Independent Technical Report for the Granduc Copper Project, BC, Canada

Report Prepared for

Castle Resources Inc.

Report Prepared by

srk consulting

SRK Consulting (Canada) Inc.
2CC039.002
April 5, 2012

Independent Technical Report for the Granduc Copper Project, BC, Canada

Castle Resources Inc.

20 Victoria Street Suite 800
Toronto, ON, M5C 2N8

SRK Consulting (Canada) Inc.
Suite 2200-1066 West Hastings Street
Vancouver, B.C., Canada V6E 3X2

e-mail: vancouver@srk.com
website: www.srk.com

Tel: +1.604.681.4196
Fax: +1.604.687.5532

SRK Project Number 2CC039.002

Effective date: February 17, 2012
Signature date: April 5, 2012

Authored by:

"Original Signed"

Michael D. Johnson, P.Geo
Senior Consultant

Peer Reviewed by:

"Original Signed"

Gilles Arseneau, PhD., P.Geo.
Principal Consultant

Cover: South Leduc Glacier and Granduc Mountain

Important Notice

This report was prepared as a National Instrument 43-101 Technical Report for Castle Resources Inc. (“CRI”) by SRK Consulting (Canada) Inc. (“SRK”). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in SRK’s services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by CRI subject to the terms and conditions of its contract with SRK and relevant securities legislation. The contract permits Castle to file this report as a Technical Report with Canadian securities regulatory authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party’s sole risk. The responsibility for this disclosure remains with CRI. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

Executive Summary

Introduction

The Granduc property is a copper volcanogenic massive sulphides ("VMS") deposit that was mined between 1970 and 1984 and is currently the subject of Castle Resources Inc. ("CRI") exploration and resource development described in this report. The project is located in west-central BC, near the southern limit of the Alaskan panhandle, approximately 40 kilometres ("km") northwest of Stewart BC. The project encloses several copper dominated volcanogenic sulphide occurrences, which have been described as belonging into three zones; North, Main and South. Within each of these zones, distinct mineralization domains have been defined.

In 2011, CRI commissioned SRK Consulting (Canada) Inc. ("SRK") to review and audit the exploration work undertaken by CRI in 2011, and to prepare an update to the Mineral Resource estimate for the deposit. This technical report follows the guidelines of the Canadian Securities Administrators National Instrument 43-101 and Form 43-101F1, and is in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines".

SRK has updated the technical report previously completed by SRK in April 2011, reflecting subsequent drilling activity completed by CRI in 2011.

Property Description and Agreements

The Granduc property presently consists of twenty-eight BC mining claims surrounding and overlaying sixty-four crown granted claims. The total land area covers an aggregate of approximately 33,400 acres (13,514 hectares). The boundaries of the crown granted claims have been legally surveyed whereas the boundaries of the mining claims have not. The property is in northwest British Columbia, Canada, with the area of immediate interest centered at about 56 ° 14' latitude north and 130 ° 20' longitude west.

The property is 100% percent owned by CRI and was acquired from Bell Copper in 2010. The property is subject to a 2% net smelter return royalty.

Location, Access and Physiography

Access to the Granduc project area is by helicopter from Stewart BC, 40 km SE of the project, or a staging area along the Summit Lake road, roughly 20 km east of the project area. During mining periods in the 1970's and 1980's, the project was also accessible via a 17 km long tunnel ("Tide Tunnel") from Tide Lake, which is approximately 35 km N of Stewart. Tide Lake can be accessed by the seasonal Summit Lake road from Stewart via the Salmon Arm valley. Currently, the Tide tunnel is not accessible and would need rehabilitation before it could be utilized.

Climatic conditions are typical of the Coastal BC region, with warm summers and relatively wet, cool winters. Snow cover is heavy, particularly at higher elevations. The area encompassed by the claims is dominantly sub-alpine and high alpine tundra and ice/glacier coverage. The property terrain is mountainous, with very steep slopes. Topographic elevations around the mine site range from 600 metres ("m") at the valley bottom to 2270 m at the highest peaks, while the elevation at the east end of the Tide Tunnel is approximately 795 m.

No permanent accommodations remain at the project site. A seasonal camp facility can be constructed yearly at an old airstrip near the mine site. A tent camp was constructed by CRI for the 2010 and 2011 drill program and would be re-instated yearly as required for exploration activities.

Exploration and Development History

The Granduc area has been explored for minerals since the initial mineralization discovery in 1931. The property was first staked in 1951 and by the early 1960's mine development was underway. Newmont financed the development of the mine, which opened in 1970, with a 2000 tonne per day ("tpd") capacity; however processing capacity was increased during mining.

The mine operated from approximately 1970 through until 1977, when it was shut down for approximately three years. The mine was acquired by Esso Minerals Canada ("Esso") in 1979 and operated from 1981 to May 1984 when it was decommissioned due to high costs and low copper prices. Mining methods included sublevel caving between 1970 and 1977 and slot and mass blasting during Esso's operation of the mine (Schmidt & Tyler, 1984). The mine processed approximately 15 million tonnes of ore and produced approximately 180,000 tonnes of copper over approximately 10 years of production. Average head-feed grade of approximately 1.29% copper and processing achieved 95% copper recovery. Average precious metal production included 0.13 grams per tonne ("g/t") gold and 8 g/t silver (Minfile, 2011). Copper concentrates were shipped from the concentrator to Stewart BC; from which they were shipped to markets in Japan.

Exploration on the property between 1974 and 1984 focussed on extending the mineralized zones to the north and south of the main deposit. This lead to the discovery of the North Zone mineralization; approximately 1 km north of the Main Zone.

Short periods of exploration were completed after closure of the mine by Esso in 1984. This included two small surface exploration programs operated by Hecla Mining Company in 1991 and again 1993. Bell Copper acquired the rights to the property in 2005 and operated two exploration programs in 2005 and 2006. They conducted field exploration, airborne geophysics and diamond drill programs, dominantly focused on the North and South Zones along strike of the Main Granduc Zone. As well, Bell Copper targeted an area where massive sulphide boulders were identified by previous exploration, termed the JK Zone.

No further work was completed on the property until 2010.

Regional and Local Geology

The rocks at the Granduc property can be grossly separated into two geological successions of the Upper Triassic and Lower to Middle Jurassic. The two are separated by the South Unuk shear zone.

The Triassic strata are correlated with the Stuhini Group and consist of foliated schists, phyllites, marbles and gneisses. The Granduc mine series rocks, which host the Main Zone of the deposit, fall within this group. The Jurassic strata are correlated with the Hazelton Group. They consist of relatively undeformed volcanic rocks.

The south Unuk shear zone is a north-northwest striking sub-vertical fault that has a dominantly sinistral displacement. This zone has been mapped from the Iskut River area, south to the Granduc Property and is terminated by the younger Coast Range intrusive suite to the south.

Within the Granduc Property the Late Triassic rocks record strongly heterogeneous deformation with a large component of simple shear in a ductile to semi-brittle environment. Three phases of deformation are believed to have occurred and termed F1, F2 and F3. The first two phases are most intense, effecting the distribution of mineralized bodies within the deposit. The F1 and F2 deformation has been linked to the formation of the South Unuk shear zone. (McGuigan, 2010)

Deposit Types and Mineralization

The deposit types and mineralization has been described by McGuigan in the 2010 technical report, and is paraphrased below.

The Granduc project is believed to host Besshi type volcanogenic sulphide mineralization. Deposits of this type form by submarine hydrothermal processes on and beneath the seafloor, are associated with penecontemporaneous volcanism, and commonly contain commercially important concentrations of several metals (ie, are "polymetallic").The most common metals of commercial significance are copper, zinc, lead, gold, and silver.

Besshi VMS sulphide mineralization consists predominantly of iron sulphides (pyrite and/or pyrrhotite), with lesser chalcopyrite; sphalerite may or may not be present. Besshi deposits can contain highly varied and complex sulphide mineralogy, including arsenopyrite, galena, bornite, tetrahedrite-tennantite, cobaltite, stannite and molybdenite. Quartz (chert), tourmaline, carbonate, albite, sericite, chlorite and amphibole can be found as gangue minerals in the deposits. Barite is usually absent, but other chemical sedimentary rocks (chert, carbonates or oxide-facies iron beds) and/or magnetite may be associated.

The Besshi massive sulphide deposits are stratiform and tabular. The massive sulphides may be finely or coarsely layered or massive and can be finely interlaminated with chert, tuff, calcareous sediment, and magnetite; the sulphide lenses can be just several metres thick but can extend for several kilometres. Chloritic alteration haloes are commonly in the host rocks surrounding the sulphide horizons, a relic of pre-deformational alteration. Other alteration minerals that may occur are quartz, carbonate, pyrite, sericite and graphite. Locally, tourmaline can be distinctly abundant.

Crosscutting the massive sulphide horizons, there may be veins of re-crystallised pyrite and/or chalcopyrite, opened and filled when the horizons were deformed. In highly deformed environments, sulphides may be thickened in fold closures, and remobilized into axial plane shears.

The principle copper-silver bearing volcanogenic massive sulphide zones on the Property are located in a north-south trending, steeply westward dipping strata of Mine series and part of the Late Triassic western series.

The Main Granduc Zone consists of a number of individual ore bodies. These orebodies appear to be structurally controlled and modified by south plunging folds. Mineralization is essentially stratabound; however deformation has caused sulphide remobilization resulting locally in cross-cutting relationships. It consists of varying proportions of chalcopyrite, pyrrhotite, magnetite, minor pyrite, and rare sphalerite and galena. Structurally modified sulphides form an important part of the many of the orebodies. Based on measurements at the 2600 level, and higher in the mine, the thickest parts of those bodies plunge in fold closures.

North Zone mineralization occurs in the upper footwall series of the Main Zone and is located 1-2km north of the Main Zone and site of the mining. The South Zone is an extension of the Main Zone below the Leduc Glacier, immediately south of the Main Zone

Exploration and Drilling

Historical data includes more than 2000 drillholes from prior operators, completed between 1931 and 2006. Historical drillholes were generally completed at 30 foot section intervals where highly confident resources were required for mine planning and run east-west.

CRI completed their first exploration program since acquiring the Granduc property during late summer 2010. In 2011, another drill program was completed by CRI targeting expanding of the Mineral Resource within the Main and South Zones.

The 2010 program was designed to confirm the mineralization in the Main Zone of the Granduc deposit. Over a period of approximately six weeks, 18 NQ drillholes were completed, totalling almost 8,300 metres. Sulphide mineralization was intersected in all drillholes. Collar locations were measured using handheld GPS units and downhole survey information was captured using a Flex-it downhole tool. Drillcore was logged for lithology and geotech parameters before being photographed and then sampled. Core recovery was generally between 90 and 95%.

The 2011 program was designed to expand the mineralization models in the Main and South Zones of the Granduc deposit. Between June and September 2011, 58 NQ drill holes were completed, totalling 30,705 metres. Collar locations were measured using differential GPS units and downhole survey information was captured using a gryrosocope tool. Drill core was logged for lithology and geotech parameters before being photographed and sampled. Core recovery was generally good aside from fault zones west of the mineralization zone.

Sampling of historic core was completed both 2010 and 2011, in order to confirm the assay results, which had been compiled from historic drilling completed between 1931 and 2006. Approximately 4103 re-assays were completed on 165 drillholes within modelled mineralized domains.

Sampling Method, Approach and Analyses

There are no records of historical sampling procedures used by previous project operators. Review of archived core indicates that assay samples were collected from half core split. The majority of samples are 1.52 metres in length, and generally consist of material containing visible sulphide minerals. Detailed records of historical assay analytical analysis procedures and sample preparation are not available.

During the 2010 and 2011 drilling campaigns completed by CRI, NQ core was split or sawn and sampling was completed on ½ of the core in 1m to 2 m intervals, with 1 m being the more common sampling length in intensely mineralized zones. Core splitting and sample boundaries were defined by a geologist during logging.

Re-sampling of historic drillcore was completed on a combination of ¼ or ½ (split) core depending on the condition of the historic holes. The core size of most samples was AX size, so most often the entire remnants of the core was included in the sample. The historic sample intervals were generally followed as closely as possible.

For all 2010 sampling, ECO Tech Laboratory (“Eco Tech”) of Stewart BC was commissioned to complete all prep and analysis. Eco Tech is a Stewart Group Laboratory which is a global provider of geochemical and assay services. Umpire duplicate analysis was completed at Acme Laboratory of Vancouver. All samples were assayed for gold, using a standard fire assay procedure with atomic absorption finish on thirty grams sub-samples and a suite of thirty-three elements, using a four-acid digestion procedure followed by ICP-Atomic Emission Spectroscopy.

Eco Tech was also utilized for analysis completed during the 2011 exploration program; however, during this program the ALS Group (“ALS”) purchased Eco Tech. Therefore approximately half of the 2011 samples collected by CRI were completed by ALS.

