

VLF EM Electromagnetic Survey Report

Mineral Tenure 504021

Omineca Mining Division

NTS 103I 088

Geographic Centre of Work

Latitude: 54 degrees 48.38 minutes

Longitude: 128 degrees 23.59 minutes

Claim Owner

Knauss Creek Mines Ltd

Operator

Knauss Creek Mines Ltd

Co – Authors:

Leon LeBlond. FML # 115352

Rod Meredith, RPF. FML # 201234

Revised Report Submitted August 14, 2009

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STATEMENT OF AUTHORS QUALIFICATIONS

Statement of Authors Qualifications

The co-authors have different and complimentary work experience, knowledge and training. The co-authors were directly involved in all aspects of the work. One field assistant also contributed to the work; Trevor Darby.

Leon LeBlond's career has largely been in the mining sector, in a number of different capacities including: coal miner, prospector; underground diamond drilling supervisor; safety officer; master control operator.

Rod Meredith's career has been in the forestry sector. Mining related work includes rock and soil identification, surveying and mapping and professional report writing.

Curriculum Vitae – Leon LeBlond

1957 to 1960	Yorkshire Coal Mines, England 2 year ONC Mining Certificate, Deputies Certificate, Underground Blasting Licence for Coal Mines, Fireman's Licence, First Aid
1960 to 1962	Giant Mines, Yellowknife, NWT Mill work to flotation operator
1962 to 1970	Various Diamond Drilling Contract Operations, Yellowknife, NWT Boyles Bros Underground Diamond Drilling, NWT Inspiration Drilling, NWT Dresser Industries Ltd, Texas
1970 to 1972	Drilling and Personnel Consultant to Dave Emery, Giant Mines Mine Manager. Achieved 3 World Records: 1. Hit a difficult 6 foot target at 1,200 feet depth 2. Highest one year average of drilled feet per man per shift 3. Highest one year total of drilled feet for a 6 man crew
1976 to 1976	Noranda Bell Copper Mine, Granisle, BC Master Control Operator in the Mill
2005 to present	Knauss Creek Mines Ltd President
1960 to present	Prospecting numerous properties in BC, Yukon and NWT Written numerous prospecting results and interpretation reports

Curriculum Vitae – Rod Meredith, RPF

1981 to 1991	Field Forester. Duties include air photo interpretation, rock and soil type identification, road location establishment, traversing and mapping, timber cruising and silviculture prescription preparation.
1991 to 2009	Ministry of Forests. Terrace, BC. Various duties. Operations Manager since 2001.

INTRODUCTION

Revised Report General Comments

Report Authors: Revised from a single author to co-authors

Report Format: Revised and resubmitted

Report Media: Digital copy submitted via E-Mail

Hardcopy submitted via courier

Report Maps: All of the original report maps are valid. They have not been resubmitted.

One additional map is being submitted as part of the revised report submission. This map shows the electromagnetic survey grid on a plan map showing claim boundaries and topographic features. This map can not be submitted electronically. This map will be submitted with the hardcopy courier submission.

Report Appendices: All of the original report appendices are valid. They have not been resubmitted.

Work Objective

1. To compare the Dorreen Gold Mine (Northwest side of Knauss Creek) structure, faulting, shear zones and vein mineralogy to the structure, faulting, shear zones and electromagnetic detectable mineralogy with the survey grid area (Southeast side of Knauss Creek).
2. To establish the electromagnetic grid in visible reference to the observed faulting associated with the Dorreen Gold Mine so that the electromagnetic data, once plotted and analyzed, might indicate similar faulting within the survey grid area.
3. To collect rock samples from recorded electromagnetic anomalies within the survey grid area.

General Location of the Claim and Works

The Snowball Claim, Tenure # 504021 is located within NTS mapsheet 103I 088.

The electromagnetic survey grid is located on the east side of Knauss Creek approximately 200 metres below the exposed, gravel deposit, glacial moraine at the headwaters of Knauss Creek.

The geographic centre of the works has the following co-ordinates:

Latitude: 54 degrees 48.38 minutes

Longitude: 128 degrees 23.59 minutes

The electromagnetic survey grid baseline runs in a southeast – northwest orientation, using a 123 degree and 290 degree, magnetic declination adjusted bearing. The magnetic declination adjustment used was 26 degrees East.

