Lab/Cor, Inc.

A Professional Service Corporation in the Northwest

September 20, 2005

Ecology and Environment, Inc.
350 Sansome
Ste 300
San Francisco, CA 94104

Dear Howard,

Enclosed is the requested data sheets for the job numbers the validator found errors in.

Included are the verification sheets for the Actiniolite found on sample 041188-09, the Actinolite found on sample 041188-49, the Edenite and Actinolite found on sample 041191-05, and the Actinolite fournd on sample 041191-56, also included is an updated copy of the Prep Sheet with the correct dilution factors.

I plan on speaking with Dee Shepard from Trillium today, and if anything changes I will update the information as needed.

Sincerely,

Kate March
Lab/Cor, Inc.
Seattle WA, 98117

(206)781-0155
kmarch@labcor.net

Lab/Cor, Inc.

A Professional Service Corporation in the Northwest

September 6, 2005
REVISED Indirect Sample Prep List

Prepped	Job #	L/C#	Sample Vol. (L)	Original Filter Area (mm2)	Test Filter Area (mm2)	FF Remain	FF Used	Visual Loading	Number of Grid Openings	Residual Volume (ml)	Aliquot (ml)	Dilution	Grids Needed
MH 1/21/05	041172	01	300.96	385	193	0.49	0.25	1.4	177.00	20	20	1:2	7
MH 1/21/05	041172	02	296.04	385	193	0.49	0.25	1	180.00	20	20	1:2	7
MH 1/21/05	041172	11	608.15	385	193	0.53	0.25	1.4	88.00	20	20	1:2	4
	041188	02	2343	385	193	Filter Blown Out							
MH 1/21/05	041188	03	902.5	385	193	0.5	0.25	2.2	59.00	20	20	1:2	3
MH 1/21/05	041188	05	893.84	385	193	0.6	0.25	2.2	60.00	20	20	1:2	3
MH 1/21/05	041188	06	908.8	385	193	0.6	0.25	3	59.00	20	20	1:2	3
MH 1/21/05	041188	07	900.33	385	193	0.65	0.25	2.7	118.00	20	10	1:4	5
MH 1/21/05	041188	08	2464.87	385	193	0.65	0.25	2.2	22.00	20	20	1:2	3
MH 1/28/05	041188	09	2465.37	385	193	0.45	0.25	3	43.00	20	10	1:4	3
MH 1/28/05	041188	12	903.74	385	193	0.7	0.25	2.1	59.00	20	20	1:2	3
MH 1/28/05	041188	15	605.59	385	193	0.65	0.25	1.3	88.00	20	20	1:2	4
	041188	16	586.2	385	193	Filter Blown Out							
MH 1/28/05	041188	19	311.64	385	193	0.7	0.25	1.4	171.00	20	20	1:2	7
MH 1/28/05	041188	20	308.4	385	193	0.75	0.5	1.2	173.00	20	10	1:2	7
MH 1/28/05	041188	25	625.58	385	193	0.65	0.25	1.2	85.00	20	20	1:2	4
MH 1/28/05	041188	27	626.25	385	193	0.7	0.25	1.9	85.00	20	20	1:2	4
MH 1/28/05	041188	31	315.25	385	193	0.75	0.5	1.2	169.00	20	10	1:2	7
MH 1/28/05	041188	37	598.92	385	193	0.6	0.25	1.3	89.00	20	20	1:2	4
MH 2/10/05	041188	39	299.11	385	193	0.89	0.5	2.8	237.00	20	7.5	1:2.7	9
MH 2/10/05	041188	40	306.25	385	193	0.89	0.5	1.4	174.00	20	10	1:2	7
MH 2/10/05	041188	43	312.54	385	193	0.89	0.5	2.2	170.00	20	10	1:2	7
MH 2/10/05	041188	44	307.46	385	193	0.89	0.5	1.8	173.00	20	10	1:2	7
MH 2/10/05	041188	45	302.04	385	193	0.89	0.5	1.3	176.00	20	10	1:2	7
MH 2/10/05	041188	47	309	385	193	0.89	0.5	1.5	172.00	20	10	1:2	7

Lab/Cor, Inc.

A Professional Service Corporation in the Northwest

Prepped	Job #	L/C#	Sample Vol. (L)	Original Filter Area (mm2	Test Filter Area (mm2)	FF Remain	FF Used	Visual Loading	Number of Grid Openings	Residual Volume (ml)	Aliquot (ml)	Dilution	Grids Needed
MH 2/10/05	041188	48	312.72	385	193	0.48	0.25	1	170.00	20	20	1:2	7
MH 2/10/05	041188	49	294.96	385	193	0.72	0.25	1.3	181.00	20	20	1:2	8
MH 2/10/05	041188	86	1203.6	385	193	0.68	0.25	1.7	44.00	20	20	1:2	3
	041188	89	1199.52	385	193	Filter Blown Out							
MH 2/10/05	041188	98	1244.76	385	193	0.45	0.25	1.5	43.00	20	20	1:2	3
MH 2/10/05	041188	101	1215.88	385	193	0.89	0.5	3	88.00	20	5	1:4	4
MH 2/10/05	041188	103	1247.88	385	193	1	0.5	1.8	43.00	20	10	1:2	3
MH 3/22/05	041188	111	1148.05	385	193	1	0.5	1.4	46.00	20	10	1:2	3
MH 3/22/05	041191	04	893.16	385	193	0.75	0.5	1.9	60.00	20	10	1:2	3
MH 3/22/05	041191	05	920.52	385	193	0.75	0.25	2.5	77.00	20	15	1:2.7	4
MH 3/22/05	041191	06	904.68	385	193	0.75	0.25	2.4	79.00	20	15	1:2.7	4
MH 3/22/05	041191	24	582.92	385	193	0.75	0.5	2.3	91.00	20	10	1:2	5
MH 3/22/05	041191	26	598.5	385	193	0.75	0.5	1.1	89.00	20	10	1:2	4
KM 3-16-05	041191	28	306.24	385	193	0.75	0.5	2.4	174.00	20	10	1:2	7
KM 3-16-05	041191	29	305.4	385	193	0.75	0.5	2.7	174.00	20	10	1:2	7
KM 3-16-05	041191	33	300.96	385	193	0.75	0.5	1.3	177.00	20	10	1:2	7
KM 3-16-05	041191	34	305.28	385	193	0.75	0.5	3	233.00	20	7.5	1:2.7	9
KM 3-16-05	041191	35	301.44	385	193	0.75	0.5	2.4	177.00	20	10	1:2	7
MH 3/22/05	041191	36	878.04	385	193	0.75	0.5	2.2	61.00	20	10	1:2	4
MH 3/22/05	041191	37	903.6	385	193	0.75	0.5	2.6	79.00	20	7.5	1:2.7	4
MH 3/22/05	041191	39	929.16	385	193	0.75	0.5	2.2	57.00	20	10	1:2	3
MH 3/22/05	041191	40	928.08	385	193	0.75	0.5	2.5	57.00	20	10	1:2	3
MH 3/7/05	041191	49	307.56	385	193	0.75	0.5	2.7	231.00	20	7.5	1:2.7	9
MH 3/7/05	041191	50	303.72	385	193	0.75	0.5	2.4	175.00	20	10	1:2	7
MH 3/7/05	041191	51	296.76	385	193	0.75	0.5	2.8	239.00	20	7.5	1:2.7	9
MH 3/7/05	041191	53	303.72	385	193	0.75	0.5	3	234.00	20	7.5	1:2.7	9
MH 3/7/05	041191	54	309.24	385	193	0.75	0.5	2.1	172.00	20	10	1:2	7