The 2010 and 2011 exploration work completed by CRI was carried out using quality assurance and quality control programs, generally meeting industry best practices. The analytical quality control data for the Granduc project include both internal and external quality control measures. Eco Tech implemented internal laboratory measures consisting of inserting quality control samples (blanks, certified reference materials and duplicate pulp) within each batch of samples submitted for assaying. CRI implemented external analytical quality control measures consisting of inserting quality control samples with each batch of core drilling samples.

The analytical quality control program developed by CRI for this project was overseen by appropriately qualified geologists. In the opinion of SRK, the exploration data from the Granduc project was acquired by CRI, using adequate quality control procedures that generally meet industry best practices for a drilling stage exploration property.

Data Verifications

Data verification for the Granduc project can be divided into (1) historical data; (2) data collected by CRI in 2010 and 2011.

Historic Data

Historic drill collar coordinates, downhole survey data and assays were checked against historic paper records such as drill logs as well as previous incarnations of the digital database. SRK investigated discrepancies and found that in most cases, the current database appeared to contain the most reliable data. The data was also spatially compared to the general trend of the deposit in 3D space. The data generally appeared to be correct and relatively few adjustments were made to the database collar locations, downhole data or assay data.

CRI also re-sampled more than 4100 intervals of historic core in 2010 and 2011, in order to compare the assay results to historic records. Aside from expected variability, the new results matched those of the historic core without any significant bias.

2010 and 2011 Castle Resources Inc. Data

In accordance with National Instrument 43-101 guidelines, SRK visited the Granduc project in August 2010 and July 2011 while active drilling was ongoing. The purpose of the site visits were to inspect the property and ascertain the geological setting of the Granduc project, witness the extent of the exploration work carried out on the property and assess logistical aspects and other constraints relating to conducting exploration work in the area. During the visits, SRK examined drill core from recently drilled boreholes and inspected drilling locations, borehole collars, the core shack and core cutting facilities. SRK also interviewed project personnel regarding the exploration strategies and field procedures used by CRI. Considering the comprehensive quality control programs used by CRI, the history of mining at the site, and the visible presence of copper sulphide minerals in drill core examined by SRK, no independent verification samples were collected by SRK.

SRK conducted routine verifications to ascertain the reliability of the electronic borehole database provided by CRI. SRK reviewed all collar location data as well as downhole data and made adjustments where required. All 2010 and 2011 assay results were digitally downloaded directly from the laboratory and compared record-for-record with the database. No significant discrepancies were found.

After the review, SRK is of the opinion that the Granduc drilling database and geological model are sufficiently reliable for resource estimation at the current stage of the project.

Mineral Processing and Metallurgical Testing

A small amount of mineral processing and metallurgical testing has been completed by CRI in 2011. In addition to this work, historical mining data provides a reasonable framework for processing and is sufficient to help justify "reasonable prospects of economic extraction" at this stage for the project.

The Granduc Mine processing facility was constructed in 1968 and reclaimed in 1984. It was a processing facility with a front end reduction to minus 0.5" and grinding completed through rod and pebble mills. Cyclone overflow fed a floatation circuit. Rougher floatation concentrates were then reground and upgraded in cleaning cells. Concentrates were then dried and trucked to Stewart for shipping.

The mill constructed during mining has been completely reclaimed and no facilities remain on site.

The objectives of CRI's 2011 metallurgical test work included:

- Conduct preliminary grindability studies to assess SAG and ball mill grinding requirements;
- Complete open circuit flotation tests to determine the metallurgical response to primary grind size, rougher and cleaner flotation pH, collector type and rougher concentrate regrind size;
- Conduct locked-cycle flotation tests under the best test conditions to assess the impact of recirculation of intermediate test products on overall metal recovery and concentrate grade;
- Evaluate the final concentrate for the presence of minor deleterious elements;
- Investigate the potential of producing a magnetic concentrate from the copper flotation tailing; and
- Generate samples of rougher tailing for environmental testing.

The test composite was formulated from mineralized intervals from three 2011 drill holes with an average composite grade of 1.47% copper 0.16 g/t gold and 9 g/t silver.

Studies included grindability, rougher flotation, cleaner flotation and lock-cycle flotation studies. Concentrate quality and iron recovery tests were also reviewed.

The average result of two locked-cycle tests demonstrated that almost 92% of the copper, 66% of the gold and 86% silver was recovered into a final flotation concentrate, grading about 30% copper, 2.8 g/t gold and 189 g/t silver. A review of the concentrate assays indicates that the concentrate is very clean and unlikely to attract any significant smelter penalties

Mineral Resource Estimation

The Mineral Resource estimate presented herein represents an update to the resource evaluation for the Granduc VMS deposit developed in 2010. The resource estimate was completed by Michael D. Johnson, P. Geo., an independent qualified person as this term is defined in National Instrument 43-101. The effective date of this resource estimate is February 17, 2012.

SRK is of the opinion that the current drilling information is sufficiently reliable to interpret with confidence the boundaries of the sulphide mineralization domains and that the assaying data is sufficiently reliable to support estimating Mineral Resources.

A total of nine separate wireframes were constructed using both Gemcom Surpac™ and Leapfrog™ 3D from the drilling data. Seven wireframes were defined in the Main and South Zones and, two wireframes were created for the North Zone. In the update, wireframes within the South Zone were continuous models extending from the Main Zone. Boundaries of the wireframe domains were determined based on a cut-off of approximately 0.7 % copper, with lower grade intercepts included for geological continuity where warranted. Interpretation was generally completed assuming that the mineralization was stratiform and roughly parallel, with thickening and/or terminations to the zones associated with structural deformation and faults. The current wireframe interpretation are grade shells and at this time do not necessarily properly confirm to geological controls. Further work is required to more accurately model the geology in conjunction with the mineralization.

Statistical analysis and resource estimation work was completed in Gemcom Surpac™, whereas variography was completed in Sage2001™. A total of approximately 9,900 copper assay records from approximately 620 drillholes are located within the interpreted mineralized domains. A total of 3,604 gold and silver assays were utilized as this data is only available for drillholes with sampling completed by CRI.

A topography surface was created from digital contour data generated from aerial photographs. A glacial ice-depth surface was also created. As well, a surface representing the limit of historical mining was compiled from mine records submitted to the government during mine closure in 1984. These surfaces were utilized to limit the mineralization within the current Mineral Resource.

A Surpac sub-block routine was used to fill the mineralization wireframes with blocks aligned with the UTM Zone 9 (NAD83 datum) coordinate system. Parent block size was set at 2 m by 10 m by 10 m (with a minimum sub-block size of 0.5 m by 2.5 m by 2.5 m).

Experimental variograms and variogram models for copper were generated for each of the Main Zone domains. The nugget values range from 20 to 30 % of the total sill. Variograms were not created for gold and silver.

Copper grades were estimated using ordinary kriging ("OK") in three successive steps using increasing search neighbourhood guided by variography. The estimation parameters were established after visual review of several tests. Gold and Silver grades were estimated using Inverse Distance Squared ("ID2"). Domain boundaries were treated as "hard" boundaries in most cases, meaning that blocks withina domain were only estimated using composites from within that domain.

Specific gravity ("SG") was assigned to the block model using average values for each mineralized domain.

The Granduc Mineral Resources were classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (December 2005) by Michael D. Johnson, an appropriate independent qualified person for the purpose of National Instrument 43-101. For classification, consideration was given to drillhole and assay density, confidence in the source data, mineralization geometry confidence, variography results and the mining history. SRK determined that the data were sufficient to support classification of the Mineral Resource as Indicated and Inferred Mineral Resources at this time. A wireframe boundary was digitized around the densest drilling and sampling zones, which corresponded to the volumes immediately below the last mining levels, and represents the volume encompassing the Indicated Mineral Resources. Similarly, a wireframe boundary was created to represent the volume representing the Inferred classification, associated with wider space drilling where grade and volume confidence is lower. Estimated blocks outside these zones define the Exploration Potential and are not part of the Mineral Resource.

Generally, most of the deposit has been mined to the 2600 ft level (792 m). The Indicated Mineral Resource largely lies immediately below this level, between the 2360 ft (720 m) and 2600 ft levels. The Inferred resource is immediately down-dip of the Indicated, generally between 1645 ft (500 m) and 2360 ft (720 m).

The resource block model was validated by comparing local “well-informed” block grades with composites contained within those blocks; and by comparing average assay grades with average block estimates along different directions (swath plots).

The “reasonable prospects for economic extraction” requirement for a Mineral Resource generally implies that the quantity and grade estimates meet certain economic thresholds, and that the Mineral Resources are reported at an appropriate cut-off grade, taking into account extraction scenarios and processing recoveries. In the current analysis, only cooper was estimated and therefore considered of economic significance, although historical records show that at least gold and silver were recovered commercially. The Mineral Resource has been tabulated at a series of Net Smelter Return (“NSR”) cut-offs between 20 C$ and 100 C$. Based on a certain set of cost and extraction assumptions, SRK believes the Mineral Resources appropriately reported at a NSR cut-off or 40 C$, considering the anticipated bulk underground mining extraction scenario that may be used to mine this mineralization.

The NSR calculation normalizes the value of the mineralization to a common unit (C$) inclusive of copper, gold and silver mineralization value. The NSR takes into account commodity prices, recoveries, smelter payables and selling costs. The NSR and cut-off parameters are based upon preliminary test work and reasonable assumptions based upon similar deposits.

The February 2012 Mineral Resource statement for the Granduc deposit is presented in Table i.

Table i: Mineral Resource Statement[1] at a 40 C$ NSR Cut-off[2] for the Granduc Deposit, Stewart BC, SRK Consulting, Effective Date February 21, 2012.

Resource	Cut-off	Quantity	Copper Grade	Gold Grade	Silver Grade	Contained Copper	Contained Gold	Contained Silver
Category	***(NSR C$/t)***	***(millions of tonnes)***	***(% Cu)***	***(g/t Au)***	***(g/t Ag)***	***(millions of lbs)***	***(ounces)***	***(ounces)***
Indicated	**40**	**10.4**	**1.25**	**0.14**	**10.6**	**286.1**	**47,000**	**3,500,000**
Inferred	**40**	**36.6**	**1.26**	**0.13**	**9.7**	**1013.2**	**155,000**	**11,400,000**

1. Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimate. All composites have been capped where appropriate.
2. NSR calculation using the following parameters. US$ to C$ Exchange is 1 : 0.92, Cu Price = US$ 3.25 / lbs., Au Price = US$ 1275 / troy ounce, Ag Price = US$ 21 / troy ounce Cu recovery at 91.7%, Au recovery = 62.56%, Ag recovery = 80.96%, Selling cost for Cu at US$ 0.312 / lbs., Au at US$ 5 / ounce, Ag at US$ 0.35 / ounce, Conversions: 31.1035 g / troy ounce, 2204.6 lbs. / tonne

The Mineral Resources summarized above are not Mineral Reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. SRK is not aware of any environmental, permitting, legal, title, taxation, socio-political or marking issues that would material effect the Mineral Resource. The resource estimate was completed by QP Michael Johnson, P.Geo., and Senior Consultant with SRK, who is independent of the Company.

When compared to the 2010 Mineral Resource estimate, which was reported at a 0.8% copper cut-off, the Mineral Resource estimate has increased from 3.8 Mt of Indicated and 15.8 Mt of Inferred material to 8.9 Mt of Indicated and 31.1 Mt of Inferred material. The average grade of the Indicated material has dropped from 1.59 % Cu to 1.35 % Cu, while the grade of the Inferred material remained essentially unchanged at 1.34 % Cu.

In the current Mineral Resource, gold and silver values were estimated for the first time, but within the Main-South Zones only. The North Zone lacks sufficient data to estimate precious metals at this time. Gold and silver assay results were based upon the 2005/6 Bell Copper drill holes, the 2010 and 2011 Castle sampling, as well as 2010 and 2011 re-sampling of historic drill holes. Gold and silver values have not been estimated for the North Zone, which accounts for approximately 10% of the Inferred Mineral Resource. The density of the gold and silver sample data is less than the copper data and results in a reasonable, but less confident estimate of gold and silver grade. Considering that the gold and silver mineralization contributes a small portion of the Mineral Resource estimate value, the data is considered sufficient for this stage of exploration.

In addition to the Mineral Resources, SRK assessed the Exploration Potential defined by wider spaced drilling data. In 2011, the Exploration Potential was defined throughout the North, Main and South Zones. At this this time, Exploration Potential has been limited to material in the North and South Zones as the Main Zone has reasonably quantified the limits of the mineralization. The current Exploration Potential is based upon approximately 16 North Zone drill holes that have been correlated with the resource domains, but are too widely spaced to define a resource. In the South Zone, 2011 drilling was unable to reach the southern limits of mineralization below an elevation of approximately 400 m AMSL. In the south, the Exploration Potential is defined by the down-dip extension of mineralization between 200 m and 400 m AMSL as well as some peripheral gaps in the estimate where drill density was insufficient to quantify resource material.

