

# TECHNICAL ASSESSMENT REPORT

# STRUCTURAL ANALYSIS USING GREYSCALE "HILLSHADED IMAGERY"

# GALORE CREEK AREA PROJECTS

# STIKINE ARCH, NORTHWESTERN, B.C.

Location: MapSheet 104B UTM Centre 6325000N / 345000E

Operator: Romios Gold Resources Inc. 17 Didrckson Drive Toronto, Ontario

Report by: Ram Exploration Ltd. Carl von Einsiedel, P.Geo. 1124 – 470 Granville St., Vancouver, B.C.

Original due date: April 15, 2006

Extended due date: May 15, 2006

Submittal date: May 15, 2006



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### Summary

The Romios Galore Creek Area Projects comprise 3 separate claim groups located on the southwestern, eastern and southeastern margins of Novagold Resources Galore Creek Property. Figure 1 shows the general project location and Figure 2 shows the location of the subject claims. Figure 7 shows the title reference numbers for all mineral claims located in the subject area.

In August 2005 Novagold Resources Inc. announced an updated resource estimate for the Galore Creek Project which estimate includes a total of 13 million ounces of gold, 156 millionounces of silver and 12 billion pounds of copper making Galore Creek one of the largest undeveloped porphyry deposits in North America.

The subject claims were staked by the author of this report on January 14 and 15, 2005 and were subsequently acquired by Mclymont Mines Inc. a wholly owned subsidiary of Romios Gold Resources Inc. on March 1, 2005.

At the time of the assessment work filing that is the subject of this report (Event No.4064797) the three claim groups consisted of 9,198.36 hectares.

According to regional geological maps available from the BC Department of Mines the subject claim groups cover a sequence of volcanic and intrusive rocks associated with regionally extensive northeast oriented shear zones. The subject claims were acquired based on the potential to host porphyry copper mineralization similar to that developed at Novagold Resources Galore Creek Project.

According to Ney and Hollister, 1976, alkalic porphyry deposits in the Canadian Cordillera appear to have formed only in the interval from 205 to 170 million years and invariably, comagmatic volcanic rocks appear with the mineralized intrusions. During the Triassic and Lower Jurassic (referred to as the Vancouver metallogenic epoch) the Nicola, Takla, Hazleton, Bonanza and Lewes River groups were formed and are the host rocks for all of the known alkalic porphyry deposits of the Canadian Cordillera. The mineralized plutons associated with these rocks are intrusive into at least some of the comagmatic volcanic rocks.

According to Seraphim and Hollister, 1976 some of the alkalic porphyry deposits in the cordillera appear to be related to separate north and northeast trending fault zones which are interpreted as possible zones of continental rifting. In the Stikine District Seraphim and Hollister further note that several of these regional breaks are accompanied by linear belts containing numerous litholgically similar syenite porphyries.

According to Barr, Fox, Preto and Northcote the association of magnetite with alkalic intrusions suggests that magnetic surveys may be useful in defining target areas. In addition, the authors note that delineating the linear distribution of alkalic intrusions, regional faults and zones of brecciation may prove useful in defining areas for follow-up exploration work.

During 2004 Mclymont Mines completed a detailed, helicopter borne magnetic survey over the central part of the Newmont Lake project area which is located approximately 25 kilometers southeast of the Romios Galore Creek Area Projects,. The results of the survey were filed for assessment credit in 2005 and are now publicly available (assessment report number pending)

The results of the airborne survey produced two significant observations.

First, it appears from the data for the Newmont Lake area that northeast oriented structural zones which are shown on the published geological maps for Mapsheet 104B (referred to as the Newmont Lake Graben) have localized emplacement of a series of small, felsic intrusives. These intrusions range from several hundred meters in diameter to more than a kilometer is size and appear to be aligned either along northeast, northwest or east west directions. In addition, survey results indicate several directions of faulting and brecciation specifically along northwest, north-south and east west directions. The airborne magnetic data for the Newmont Lake area is included as Figure 4 and Figure 5.

As noted in the referenced literature regarding alkalic porphyry copper deposits the felsic intrusions associated with alkalic porphyry copper deposits in the western cordillera tend to be small, highly magnetic bodies and tend to be localized along major structural zones.

The second important observation is that many of these intrusions have an elevated magnetic response and that this response is co-incident with a limited, but clearly co-incident topographic high feature.

In summary, results of the airborne magnetic survey completed at Newmont Lake clearly suggest that the Newmont Lake area has many of the geological characteristics associated with alkalic porphyry copper mineralization.

The objective of the current program was to assess potential of various claim groups located close to Galore Creek utilizing modern image analysis techniques to determine if northeast oriented structural corriders are present and to determine if small, resistive, topographic features potentially representing intrusive rocks, are associated with these structural corriders.

The image analysis techniques utilized in the current program are referred to as greyscale, "hillshaded" topographic analysis and are described in a technical paper titled IMAGE ANALYSIS TOOLBOX AND ENHANCED SATELLITE IMAGERY INTEGRATED INTO MAP PLACE." Written by W.E. Kelly, K. Kliparchuk and A. McIntosh, 2004.