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Prepped	Job #	L/C#	Sample Vol. (L)	Original Filter Area (mm2)	Test Filter Area (mm2)	FF Remain	FF Used	Visual Loading	Number of Grid Openings	Residual Volume (ml)	Aliquot (ml)	Dilution	Grids Needed
MH 3/7/05	041191	55	302.52	385	193	0.75	0.5	2.5	176.00	20	10	1:2	7
MH 3/7/05	041191	56	291.96	385	193	0.75	0.5	2.5	182.00	20	10	1:2	8
MH 3/22/05	041191	82	606.99	385	193	1	0.5	1.5	88.00	20	10	1:2	4
MH 3/22/05	041191	87	580.78	385	193	0.82	0.5	1.4	92.00	20	10	1:2	5
	041191	100	303.21	385	193	0.85	Rejected at Prep - About 1-2 mm hole in filter						
	041191	101	1231.2	385	193	0.89	Rejected at Prep - About 1-2 mm hole in filter						
	041191	104	1255.2	385	193	0.89	Rejected at Prep - Blue & White filter remmants from manufacturing under filter, causing redistribution of air flow over filter						
MH 3/7/05	041191	108	1258.8	385	193	0.89	0.5	2.8	56.00	20	7.5	1:2.7	3
MH 3/7/05	041191	109	1185.06	385	193	0.89	0.5	1.4	45.00	20	10	1:2	3
MH 3/7/05	041191	112	1243.2	385	193	0.89	0.5	2.1	43.00	20	10	1:2	3
	041210	22	6588.09	385	193	Filter Blown Out							
MH 3/22/05	041210	46	7200	385	193	0.8	0.25	3	49.00	20	10	1:4	3
MH 3/22/05	041210	47	7072.96	385	193	0.8	0.25	3	50.00	20	10	1:4	3
MH 3/22/05	041210	59	6931.34	385	193	0.8	0.25	3	51.00	20	10	1:4	3
MH 3/30/05	050580	02	605.59	385	193	0.65	0.25	1.3	88.00	20	20	1:2	4
MH 3/30/05	050580	03	605.59	385	193	0.65	0.25	1.3	88.00	20	20	1:2	4
MH 3/30/05	050580	07	1185.06	385	193	0.89	0.5	1.4	45.00	20	10	1:2	3
KM 3/16/2005	Lab Process Blank			385	193	1	0.5	0	60.00	20	10	1:2	3

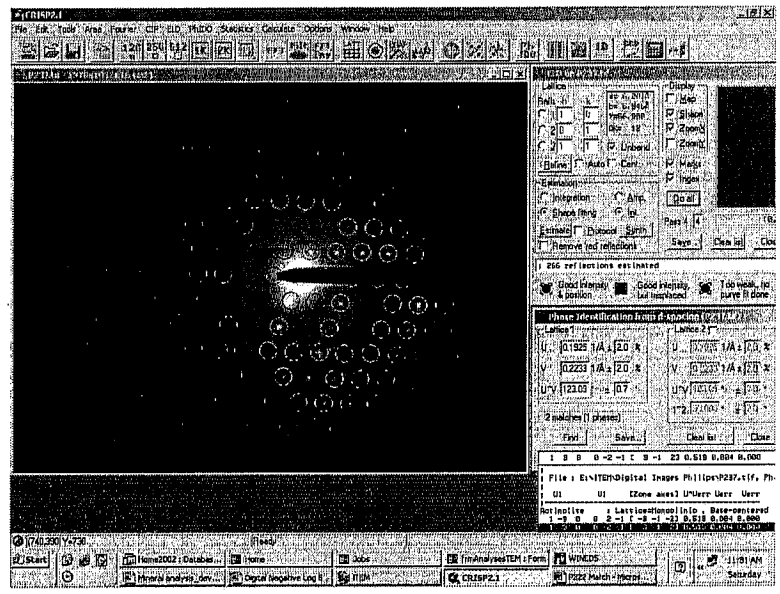
QC Supervisor,

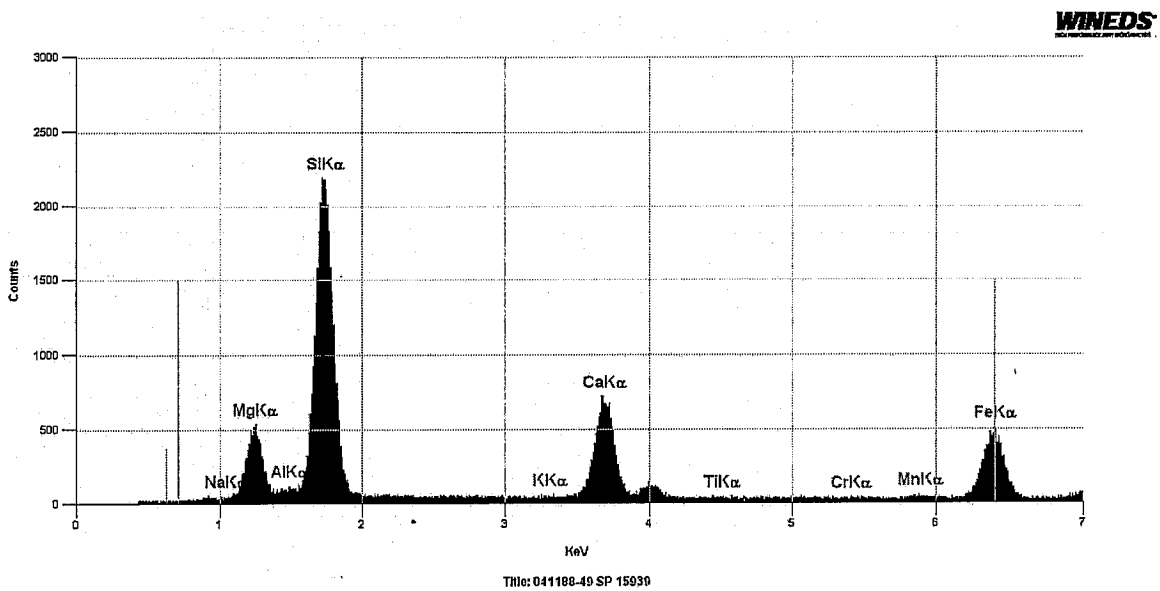
Kate March

QC Technician,

Minh Huynh

Actinolite
Zone Axis [3 -1 2]
Neg# P237 Job# 041188-49
iTEM Image





Quantitative Analysis Results - Standardless Analysis :
Spectrum8 041188-49 SP 15939 Sat, Mar 26 2005
EDS Parameters - 100KV, Takeoff Angle: 38.0°, Fit Index: 10.05
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Mg	8.69	MgO	16.03	0.64	16.03
Al	0.07	Al2O3	0.17	0.14	0.17
Si	21.47	SiO2	59.02	1.19	59.02
Ca	4.42	CaO	11.34	0.49	11.34
Fe	3.68	Fe2O3	13.44	0.75	13.44
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	59.02	Si+4	8.0000	8.0000							
Al2O3	0.17	Al+3	0.0467	0.0000	**0.0467**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	13.44	Fe+3	0.2638			0.2638	0.0000				
MgO	16.03	Mg+2	3.3525			3.3525	**0.0000**				
MnO	0	Fe+2	1.3012			1.3012	**0.0000**				
CaO	11.34	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	0	Ca+2	1.7144					1.7144	0.0000		
K2O	0	Na+	0.0000					0.0000	**0.0000**	0.0000	0.0000
		K+	0.0000							0.0000	0.0000
Total	**100**		**Excess**	T site	**0.0467**	C site	**0.0000**	B site	**0**	A site	**0**
			Total	**8**		**4.9643**		**1.7144**		**0.0000**	**0.0000**
			%Fill	**100**		**99.2857**		**85.7209**			

