

Mineral Resources Tasmania

Laboratory Report

LJN2019-028

# MINERALOGICAL ANALYSES, MICAS, VAR LOCATIONS



An unpublished Mineral Resources  
Tasmania Report for:

**Jan van Moort**

By: R S Bottrill, L. Unwin & T  
Coyte

Date: 21/3/2019

## SUMMARY

The samples were analysed by SEM/EDS and XRD and the results indicate a range of minerals and compositions, mostly biotite and muscovite.

## INTRODUCTION & BACKGROUND

Six mica samples were submitted for examination for mica minerals. They were prepared and analysed by standard mineralogical techniques in the Mineral Resources Tasmania (MRT) and CSL laboratories.

## SAMPLES

The details of the filter samples are given in Table 1 below.

**Table 1: Sample details**

<b>MRT Lab Number</b>	<b>Field No.</b>	<b>Location</b>	<b>Sample Description</b>
C111626	BT52/130.5m	Anchor mine	mica
R015332	HR2	Hardens Ravine	mica
G406058	POIMEN BIO	Old Chum Dam	mica
E201163	POIMEN BIO	Garibaldi road	mica
R013395	MC Biotite	Foot of Mt Cameron East on NW side	mica
R015351	FBN 3-2	Fly-By-Night mine	mica

The samples were prepared, examined and analysed by XRD and optical microscopy in the MRT laboratories, Rosny Park, Tasmania. They were also analysed by SEM/EDS in the CSL, University of Tasmania.

# Mineral Resources Tasmania

## DESCRIPTIONS & PHOTOS

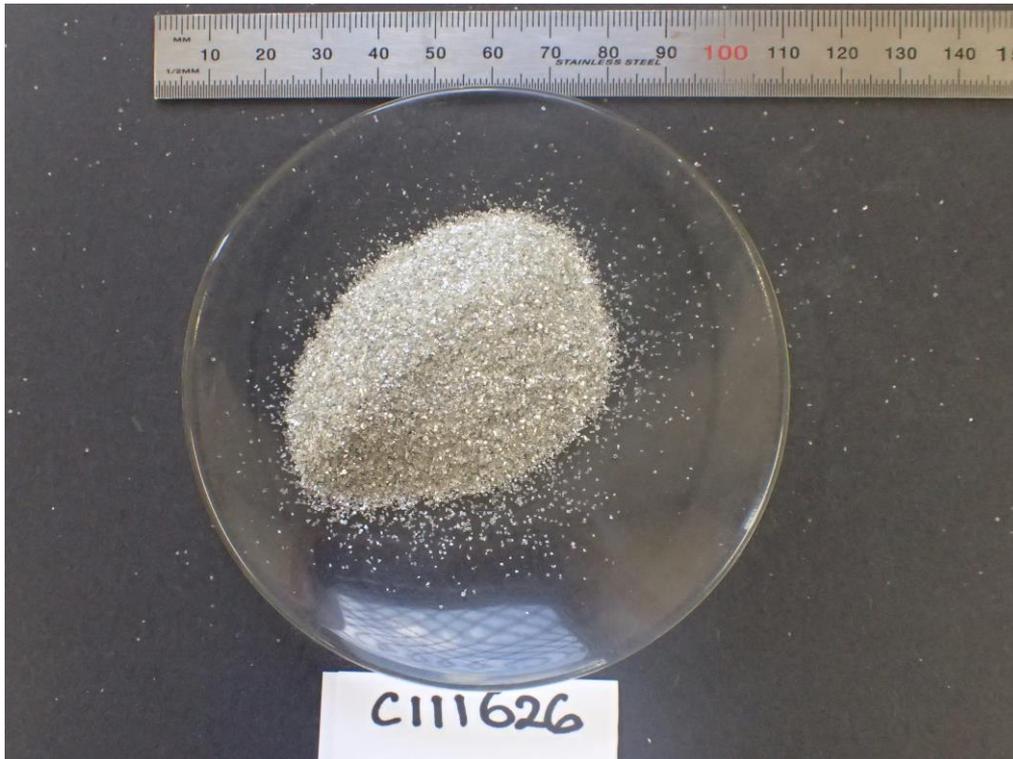


Fig. 1 C111626 BT52/130.5m Anchor mine: Coarse white mica



Fig. 2 E201163 POIMEN BIO Garibaldi road : coarse biotite.

# Mineral Resources Tasmania



Fig. 3 R013395 MC Biotite Foot of Mt Cameron East on NW side

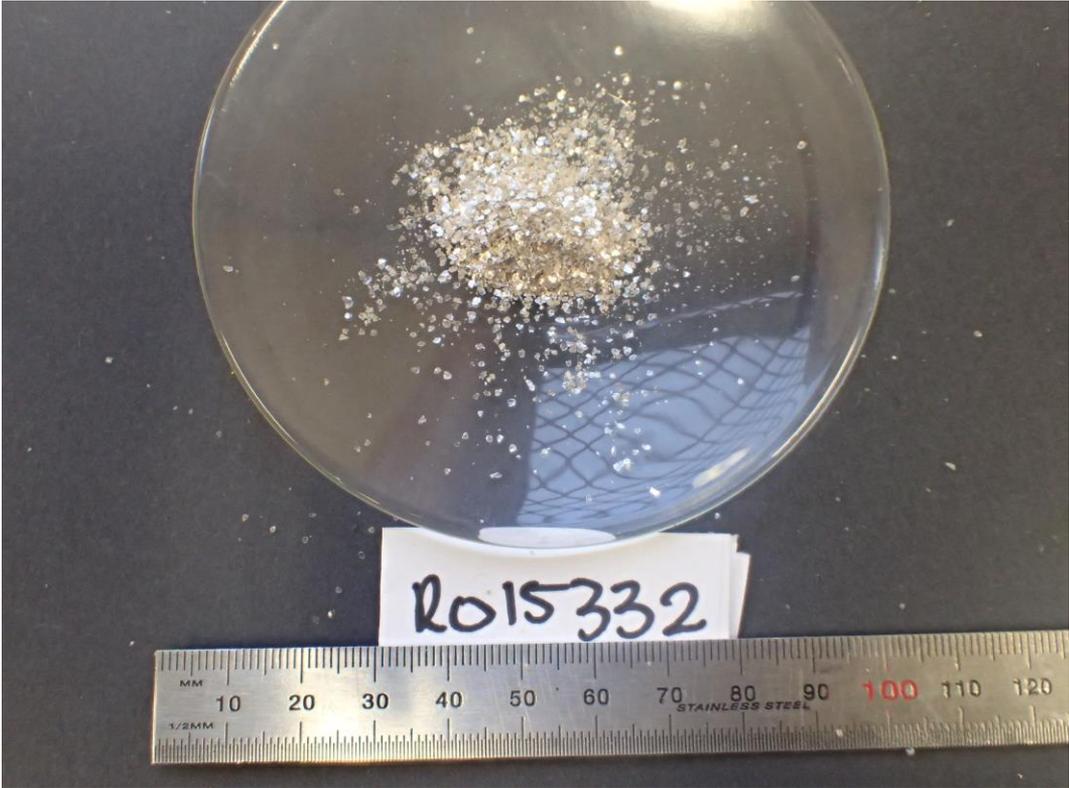


Fig. 4 R015332 HR2 Hardens Ravine Coarse white mica

# Mineral Resources Tasmania



Fig. 5 R015351 FBN 3-2 Fly-By-Night mine. Coarse white mica



Fig. 6 G406058 POIMEN BIO Old Chum Dam: coarse biotite

# Mineral Resources Tasmania

## XRD ANALYSES

The samples were prepared, examined and analysed in the MRT laboratories, Rosny Park, Tasmania. They were run on a Rigaku Miniflex 600 X-Ray Diffractometer system: a 600W generator 150mm goniometer with a Cu tube; 40kV/15mA, sample spinner and a D/teX Ultra High Speed 1D Detector with Be window,  $-3^{\circ}$  to  $145^{\circ} 2\theta$  scanning range and  $2^{\circ}$  -  $140^{\circ} 2\theta$  measuring range, with a scanning speed of 0.01 to  $100^{\circ}/\text{min}$ , A graphite monochromator and a  $K\beta$  Ni- filter, The analysis software used is the PDXL2 using the ICDD database.

