SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	24.000	24.000	24.000	24.000	24.000	24.001	14.787	14.883	14.684	CATSUM

1. C01-1 SIDERITE
2. C01-2 SMALL DOL
3. C01-3 DOL CORE
4. C01-4 MANTLE OF DOL

5. C01-5 RIM OF DOL
6. C02-1 DOL
7. C02-2 DOL
8. C03-2 SO-CALLED CHL

9. C03-3 IBID
10. C03-5

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	
SI02	41.94	45.23	41.90	40.59	41.34		22.55	42.12		SI02
AL203	33.71	34.68	33.86	32.39	31.89		18.39	34.88		AL203
TI02	0.57		0.80	2.00	1.26					TI02
FE0	0.75	0.86	1.21	1.47	1.45	0.21	25.72	0.40	12.04	FE0
MGO							5.43		9.90	MGO
MNO							1.53		2.93	MNO
CA0									28.88	CA0
K2O	3.55	1.42	3.12	6.96	4.64			0.42		K2O
SO3						0.38				SO3
SUM	80.52	82.19	80.89	83.41	80.58	0.59	73.62	78.82	53.75	SUM

ATOMIC PROPORTIONS

SI	6.837	7.075	6.900	6.621	6.835		4.986	6.968		SI
AL	6.477	6.396	6.479	6.228	6.216		4.795	6.644		AL
TI	0.069		0.097	0.245	0.157					TI
FE	0.102	0.112	0.165	0.200	0.201*****		4.757	0.054	4.149	FE
MG							1.792		6.082	MG
MN							0.287		1.023	MN
CA									12.747	CA
K	0.738	0.284	0.645	1.449	0.979			0.087		K
S					*****					S
O	24.000	24.000	24.000	24.000	24.000	3444364.250	24.000	24.000	24.000	O
CATSUM	14.223	13.868	14.185	14.743	14.388*****		16.617	13.753	24.001	CATSUM

11. C04-1
 12. C04-2
 13. C04-3

14. C04-4
 15. C04-6
 16. C05-1 PY

17. C05-2 CHL
 18. C05-3 ??
 19. C05-4 DOL

KRF -LOGON:
 ARL -LOGON:
 ETEC -LOGON:
 TABLET-LOGON:

WEIGHT PERCENT	1	2	4	5	6	7	8	9	10		
SI02				46.40	27.72	24.38	22.61	25.77	25.39	SI02	
AL203				35.36	22.29	20.21	20.38	17.74	20.03	AL203	
TiO2				0.47						TiO2	
FeO	43.92	43.76	44.03	43.64	1.47	29.94	32.71	32.93	33.03	FeO	
MgO	7.75	9.49	9.57	10.46		7.67	8.56	8.53	8.58	MgO	
MnO	5.28	3.24	1.16	2.35		0.37	0.36	0.45	0.37	MnO	
CaO	1.19	1.50	2.51	1.74						CaO	
K2O					8.62	0.95	0.13		0.30	K2O	
SR0	0.33		0.35	0.21						SR0	
SUM	58.47	57.99	57.67	58.40	92.32	88.94	86.35	85.90	85.95	86.70	SUM

ATOMIC PROPORTIONS

SI				2.851	3.773	3.511	3.430	3.741	3.624	SI	
AL				2.561	3.575	3.430	3.490	3.037	3.369	AL	
TI				0.022						TI	
FE	6.774	6.642	6.781	6.510	0.076	3.408	3.939	4.001	4.021	3.943	FE
Mg	2.120	2.568	2.594	2.780		1.557	1.838	1.848	1.857	1.755	Mg
MN	0.825	0.498	0.179	0.355		0.043	0.044	0.055	0.046		MN
CA	0.234	0.291	0.490	0.333							CA
K					0.676	0.165	0.024		0.055		K
SR	0.036		0.027	0.021							SR
O	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	O
CATSUM	9.999	9.999	10.001	9.999	6.186	12.521	12.796	12.824	12.767	12.691	CATSUM

- 1. 001-1 SIDERITE
- 2. 001-2 SIDERITE
- 3. 001-3 SIDERITE
- 4. 001-4 SIDERITE

- 5. 001-5 SER
- 6. 002-1 CHL
- 7. 002-2 CHL IN PO
- 8. 002-4 CHL MASS

- 9. 003-1 CHL MASS
- 10. 003-2 CHL MASS

WEIGHT PERCENT	11	12	
SiO2	28.05	29.92	SiO2
AL2O3	18.26	21.65	AL2O3
FE	29.38	25.57	FE
MGO	10.24	6.65	MGO
K2O	0.28	0.42	K2O
SUM	86.22	85.22	SUM

ATOMIC PROPORTIONS

SI	3.932	4.126	SI
AL	3.017	3.520	AL
FE	3.444	3.064	FE
MG	2.140	1.365	MG
K	0.049	0.075	K
O	18.000	18.000	O
CATSUM	12.592	12.151	CATSUM

11. 004-1 CHL NNEAR F0

12. 004-3 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	7.27	3.33	24.44	55.18	45.99	64.49	24.85	22.70	66.42	21.80	SI02
AL2O3	6.48	2.98	19.38	18.22	36.20	18.88	18.62	18.72	18.45	21.25	AL2O3
TI02				0.58	0.27	0.91					TI02
FE0	38.68	37.47	34.67		0.97		36.90	36.98		35.73	FE0
MGO	6.61	6.12	7.12				7.48	6.94		7.20	MGO
MNO	0.36	0.36	0.38				0.45	0.34		0.45	MNO
CAO	0.50	0.79									CAO
K2O	1.16	0.43	0.20	14.54	8.41	13.79	0.14		15.25		K2O
SUM	61.06	51.38	85.19	99.52	91.84	98.87	87.64	96.68	100.12	96.43	SUM

ATOMIC PROPORTIONS

SI	1.875	1.117	3.622	6.817	5.092	6.728	3.505	3.495	3.033	3.212	SI
AL	1.971	1.140	3.211	2.212	4.725	2.322	3.198	3.254	0.993	3.691	AL
TI				0.045	0.022	0.071					TI
FE	9.345	10.514	4.298		0.090		4.498	4.561		4.402	FE
MG	2.540	3.063	1.574				1.625	1.525		1.582	MG
MN	0.078	0.101	0.048				0.056	0.042		0.056	MN
CA	0.138	0.286									CA
K	0.383	0.134	0.037	1.911	1.188	1.835	0.027		0.869		K
O	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	O
CATSUM	15.330	16.485	12.790	10.965	11.117	10.956	12.909	12.877	4.915	12.943	CATSUM

WEIGHT PERCENT 11

SI02	45.94	SI02
AL2O3	32.95	AL2O3
TI02	0.37	TI02
FE0	1.53	FE0
K2O	9.16	K2O
SUM	90.96	SUM

ATOMIC PROPORTIONS

SI	5.181	SI
AL	4.515	AL
TI	0.021	TI
FE	0.144	FE
K	1.319	K
O	18.000	O
CATSUM	11.190	CATSUM

1. C01-1 SIDERITE+SER
2. C01-2 IBID
3. C02-1 CHL
4. C02-2 K-FELDSPAR

5. C02-3 SER
6. C02-4 K-FELDSPAR
7. C03-1 CHL AGGREG
8. C03-2 CHL AGREG

9. C03-3 K-FELDSPAR
10. C05-1 CHL
11. C05-2 SER

WEIGHT PERCENT	1	2	3	4	5	6	7		9	10		
SI02				46.27					66.91	23.91	24.59	SI02
AL2O3				24.34					19.08	20.76	21.47	AL2O3
TIO2				0.28					0.70			TIO2
FE0	39.59	43.59	49.01	1.09	13.77	15.41	11.62		0.25	31.75	30.35	FE0
MGO	11.99	9.92	7.62		9.32	8.47	10.42			9.65	9.32	MGO
MNO	3.72	2.07	2.49		1.47	3.74	0.92			0.60	0.58	MNO
CA0	2.59	2.15	1.67		30.24	30.87	30.41					CA0
K2O				9.36						12.11		K2O
SRO	0.24				0.50				0.44			SRO
SUM	53.12	57.69	60.79	91.34	55.50	58.49	53.82		99.05	86.67	86.31	SUM

ATOMIC PROPORTIONS

SI				2.882					3.032	2.657	2.712	SI
AL				2.521					1.019	2.720	2.792	AL
TI				0.013					0.024			TI
FE	5.804	6.596	7.288	0.057	1.930	2.087	1.650		0.010	2.951	2.901	FE
MG	2.133	2.676	2.919		2.380	2.044	2.638			1.598	1.532	MG
MN	0.553	0.311	0.375		0.208	0.513	0.134			0.057	0.054	MN
CA	0.486	0.418	0.318		5.433	5.356	5.535					CA
K				0.744						0.700		K
SR	0.024				0.049				0.043			SR
O	10.000	10.000	10.000	10.000	10.000	10.000	10.000		8.000	14.000	14.000	O
CATSUM	10.000	10.001	10.000	6.217	10.000	10.000	10.000		4.785	9.983	9.891	CATSUM

1. C01-1 SIDERITE LAYER
2. C01-2 ISIS DIFF. LAYER
3. C01-3 SIDERITE LAYER
4. C01-4 SER

5. C02-1 DOLOMITE
6. C02-2 DOL
7. C02-3 DOL
8. C02-4 K-FELDSPAR

9. C03-1 CHL SAND
10. C03-2 CHL

WEIGHT PERCENT	11	12	13	14	
SI02	46.24	23.81	23.79		SI02
AL2O3	35.44	21.76	21.54		AL2O3
TiO2	0.32				TiO2
FeO	0.99	28.04	29.29	11.07	FeO
MgO		12.92	10.20	8.98	MgO
MnO		0.64	0.64	0.50	MnO
CaO				31.37	CaO
K2O	9.13				K2O
SR0				0.38	SR0
SUM	92.13	87.17	85.46	52.30	SUM

ATOMIC PROPORTIONS

SI	3.988	2.577	2.643		SI
AL	3.603	2.776	2.823		AL
Ti	0.022				Ti
FE	0.071	2.539	2.724	1.627	FE
Mg		2.004	1.690	2.353	Mg
MN		0.059	0.061	0.075	MN
CA				5.907	CA
K	1.011				K
SR				0.039	SR
O	14.000	14.000	14.000	10.000	O
CATSUM	8.695	10.035	9.943	10.001	CATSUM

- 11. 004-1 SER
- 12. 003-2 CHL

- 13. 004-3 CHL
- 14. 005-1 DOL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02		47.84	54.62	54.16	50.12	45.81	44.92	45.55			SI02
AL2O3		23.95	21.50	21.60	23.43	37.88	37.44	38.66			AL2O3
FE0	58.86						1.31	0.67	42.81	40.02	FE0
MGO	0.66								10.83	8.37	MGO
MNO	0.53								3.02	6.38	MNO
CA0	0.25								0.70	1.34	CA0
NA2O				1.12							NA2O
BA0		22.35	15.24	14.58	20.19						BA0
K2O		5.68	8.74	8.83	6.95	0.13	0.58				K2O
SRO									0.22	0.52	SRO
SUM	60.31	99.82	100.10	100.29	100.69	83.82	84.25	84.88	57.58	56.63	SUM

ATOMIC PROPORTIONS

SI		2.544	2.752	2.726	2.603	2.309	2.282	2.277			SI
AL		1.501	1.277	1.282	1.435	2.251	2.241	2.278			AL
FE	9.663						0.056	0.028	6.462	6.203	FE
MG	0.193								2.915	2.351	MG
MN	0.089								0.463	1.018	MN
CA	0.055								0.135	0.270	CA
NA				0.109							NA
BA		0.466	0.301	0.287	0.411						BA
K		0.385	0.562	0.567	0.461	0.009	0.037				K
SR									0.022	0.057	SR
O	10.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	10.000	10.000	O
CATSUM	10.000	4.897	4.692	4.971	4.910	4.569	4.616	4.583	9.999	9.999	CATSUM

1. C01-1 SIDERITE PURE

2. C01-2 HYALOPHANE

3. C01-3 IBID

4. C01-4 NA-BEARING HYALOPHANE

5. C01-5 HYALOPHANE

6. C02-1 PYROPHYLLITE

7. C02-2 IBID

8. C02-3 IBID

9. C03-5 SIDERITE

10. C02-6 SID. NEAR PO-PY

WEIGHT PERCENT	11	12	13	14	15	
SI02		52.50	44.71	43.75		SI02
AL2O3		22.94	38.22	36.34		AL2O3
FE0	50.82		0.57	0.78	40.64	FE0
MGO	6.28				11.60	MGO
MNO	2.15				2.43	MNO
CAO	0.78				0.44	CAO
BAO		17.70				BAO
K2O		0.13		0.28		K2O
SRO					0.30	SRO
SUM	60.03	101.27	83.51	81.15	55.41	SUM

ATOMIC PROPORTIONS

SI		3.329	2.839	2.867		SI
AL		1.715	2.861	2.807		AL
FE	7.795		0.028	0.043	6.295	FE
MG	1.718				3.203	MG
MN	0.334				0.381	MN
CA	0.153				0.088	CA
BA		0.440				BA
K		0.658		0.023		K
SR					0.033	SR
O	10.000	10.000	10.000	10.000	10.000	O
CATSUM	10.000	6.142	5.720	5.740	10.000	CATSUM

11. 002-7 SIDERITE
12. 003-1 HYALOPHANE

13. 006-1 PYROPHYLLITE
14. 006-2 IBID

15. 007-1 SIDER. AFTER PLG

WEIGHT PERCENT	1	2	4	5	6	7	8	9	10		
SI02	70.01	69.43						32.09	39.73	SI02	
AL2O3	19.76	19.28						28.05	27.10	AL2O3	
TI02			65.12	61.98	59.31	97.67				TI02	
FE0			25.81	32.34	35.03	0.59	10.85	10.30		FE0	
MGO							14.84	14.29		MGO	
MNO			0.42	0.67	0.66		0.45	0.61		MNO	
CAO							28.66	28.38		CAO	
NA2O	13.29	12.85								NA2O	
BAO								40.59	23.75	BAO	
K2O								0.20	4.02	K2O	
SUM	103.06	101.56	91.35	94.99	95.00	98.26	54.80	54.18	101.93	94.60	SUM