Prefix none
Name **actinolite**
Modifier none
Group **Calcic Amphibole**

Sample # **041188-49-15939**

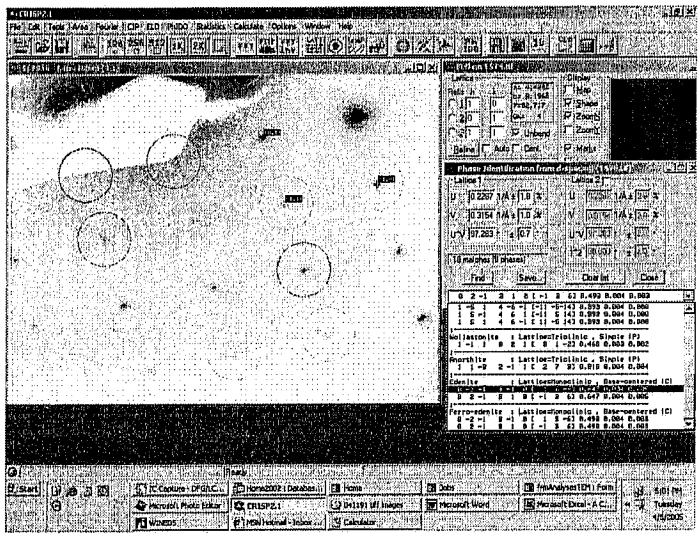
Values		Satisfied Conditions
(Ca,Na)@B	1.71	(Ca,Na)@B >= 1 and Na@B < 0.5
Na@B	0.00	Ca@B >= 1.5 and (Na,K)@A < 0.5
Ca@B	1.71	(Mg/(Mg+Fe2))>= 0.5
(Na,K)@A	0.00	Si > 7.5
Mg/(Mg+Fe2)	0.72	(Mg/(Mg+Fe2))< 0.9
Si	8.00	

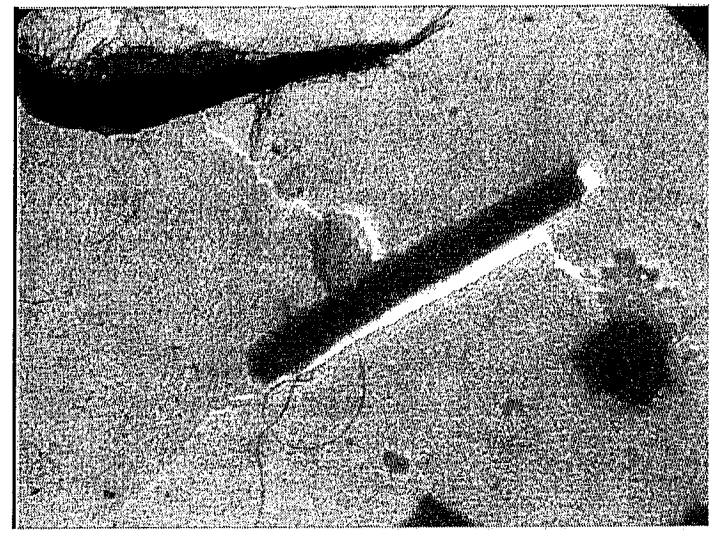
Mineral Analysis Program (Version 5.0)

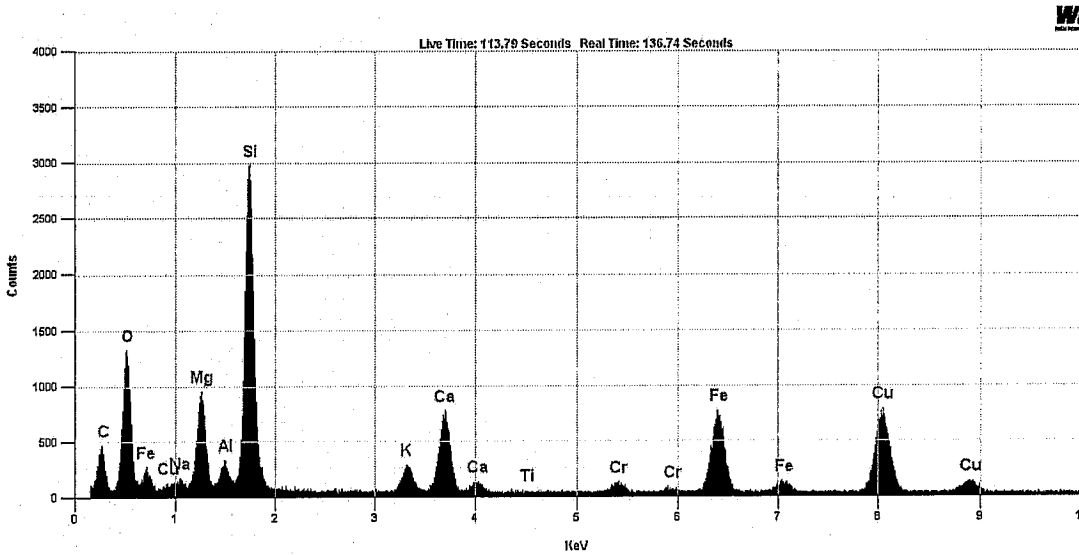
Lab/Cor, Inc.

A Professional Service Corporation in the Northwest

EDENITE - Zone Axis [1 3 -6]
Neg# J1579 Job# 041191-05
JEOL 1200EX - Gatan Image







Quantitative Analysis Results - Standardless Analysis :
041191-05 SP 1213 Tue, Apr 05 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 171.57
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Na	0.79	Na2O	1.09	0.17	1.09
Mg	6.41	MgO	11.51	0.28	11.51
Al	0.66	Al2O3	1.51	0.13	1.51
Si	20.40	SiO2	54.61	0.72	54.61
K	1.23	K2O	2.59	0.17	2.59
Ca	4.54	CaO	11.35	0.36	11.35
Fe	4.88	Fe2O3	17.34	0.62	17.34
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	54.61	Si+4	7.9261	7.9261							
Al2O3	1.51	Al+3	0.2583	0.0739	**0.1844**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	17.34	Fe+3	0.0189			0.0189	0.0000				
MgO	11.51	Mg+2	2.4905			2.4905	**0.0000**				
MnO	0	Fe+2	2.0834			2.0834	**0.0000**				
CaO	11.35	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	1.09	Ca+2	1.7648					1.7648	0.0000		
K2O	2.59	Na+	0.3067					0.2352	**0.0716**	0.0716	0.0000
		K+	0.4795							0.4795	0.0000
Total	**100**		**Excess**	T site	**0.1844**	C site	**0.0000**	B site	**0.0715549**	A site	**0**
			Total	**8**		**4.7773**		**2.0000**		**0.5511**	**0.0000**
			%Fill	**100**		**95.5459**		**100**			