The GPS waypoint reading for the main base station established for the electromagnetic survey grid is:

Latitude:	54 degrees	48.504 minutes
Longitude:	128 degrees	24.249 minutes

GPS readings were taken using a GARMIN E-Trex Legend instrument.

Access to Claims

From Terrace, British Columbia, travel East on Highway for approximately 30 km. Turn left and go across the Skeena River, using the Skeena West Forest Service Road bridge. Go across the railway tracks. Turn right at the “ T “ intersection approximately 100m past the railway tracks and travel 20 km on the Fiddler Forest Service Road (FSR). Park at the end of the Fiddler FSR and the beginning of Branch 300. Hike along the old Dorreen Gold Mine road until it reaches Knauss Creek. Hike up Knauss Creek approximately 2 km to a Southwest side tributary creek and associated rock talus remaining after a 1985 ice and rock debris flow. Hiking alongside Knauss Creek is the quickest way, but is difficult in high water. Hiking in the slide alder adjacent to Knauss Creek is possible, but slow going. Helicopter access from Terrace to the helicopter pad within the survey grid within the tributary creek rock slide is a 20 minute, one way trip.

Index Map

Will be included with the hardcopy revised report submission.

Property Definition

The current owner and operator of the Snowball Claim, Tenure # 504021 is Knauss Creek Mines Ltd.

The Snowball property has an interesting and important history. The Dorreen Gold Mine adit is located within the Snowball property. The Dorreen Gold Mine is located on the Northwest side of Knauss Creek. Mine tonnage was produced in 1924, 1926 and 1952.

The Dorreen Gold Mine history, geology and commodities are well summarized in MINFFILE Record Summary, MINFILE No 103I 048, Fiddler, Dorreen.

The owners current economic assessment is this is a good property with considerable historic value and future potential.

Work Summary by Mineral Tenure

Table of Works Conducted By Mineral Tenure

Work Category	Description	Tenure
Physical	Ground control survey	504021
	Line cutting	504021
	Grid establishment	504021
Technical	Electromagnetic survey	504021
	Rock sample analysis	504021
	Helicopter pad construction	504021

Work Summary by Quantity

Table of Work Activity by Quantity

Work Category	Description	Quantity
Physical	Ground control survey	1.6 km
	Line cutting	1.6 km
	Grid establishment	1 grid
Technical	Electromagnetic survey	1.6 km
	Rock sample analysis	6 rock sample assays
	Helicopter pad construction	1 heli- pad

SURVEY METHODOLOGY

Establishing Snowball Survey Grid

The main base station was established on the following criteria:

- Locate the main base station at the helipad constructed within the un-vegetated portions of the survey grid area. This ensures the main base station will be easy to return to and find in future years.
- Locate on the grid baseline
- Locate to electromagnetically detect if the fault associated with the Dorreen Gold Mine extends across Knauss Creek to the Southeast side of the property.

Snowball Grid Layout

The primary consideration for the location of the survey grid is the location of the fault zone associated with the Dorreen Gold Mine. The fault zone is delineated by a rock slide zone from a canyon South of the mine adits running downslope to Knauss Creek. The width of the rock slide in situ varies, but is approximately 150 metres to 200 metres wide. See photo #16 for extension of this zone to the West side of Knauss Creek up to the Dorreen Gold Mine which is on an elevation of 650 feet above Knauss Creek.

A total of 1,600 metres (m) of survey grid line was established within the Snowball Grid.

The main base station occurs at the helipad approximately 125m above Knauss Creek, on the Southeast side, where a tributary creek and associated recent rock slide (10 to 20 years) flows into Knauss Creek. A large rock with flagging remains onsite at the Southeast end of the helipad. This large rock is the location of the main base station.

2 Baselines are established from the main base station. Both baselines are flagged with distance stations every 25m.

Baseline #1 runs upslope at a bearing of 123 degrees. This baseline runs 400m upslope and stops at the start of the ice damn within the tributary creek canyon.

Baseline #2 runs downslope at a bearing of 290 degrees. This baseline runs downslope 115m and stops at Knauss Creek.