ATOMIC PROPORTIONS

SI	2.982	2.996							2.008	2.282	SI
AL	0.932	0.921							2.007	1.835	AL
TI			1.226	1.157	1.124	1.495					TI
FE			0.540	0.671	0.738	0.010	1.457	1.396			FE
MG							3.552	3.595			MG
MN			0.009	0.014	0.014		0.061	0.084			MN
CA							4.930	4.926			CA
NA	1.099	1.075									NA
BA									0.965	0.535	BA
K									0.015	0.295	K
O	8.000	8.000	3.000	3.000	3.000	3.000	10.000	10.000	8.000	8.000	O
CATSUM	5.072	5.052	1.775	1.842	1.876	1.505	10.000	10.001	4.995	4.947	CATSUM

1. C01-1 ALBITE

2. C01-2 IBID

3. C01-3 FE-TI OXIDE

4. C01-4 IBID

5. IBID

6. C01-6 PUTILE

7. C01-7 DOLOMITE CENTER

8. C01-8 ITS RIM

9. C02-1 CELSIAN

10. C02-2 IBID

WEIGHT PERCENT	11	12	13	14	
SI02	52.45	52.49	33.23		SI02
AL2O3	23.81	24.27	28.26		AL2O3
FE0	0.67	0.46		91.50	FE0
BA0	16.26	15.56	40.20		BA0
K2O	7.78	7.73	0.22		K2O
SUM	100.97	100.50	101.91	91.50	SUM

ATOMIC PROPORTIONS

SI	2.641	2.636	2.009		SI
AL	1.413	1.437	2.014		AL
FE	0.028	0.020		7.999	FE
BA	0.321	0.306	0.953		BA
K	0.500	0.496	0.017		K
O	8.000	8.000	8.000	8.000	O
CATSUM	4.903	4.835	4.992	7.999	CATSUM

11. C02-4 HYALOPHANE

12. C02-8 IBID

13. C02-9 CELSIAN FIBRE

14. C04-1 MAGNETITE, IGNEOUS?

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	27.46	27.73	27.74	27.82	59.80	59.61	60.30	61.75			SI02
AL2O3	20.05	20.62	19.11	20.36							AL2O3
FE0	9.81	9.35	12.47	9.11	8.27	7.58	7.82	7.07	3.74	3.76	FE0
MGO	27.60	27.22	24.92	27.75	26.14	26.88	26.89	27.18	19.88	20.70	MGO
CA0									29.31	29.04	CA0
SUM	84.93	84.93	84.24	85.04	94.21	94.07	95.01	96.00	52.93	53.50	SUM

ATOMIC PROPORTIONS

SI	2.751	2.766	2.838	2.770	5.059	5.039	5.048	5.067			SI
AL	2.369	2.427	2.305	2.390							AL
FE	0.822	0.780	1.057	0.758	0.585	0.536	0.547	0.487	0.487	0.483	FE
MG	4.123	4.048	3.801	4.118	3.297	3.387	3.356	3.328	4.619	4.739	MG
CA									4.894	4.778	CA
O	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	10.000	10.000	O
CATSUM	10.065	10.021	10.011	10.036	8.941	8.962	8.951	8.912	10.000	10.000	CATSUM

WEIGHT PERCENT 11 12 13 14 15

SI02		59.27				SI02
FE0	3.77	8.65	16.61	16.53	7.68	FE0
MGO	20.60	25.56	34.76	35.85	16.84	MGO
MNO			0.25	0.32	0.68	MNO
CA0	28.99			0.24	29.71	CA0
SUM	53.36	93.48	51.62	52.94	54.91	SUM

ATOMIC PROPORTIONS

SI		3.617				SI
FE	0.485	0.442	2.107	2.039	1.004	FE
MG	4.731	2.325	7.861	7.883	3.927	MG
MN			0.033	0.040	0.090	MN
CA	4.784			0.038	4.980	CA
O	10.000	10.000	10.000	10.000	10.000	O
CATSUM	10.000	5.384	10.001	10.000	10.001	CATSUM

1. C01-1 MG-CHL
2. C01-2 IBID
3. C01-3 IBID
4. C01-4 IBID
5. C01-5 TALC

6. C01-6 TALC
7. C02-1 RADIAL TALC
8. C02-2 TALC
9. C02-4 DOLOMITE
10. C02-5 DOL

11. C02-6 DOL
12. C04-1 TALC
13. C04-2 MGFE CARBONATE
14. C04-3
15. C04-4 DOL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	
SI02		42.81	45.55					42.87	44.60	SI02
AL2O3		38.24	39.29					31.64	33.73	AL2O3
TI02								3.09	2.57	TI02
FE0	41.45	0.21	0.48	44.94	49.00	13.37	11.75	2.45	2.04	FE0
MGO	12.26			10.35		10.84	12.65	0.58	0.61	MGO
MNO	0.36			1.34	12.44	0.37	0.31			MNO
CAO	1.12			0.57		28.62	27.75			CAO
K2O								7.60	7.35	K2O
SRO	0.49			0.34	0.22		0.49			SRO
SUM	56.68	82.36	85.32	57.54	61.66	53.20	52.95	88.23	90.90	SUM

ATOMIC PROPORTIONS

SI		2.817	2.830					2.782	2.787	SI
AL		2.899	2.877					2.420	2.485	AL
TI								0.151	0.121	TI
FE	6.166	0.017	0.025	6.839	7.934	1.917	1.667	0.133	0.106	FE
MG	3.516			2.898		2.772	3.197	0.056	0.057	MG
MN	0.055			0.295	2.040	0.053	0.044			MN
CA	0.213			0.111		5.258	5.044			CA
K								0.529	0.586	K
SR	0.059			0.036	0.025		0.048			SR
O	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	O
CATSUM	10.000	5.733	5.732	10.000	9.999	10.000	10.000	6.171	6.142	CATSUM

1. C01-1 SID
2. C01-2 KAOL
3. C01-3 ISID

4. C02-1 SID
5. C03-1 MN-SIDERITE NEAR PD
6. C03-2 DOL

7. C04-1 DOL
8. C04-2 TI-SERICITEZ
9. C04-4 SER

WEIGHT PERCENT	1	2	4	5	6	7	8	9	10		
SI02	46.41	22.76	23.51	38.77	37.98	23.62	23.26	55.67	63.43	62.77	SI02
AL2O3	35.38	21.99	22.61	17.69	18.27	22.51	22.66	20.06	22.74	22.94	AL2O3
TI02	0.84			2.22	2.41			3.03		0.53	TI02
FE0	1.96	30.98	30.84	20.78	20.56	31.53	31.91	0.89			FE0
MGO		9.49	9.31	9.01	8.59	9.68	9.68				MGO
MNO		0.41	0.48	0.32	0.33	0.51	0.56				MNO
CAO								0.20	3.75	2.81	CAO
NA2O	0.89								10.84	10.05	NA2O
K2O	8.12			7.93	7.92		0.14	7.19	0.38	1.08	K2O
SUM	93.60	85.63	86.75	96.73	96.06	87.85	89.31	87.04	101.14	100.18	SUM

ATOMIC PROPORTIONS

SI	2.824	2.553	2.590	3.660	3.611	2.578	2.545	4.967	4.883	4.872	SI
AL	2.528	2.908	2.936	1.968	2.048	2.896	2.911	2.109	2.064	2.099	AL
TI	0.038			0.158	0.173			0.203		0.031	TI
FE	0.190	2.907	2.842	1.641	1.635	2.878	2.909	0.067			FE
MG		1.587	1.529	1.268	1.218	1.575	1.573				MG
MN		0.029	0.045	0.026	0.026	0.047	0.051				MN
CA								0.019	0.310	0.234	CA
NA	0.105								1.618	1.513	NA
K	0.631			0.955	0.961		0.019	0.918	0.027	0.107	K
O	10.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	O
CATSUM	6.226	9.994	9.942	9.676	9.672	9.974	10.008	8.183	8.912	8.856	CATSUM

1. C01-1 SER

2. C01-2 CHL

3. C01-3 CHL

4. C02-1 BIOTITE

5. C02-2 BIOTITE

6. C02-3 CHLORITE

7. C02-4 CHL

8. C04-1 SER

9. C04-2 PLG

10. C04-3 IBID

WEIGHT PERCENT	1	2	3	4	5	6	7	9	10		
SI02	22.84	22.92	22.50	22.36	32.23	35.21	35.70	34.66	48.26	47.21	SI02
AL203	20.05	19.67	20.05	20.53	19.03	17.54	18.70	20.04	35.63	35.14	AL203
TI02					1.31	1.27	0.82	2.04	0.39	0.37	TI02
FE0	31.69	32.85	32.50	34.29	28.10	25.07	26.72	27.40	1.56	2.47	FE0
MGO	8.61	6.70	7.09	6.09	5.62	5.27	5.97	5.80			MGO
MNO	1.82	2.15	2.04	1.79							MNO
K20			0.21	0.15	5.41	8.25	7.13	7.56	9.25	9.40	K20
SUM	85.01	84.30	85.39	85.21	91.70	93.61	95.04	97.50	95.09	94.59	SUM

ATOMIC PROPORTIONS

SI	2.620	2.677	2.606	2.600	3.332	3.636	3.532	3.365	4.038	4.001	SI
AL	2.713	2.707	2.737	2.814	2.319	2.076	2.181	2.293	3.514	3.511	AL
TI					0.102	0.096	0.061	0.149	0.025	0.024	TI
FE	3.041	3.207	3.244	3.334	2.430	2.105	2.211	2.225	0.109	0.175	FE
MG	1.472	1.166	1.224	1.057	0.866	0.790	0.880	0.839			MG
MN	0.177	0.212	0.200	0.177							MN
K			0.031	0.022	0.714	1.056	0.901	0.937	0.988	1.017	K
O	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	O
CATSUM	10.023	9.969	10.042	10.004	9.763	9.759	9.766	9.808	8.674	8.728	CATSUM

WEIGHT PERCENT 11 12 13 14 15 16 17 18

SI02	36.60	34.96	40.79	23.78			46.21	46.21	SI02
AL203	18.15	18.74	31.24	21.90			37.00	37.00	AL203
TI02	1.56	1.44	0.27		51.25	51.78	0.32	0.32	TI02
FE0	25.65	26.30	10.40	32.73	32.39	32.76	1.45	1.45	FE0
MGO	6.00	6.08	1.68	6.00					MGO
MNO					13.81	13.49			MNO
K20	8.22	7.28	6.79	0.46			9.05	9.05	K20
SUM	96.18	94.80	91.17	84.97	97.45	98.03	94.03	94.03	SUM

ATOMIC PROPORTIONS

SI	3.576	3.473	3.738	2.706			3.913	3.913	SI
AL	2.090	2.195	3.375	2.927			3.694	3.694	AL
TI	0.115	0.107	0.019		4.657	4.672	0.020	0.020	TI
FE	2.096	2.185	0.797	3.115	3.273	3.286	0.102	0.102	FE
MG	0.875	0.900	0.229	1.034					MG
MN					1.413	1.371			MN
K	1.025	0.922	0.794	0.067			0.978	0.978	K
O	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	O
CATSUM	9.777	9.782	8.952	9.859	9.343	9.329	8.707	8.707	CATSUM

1. C01-1 CHL 30U FROM PO
2. C01-2 CHL NEAR PO
3. C01-3 CHL IN QTZ
4. C02-1 CHL NEAR BIOT
5. C02-2 BIOT
6. C02-3 BIOT

7. C02-4 BIOT
8. C02-5 B
9. C02-6 MUSCOV NEAR BIOT
10. C02-7 SER NEAR BIOT
11. C03-1 BIOT NEAR PO
12. C03-2 BIOT

13. C02-3 SEE NOTE
14. C02-4 CHL
15. C02-5 MN-ILM
16. C03-6
17. C04-1 SER
18. C04-1 SER

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02		39.72		23.28	23.11	23.91	23.21	22.50	22.59		SI02
AL203		13.07		21.82	22.97	20.69	22.45	21.95	22.09		AL203
TI02		0.33								51.24	TI02
FE0	4.94	18.32	10.59	32.14	31.68	31.52	35.11	33.81	34.48	40.01	FE0
MGO	1.26	16.62	3.06	10.19	9.83	10.16	8.06	7.75	7.59		MGO
MNO	3.51		2.87	0.42	0.67	0.46	0.55	0.57	0.67	6.85	MNO
CA0	44.70		34.98								CA0
K2O		7.34									K2O
SRO	0.35		1.00								SRO
SUM	54.76	95.40	53.30	87.85	88.26	86.74	89.38	86.58	87.41	98.10	SUM

ATOMIC PROPORTIONS

SI		2.687		2.555	2.517	2.650	2.540	2.537	2.531		SI
AL		1.043		2.822	2.949	2.783	2.895	2.919	2.917		AL
TI		0.017								0.994	TI
FE	0.723	1.036	1.629	2.950	2.886	2.922	3.213	3.189	3.231	0.863	FE
MG	0.329	1.676	0.840	1.667	1.596	1.679	1.314	1.304	1.267		MG
MN	0.521		0.447	0.039	0.062	0.043	0.051	0.054	0.064	0.150	MN
CA	8.391		6.893								CA
K		0.634									K
SR	0.036		0.192								SR
O	10.000	10.000	10.000	14.000	14.000	14.000	14.000	14.000	14.000	3.000	O
CATSUM	10.000	7.093	10.001	10.033	10.010	9.997	10.013	10.003	10.010	2.007	CATSUM

1. C01-1 CAL
2. C01-2 BIOT
3. C01-3 CAL
4. C02-1 CHL IN QTZ

5. C02-2 IBID
6. C02-3 IBID
7. C02-4 CHL IN SER
8. C02-5 IBID

9. C02-6 IBID
10. C02-7 ILM

WEIGHT PERCENT	11	12	13	14	15	16	17	
SI02		36.91	36.49	37.25	24.79	23.18	25.30	SI02
AL2O3		17.70	17.39	16.60	20.24	21.94	19.65	AL2O3
TI02	51.26	1.25	1.20	1.15	0.26		0.41	TI02
FE0	40.27	26.50	26.29	25.85	33.42	36.76	33.60	FE0
MGO		7.25	6.90	7.36	8.16	8.08	7.55	MGO
MNO	7.27							MNO
K2O		8.35	8.04	8.19	0.27		0.76	K2O
SUM	98.80	97.86	96.31	96.40	87.14	89.96	87.27	SUM