**Table 2: Sample descriptions:**

MRT Lab Number	Field No.	Location	Main minerals
C111626	BT52/130.5m	Anchor mine	Phengite (2M1), minor chlorite
R015332	HR2	Hardens Ravine	Muscovite (2M1)
G406058	POIMEN BIO	Old Chum Dam	Biotite (1M)., minor chamosite, albite
E201163	POIMEN BIO	Garibaldi road	Biotite (1M)., major chamosite, albite
R013395	MC Biotite	Foot of Mt Cameron East on NW side	Biotite, (1M). minor chamosite
R015351	FBN 3-2	Fly-By-Night mine	Muscovite, quartz, kaolinite, rectorite

Sample R015351 was further tested by heating tests and glycollation (treatment with ethylene glycol). The heating moved the smectite peaks a 4 and  $8^{\circ}2\theta$  slightly, as expected for smectites. Glycollation made the  $4^{\circ}2\theta$  peak disappear, probably shifted to a lower angle than recorded.

# Mineral Resources Tasmania

## SEM/EDAX ANALYSES

The samples were all subsampled, grains mounted on carbon tape on Al stubs and analysed by SEM-EDS, CSL, University of Tasmania, with analytical conditions shown in Appendix 1. Results are given in Appendix 2, summarised below and shown in Fig. 7. The mica analyses are generally classified as either ferrian or ferroan based on stoichiometry (fully dioctahedral or trioctahedral) and charge balance, but would most likely have mixed valence iron.

### **C111626 BT52/130.5m Anchor mine**

Ferroan muscovite/phengite (2M1).

Average structural formula:  $K_{0.9}(Al_{1.7} Fe_{0.3} Mg_0) (Si_{3.2} Al_{0.8})O_{10}(OH)_2$

### **R015332 HR2 Hardens Ravine**

Ferrian illite (2M1).

Average structural formula:  $K_{0.8}(Al_{1.5} Fe_{0.4} Mg_0) (Si_{3.0} Al_{1.0})O_{10}(OH)_2$

### **G406058 POIMEN BIO Old Chum Dam**

Annite

Average structural formula:  $K (Al_{0.6} Fe_{1.5} Mg_{0.7} Ti_{0.2}) (Si_{2.8} Al_{1.2})O_{10}(OH)_2$

### **E201163 POIMEN BIO Garibaldi road**

Randomly interlayered chlorite-annite, highly variable.

Average structural formula:  $K_{0.5}(Al_{0.2} Fe_{1.8} Mg_{0.9} Ti_{0.1}) (Si_{2.5} Al_{1.5})O_{10}(OH)_2$

### **R013395 MC Biotite Mt Cameron**

Annite (1M).

Average structural formula:  $K (Al_{0.6} Fe_{1.4} Mg_{1.0}) (Si_{2.8} Al_{1.2})O_{10}(OH)_2$

### **R015351 FBN 3-2 Fly-By-Night mine**

Randomly interlayered ferrian illite and rectorite, highly variable.

Average structural formula:  $K_{0.8}(Al_{1.6} Fe_{0.4} Mg_0) (Si_{3.1} Al_{0.9})O_{10}(OH)_2$

# Mineral Resources Tasmania

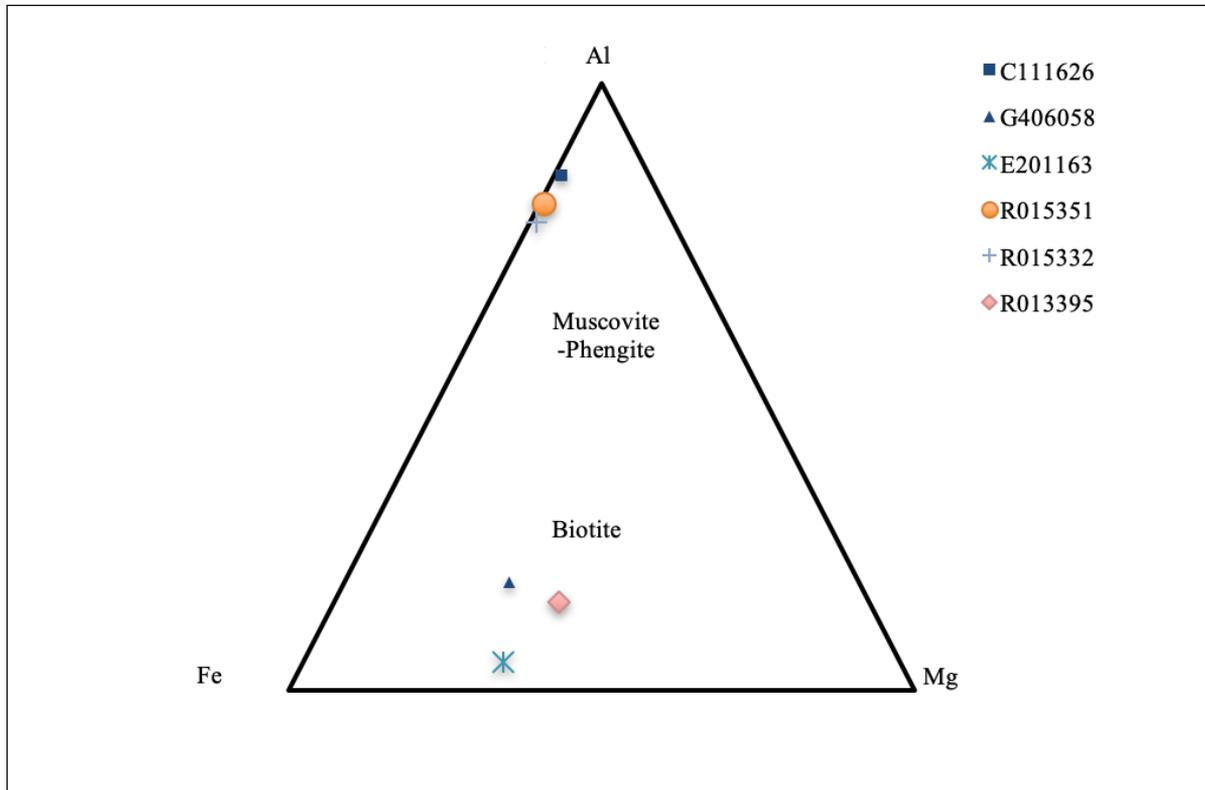


Fig. 7: Triangular plot of octahedral Fe-Mg-Al in the micas.

As well as these major minerals described above, most of these samples contained a wide range of minor to trace components, including quartz, feldspar, kaolinite, cassiterite, zircon, monazite and other phases.

## RESULTS

The results indicate a range of compositions in these concentrates, mostly either biotite (annite) or muscovite (including illite and phengite). Some have other minerals interlayered, including chlorite and rectorite. There are many other trace minerals present.