In the North Zone, the Exploration Potential has been defined by correlating widely space drill holes largely above the Mineral Resource. The resource is defined in an area where drilling density from an exploration drift was high enough to accurately quantify the resource. Fans of drilling from widely spaced surface and underground holes have been used to quantify the Exploration Potential. In 2011, three holes were completed in the North Zone and all holes intersected significant mineralization which exceeded expected thickness; however, the data was insufficient to modify the further Mineral Resources in the North Zone.

The potential quantity and grade of the Exploration Potential (Table ii) is conceptual in nature and there has been insufficient exploration to define a Mineral Resource for this material. It is uncertain if further exploration will result in the exploration targets being delineated as a Mineral Resource.

The February 2012 Exploration Potential for the Granduc deposit is summarized in Table ii.

Table ii: Summary of Granduc Exploration Potential, SRK, Feb 17, 2012

Estimated Tonnage (Mt)	Estimated Copper Grade Range (Cu %)
15 to 25	1.2 % to 1.5 %
Based upon a NSR cut-off of approximately 40 C$	

Gold and silver grades have not been estimated within the Exploration Potential.

Conclusion and Recommendations

In the opinion of SRK, the block model resource estimate and resource classification reported herein are a reasonable representation of the global copper, gold and silver Mineral Resources found in the Granduc deposit. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserve.

SRK constructed a Mineral Resource block model for the Granduc deposit, constraining grade interpolation to within the nine modelled mineralization domains. After validation and classification, SRK considers that the Mineral Resources for the Granduc project are appropriately reported at a NSR cut-off of 40 C$ considering the likely bulk underground mining method that may be used to extract this mineralization.

In reviewing the Mineral Resource model, SRK draws the following conclusions:

- The accuracy of spatial data is sufficient for definition of Inferred and Indicated Mineral Resource, but needs higher drilling density for Measured Resources and significantly increasing the amount of Indicated Mineral Resources;
- Mineralization models are currently sufficient for defining Inferred and Indicated Mineral Resources, but need multi-element assays, geology / structural data and litho-geochemistry for more reliable interpretation necessary for mine engineering analysis;
- Grade shell interpretations are sufficient for the current level of analysis, but should be replaced with geological models where possible;
- Accuracy of interpretation is higher at highest elevations (700-790 m), but the accuracy of the models is lessened with depth and lower density of drill holes;
- Orebody thickness, and to a lesser degree grade, vary widely both within and between interpreted domains;
- The Mineral Resources are appropriately reported at a NSR cut-off of 40 C$ based on current metal prices and expectation of bulk tonnage mining;
- Estimates are sufficiently accurate for global estimation but need further validation, increased data density, and geology mapping to increase local estimate accuracy;
- The Indicated Mineral Resource is based largely on a huge amount of closely spaced sample data, but significant copper and precious metal analyses lack concrete verification;
- The Inferred Mineral Resource is largely based on widely space drilling data in a relatively complex mineralization environment, making local estimation and interpretation more uncertain;
- North Zone Inferred Mineral Resources are supported by more widely spaced drilling than those of the Main Zone; and,
- A drill hole intercept spacing of approximately 30 m is required for converting Inferred Mineral Resources to Indicated.

A number of factors have been identified by SRK that may affect the quality and quantity of the current estimates, and thereby highlight opportunities for improvement. The following factors remain opportunities for future work:

Methodology:

- Complete differential GPS survey of all surface holes possible;
- Complete underground and surface collar survey including azimuth/dips where practical; and,
- Purchase / develop a field useable database and eliminate spreadsheet use.

Drilling and Sampling

- Continue to complete re-sampling program on mineralized zones of stored historical core;
- Complete surface drill holes to expand mineralization at depth within the South Zone;
- Complete underground drill holes to convert Inferred Mineral Resources to Indicated as warranted by preliminary economic assessment; and,
- Complete surface and underground drill holes to expand knowledge of North Zone mineralization.

Geology and Structure

- Complete structural and geology mapping in the lowest production levels (2100 ft or 2600 ft) and at surface to refine the geological modelling.

Analytical Techniques

- Increase insertion rate of reference standards to one in twenty;
- Utilize a reference standard at the average grade of the copper mineralization, as well as one above this value, and one near cut-off values; and,
- Utilize appropriate precious metal standards for all new analysis.

Modelling, Statistics and Estimation

- Complete a model of all mineralization within the historically mined out areas.
- Continue to collect precious metal content upon further compilation of historical data, re-sampling of available historic core and any future drilling data.

SRK considers that another 30,000 m drilling program is warranted to test the depth and lateral extension of the mineralization within the South and North Zones. This work should be completed firstly via a surface drilling program followed by an underground drilling program.

Surface drilling targets are largely limited to defining more Inferred Mineral Resources and/or Exploration Potential with longer steep holes. The majority of the drill holes designed for converting Inferred to Indicated Mineral Resource will require underground access allowing detailed drill targeting of the 2360 ft (720 m) to 2130 ft (2130 m) levels.

SRK recommends continuing to quantifying the precious metal content of the Granduc deposit. SRK also recommends a scoping study or Preliminary Economic Assessment (“PEA”) to begin to understand the general economics related to the Mineral Resources as they are currently defined.

The total costs for both phases of the recommended work program are estimated at approximately C$ 15.4 million including five percent administrative charges and a five percent contingency.

Table of Contents

List of Tables

List of Figures

1 Introduction and Terms of Reference

This technical report has been prepared by SRK Consulting for Castle Resource Inc. It provides an update to the technical merits of the Granduc copper property.

The Granduc property is a copper volcanogenic massive sulphides ("VMS") project that was mined between 1970 and 1984 and is currently the subject of Castle Resources Inc. ("CRI") exploration and resource development described in this report. The project is located in west-central BC, near the southern limit of the Alaskan panhandle, approximately 40 kilometres ("km") northwest of Stewart BC. The project encloses several copper dominated volcanogenic sulphide occurrences which have been described as belonging into three zones; North, Main and South.

The property was acquired from Bell Copper in 2010. Bell Copper had completed the last historic exploration activities on the property in 2005 and 2006.

In April 2011, SRK updated the technical report which was previously compiled by Cambria Geological in July 2010.

The current report reflects the subsequent drilling activity completed by CRI in 2011 and associated Mineral Resource analysis by CRI and SRK.

This technical report, documenting the SRK updated resource model, was prepared following the guidelines of the Canadian Securities Administrators National Instrument 43-101 ("NI43-101") and Form 43-101F1, and in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines".

SRK visited the Granduc project for four days in 2010 and for six days in 2011. During the site visits, SRK was able to observe drill collar sites, drilling activities, core logging, sampling and logistical activities related to the exploration.

1.1 Scope of Work

SRK was engaged by CRI in July 2010 to review and audit the exploration work undertaken by CRI in 2010, and to prepare an initial Mineral Resource estimate for the deposit. In the fall of 2011, again SRK was engaged by CRI to complete an update to the technical report and the Mineral Resource estimate based upon the additional 2011 data and further interpretation and analysis by CRI and SRK. The results of this analysis were to be compiled in a technical report for the Granduc property.

This required an assessment of the following aspects of the project:

- Topography, landscape and access;
- regional and local geology;
- exploration history;
- audit of the historical and current exploration work;
- Mineral Resource estimation;
- estimate validation; and
- conclusions and recommendations for further work.

To complete this report SRK was required to:

- Review the analytical quality control procedures of CRI;
- review the validity and accuracy of the historical database;
- conduct a site visit;
- create a wireframe mineralization model;
- review all material changes to the project; and
- compile the findings into a single report.

1.2 Work Program

CRI completed the 2010 exploration campaign during August, September and October 2010 and the 2011 exploration program in June, July, August, and September 2011. SRK completed a site visit during the drill program between August 23 and 26, 2010 and again between July 25 and July 28 2011. Data from the programs was compiled by CRI in October, November and December of each year.

The 2011 drill program analytical test work was completed in December 2011. Wireframe models and statistical analyses were completed during January 2011 and Estimation was completed in February 2011, with final public release on February 21, 2012.

1.3 Basis of Technical Report

This report is based on information collected by SRK during site visits performed in 2010 and 2011 while active drilling was ongoing, on additional information provided by CRI, and other information obtained from the public domain. SRK has no reason to doubt the reliability of the information provided by these three parties.

This technical report is based on the following sources of information:

- Discussion with CRI personnel;
- Inspection of the Granduc project area;
- Review of the historic exploration and mining data compiled by previous operators and their consultants such as Granby Mining, Bell Copper and Cambria Geological Services;
- Review of the exploration data collected by CRI; and
- Additional information from public domain sources.

SRK has also relied on information provided by Brad Leonard, P.Geo, Exploration Manager, CRI Resources Inc.

1.4 Qualifications of SRK and SRK Team

The SRK Group comprises over 700 professionals, offering expertise in a wide range of resource engineering disciplines. The SRK Group’s independence is ensured by the fact that it holds no equity in any project and that its ownership rests solely with its staff. This permits SRK to provide its clients with conflict free and objective recommendations on crucial judgment issues. SRK has a demonstrated track record in undertaking independent assessments of Mineral Resources and Mineral Reserves, project evaluations and audits, technical reports and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and their projects, providing mining industry consultancy service inputs.

The CRI data verification, wireframe models was jointly completed by Michael D. Johnson, P.Geo (APEGBC#34923). The resource estimation sections were completed by Mr. Michael Johnson.

This technical report was compiled by Mr. Johnson, P.Geo. By virtue of his education, membership to a recognized professional association and relevant work experience, Mr. Johnson is an independent Qualified Person as this term is defined by NI 43-101.

Chris Elliot, P.Eng, from SRK provided assistance with the NSR cut-off calculations for the Mineral Resources. Marek Nowak, P. Eng provided assistance with the variography analysis.

Several sections, figures and tables in this report were reproduced from the 2010 technical report authored by Paul McGuigan and Don J. Harrison, of Cambria Geosciences Inc. Although they are not required, they have been included in this report to provide framework and background where the information has not materially changed since the 2010 technical report.

Data and selected text and figures for this report were provided by Brad Leonard (APEGBC# 35762) of CRI.

This technical report benefited from the review of Dr. Gilles Arseneau, P.Geo.; Principle Associate Consultant of SRK.

Michael D. Johnson, P. Geo, has more than 15 years of exploration, mineral deposit evaluation and mining experience within Africa and Canada. His principle area of expertise lies in mineral exploration activities, data management, sampling, 3D modeling and mineral resource estimation. Mr. Johnson has been involved in Mineral Resources estimation since 1998. He was involved in the valuation of VMS deposits in the Stewart BC area in 2008 and 2009 and over the last three years he has been heavily focused on Mineral Resource estimation and modeling in wide variety of commodities.

1.5 Site Visit

In accordance with the NI 43-101 guidelines, SRK QPs completed site visits to the property.

SRK visited the Granduc project for four days between August 23 and August 26, 2010 and again twice in 2011. The first 2011 site visit was between May 30 and June 2 and the second was between July 25 and July 28, 2011. The 2010 site visit was completed by Marek Nowak and the two site visits completed in 2011 were completed by Michael D. Johnson.

During all site visits, SRK was able to observe drill collar sites, drilling activities, core logging, sampling and logistical activities related to the exploration.

The purpose of the visits to was to ascertain the geology of the project area, with a specific emphasis on the 2010 drill program and the Granduc sulphide deposit. SRK examined drill core and visited outcrop exposures in different portions of the property. Mr. Nowak reviewed the current analytical quality control procedures and future exploration plans with staff on site.

SRK was given full access to relevant project data and conducted interviews of key project personnel to obtain information on the past exploration work, and to understand field procedures used to collect, record, store and analyse exploration data.

1.6 Acknowledgement

SRK would like to acknowledge the support and collaboration provided by CRI personnel for this assignment. Their collaboration was greatly appreciated and instrumental to the success of this project.

1.7 Declaration

SRK's opinion contained herein and effective **February 17, 2012**, is based on information collected by SRK throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

This report may include technical information that requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material.

SRK is not an insider, associate or an affiliate of CRI, and neither SRK nor any affiliate has acted as advisor to CRI, its subsidiaries or its affiliates in connection with this project. The results of the technical review by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

2 Reliance on Other Experts

SRK's opinion, contained herein and effective **February 17, 2012**, is based on information provided to SRK by CRI, throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

This report includes technical information that may require subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material.