ATOMIC PROPORTIONS

SI		3.552	3.574	3.637	2.753	2.536	2.816	SI
AL		2.013	2.007	1.910	2.650	2.830	2.578	AL
TI	0.989	0.090	0.089	0.085	0.022		0.034	TI
FE	0.864	2.139	2.154	2.111	3.104	3.364	3.127	FE
MG		1.043	1.007	1.071	1.351	1.318	1.252	MG
MN	0.158							MN
K		1.027	1.004	1.020	0.039		0.107	K
O	3.000	14.000	14.000	14.000	14.000	14.000	14.000	O
CATSUM	2.011	9.864	9.835	9.834	9.919	10.048	9.914	CATSUM

11. C02-8 ILM
 12. C03-1 BIOT
 13. C03-2 SEE NOTE

14. C02-3
 15. C03-4 CHL
 16. C03-5

17. C03-6 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	25.79	25.79	24.14	36.87	39.38	39.38					SI02
AL2O3	13.72	13.72	20.89	14.85	15.69	15.69					AL2O3
TI02				0.94	1.34	1.34			52.61	51.42	TI02
FE0	25.91	25.91	25.90	16.61	16.55	16.55	7.20	2.74	37.17	36.74	FE0
MGO	15.16	15.16	13.93	17.48	14.48	14.48	3.02	0.60			MGO
MNO							3.02	3.77	10.76	10.64	MNO
CA0							40.07	49.77			CA0
K2O				7.79	8.12	8.12					K2O
SUM	85.49	85.49	84.86	90.46	94.56	94.56	53.32	56.93	100.54	99.90	SUM

ATOMIC PROPORTIONS

SI	2.794	2.794	2.649	3.679	3.652	3.652					SI
AL	2.399	2.399	2.781	1.747	1.760	1.760					AL
TI				0.071	0.096	0.096			0.995	0.991	TI
FE	2.356	2.356	2.376	1.386	1.317	1.317	1.075	0.384	0.781	0.797	FE
MG	2.457	2.457	2.277	2.005	2.054	2.054	0.602	0.149			MG
MN							0.458	0.535	0.229	0.231	MN
CA							7.664	8.932			CA
K				0.990	0.985	0.985					K
O	14.000	14.000	14.000	14.000	14.000	14.000	10.000	10.000	3.000	3.000	O
CATSUM	10.006	10.006	10.002	9.867	9.864	9.864	9.999	10.000	2.005	2.009	CATSUM

WEIGHT PERCENT 11

TI02	51.57	TI02
FE0	37.63	FE0
MNO	10.94	MNO
SUM	100.14	SUM

ATOMIC PROPORTIONS

TI	0.993	TI
FE	0.798	FE
MN	0.235	MN
O	3.000	O
CATSUM	2.016	CATSUM

1. C01-1 CHL
2. C01-1 CHL
3. C01-2 CHL
4. C01-3 BIOT

5. C01-4 BIOT
- 6.
7. C01-6 CAL
8. C01-7 CAL

9. C02-1 ILM
10. C02-2 ILM
11. C02-3 ILM

WEIGHT PERCENT	1	2	3	4	5	6	7	
SI02	48.66	48.39	29.62			23.70	22.79	SI02
AL2O3	39.63	38.31	20.03			22.83	23.11	AL2O3
TI02						0.26		TI02
FE0	0.23	0.29	33.75	39.32	36.64	31.04	31.76	FE0
MGO			9.13	12.03	11.28	9.88	9.90	MGO
MNO				0.58	1.75	0.40	0.47	MNO
CA0				1.53	2.21			CA0
K2O	0.13	0.66					0.17	K2O
SRO				1.20	0.66			SRO
SUM	88.70	87.64	83.58	54.66	52.54	88.91	88.20	SUM

ATOMIC PROPORTIONS

SI	0.870	0.879	0.522			2.555	2.488	SI
AL	0.836	0.820	0.597			2.901	2.973	AL
TI						0.021		TI
FE	0.004	0.004	0.714	6.129	5.928	2.871	2.899	FE
MG			0.346	3.344	3.253	1.588	1.611	MG
MN				0.091	0.287	0.037	0.044	MN
CA				0.306	0.458			CA
K	0.004	0.015					0.023	K
SR				0.129	0.074			SR
O	3.000	3.000	3.000	10.000	10.000	14.000	14.000	O
CATSUM	1.714	1.719	2.179	9.999	10.000	9.973	10.038	CATSUM

1

2. C03-1 KAOL

3. C03-3 CHL?

4. C03-4 SID CLOT

5. C03-5 IBID

6. C04-1 CHL IN SER

7. C04-2 IBID

X-RAY ASSAY LABORATORIES LIMITED

1385 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4

PHONE 416-445-5755

TELEX 06-986947

CERTIFICATE OF ANALYSIS

TO: UNIVERSITY OF TORONTO,
ATTN: T. URABE, DEPT. OF GEOLOGY, D288629,
RM 124, MINING BLDG.,
170 COLLEGE ST.,
TORONTO, ONT. M5S 1A1

CUSTOMER NO. 654

DATE SUBMITTED
4-DEC-80

REPORT 10468

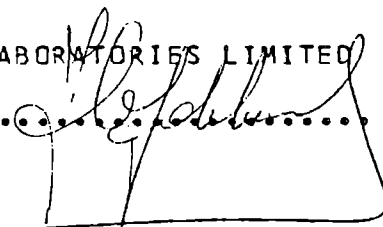
REF. FILE 5979-G2

65 SAMPLES PO# D288629

WERE ANALYSED AS FOLLOWS:

	UNITS	METHOD	DETECTION LIMIT
CO2	%	WET	0.100
NA2O	%	XRF	0.010
MGO	%	XRF	0.010
AL2O3	%	XRF	0.010
SiO2	%	XRF	0.010
P2O5	%	XRF	0.010
S	%	XRF	0.010
K2O	%	XRF	0.010
CAO	%	XRF	0.010
TiO2	%	XRF	0.010
MNO	%	XRF	0.010
FeO	%	XRF	0.010
Rb	PPM	XRF	10.000
Sr	PPM	XRF	10.000
Zr	PPM	XRF	10.000
CR2O3	PPM	XRF	10.000

DATE 16-FEB-81

X-RAY ASSAY LABORATORIES LIMITED
CERTIFIED BY 

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	52.09	40.45									SI02
AL2O3	19.29	32.34									AL2O3
TIO2	5.92	3.96									TIO2
FE0	0.26	1.69	15.39	55.64	53.06	44.08	40.02	0.22	0.22	0.29	FE0
MGO		0.64	6.15	3.43	3.77	8.70	10.43				MGO
MNO			2.77	1.77	3.00	4.27	3.89				MNO
CAO			25.80	1.05	0.42	2.01	4.15				CAO
K2O	11.41	7.85									K2O
SO3								0.37	0.37	0.27	SO3
SUM	88.96	86.92	50.10	51.89	60.25	59.06	58.49	0.60	0.60	0.55	SUM

ATOMIC PROPORTIONS

SI	8.002	6.412									SI
AL	3.527	6.042									AL
TI	0.691	0.472									TI
FE	0.034	0.223	5.933	20.576	20.096	15.911	14.154	*****			FE
MG		0.151	4.232	2.261	2.547	5.597	6.574				MG
MN			1.081	0.563	1.150	1.563	1.393				MN
CA			12.754	0.499	0.205	0.929	1.860				CA
K	2.259	1.597									K
S								*****			S
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	0.000	0.000	0.000	O
CATSUM	14.593	14.837	24.000	23.999	23.998	24.000	24.001	*****			CATSUM

- 1. C01-1 SER, TI-BEARING
- 2. C01-2 TI-MUSCOV
- 3. C01-3 DOLOM, FE-RICH
- 4. C01-4 SIDERITE

- 5. C01-5 SIDERITE
- 6. C01-6 SIDERITE
- 7. C01-7 SIDER
- 8. C02-1 LARGE PY

- 9. C02-2 MARCASITE
- 10. C02-3 PO

WEIGHT PERCENT	11	12	13	14	15	16	17	18	
SI02	39.93	40.24	29.45	29.99		29.19	30.50		SI02
AL2O3	33.70	32.50	22.70	22.31		22.31	25.35		AL2O3
TI02	4.05	5.05	23.47	22.84		22.79	19.21		TI02
FE0	2.04	2.00						37.71	FE0
V2O5					0.95				V2O5
MGO	1.09	1.16						11.97	MGO
MNO			0.50	0.28		0.38	0.39	3.17	MNO
CU0					0.31				CU0
CAO	0.19							6.16	CAO
BAO							14.44		BAO
K2O	7.94	7.19		0.42		0.47	0.21		K2O
SUM	88.94	88.14	75.12	74.83	1.26	75.12	90.10	59.01	SUM

ATOMIC PROPORTIONS

SI	6.217	6.290	5.143	5.259		5.278	5.197		SI
AL	6.186	5.989	4.838	4.772		4.756	5.092		AL
TI	0.475	0.594	3.191	3.117		3.099	2.462		TI
FE	0.265	0.261						12.901	FE
V					2.050				V
MG	0.254	0.271						7.299	MG
MN			0.076	0.043		0.058	0.057	1.099	MN
CU					0.965				CU
CA	0.031							2.702	CA
BA							0.964		BA
K	1.578	1.435		0.097		0.109	0.045		K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.006	14.840	13.248	13.239	3.015	13.300	13.817	24.000	CATSUM

11. CO3-1 MUSCOV. TI-BEARING

12. CO3-3 MUSCOV

13. CO3-4 ?ALB MINERAL

14. IBID

15. SAME MIN

16. IBID, ANOTHER GRAIN

17. CO3-10 BA-FELDSP?

18. CO3-11 SID

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	32.58	33.63	32.99		33.83	41.45	40.75	40.32	42.50	40.92	SI02
AL2O3	29.07	28.84	29.88		28.52	35.89	35.54	32.27	33.65	36.11	AL2O3
FE0				38.25					2.47	2.04	FE0
MGO				9.69							MGO
MNO				4.62							MNO
CAO				4.26							CAO
BA0	39.37	39.05	39.45	0.51	38.60	9.36	8.80	8.49	8.53	9.62	BA0
K2O	0.18	0.35			0.45	6.57	6.63	6.77	6.56	6.17	K2O
SUM	101.20	101.87	102.32	56.33	101.40	93.27	91.72	88.85	92.71	94.86	SUM

ATOMIC PROPORTIONS

SI	5.918	6.033	5.896		6.062	6.450	6.433	6.578	6.619	6.332	SI
AL	6.226	6.099	6.296		6.042	6.583	6.614	6.398	6.178	6.586	AL
FE				14.316					0.322	0.263	FE
MG				5.800							MG
MN				1.752							MN
CA				2.042							CA
BA	2.803	2.745	2.763	0.090	2.720	0.571	0.544	0.543	0.520	0.583	BA
K	0.042	0.079			0.102	1.305	1.326	1.409	1.304	1.218	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	14.989	14.956	14.956	24.000	14.948	14.909	14.927	14.928	14.943	14.982	CATSUM

WEIGHT PERCENT 11

SI02	39.96	SI02
AL2O3	36.07	AL2O3
FE0	1.51	FE0
BA0	7.81	BA0
K2O	6.51	K2O
SUM	91.86	SUM

ATOMIC PROPORTIONS

SI	6.302	SI
AL	6.705	AL
FE	0.199	FE
BA	0.483	BA
K	1.310	K
O	24.000	O
CATSUM	14.999	CATSUM

1. C03-1 BA-FELDSPAR
2. C03-2 IBID
3. C03-3 IBID
4. C03-4 CARBONATE NEAR IT

5. C04-1 BA-FELDSP
6. C04-2 K-BA FELDSPAR
7. C04-3 K-BA MIN
8. C04-4 IBID

9. C04-5 IBID
10. C04-6 IBID
11. C04-7

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02				45.51	24.25	24.17	45.44	42.10	24.16	26.26	SI02
AL203				33.47	23.28	22.24	35.64	34.48	22.89	20.59	AL203
TI02				0.92			1.08	1.46			TI02
FE0	13.78	2.73	1.02	1.54	29.88	28.80	0.64	2.90	26.38	26.54	FE0
MGO		2.49	0.86	1.51	11.00	11.63	0.64	1.47	12.39	15.73	MGO
MNO		0.41	0.39			0.25					MNO
CA0		50.65	56.41								CA0
K2O				8.56			8.11	7.30		0.21	K2O
SO3	14.03										SO3
SUM	27.80	56.23	58.68	91.51	88.41	87.09	91.55	90.71	86.81	89.12	SUM

ATOMIC PROPORTIONS

SI				6.802	4.440	4.486	6.724	6.521	4.433	4.691	SI
AL				5.896	5.027	4.867	6.217	6.149	4.949	4.292	AL
TI				0.103			0.120	0.166			TI
FE	*****	0.964	0.325	0.193	4.577	4.471	0.090	0.266	4.047	3.966	FE
MG		1.463	0.466	0.336	3.002	3.218	0.140	0.331	3.662	4.189	MG
MN		0.138	0.127			0.039					MN
CA		21.450	23.061								CA
K				1.632			1.531	1.409		0.048	K
S	*****										S
O	0.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	*****	24.000	23.999	14.962	17.046	17.091	14.812	14.942	17.091	17.186	CATSUM

1. C01-1 SPH
2. C01-2 CALCITE
3. C01-3 CALC
4. C01-5 MUSCOV

5. C02-1 CHL AFT. PYX
6. IBID
7. C02-3 SER
8. C02-4 SER (MIXTURE?)

9. C03-1 CHL AT CREST
10. C03-2 IBID CHL

WEIGHT PERCENT 11 12

SI02	42.45	47.25	SI02
AL203	32.07	34.37	AL203
TI02	2.56	0.85	TI02
FE0	2.70	1.02	FE0
MGO	2.19	0.77	MGO
K2O	7.81	9.00	K2O
SUM	89.78	93.26	SUM

ATOMIC PROPORTIONS

SI	6.521	6.982	SI
AL	5.817	5.919	AL
TI	0.296	0.093	TI
FE	0.348	0.125	FE
MG	0.503	0.157	MG
K	1.534	1.677	K
O	24.000	24.000	O
CATSUM	15.029	14.982	CATSUM

11. 003-3 TI-BEARING SER

12. SER OFF CREST

WEIGHT PERCENT	1	2	3	4	5	6	7	9	10		
SI02				41.51	47.90	47.10	47.24		34.63	SI02	
AL2O3				32.96	35.64	35.38	35.24		19.04	AL2O3	
TI02				0.49	0.99	0.73	1.13	63.19	48.20	2.61	TI02
FE0	2.59	1.79	2.28	10.35	2.81	1.06	1.28	35.45	44.71	25.17	FE0
MGO	1.37	0.86	1.01	3.67	0.93					5.28	MGO
MNO	1.89	1.58	1.14					2.29	2.75		MNO
CA0	51.91	52.93	53.47								CA0
K2O				6.17	8.69	9.80	9.22			8.50	K2O
SUM	57.76	57.56	57.90	95.15	96.96	94.07	94.21	100.93	95.66	95.23	SUM

