SGS Lakefield Research Limited

MINERALOGICAL EXAMINATION OF THREE MICA STONE SAMPLES

Prepared for

McLaren's Bay Mica Stone Quarries

10997-001/MI5001-APR05

April 15, 2005

Progress Report

NOTE:
This report refers to the samples as received.

Lakefield Research

SGS Lakefield Research Limited | P.O. Box 4300, 185 Concession Street, Lakefield, Ontario, Canada K0L 2H0
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Member of SGS SA Group (Société Générale de Surveillance)

Introduction

Three samples identified as Red, Green and Black were submitted by McLaren's Bay Mica Stone Quarries for general mineralogical examination. The objectives of the investigation were to identify the mineral species, their associations, grain size and liberation characteristics.

Polished and polished thin sections prepared from as-received samples were systematically scanned under microscope to determine the mineralogy and liberation characteristics.

SGS LAKEFIELD RESEARCH LIMITED

Aparup Chattopadhyay Ph.D.
Senior Mineralogist

Joe Zhou, M.Sc., Senior Mineralogist
& Project Manager

Chris J. Martin, M.Eng.
Group Leader, Mineral Technologies

Experimental Work by: Anita coppaway – Sample Logging
Krista Henderson – Polished Section Preparation
Aparup Chattopadhyay and Joe Zhou – Optical Microscopy

Report Preparation by: Aparup Chattopadhyay and Joe Zhou

MINERALOGICAL RESULTS

SAMPLE: RED

The Red sample composed entirely of silicates (~99 vol.%) with traces of opaque minerals. The non-opaque minerals mostly consist of composite polycrystalline quartz (~60%), mica (~25%), feldspar (~10%) with minor amounts of chlorite, zircon, amphibole, tourmaline and epidote. The proportion of feldspar in this sample was higher compared to other two samples.

The majority of the non-opaque grains were liberated (~90%). Large composite polycrystalline quartz grains (360 – 880 µm) were mostly free, while some were associated with mica and other minerals. Most of feldspar were within the size range of 40-180 µm.

Trace amounts of fine-grained pyrite and chalcopyrite were disseminated in silicate groundmass.

SAMPLE: GREEN

The Green sample was predominantly composed of non-opaques (>95 vol.%), with minor amounts of opaque minerals. The non-opaques mainly consisted of composite polycrystalline quartz (~60%) and mica (~30%), with minor proportions of chlorite, feldspar, amphibole, zircon, tourmaline and epidote.

Most of the major non-opaque grains were liberated (~85%). Composite polycrystalline quartz and feldspar grains were within 300 – 720 µm and 30-120 µm, respectively.

The amount of opaque minerals in the Green sample was more compared to other two samples. Pyrite was the main opaque mineral, occurring mainly as liberated particles. Pyrite associated with chalcopyrite and magnetite was also observed.

SAMPLE: BLACK

The Black sample was predominantly (>95% vol.) consisted of non-opaques with trace amounts of opaque minerals. The non-opaque minerals mostly consisted of composite polycrystalline quartz (~70%) and mica (~20%) with minor proportion of chlorite, feldspar, carbonates, tourmaline, epidote, and amphibole. Pyrite was the main opaque mineral.

Most of the major non-opaque phases were liberated (~80%). Most of the composite polycrystalline quartz were within 400 -900 µm grain size range.

Most of pyrite were liberated (~80%) and within the size-range of 80 – 110 µm. Some were associated with non-opaque minerals.