SRK is not an insider, associate or an affiliate of CRI, and neither SRK nor any affiliate has acted as advisor to CRI or its affiliates in connection with this project. The results of the technical review by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

SRK has not performed an independent verification of land title and tenure as summarized in Section 3 of this report. SRK did not verify the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties relating to the Granduc Property.

SRK was informed by CRI that there are no known litigations or other material encumbrances potentially affecting the Granduc project.

3 Property Description and Location

3.1 Location

The Granduc Property is located in north-western British Columbia, Canada, approximately 40 km northwest of Stewart, BC. Figure 3.1 shows the location of the property relative to British Columbia and the southern Alaskan panhandle. The property is located on NTS Map sheet 104B/1E, 1W and 8W and its geographic centre is located at approximately 130° 20’ west longitude and 56° 15’ north latitude.

The Property is comprised of two groups of mineral tenures, which are shown in Figures 3.2 and 3.3.

a) A contiguous block of 64 Crown Granted claims that total 1090.97 hectares in area; all claims are located in the Skeena Mining Division.

b) BC mining claims comprising 28 titles and 12,422 hectares.

Tables 3.1 and 3.2 list the claims and mineral tenures described above. All tenures are 100% owned and registered to CRI. The group was acquired from Bell Copper in 2010.

The Crown Granted claims were legally surveyed as part of the granting process and the locations of those surveys have been tied into “Hole 1” survey monument; coordinates for which are known in both the Granduc Mine Grid and in relation to first-order survey monuments in the area of the mine. (McGuigan, 2010)

All other mineral tenures are located under the BC mining claim system and do not require surveying to confirm their location and boundaries. Areas cited above are nominal, and do not fully reflect the prior titles of the Crown Granted claims. The area of the Crown Claims will reduce the actual area of the overlapping BC mining claims.

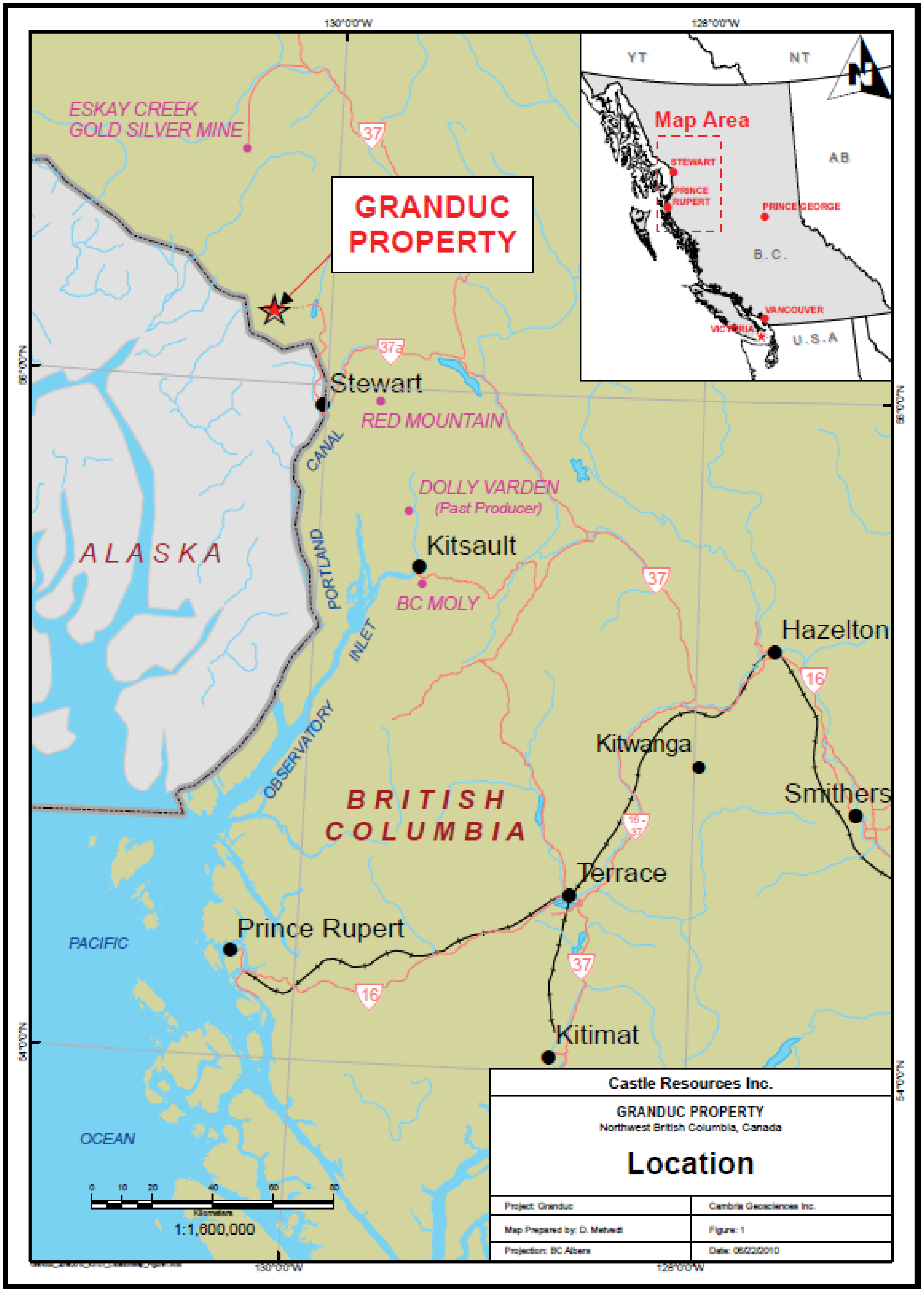

Figure 3.1: Location Map (McGuigan, 2010)

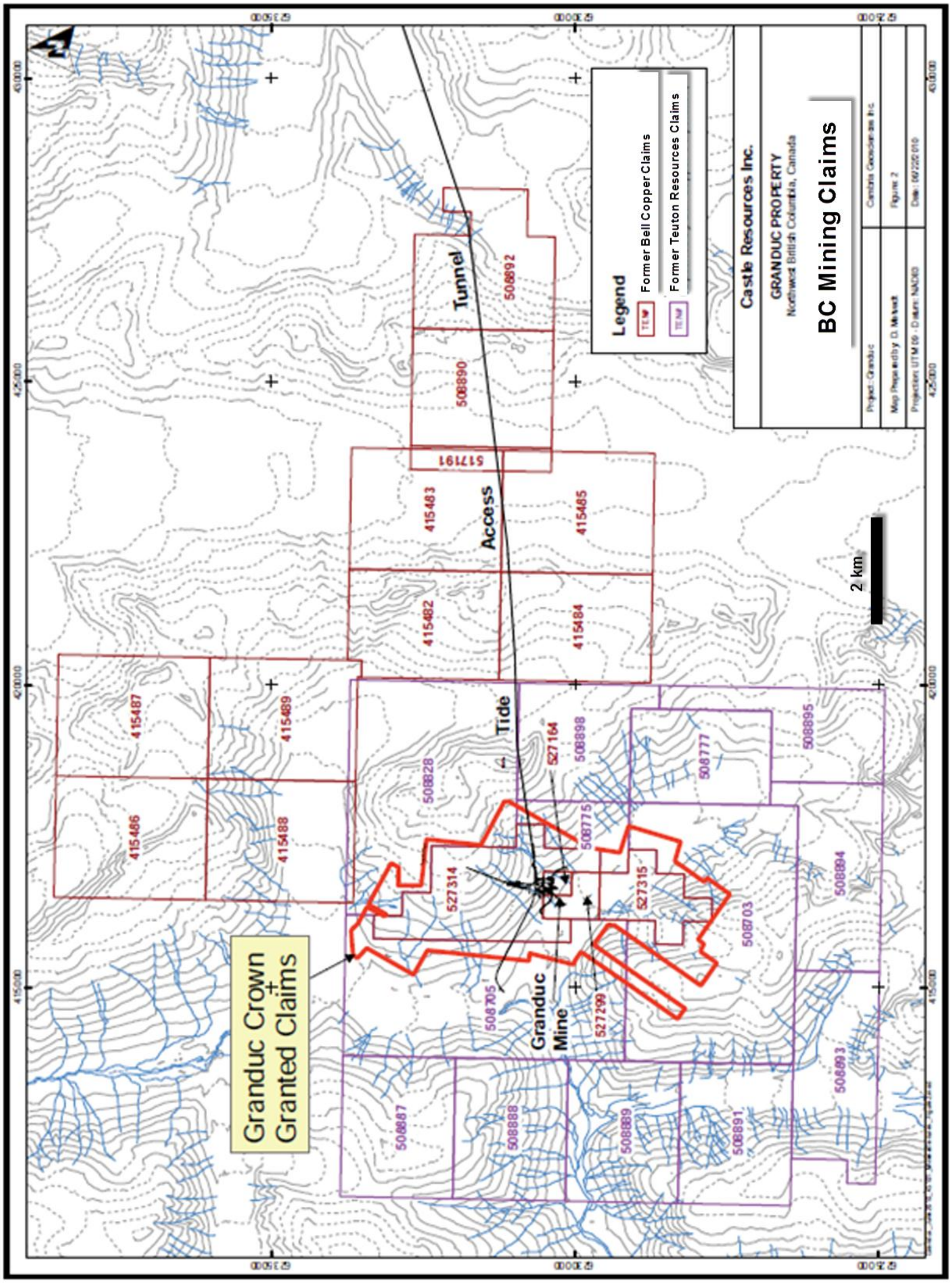

Figure 3.2: Granduc BC Mining Claims (modified from McGuigan, 2010)