Eight cross lines were run perpendicular to the baseline. The cross lines were established at 50m intervals along the baseline, and are flagged every 25m to identify the cumulative cross line distance. The cross lines were established parallel to the suspected direction of the fault extension from the Northwest side of Knuass Creek. The GPS Waypoint reading taken at the helicopter pad main base station is:

Helicopter Pad Main Base Station GPS Waypoint

Latitude:	54 degrees	48.504 minutes
Longitude:	128 degrees	24.249 minutes

VLF Electromagnetic (EM) Survey

Once the 1,600m of grid line was established, a GEONICS VLF EM – 16 was used to conduct an electromagnetic assessment of possible faulting and associated mineralized veins within the Snowball Survey Grid area.

VLF EM – 16. Made by Geonics Limited, Mississauga – Ontario – Canada.
Model “N”. Serial No. 8403008.

The following VLF EM – 16 methodology was employed:

1. **Used NLK Seattle station.** A strong signal was received from this station at a bearing of 148 degrees.
2. Holding the EM Unit “parallel” to the ground (estimating a flat ground surface), the EM Unit was pointed towards Seattle and moved in an arc until strongest signal was received.
3. From this position, the EM Unit was always turned 90 degrees in a counter-clockwise direction.
4. The EM Unit was then vertically aligned to “void” the signal. The quadrature dial was then turned to also “void” the signal.
5. Once the signal was “voided”, two readings were recorded – first the in phase reading then the quadrature reading.
6. EM Unit readings were taken every 12.5m along each grid line. The midpoint distance between each 25m station was paced (estimated) and not marked in the field.

The VLF EM – 16 grid covers a considerable portion of the rock slide area. It also covers most of the fault that runs at an approximate 123 degree bearing on the Northwest side of Knauss Creek and is believed to extend across to the Southeast side as well. This fault occurs in association with the Dorreen Gold Mine. The fault width is estimated to be 30 feet wide. If the fault extends across Knauss Creek, then a fault zone will have been identified.

Rock and Soil Samples

Once the VLF EM – 16 data was analyzed, the location of data “anomaly’s” was recorded on the prospecting field map. Based on the physical geography observed at each “anomaly”, a rock sample was taken. Attempts were made to avoid taking float rock samples but in some situations, the only suitable sample was a float sample. One stream sample was also taken.

The description and location of each rock chip sample taken is in Appendix 6 of the original report. The geochemical analysis assay results for the samples taken is in Appendix 7 of the original report.

Photographs

32 photographs were taken and included in the original report. They were taken to document the range of physical geography observed and work conducted.

A photo list, photo description summary and all 32 photographs is in Appendix 8 of the original report.

Prospecting Notes and Field Maps

Prospecting notes were recorded in a “Rite in the Rain” – All Weather Writing Paper – Hip Pocket notebook.

Notes taken while laying out the Snowball Grid and recording the VLF EM – 16 were also recorded in this notebook.

A Prospecting Field Reference map (or Plan of the Snowball Grid) was produced from these notes and is included in Appendix 2 of the original report. This map is for prospecting and physical geography “ field reference ” only – as it is based on uncorrected slope distance measurements.

Weather

Weather is a recurring problem within the property area. In 2007, hurricane force winds were experienced by work crews at the top of the mountain. This year, in 2008, heavy rainfall generated flood waters within the tributary canyon and within Knauss Creek itself.

In 1985, a large chunk of ice within the tributary creek canyon hurtled down the creek, scouring out the then thick and tall (4m+) slide alder vegetation. Evidence of the remaining thick and tall slide alder vegetation outside of the ice flow cleared area is provided in various photos within the Photo Appendix. The area cleared by the 1985 ice and rock slide is approximately 1,200m long by 200m wide. In 1985 the ice was 50 feet thick in the canyon. In 2008 the ice has shrunk considerably to an approximate 4m thickness. See photo's #2 and #4.

TECHNICAL DATA AND INTERPRETATION

Technical Data

The VLF EM – 16 recorded data is in Appendix 3 of the original report.

A map of the raw “ as read “ VLF EM – 16 data is in Appendix 4 of the original report.

A map of the contoured VLF EM – 16 data is in Appendix 5 of the original report.

Fraser Filter calculations were conducted as described in “The Contouring of VLF – EM Data”, by D. C. Fraser, GEOPHYSICS Vol. XXXIV, No. 6, December 1969, pages 958 to 967.

Interpretation

The presence of a plunging anticline is a significant influencing feature for this property. This plunging anticline has been previously reported, described and photographed. See previous report titled “ Kandy 1-6 Group Report, December 20, 2004, #27676, Omineca Mining Division. Appendix 9 of the original report contains relevant pages and photo’s from this previous #27676 report.