PHOTOMICROGRAPHS

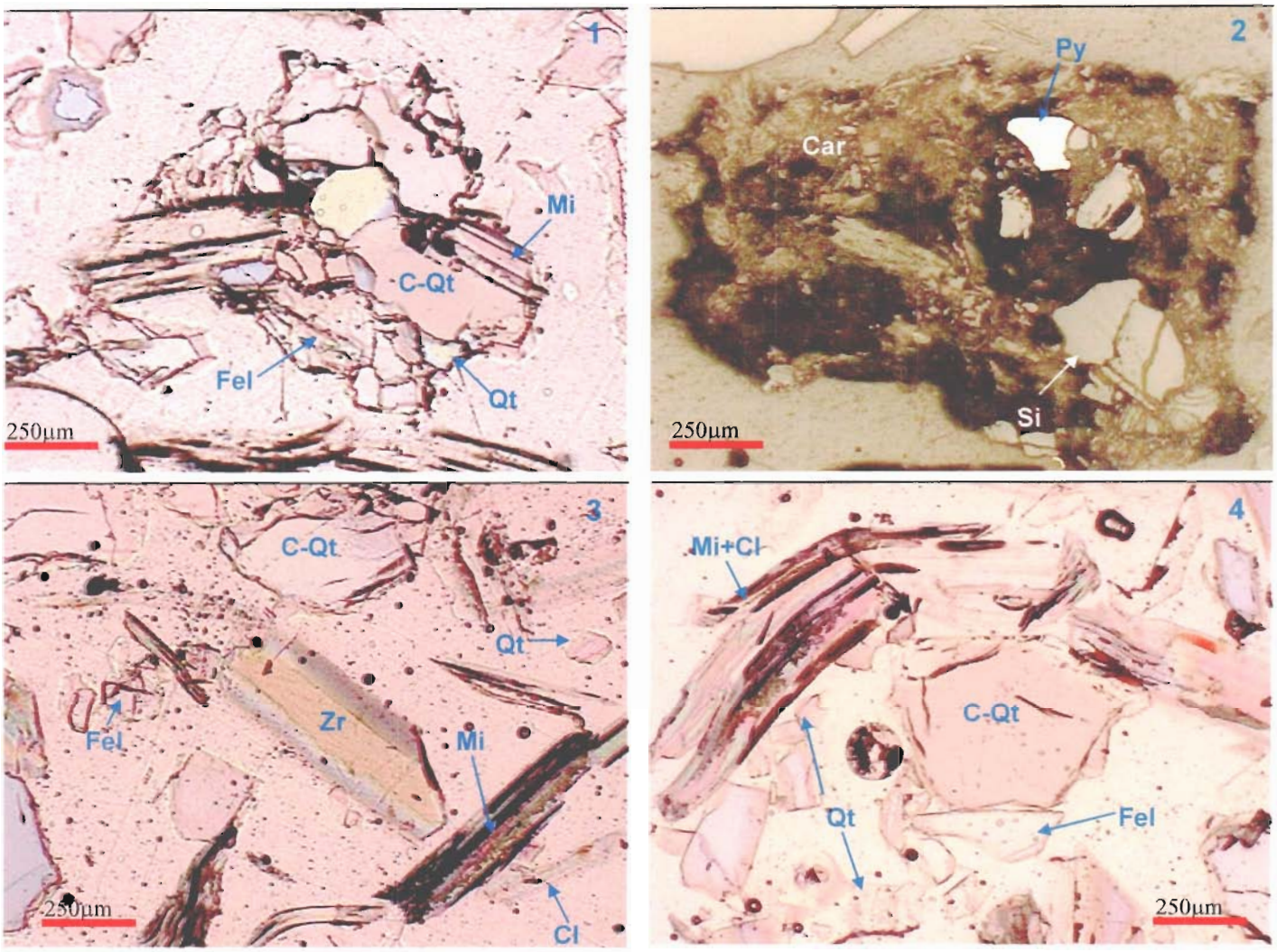

Figure 1: photomicrograph showing the mineralogical composition and texture of three samples.
Plate 1: Black sample: (C-Qt) - composite polycrystalline strained quartz, Mi - mica, Qt – quartz, Fel - feldspar.
Plate 2: Black sample: pyrite (Py) within carbonate (Car) and silicate (Si) groundmass.
Plate 3: Green sample: liberated grains of composite polycrystalline strained quartz (C-Qt), zircon (Zr), mica (Mi), quartz (Qt), feldspar (Fel) and chlorite (Cl).
Plate 4: Red sample: composite grain of mica (Mi) and chlorite (Cl), with composite polycrystalline strained quartz (C-Qt), feldspar (Fel) and quartz (Qt).

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Comments:

The mineralogical examination of the three samples indicated that all the samples were predominantly composed of non-opaque minerals (>95% vol.) with trace to minor amounts of opaques (mainly pyrite, chalcopyrite, and magnetite). The Red sample almost entirely consisted of non-opaques (~99%) with traces of fine disseminated opaque minerals. The proportion of opaques was more in Green and Black samples compared to Red sample.