# Mineral Resources Tasmania

R S Bottrill

**MINERALOGIST/PETROLOGIST**

L Unwin & T Coyte

**TECHNICAL OFFICER**

## **Disclaimers**

*While every care has been taken in the preparation of this report, no warranty is given as to the correctness of the information and no liability is accepted for any statement or opinion or for any error or omission. No reader should act or fail to act on the basis of any material contained herein. Readers should consult professional advisers. As a result the Crown in Right of the State of Tasmania and its employees, contractors and agents expressly disclaim all and any liability (including all liability from or attributable to any negligent or wrongful act or omission) to any persons whatsoever in respect of anything done or omitted to be done by any such person in reliance whether in whole or in part upon any of the material in this report.*

*This and other data collected in MRT laboratories may enter the MRT databases but every attempt will be made to ensure it remains closed file and not be available externally, unless at your request.*

# Mineral Resources Tasmania

## Appendix 1: MRT Laboratory Report

Client: R Bottrill

Sample Location: NE Tas

Job Number: LJN2019-028

Analyses: Mineralogy

Methods: XRD

Analyst: L Unwin & T Coyte

Lab Manager: R Bottrill

Date: 20/2/2019

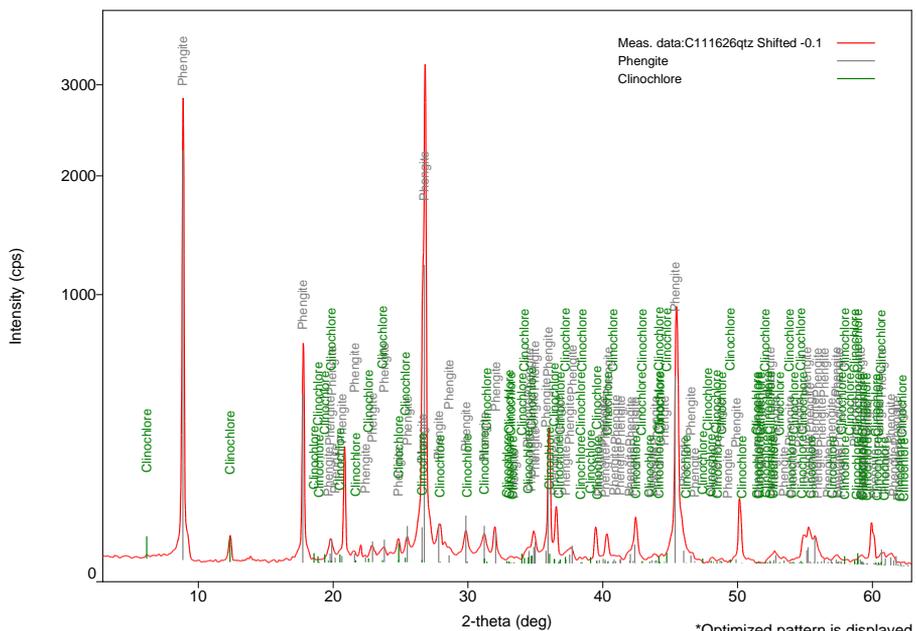
## Analysis Results – C111626

### General information

Analysis date	2019/03/08 09:37:29	Measurement date	2019/03/07 15:35:35
Sample name	LJN2019-028	Operator	t-coyte and lunwin
File name	C111626+45%Qtz.ras		
Comment	Shifted -0.1 with added Quartz		

### Quantitative analysis results

Phase name	Content(%)	Formula
Phengite	95(2)	$K Fe_{0.26} Al_{2.48} Si_{3.26} O_{10} (OH)_{1.88} F_{0.12}$
Clinochlore	5(2)	$Mg_5 Cr_{0.7} Fe_1 Al_{1.2} Si_3 O_{10} (OH)_8$



\*Optimized pattern is displayed.

# Mineral Resources Tasmania

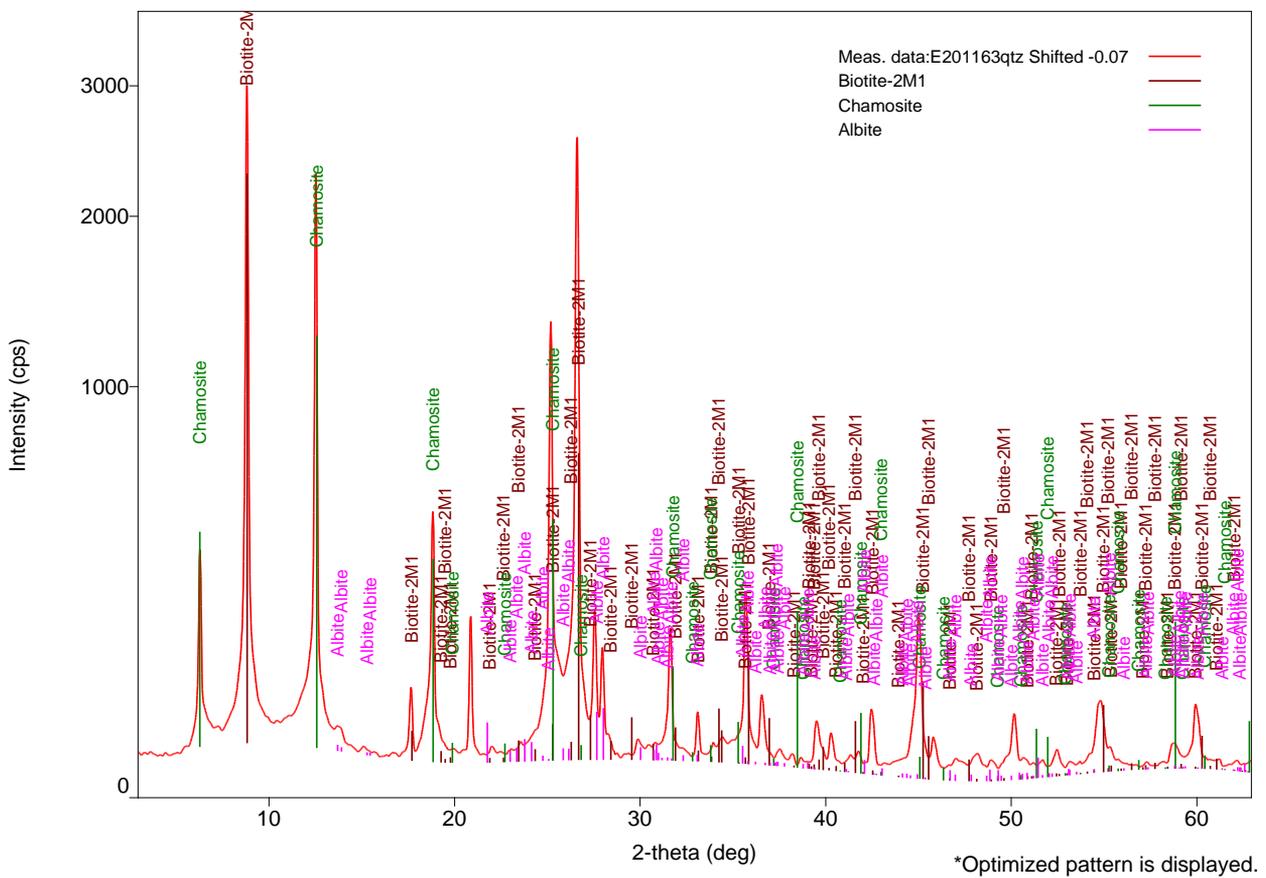
## Analysis Results – E201163

### General information

Analysis date	2019/03/08 09:08:49	Measurement date	2019/03/06 14:50:20
Sample name	LJN2019-028	Operator	t-coyte
File name	E201163+30%Qz.ras		
Comment	Shifted -0.07 with added Quartz		

