



APPENDIX A

SCANNING ELECTRON MICROSCOPY (SEM)

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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8/18/2009 11:03:53 AM

Project 1

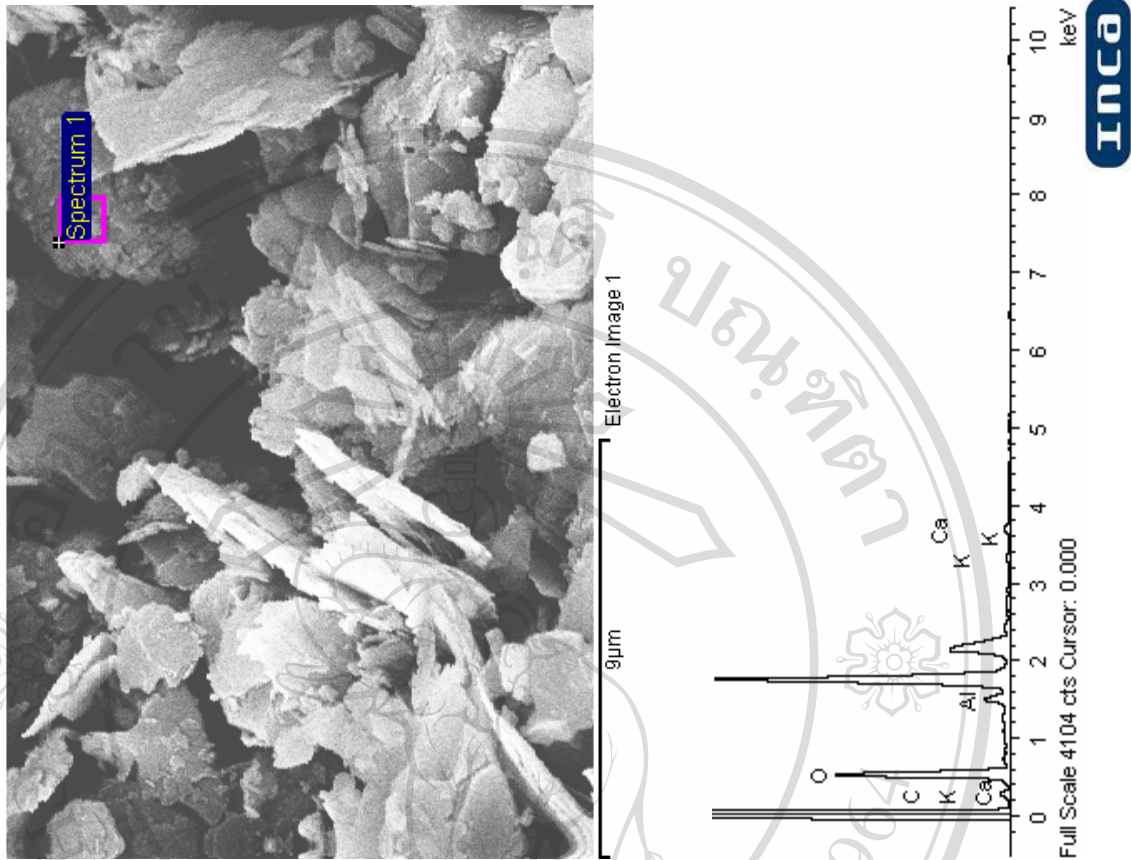
Spectrum processing :
Peaks possibly omitted : 2.139, 2.420, 6.440, 9.722 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :

C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	11.89	18.00
O K	51.69	58.74
Al K	2.13	1.44
Si K	32.30	20.91
K K	0.64	0.30
Ca K	1.35	0.61
Totals	100.00	



Comment: Well-B-01-1152.32

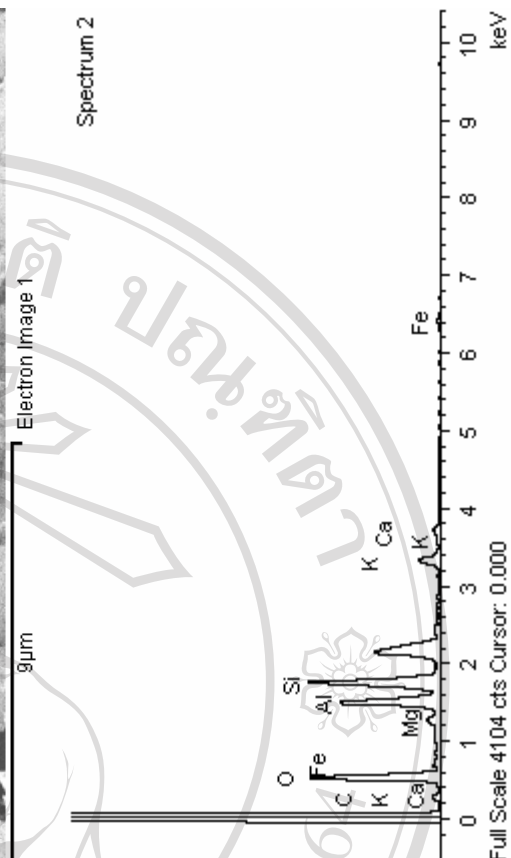
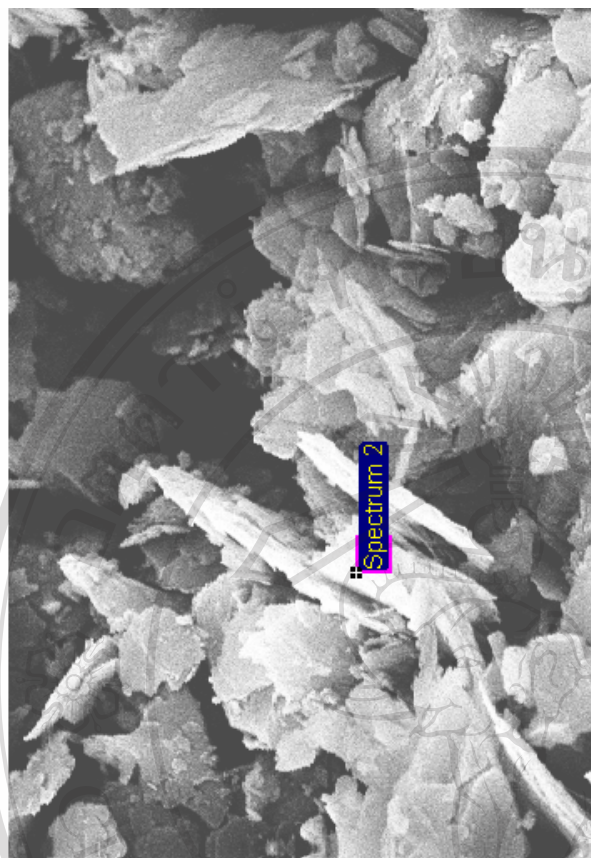
Spectrum processing :
Peaks possibly omitted : 2.141, 2.421, 9.722 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :

C CaCO₃ 1-Jun-1999 12:00 AM
O SiO₂ 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al₂O₃ 1-Jun-1999 12:00 AM
Si SiO₂ 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
CK	9.63	15.36
OK	48.21	57.74
MgK	1.05	0.83
AlK	12.56	8.92
SiK	18.75	12.79
KK	5.28	2.59
CaK	1.61	0.77
FeK	2.90	1.00
Totals	100.00	



Comment: Well-B-01-1152.32

Spectrum processing :

Peaks possibly omitted : 2.143, 2.420, 9.699 keV

Processing option : All elements analyzed (Normalised)

Number of iterations = 4

Standard :