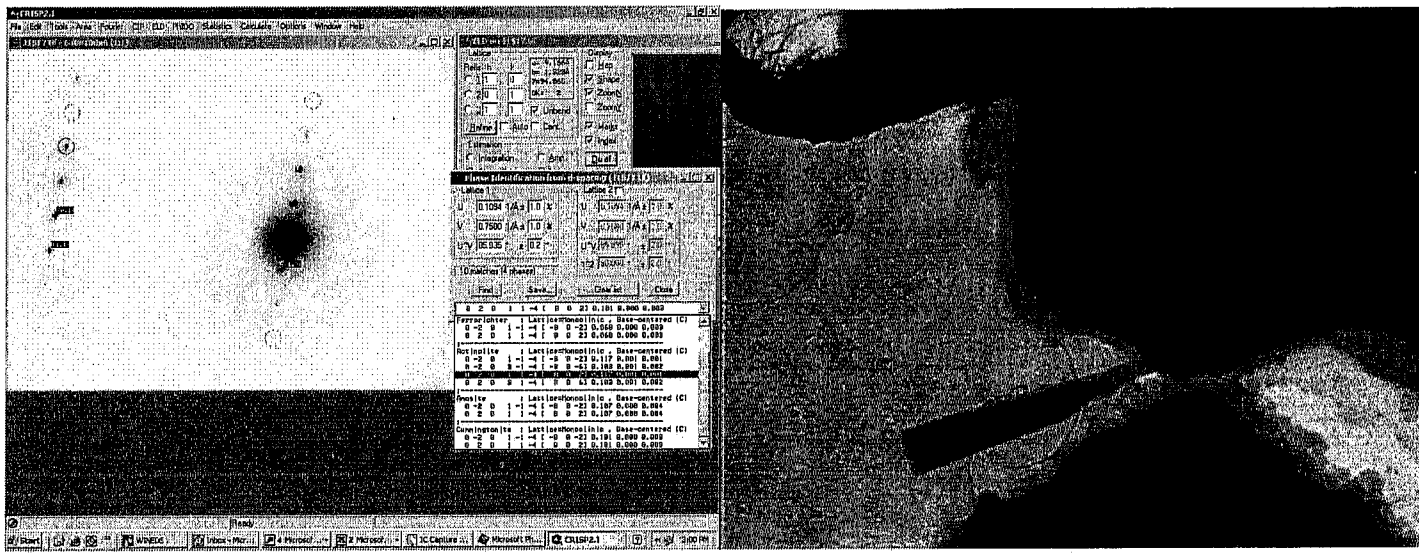
Prefix none
Name **edenite**
Modifier Potassian
Group **Calcic Amphibole**

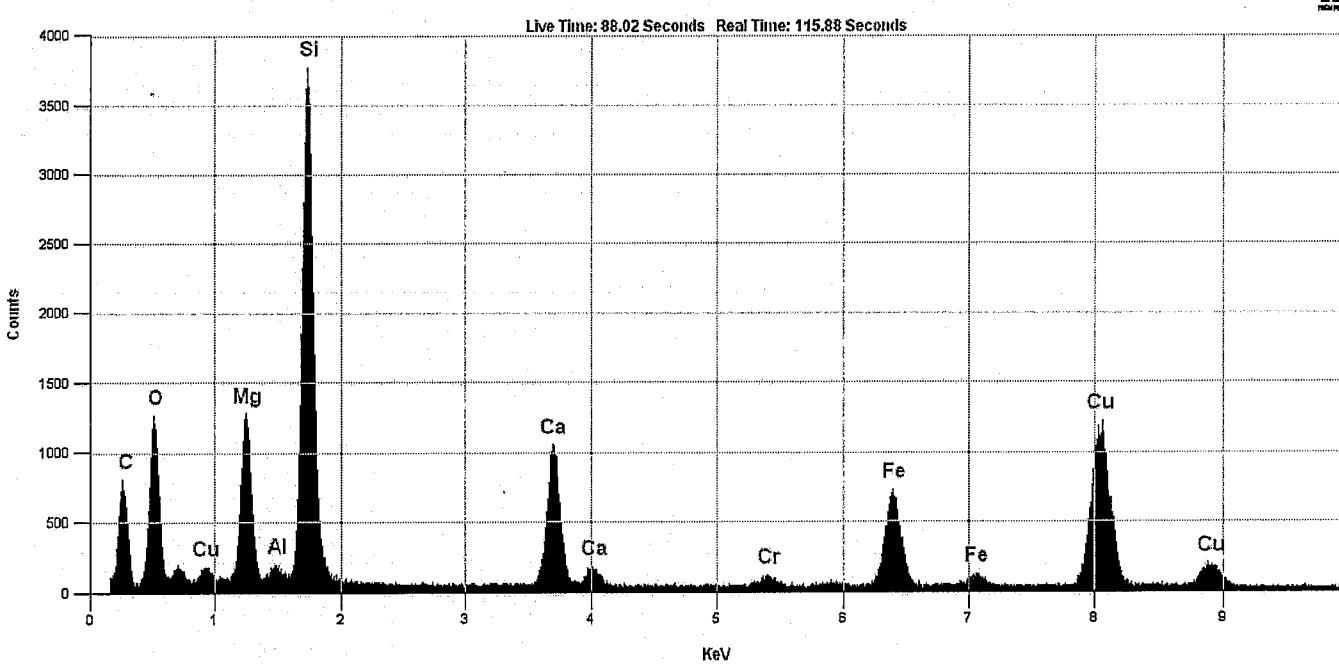
Sample # **041191-05-1213**

Values		**Satisfied Conditions**
(Ca,Na)@B	**2.00**	**(Ca,Na)@B >= 1 and Na@B < 0.5**
Na@B	**0.24**	**Ca@B >= 1.5 and (Na,K)@A >= 0.5**
Ca@B	**1.76**	**(Mg/(Mg+Fe2))>= 0.5**
(Na,K)@A	**0.55**	**Si > 6.5**
Mg/(Mg+Fe2)	**0.54**	
Si	**7.93**	

Mineral Analysis Program (Version 5.0)

ACTINOLITE
[4 0 1]
041191-56, Neg#J1517





Quantitative Analysis Results - Standardless Analysis :
041191-56-SP1161 Wed, Mar 16 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 228.78
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Mg	7.33	MgO	13.41	0.28	13.41
Al	0.21	Al2O3	0.50	0.10	0.50
Si	21.54	SiO2	58.75	0.68	58.75
Ca	5.49	CaO	13.97	0.36	13.97
Fe	3.69	Fe2O3	13.36	0.50	13.36
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	58.75	Si+4	8.0000	8.0000							
Al2O3	0.5	Al+3	0.1073	0.0000	**0.1073**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	13.36	Fe+3	0.0300			0.0300	0.0000				
MgO	13.41	Mg+2	2.8574			2.8574	**0.0000**				
MnO	0	Fe+2	1.5812			1.5812	**0.0000**				
CaO	13.97	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	0	Ca+2	2.1373					2.0000	0.1373		
K2O	0	Na+	0.0000					0.0000	**0.0000**	0.0000	0.0000
		K+	0.0000							0.0000	0.0000
Total	**99.99**		**Excess**	T site	**0.1073**	C site	**0.0000**	B site	**0.137251**	A site	**0**
			Total	**8**		**4.5760**		**2.0000**		**0.0000**	**0.0000**
			%Fill	**100**		**91.5192**		**100**			

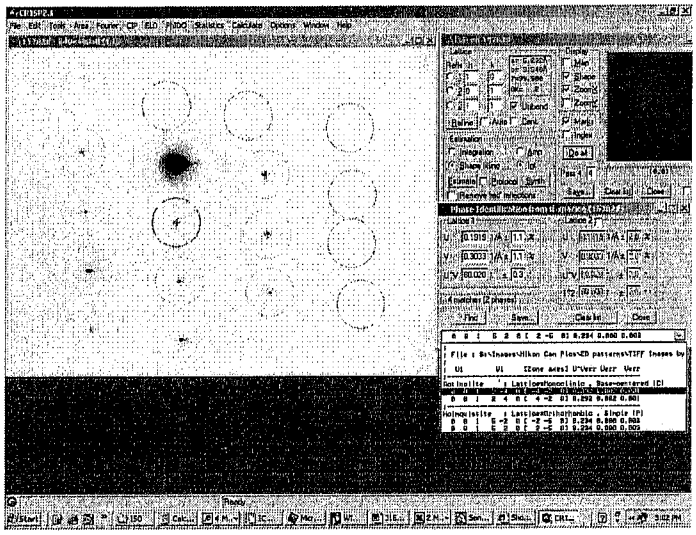
Prefix none
Name **actinolite**
Modifier none
Group **Calcic Amphibole**