ATOMIC PROPORTIONS

SI				6.222	6.778	6.851	6.852			5.886	SI
AL				5.824	5.945	6.066	6.028			3.814	AL
TI				0.055	0.106	0.080	0.123	9.007	7.753	0.333	TI
FE	0.847	0.586	0.743	1.298	0.333	0.129	0.155	5.619	7.996	3.578	FE
MG	0.797	0.501	0.584	0.820	0.196					1.328	MG
MN	0.624	0.658	0.377					0.367	0.498		MN
CA	21.732	22.255	22.296								CA
K				1.180	1.570	1.919	1.703			1.843	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.000	24.000	24.000	15.339	14.928	14.945	14.861	14.993	15.247	16.792	CATSUM

WEIGHT PERCENT	11	12	13	14	15	16	
SI02	24.71	36.02	35.23	46.90		SI02	
AL2O3	22.58	19.52	18.85	34.94		AL2O3	
TI02		1.74	2.91	1.00	75.00	51.28	TI02
FE0	33.32	24.72	23.56	1.30	23.71	42.90	FE0
MGO	8.27	5.88	7.03				MGO
MNO	0.52	0.33			1.09	3.18	MNO
K2O		9.91	8.00	9.39			K2O
SUM	89.40	97.12	95.58	93.53	100.60	97.36	SUM

ATOMIC PROPORTIONS

SI	4.562	5.979	5.894	6.857		SI	
AL	4.914	3.819	3.718	6.020		AL	
TI		0.218	0.366	0.110	10.153	8.000	TI
FE	5.146	3.452	3.296	0.159	3.531	7.443	FE
MG	2.277	1.455	1.754				MG
MN	0.081	0.047			0.165	0.558	MN
K		1.887	1.707	1.751			K
O	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	16.980	16.837	16.735	14.897	13.849	16.001	CATSUM

1. C01-1 CALCITE
2. C01-2 CALCITE
3. C01-3 CALCITE
4. C01-4 SERICITE
5. C01-5 MUSCOV
6. C02-1 MUSCOV

7. C02-2 MUSCOV
8. C02-3 ILM+RUT?
9. C02-4 ILM
10. C02-5 BIOTITE
11. C02-6 ~~BIOTITE~~ CHL
12. C02-7 BIOT

13. C02-8 BIOT
14. C03-1 MUSCOV
15. C03-2 RUTILR
16. C03-4 ~~BIOTITE~~ ILM.

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02					23.83	22.66	44.24				SI02
AL203					21.86	22.74	33.26				AL203
TI02	58.09	75.05	91.96				1.07	92.99	52.57	50.14	TI02
FEO	41.30	21.68	8.23	3.33	28.77	30.52	2.96	6.92	42.14	41.91	FEO
MGO				2.00	11.43	9.77	1.20				MGO
MNO	1.87	0.97		0.62					2.12	2.14	MNO
CAO				50.57							CAO
K2O							7.76				K2O
SUM	101.26	97.70	100.19	56.52	85.89	85.69	90.49	99.70	102.83	94.19	SUM

ATOMIC PROPORTIONS

SI					4.489	4.329	6.715				SI
AL					4.853	5.122	5.952				AL
TI	8.491	10.276	11.432				0.122	11.530	7.934	8.060	TI
FE	6.712	3.301	1.137	1.107	4.533	4.876	0.376	0.942	7.977	7.493	FE
MG				1.130	3.209	2.784	0.271				MG
MN	0.308	0.150		0.207					0.356	0.387	MN
CA				21.506							CA
K							1.502				K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.511	13.727	12.569	24.000	17.084	17.111	14.939	12.472	16.167	15.940	CATSUM

WEIGHT PERCENT 11 12 13 14

SI02	24.59	48.05	24.56		SI02
AL203	23.42	35.50	23.13		AL203
TI02		1.05			TI02
FEO	32.54	1.37	31.53	3.78	FEO
MGO	10.36	0.67	9.97	2.46	MGO
MNO	0.17			0.64	MNO
CAO				49.24	CAO
K2O		9.21			K2O
SUM	91.08	95.85	99.19	56.12	SUM

ATOMIC PROPORTIONS

SI	4.424	6.044	4.490		SI
AL	4.967	5.962	4.995		AL
TI		0.113			TI
FE	4.896	0.163	4.822	1.262	FE
MG	2.779	0.142	2.719	1.463	MG
MN	0.025			0.217	MN
CA				21.059	CA
K		1.674			K
O	24.000	24.000	24.000	24.000	O
CATSUM	17.091	14.998	17.016	24.000	CATSUM

1. CQ1-1 ILM
2. CQ1-2 MIX RUTIL +ILM
3. CQ1-3 RUTILE
4. CQ1-4 CALCITE

6. CQ1-7 CHL
7. CQ1-8 MUSCOV
8. CQ1-9 RUTILE
9. CQ2-1 CORF TLM

11. CQ2-3 CHL
12. CQ2-6 MUSCOV
13. CQ2-5 CHL
14. CQ2-7 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02				25.03	25.49	24.30	44.35	44.87		6.09	SI02
AL2O3				18.53	20.35	19.14	33.19	32.98			AL2O3
TiO2							1.09	1.02			TiO2
FeO	46.37	43.41	45.75	30.32	28.20	29.04	1.19	1.34	13.54	7.29	FeO
MgO	6.61	8.76	7.54	10.84	9.79	10.01					MgO
MnO	2.99	3.16	3.21	0.67	0.26	0.74					MnO
COO									15.58	29.11	COO
NiO									18.11	7.74	NiO
CaO	1.55	1.93	1.39								CaO
K2O				0.15			8.41	8.37			K2O
SO3									40.00	40.69	SO3
SrO	0.34	0.24	0.30								SrO
ASO									55.57	47.25	ASO
SUM	57.06	57.50	58.19	85.54	84.09	83.23	88.23	88.58	143.00	138.17	SUM

ATOMIC PROPORTIONS

SI				4.806	4.881	4.770	6.850	6.901		0.726	SI
AL				4.193	4.592	4.427	6.042	5.979			AL
TI							0.127	0.118			TI
FE	17.553	16.059	17.040	4.868	4.515	4.765	0.153	0.172	1.346	0.727	FE
Mg	4.463	5.780	5.006	3.103	2.794	2.930					Mg
MN	1.144	1.195	1.212	0.109	0.041	0.122					MN
CO									1.581	2.784	CO
NI									1.731	0.742	NI
CA	0.750	0.914	0.664								CA
K				0.035			1.657	1.642			K
S									3.569	3.643	S
SR	0.089	0.062	0.078								SR
AS									3.454	2.947	AS
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	24.000	24.000	17.115	16.823	17.015	14.823	14.812	11.681	11.569	CATSUM

1. C01-1 SIDERITE
2. C01-2 SIDERITE
3. C01-3 SIDERITE
4. C01-4 CHL

5. C01-5 CHL
6. C01-6 CHL
7. C02-1 SER
8. C03-1 MUSCOVITE

9. C03-1 FE-CO-NI-AS-S MIN
10. C03-2 IBID NOT OXIDE

WEIGHT PERCENT	11	12	13	14	15	16	17	
TI02	98.47				97.79			TI02
FE0	0.44	44.86	47.37	46.67	0.80	0.29	0.29	FE0
MG0		7.42	7.92	7.65				MG0
MNO		4.70	4.35	3.94				MNO
CA0		1.77	0.40	1.85				CA0
S03						0.25	0.25	S03
SUM	98.91	58.75	60.04	60.11	98.59	0.54	0.52	SUM

ATOMIC PROPORTIONS

TI	11.972				11.947			TI
FE	0.059	16.531	17.119	16.802	0.109*****			FE
MG		4.875	5.103	4.910				MG
MN		1.756	1.593	1.435				MN
CA		0.837	0.184	0.952				CA
S						0.000	0.000	S
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	12.031	23.999	23.999	23.999	12.056*****			CATSUM

11. CQ3-3 RUTILE
 12. CQ3-4 SIDERITE
 13. CQ3-5 SIDERITE

14. CQ3-6 SIDERITE
 15. CQ4-1 RUTILE
 16. CQ1-7 PO

17. CQ1-8 PO

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02		54.37	52.76	54.49	53.00			42.21	21.91	22.31	SI02
AL2O3							4.61	34.12	21.74	21.82	AL2O3
TI02						54.54	82.54	0.62			TI02
FE0	0.29	17.47	16.96	18.74	21.29	37.22	6.20	1.41	29.87	29.51	FE0
MGO		18.20	17.96	16.99	15.60				9.53	9.77	MGO
MNO		0.25	0.24	0.37	0.22	6.89	0.51				MNO
K2O								7.44			K2O
SO3	0.25										SO3
SUM	0.53	90.29	87.92	90.59	90.10	98.65	93.86	86.80	83.05	83.41	SUM

ATOMIC PROPORTIONS

SI		8.659	8.632	8.700	8.639			6.752	4.329	4.373	SI
AL							0.945	5.293	5.065	5.041	AL
TI						8.273	10.803	0.073			TI
FE	*****	2.327	2.321	2.503	2.900	6.278	0.902	0.134	4.937	4.836	FE
MG		4.321	4.331	4.045	3.790				2.807	2.855	MG
MN		0.033	0.034	0.051	0.030	1.177	0.076				MN
K								1.483			K
S	0.000										S
O	3444364.250	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	*****	15.340	15.368	15.299	15.359	15.728	12.726	14.775	17.138	17.105	CATSUM

WEIGHT PERCENT 11

SI02	22.08	SI02
AL2O3	22.02	AL2O3
FE0	29.28	FE0
MGO	10.47	MGO
SUM	83.85	SUM

ATOMIC PROPORTIONS

SI	4.302	SI
AL	5.056	AL
FE	4.771	FE
MG	3.042	MG
O	24.000	O
CATSUM	17.171	CATSUM

1. CQ1-1 PO
2. CQ1-2 ?MIN
3. CQ1-3 IBID
4. CQ1-4 IBID

5. CQ1-5 IBID
6. CQ2-1 ILMENITE MN-RICH
7. CQ2-2 MIX. OF RUT+ILM.
8. CQ2-3 SER

9. CQ2-4 CHL
10. CQ2-5 CHL
11. CQ2-6 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02							34.54	37.65	30.50	36.93	SI02
AL2O3							11.44	10.34	14.43	11.43	AL2O3
TiO2							0.21	0.25		0.42	TiO2
FeO	23.01	10.00	7.51	24.26	20.35	8.21	22.57	19.23	23.00	21.24	FeO
MgO	5.14	3.95	2.44	6.49	2.24	2.35	12.33	12.96	11.26	12.87	MgO
MnO	31.94	17.57	17.18	27.11	36.70	19.41	0.54	0.89	0.82	0.51	MnO
CaO	2.63	23.06	31.35	3.38	3.54	28.31					CaO
K2O							5.86	6.73	2.93	7.19	K2O
SR0	0.18	1.23	0.33			0.22					SR0
SUM	62.90	57.41	58.81	61.24	62.83	58.50	87.49	88.09	88.02	90.58	SUM

ATOMIC PROPORTIONS

SI							6.324	6.721	5.659	6.465	SI
AL							2.488	2.175	3.155	2.366	AL
TI							0.029	0.034		-0.056	TI
FE	8.121	3.865	2.568	8.611	7.394	2.877	3.457	2.879	4.358	3.120	FE
Mg	3.231	2.522	1.496	4.104	1.454	1.470	3.366	3.449	3.115	3.369	Mg
MN	11.416	6.370	5.997	9.747	13.505	6.890	0.084	0.133	0.129	0.076	MN
CA	1.189	10.938	13.841	1.539	1.648	12.710					CA
K							1.370	1.532	0.695	1.608	K
SR	0.044	0.305	0.078			0.054					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.001	24.000	24.000	24.001	24.001	24.001	17.098	16.922	17.111	17.090	CATSUM

1. C01-1 RHODOCHROSITE
2. C01-2 DOLOMITE
3. C01-3 IBID
4. C01-4 MN-FE DOLOMITE

5. C01-5 MN-FE DOL
6. C01-6 DOL
7. C01-7 AMPHIBOLE
8. C01-8 IBID

9. C01-9 IBID
10. C01-10 IBID

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	2.02		21.92	22.50	21.93						SI02
AL2O3			21.36	19.65	20.42						AL2O3
TIO2						76.74	55.10	62.44	51.99		TIO2
FE0	92.30	27.59	33.19	33.66	31.98	17.48	35.56	29.24	39.45	13.78	FE0
MGO		6.72	8.06	8.00	8.89						MGO
MNO		27.16	1.15	1.30	1.10	4.87	10.36	7.74	10.46	1.40	MNO
ZNO										79.89	ZNO
CAO		1.61									CAO
SO3										66.87	SO3
SRO		0.40									SRO
SUM	94.32	63.48	85.88	85.11	84.32	99.09	101.02	98.42	100.90	161.94	SUM

ATOMIC PROPORTIONS

SI	0.598		4.299	4.466	4.353						SI
AL			4.940	4.598	4.778						AL
TI						10.324	8.193	9.083	7.871		TI
FE	22.803	9.538	5.445	5.587	5.309	2.615	5.890	4.567	6.474*****		FE
MG		4.142	2.355	2.366	2.632						MG
MN		9.511	0.190	0.218	0.186	0.738	1.736	1.268	1.784	-0.000	MN
ZN									*****		ZN
CA		0.713									CA
S										0.000	S
SR		0.096									SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000
CATSUM	23.401	24.000	17.230	17.235	17.258	13.677	15.809	14.918	16.129*****		CATSUM

- 11. C02-1 MAGNETITE
- 12. C02-2 MN-FE DOL
- 13. C02-3 CHL
- 14. C02-4 CHL

- 15. C02-5 CHL NEAR MT-P0
- 16. C02-6
- 17. C02-7
- 18. C02-8

- 19. C02-9
- 20. C02-11 SPH

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	22.48	23.15	22.52				26.54	52.14	55.24	51.76	SI02
AL2O3	20.00	19.23	18.94				18.09				AL2O3
TIO2								0.17			TIO2
FE0	28.90	30.72	31.72	0.90	1.58	3.76	25.52	16.05	11.37	9.92	FE0
MGO	11.33	10.03	10.08		1.59	3.61	15.60	16.96	21.96	21.61	MGO
MNO	0.29	0.32	0.33	0.62	0.34	0.70					MNO
CAO				52.37	49.24	45.28					CAO
K2O		0.14						0.32			K2O
SRO						0.37					SRO
SUM	83.00	83.59	83.59	53.89	52.75	53.72	86.07	85.32	88.57	83.29	SUM