C CaCO₃ 1-Jun-1999 12:00 AM

O SiO₂ 1-Jun-1999 12:00 AM

Mg MgO 1-Jun-1999 12:00 AM

Al Al₂O₃ 1-Jun-1999 12:00 AM

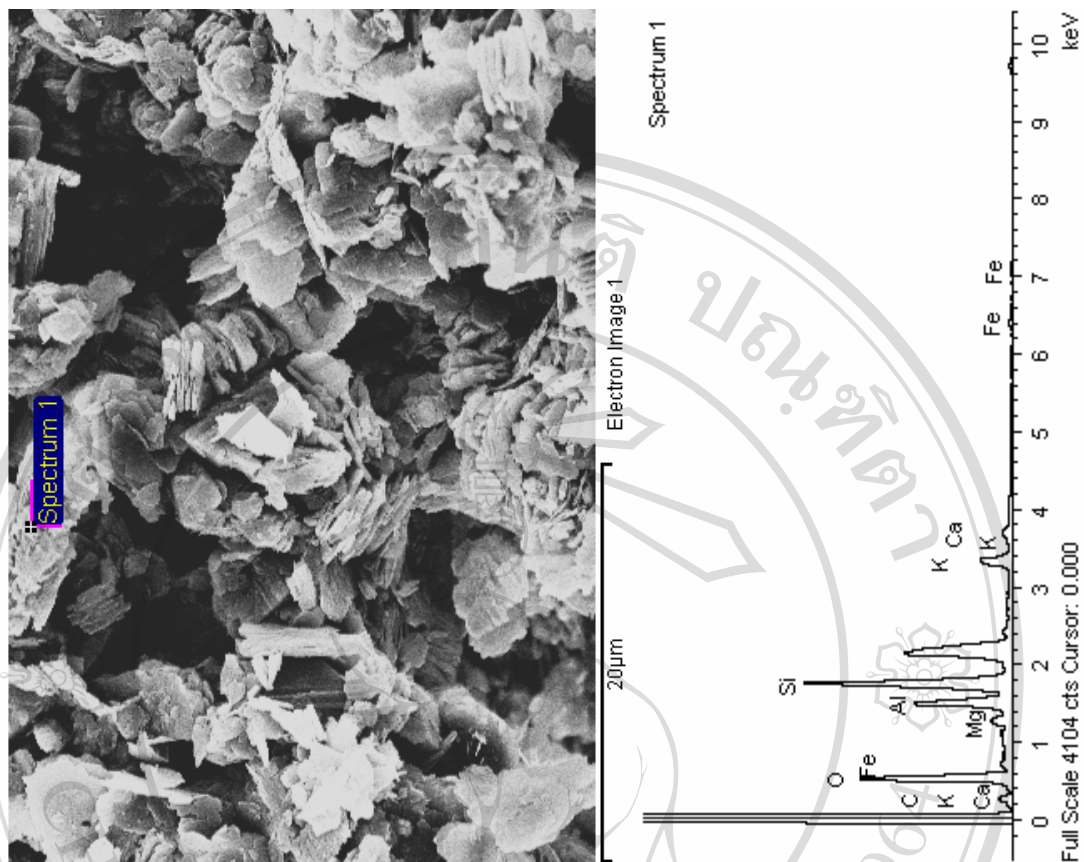
Si SiO₂ 1-Jun-1999 12:00 AM

K MAD-10 Feldspar 1-Jun-1999 12:00 AM

Ca Wollastonite 1-Jun-1999 12:00 AM

Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	9.96	15.96
O K	47.07	56.60
Mg K	1.43	1.13
Al K	9.13	6.51
Si K	21.83	14.95
K K	6.43	3.16
Ca K	1.89	0.91
Fe K	2.25	0.77
Totals	100.00	



Comment: Well-B-02-1156.40

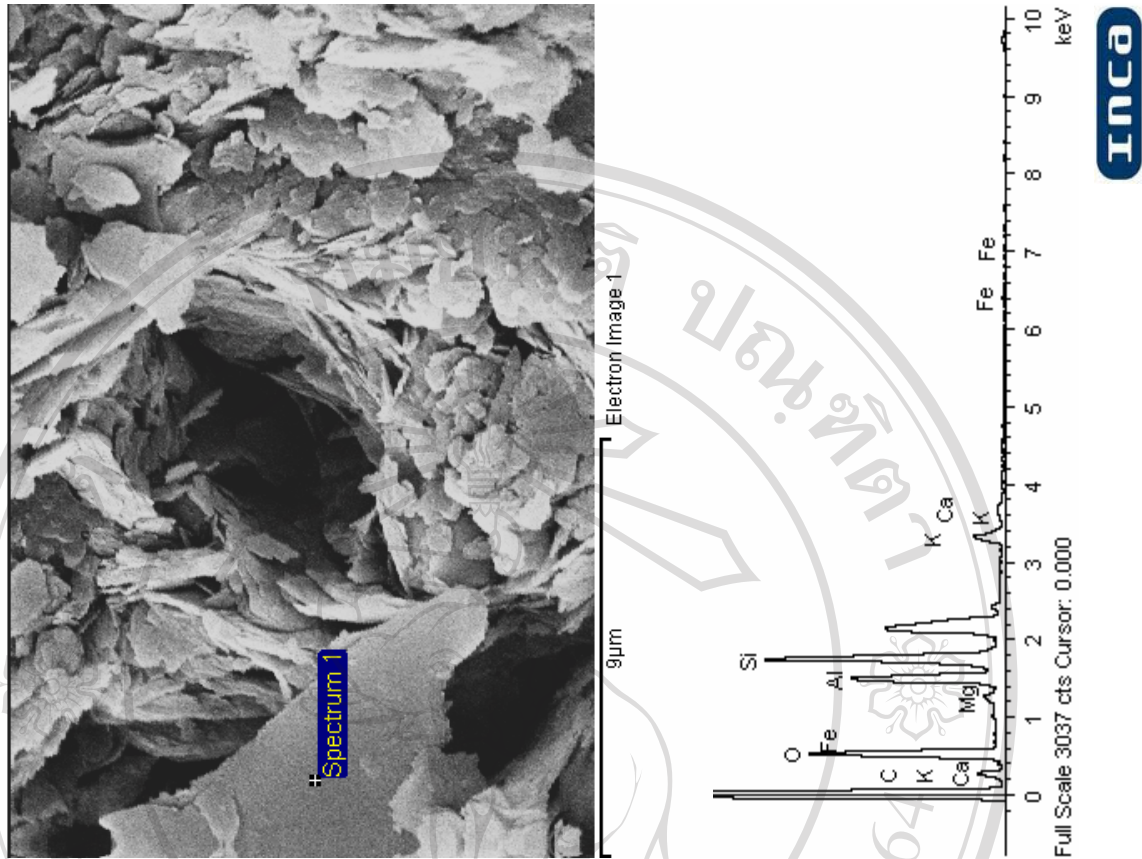
Project 1

Spectrum processing :
Peaks possibly omitted : 2.142, 2.418, 9.704 keV
Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	16.71	25.21
O K	45.33	51.36
Mg K	0.83	0.62
Al K	11.00	7.39
Si K	19.30	12.46
K K	4.69	2.18
Ca K	0.76	0.34
Fe K	1.37	0.44
Totals	100.00	

Comment: Well-B-03-1159.71



Spectrum processing :

Peaks possibly omitted : 2.139, 2.428, 9.718 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :

C CaCO₃ 1-Jun-1999 12:00 AM

0 SiO2 1-Jun-1999 12:00 AM

Mg MgO 1-Jun-1999 12:00 AM

Al	Al2O3	1-Jun-1999 12:00 AM
Al	Al2O3	1-Jun-1999 12:00 AM

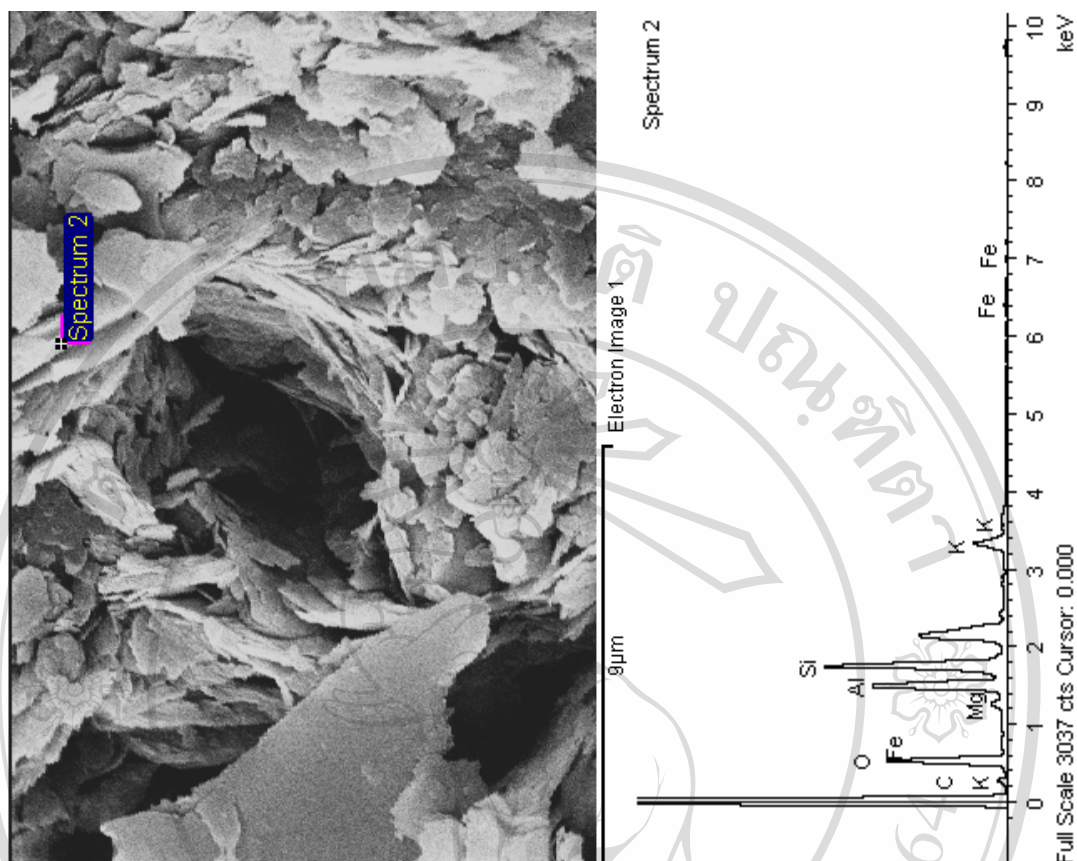
Si SiO2 1-Jun-1999 12:00 AM

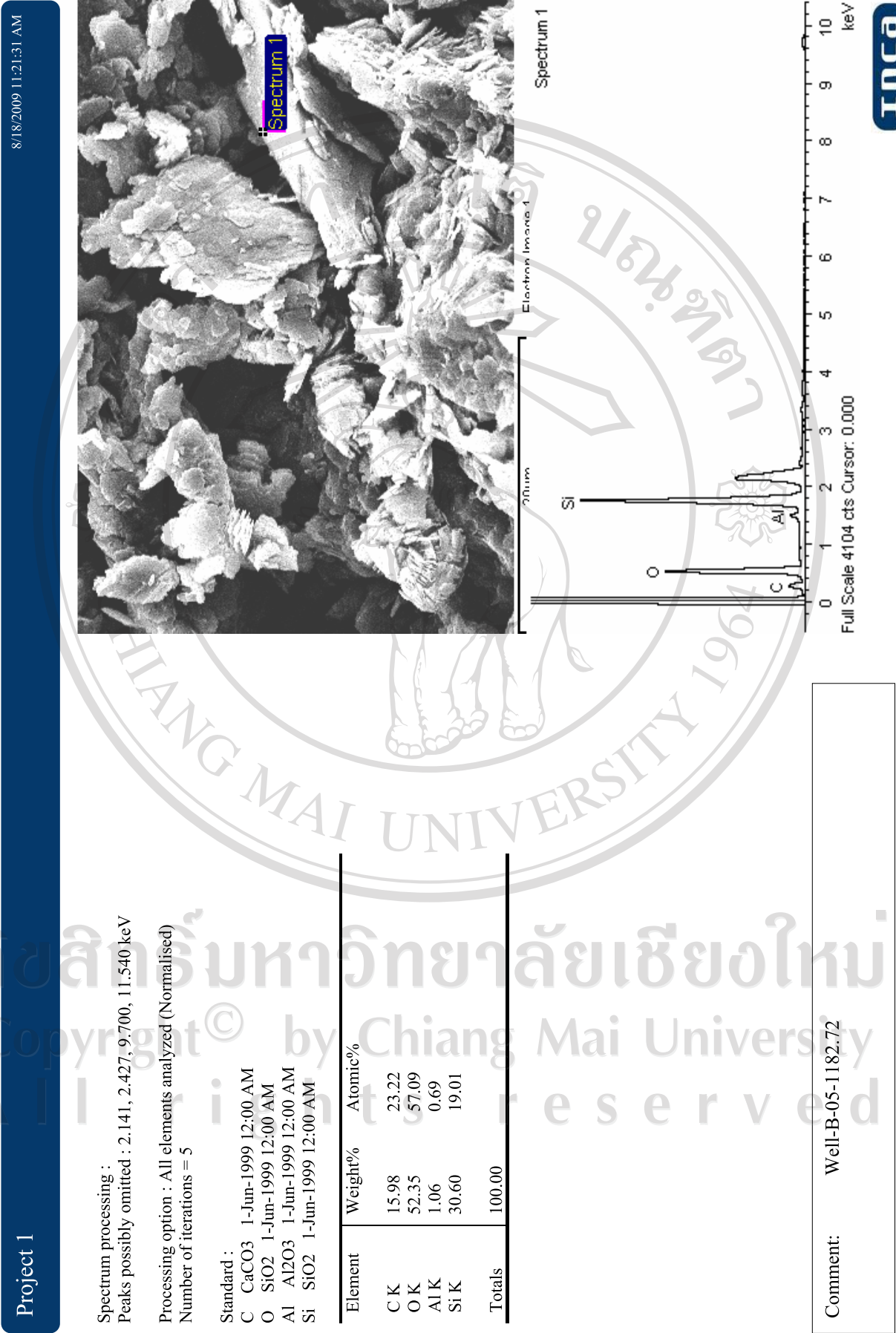
K MAD-10 Feldspar 1-Jun-1999 12:00 AM

Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	6.76	11.37
O K	42.83	54.07
Mg K	1.12	0.93
Al K	15.35	11.49
Si K	24.17	17.38
K K	7.86	4.06
Fe K	1.91	0.69
Totals	100.00	

Comment: Well-B-03-1159.71

**inca**



Project 1

8/18/2009 11:21:58 AM

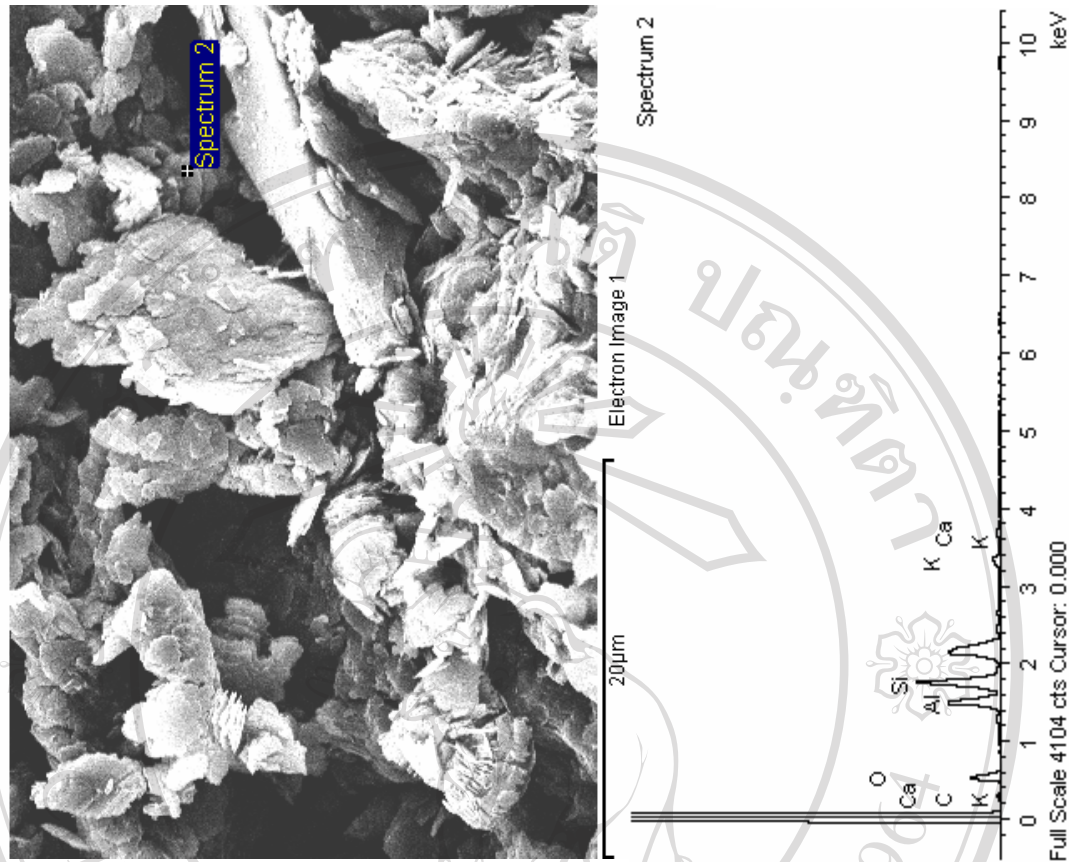
Spectrum processing :
Peaks possibly omitted : 2.145, 2.440, 9.706 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :

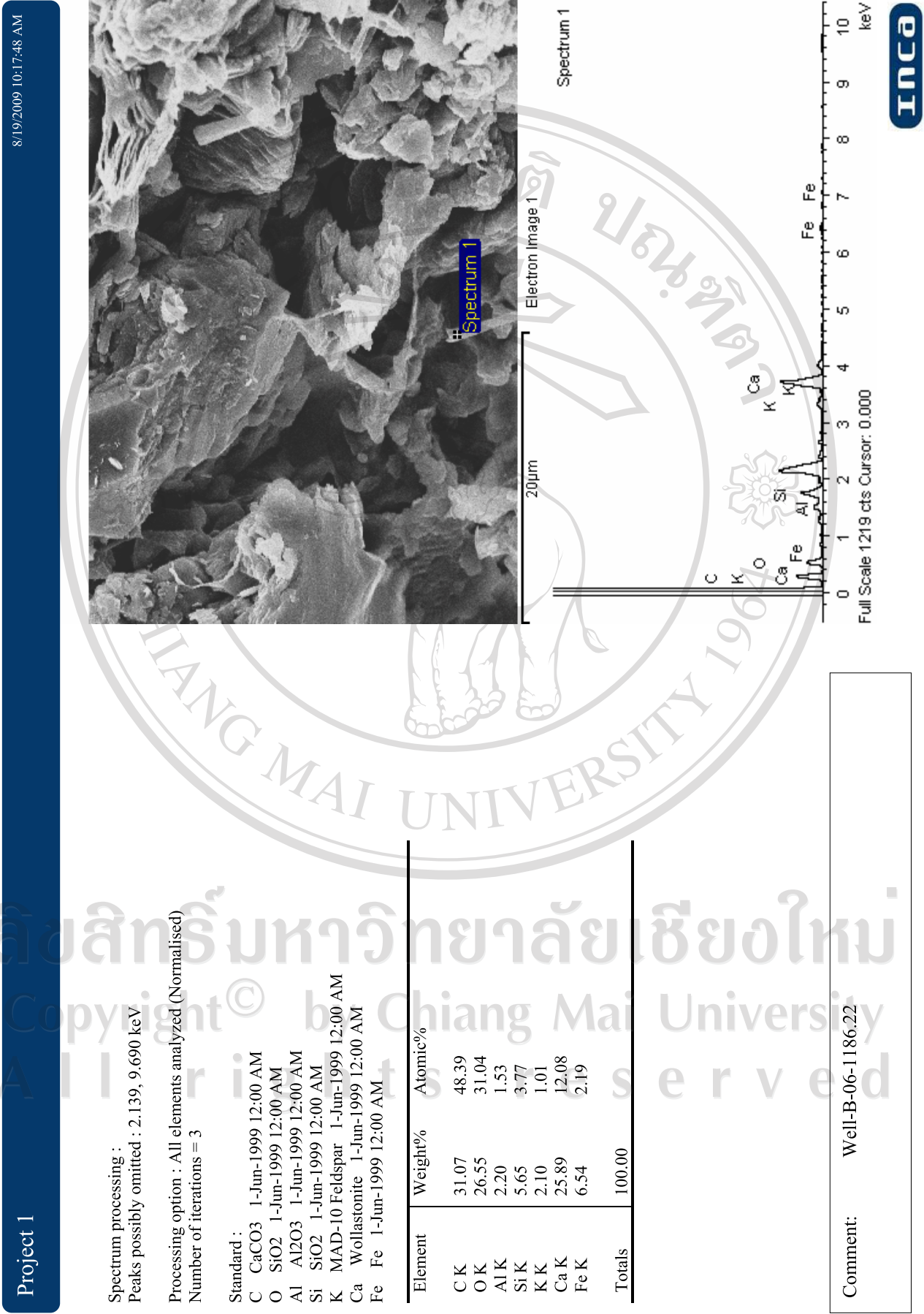
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	17.71	27.97
O K	33.88	40.17
Al K	14.66	10.31
Si K	27.35	18.47
K K	4.47	2.17
Ca K	1.93	0.91
Totals	100.00	