The greyscale, "hillside shaded" imagery is produced by the application of artificial lighting to the 25m/ pixel Digital Elevation Model. By utilizing multiple directions of lighting image analysis is enhanced.

For reference, a detailed geological map of the Galore Creek area (Figure 6a) and a comparative map (Figure 6b) showing the structural analysis of the Galore Creek area based on published geological maps, airborne magnetic surveys of the Galore Creek area and based on the structural analysis utilizing greyscale, "hillside shaded" topography carried out during the current program.

Large format structural analysis maps based on the greyscal, "hillside shaded" imagery and the LANDSAT imagery are included in an Appendix to this report. Interpreted faults are drawn as black solid lines and topographic features interpreted as possible small, felsic intrusions are drawn as black circles.



### Project Location, Access and Claim Description

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The Romios Galore Creek Area Projects comprise 3 separate claim groups located on the southwestern, eastern and southeastern margins of Novagold Resources Galore Creek Property. Figure 1 shows the general project location and Figure 2 shows the location of the subject claims. Figure 7 shows the title reference numbers for all mineral claims located in the subject area. The assessment filing document lists the title reference numbers and the number of hectares for each of the titles.

The subject claims were staked by the author of this report on January 14 and 15, 2005 and were subsequently acquired by Mclymont Mines Inc. a wholly owned subsidiary of Romios Gold Resources Inc. on March 1, 2005.

At the time of the assessment work filing that is the subject of this report (Event No.4064797) the three claim groups combined consisted of 9,198.36 hectares.

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Assessment Filing Documents

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504248gsw	2005/JAN/19/2006/JAN/19/2006/may/01	102 440.93 \$ 492.88 \$ 49.2
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Total required work value: \$ 10575.77

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Debited PAC amount:	\$	0.00
Credited PAC amount:	\$	124.23
Total Submission Fees:	\$	1057.58
Total Paid:	\$	1057.58

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### Regional Geology and Exploration Model

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### Description of Assessment Work Completed

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The greyscale, "hillside shaded" imagery is produced by the application of artificial lighting to the 25m/ pixel Digital Elevation Model. By utilizing multiple directions of lighting image analysis is enhanced.

In addition to the greyscale, "hillside shaded" structural analysis the current study utilized iron oxide analysis from LANDSAT imagery for the subject claim areas.

For reference, a detailed geological map of the Galore Creek area (Figure 6a) and a comparative map (Figure 6b) showing the structural analysis of the Galore Creek area based on published geological maps, airborne magnetic surveys of the Galore Creek area and based on the structural analysis utilizing greyscale, "hillside shaded" topography carried out during the current program.

Large format structural analysis maps based on the greyscale, "hillside shaded" imagery and the LANDSAT imagery are included in an Appendix to this report. Interpreted faults are drawn as black solid lines and topographic features interpreted as possible small, felsic intrusions are drawn as white circles.



Figure No. 4: Comparative map showing airborne magnetic survey data and regional geological map for the Newmont Lake Project

## LEGEND TO ACCOMPANY FIGURE NO. 4: GEOLOGICAL MAP (Modified after BC BCEMPR Bulletin 104)

## VOLCANIC AND SEDIMENTARY ROCKS

#### QUATERNARY

Qt Active hotspring, calcareous tufa deposits

### UPPER TRIASSIC

STUHINI GROUP

Undifferentiated volcanic and arc-derived sedimentary rocks

#### NEWMONT LAKE GRABEN

Felsic and intermediate lapili and plagloclase crystal tuff and pink flow-layered rhyolite SULL SUL

Intermediate volcanic conglomerate, sandstone and minor thin bedded siliceous UKSAS limestone lenses

Algal Ilmestone, laminated, dark grey to black

Maroon homblende-plagioclase porphyritic andesite breccia flows

u Syst Maroon lapilli and plagioclase crystal tuff and epiclastic rocks

STIKINE ASSEMBLAGE

Psuce Undifferentiated Paleozoic foliated volcanic and associated sedimentary rock

#### LOWER PERMIAN

Medium bedded to massive fossiliterous carbonate; deformed, thin layered carbonate of probable Permian age (IPSdc) (Pac

Psa Deformed, interlayered intermediate siliceous tuff and sedimentary rocks

### CARBONIFEROUS

Grey to light green phylilic siltstone, graphitic argilitte, siliceous phylite/tuff and thin lenses of dark brown limestone

### UPPER CARBONIFEROUS



#### MID CARBONIFEROUS (SERPUKHOVIAN - BASHKIRIAN)

Grey, medium bedded to massive bioclastic limestone, locally with buff, silty dolomitic layers

## INTRUSIVE ROCKS

### LATE TRIASSIC TO EARLY JURASSIC

COPPER MOUNTAIN PLUTONIC SUITE (210 - 200 Ma)



**EXTERN** 

Grey and pink, hornblende biotite syenite, orthoclase porphyry with large zoned phenocrysts