### Quantitative analysis results

Phase name	Content(%)	Formula
Biotite	60(3)	( K1.891 Na0.062 ) ( Fe2.427 Mg3.090 Mn0.035 Ti0.448 ) ( ( Si5.568 Al2.432 ) O21.452 ( O H )2.548 )
Chamosite	32(3)	( Mg1.5 Fe7.9 Al2.6 ) ( Si6.2 Al1.8 O20 ) ( O H )16
Albite	8(3)	( Na0.7 K0.3 ) ( Al1.02 Si2.98 O8 )



# Mineral Resources Tasmania

## Analysis Results – G406058

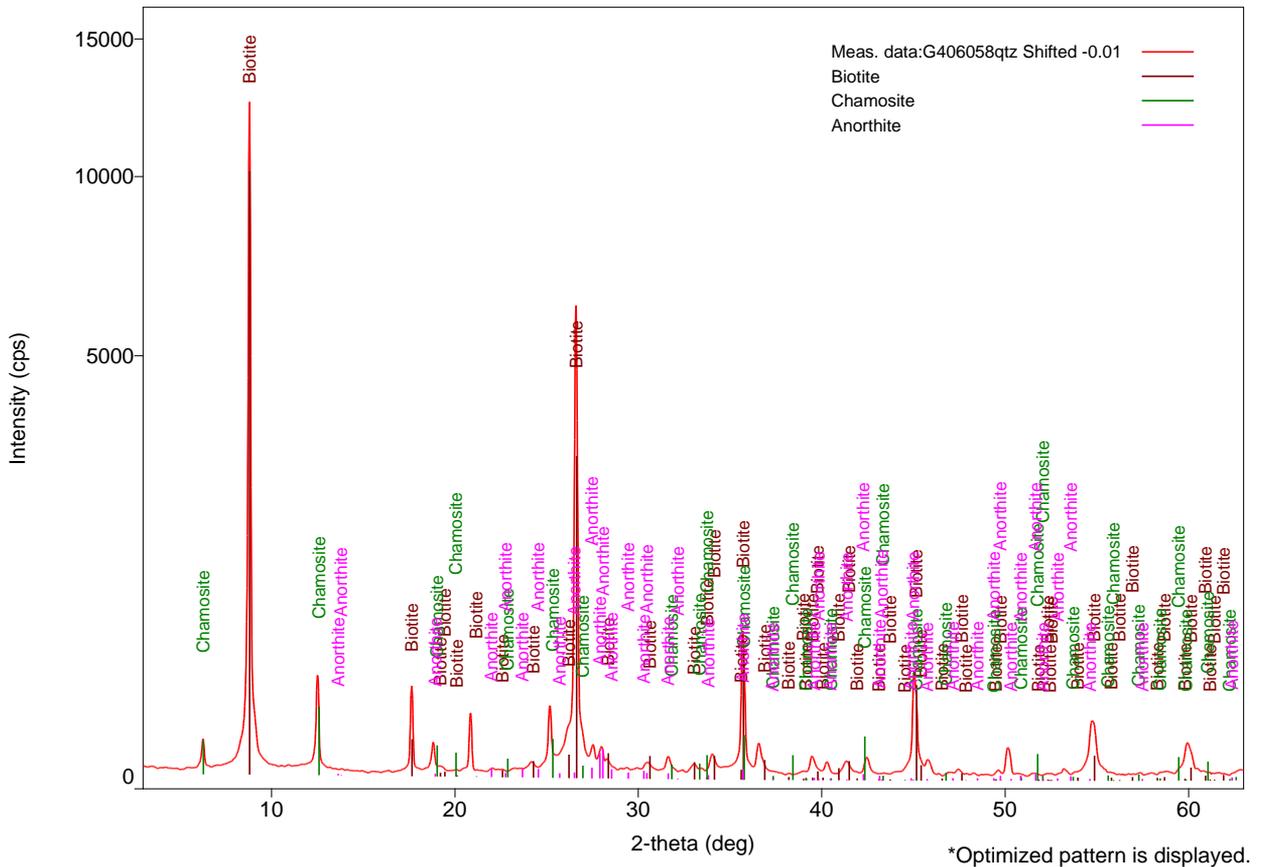
### General information

Analysis date	2019/03/13 16:01:55	Measurement date	2019/03/07 08:29:24
Sample name	LJN2019-028	Operator	t-coyte
File name	G406058+30%Qtz.ras		
Comment	Shifted -0.01 with added quartz & refined		

### Quantitative analysis results

Phase name	Content(%)	Formula
Biotite- 1M	90(5)	( K1.9 Na0.03 ) ( Al0.1 Fe2.4 Mg3.1 Mn0 Ti0.4 ) ( ( Si5.6 Al2.4 ) O21.5 ( O )2.5 )
Chamosite	8(4)	( Mg1.5 Fe7.9 Al2.6 ) ( Si6.2 Al1.8 O20 ) ( OH )16
Albite	2(2)	Na ( Al Si3 O8 )

### Phase data pattern



# Mineral Resources Tasmania

## Analysis Results – R013395

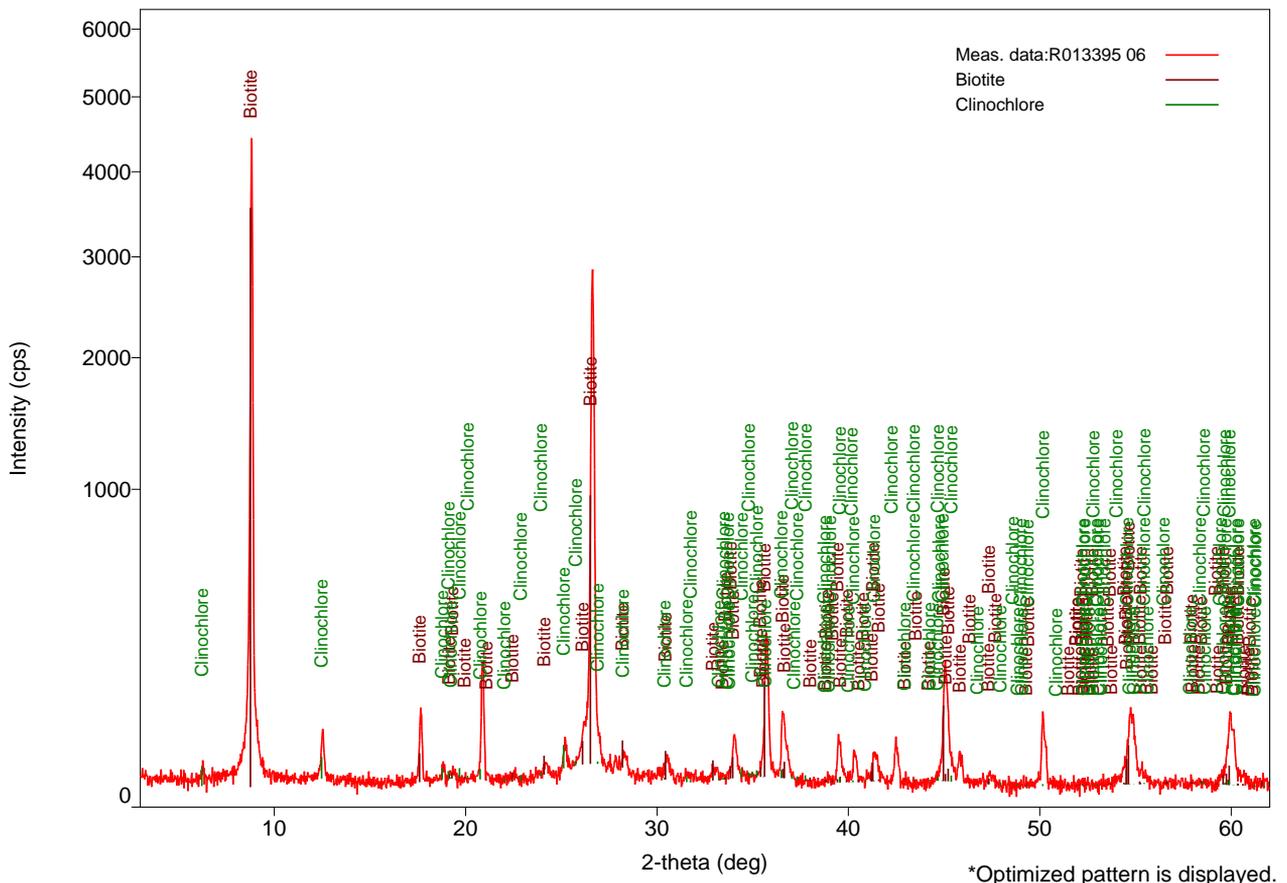
### General information

Analysis date	2019/03/13 16:11:30	Measurement date	2019/03/06 10:19:43
Sample name	LJN2019-028	Operator	tcoyte
File name	R013395 06.ras		
Comment	With added Quartz & refined		