Comment: Well-B-04-1182.72





Project 1

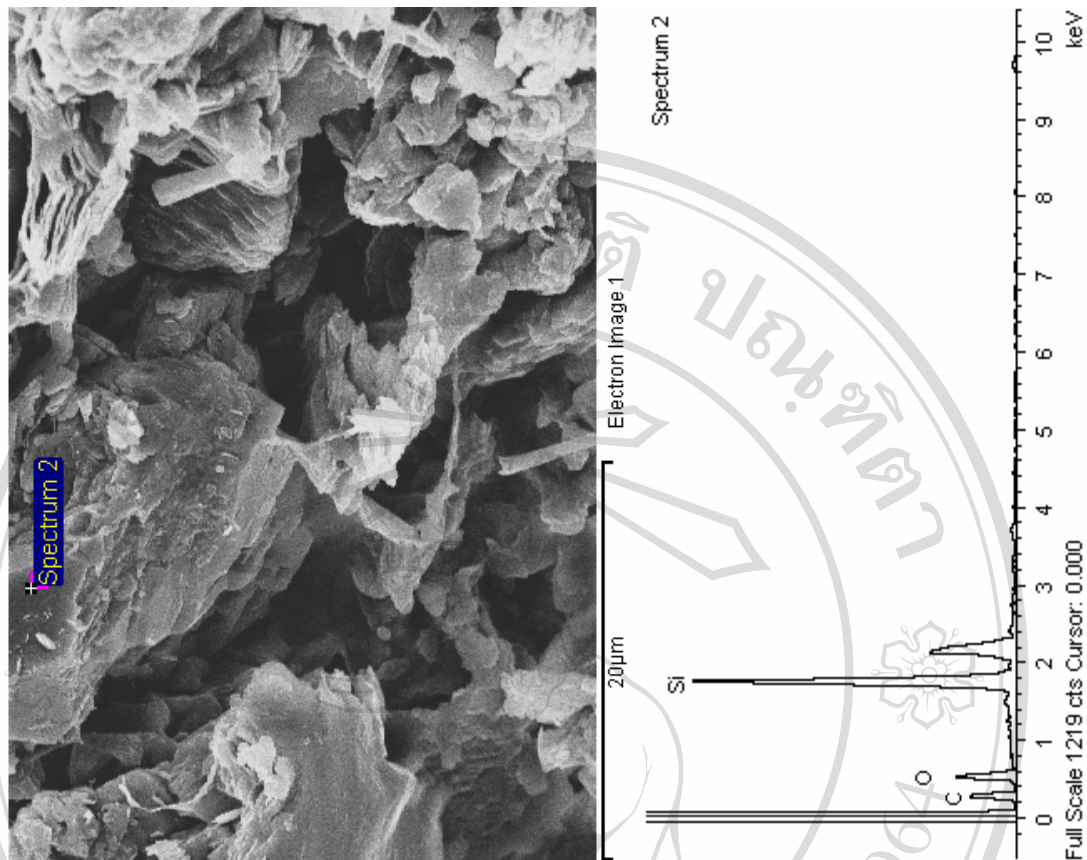
8/19/2009 10:18:12 AM

Spectrum processing :
Peaks possibly omitted : 2.139, 9.694 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	39.74	53.63
O K	26.60	26.94
Si K	33.67	19.43
Totals	100.00	



Comment: Well-B-06-1186.22



Spectrum processing :

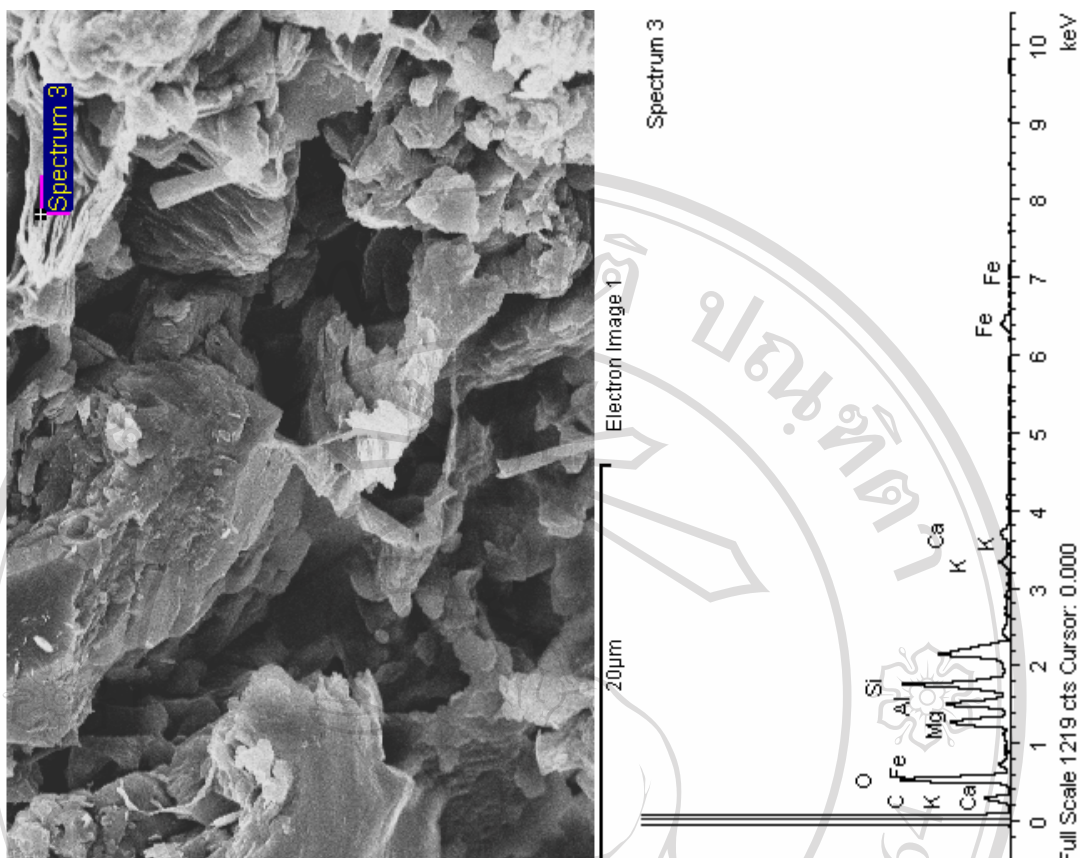
Peaks possibly omitted : 2.143, 9.710 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :

C CaCO₃ 1-Jun-1999 12:00 AM
O SiO₂ 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al₂O₃ 1-Jun-1999 12:00 AM
Si SiO₂ 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	24.02	35.80
O K	38.10	42.63
Mg K	6.59	4.85
Al K	6.94	4.60
Si K	11.99	7.64
K K	1.77	0.81
Ca K	2.11	0.94
Fe K	8.48	2.72
Totals	100.00	