The VLF EM – 16 results picked up the presence of the plunging anticline on cross lines # 5 and # 6. Although the plot data results are flat, the data possibly indicates the plunging anticline continues at depth. The end (nose) of the plunging anticline is beyond the area surveyed.

Faults are also indicated on the Fraser Filter plot results on cross line # 6, # 7 and # 8. We believe the fault associated with the Dorreen Gold Mine on the West side of Knauss Creek extends across Knauss Creek to the East side, with a slight North/South shift. See photo # 16 in the original report showing the location of the faults associated with the Dorreen Gold Mine on the West side of Knauss Creek.

Over the years, Leon LeBlond has panned for gold from the tributary creek between cross lines # 7 and # 8. He has found gold in association with black sand. To the North. Not on grid end (nose) syncline. Panning for gold below cross line # 6 has not produced any results. Leon believes this could indicate a ridge from the anticline forms an underground barrier, which traps gold. Spring runoff then churns the gold to the surface.

COST STATEMENT

Expenses:	Total # of Days	Hourly Rate	Daily Rate	Total(s) (\$)
Labour cost:				
Leon LeBlond FML # 115352	22.5	N / A	\$ 550	\$ 12,375
Rod Meredith FML # 201234	21.0	N / A	\$ 450	\$ 9,450
Trevor Darby	1.5	N / A	\$ 350	\$ 525
Equipment & Machinery cost:				
VLF EM – 16 # 8403008 1 month Lease				\$ 2, 000.00
Transportation:	Rate(s)	Days / Distance	Total(s) (\$)	
Helicopter	\$ 800 / hour	2 days	\$ 800.00	
1997 Mazda 4X4 Pickup	\$ 0.45 per km	440 km	\$ 198.00	
Lodging / Food:				
Food	\$ 25.00 per day	45 Days	\$ 1,125	
Lodging	Field Camp – No Hotel Accomodation Required	N / A	\$ 0.00	
Other:				
Assays	\$ 40.00 per sample	6 samples	\$ 240.00	
Field Supplies (Ribbon, Hip Chain, GPS, Etc)			\$ 50	
Safety Supplies (Stretcher & Spine Board, Bear Spray, Bear Bangers, Radio's, Air Horn, First Aid Kit)			\$ 100	
Camp Supplies (Cook Stove, Pots & Pans, Cutlery, Plates, Bowls)			\$ 50	
Report and Office Supplies			\$ 200	
			Total costs:	\$ 27, 113
			Amount claimed for assessment:	\$ 27, 113

Signature of Recorded Holder / Agent

Date

REFERENCES CITED

MINFFILE Record Summary, MINFILE No 103I 048, Fiddler, Dorreen.

“The Contouring of VLF – EM Data”, by D. C. Fraser, GEOPHYSICS Vol. XXXIV, No. 6, December 1969, pages 958 to 967.

“ Kandy 1-6 Group Report, December 20, 2004, #27676, Omineca Mining Division.

APPENDICES

The original report submission contains 12 appendices. All of these appendices are valid and are part of the revised report submission. Because they have already been submitted, additional appendices copies are not submitted with the revised report.

One additional map showing the electromagnetic survey grid on a plan map showing claim boundaries and topographic features is submitted with the hardcopy submission of the revised report, and is labeled Appendix # 13.

The following is a list of the appendices submitted with the original report including the addition of one map described above as Appendix # 13.

1. 1:10,000 MTO Map
2. VLF EM – 16 Survey Grid Map
3. VLF EM – 16 Survey Notes
4. VLF EM – 16 “ As Read “ Results. Plot of data
5. Fraser Filter results. Plot of data
6. Rock Sample Description
7. Geochemical Analysis Results. 8V – 3701 – RG1. Assayers Canada
8. Photo List, Photo Description and Photo Sleeves (32 Photo’s)
9. Page 4 and Photo’s # 4 and # 5 from previous report titled “ Kandy 1 – 6 Group Report, December 20, 2004, # 27676, Omineca Mining Division
10. Work Diary Summary for Snowball Property 2008
11. 90 Day Assessment Report
12. Copy of MTO Transaction. Event # 4244869
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13. 1:10,000 plan map showing electromagnetic survey grid in relation to claim boundaries and topographic features