### Quantitative analysis results

Phase name	Content(%)	Formula
Biotite-1M	98(5)	( K1.9 Na0.03 ) ( Al0.1 Fe2.4 Mg3.1 Mn0 Ti0.4 ) ( ( Si5.6 Al2.4 ) O21.5 ( O )2.5 )
Chamosite	2(5) [Peak.2]	Mg1.3 Fe3.4 Al2.6 Si2.7 O10 ( O H )8

### Phase data pattern



# Mineral Resources Tasmania

## Analysis Results – R015332

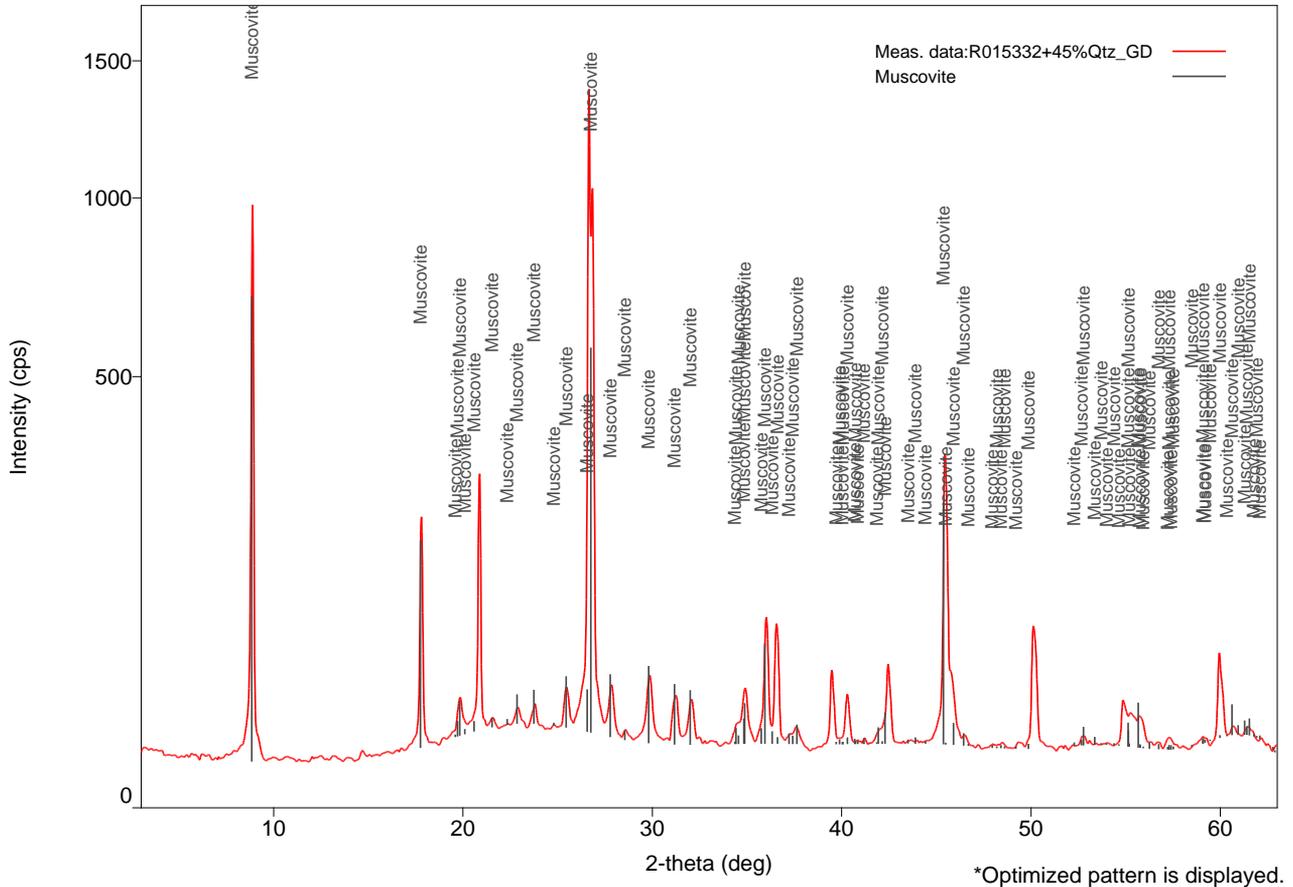
### General information

Analysis date	2019/03/08 07:56:05	Measurement date	2019/03/07 11:53:28
Sample name	LJN2019-028	Operator	t-coyte
File name	R015332+45%Qtz_GD.ras		
Comment	With added Quartz		

### Quantitative analysis results

Phase name	Content(%)	Formula
Muscovite	100	K0.9 Na0.1 Mg0.1 Ti0.0 Fe0.1 Al2.9 Si3.0 O10.0 (OH)1.9 F0.1