ATOMIC PROPORTIONS

SI	4.435	4.581	4.489				4.904	8.735	8.680	8.625	SI
AL	4.652	4.484	4.451				3.941				AL
TI								0.022			TI
FE	4.769	5.082	5.290	0.314	0.560	1.305	3.945	2.249	1.494	1.382	FE
MG	3.334	2.957	2.998		1.003	2.230	4.297	4.237	5.145	5.367	MG
MN	0.049	0.054	0.056	0.220	0.122	0.247					MN
CA				23.466	22.315	20.130					CA
K		0.034						0.076			K
SR						0.003					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.239	17.193	17.284	24.000	24.000	24.000	17.163	15.242	15.319	15.374	CATSUM

- 1. C01-1 CHL
- 2. C01-2 CHL
- 3. C01-4 CHL
- 4. C01-1 CALCITE

- 5. C02-1 CALCITE NEAR PO
- 6. C02-3 CHL NEAR PO
- 7. C03-1 CHL
- 8. C04-1

- 9. C04-2
- 10. C04-3

WEIGHT PERCENT 11

FEO	1.03	FEO
MGO	0.77	MGO
MNO	0.65	MNO
CAO	50.03	CAO
SUM	52.58	SUM

ATOMIC PROPORTIONS

FE	0.387	FE
MG	0.489	MG
MN	0.235	MN
CA	22.889	CA
O	24.000	O
CATSUM	24.000	CATSUM

11. CQ4-4 CALCITE

~~11. CQ4-4 CALCITE~~

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02		44.05	60.46	58.36	59.96	25.26	24.41	24.48			SI02
AL2O3		34.34				20.21	20.04	20.77			AL2O3
TI02		0.39									TI02
FE0	89.78	3.20	7.00	6.61	6.54	25.09	31.07	28.94	54.50	53.71	FE0
MGO		0.63	27.61	25.93	27.65	14.90	10.93	12.49	0.97	1.12	MGO
MNO			0.28	0.19	0.24	1.37	1.15	1.16	4.49	4.26	MNO
CA0									0.32	0.94	CA0
K2O		8.48					0.12	0.29			K2O
SUM	89.78	91.10	95.35	91.09	94.39	86.83	87.72	88.13	60.28	60.03	SUM

ATOMIC PROPORTIONS

SI		6.674	8.628	8.636	8.626	4.641	4.590	4.530			SI
AL		6.132				4.377	4.444	4.531			AL
TI		0.045									TI
FE	23.998	0.405	0.835	0.824	0.787	3.856	4.889	4.480	21.376	21.050	FE
MG		0.141	5.874	5.760	5.931	4.083	3.066	3.447	0.677	0.784	MG
MN			0.033	0.023	0.029	0.214	0.184	0.182	1.783	1.693	MN
CA									0.163	0.471	CA
K		1.639					0.030	0.069			K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.998	15.036	15.370	15.303	15.373	17.171	17.202	17.239	23.999	23.998	CATSUM

WEIGHT PERCENT 11 12 13

SI02	55.85	57.11	98.29	SI02
FE0	7.72	8.49		FE0
MGO	24.85	24.28		MGO
SUM	88.42	89.88	98.29	SUM

ATOMIC PROPORTIONS

SI	8.636	8.701	11.999	SI
FE	0.998	1.082		FE
MG	5.728	5.515		MG
O	24.000	24.000	24.000	O
CATSUM	15.362	15.298	11.999	CATSUM

1. C01-1 MAGNETITE
2. C01-2 MUSCOVITE
3. C01-3
4. C01-4
5. C01-5

6. C02-1 CHL
7. C02-2 CHL
8. C02-3 CHL
9. C03-1 SIDERITE
10. C03-2 SIDERITE

11. C03-3
12. C03-4
13. QTZ

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02								24.96	26.90	26.40	SI02
AL2O3								20.79	17.67	17.78	AL2O3
FE0	92.53	46.57	48.01	47.02	45.66	43.61	46.94	24.90	22.51	20.51	FE0
MGO		9.21	7.08	8.34	10.29	13.09	11.26	12.40	16.64	13.29	MGO
MNO		0.55	2.29	0.39				0.91	0.63	0.77	MNO
CAO		3.54	1.64	3.28	2.61	1.06	1.06				CAO
SRO		0.26				0.18					SRO
SUM	92.53	59.13	59.02	59.03	58.56	57.94	59.26	84.96	85.35	82.75	SUM

ATOMIC PROPORTIONS

SI								4.671	4.965	4.900	SI
AL								4.586	3.843	3.890	AL
FE	23.999	16.813	17.711	16.972	16.270	15.295	16.476	3.896	3.628	3.184	FE
MG		5.283	4.658	5.368	6.538	8.185	7.046	3.737	4.579	5.059	MG
MN		0.200	0.856	0.142				0.145	0.099	0.121	MN
CA		1.636	0.775	1.517	1.191	0.476	0.477				CA
SR		0.066				0.043					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.998	23.998	24.000	23.999	23.999	23.999	23.999	17.025	17.114	17.154	CATSUM

1. C01-1 MAGNETITE
 2. C01-2 SIDERITE
 3. C01-3 SIDERITE
 4. C01-4 SIDERITE

5. C02-1 SIDERITE
 6.
 7. C02-3 IBID
 8. C03-1 CHL

9. C03-2 CHL
 10. C03-3 CHL

WEIGHT PERCENT		11	12	13	
SI02	25.08				SI02
AL2O3	21.42	1.05			AL2O3
TI02	0.17	49.13	51.48		TI02
FE0	25.16	39.82	41.95		FE0
MGO	14.55				MGO
MNO	1.30	1.98	4.74		MNO
K2O	0.03				K2O
SUM	87.76	92.03	98.17		SUM

ATOMIC PROPORTIONS

SI	4.554				SI
AL	4.584	0.269			AL
TI	0.024	8.011	7.974		TI
FE	3.821	7.213	7.225		FE
MG	3.937				MG
MN	0.200	0.364	0.927		MN
K	0.019				K
O	24.000	24.000	24.000		O
CATSUM	17.139	15.857	15.026		CATSUM

11. C03-4 CHL

12. C04-1 ILM

13. C04-2 ILM

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02		23.16	23.63	29.34	30.24	22.37	23.98	55.98			SI02
AL203		20.60	19.60	14.02	13.26	21.22	19.53	19.23			AL203
TI02									51.24	51.75	TI02
FEO	93.35	30.88	30.29	36.55	35.21	29.86	30.06		40.31	39.29	FEO
MGO		8.79	9.88	6.69	6.85	8.51	8.58				MGO
MNO		1.12	1.07			1.74	1.74	12.96	6.72	7.55	MNO
CAO								0.26			CAO
K2O			0.25	0.40	0.21		0.19	0.16			K2O
SUM	93.35	84.55	84.71	87.00	85.77	83.70	84.00	99.59	98.27	98.59	SUM

ATOMIC PROPORTIONS

SI		2.644	2.688	3.305	3.421	2.580	2.754	2.962			SI
AL		2.772	2.629	1.862	1.769	2.885	2.644	1.002			AL
TI									2.647	2.659	TI
FE	9.999	2.949	2.881	3.444	3.332	2.880	2.897		2.315	2.245	FE
MG		1.497	1.676	1.124	1.155	1.463	1.455				MG
MN		0.103	0.103			0.170	0.170	1.111	0.391	0.437	MN
CA								0.012			CA
K			0.037	0.058	0.021		0.028	0.009			K
O	10.000	14.000	14.000	14.000	14.000	14.000	14.000	8.000	8.000	8.000	O
CATSUM	9.999	9.970	10.014	9.793	9.708	9.978	9.938	5.096	5.353	5.341	CATSUM

WEIGHT PERCENT 11 12 13 14 15

SI02	23.98	23.90	24.36	24.24	44.74	SI02
AL203	18.56	17.87	16.26	17.91	33.98	AL203
TI02					0.48	TI02
FEO	33.28	33.56	32.97	33.98	2.33	FEO
MGO	8.39	7.81	8.23	8.10		MGO
MNO	0.62	0.65	0.82	0.88		MNO
K2O					7.85	K2O
SUM	84.83	83.79	84.65	85.11	89.38	SUM

ATOMIC PROPORTIONS

SI	2.760	2.796	2.885	2.796	3.983	SI
AL	2.518	2.465	2.479	2.434	3.566	AL
TI					0.032	TI
FE	3.203	3.284	3.176	3.278	0.173	FE
MG	1.440	1.362	1.414	1.393		MG
MN	0.060	0.065	0.081	0.086		MN
K					0.892	K
O	14.000	14.000	14.000	14.000	14.000	O
CATSUM	9.981	9.972	9.955	9.987	8.646	CATSUM

1. C01-1 MAGNETITE, CORRODED
2. C01-2 CHL NEAR MT
3. C01-3 CHL AFTER MT
4. C02-1 OXY-CHLORITE
5. C02-2 OXY-CHL

6. C02-3 IBID
7. C02-4 NORMAL CHL
8. C03-1 ALBITE
9. C03-2 ILMENITE
10. C04-1 TLM

11. C04-2 CHL INSER
12. C04-3 IBID
13. C05-1 CHL AGREG
14. C05-2 CHL AGREG
15. C05-3 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	
SI02			23.40	23.02	23.46		23.49	SI02
AL2O3			21.75	21.32	21.63		21.91	AL2O3
FE0	0.33	0.47	25.78	25.21	25.32	0.56	25.47	FE0
MGO			12.62	12.77	13.08	0.53	12.74	MGO
MNO	0.33	0.43				0.50		MNO
CAO	52.84	55.04				53.97		CAO
SRO		0.39						SRO
SUM	53.50	56.33	82.75	82.32	83.49	55.56	83.61	SUM

ATOMIC PROPORTIONS

SI			2.601	2.602	2.610		2.610	SI
AL			2.851	2.840	2.836		2.869	AL
FE	0.049	0.065	2.397	2.383	2.356	0.111	2.365	FE
MG			2.124	2.153	2.169	0.185	2.110	MG
MN	0.050	0.060				0.100		MN
CA	9.902	9.836				13.605		CA
SR		0.038						SR
O	10.000	10.000	14.000	14.000	14.000	14.000	14.000	O
CATSUM	10.001	9.999	9.973	9.978	9.971	14.001	9.955	CATSUM

1. C01-1 CALCITE
 2. C01-2 CALCITE
 3. C03-1 CHL

4.
 5. C02-3 CHL
 6. C03-4 CAL

7. C04-1 CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	25.52	26.34	26.41	46.57						29.71	SI02
AL2O3	19.46	19.80	20.54	34.41						24.91	AL2O3
TI02				1.07							TI02
FE0	19.64	18.80	20.16	1.54	42.55	38.31	37.94	46.31	46.14	18.60	FE0
MGO	18.02	19.54	19.11		13.79	12.50	15.21	8.56	10.65	11.90	MGO
MNO	0.24		0.21			4.08	1.32	0.86	0.50	0.24	MNO
CAO					1.08	2.10	1.06	1.45	0.39		CAO
K2O				7.99							K2O
SRO						0.39	0.38	0.49			SRO
SUM	82.88	84.48	86.43	91.58	57.42	57.38	55.91	57.67	57.69	85.26	SUM

ATOMIC PROPORTIONS

SI	2.770	2.782	2.746	4.025						3.040	SI
AL	2.491	2.466	2.517	3.506						3.005	AL
TI				0.070							TI
FE	1.793	1.661	1.752	0.111	8.695	7.925	7.812	10.020	9.764	1.592	FE
MG	2.918	3.077	2.962		5.022	4.609	5.580	3.305	4.021	1.800	MG
MN	0.022		0.018			0.854	0.275	0.188	0.108	0.021	MN
CA					0.283	0.555	0.280	0.403	0.106		CA
K				0.881							K
SR						0.056	0.054	0.073			SR
O	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	O
CATSUM	9.984	9.986	9.995	8.593	14.000	13.999	14.001	13.999	13.999	9.458	CATSUM

1. C01-1 RADIAL CHL CORE
2. C01-2 RADIAL CHL RIM
3. C01-3 IBID
4. C01-4 SER

5. C02-1 SIDERITE IN PO
6. C02-2 SID. NEAR PO
7. C02-1 SID. IN SER
8. C02-2 SID. IN SER

9. C02-3 IBID
10. C02-4 CHL NEAR PO

WEIGHT PERCENT	11	12	13	14	15	
SiO2	26.79	28.43	27.79	24.47	26.91	SiO2
AL2O3	21.31	23.09	23.86	20.95	23.07	AL2O3
FeO	21.47	20.32	22.70	26.91	23.60	FeO
MgO	17.15	15.55	9.97	13.36	11.34	MgO
MNO		0.35	0.32	0.67	0.52	MNO
SUM	86.72	87.74	84.64	86.17	85.44	SUM

ATOMIC PROPORTIONS

SI	2.783	2.821	2.950	2.661	2.861	SI
AL	2.609	2.758	2.966	2.674	2.891	AL
FE	1.865	1.722	2.016	2.439	2.098	FE
MG	2.656	2.349	1.578	2.166	1.798	MG
MN		0.030	0.028	0.062	0.047	MN
O	14.000	14.000	14.000	14.000	14.000	O
CATSUM	9.913	9.740	9.558	10.002	9.695	CATSUM

11. C03-5 IBID

12. C03-6 IBID CHL HETEROG

13. C04-1 CHL IN PO.

14. C04-2 CHL BETWEEN PO

15. C04-4 IBID

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02			46.65	46.05	44.81	42.73	45.15		24.08		SI02
AL2O3			34.57	35.71	37.51	36.36	38.22		19.13		AL2O3
TiO2			0.32	0.35							TiO2
FE0	7.47	13.00	1.21	1.13	1.92	3.04	1.06	22.79	36.40	60.60	FE0
MGO	15.45	12.50						11.46	6.87	0.75	MGO
MNO	1.36	1.56						1.66			MNO
CA0	30.15	28.43						9.70		0.53	CA0
K2O			7.51	8.39		0.12					K2O
SRO	0.16							0.21		0.34	SRO
SUM	55.59	55.49	90.26	91.63	84.24	82.25	84.42	55.82	86.48	62.22	SUM