Comment: Well-B -06-1186.22

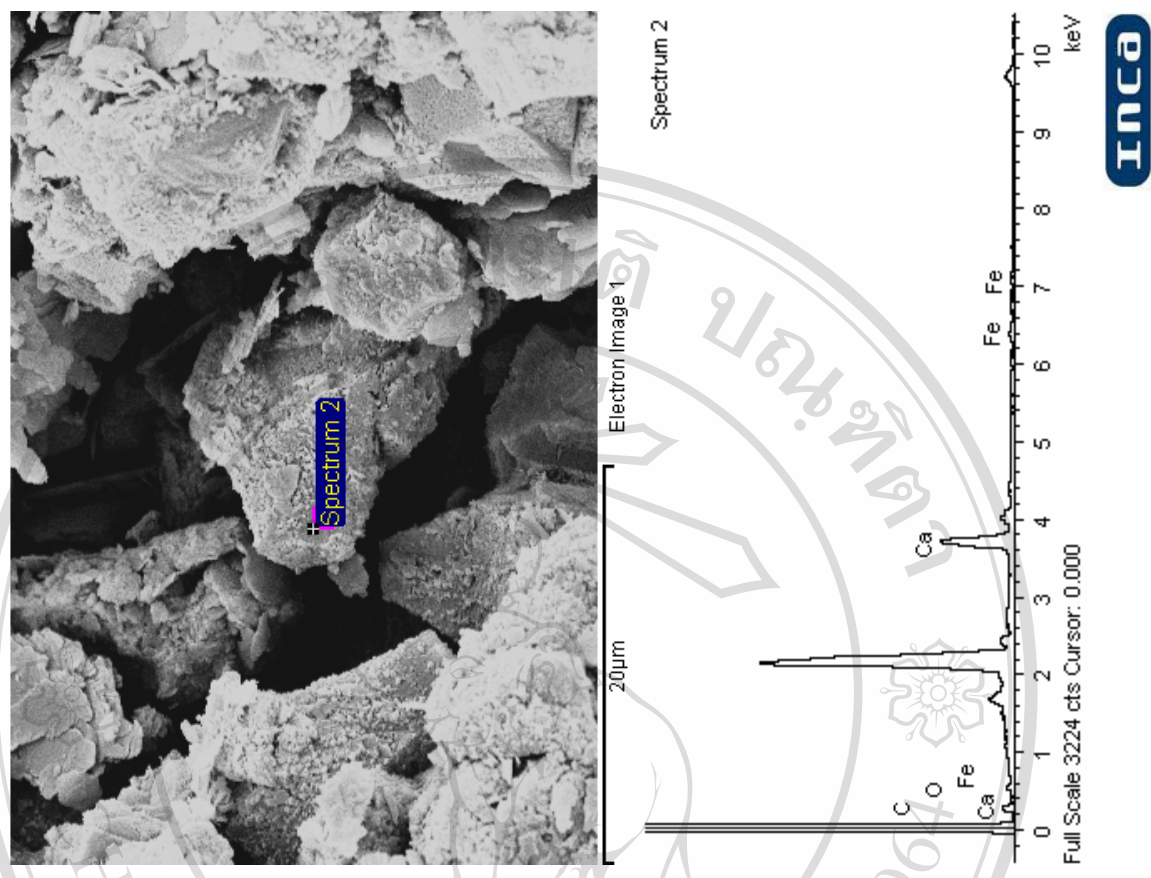
Project 1

Spectrum processing :
Peaks possibly omitted : 1.667, 2.142, 2.422, 9.701, 11.562 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	12.07	26.56
O K	17.33	28.63
Ca K	61.30	40.42
Fe K	9.30	4.40
Totals	100.00	



Comment: Well-B-07-1192.50

Project 1

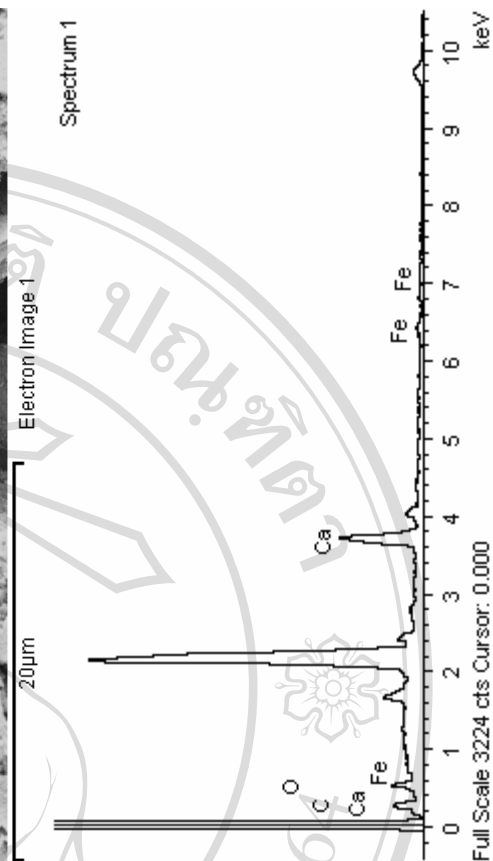
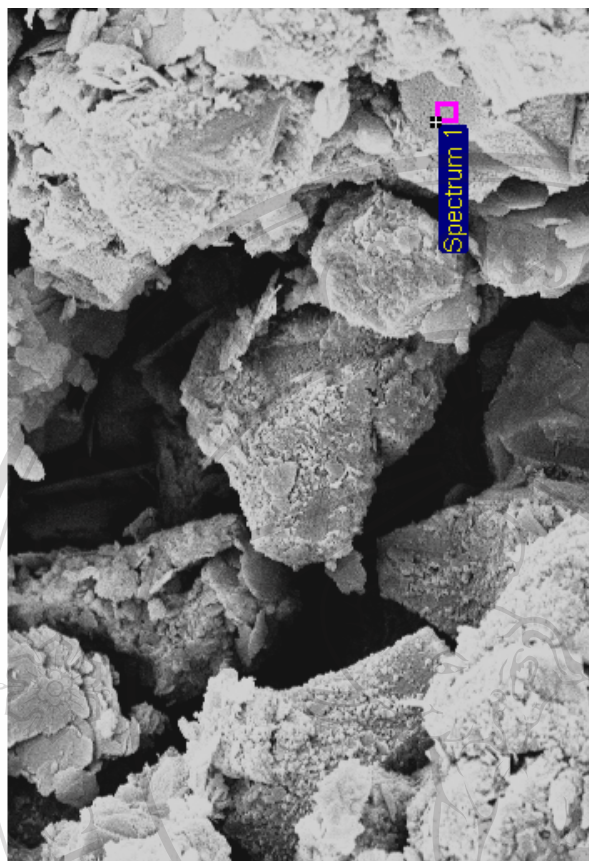
8/19/2009 10:44:43 AM

Spectrum processing :
Peaks possibly omitted : 1.660, 2.143, 2.422, 9.704, 11.562 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
C CaCO₃ 1-Jun-1999 12:00 AM
O SiO₂ 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
CK	14.85	26.36
OK	36.66	48.84
CaK	41.89	22.28
FeK	6.59	2.52
Totals	100.00	



Comment: Well-B-07-1192.50

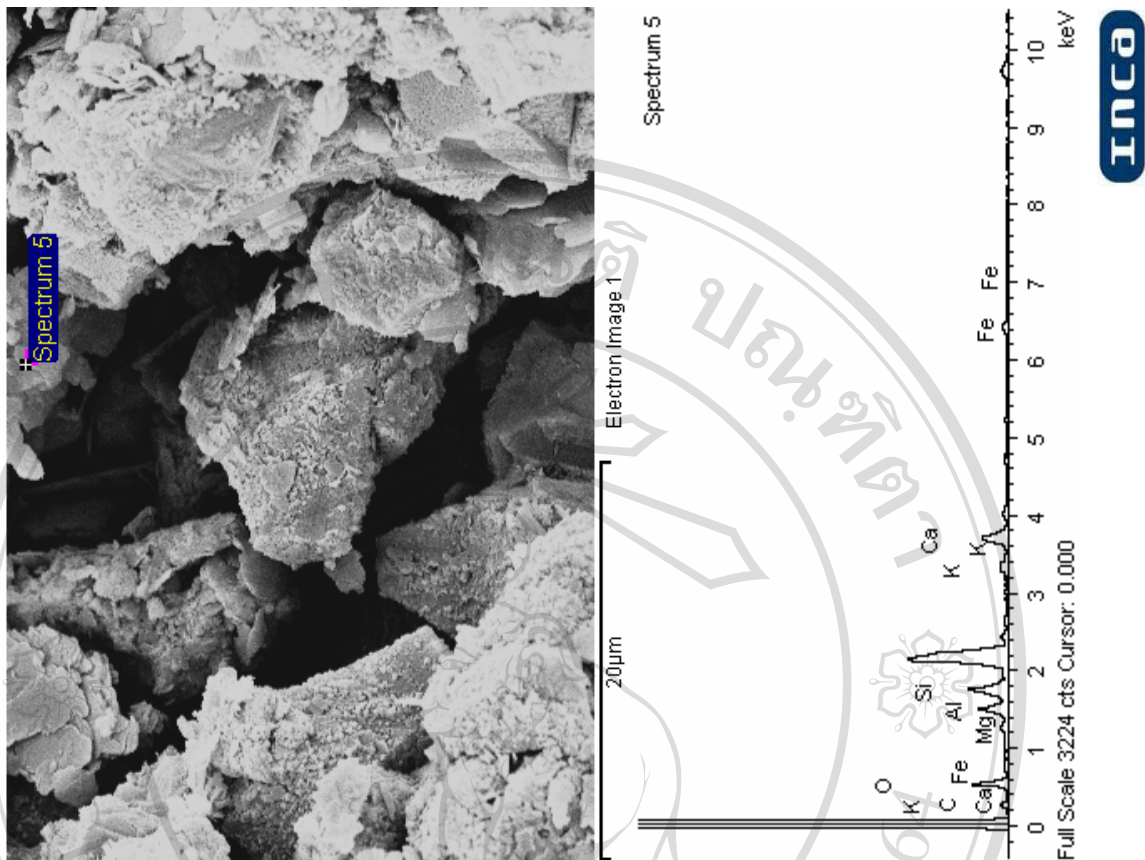


Spectrum processing :
Peaks possibly omitted : 2.144, 2.421, 9.703, 11.480 keV
Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	10.59	18.77
O K	38.26	50.91
Mg K	1.44	1.26
Al K	8.15	6.43
Si K	10.14	7.68
K K	3.23	1.76
Ca K	16.28	8.65
Fe K	11.89	4.53
Totals	100.00	