### Phase data pattern



# Mineral Resources Tasmania

## Analysis Results – R015351

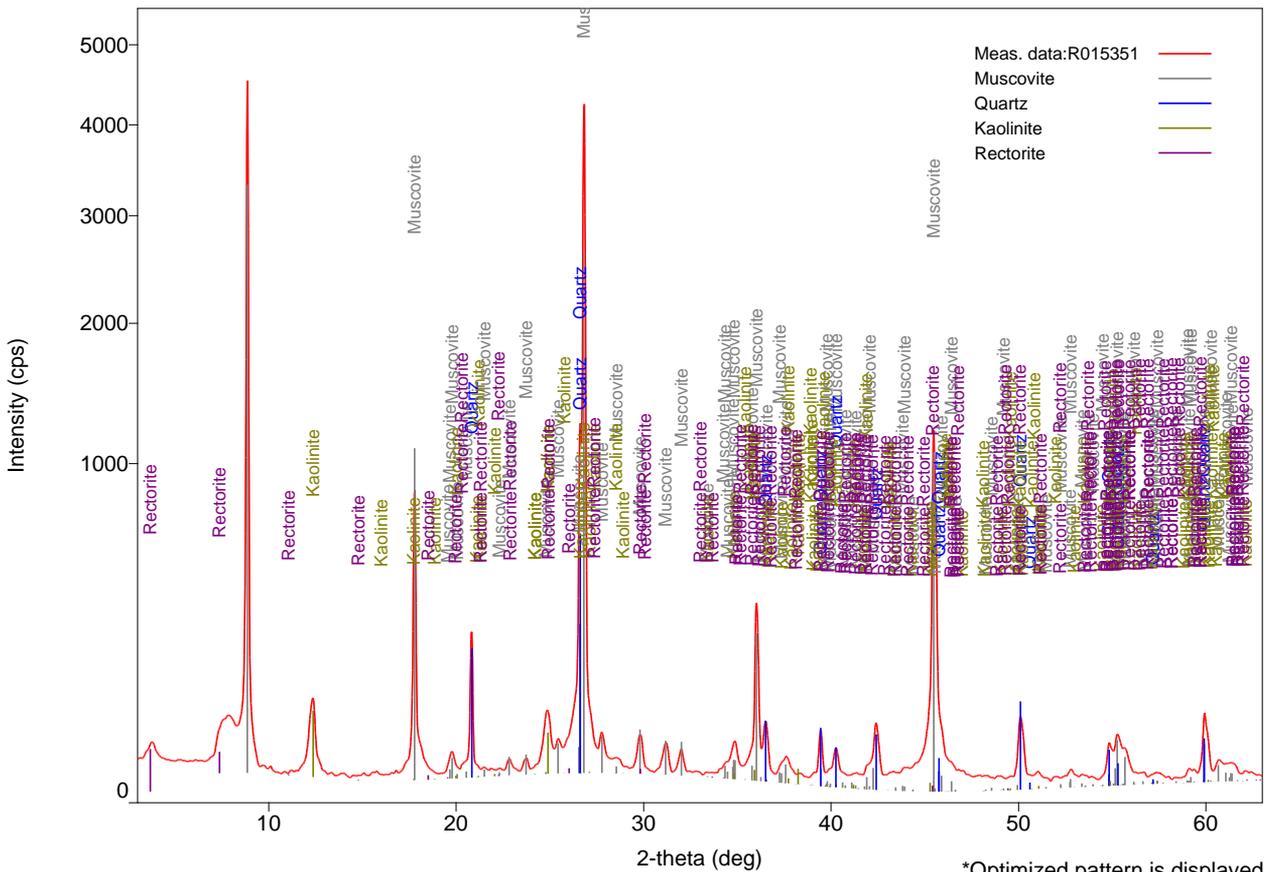
### General information

Analysis date	2019/03/05 15:37:38	Measurement date	2019/03/04 15:00:11
Sample name	LJN2019-028	Operator	t-coyte
File name	R015351.ras		
Comment			

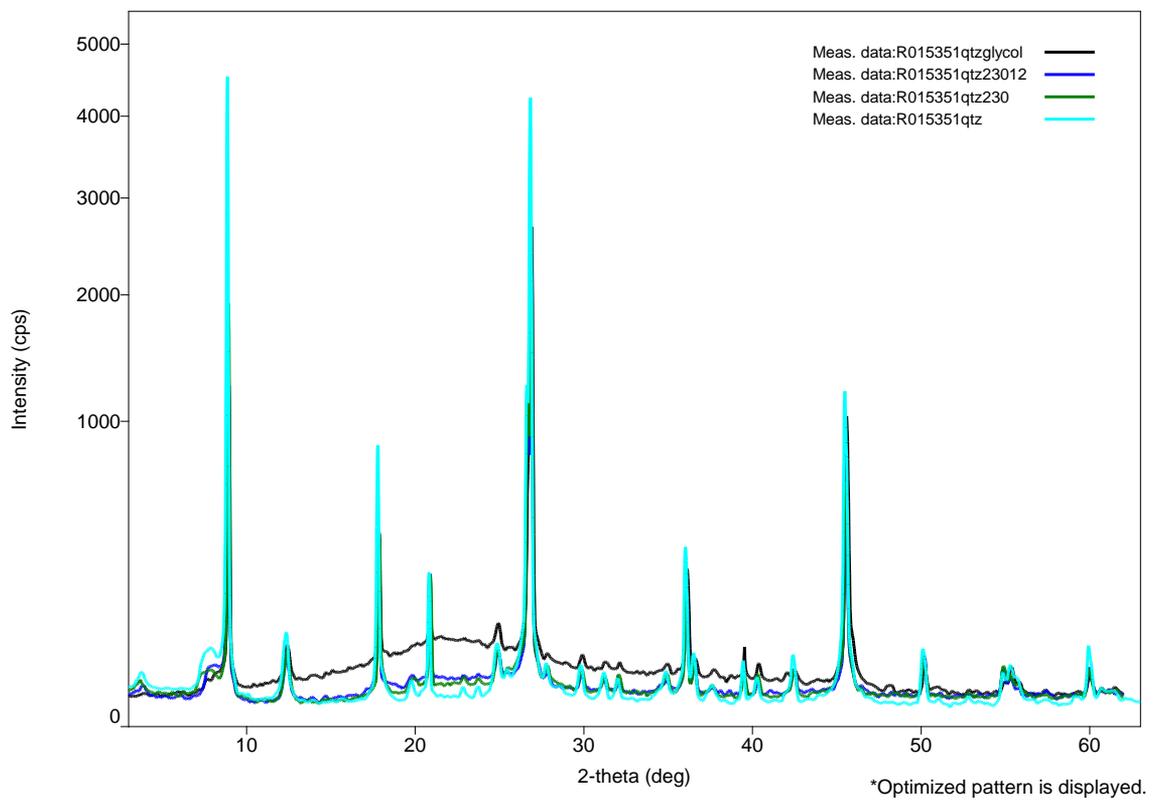
### Quantitative analysis results

Phase name	Content(%)	Formula
Muscovite	73(9)	$K (Al_{1.27} Mg_{0.53} Fe_{0.09} Mn_{0.08} Ti_{0.03}) (Al_{0.46} Si_{3.54}) O_{10} (OH)_2$
Quartz	13(3)	$Si O_2$
Kaolinite	7(9)	$Al_2 Si_2 O_5 (OH)_4$
Rectorite	7(12)	$Na Al_4 (Si, Al)_8 O_{20} (OH)_4 \cdot 2 H_2O$

### Phase data pattern



# Mineral Resources Tasmania



R015351qtz: sample R015351 with added quartz, untreated  
R015351qtz230: sample R015351 with added quartz, heated to 230oC for 1 hr  
R015351qtz23012: sample R015351 with added quartz, heated to 230°C for 12 hrs  
R015351qtz23012: sample R015351 with added quartz, heated to 230°C for 12 hrs and glycollated

# Mineral Resources Tasmania

## Appendix 2: Laboratory Report – SEM analytical conditions

### Hitachi SU-70 analytical field emission SEM

- Installed February 2011
- Schottky thermal field emission source
- ultra-high resolution (1.0 nm @ 15kV, 1.6 nm @ 1kV for SE imaging)
- high vacuum operation only (i.e. no variable pressure in chamber)
- Hitachi in-chamber and in-lens scintillation detectors, Super ExB filter, beam deceleration
- Hitachi in-chamber 5-segment solid state BSE detector, retractable
- in-column Faraday cup with picoammeter for beam current measurement
- anticontamination cold plate, liquid nitrogen cooled
- 5 axis motorised fully eucentric stage, XYZ range 110x110x40mm
- Oxford AZtec EDS/EBSD system with
  - X-Max 80 SDD EDS, MnKa 125 eV resolution, elements B-U, large area hyperspectral mapping, standardless and standards-based quantification, feature analysis
  - HKL NordlysNano EBSD camera & foreshatter detector system, HKL & Channel 5 software packages, Synergy EDS/EBSD integration, HKL, ICSD & American Mineralogist phase databases
- NEW June 2017: Gatan ChromaCL2 colour cathodoluminescence imaging system with integrated BSE detector, Digital Micrograph 3 software, automated mosaic acquisition, simultaneous acquisition of SE, iBSE and colour CL images.