ATOMIC PROPORTIONS

SI			2.903	2.842	2.844	2.804	2.844		2.748		SI
AL			2.535	2.597	2.806	2.813	2.837		2.574		AL
TI			0.015	0.016							TI
FE	0.972	1.774	0.063	0.059	0.102	0.167	0.056	4.859	3.474	9.643	FE
MG	3.813	3.040						3.029	1.169	0.212	MG
MN	0.179	0.215						0.249			MN
CA	5.023	4.971						1.841		0.108	CA
K			0.596	0.661		0.010					K
SR	0.014							0.022		0.037	SR
O	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	14.000	10.000	O
CATSUM	10.001	10.000	6.112	6.175	5.752	5.794	5.737	10.000	9.965	10.000	CATSUM

1. CQ1-1 DOLOMITE AGGREG
2. CQ1-2 DOL
3. CQ2-1 SER AGGREG
4. CQ2-2 SER

5. CQ2-3 KAOL?
6. CQ2-4 IBID
7. CQ2-5 IBID
8. CQ3-1.FE-MG CARBONATE

9. CQ3-2 CHL
10. CQ3-3 SIDERITE

WEIGHT PERCENT		11	12	13	
SI02				18.36	SI02
AL2O3				13.57	AL2O3
FE0	37.74	39.00		36.79	FE0
MGO	11.32	15.47		6.64	MGO
MNO	1.41	1.82		0.33	MNO
CAO	1.54	1.03			CAO
SRO	0.58	0.24			SRO
SUM	52.59	57.56		75.69	SUM

ATOMIC PROPORTIONS

SI			2.529		SI
AL			2.362		AL
FE	6.115	5.579	4.237		FE
MG	3.270	3.544	1.363		MG
MN	0.231	0.264	0.036		MN
CA	0.319	0.189			CA
SR	0.065	0.024			SR
O	10.000	10.000	14.000		O
CATSUM	10.000	10.000	10.369		CATSUM

11. C03-4 SID

12. C03-5 IBID

13. C03-6 CHL?

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	45.00	23.10	23.57	23.30	45.51	24.34	24.19	24.45			SI02
AL2O3	36.02	21.00	22.45	22.03	37.89	19.89	20.51	19.95			AL2O3
TI02	0.41										TI02
FE0	1.30	33.10	34.05	33.18	0.65	32.03	21.38	22.47	45.05	46.98	FE0
MGO		8.55	9.57	9.61		10.15	9.93	8.62	8.98	7.62	MGO
MNO		0.50	0.54	0.62		0.37	0.48	0.32	1.92	2.60	MNO
CAO									2.34	2.05	CAO
K2O	8.70				0.25	0.17	0.25	0.22			K2O
SRO									0.37	0.30	SRO
SUM	92.23	86.25	90.18	89.74	84.30	86.95	86.74	86.03	58.67	59.55	SUM

ATOMIC PROPORTIONS

SI	3.945	2.604	2.538	2.545	4.014	2.700	2.692	2.747			SI
AL	3.657	2.791	2.849	2.837	3.939	2.601	2.681	2.643			AL
TI	0.027										TI
FE	0.093	3.120	3.065	3.031	0.048	2.972	2.310	3.051	6.798	7.115	FE
MG		1.437	1.526	1.565		1.678	1.641	1.444	2.416	2.057	MG
MN		0.048	0.050	0.057		0.035	0.045	0.031	0.294	0.398	MN
CA									0.452	0.399	CA
K	0.956				0.028	0.024	0.035	0.031			K
SR									0.039	0.021	SR
O	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	10.000	10.000	O
CATSUM	8.678	10.000	10.038	10.035	8.029	10.010	9.994	9.947	9.999	10.000	CATSUM

1. C01-1 SER
2. C02-1 CHL
3. C02-2 IBID
4. C02-3 IBID

5. C02-4 KAOL?
6. C03-1 CHL NEAR P0
7. C03-2 IBID
8. C04-1 CHL AGGREG

9. C05-1 CORRODED SIDERITE
10. C05-2 IBID

WEIGHT PERCENT	1	2	3	4	5	
SI02	41.95	41.49			42.05	SI02
AL203	30.56	31.19			30.46	AL203
TI02	13.77	4.05			3.89	TI02
FE0	2.74	1.70	12.59	13.01	2.92	FE0
MGO	0.87	0.61	12.43	11.43	0.77	MGO
MNO			1.19	1.08		MNO
CA0			29.85	31.11		CA0
K2O	7.72	7.23			7.08	K2O
SUM	87.61	86.27	56.05	56.63	87.17	SUM

ATOMIC PROPORTIONS

SI	2.758	2.745			2.768	SI
AL	2.368	2.432			2.363	AL
TI	0.187	0.201			0.193	TI
FE	0.151	0.094	1.697	1.750	0.161	FE
MG	0.085	0.060	2.936	2.740	0.075	MG
MN			0.162	0.148		MN
CA			5.155	5.362		CA
K	0.648	0.610			0.595	K
O	10.000	10.000	10.000	10.000	10.000	O
CATSUM	6.197	6.142	10.000	10.000	6.155	CATSUM

1. C02-1 TI-SER
2. C02-2 IBID

3. C02-3 DOL
4. C02-4 IBID

5. C02-5 SER

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	45.84	45.71	0.59	0.74	1.99		3.67	46.30	24.05	23.68	SI02
AL203	33.77	34.47			0.71		3.13	34.06	21.37	22.31	AL203
TI02			50.94	54.33	82.75	96.76	47.91				TI02
FE0	1.11	1.19	45.03	42.36	7.08	0.32	41.76	1.17	28.62	27.98	FE0
MGO									10.54	11.85	MGO
MNO			1.35	1.19	0.28		1.26			0.24	MNO
CA0					0.23	0.53					CA0
K2O	9.47	9.01	0.24		0.24			10.21			K2O
SUM	90.19	90.38	98.15	98.62	93.28	97.61	97.73	91.74	84.58	86.06	SUM

ATOMIC PROPORTIONS

SI	6.947	6.894	0.122	0.149	0.351		0.728	6.931	4.598	4.438	SI
AL	6.032	6.129			0.148		0.731	6.011	4.817	4.927	AL
TI			7.875	8.197	10.963	11.932	7.153				TI
FE	0.141	0.150	7.741	7.107	1.043	0.044	6.932	0.147	4.576	4.384	FE
MG									3.003	3.311	MG
MN			0.235	0.202	0.042		0.211			0.039	MN
CA					0.043	0.093					CA
K	1.831	1.734	0.064		0.054			1.950			K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	14.951	14.907	16.037	15.655	12.644	12.069	15.755	15.039	16.994	17.099	CATSUM

1. CQ1-1 GREEN DISPS. MUSCOV
2. CQ1-2 MUSCOV
3. CQ1-3 ILMENITE IN MUSC
4. CQ1 IBID

5. CQ1-5 RUTILE
6. CQ1-6 LARGE RUTILE
7. CQ2-1 ILM IN MUSC.
8. CQ2-3MUSC HOST

9. CQ2-4 PTIGNATIC CHL
10. CQ2 IBID CHL

4L in 34

List of DYALD is not
included
the other
see complete set of List.

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	23.56	44.98	66.84	45.47	1.76			68.66	23.49	23.74	SI02
AL2O3	21.55	34.24	21.93	35.80	1.17			19.50	22.40	21.57	AL2O3
TiO2					92.94	52.48	95.61				TiO2
FeO	28.69	1.75		1.17	1.64	44.22	0.26		26.92	27.19	FeO
MgO	10.23								12.22	12.03	MgO
MnO						1.51					MnO
Na2O			12.91					16.55			Na2O
K2O		9.22	0.90	9.35							K2O
SUM	84.03	90.19	102.58	91.79	97.51	98.21	95.87	104.71	85.03	84.53	SUM

ATOMIC PROPORTIONS

SI	4.543	6.839	8.645	6.770	0.289			8.772	4.428	4.512	SI
AL	4.898	6.136	3.344	6.284	0.225			2.937	4.978	4.831	AL
Ti					11.431	8.083	11.983				Ti
FE	4.627	0.223		0.146	0.224	7.573	0.036		4.244	4.321	FE
MG	2.941								3.434	3.409	MG
MN						0.262					MN
NA			3.237					4.100			NA
K		1.789	0.149	1.775							K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.009	14.987	15.375	14.975	12.169	15.918	12.019	15.809	17.084	17.073	CATSUM

11. CQ2 IBID

12. CQ3-1NORMAL SER

13. CQ3-2 ALBITE IN SER

14. CQ3 NORMAL SER

15. CQ3 OPAQUE RUTILE

16. CQ3 ILMENITE

17. CQ4-1 RUTILE

18. CQ4 ALBITE

19. CQ4 CHL IN MUSCOV

20. CQ4 IBID

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	24.09	24.04	23.30	66.29	45.70			22.99	31.31	27.46	SI02
AL203	21.43	21.59	21.06	18.08	33.99			21.00	18.44	19.88	AL203
TI02			0.23			52.70	67.41		0.98		TI02
FEO	30.46	31.50	31.36		1.45	36.18	10.17	30.61	24.22	28.30	FEO
MGO	9.42	9.69	7.57					8.83	7.96	8.09	MGO
MNO	1.70	1.58	1.67			8.04	5.05	1.76	0.78	1.02	MNO
CAO				0.35			3.50				CAO
NA2O				11.29							NA2O
K2O				0.45	9.37				5.71	0.64	K2O
SUM	87.10	88.40	85.09	96.46	90.51	96.92	86.13	85.19	89.40	85.39	SUM

ATOMIC PROPORTIONS

SI	4.552	4.494	4.530	9.031	6.912			4.473	5.645	5.186	SI
AL	4.773	4.758	4.847	2.903	6.059			4.815	3.919	4.425	AL
TI			0.034			8.176	10.318		0.132		TI
FE	4.813	4.925	5.120		0.183	6.243	1.732	4.981	3.651	4.470	FE
MG	2.652	2.700	2.204					2.560	2.138	2.279	MG
MN	0.271	0.250	0.275			1.406	0.870	0.290	0.120	0.163	MN
CA				0.052			0.764				CA
NA				2.983							NA
K				0.079	1.809				1.313	0.154	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.061	17.127	17.010	15.048	14.963	15.825	13.684	17.119	16.918	16.677	CATSUM

1. CQ1-1CHL 50U FROM PO
2. CQ1-2 CHL 30U FROM PO
3. CHL 10U PO
4. CQ2-1 ALBITE AT CREST

5. CQ2-2 MUSCOV
6. CQ2-3 ILM
7. CQ2-4 MIX ILM+RUT
8. CQ4-1 CHL

9. CQ4-2 CHL AFT? BIOT
10. CQ4-1 CHL

WEIGHT PERCENT	11	12	13	14	15	
SI02	24.12	24.32			23.71	SI02
AL203	21.16	21.02			21.09	AL203
FE0	30.58	29.63	1.60	1.12	31.01	FE0
MGO	10.37	8.44	0.66		8.76	MGO
MNO	1.72	1.68	5.37	4.93	1.23	MNO
CA0			48.97	48.67		CA0
SUM	87.95	85.09	56.60	54.72	85.80	SUM

ATOMIC PROPORTIONS

SI	4.518	4.685			4.561	SI
AL	4.671	4.773			4.784	AL
FE	4.790	4.773	0.542	0.393	4.969	FE
MG	2.896	2.422	0.397		2.513	MG
MN	0.272	0.274	1.840	1.751	0.200	MN
CA			21.221	21.856		CA
O	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.147	16.927	24.000	24.000	17.047	CATSUM

11. C05-1 RADIAL CHL
12. C05-2 RADIAL CHL RIM

13. C07-1 CALCITE
14. C07-2 CALCITE VEIN

15. C07-3 CHL VEIN

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	67.36	66.51			23.08	45.75					SI02
AL203	19.00	17.67			21.91	34.07					AL203
TI02				50.61		0.33					TI02
FE0			0.27	43.16	30.92	1.63	13.78	13.78	13.78	13.78	FE0
MGO					10.58	0.53					MGO
MNO				3.71							MNO
ZNO							85.15	82.80	87.10	77.60	ZNO
NA2O	10.86	10.09									NA2O
K2O						9.11					K2O
SO3			0.29				92.39	91.83	95.94	87.65	SO3
SUM	97.22	94.26	0.56	97.48	86.49	91.42	191.32	188.40	196.81	179.03	SUM

ATOMIC PROPORTIONS

SI	9.039	9.171			4.377	6.954					SI
AL	3.005	2.872			4.899	6.016					AL
TI				7.919		0.037					TI
FE		*****		7.509	4.904	0.204*****					FE
MG					2.992	0.119					MG
MN				0.654							MN
ZN							*****				ZN
NA	2.827	2.695									NA
K						1.741					K
S		*****					*****				S
O	24.000	24.000	0.000	24.000	24.000	24.000	0.000	0.000	0.000	0.000	O
CATSUM	14.671	14.738*****		16.062	17.172	14.971*****					CATSUM

- 1. C01-1 ALBITE
- 2. C01-2 ALB
- 3. C01-3 PO
- 4. C01-4 ILM

- 5. C01-5 CHL
- 6. C01-7 MUSCOV
- 7. C02-1 SPH
- 8. SPH

- 9. SPH
- 10. SPH

WEIGHT PERCENT	11	12	13	
SI02	22.64	22.74		SI02
AL2O3	21.97	22.50		AL2O3
TIO2			51.74	TIO2
FE0	33.81	32.78	44.97	FE0
MGO	7.55	8.71		MGO
MNO	0.31	0.49	3.86	MNO
SUM	86.28	87.22	100.57	SUM

ATOMIC PROPORTIONS

SI	4.384	4.329		SI
AL	5.015	5.049		AL
TI			7.868	TI
FE	5.477	5.218	7.604	FE
MG	2.180	2.471		MG
MN	0.052	0.020	0.661	MN
O	24.000	24.000	24.000	O
CATSUM	17.108	17.147	16.133	CATSUM

11. C03-1 CHL<

12. C03-2 CHL

13. C03-3 ILMENITE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02				24.12	32.76				22.21	22.55	SI02
AL203				20.61	18.00				21.46	21.63	AL203
TI02			68.33		0.64						TI02
FE0	13.78	13.78	9.65	30.42	23.38	1.55	1.61	1.40	35.33	34.83	FE0
MGO				8.92	9.03	0.74		0.63	4.54	6.41	MGO
MNO			2.50	1.11	0.80	3.84	5.61	5.44	1.25	1.23	MNO
ZNO	78.36	79.57									ZNO
CA0						48.07	47.04	46.35			CA0
K2O				0.27	5.31						K2O
SO3	85.53	86.92									SO3
SUM	177.66	180.26	80.48	85.45	89.92	54.20	54.26	53.82	84.79	86.65	SUM