The silicate minerals mainly composed of composite polycrystalline strained quartz, mica, feldspar with minor amounts of chlorite, zircon, carbonates, tourmaline, epidote and amphibole. Mineralogically, these three samples were similar but proportion of different minerals varied. Feldspar was more in Red sample, carbonate, tourmaline and epidote were more in Black sample while mica was more in Green sample.

The red color was imparted mainly by the presence of small amount of limonite (Fe-hydroxides) associated with K-feldspar and possible presence of Fe in mica.

The green color was imparted by feldspar predominantly, as it ranges from clear through milky white to pale green in color. Muscovite is also green in color.

The black color was imparted by mica (biotite), iron oxides (magnetite) in association with more tourmaline and carbonates.

Chemical Analyses

SGS Lakefield Research Limited

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Polished and polished thin sections prepared from as-received samples were systematically scanned under microscope to determine the mineralogy and liberation characteristics. A representative portion of each crushed sample was sent for chemical analysis (Appendix 1).

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Mineralogical Results

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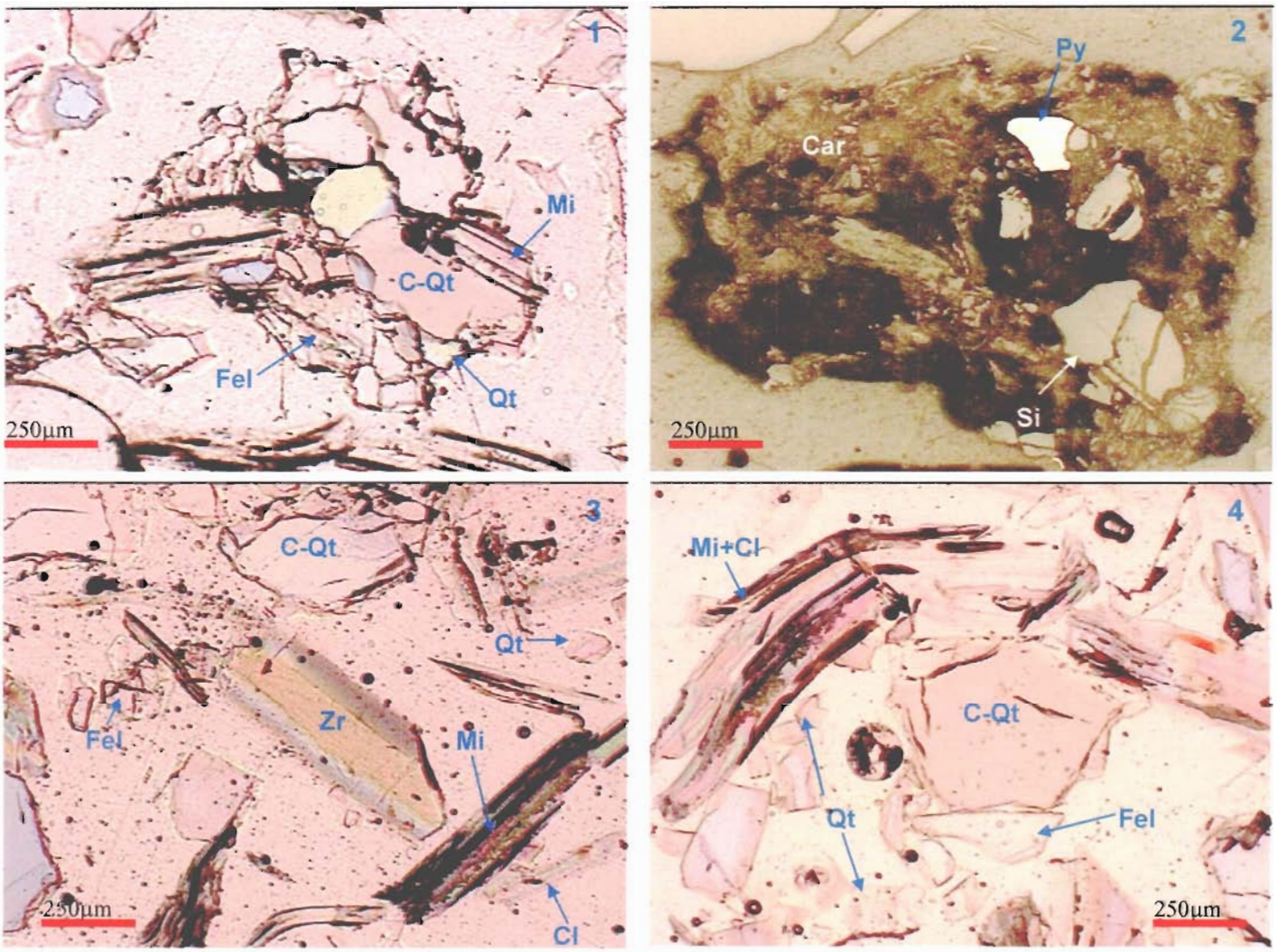
Photomicrographs