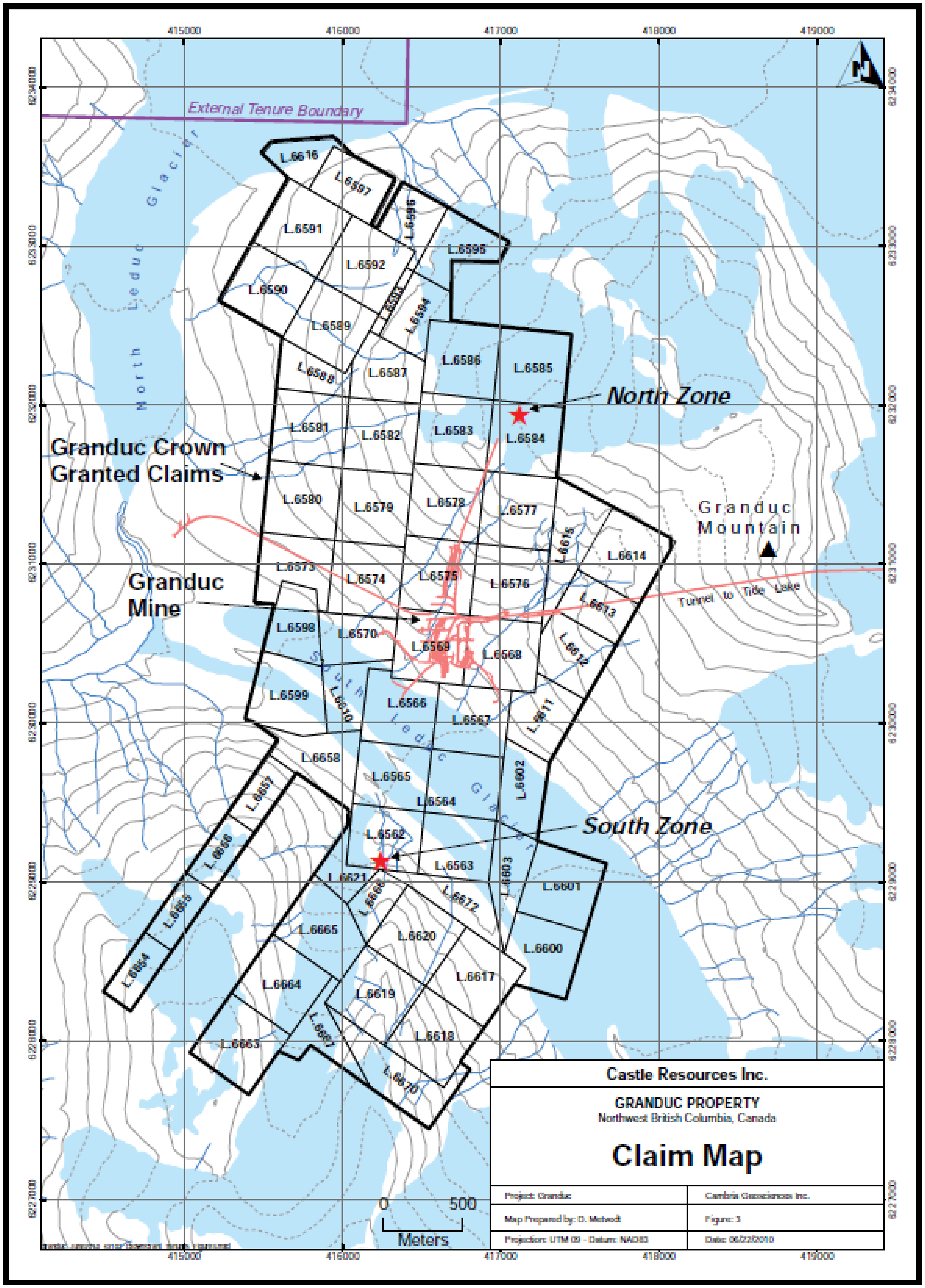

Figure 3.3: Crown Claim Map, Granduc Property (McGuigan, 2010

Table 3.1: Castle Granduc Crown Mineral Claims

Number	Lot Number	Land District	5 Lot Name	NTS Map	BCGS Map	Area (ha)
3.9 1	0 6562	CASSIAR	2 V.K. NO. 13	104B01W	104B029	15 18.18
3.16 2	7 6563	CASSIAR	9 V.K. NO. 14	104B01W	104B029	22 18.18
3.23 3	4 6564	CASSIAR	6 V.K. NO. 12	104B01W	104B029	29 18.18
3.30 4	1 6565	CASSIAR	3 V.K. NO. 11	104B01W	104B029	36 18.18
3.37 5	8 6566	CASSIAR	40 V.K. NO. 9	104B01W	104B029	43 19.59
3.44 6	5 6567	CASSIAR	7 V.K. NO. 10	104B01W	104B029	50 19.17
3.51 7	2 6568	CASSIAR	VAUGHN K. NO.5	104B01W	104B029	3.57 20.4
3.58 8	9 6569	CASSIAR	VAUGHN K. NO.6	104B01W	104B029	20.4
9	6570	CASSIAR	GRANDUC FR.	104B01W	104B029	14.28
10	6573	CASSIAR	GRANDUC NO.1	104B01W	104B029	17.2
11	6574	CASSIAR	GRANDUC NO.2	104B01W	104B029	20.36
12	6575	CASSIAR	VAUGHN K. NO.8	104B01W	104B029	20.9
13	6576	CASSIAR	VAUGHN K. NO.7	104B01W	104B029	20.9
14	6577	CASSIAR	LOLA NO.2	104B01W	104B029	20.9
15	6578	CASSIAR	LOLA NO.1	104B01W	104B029	20.9
16	6579	CASSIAR	GRANDUC NO.4	104B01W	104B029	20.4
17	6580	CASSIAR	GRANDUC NO.3	104B01W	104B029	20.9
18	6581	CASSIAR	GRANDUC NO.5	104B01W	104B029	20.52
19	6582	CASSIAR	GRANDUC NO.6	104B01W	104B029	20.06
20	6583	CASSIAR	LOLA NO.3	104B01W	104B029	20.52
21	6584	CASSIAR	LOLA NO.4	104B01W	104B029	20.52
22	6585	CASSIAR	LOLA NO.6	104B01W	104B029	20.9
23	6586	CASSIAR	LOLA NO.5	104B01W	104B029	20.9
24	6587	CASSIAR	GRANDUC NO.8	104B01W	104B029	15.4
25	6588	CASSIAR	GRANDUC NO.7	104B01W	104B029	10.21
26	6589	CASSIAR	MC Q NO.2	104B01W	104B029	19.85
27	6590	CASSIAR	MC Q NO.3	104B01W	104B029	19.98
28	6591	CASSIAR	MC Q NO.1	104B01W	104B029	20.9
29	6592	CASSIAR	MC Q	104B01W	104B029	20.9
30	6593	CASSIAR	AUDRO NO.3	104B01W	104B029	2.57
31	6594	CASSIAR	AUDRO NO.5	104B01W	104B029	13.69
32	6595	CASSIAR	AUDRO NO.4	104B01W	104B029	15.24

Number	Lot Number	Land District	Lot Name	NTS Map	BCGS Map	Area (ha)
33	6596	CASSIAR	AUDRO NO.2	104B01W	104B029	11.32
34	6597	CASSIAR	AUDRO NO.1	104B01W	104B029	14.89
35	6598	CASSIAR	SOLAR NO. 8	104B01W	104B029	13.67
36	6599	CASSIAR	BLUE NO.4	104B01W	104B029	20.56
37	6600	CASSIAR	FANNY NO.1	104B01W	104B029	18.1
38	6601	CASSIAR	FANNY NO.2	104B01W	104B029	20.9
39	6602	CASSIAR	DAL FRACTION	104B01W	104B029	14.9
40	6603	CASSIAR	BRYCE FRACTION	104B01W	104B029	13.68
41	6610	CASSIAR	MARG NO.2	104B01W	104B029	11.8
42	6611	CASSIAR	BLEND NO.4	104B01W	104B029	16.8
43	6612	CASSIAR	BLEND NO.3	104B01W	104B029	16.8
44	6613	CASSIAR	BLEND NO.2	104B01W	104B029	13.3
45	6614	CASSIAR	BLEND NO.1	104B01W	104B029	20.9
46	6615	CASSIAR	BENT FRAC	104B01W	104B029	18.11
47	6616	CASSIAR	MCQ NO.4	104B01W	104B029	9.01
48	6617	CASSIAR	VAUGHN K NO. 4	104B01W	104B029	20.9
49	6618	CASSIAR	VAUGHN K NO. 2	104B01W	104B029	20.9
50	6619	CASSIAR	VAUGHN K NO. 1	104B01W	104B029	20.9
51	6620	CASSIAR	VAUGHN K NO. 3	104B01W	104B029	20.9
52	6621	CASSIAR	BELLE NO.3	104B01W	104B029	7.43
53	6654	CASSIAR	REX NO. 10 FRACTION	104B01W	104B029	9.69
54	6655	CASSIAR	REX NO. 9 FRACTION	104B01W	104B029	9.69
55	6656	CASSIAR	REX NO. 8 FRACTION	104B01W	104B029	9.69
56	6657	CASSIAR	REX NO. 7 FRACTION	104B01W	104B029	9.69
57	6658	CASSIAR	REX NO. 6 FRACTION	104B01W	104B029	18.07
58	6663	CASSIAR	REX NO.1	104B01W	104B029	20.9
59	6664	CASSIAR	REX NO.2	104B01W	104B029	20.9
60	6665	CASSIAR	REX NO. 13 FRACTION	104B01W	104B029	20.63
61	6666	CASSIAR	REX NO. 15 FRACTION	104B01W	104B029	8.6
62	6667	CASSIAR	REX NO. 12 FRACTION	104B01W	104B029	11.51
63	6670	CASSIAR	REX NO. 11 FRACTION	104B01W	104B029	20.53
64	6672	CASSIAR	REX NO. 14 FRACTION	104B01W	104B029	14.12
Total Crown Claims						1090.97

Table 3.2: Castle BC Mining Claims List

Tenure Number	Claim Name	Owner Name	Map Number	Issue Date	Good To Date	Status	Area (ha)
415482	TON-1	Castle Resources	104B029	2004/nov/09	2016/mar/01	GOOD	500.0
415483	TON-2	Castle Resources	104B029	2004/nov/09	2016/mar/01	GOOD	500.0
415484	TON-3	Castle Resources	104B029	2004/nov/09	2016/mar/01	GOOD	500.0
415485	TON-4	Castle Resources	104B029	2004/nov/09	2016/mar/01	GOOD	500.0
415486	PEARSON 1	Castle Resources	104B029	2004/nov/08	2016/mar/01	GOOD	500.0
415487	PEARSON 2	Castle Resources	104B029	2004/nov/08	2016/mar/01	GOOD	500.0
415488	PEARSON 3	Castle Resources	104B029	2004/nov/08	2016/mar/01	GOOD	500.0
415489	PEARSON 4	Castle Resources	104B029	2004/nov/08	2016/mar/01	GOOD	500.0
508703		Castle Resources	104B	2005/mar/10	2016/mar/01	GOOD	1062.373
508705		Castle Resources	104B	2005/mar/10	2016/mar/01	GOOD	953.487
508775		Castle Resources	104B	2005/mar/11	2016/mar/01	GOOD	143.976
508777		Castle Resources	104B	2005/mar/11	2016/mar/01	GOOD	360.098
508828		Castle Resources	104B	2005/mar/11	2016/mar/01	GOOD	899.306
508887	Leduc Silver NW	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	431.614
508888	Leduc Silver W1	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	431.797
508889	Leduc Silver W2	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	431.981
508890	Tunnel 1	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	449.722
508891	Leduc Silver SW1	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	432.165
508892	Tunnel 2	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	449.724
508893	Leduc Silver SW2	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	450.369
508894	Leduc Silver S	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	450.362
508895	Leduc Silver SE	Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	360.239
508898		Castle Resources	104B	2005/mar/14	2016/mar/01	GOOD	377.926
517191	AGE	Castle Resources	104B	2005/jul/12	2016/mar/01	GOOD	89.945
527164	ESKAY GOLD	Castle Resources	104B	2006/feb/06	2016/mar/01	GOOD	17.995
527299	LUDUC MINERALS	Castle Resources	104B	2006/feb/08	2016/mar/01	GOOD	53.99
527314	GRANDUC NORTH	Castle Resources	104B	2006/feb/09	2016/mar/01	GOOD	413.782
527315	GRANDUC SOUTH	Castle Resources	104B	2006/feb/09	2016/mar/01	GOOD	162.016

3.1 Property Agreements

The Property is 100% owned by CRI subject to several pre-existing royalties. The Property was acquired from Bell Copper in 2010. Different tenures on the Property are subject to net smelter royalties.

The Property is subject to a 2% net smelter royalty, payable to Glencairn Gold Corporation, now Central Sun Mining Inc., which is a subsidiary company of B2Gold Corp. The net smelter royalties can be purchased by CRI for $500,000 for the first one percent (1%) and $1 million for the remaining one percent (1%). Teuton Resources Corp. will retain a 1.5 % net smelter royalty on the Silver Leduc parcel and on Bell Copper's four claims to the north of the Silver Leduc claims (No. 415486, No.

415487, No. 415488 and No. 415489). The Granduc Crown Granted claims are excluded from the net smelter royalty agreement.

Due to the royalties, the Property is subject to an annual advance royalty payment of $50,000 comprising cash and shares. The cash component of the advance royalty will be $25,000 and the share component will be $25,000 payable in common shares to be calculated as the average price of the shares of CRI over the previous 10 trading days prior to the annual Dec. 31 payment date.

3.2 Regulatory & Environmental

SRK is not aware of any material environmental liabilities to which the Property is subject; however, SRK has not reviewed the environmental consideration of the property in any detail.

CRI has stated that the taxes are fully paid on the Crown Granted claims and the titles are in good standing. According to CRI and the Mineral Title Office website database, the mineral tenures are all in good standing until March 1, 2016.

To diamond drill on the Property, exploration permits and bonds must be obtained. SRK understands that CRI has applied for, and received, all of the required permits, in anticipation of summer and fall 2011 exploration.

Crown Granted claims include the right to employ the surface over these Crown Grants for mine access as well as mine and mill facilities. If the option to rehabilitate the Granduc Tunnel and Summit Lake road access is chosen as part of any development plan, however, CRI must requires right-of-ways to the access road and tunnel. SRK understands that CRI is working to secure such a right-of-way. CRI has currently received a temporary two year SRO permit for access to the Tide Tunnel.

The Crown Grants are within the municipality of Stewart, and surface improvements are subject to municipal taxes. In the past these taxes were used to maintain infrastructure and schools for the community of Stewart where the mine personnel were housed.

4 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The following information has been copied from a technical report written by Paul J. McGuigan and Don J. Harrison of Cambria Resources in 2010.

"Topography at the Property is mountainous, with elevations ranging from 700 to 2000m above sea level on most of the Property (see Figure 4.3). Vegetation is mostly subalpine and alpine shrubbery, with significant snow and ice coverage. Valley glaciation dominates. Most prominent on the Property are the North and South Leduc glaciers. The climate is typical of northern coastal mountain ranges.

The local community of Stewart is serviced by the Stewart-Cassiar highway (see Figure 4.1).Connection to rail service on the Yellowhead railway is available Kitwanga, which is located at the junction of Highway 37 and the Yellowhead Highway 6.

Historic access to the Property is via a 35 km all weather road from the communities of Stewart, BC and Hyder, Alaska to a former mill site near Summit Lake. A 17 km long tunnel and electric tram connected the mill and mine operations. The access road is currently closed during the winter season. Additionally, the portals of the Granduc tunnel have been closed and are not available for exploration activities.

Currently, access to the Property is by helicopter from Stewart, B.C. or a marshalling point on the access road.