Comment: Well-B-07-1192.50



8/18/2009 11:50:10 AM

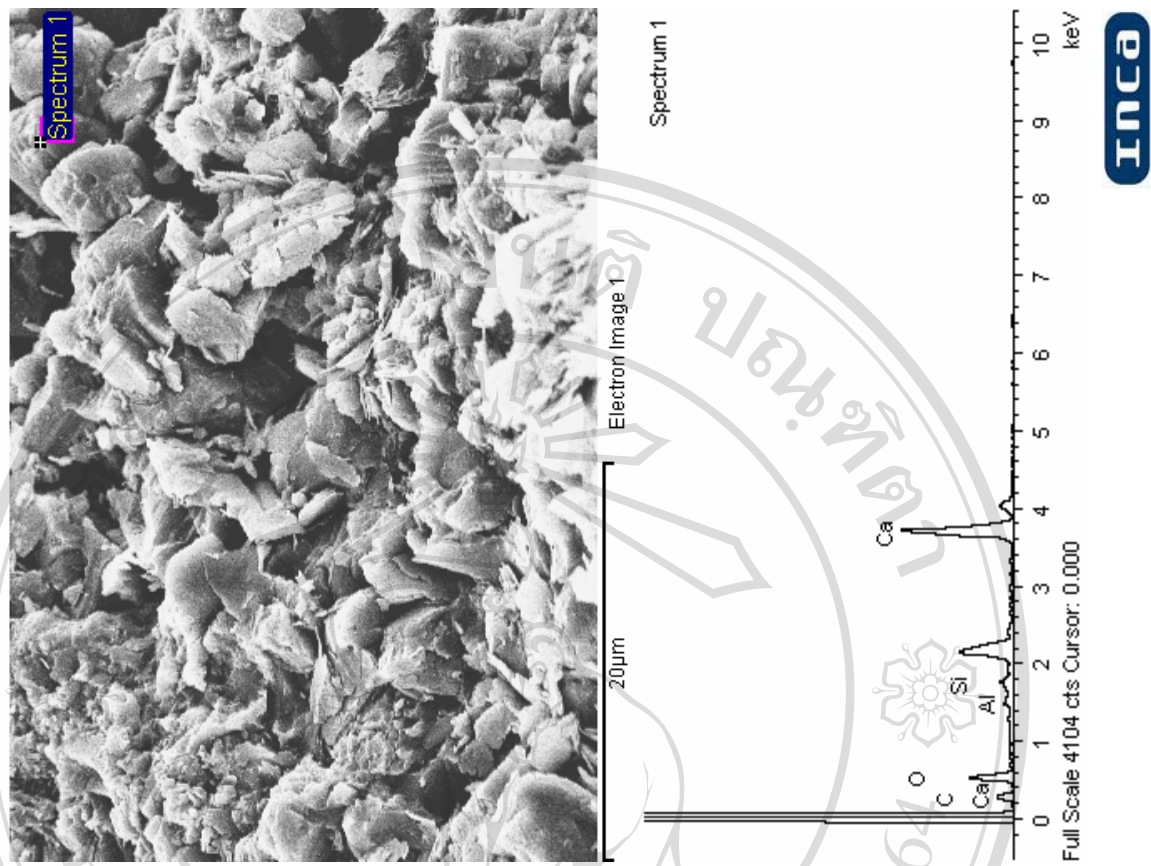
Project 1

Spectrum processing :
Peaks possibly omitted : 2.141, 6.400, 9.692 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	7.84	13.85
O K	46.13	61.19
Al K	1.01	0.79
Si K	1.46	1.10
Ca K	43.57	23.07
Totals	100.00	

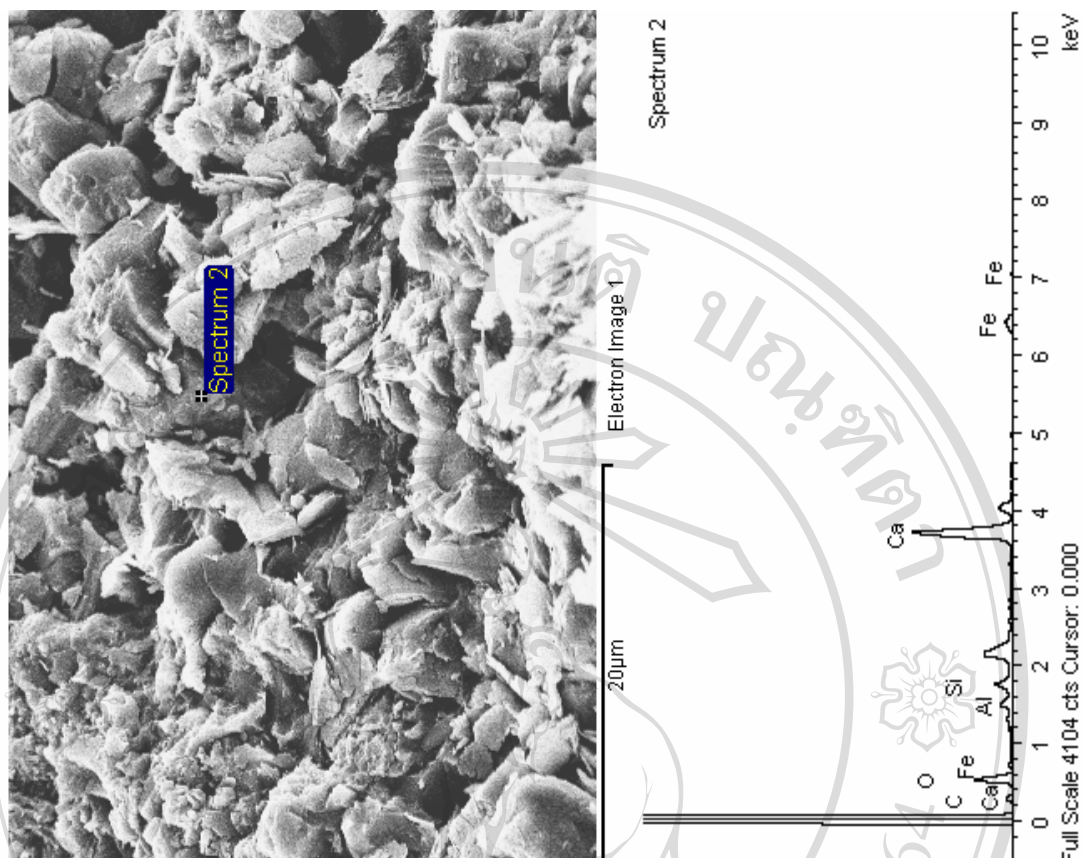


Comment: Well-B-08-1194.51

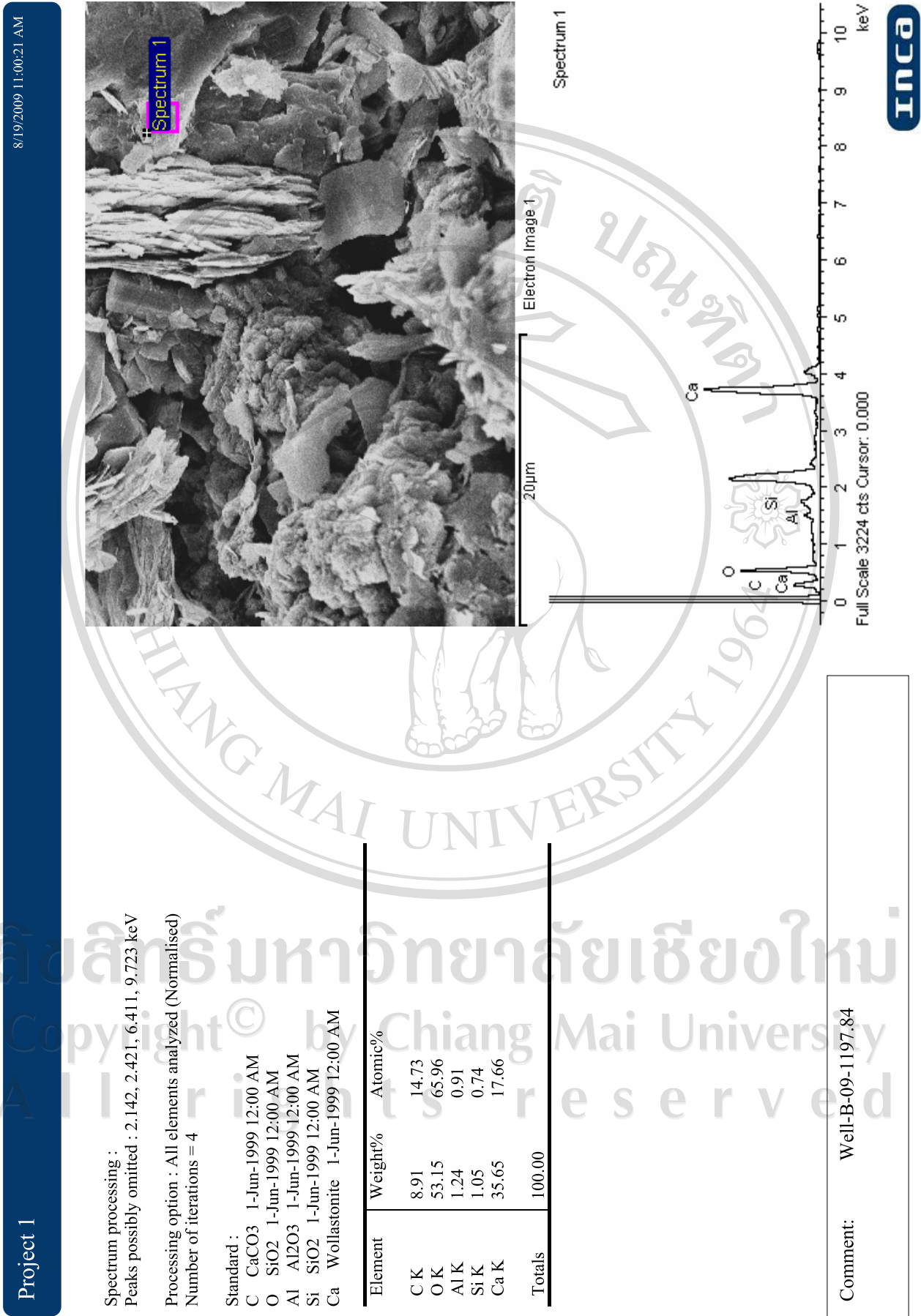
Spectrum processing :
Peak possibly omitted : 2.141 keV
Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
C CaCO₃ 1-Jun-1999 12:00 AM
O SiO₂ 1-Jun-1999 12:00 AM
Al Al₂O₃ 1-Jun-1999 12:00 AM
Si SiO₂ 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	4.18	8.44
O K	37.78	57.26
Al K	1.82	1.64
Si K	2.70	2.33
Ca K	41.52	25.12
Fe K	11.99	5.21
Totals	100.00	