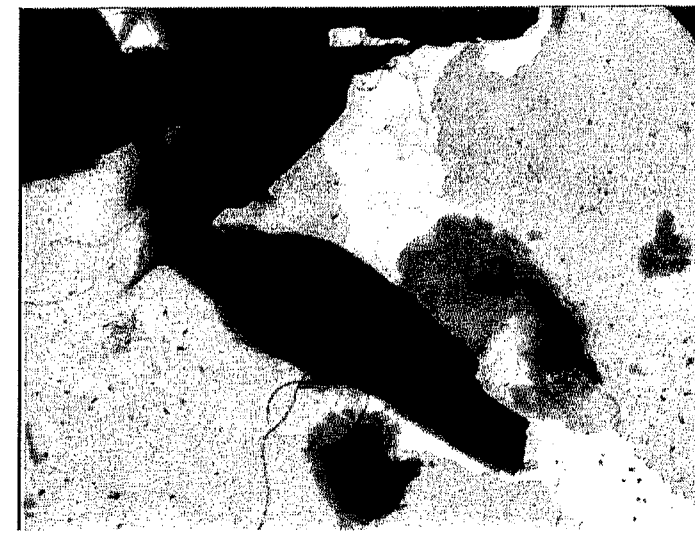
Sample # **041191-56-1161**

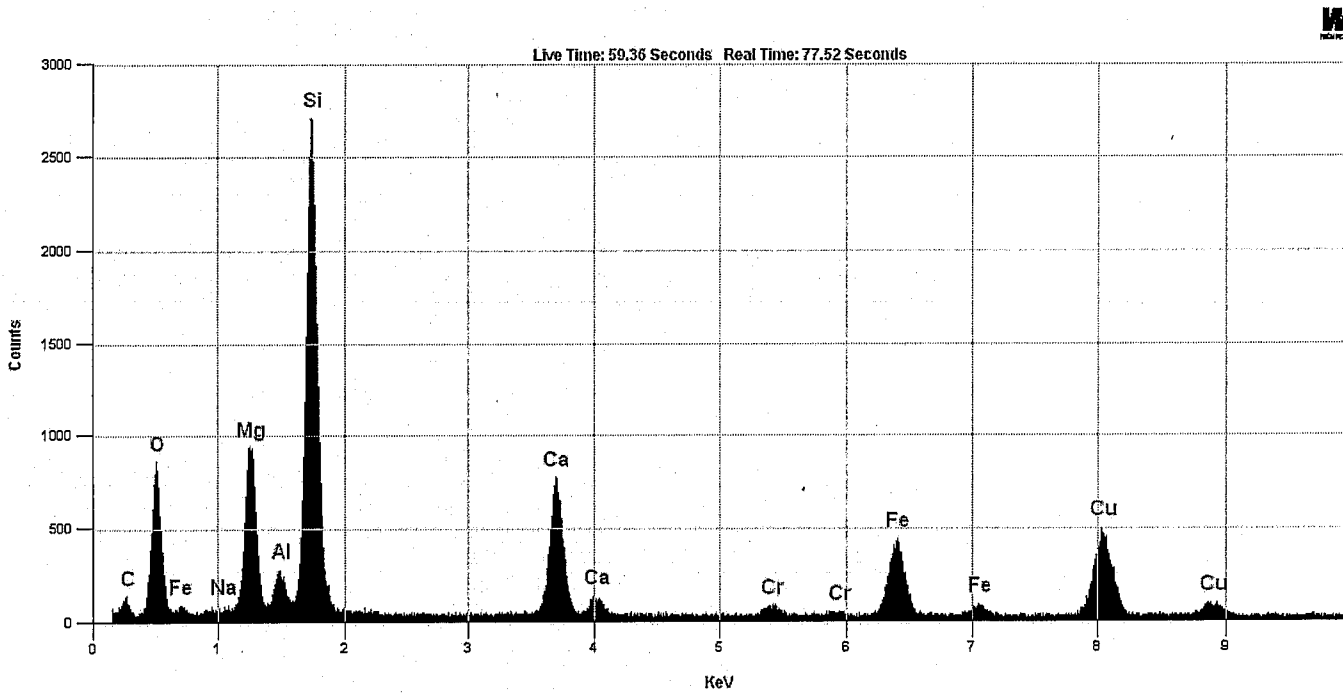
Values		Satisfied Conditions
(Ca,Na)@B	2.00	(Ca,Na)@B >= 1 and Na@B < 0.5
Na@B	0.00	Ca@B >= 1.5 and (Na,K)@A < 0.5
Ca@B	2.00	(Mg/(Mg+Fe2))>= 0.5
(Na,K)@A	0.00	Si > 7.5
Mg/(Mg+Fe2)	0.64	(Mg/(Mg+Fe2))< 0.9
Si	8.00	

Mineral Analysis Program (Version 5.0)

ACTINOLITE
[2 1 0] Zone Axis
041191-05, Neg#J1578







Title: 041191-05-SP1212 Time: 2:35:29 PM Date: Tue, Apr 05 2005 Accelerating Voltage: 100 KV Take Off Angle: 35 Degrees

Quantitative Analysis Results - Standardless Analysis :
041191-05-SP1212 Tue, Apr 05 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 172.29
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Na	0.16	Na2O	0.22	0.16	0.22
Mg	8.02	MgO	14.80	0.33	14.80
Al	0.73	Al2O3	1.71	0.15	1.71
Si	21.14	SiO2	58.17	0.83	58.17
Ca	5.40	CaO	13.87	0.43	13.87
Fe	3.07	Fe2O3	11.23	0.58	11.23
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	58.17	Si+4	8.0000	8.0000							
Al2O3	1.71	Al+3	0.2856	0.0000	**0.2856**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	11.23	Fe+3	0.0157			0.0157	0.0000				
MgO	14.8	Mg+2	3.0743			3.0743	**0.0000**				
MnO	0	Fe+2	1.2975			1.2975	**0.0000**				
CaO	13.87	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	0.22	Ca+2	2.0711					2.0000	0.0711		
K2O	0	Na+	0.0745					0.0000	**0.0745**	0.0745	0.0000
		K+	0.0000							0.0000	0.0000
Total	**100**		**Excess**	T site	**0.2856**	C site	**0.0000**	B site	**0.1456058**	A site	**0**
			Total	**8**		**4.6730**		**2.0000**		**0.0745**	**0.0000**
			%Fill	**100**		**93.4609**		**100**			

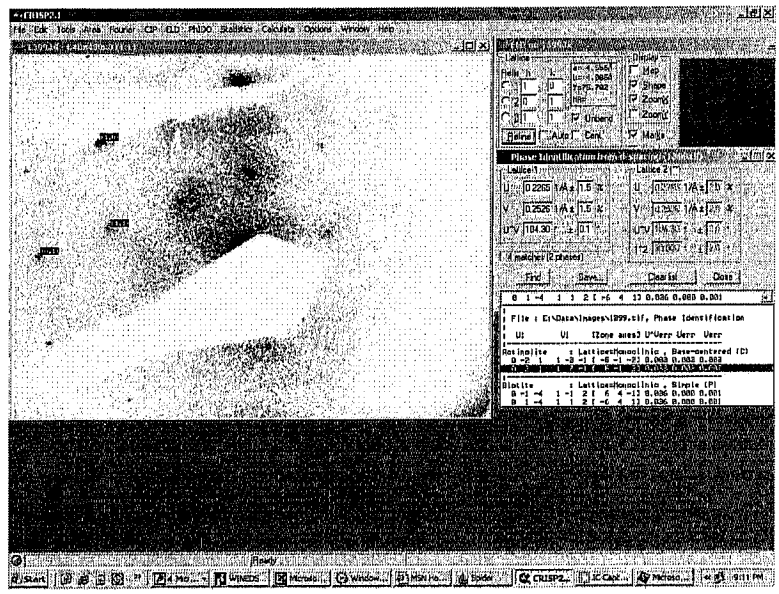
Prefix none
Name **actinolite**
Modifier none
Group **Calcic Amphibole**