In the event of a new mining operation on the Property the most favorable access alternative is the rehabilitation of the Granduc tunnel. The Summit Lake road access remains suitable for year-round operation, with a winter snow-clearing program. Electrical transmission lines now service Stewart and have been extended to within 20 km of the old mill site. Stewart has storage and ship loading facilities Panamax size dry cargo ships. Charter helicopter bases and a paved 5000 ft airstrip capable of handling prop-driven aircraft and small business jets are located in the city."

Figure 4.1 shows picture examples of the typical physiography near the Granduc Copper Project.

In 2011, CRI completed rehabilitation of the Granduc tunnel, also called the "Tide tunnel". The rehabilitation was completed from the Tide Lake (east) end of the tunnel, through to the underground workings, within the Granduc deposit itself. The rehabilitation of access through to the surface at the Granduc / Leduc glacier side was not completed, however, due to closure of the road from Stewart to Tide Lake in late fall 2011. CRI expects to continue rehabilitation of the underground workings at the Granduc deposit in 2012.

Figure 4.1: Typical Landscape in the Project Area (June 2011).

5 History

The following information has been copied from a technical report written by Paul J. McGuigan and Don J. Harrison of Cambria Resources in 2010.

Mineralization was first discovered on Granduc Mountain by Wendell, Dawson and W. Fromholz in 1931. E. Kvale and T.J. McQuillan staked the copper showings in 1951 for Helicopter Exploration Company Ltd. Granby Mining Company acquired the Property in 1952 and completed surface and underground exploration work under their newly formed company, Granduc Mines Ltd. Newmont Mining Corporation Ltd. entered into an agreement with Granby in 1953 whereby Newmont would finance mine development. Mine development commenced in the early 1960s with production in 1968 at a mine/mill capacity of 2000 tpd. Between 1970 and 1978, the Granduc ore body was mined by Newmont using sublevel caving mining methods.

The Granduc mine was acquired in 1979 by Esso Minerals Canada (Canada Wide Mines division) and operated until closure in May, 1984. After purchasing the Property in 1979, Esso began converting to a new mining method referred to as "slot and mass blast". The initial results achieved by the method fell short of those achieved in the past with sublevel caving. Continued improvements, however, yielded stope recoveries significantly superior to sub-level caving and significantly less dilution. After closure, the Property was returned to Granduc Mines Ltd., then a subsidiary of Hecla Mining Company ("Hecla").

Exploration on the Property during the period 1974 to 1984 focused primarily on extending copper mineralization along strike north and south of the mine, in areas east of the Granduc fault. Work during that time discovered the North Zone, located about 3 km north of the main mine workings (Figure 5.1). No copper mineralization has been discovered west of the Granduc fault on Granduc Mountain.

In 1991, a small surface exploration program was funded by Hecla. The program focused on several surface mineralized zones on the Property and comprised surface sampling and mapping by Cambria Geological Ltd. ("Cambria").

In 1993, Hecla financed a field program that retained Cambria to conduct additional mapping and sampling. Cambria conducted the work and in addition, supervised the funding of the Mineral Deposits Research Unit ("MDRU") of the University of BC to conduct structural mapping, geochronology and lithogeochemistry of the Property (Dawson, et al, 1994). One author (McGuigan) of this report supervised the 1991 and 1993 programs. Granduc Mines Ltd. passed into the ownership of Graincairn Gold Corporation, but no work was done on the Property.

In 2005, Bell Copper acquired the Property, initially under Option from Glencairn Gold Corporation, now Central Sun Mining Inc., which is now a subsidiary company of B2Gold Corp. Bell Copper conducted field exploration and diamond drilling programs in the summer seasons of 2005 and 2006. Bell Copper is now the 100% owner of the Property.

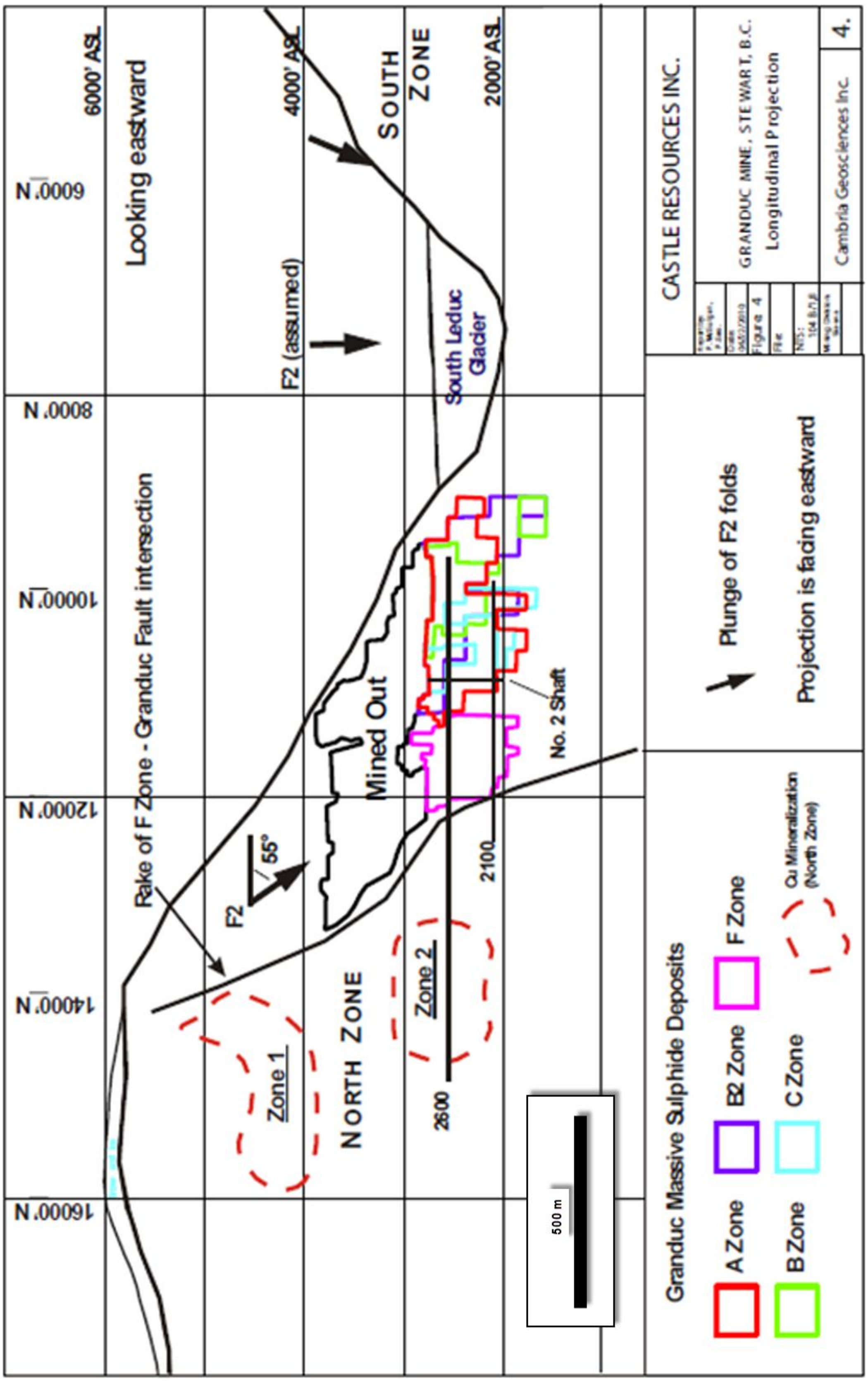

Figure 5.1: Generalized Long Section of the Granduc Deposit (McGuigan, 2010)

5.1 Mine Production 1971 to 1984

After exploration on the Granduc property, between 1931 and 1964, a decision was made to begin significant development of the deposit. A road was built connecting Stewart BC to the Tide Lake concentrator and construction was begun on the 17 km access tunnel, or “Tide Tunnel.”

The Tide Tunnel access was a monumental task. Construction began in 1965 and the tunnel was completed in 1968. Production at the Granduc Mine started in November 1970 (Schmidt and Tyler, 1983) with the first concentrate shipped in January 1971. The mine was operated by the Granduc Operating Company, a subsidiary of Newmont Mining Corporation.

The mine operated from approximately 1970 through until 1977, when it was shut down for approximately three years. The Granduc Mine was purchased by Esso Minerals Canada in 1978, even while Newmont was dismantling the site. By May of 1979, Esso decided to rehabilitate the site and re-start mining operations. The site was operated under the name Canada Wide Mines Ltd., with production resuming in September 1980. Approximately 2.0 million tons of ore was delineated for mining by 1983, however most of the remaining delineated material was deemed uneconomic and the mine began to plan for closure a second time. The mine was decommissioned in early 1984 due to high costs and low copper prices. Esso immediately began decommissioning the site and by late 1984 nearly all infrastructure and equipment had been removed. (Walker, 1985)

Mining methods included sublevel caving between 1970 and 1977 and a slot and mass blasting during Esso’s operation of the mine (Schmidt & Tyler, 1984). The mine processed approximately 15 million tonnes of ore and produced approximately 180,000 tonnes of copper over approximately 10 years of production. Average head-feed grade of approximately 1.29% copper and processing was estimated to have achieved 95% copper recovery. Average precious metal production included 0.13 grams per tonne (“g/t”) gold and 8 g/t silver (Minfile, 2011). Copper concentrates were shipped from the concentrator to Stewart BC; from which they were shipped to markets in Japan.

Table 5.1 summarizes the documented production at the Granduc Mine as listed on BC government “MinFile” web site.

Table 5.1: Documented Production at Granduc Mine, 1971 to 1984

Year	Silver	Gold	Copper	Milled	Silver Grade	Gold Grade	Copper Grade
	grams	*grams*	*kilograms*	*tonnes*	*g/t*	*g/t*	*Cu %*
1971	12,983,667	187,955	17,467,617	1,359,730	9.55	0.14	1.28%
1972	13,570,114	229,820	21,702,538	1,895,884	7.16	0.12	1.14%
1973	20,259,654	342,257	31,548,799	2,538,242	7.98	0.13	1.24%
1974	19,216,895	315,198	29,055,142	2,457,307	7.82	0.13	1.18%
1975	9,604,482	162,606	16,222,977	1,499,585	6.40	0.11	1.08%
1976	10,373,566	154,800	15,569,210	1,315,905	7.88	0.12	1.18%
1977	8,631,953	130,011	13,262,755	1,252,362	6.89	0.10	1.06%
1978	9,056,914	160,460	14,780,100	741,648	12.21	0.22	1.99%
1979	-	-	-	-			
1980	-	-	-	-			
1981	4,850,000	75,283	7,626,025	613,936	7.90	0.12	1.24%
1982	3,606,800	52,627	5,380,913	500,335	7.21	0.11	1.08%
1983	7,950,859	133,273	11,925,042	1,031,805	7.71	0.13	1.16%
1984	3,944,057	55,771	5,602,592	352,630	11.18	0.16	1.59%
Total	**124,049,000**	**2,000,000**	**190,144,000**	**15,559,000**	**7.97**	**0.13**	**1.22%**

source: BC MINFILE Number: 104B 021

The Tide Tunnel and other underground development remains. CRI and SRK have had limited access to the underground development of the property. The condition of the tunnel and development is highly variable depending on the local ground conditions. In 2011, CRI extensively rehabilitated the tide tunnel from the Tide Lake (east) end through to the Granduc Mine workings.

The 2011 rehabilitation program cleared and supported all major falls of ground from the Tide Tunnel Portal into the 2600 Level. This program bolted, screened and replaced timbers as required along the length of the tunnel. Further roadwork, scaling and bolting is required through the 2600 Level to access the 2810 Portal and potential exploration drilling locations.

To support the rehabilitation work, temporary facilities were established near the Tide Portal, including a camp with office and a kitchen, dry changing facilities, supply and equipment storage areas, and a mobile equipment shop.

Existing infrastructure in the tunnel that hindered rehabilitation work was removed. This included portal infrastructure that had been damaged by vandalism, rail left in the first 1000 m of the tunnel, and rail ties left along the entire length of the tunnel. Bulkheads were built on each end of a side tunnel with railstock and orepasses in it to prevent access.

The original ventilation fan was too deteriorated to be rebuilt and a new 100 horsepower vane axial fan was installed in its place to control airflow through the Tide Tunnel. The drainage ditch had to be repaired or enlarged along much of the length of the tunnel to accommodate ground water encountered.

At the time of writing, CRI plan to undertake further tunnel and underground rehabilitation in 2012, which is expected allow access between the Leduc Glacier and the Tide Lake site.

Figure 5.2 shows images from the 2011 Granduc Tide tunnel rehabilitation.

Figure 5.2: Images from the 2011 Granduc Tide Tunnel Rehabilitation

5.2 Exploration Programs 2005-2006

The following information has been copied from a technical report written by Paul J. McGuigan and Don J. Harrison of Cambria Resources in 2010.