Label:	am 179
Element List Type:	Current Spectrum
Processing Option:	All Elements
Specimen Coating:	On
Beam Calibration Element Coating:	Off
Coating Element:	Carbon
Coating Thickness:	20 nm
Coating Density:	2.25 g/cm <sup>3</sup>
Automatic Line Selection:	Disabled
Normalization:	Enabled
Thresholding:	Sigma level = 1
Detector Window Correction:	Enabled
Deconvolution Elements:	None
Selected Standards:	Minerals_15kV_2017-10-20 [ User ]
Pulse Pile Up Correction:	Succeeded
Detector file:	X-Max 3
Efficiency:	File based

# Mineral Resources Tasmania

## Appendix 3: Laboratory Report – SEM Analyses

(relative atomic proportions based on cation totals)

Table 1: Mica analyses, At%

**Client:** J van Moort

**Sample Location:** NE Tas district

**Job Number:** LJN2019-028

**Analyses:** Mineral chemistry

**Methods:** SEM-EDS

**Analyst:** R Bottrill

**Lab Manager:** R Bottrill

**Date:** 19/03/2019

Table 1: C111626 BT52/130.5m Anchor mine muscovite

	Min	cat	Si	Ti	Al	Fe	Mn	Mg	Na	K	F
Spectrum 89		6.0	3.29	0.00	2.36	0.31	0.02	0.02	0.02	0.84	0.00
Spectrum 90		6.0	3.14	0.00	2.48	0.35	0.02	0.00	0.03	0.86	0.43
Spectrum 91		6.0	3.16	0.00	2.51	0.30	0.00	0.03	0.04	0.85	0.00
Spectrum 92		6.0	3.27	0.00	2.37	0.27	0.03	0.05	0.02	0.76	0.29
Spectrum 93		6.0	3.34	0.00	2.38	0.20	0.02	0.06	0.00	0.73	0.00
Spectrum 94		6.0	3.15	0.00	2.56	0.26	0.03	0.00	0.03	0.87	0.00
Spectrum 95		6.0	3.24	0.00	2.38	0.32	0.02	0.03	0.02	0.88	0.00
Spectrum 96		6.0	3.12	0.00	2.55	0.33	0.00	0.00	0.03	0.99	0.00
Spectrum 97		6.0	3.11	0.00	2.52	0.34	0.03	0.00	0.03	0.95	0.41
Spectrum 99		6.0	3.16	0.00	2.54	0.28	0.02	0.00	0.03	0.91	0.00
Spectrum 100		6.0	3.12	0.00	2.64	0.24	0.00	0.00	0.03	0.90	0.00
Spectrum 101		6.0	3.15	0.00	2.52	0.31	0.02	0.00	0.00	0.98	0.00
Spectrum 385		6.0	3.35	0.00	2.37	0.19	0.04	0.05	0.02	0.65	0.00

# Mineral Resources Tasmania

ave		3.20	0.00	2.48	0.28	0.02	0.02	0.02	0.86	0.09
-----	--	------	------	------	------	------	------	------	------	------

Table 2: E201163 POIMEN BIO Garibaldi road Biotite

Min	cat	Si	Ti	Al	Mn	Fe	Mg	Na	K	Ca	Cl	F
chl	7.0	2.14	0.04	1.74	0.06	2.01	1.01	0.03	0.11	0.00	0.00	0.00
chl	7.0	2.07	0.06	1.48	0.06	2.47	0.85	0.00	0.16	0.00	0.00	0.00
chl	7.0	2.49	0.10	1.64	0.05	1.89	0.83	0.04	0.23	0.04	0.00	0.00
chl	7.0	2.36	0.09	1.72	0.05	1.66	1.11	0.00	0.28	0.02	0.00	0.00
chl	7.0	2.57	0.16	1.75	0.04	1.50	0.98	0.03	0.39	0.00	0.00	0.00
chl	7.0	2.56	0.16	1.79	0.04	1.50	0.94	0.00	0.47	0.06	0.00	0.00
chl	7.0	2.39	0.13	1.62	0.05	1.87	0.95	0.00	0.42	0.06	0.00	0.00
Bt	7.0	2.41	0.16	1.57	0.05	1.94	0.87	0.00	0.51	0.00	0.00	0.00
Bt	7.0	2.53	0.24	1.58	0.06	1.87	0.72	0.04	0.63	0.00	0.00	0.00
Bt	7.0	2.85	0.19	1.71	0.05	1.37	0.84	0.04	0.86	0.00	0.00	0.00
Bt	7.0	2.80	0.20	1.62	0.05	1.57	0.76	0.05	0.90	0.00	0.00	0.00
ave.		2.47	0.14	1.66	0.05	1.79	0.90	0.02	0.45	0.02	0.00	0.00

Table 3 G406058 POIMEN BIO Old Chum Dam Biotite

Min	cat	Si	Ti	Al	Mn	Fe	Mg	Ca	Na	K	Cl
Mica	7.0	2.76	0.22	1.68	0.04	1.59	0.71	0.00	0.03	0.97	0.00
Mica	7.0	2.72	0.23	1.72	0.03	1.61	0.68	0.00	0.03	0.99	0.00
Mica	7.0	2.74	0.24	1.72	0.03	1.57	0.70	0.00	0.00	0.97	0.00
Mica	7.0	2.74	0.20	1.74	0.03	1.58	0.70	0.00	0.00	0.97	0.00
Mica	7.0	2.72	0.25	1.67	0.04	1.65	0.67	0.00	0.03	1.00	0.00
Mica	7.0	2.76	0.22	1.66	0.03	1.62	0.71	0.00	0.03	0.96	0.00
Mica	7.0	2.78	0.22	1.68	0.03	1.55	0.73	0.00	0.04	0.92	0.01
Mica	7.0	2.78	0.23	1.70	0.04	1.53	0.73	0.00	0.00	0.94	0.00
Mica	7.0	2.79	0.22	1.67	0.04	1.51	0.77	0.00	0.04	0.93	0.00
Mica	7.0	2.81	0.20	1.73	0.03	1.46	0.78	0.00	0.03	0.93	0.00
Mica	7.0	2.90	0.15	2.00	0.02	1.25	0.68	0.00	0.03	0.68	0.00
Mica	7.0	2.77	0.21	1.71	0.03	1.52	0.76	0.00	0.00	0.94	0.00
Mica	7.0	2.74	0.22	1.70	0.03	1.58	0.73	0.00	0.00	0.95	0.00
ave		2.77	0.22	1.72	0.03	1.54	0.72	0.00	0.02	0.93	0.00