Loon Lake Stock: Saimon-orange, crowded plagloclese-pyroxene monzonite

porphyry, trachytic and equigranular phases Newmont Lake plugs: Fine-grained and potassium feldspar porphyritic monzonite, granodiorite

### LATE DEVONIAN

FORREST KERR PLUTONIC SUITE (~ 370 Ma)

Dg Medium to coarse-grained pink, biotite granite, monzonite and tonalite

Heterogeneous, medium-grained homblende diorite, quartz diorite mainly -LDd equigranular, gneissic in places

Coarse-grained gabbro, homblendite, clinopyroxenite

#### SYMBOLS

Geological boundary (defined, approximate, assumed)	
Unconformity (defined, assumed)	
Bedding; tops unknown (inclined, vertical)	×
لا 🕫 Bedding; tops observed (inclined, overturned)	3
اسر ۲۹ Igneous flow layering (Inclined, vertical)	*
Dominant foliation (inclined, vertical)	44
نع حدق Foliation; generation indicated by number of ticks	8
Lineation; bedding-cleavage intersection, m=mineral, s=stretching, ss=slickensides	
Crenulation lineation; ages indicated by number of ticks (plunge indicated)	1
Joint (inclined, vertical)	ø
Dike (inclined, vertical)	-
Vein (inclined, vertical)	*
Axial trace of overturned antiform, synform (arrow indicates plunge)	++-
Axial trace of upright antiform, synform (arrow indicates plunge)	-
Fold axis of minor fold (arrow indicates plunge) m, s and z asymmetry	1.00
Brittle fault zone (inclined, vertical)	rr
Extension fault; downthrown side indicated (defined, approximate, assumed)	
Contraction fault; teeth indicate upthrust side (defined, approximate, assumed)	
Cross-section line	P



Figure No. 5: Comparative map showing airborne magnetic survey data and interpreted structural analysis from the "hillside shaded" topographic map for the Newmont Lake Project



FIGURE NO. 6A: COMPARATIVE MAP SHOWING GEOLOGY OF THE GALORE CREEK AREA CIM Special Volume No. 15 ADAPTED FROM PORPHYRY DEPOSITS OF THE CANADIAN CORDILLERA, SPECIAL VOLUME 15, 1976



FIGURE NO. 6B: COMPARATIVE MAP SHOWING GEOLOGY OF THE GALORE CREEK AREA CINAND INTERPRETED STRUCTURAL ANALYSIS FROM "HILLSIDE SHADED" TOPOGRAPHIC MAP

CIM Special Volume No. 15

ADAPTED FROM PORPHYRY DEPOSITS OF THE CANADIAN CORDILLERA, SPECIAL VOLUME 15, 1976

# Statement of Costs

1

Acquisition of raster DEM files for image analysis	\$	862.50
Pro-rated software costs		1,250.00
Image processing charges -105 hours @ \$65 per hour		6,825.00
Preparation of technical reports		900.00
Preparation of technical drawings -13 hours @ \$65		845.00
Total applied for assessment credit:	\$1	0,682.50

# Recommendations

1

The image analysis completed during the current program identified multiple areas of interest on the subject claim group.

1997 President 1977

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Areas which are considered highest priority are marked with large circles on Figure 7.

## References

W.E. Kelly, K. Kliparchuk and A. McIntosh, 2004: IMAGE ANALYSIS TOOLBOX AND ENHANCED SATELLITE IMAGERY INTERGRATED INTO MAP PLACE.

D.E. Barr, P.E. Fox, K.E. Northcote and V.A. Preto, 1976: ,The Alkaline Suite of Porphyry Copper Deposits – A Summary. PORPHYRY COPPER DEPOSITS OF THE CANADIAN CORDILLERA, Published by CIM, 1976.

C.S. Ney, V.F. Hollister, 1976: Geological Setting of Porphyry Copper Deposits in the Canadian Cordillera. PORPHYRY COPPER DEPOSITS OF THE CANADIAN CORDILLERA, Published by CIM, 1976.

R.H. Seraphim and V.F. Hollister, 1976: Structural setting of Porphyry Copper Deposits in the Canadian Cordilleran. PORPHYRY COPPER DEPOSITS OF THE CANADIAN CORDILLERA, Published by CIM, 1976.

Von Einsiedel, Carl, 20005: airborne Magnetic Survey of the Newmopnt Lake Project Fugro Airborne Surveys Technical Report. Assessment Report:

## CERTIFICATE

I, Carl von Einsiedel, of 1124 - 470 Granville St., Vancouver, B.C. hereby certify that:

- 1. I am an independent consulting geologist with offices located at 1124 470 Granville St., Vancouver, B.C., V6C-1V5
- 2. I graduated from the Carleton University in Ontario with a BSc. (1987) in Geology and have practised my profession continuously since graduation.
- 3. I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia since 1992 with membership number #122307.
- 4. I have practiced my profession as a geologist since my graduation from university in the private sector in Eastern and Western Canada, in parts of the United States and Mexico reporting on and managing several projects in mineral exploration.
- 5. I have prepared all sections of this report.
- 6. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical report misleading.

Dated the 15th day of May 2006

Carl von Einsiedel, P.Geo.