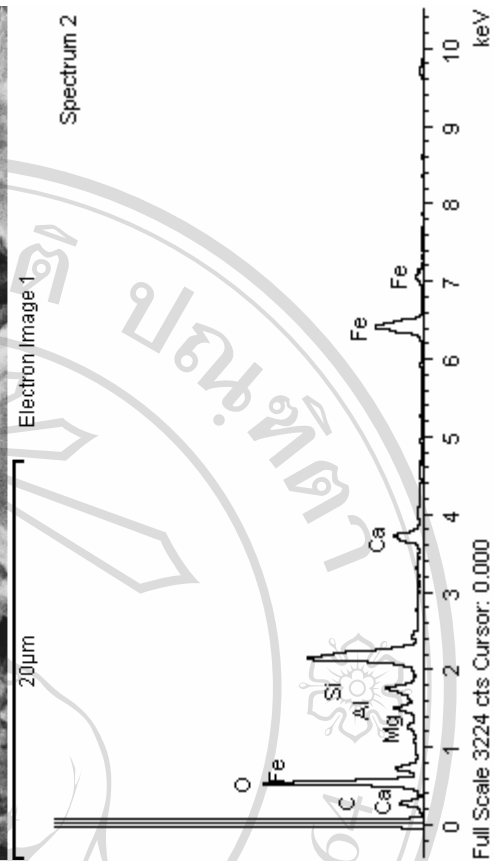
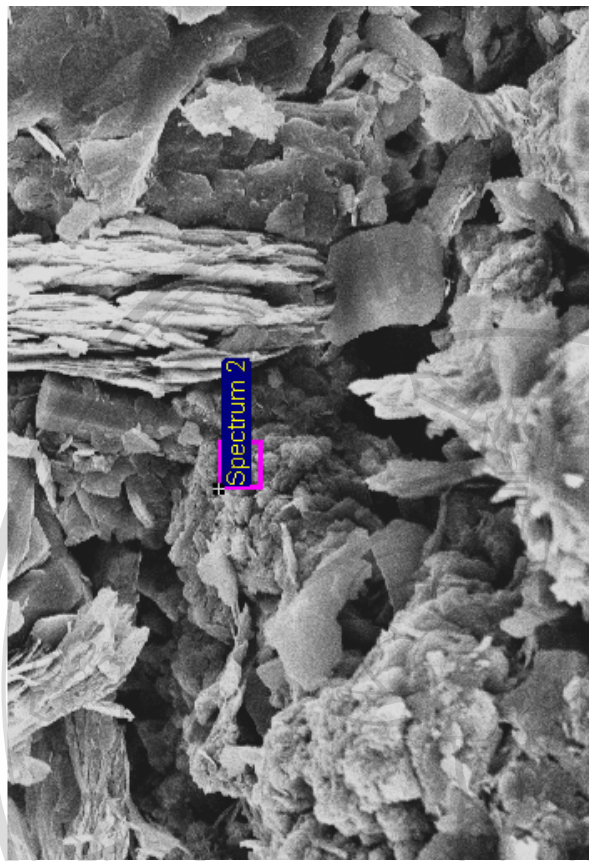
Comment: Well-B-08-1194.51



Spectrum processing :
Peaks possibly omitted : 2.139, 2.420, 9.701 keV
Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	10.88	20.96
O K	37.13	53.70
Mg K	0.94	0.89
Al K	2.61	2.24
Si K	2.97	2.44
Ca K	5.68	3.28
Fe K	39.79	16.49
Totals	100.00	

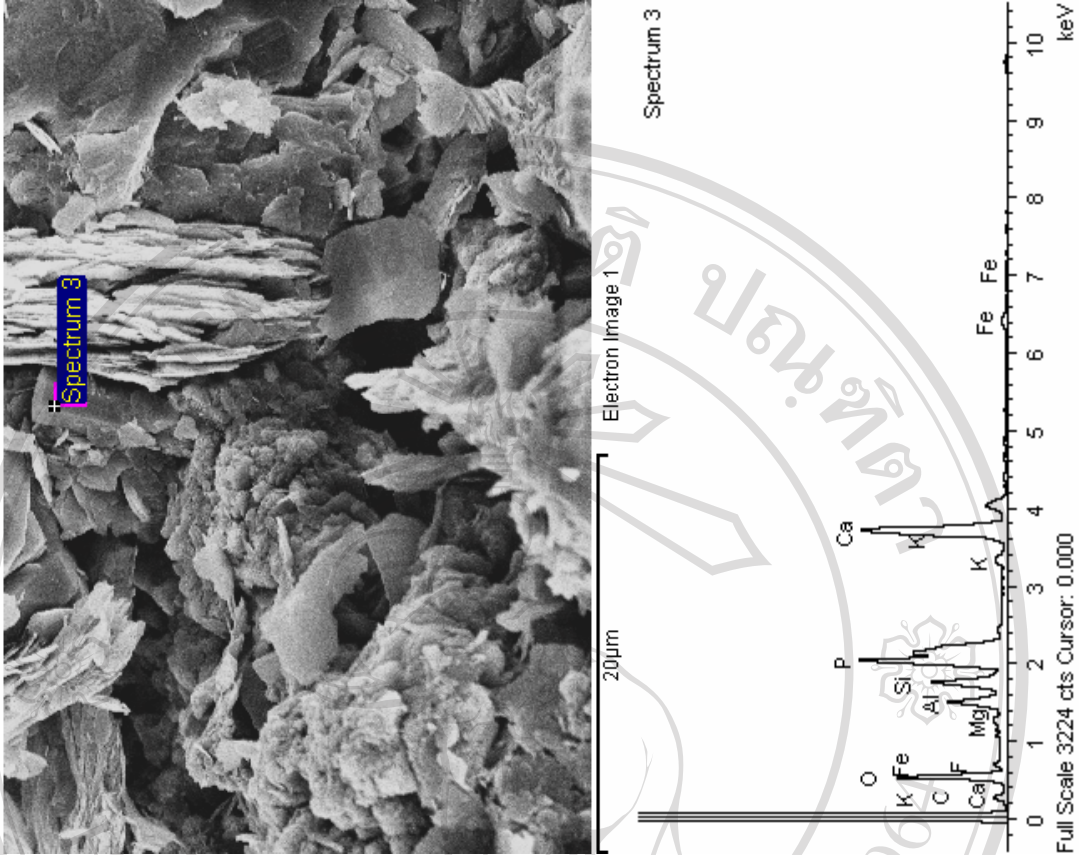


Spectrum processing :
Peaks possibly omitted : 2.420, 7.600, 9.710, 11.120 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 4

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
F MgF2 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
P GaP 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	6.65	11.98
O K	39.36	53.21
F K	3.30	3.76
Mg K	0.46	0.41
Al K	4.03	3.23
Si K	5.30	4.08
P K	10.94	7.64
K K	1.22	0.68
Ca K	25.51	13.77
Fe K	3.21	1.24
Totals	100.00	