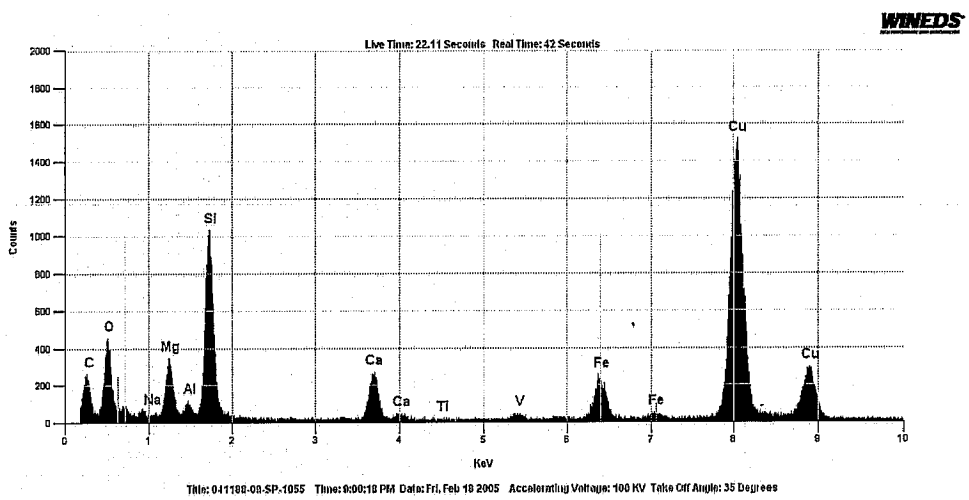
Sample # **041191-05-1212**

Values		**Satisfied Conditions**
(Ca,Na)@B	**2.00**	**(Ca,Na)@B >= 1 and Na@B < 0.5**
Na@B	**0.00**	**Ca@B >= 1.5 and (Na,K)@A < 0.5**
Ca@B	**2.00**	**(Mg/(Mg+Fe2))>= 0.5**
(Na,K)@A	**0.07**	**Si > 7.5**
Mg/(Mg+Fe2)	**0.70**	**(Mg/(Mg+Fe2))< 0.9**
Si	**8.00**	

Mineral Analysis Program (Version 5.0)

ACTINOLITE - Zone Axis [5 1 2]
041188-09 Neg# J1399
Gatan Image 2/18/05





Quantitative Analysis Results - Standardless Analysis :
041188-09-SP-1055 Fri, Feb 18 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 81.82
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Na	0.42	Na2O	0.58	0.33	0.58
Mg	6.83	MgO	12.35	0.56	12.35
Al	0.75	Al2O3	1.72	0.24	1.72
Si	20.56	SiO2	55.37	1.41	55.37
Ca	4.92	CaO	12.38	0.70	12.38
Fe	4.92	Fe2O3	17.61	1.38	17.61
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	55.37	Si+4	7.9201	7.9201							
Al2O3	1.72	Al+3	0.2899	0.0799	**0.2101**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	17.61	Fe+3	0.0190			0.0190	0.0000				
MgO	12.35	Mg+2	2.6336			2.6336	**0.0000**				
MnO	0	Fe+2	2.0852			2.0852	**0.0000**				
CaO	12.38	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	0.58	Ca+2	1.8971					1.8971	0.0000		
K2O	0	Na+	0.1608					0.1029	**0.0580**	0.0580	0.0000
		K+	0.0000							0.0000	0.0000
Total	**100.01**		**Excess**	T site	**0.2101**	C site	**0.0000**	B site	**0.0579834**	A site	**0**
			Total	**8**		**4.9479**		**2.0000**		**0.0580**	**0.0000**
			%Fill	**100**		**98.9572**		**100**			

Prefix none
Name **actinolite**
Modifier none
Group **Calcic Amphibole**

Sample # **041188-09-1055**

Values		Satisfied Conditions
(Ca,Na)@B	2.00	(Ca,Na)@B >= 1 and Na@B < 0.5
Na@B	0.10	Ca@B >= 1.5 and (Na,K)@A < 0.5
Ca@B	1.90	(Mg/(Mg+Fe2))>= 0.5
(Na,K)@A	0.06	Si > 7.5
Mg/(Mg+Fe2)	0.56	(Mg/(Mg+Fe2))< 0.9
Si	7.92	

Mineral Analysis Program (Version 5.0)

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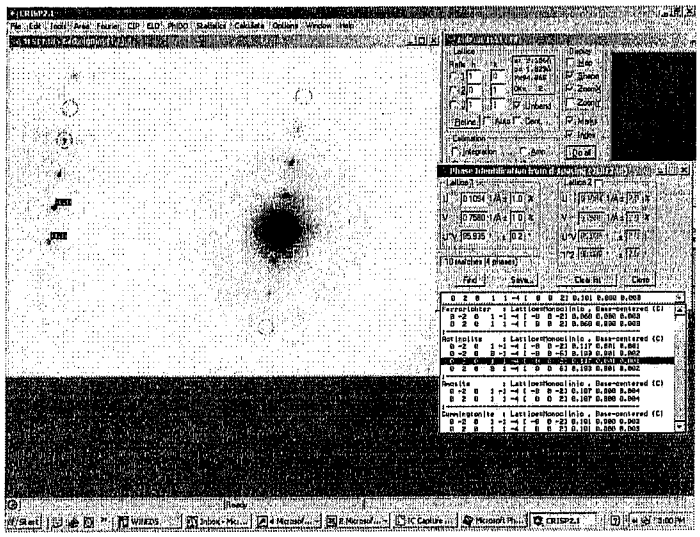
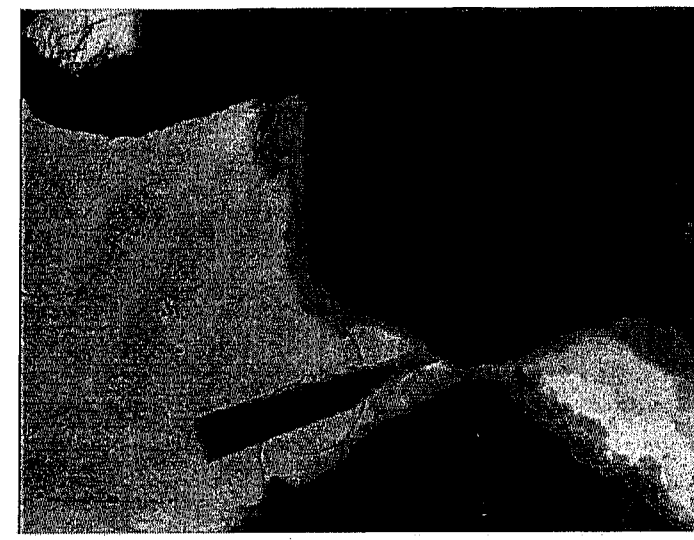
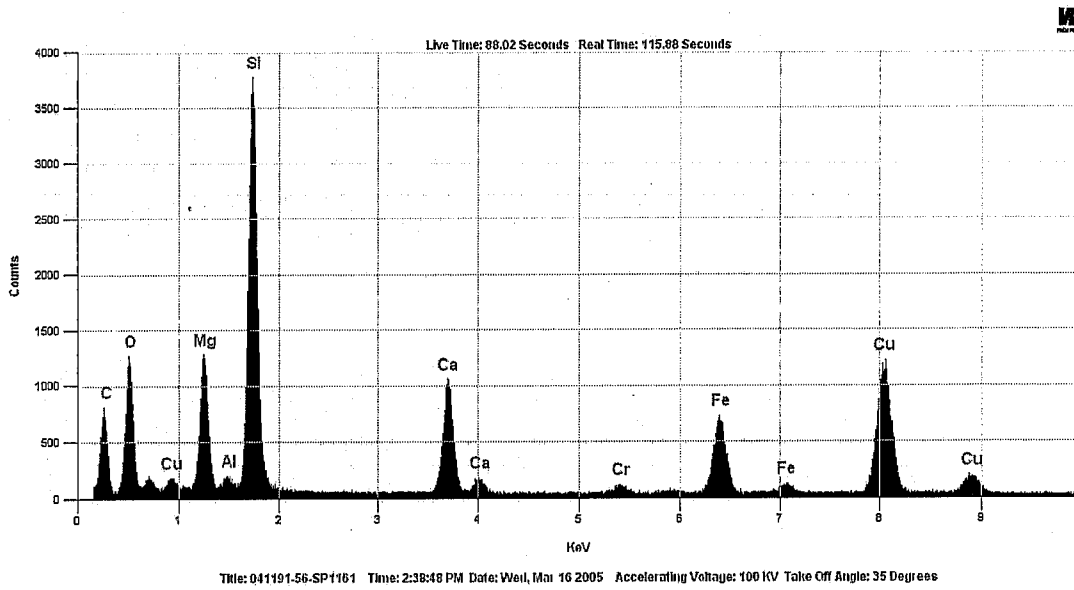
ACTINOLITE -- Zone Axis [4 0 1]
Neg#J1517 Job# 041191-56,
JEOL 1200EX -- Gatan Image