# Mineral Resources Tasmania

Table. 4 R015351 FBN 3-2 Fly-By-Night mine muscovite

Min	cat	Si	Ti	Al	Mn	Fe	Mg	Ca	Na	K	O	F
Mica	6.0	3.05	0.00	2.56	0.03	0.36	0.00	0.00	0.04	0.94	10.73	0.39
Mica	6.0	3.11	0.00	2.62	0.02	0.25	0.00	0.00	0.04	0.89	11.60	0.53
Mica	6.0	3.10	0.02	2.46	0.02	0.38	0.02	0.00	0.05	0.84	12.15	0.46
Mica	6.0	3.06	0.00	2.51	0.03	0.40	0.00	0.00	0.04	0.94	10.48	0.46
Mica	6.0	3.05	0.00	2.55	0.03	0.37	0.00	0.00	0.04	0.94	10.68	0.37
Mica	6.0	3.04	0.00	2.44	0.03	0.48	0.00	0.00	0.04	0.89	11.36	0.00
Mica	6.0	3.06	0.00	2.41	0.04	0.47	0.02	0.00	0.04	0.93	11.21	0.00
Mica	6.0	3.08	0.00	2.62	0.02	0.27	0.01	0.00	0.07	0.80	14.49	0.67
Mica	6.0	3.14	0.00	2.40	0.04	0.41	0.02	0.00	0.02	0.89	11.86	0.00
Mica	6.0	3.10	0.02	2.41	0.04	0.43	0.00	0.00	0.03	0.90	11.38	0.52
Mica	6.0	3.08	0.00	2.53	0.03	0.37	0.00	0.00	0.04	0.80	14.80	0.00
Mica	6.0	3.08	0.00	2.56	0.03	0.34	0.00	0.00	0.05	0.83	12.90	0.63
Mica	6.0	3.07	0.00	2.56	0.02	0.35	0.00	0.00	0.05	0.85	12.46	0.68
Mica	6.0	3.07	0.00	2.48	0.03	0.42	0.00	0.00	0.06	0.85	12.19	0.64
Mica	6.0	3.15	0.00	2.48	0.02	0.33	0.02	0.00	0.06	0.83	12.56	0.77
Mica	6.0	3.11	0.01	2.44	0.03	0.39	0.02	0.00	0.05	0.84	12.88	0.00
Mica	6.0	3.11	0.00	2.45	0.03	0.39	0.02	0.00	0.04	0.78	12.61	0.45
Mica	6.0	3.08	0.01	2.57	0.02	0.31	0.02	0.00	0.05	0.90	10.92	0.49
Mica	6.0	3.11	0.01	2.42	0.03	0.41	0.02	0.00	0.04	0.88	11.40	0.66
Mica	6.0	3.09	0.01	2.38	0.03	0.46	0.02	0.00	0.03	0.76	10.45	0.54
Mica	6.0	3.12	0.01	2.24	0.04	0.56	0.02	0.00	0.02	0.68	11.03	0.75
Mica	6.0	3.08	0.00	2.24	0.04	0.61	0.02	0.00	0.03	0.96	9.82	0.41
Rect	6.0	3.20	0.00	2.45	0.03	0.33	0.00	0.00	0.00	0.58	15.37	1.10
Rect	6.0	3.03	0.00	2.75	0.02	0.18	0.03	0.00	0.03	0.48	14.91	0.00
Rect	6.0	3.08	0.00	2.84	0.00	0.03	0.05	0.00	0.02	0.42	14.99	0.00
Rect	6.0	3.08	0.00	2.59	0.02	0.30	0.02	0.00	0.00	0.36	12.16	0.00
Mica	6.0	3.01	0.02	2.36	0.04	0.54	0.03	0.00	0.03	0.73	10.43	0.23
ave		3.09	0.00	2.49	0.03	0.38	0.01	0.00	0.04	0.80	12.14	0.40

# Mineral Resources Tasmania

**Table 5. R015332 HR2 Hardens Ravine muscovite**

cat	Si	Ti	Al	Mn	Fe	Mg	Na	K	F
6.0	1.67	0.00	1.47	0.03	2.81	0.02	0.01	0.41	0.00
6.0	4.37	0.00	1.45	0.00	0.17	0.00	0.04	0.48	0.00
6.0	2.08	0.00	1.88	0.03	2.00	0.01	0.05	0.53	0.00
6.0	3.13	0.00	2.59	0.00	0.27	0.01	0.11	0.77	0.67
6.0	2.93	0.00	2.45	0.02	0.57	0.04	0.02	0.67	0.00
6.0	2.71	0.00	2.44	0.02	0.82	0.02	0.06	0.70	0.00
6.0	3.14	0.00	2.63	0.00	0.19	0.04	0.03	0.77	0.00
6.0	3.08	0.00	2.64	0.01	0.25	0.01	0.06	0.79	0.00
6.0	3.04	0.00	2.64	0.01	0.29	0.01	0.05	0.81	0.00
6.0	3.32	0.01	2.08	0.03	0.54	0.03	0.04	0.76	0.00
6.0	3.03	0.00	2.77	0.00	0.19	0.01	0.07	0.81	0.00
6.0	2.93	0.00	2.61	0.01	0.41	0.03	0.00	0.80	0.00
6.0	2.91	0.01	2.80	0.00	0.25	0.02	0.05	0.80	0.00
6.0	2.95	0.01	2.78	0.00	0.24	0.02	0.05	0.80	0.00
6.0	2.97	0.02	2.74	0.00	0.25	0.02	0.05	0.81	0.00
6.0	3.08	0.02	2.24	0.02	0.62	0.02	0.03	0.84	0.76
6.0	2.87	0.00	2.81	0.00	0.27	0.05	0.05	0.77	0.57
6.0	3.11	0.01	2.53	0.00	0.33	0.03	0.06	0.83	0.00
6.0	3.03	0.01	2.63	0.00	0.28	0.05	0.05	0.79	0.00
6.0	3.07	0.03	2.63	0.01	0.22	0.03	0.06	0.81	0.64
6.0	2.94	0.00	2.74	0.01	0.26	0.04	0.06	0.78	0.00
6.0	3.07	0.00	2.71	0.00	0.19	0.03	0.07	0.81	0.58
6.0	2.95	0.00	2.75	0.00	0.27	0.02	0.05	0.81	0.50
6.0	2.93	0.01	2.78	0.00	0.26	0.03	0.05	0.81	0.46
6.0	3.11	0.02	2.54	0.00	0.28	0.06	0.05	0.86	0.55
6.0	3.07	0.01	2.64	0.00	0.25	0.01	0.05	0.90	0.33
6.0	3.07	0.00	2.67	0.00	0.25	0.01	0.05	0.92	0.00
6.0	3.05	0.00	2.57	0.02	0.33	0.03	0.05	0.89	0.47
6.0	3.09	0.00	2.59	0.01	0.29	0.02	0.05	0.91	0.46
6.0	3.07	0.02	2.57	0.02	0.29	0.04	0.04	0.92	0.51
6.0	3.03	0.00	2.56	0.01	0.36	0.04	0.05	0.92	0.47
6.0	3.05	0.02	2.64	0.01	0.25	0.02	0.06	0.92	0.51
6.0	3.28	0.00	2.32	0.00	0.39	0.01	0.03	1.01	0.00
6.0	3.01	0.00	2.90	0.00	0.08	0.00	0.06	0.94	0.27
Ave	3.00	0.01	2.52	0.01	0.43	0.02	0.05	0.80	0.23

**Table 6. R013395 MC Biotite, Foot of Mt Cameron East on NW side biotite**

# Mineral Resources Tasmania

cat	Si	Ti	Al	Mn	Fe	Mg	Ca	Na	K	Cl	F
7.0	3.20	0.13	1.64	0.03	1.13	0.86	0.08	0.04	0.82	0.00	0.00
7.0	2.74	0.13	1.60	0.03	1.45	1.05	0.00	0.00	0.86	0.00	0.00
7.0	2.77	0.14	1.56	0.03	1.43	1.06	0.00	0.00	0.89	0.00	0.00
7.0	2.80	0.16	1.59	0.03	1.36	1.06	0.00	0.03	0.90	0.00	0.00
7.0	2.79	0.16	1.60	0.03	1.35	1.05	0.00	0.00	0.91	0.01	0.00
7.0	2.92	0.19	1.57	0.03	1.33	0.95	0.00	0.00	0.91	0.01	0.00
7.0	2.79	0.16	1.58	0.03	1.40	1.03	0.00	0.03	0.92	0.00	0.00
7.0	2.77	0.16	1.56	0.03	1.44	1.05	0.00	0.00	0.93	0.00	0.00
7.0	2.76	0.17	1.56	0.03	1.48	1.00	0.00	0.00	0.94	0.01	0.00
7.0	2.80	0.16	1.56	0.03	1.44	1.00	0.00	0.00	0.96	0.01	0.00
7.0	2.76	0.17	1.55	0.03	1.51	0.98	0.00	0.00	0.98	0.02	0.00
Ave.	2.83	0.16	1.58	0.03	1.40	1.01	0.01	0.01	0.91	0.00	0.00