The last phase of major diamond drilling on the Property was during the Esso Minerals Canada ownership of the mine, prior to 1984. Bell Copper conducted two exploration programs on the Property, focused on targets under the South Leduc glacier and in the South Zone. Progress was *disclosed in news releases in 2005 and 2006 but no technical reports have been made publicly available. However, the 2006 exploration is reported in Wasterneys (2007, Assessment Report 28912 in the ARIS system) and is now released from confidential.*

Work was conducted out of an exploration camp located at an abandoned airstrip, which is located near the 2475 level portal of the Granduc Mine. All programs were helicopter-supported.

In 2005, Bell Copper conducted a limited diamond drilling program and an airborne geophysical survey. Work accomplished was as follows:

> *a) Diamond drilling in 5 holes, for a total of 2087.6 metres, at the south extension of the main mineralized horizons of the Granduc Mine, under the north side of the South Leduc glacier.*
>
> *b) AeroTEM II surveys, for 1206 line km. comprising magnetic and AeroTEM II helicopter electromagnetic system.*

The 2005 work conducted by Cambria and was supervised by one of the authors of this report (Harrison).

In 2006, Bell Copper conducted a limited diamond drilling program and surface prospecting. Work accomplished was as follows:

> *a) Prospecting in the area recommended by McGuigan (2005), where massive sulphide boulders were discovered on the north side of Granduc Mountain (Melnyk, 1991).*
>
> *b) Diamond drilling in 12 holes, for a total of 3927.5 metres, at the south side of the South Leduc glacier and under the South Zone.*

This work was supervised by Bell Copper employees (Wasterneys, 2007).

5.2.1 AeroTEM II Airborne Geophysical Survey

In 2005, Bell Copper commissioned an airborne geophysical survey of the Property from Aeroquest Limited; comprising 1206 line-km. Surveys employed a magnetic and AeroTEM II helicopter electromagnetic system. The AeroTEM II is a coincident coil helicopter-borne time domain EM system. See Rudd (2005).

Magnetic Response

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area. The sources for anomalous magnetic responses are thought to be predominantly magnetite because of the relative abundance and strength of response (high magnetic susceptibility) of magnetite over other magnetic minerals such as pyrrhotite.

According to Rudd (2005), the magnetic data (Figure 5.2) ranges from lows of approximately 55,500 nT to highs of up to 60,660nT with an average background of 56,375 nT. The area is characterized by a series of broad and multi-lobed magnetic highs which likely define mafic lithologies, such as the basalts and the Bucke Glacier intrusive suite. The highest magnetic response is observed approximately 2 km northwest of the Granduc mine site (Figure 5.2;Point A). This feature has a *comparatively small strike length (750 m) and is semi-circular with a amplitude of over 3,700 nT. However the body does not show an associated EM response which may indicate that the body has remnant magnetization. Subsequent drilling by Bell Copper showed this body to be part of the Bucke Glacier intrusive suite.*

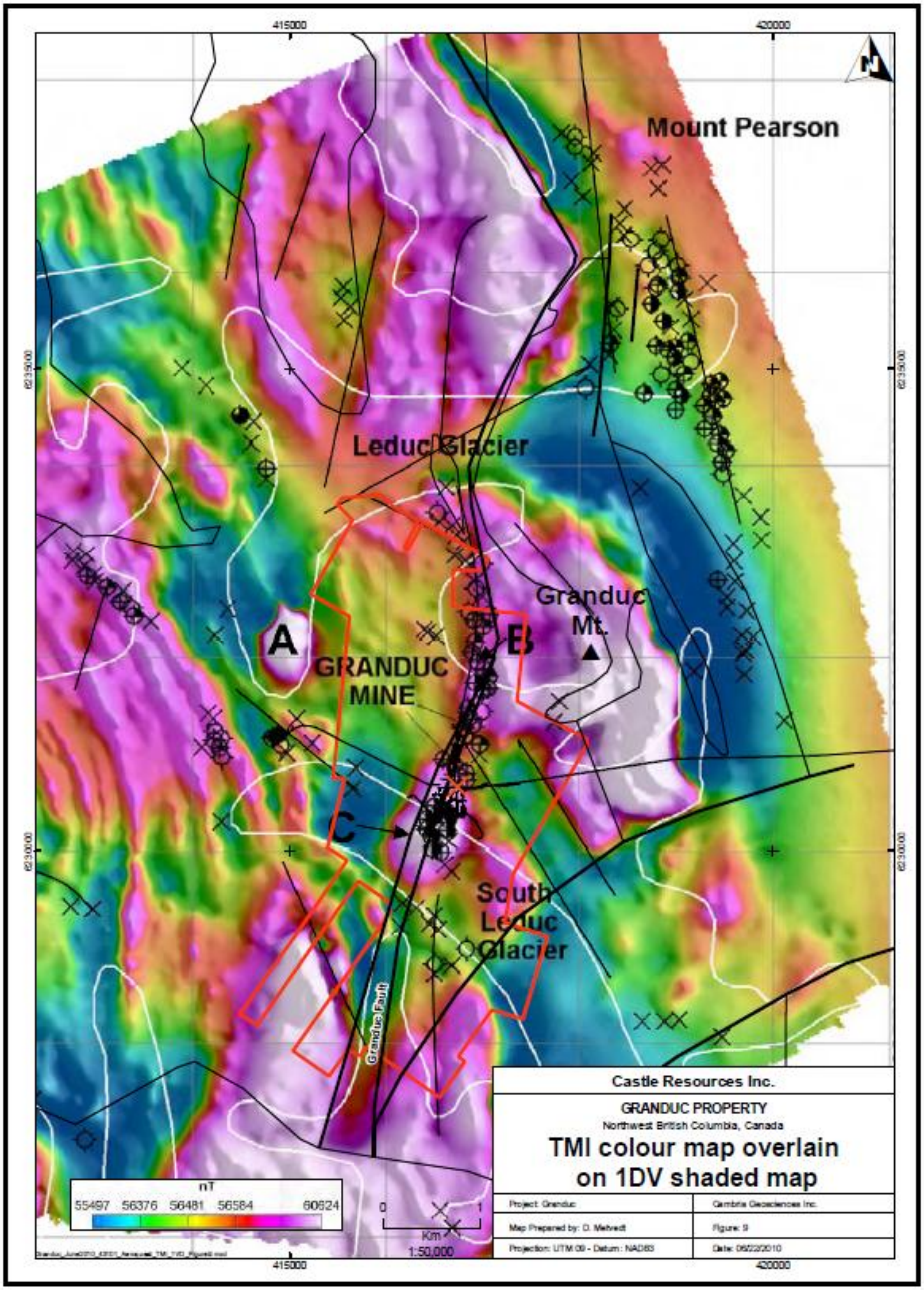

Figure 5.3: Granduc Airborne Magnetics Map (McGuigan, 2010)

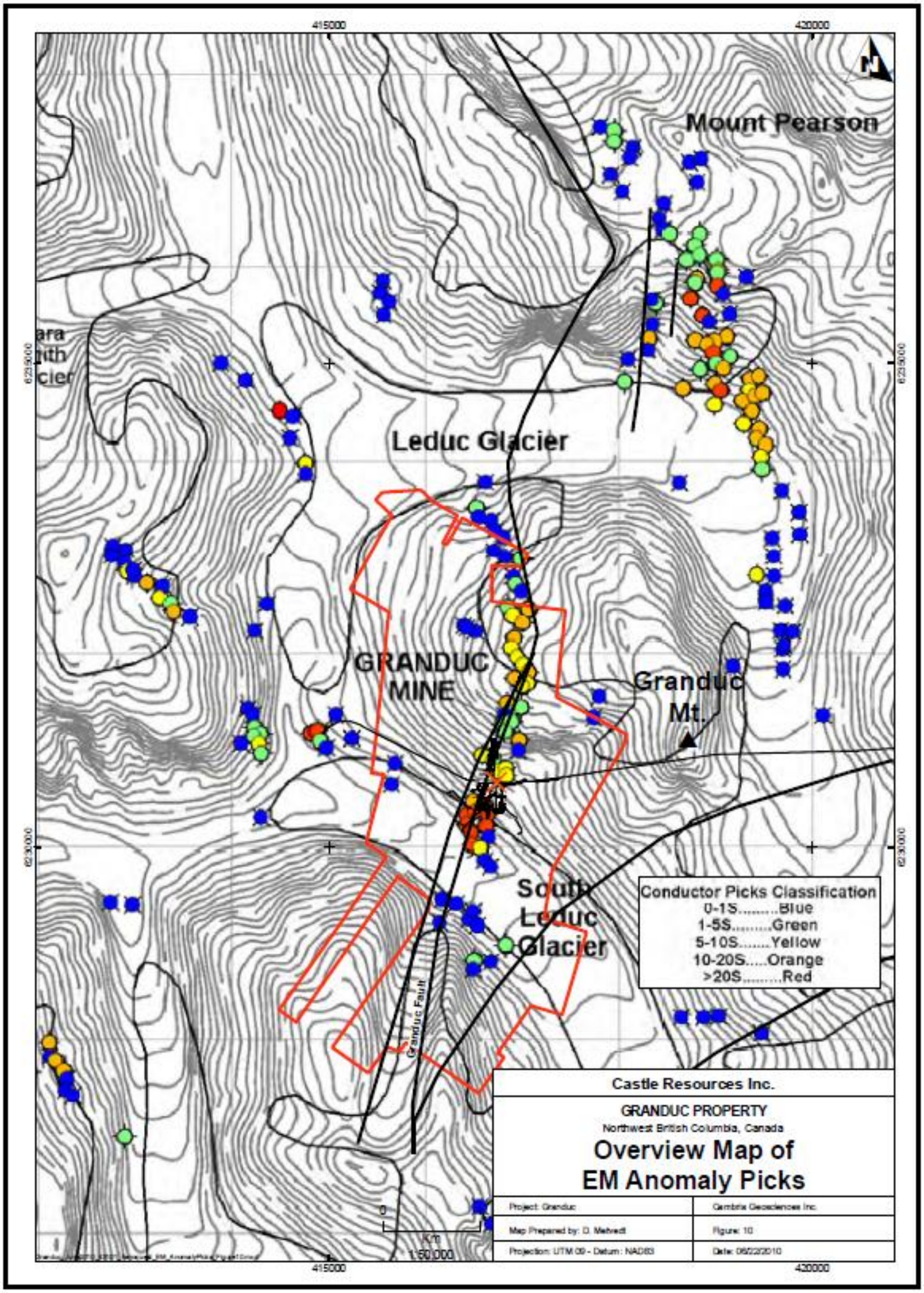

Figure 5.4: Granduc Electromagnetic Anomalies (McGuigan, 2010)

Higher frequency magnetic response images the strike of the sedimentary packages in the western portion of the survey block and the magnetite-bearing Mine series sedimentary and tuff succession. Of potential significance in the interpretation of the Mine series exploration potential is the pattern of magnetic response along strike southward from the North Leduc glacier, across Granduc Mountain, through to the South Zone. Magnetic responses appear to be most intense at lower elevations on the flanks of the Granduc Mountain. This correlates with geological mapping data that suggests lower copper grades and less sulphide-magnetite mineralization in the Mine series at higher elevations. Best copper grades are found at the 3200 level and below (near or below the South and North Leduc glacier ice levels). Thickness and grades of the Mine series exhalative mineralization attenuates up dip.

Faulting can also be identified by patterns in the magnetic data contours or colours. Faults often appear as lineaments and often have strike length of several kilometres. Offsets in narrow, magnetic stratigraphic trends also delineate structure. Sharp contrasts in magnetic lithologies may indicate large displacements along strike-slip or thrust faults. Several faults can be interpreted from the magnetic data throughout the survey area. Most prominent in the survey is the north-south lineament of the Granduc-Western fault system.

5.2.2 AeroTEM II Electromagnetic Survey

According to Rudd (2005), the EM data show that the majority of the bedrock in the area is highly resistive. However, several anomalous conductive zones throughout the survey area have been identified where the EM response persist to the later channels (Figure 5.3). Anomalies that have attenuated amplitude in the early channels accompanied by a slow rate of decay (persisting to the later channels) indicate the better bedrock conductors (Figure 5.3; red and orange symbols).

The area of the Granduc mine site shows well defined EM responses (Figure 5.2, Point B) which trend north -south and closely follow a magnetic boundary discussed above. Perhaps the most interesting observed response occurs south of the Granduc mine site, under the South Leduc glacier (See Rudd, 2005 and refer to picks on L10750 through L1070). Here the anomalies show moderately high conductance (higher than the mine site) and occur on a magnetic high (Figure 5.2, Point C).

In interpreting the EM responses over the Granduc mine, it is important to observe that the massive sulphide and magnetite-bearing ores have been mined out to surface.