Quantitative Analysis Results - Standardless Analysis :
041191-56-SP1161 Wed, Mar 16 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 228.78
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Mg	7.33	MgO	13.41	0.28	13.41
Al	0.21	Al2O3	0.50	0.10	0.50
Si	21.54	SiO2	58.75	0.68	58.75
Ca	5.49	CaO	13.97	0.36	13.97
Fe	3.69	Fe2O3	13.36	0.50	13.36
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	58.75	Si+4	8.0000	8.0000							
Al2O3	0.58	Al+3	0.1196	0.0000	**0.1196**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	13.36	Fe+3	0.0294			0.0294	0.0000				
MgO	13.41	Mg+2	2.8529			2.8529	**0.0000**				
MnO	0	Fe+2	1.5787			1.5787	**0.0000**				
CaO	13.97	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	0	Ca+2	2.1339					2.0000	0.1339		
K2O	0	Na+	0.0000					0.0000	**0.0000**	0.0000	0.0000
		K+	0.0000							0.0000	0.0000
Total	**100.07**		**Excess**	T site	**0.1196**	C site	**0.0000**	B site	**0.1339438**	A site	**0**
			Total	**8**		**4.5807**		**2.0000**		**0.0000**	**0.0000**
			%Fill	**100**		**91.6134**		**100**			

Prefix none
Name **actinolite**
Modifier none
Group **Calcic Amphibole**

Sample # **041191-56-1161**

Values		**Satisfied Conditions**
(Ca,Na)@B	**2.00**	**(Ca,Na)@B >= 1 and Na@B < 0.5**
Na@B	**0.00**	**Ca@B >= 1.5 and (Na,K)@A < 0.5**
Ca@B	**2.00**	**(Mg/(Mg+Fe2))>= 0.5**
(Na,K)@A	**0.00**	**Si > 7.5**
Mg/(Mg+Fe2)	**0.64**	**(Mg/(Mg+Fe2))< 0.9**
Si	**8.00**	

Mineral Analysis Program (Version 5.0)

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	58.17	Si+4	8.0000	8.0000							
Al2O3	1.71	Al+3	0.2856	0.0000	0.2856						
TiO2	0	Ti+4	0.0000	0.0000	0.0000						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	11.23	Fe+3	0.0157			0.0157	0.0000				
MgO	14.8	Mg+2	3.0743			3.0743	0.0000				
MnO	0	Fe+2	1.2975			1.2975	0.0000				
CaO	13.87	Mn+2	0.0000			0.0000	0.0000				
Na2O	0.22	Ca+2	2.0711					2.0000	0.0711		
K2O	0	Na+	0.0745					0.0000	0.0745	0.0745	0.0000
		K+	0.0000							0.0000	0.0000
Total	100		Excess	T site	0.2856	C site	0.0000	B site	0.1456058	A site	0

		Total	8	4.6730	2.0000 0.0745 0.0000
		%Fill	100	93.4609	100

Prefix	none
Name	actinolite
Modifier	none
Group	Calcic Amphibole

Sample # 041191-05-1212

Values	Satisfied Conditions
(Ca,Na)@B	2.00 (Ca,Na)@B >= 1 and Na@B < 0.5
Na@B	0.00 Ca@B >= 1.5 and (Na,K)@A < 0.5
Ca@B	2.00 (Mg/(Mg+Fe2))>= 0.5
(Na,K)@A	0.07 Si > 7.5
Mg/(Mg+Fe2)	0.70 (Mg/(Mg+Fe2))< 0.9
Si	8.00

MineralAnalysis Program (Version 5.0)

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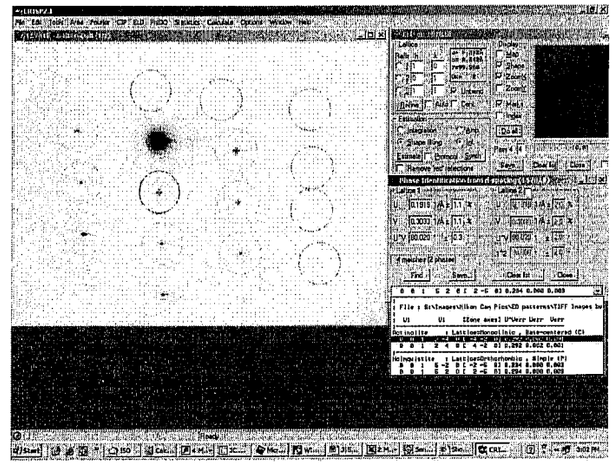
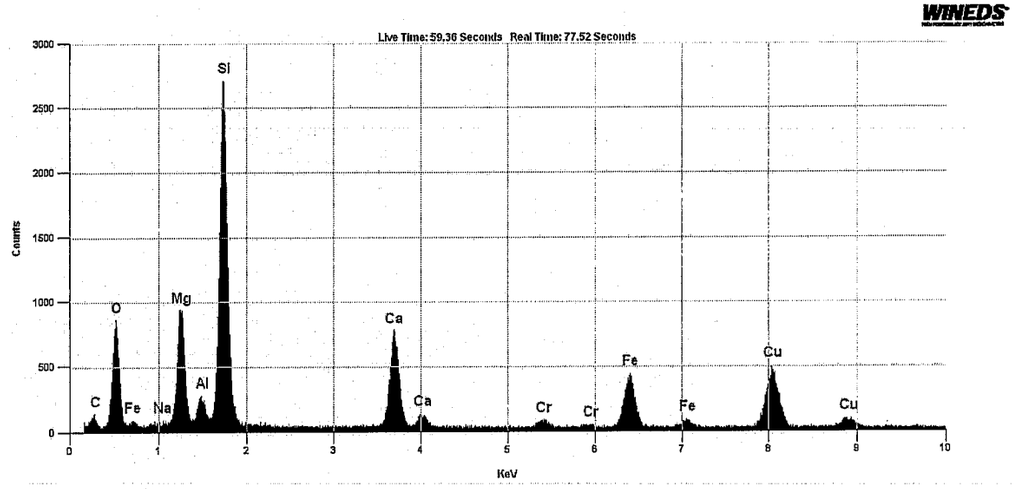
ACTINOLITE -- Zone Axis [2 1 0]
Neg#J1578 Job#041191-05
JEOL 1200EX - Gatan Image





Title: 041191-05-SP1212 Time: 2:35:29 PM Date: Tue, Apr 05 2005 Accelerating Voltage: 100 KV Take Off Angle: 35 Degrees