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Appendix 1: Chemical Analyses

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LR Internal Dept 14
Attn : JZ / AC

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Phone: —
Fax:—

Tuesday, April 26, 2005

Date Rec. : 11 April 2005
LR Report : **CA01803-APR05**
Project : CALR-10997-001
Client Ref : MI5001-Apr05

CERTIFICATE OF ANALYSIS

Sample ID	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	V2O5 %	Cr2O3 %	LOI %
1: Red	81.2	10.6	1.34	0.20	0.03	0.13	3.27	0.16	0.03	0.10	< 0.01	< 0.01	1.64
2: Green	83.2	9.51	1.77	0.28	0.04	0.13	2.95	0.29	0.03	0.01	< 0.01	< 0.01	1.51
3: Black	68.4	16.7	4.50	0.80	0.66	0.24	5.35	0.33	0.04	0.05	< 0.01	< 0.01	2.65
4-DUP: Black	68.4	16.9	4.55	0.81	0.66	0.24	5.47	0.33	0.04	0.05	< 0.01	< 0.01	2.61

Sample ID	Sum %	Nb g/t	La g/t	Th g/t	Ta g/t	Ce g/t	W g/t	Zr g/t	Rb g/t	Ag g/t	Al g/t	As g/t	Ba g/t
1: Red	98.7	< 50	26	< 20	< 10	40	< 40	25	< 150	< 2	58000	< 30	1000
2: Green	99.7	< 50	26	< 20	< 10	52	< 40	41	< 150	< 2	51000	< 30	500
3: Black	99.7	< 50	83	< 20	< 10	150	< 40	59	< 150	< 2	91000	< 30	1900
4-DUP: Black	100.0	< 50	74	< 20	< 10	140	< 40	54	< 150	2	88000	< 30	1700

Sample ID	Be g/t	Bi g/t	Ca g/t	Cd g/t	Co g/t	Cr g/t	Cu g/t	Fe g/t	K g/t	Li g/t	Mg g/t	Mn g/t	Mo g/t
1: Red	1.2	< 20	1000	< 2	20	26	14	9300	32000	< 5	1100	790	< 5
2: Green	1.0	< 20	150	< 2	11	33	11	11000	26000	< 5	1100	52	< 5
3: Black	2.7	< 20	4900	< 2	15	31	10	32000	43000	< 5	4800	370	< 5
4-DUP: Black	2.6	< 20	4700	< 2	15	31	11	32000	46000	< 5	4600	370	< 5

Sample ID	Na g/t	Ni g/t	P g/t	Pb g/t	Sb g/t	Se g/t	Sn g/t	Sr g/t	Ti g/t	Tl g/t	U g/t	V g/t	Y g/t	Zn g/t
1: Red	1100	27	< 200	< 20	< 10	< 30	< 20	23	1000	< 30	< 20	20	2.6	35
2: Green	1100	< 20	< 200	< 20	< 10	< 30	< 20	12	1600	< 30	< 20	25	3.8	11
3: Black	2200	23	< 200	< 20	< 10	< 30	< 20	69	1900	< 30	< 20	21	61	42
4-DUP: Black	1700	22	< 200	< 20	< 10	< 30	< 20	66	2000	< 30	< 20	20	57	44

OnLine LIMS

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LR Report : CA01803-APR05

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