ATOMIC PROPORTIONS

SI				4.648	5.807				4.452	4.397	SI
AL				4.682	3.761				5.069	4.972	AL
TI			10.918		0.086						TI
FE	*****		1.715	4.903	3.466	0.545	0.571	0.498	5.923	5.680	FE
MG				2.562	2.385	0.461		0.399	1.357	1.863	MG
MN			0.450	0.182	0.120	1.365	2.018	1.962	0.212	0.203	MN
ZN	*****										ZN
CA						21.630	21.411	21.142			CA
K				0.067	1.202						K
S	*****										S
O	0.000	0.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	*****		13.083	17.044	16.827	24.001	24.000	24.001	17.013	17.115	CATSUM

1. CQ1-1 SPH

2. CQ1-2 SPH

3. CQ1-3 RUTILE+ILM

4. CQ2-1 CHL

5. CQ2-2 CHL AFT BIOT

6. CQ2-4 CALCITE

7. CQ3-1 CAL

8. CQ3-2 CAL

9. CQ3-3 CHL VEIN

10. CQ3-4 CHL VEIN

WEIGHT PERCENT 11 12

SI02	22.84		SI02
AL2O3	21.01		AL2O3
TI02		88.51	TI02
FE0	34.86	4.95	FE0
MGO	6.20		MGO
MNO	1.25	1.53	MNO
SUM	86.16	94.99	SUM

ATOMIC PROPORTIONS

SI	4.483		SI
AL	4.860		AL
TI		11.530	TI
FE	5.722	0.717	FE
MG	1.815		MG
MN	0.207	0.225	MN
O	24.000	24.000	O
CATSUM	17.087	12.472	CATSUM

11 CQ3-5 SMOOTH SURFACE SCHL

12 CQ5-1 RUTILE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	45.28	45.51	24.98	24.66	67.40	66.34	24.58	28.46	45.46	47.29	SI02
AL2O3	33.18	34.98	20.53	21.11	19.46	17.68	22.50	24.30	34.69	34.87	AL2O3
FE0	1.77	1.41	22.95	23.53			25.17	20.79	1.09	1.30	FE0
MGO			14.83	13.65			14.30	12.95			MGO
MNO				0.41			0.46	0.49			MNO
NA2O					12.68	13.64					NA2O
K2O	9.58	9.27							9.86	9.48	K2O
SUM	89.81	91.17	83.29	83.36	99.54	97.66	87.01	86.99	91.30	92.94	SUM

ATOMIC PROPORTIONS

SI	6.929	6.828	4.699	4.659	8.911	8.986	4.479	4.985	6.826	6.947	SI
AL	5.986	6.186	4.554	4.702	3.033	2.824	4.833	5.018	6.177	6.038	AL
FE	0.226	0.177	3.611	3.718			3.837	3.046	0.137	0.160	FE
MG			4.160	3.845			3.884	3.383			MG
MN				0.066			0.071	0.073			MN
NA					3.252	3.582					NA
K	1.871	1.775							1.888	1.778	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.012	14.966	17.024	16.990	15.196	15.392	17.104	16.505	15.028	14.923	CATSUM

1. CQ1-1 SERICITE
2. CQ1-2 IBID
3. CQ1-3 BROWN CHL
4. CQ1-4 CHL

5. CQ2-1ALBITIZED PLG
6. IBID
7. CQ2-2 CHL
- ~~8. CQ2-3 CHL~~

9. CQ2-4 SER
10. CQ3-1 SER

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	46.61	3.98					45.88	30.04	45.93	24.27	SI02
AL203	33.96	2.77					34.36	26.62	34.40	21.50	AL203
TI02		80.69									TI02
FE0	1.38	2.82	8.04	7.54	7.03	11.61	1.36	16.25	1.27	25.87	FE0
MGO			12.57	11.89	12.98	11.35		10.36		12.15	MGO
MNO			1.10	1.54	1.10	0.65		0.25		0.40	MNO
CA0			33.98	33.63	33.85	29.66					CA0
K2O	9.11						9.73		9.40		K2O
SRO			0.25								SRO
SUM	91.06	90.26	55.94	54.60	54.96	53.27	91.33	83.52	91.00	84.19	SUM

ATOMIC PROPORTIONS

SI	6.982	0.699					6.888	5.286	6.900	4.599	SI
AL	5.995	0.573					6.081	5.521	6.092	4.802	AL
TI		10.665									TI
FE	0.173	0.415	2.563	2.466	2.261	3.953	0.171	2.391	0.160	4.100	FE
MG			7.144	6.934	7.440	6.887		2.718		3.434	MG
MN			0.356	0.511	0.358	0.226		0.037		0.064	MN
CA			13.882	14.090	13.943	12.935					CA
K	1.740						1.863		1.802		K
SR			0.055								SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	14.890	12.352	24.000	24.001	24.002	24.001	15.003	15.953	14.954	16.999	CATSUM

11. C03-2 IBID

12. C03-3 RUTILE

13. C04-1 DOL??

14. C4-2 DOL??

15. C04-3 DOL??

16. C04-5 DOL IN SER

17. C05-1 FIBROUS MUSC

18. C06-1 CHL

19. C07-1 SER

20. C07-2 CHL

WEIGHT PERCENT		21	22
SI02	23.84		SI02
AL2O3	21.58		AL2O3
TI02		95.36	TI02
FE0	24.72		FE0
MGO	13.45		MGO
MNO	0.54		MNO
SUM	84.13	95.36	SUM

ATOMIC PROPORTIONS

SI	4.504		SI
AL	4.807		AL
TI		12.001	TI
FE	3.906		FE
MG	3.787		MG
MN	0.087		MN
O	24.000	24.000	O
CATSUM	17.091	12.001	CATSUM

21 CQ7-3 CHL

22 CQ7-4 RUTILE

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	24.14	25.15	0.39	23.44	46.59	45.50	44.65	23.39	24.33	23.14	SI02
AL203	22.55	22.67		22.06	34.76	35.68	36.43	22.91	22.15	21.88	AL203
TI02			100.07								TI02
FE0	25.05	22.58		26.35	1.21	0.99	1.18	28.51	27.66	27.83	FE0
MGO	12.33	15.70		12.12				11.23	10.70	9.86	MGO
MNO	0.40	0.53		0.66		1.32	3.29	0.23	0.43	0.31	MNO
CA0			0.11								CA0
K20					9.01	7.04	5.88		0.15		K20
SUM	84.47	86.63	100.57	84.63	91.57	90.53	91.43	86.27	85.42	83.02	SUM

ATOMIC PROPORTIONS

SI	4.533	4.534	0.062	4.446	6.928	6.796	6.630	4.384	4.584	4.507	SI
AL	4.991	4.818		4.931	6.092	6.282	6.375	5.060	4.920	5.025	AL
TI			11.930								TI
FE	3.933	3.405		4.179	0.151	0.123	0.147	4.468	4.360	4.534	FE
MG	3.451	4.220		3.426				3.137	3.006	2.864	MG
MN	0.063	0.081		0.106		0.381	0.946	0.037	0.068	0.050	MN
CA			0.020								CA
K					1.709	1.342	1.114		0.036		K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	16.971	17.058	12.012	17.088	14.880	14.924	15.212	17.086	16.974	16.980	CATSUM

1. C01-1 CHL AGGREG.
2. C01-2 CHL
3. C01-3 RUTILE
4. C02-1LITE REFL PT. CHL

5. C02-2DARKER PT=SER
6. C02-3 SER
7. C02-4 SER
8. C03-1 CHL BETW. LAY. 1-3

9. C03-2 CHL
10. C03-4 LOWER PART , CHL

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	23.24	46.04	46.21			23.50	23.54				SI02
AL2O3	22.47	35.02	33.98			22.42	22.31				AL2O3
TIO2				91.29							TIO2
FE0	28.59	1.26	1.43		4.98	26.92	26.78	0.25	0.32	1.34	FE0
MGO	10.56				2.24	11.25	11.60				MGO
MNO	0.26				1.24	0.33	0.34	0.68	0.40	1.69	MNO
CA0					41.26			48.86	49.41	53.36	CA0
K2O		9.07	8.80								K2O
SRO					1.51			0.25			SRO
SUM	85.12	91.39	90.42	91.29	51.23	84.42	84.57	50.04	50.13	56.39	SUM

ATOMIC PROPORTIONS

SI	4.423	6.870	6.961			4.469	4.466				SI
AL	5.041	6.160	6.033			5.025	4.989				AL
TI				12.001							TI
FE	4.552	0.158	0.181		1.862	4.281	4.248	0.093	0.120	0.450	FE
MG	2.997				1.493	3.190	3.282				MG
MN	0.042				0.472	0.054	0.055	0.259	0.152	0.574	MN
CA					19.782			23.582	23.729	22.976	CA
K		1.726	1.692								K
SR					0.391			0.066			SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	17.055	14.914	14.867	12.001	24.000	17.019	17.040	24.000	24.001	24.000	CATSUM

11. C03-5 IBID CHL
12. C03-6 GREEN DISP. MUSCOV.
13. MUSCOVITE
14. C03-7 RUTILE IN MUSCOV LAYER

15. C04-1 FE-CALCITE
16. C04-2 CHL IN OTZ
17. IBID CHL
18. C05-1 CAL 50U OFF PO

19. C05-2 30U OFF PO, CAL
20. C05-3 CAL 10 U OFF

WEIGHT PERCENT	21	22	23	24	25	26	27	28	
SI02			44.79	45.59	23.62	23.87	45.73	46.28	SI02
AL203			34.68	35.47	21.76	22.09	33.63	34.27	AL203
FE0	1.22	0.27	0.89	1.41	29.46	29.41	2.60	1.54	FE0
MGO					10.36	9.90			MGO
MNO	1.40		1.34	1.50					MNO
CA0	49.19								CA0
K20			8.82	8.30			8.26	9.02	K20
SO3		0.29							SO3
SRO	1.22								SRO
SUM	53.03	0.56	90.52	92.27	85.20	85.27	90.22	91.11	SUM

ATOMIC PROPORTIONS

SI			6.779	6.761	4.506	4.540	6.930	6.934	SI
AL			6.187	6.201	4.894	4.954	6.008	6.051	AL
FE	0.442*****		0.113	0.174	4.700	4.679	0.329	0.192	FE
MG					2.947	2.809			MG
MN	0.513		0.394	0.431					MN
CA	22.740								CA
K			1.702	1.571			1.596	1.723	K
S	*****								S
SR	0.305								SR
O	24.000	0.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	24.000*****		15.175	15.138	17.047	16.982	14.863	14.900	CATSUM

- 21. C05-4 CAL 10U OFF PO
- 22. C05-5 PO
- 23. C07-1 ORANGE DISP. MUSCOV

- 24. C07-2 IBID MUSC.
- 25. C08-1 CHL
- 26. C08-2 CHL

- 27. C08-3 MUSC IN CHL
- 28. C08-4 MUSC IN CHL

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02	68.61	35.27	35.02	34.57	27.66	45.40	2.29	2.25	2.24	31.89	SI02
AL2O3	19.32	18.64	20.46	19.67	22.76	33.85	0.81	1.05	1.92	19.24	AL2O3
TIO2		1.17	1.21	1.27			56.88	71.75	93.62	0.51	TIO2
FEO		24.16	24.31	23.58	29.88	1.56	30.54	1.09	0.50	25.82	FEO
MGO		6.20	5.96	5.04	7.42					5.35	MGO
MNO		0.36	0.40	0.39	0.85		4.77	1.53		0.37	MNO
CAO					0.20			8.85	0.20		CAO
NA2O	12.52				1.34						NA2O
K2O		8.35	7.35	7.88		10.13				6.64	K2O
SUM	100.45	94.15	94.71	92.40	90.11	90.94	95.29	96.52	98.48	89.82	SUM

ATOMIC PROPORTIONS

SI	8.972	6.031	5.908	5.994	4.959	6.878	0.453	0.428	0.360	5.768	SI
AL	2.978	3.758	4.067	4.020	4.810	6.045	0.189	0.235	0.364	4.102	AL
TI		0.150	0.154	0.165			8.475	10.283	11.317	0.069	TI
FE		3.455	3.429	3.420	4.481	0.197	5.060	0.173	0.067	3.905	FE
MG		1.581	1.498	1.302	1.982					1.442	MG
MN		0.052	0.056	0.057	0.129		0.800	0.246		0.057	MN
CA					0.038			1.807	0.035		CA
NA	3.175				0.467						NA
K		1.821	1.582	1.743		1.957				1.532	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.125	16.848	16.694	16.701	16.866	15.077	14.977	13.172	12.143	16.875	CATSUM

1. CQ1-1 ALBITE
2. CQ1-2 BIOTITE
3. CQ1-3 BIOTITE
4. CQ1-4 BIOTITE

5. CQ1-5 CHL REPLACING BIOT
6. CQ1-6 MUSCOV
7. CQ1-7 MN-ILMENITE
8. PROBABLY RUTILDE+SPHENE

9. CQ1-9 RUTILE
10. CQ2-1 BIOT

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	20	
SI02	34.84	37.11	23.14	36.66	24.38	45.81			68.09		SI02
AL2O3	18.83	17.61	21.46	18.26	19.88	35.26			18.31		AL2O3
TIO2	0.92	1.32		0.68		0.29	61.64	94.53		62.24	TIO2
FEO	23.80	21.99	32.66	22.73	31.61	1.30	27.39	1.02		29.18	FEO
MGO	5.52	5.70	7.45	5.69	8.93						MGO
MNO	0.48	0.44	1.03	0.47	0.74		4.61			4.48	MNO
CAO				0.20			0.21	0.28			CAO
NA2O									13.90		NA2O
K2O	8.26	8.81		8.13		9.37					K2O
SUM	92.65	92.98	85.74	92.82	85.54	92.83	93.85	95.83	100.30	95.90	SUM