Quantitative Analysis Results - Standardless Analysis :
041191-05-SP1212 Tue, Apr 05 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 172.29
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Na	0.16	Na2O	0.22	0.16	0.22
Mg	8.02	MgO	14.80	0.33	14.80
Al	0.73	Al2O3	1.71	0.15	1.71
Si	21.14	SiO2	58.17	0.83	58.17
Ca	5.40	CaO	13.87	0.43	13.87
Fe	3.07	Fe2O3	11.23	0.58	11.23
<Total>	100.00		100.00		100.00

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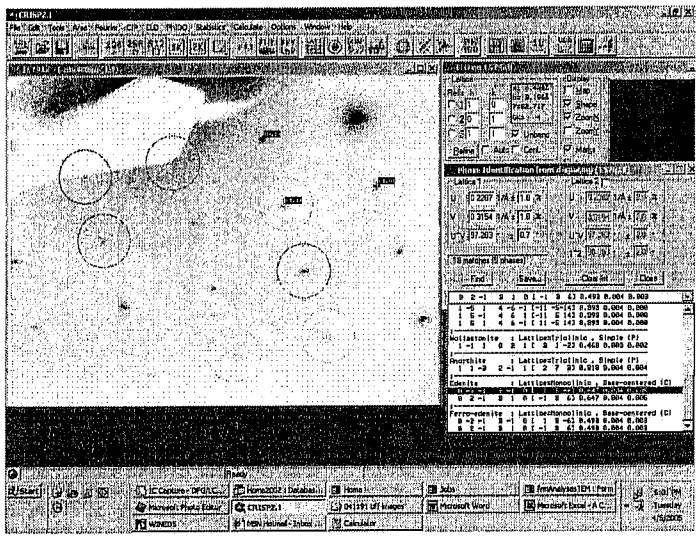
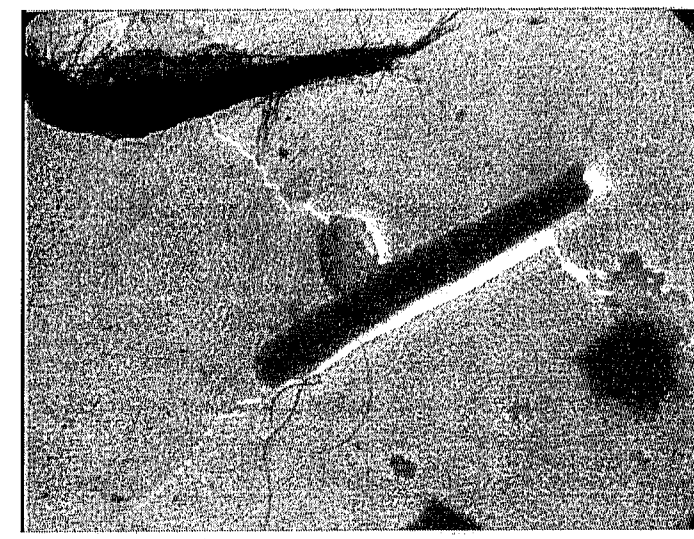
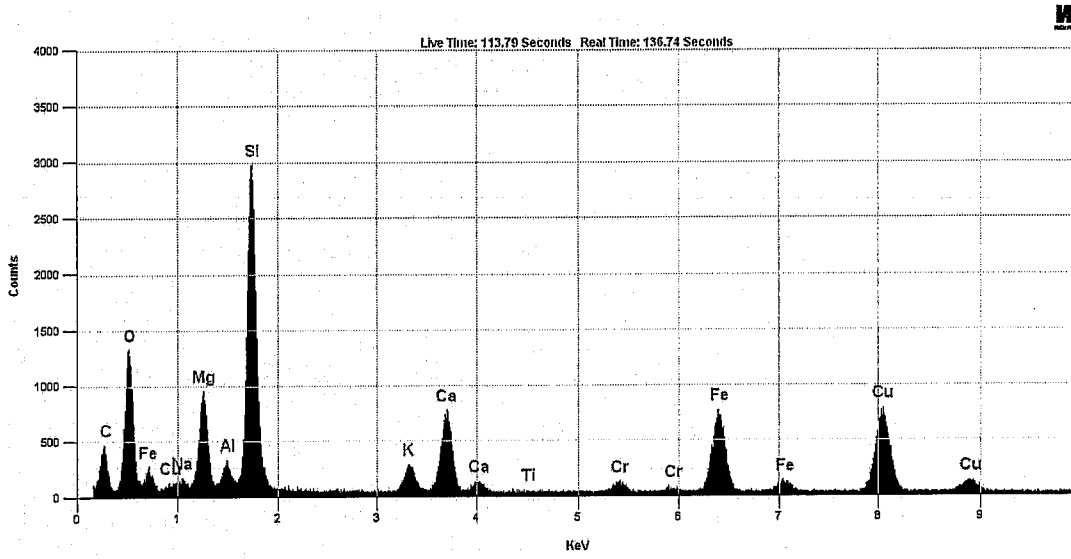
EDENITE - Zone Axis [1 3 -6]
Neg# J1579 Job# 041191-05
JEOL 1200EX - Gatan Image







Quantitative Analysis Results - Standardless Analysis :
041191-05 SP 1213 Tue, Apr 05 2005
EDS Parameters - 100KV, Takeoff Angle: 35.0°, Fit Index: 171.57
Correction: CLIFF LORIMER, Cycles: 1

Element	Atoms%	Compound	Weight%	Error(±)	Norm%
Na	0.79	Na2O	1.09	0.17	1.09
Mg	6.41	MgO	11.51	0.28	11.51
Al	0.66	Al2O3	1.51	0.13	1.51
Si	20.40	SiO2	54.61	0.72	54.61
K	1.23	K2O	2.59	0.17	2.59
Ca	4.54	CaO	11.35	0.36	11.35
Fe	4.88	Fe2O3	17.34	0.62	17.34
<Total>	100.00		100.00		100.00

	Wt Percent		ions	T site	Leftover	C site	Leftover	B site	Leftover	A site	Leftover
SiO2	54.61	Si+4	7.9261	7.9261							
Al2O3	1.51	Al+3	0.2583	0.0739	**0.1844**						
TiO2	0	Ti+4	0.0000	0.0000	**0.0000**						
Cr2O3	0	Cr+3	0.0000			0.0000	0.0000				
Fe(total)O	17.34	Fe+3	0.0189			0.0189	0.0000				
MgO	11.51	Mg+2	2.4905			2.4905	**0.0000**				
MnO	0	Fe+2	2.0834			2.0834	**0.0000**				
CaO	11.35	Mn+2	0.0000			0.0000	**0.0000**				
Na2O	1.09	Ca+2	1.7648					1.7648	0.0000		
K2O	2.59	Na+	0.3067					0.2352	**0.0716**	0.0716	0.0000
		K+	0.4795							0.4795	0.0000
Total	**100**		**Excess**	T site	**0.1844**	C site	**0.0000**	B site	**0.0715549**	A site	**0**
			Total	**8**		**4.7773**		**2.0000**		**0.5511**	**0.0000**
			%Fill	**100**		**95.5459**		**100**			

Prefix none
Name **edenite**
Modifier Potassian
Group **Calcic Amphibole**

Sample # **041191-05-1213**

Values		Satisfied Conditions
(Ca,Na)@B	2.00	(Ca,Na)@B >= 1 and Na@B < 0.5
Na@B	0.24	Ca@B >= 1.5 and (Na,K)@A >= 0.5
Ca@B	1.76	(Mg/(Mg+Fe2))>= 0.5
(Na,K)@A	0.55	Si > 6.5
Mg/(Mg+Fe2)	0.54	
Si	7.93	

Mineral Analysis Program (Version 5.0)