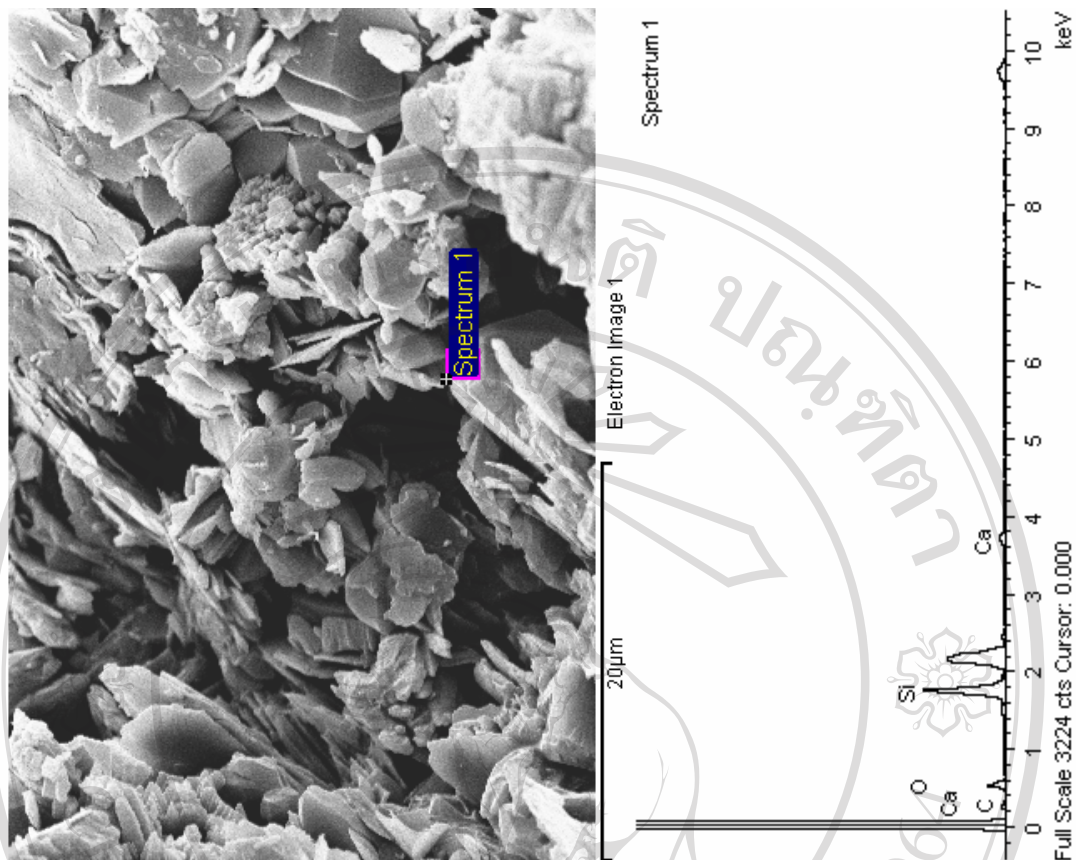


Comment: Well-B-09-1197.84

Spectrum processing :
Peaks possibly omitted : 2.148, 2.430, 9.707 keV
Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	19.09	29.72
O K	34.83	40.70
Si K	40.56	27.00
Ca K	5.52	2.58
Totals	100.00	



Comment: Well-B-10-1199.06

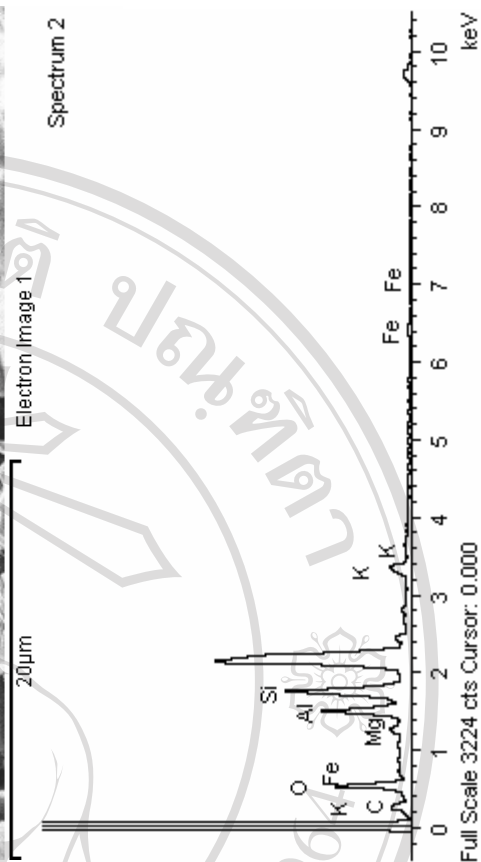
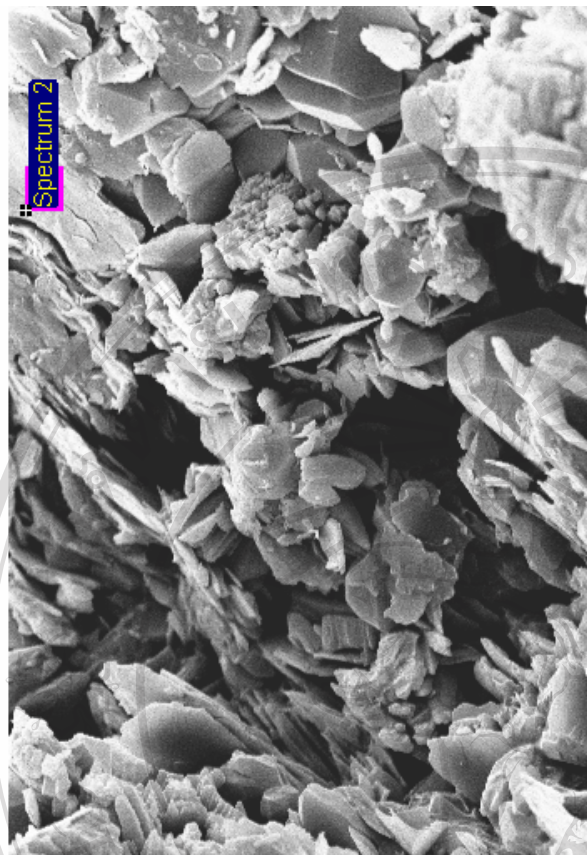
Spectrum processing :
Peaks possibly omitted : 2.145, 2.429, 2.800, 9.691, 11.520 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
C CaCO3 1-Jun-1999 12:00 AM
O SiO2 1-Jun-1999 12:00 AM
Mg MgO 1-Jun-1999 12:00 AM
Al Al2O3 1-Jun-1999 12:00 AM
Si SiO2 1-Jun-1999 12:00 AM
K MAD-10 Feldspar 1-Jun-1999 12:00 AM
Fe Fe 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	11.37	18.84
O K	38.84	48.31
Mg K	1.54	1.26
Al K	13.99	10.32
Si K	22.98	16.28
K K	6.39	3.25
Fe K	4.88	1.74
Totals	100.00	

Comment: Well-B-10-1199.06



Project 1

8/19/2009 11:19:40 AM

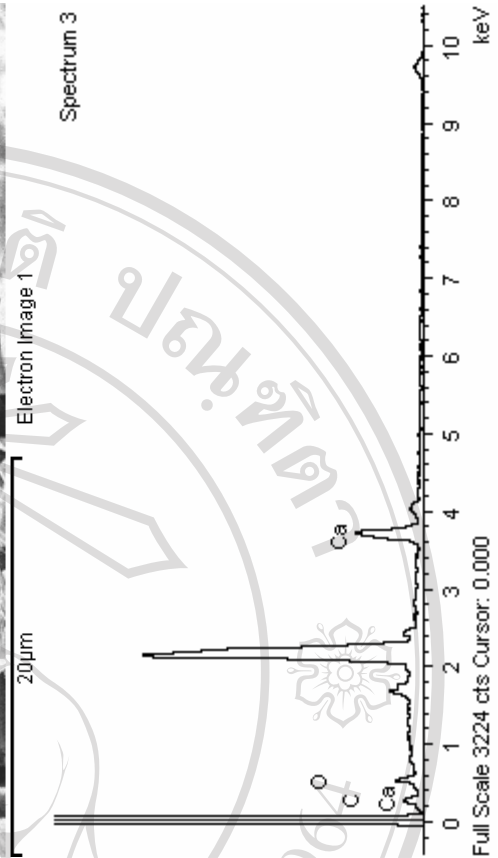
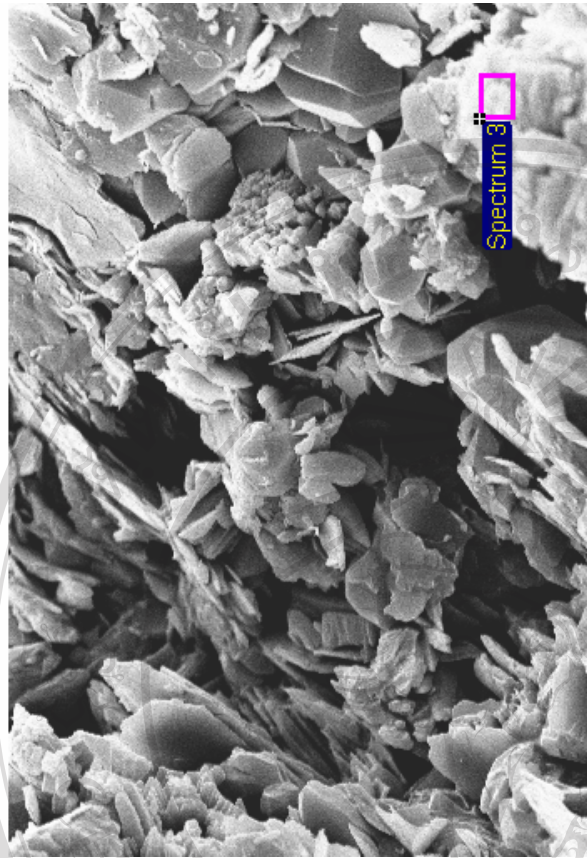
Spectrum processing :
Peaks possibly omitted : 1.665, 2.140, 2.423, 9.706 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :

C CaCO₃ 1-Jun-1999 12:00 AM
O SiO₂ 1-Jun-1999 12:00 AM
Ca Wollastonite 1-Jun-1999 12:00 AM

Element	Weight%	Atomic%
C K	12.39	21.43
O K	42.48	55.17
Ca K	45.13	23.40
Totals	100.00	



INCA

Comment: Well-B-10-1199.06