ATOMIC PROPORTIONS

SI	6.052	6.351	4.496	6.288	4.707	6.809			8.976		SI
AL	3.855	3.553	4.916	3.692	4.526	6.177			2.846		AL
TI	0.120	0.169		0.087		0.032	9.291	11.904		9.223	TI
FE	3.457	3.147	5.307	3.261	5.104	0.162	4.591	0.143		4.808	FE
MG	1.430	1.455	2.157	1.455	2.572						MG
MN	0.071	0.063	0.169	0.068	0.121		0.783			0.747	MN
CA				0.037			0.046	0.051			CA
NA									3.554		NA
K	1.830	1.924		1.779		1.778					K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	16.815	16.662	17.045	16.667	17.030	14.958	14.711	12.098	15.376	14.778	CATSUM

11. C02-2 BIOT
12. C02-3 SMALL BIOT
13. C02-4 CHL NEAR BIOT
14. C02-5 GREEN BIOT?

15. C02-6 CHL
16. C03-1 MUSCOVITE GREEN D.
17. C03-1 MN-ILMENITE
18. C03-2 RUTILE

19. C04-1 ALBITE
20. C04-2 MN-ILM

WEIGHT PERCENT	21	22	23	24	25	26	27	28	
SI02		23.05	23.98	23.49	34.97	23.11	24.26	36.50	SI02
AL2O3		21.82	21.14	20.56	18.29	21.47	20.74	17.53	AL2O3
TI02	70.53				0.74			0.53	TI02
FEO	1.89	32.54	32.65	32.98	22.29	30.48	30.47	21.92	FEO
MGO		8.32	7.86	7.35	6.77	9.88	9.28	7.35	MGO
MNO	1.26	0.96	0.68	0.59	0.31	0.66	0.55	0.39	MNO
CAO	10.11								CAO
K2O					8.40			8.49	K2O
SUM	83.79	86.69	86.31	84.89	91.77	85.52	85.30	92.71	SUM

ATOMIC PROPORTIONS

SI		4.421	4.607	4.609	6.093	4.442	4.659	6.264	SI
AL		4.933	4.786	4.755	3.756	4.866	4.695	3.547	AL
TI	10.648				0.097			0.069	TI
FE	0.317	5.221	5.244	5.400	3.248	4.900	4.893	3.146	FE
MG		2.380	2.251	2.150	1.759	2.809	2.656	1.881	MG
MN	0.214	0.157	0.111	0.097	0.045	0.108	0.090	0.056	MN
CA	2.174								CA
K					1.868			1.859	K
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	13.353	17.112	16.999	17.011	16.866	17.125	16.993	16.822	CATSUM

21. C04-3 RUTILE+SPHENE

22. C04-4 CHL MASS

23. C05-1 CHL PTIGM. VEIN

24. C05-2 CHL IN VEIN

25. C06-1 BIOTITE

26. C06-2 CHL AFT? BIOT

27. C06-3 CHL AFT? BIOT

28. C06-4 BIOT

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
SI02							46.63	45.36	45.46	47.45	SI02
AL203							39.50	38.73	39.44	40.40	AL203
FE0	52.81	53.12	54.35	44.02	41.40	40.61	1.09	2.64	1.58	0.82	FE0
MGO	1.45		0.75	11.88	10.86	13.15					MGO
MNO	3.06	4.45	3.01	0.40	0.39	0.46					MNO
CA0	2.04	1.41	1.46	0.75	2.27	1.59					CA0
NA20										1.66	NA20
K20							9.16	8.23	8.83	8.24	K20
SRO	0.34				0.54	0.33					SRO
SUM	59.70	58.98	59.57	57.05	55.46	56.14	96.38	94.96	95.31	98.57	SUM

ATOMIC PROPORTIONS

SI							6.589	6.532	6.509	6.549	SI
AL							6.579	6.574	6.657	6.573	AL
FE	20.661	21.450	21.521	15.871	15.421	14.594	0.128	0.318	0.189	0.095	FE
MG	1.012		0.528	7.636	7.209	8.428					MG
MN	1.212	1.819	1.207	0.145	0.145	0.166					MN
CA	1.021	0.730	0.743	0.348	1.065	0.730					CA
NA										0.444	NA
K							1.651	1.513	1.613	1.451	K
SR	0.093				0.139	0.082					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	23.999	23.999	24.000	23.999	24.000	14.947	14.937	14.968	15.112	CATSUM

1. CQ1-1 SIDERITE BAND.
2. CQ1-2 SIDERITE BAND
3. CQ1-3 IBID
4. CQ1-4 DOL+SID? NO SI

5. CQ1-5 10U OFF 1-4
6. CQ1-6 20U OFF 1-4
7. CQ1-7 MUSCOV
8. CQ1-8 IBID.

9. CQ1-9 20U OFF 1-8, MUSCOV
10. CQ1-10 SER. NA-BEAR.

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	
SI02	47.71	45.68					45.64		45.68	SI02
AL2O3	40.24	36.37					37.10		36.35	AL2O3
FE0	1.09	1.08	52.22	49.79	43.15	42.81	0.85	48.45	0.88	FE0
MGO			4.75	4.24	11.07	12.22		4.52		MGO
MNO			1.51	3.15	0.88	0.37		1.88		MNO
CA0			0.94	0.78	2.38	0.51		1.13		CA0
NA2O	1.21									NA2O
K2O	8.99	9.08					8.84		9.04	K2O
SRO			0.61							SRO
SUM	99.24	92.13	60.03	57.96	57.48	55.91	92.43	55.98	91.95	SUM

ATOMIC PROPORTIONS

SI	6.566	6.747					6.710		6.762	SI
AL	6.528	6.343					6.431		6.342	AL
FE	0.125	0.133	19.627	19.418	15.499	15.658	0.104	19.427	0.110	FE
MG			3.185	2.947	7.085	7.966		3.228		MG
MN			0.575	1.243	0.321	0.139		0.764		MN
CA			0.454	0.391	1.094	0.237		0.580		CA
NA	0.323									NA
K	1.578	1.714					1.658		1.707	K
SR			0.158							SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	15.120	14.937	23.999	23.999	23.999	24.000	14.903	23.999	14.921	CATSUM

11. CQ1-X ??

12. CQ1-11 SER

13. CQ2-1 SID

14. CQ2-2 10U OFF 1-1

15. CQ2-3 SID NOTE HETEROGEN.

16. CQ2-5 NEARBY SID

17. CQ2-6 GREEN DISPERS. MUSCOV

18. CQ3-1 SID

19. CQ3-2 RED DISPS. MUSCOV

XRF -LOGON:

ARL -LOGON:

ETEC -LOGON:

TABLET-LOGON:

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	51.12	51.30	50.94		49.16	53.24	12.81	52.25	50.85		FEO
MGO	2.35	2.49	1.86		2.52			1.90	1.63		MGO
MNO	5.25	5.09	5.13		5.54	5.17		4.59	7.88		MNO
CAO	1.00	0.73	0.71		0.57			1.00	0.48		CAO
BAO				64.87						64.36	BAO
SO3				36.05						35.96	SO3
SUM	59.72	59.61	58.64	100.92	57.79	58.41	12.81	59.74	60.84	100.32	SUM

ATOMIC PROPORTIONS

FE	19.814	19.909	20.253		19.667	21.848*****		20.366	19.574		FE
MG	1.626	1.725	1.317		1.798			1.322	1.115		MG
MN	2.062	2.002	2.067		2.244	2.151		1.811	3.072		MN
CA	0.497	0.363	0.362		0.290			0.500	0.238		CA
BA				5.724						5.700	BA
S				6.093						6.101	S
O	24.000	24.000	24.000	24.000	24.000	24.000	0.000	24.000	24.000	24.000	O
CATSUM	23.999	23.999	23.999	11.817	23.999	23.999*****		23.999	23.999	11.801	CATSUM

WEIGHT PERCENT 11 12

FEO	50.07	51.62	FEO
MGO	2.33	2.18	MGO
MNO	5.04	4.82	MNO
CAO	0.62	0.67	CAO
SUM	58.06	59.29	SUM

ATOMIC PROPORTIONS

FE	19.908	20.224	FE
MG	1.655	1.522	MG
MN	2.038	1.914	MN
CA	0.318	0.339	CA
O	24.000	24.000	O
CATSUM	23.999	23.999	CATSUM

1. C01 PT1 CENTER OF GRAIN
2. C01 PT2 MANTLE OF SID
3. C01PT3 RIM OF SID
4. C02PT1 BARITE

5. C02PT1* SID
6. C02PT2 SID
7. C02PT3 SPH
8. C03PT1 SID

9. C03PT2 SID
10. C03PT3 BAR
11. C04 PT1 SIDER AT CENTER
12. C04 SID RIM PART

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	50.97	49.94	49.87	51.26	53.05	52.49	52.90	53.06	49.12	93.71	FEO
MGO	4.01	3.42	3.71	4.52	4.13	3.99	3.42	2.83	4.11		MGO
MNO	4.55	4.38	4.29	3.46	2.88	3.00	3.01	3.75	4.89		MNO
CAO	0.58	0.50	0.48	0.25	0.23	0.26	0.24	0.47	0.47		CAO
SRO	0.14										SRO
SUM	60.25	58.24	58.35	59.49	60.29	59.74	59.57	60.11	58.59	93.71	SUM

ATOMIC PROPORTIONS

FE	19.242	19.614	19.479	19.482	20.011	20.000	20.364	20.376	19.012	23.998	FE
MG	2.697	2.394	2.585	3.063	2.780	2.713	2.346	1.934	2.838		MG
MN	1.741	1.741	1.696	1.334	1.099	1.160	1.172	1.458	1.917		MN
CA	0.281	0.250	0.239	0.120	0.109	0.127	0.117	0.230	0.232		CA
SR	0.038										SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	O
CATSUM	23.999	23.999	23.999	23.999	23.999	24.000	23.999	23.998	23.999	23.998	CATSUM

WEIGHT PERCENT	11	12	13	14	15	16	17	18	
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FEO	52.37	52.56	53.67	52.72	13.78	11.45	13.78	13.78	FEO
MGO	2.33	3.02	2.21	2.48					MGO
MNO	4.24	4.01	4.21	3.70					MNO
CAO	0.53	0.43	0.51	0.46					CAO
SUM	59.47	60.02	60.60	59.36	13.78	11.45	13.78	13.78	SUM

ATOMIC PROPORTIONS

FE	20.437	20.161	20.603	20.577	*****				FE
MG	1.619	2.066	1.510	1.728					MG
MN	1.677	1.558	1.637	1.463					MN
CA	0.266	0.213	0.249	0.231					CA
O	24.000	24.000	24.000	24.000	0.000	0.000	0.000	0.000	O
CATSUM	23.999	23.998	23.999	23.999	*****				CATSUM

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|------------------------|---------------------------------|---------------------------|
| 1. CQ1PT1 CORE OF SID | 7. CQ2PT4 RIM OF SID | 13. CQ4 PT4 HIGH REF. SID |
| 2. CQ1PT2 RIM OF SID | 8. CQ3PT1 SID | 14. CQ4PT5 RIM OF THE SID |
| 3. CQ1 PT3 OTHER GRAIN | 9. CQ3PT2 RIM OF THE SID | 15. CQ4PT6 SPH |
| 4. CQ2PT1 CORE OF SID | 10. CQ4PT1 MAGNETITE 72.36FE | 16. CQ4PT7 SPH |
| 5. CQ2PT2 MANTLE-1 SID | 11. CQ4 PT2 CENTER OF ROSETTE | 17. CQ4PT8 SPH |
| 6. CQ2PT3 MANTLE-2 SID | 12. CQ4PT3 MANTLE OD ROSET. SID | 18. CQ4 PT9 SPH |

WEIGHT PERCENT	1	2	3	4	5	6	7	8	9	10	
FEO	49.89	51.13	51.50	51.02	22.17	21.73	21.32	13.78	21.53		FEO
MGO	3.87	5.08	3.62	3.63	4.70	5.45	4.81		5.37		MGO
MNO	3.58	3.71	3.49	3.46	2.39	2.35	2.79	0.91	2.33		MNO
CAO	0.53	0.39	0.54	0.34	26.58	25.87	26.25		26.17		CAO
BAO										64.91	BAO
SO3										33.87	SO3
SRO			0.37	0.27	0.26	0.34			0.27	0.45	SRO
SUM	57.87	60.31	59.52	58.72	56.10	55.74	55.17	14.69	55.67	99.23	SUM

ATOMIC PROPORTIONS

FE	19.597	19.038	19.796	19.868	7.917	7.758	7.713*****		7.691		FE
MG	2.710	3.375	2.482	2.522	2.994	3.470	3.100		3.421		MG
MN	1.424	1.398	1.359	1.366	0.864	0.851	1.022*****		0.843		MN
CA	0.268	0.188	0.264	0.169	12.162	11.836	12.165		11.979		CA
BA										5.988	BA
S										5.984	S
SR			0.097	0.074	0.064	0.084			0.066	0.062	SR
O	24.000	24.000	24.000	24.000	24.000	24.000	24.000	0.000	24.000	24.000	O
CATSUM	23.999	23.999	23.998	23.999	24.001	23.999	24.000*****		24.000	12.034	CATSUM

WEIGHT PERCENT	11	12	13	14	15	16	17	18	19	
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FEO		53.35	94.30	94.21	51.91	94.07	13.78	13.78	13.78	FEO
MGO		2.77			3.64					MGO
MNO		3.37			3.75			1.10		MNO
CAO		0.63			0.44					CAO
BAO	64.96									BAO
SO3	34.14									SO3
SRO	0.48					0.31				SRO
SUM	99.58	60.12	94.30	94.21	59.74	94.38	13.78	14.88	13.78	SUM

ATOMIC PROPORTIONS

FE		20.483	23.998	23.998	19.851	23.944*****					FE
MG		1.894			2.478						MG
MN		1.312			1.453			*****			MN
CA		0.309			0.217						CA
BA	5.955										BA
S	5.994										S
SR	0.065					0.054					SR
O	24.000	24.000	24.000	24.000	24.000	24.000	0.000	0.000	0.000	0.000	O
CATSUM	12.014	23.998	23.998	23.998	23.999	23.998*****					CATSUM

1. C01-1 CORE OF SID
2. C01-2 RIM OF SID
3. C01-3 MANTLE OF SID
4. C01-4 OUTER MANTLE OF SID
5. C01-6 DOLOMITE CORE
6. C01-7 DOLOMITE RIM
7. C01-8 DOLOMITE

8. C02-1 SPH
9. C02-2 DOLOM
10. C02-3 BARITE
11. C02-5 BARITE
12. C02-6 SIDERITE
13. C03-1 MAGNETITE
- 14.

15. C03-3 SIDERITE
16. C04-1 MT.
17. C05-1 SPH
18. C05-2 SPH
19. C05-4 SPH