Subsequent to the airborne geophysical program, Point C was drilled later in 2005. The southward continuation of the Mine series succession was intersected, including the A and B zones. In addition to significant pyrrhotite-pyrite-chalcopyrite-magnetite mineralization, several zones of graphic chert were intersected. The combination of the conductive sulphides and graphite explain the strong EM response. The Mine series in this area contains about 15% or more magnetite, explaining the coincident magnetic responses.

The linear zone, of better bedrock conductor picks on Granduc Mountain, are mapping the expression of the Mine series and Upper Footwall series lithologies. The EM responses are likely *detecting the presence of graphite, sulphides and clays with the Mine series, and within the Granduc Fault.*

The linear zone of better bedrock conductor picks on the north and east side of the (North) Leduc glacier are mapping the expression of the Lower to Middle Jurassic Hazelton group sedimentary rocks and possibly a sub-parallel fault to the Granduc fault. This area has not been prospected by Bell Copper.

5.2.3 Prospecting

In 2006, Bell Copper personnel followed up on the recommendations of McGuigan (2005) to prospect the area of massive sulphide boulders in talus and local till at the northern fringe of the retreating ice field on Granduc mountain (Melnyk, 1991). Nearby magnetic highs in the AeroTEM II survey confirmed the target.

The area has now melted free of ice, and has exposed the new discovery by Bell Copper. Termed the JK Zone, it consists of heavily disseminated and stringer pyrrhotite, pyrite, chalcopyrite and magnetite in mafic tuffs and sediments, near the contacts with intermediate to mafic intrusions. (Marsh, Oct. 25, 2006 News Release). See the section on Drilling in this report for results.

6 Geological Setting and Mineralization

The following information has been compiled, summarized or quoted from the technical report written by Paul J. McGuigan and Don J. Harrison of Cambria Resources in 2010 and remains a valid description of the Granduc deposit geological setting.

6.1 Regional and Local Geology

The area north of Granduc Mountain along the eastern flank of the South Unuk River was mapped by Lewis (1994) in order to extend stratigraphic and structural features documented in the MDRU Iskut River study (Lewis, 1993; Lewis et al., 1993) southward into the Granduc mountain mine area. Previous regional mapping in the area is by Alldrick et al. (1989) and references therein.

Stratified rocks exposed on Granduc Mountain and to the north are subdivided into two easily recognizable units, termed the western and eastern series, which are separated by the north-northwest striking South Unuk shear zone (Lewis, 1994: Figure 6.2). The terms western series and eastern series predate the availability of fossil and radiometric age determinations, and are retained in the 1994 report and within this report for continuity to work conducted in the 1979 to 1993 period. The unit names for lithologies are the same as adopted in Lewis (1994) and Klepacki and Read (1981), again for commonality with earlier work.

***Western series** rocks consist of foliated, greenschist facies metavolcanic and metasedimentary rocks and include the Granduc Mine series (McGuigan and Marr, 1979), units lying north of the North Leduc glacier and units in the hanging wall of the Granduc fault on Granduc mountain (Figure 6.1 and 7.2). These rocks remain of uncertain stratigraphic succession, but belong to the Upper Triassic Stuhini Group.*

***Eastern series** rocks are much less deformed and are mainly volcanic. The boundary between western and eastern series rocks is easily identifiable north of Granduc Mountain; however on Granduc Mountain itself, the boundary is uncertain. These rocks belong to the Lower to Middle Jurassic Hazelton Group.*

***Intrusive suites** consist of the pre-tectonic Late Triassic Bucke Glacier stock and syenite sills or dykes that intrude western series rocks and the post-tectonic Eocene Lee Brant pluton that intrude both western and eastern series rocks.*

6.1.1 Stratigraphy

Western series (Upper Triassic Stuhini Group)

Western series rocks crop out east of the South Unuk River where they form a north-northwest striking and steeply dipping unit. They consist of moderately to highly foliated schist, phyllite, marble and gneiss. The stratigraphic thickness of the western series is uncertain because facing indicators have been destroyed by metamorphism and deformation. Repetition of similar lithologic units suggests structural duplication. North of Granduc Mountain, the western series is subdivided into six lithological (not stratigraphic order) rock types consisting of:

(i) strongly foliated, medium grained biotite schist;

(ii) pale green argillite and cherty argillite;

(iii) marble;

(iv) mafic hornblende schist and gneiss;

(v) intermediate schist and gneiss; and

(vi) layered to laminated phyllitic mudstone to siltstone.

Similar rock types defined by Klepacki and Read (1981) on Granduc Mountain (units 1 to 8) were retained by Lewis (1994); correlation of individual units across the North Leduc glacier was not attempted.

A minimum age of 220 Ma for the western series is obtained by U-Pb (zircon) dates from the Bucke Glacier stock north of the North Leduc glacier, and related bodies on Granduc Mountain, that intrude western series rocks. The Bucke Glacier stock ranges from 220 to 223 Ma (J. Mortensen, personal communication to P.D. Lewis, 1994); similar composition sills on Granduc Mountain were 232 + 3 Ma (Childe, 1994). In addition, a U-Pb (zircon) analysis from the footwall andesite on Granduc Mountain (North Zone) returned an identical date within error of 230.5 + 14 Ma.

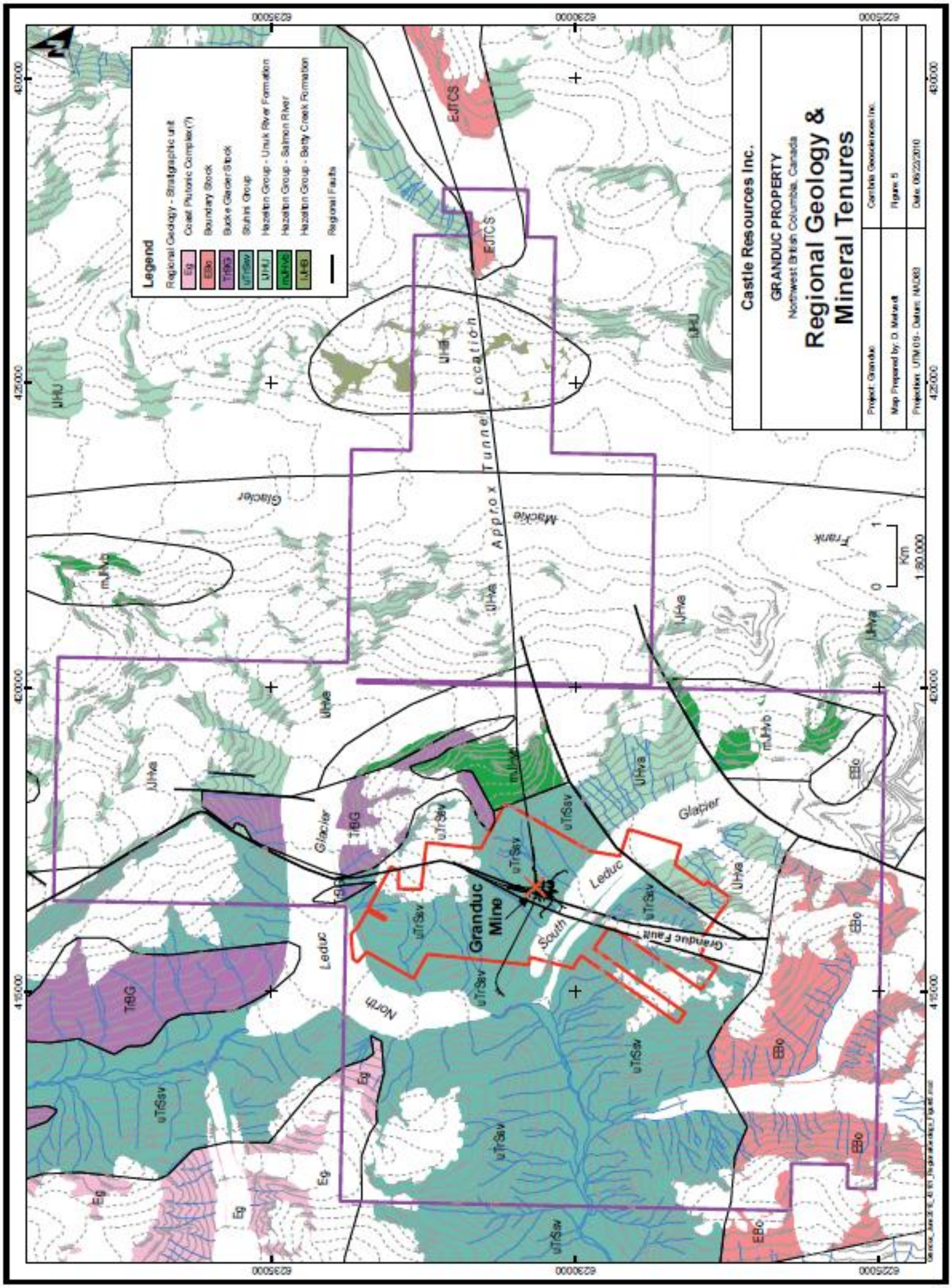

Figure 6.1: Regional Geology, Granduc Property (McGuigan, 2010)

Eastern series (Lower to Middle Jurassic Hazelton Group)

Eastern series rocks form a northwest trending package of rocks that are separated from western series rocks by the South Unuk shear zone on the west, and are bounded by the Frank Mackie Glacier on the east. They are subdivided into three lithologically distinct conformable volcanic units (from oldest to youngest) consisting of:

(i) heterolithic intermediate volcanic breccia to conglomerate;

(ii) bedded dacitic(?) tuffs, tuffaceous conglomerate and homolithic breccia; and

(iii) andesitic pillowed flow and pillow breccia. In the North Leduc glacier area, sedimentary grading and pillow shapes indicate these units face southwest; in other areas, facing directions are uncertain.

The age of the eastern series is partly constrained by U-Pb analyses of zircons separated from a dacite megaclast collected north of Granduc Mountain. An interpreted age for this unit, based on four zircon fractions, is 186.8 + 5.6 Ma (J. Mortensen, personal communication to P. Lewis, 1994). An identical age within error of 185.4 + 9 Ma was obtained from a felsic lapilli tuff approximately 7 km to the south on the Homestake property (Childe, 1994). These rocks are similar in age to felsic rocks (Hazelton Group) in the footwall of the precious metal rich Eskay Creek massive sulphide deposit (Bartsch, 1993). Volcanic rocks of this age correlate with the Betty Creek formation (Hazelton Group) in the Stewart – Iskut mining camps.

6.1.2 Intrusions

Bucke Glacier stock

Bucke Glacier stock forms a northwesterly elongate body (approximately 10 km long by 2 km wide) in western series rocks north of Granduc Mountain. It consists of fine to coarse grained hornblende-biotite diorite to monzodiorite. The contacts of the stock are parallel to subparallel to regional foliation, and the stock is foliated itself, however, to a lesser degree than the enclosing western series rocks. Intermediate intrusive rocks exposed on the north side of Granduc mountain (Klepacki and Read, 1981) and intersected in North Zone drilling (Freckelton et al., 1982) are correlated with the Bucke Glacier suite based on similar lithologies and preliminary U-Pb (zircon) dates (Childe, 1994).

The age of the Bucke Glacier stock is constrained by two widely separated U-Pb (zircon) dates. To the north, near the northern most exposure of the stock, a foliated diorite phase of the stock returned a date of 221 + 1 Ma (M.L. Bevier, personal communication to P. Lewis, 1994). To the south, near the southern most exposure of the stock, a hornblende quartz monzodiorite phase returned a date of 220 - 223 Ma (J. Mortensen, personal communication to P. Lewis, 1994).

Similar composition sills on Granduc Mountain were 232 + 3 Ma (Childe, 1994). In addition, a U-Pb (zircon) analysis from the footwall andesite on Granduc Mountain (North Zone) returned an identical date within error of 230.5 + 14 Ma.

Syenite sills (and dykes)

Syenite sills (and minor dykes) form north-northwesterly trending elongate bodies (<1.5 km long and 10's of metres thick) in western series rocks north of Granduc mountain. Sill contacts are parallel to subparallel to regional foliation and compositional layering measured in the enclosing western series rocks. The sills contain crowded megacrystic (<5 cm) potassium feldspar and are weakly foliated.

Lee Brant stock

Lee Brant stock forms a large stock in eastern series rocks north of Divelbliss Creek. The stock consists of undeformed hornblende - biotite quartz monzonite. A U-Pb (zircon) date of 55.6 + 2 Ma was obtained from a sample collected along the eastern margin of the body north of Divelbliss Creek (J. Mortensen, personal communication to P. Lewis, 1994).

6.1.3 Structure

The major structure identified in the Unuk river area is the South Unuk shear zone. It is a north-northwest striking, subvertical fault that is mapped from the Iskut river area south to Granduc mountain, a distance of 60 km (Lewis, 1994). The fault varies along strike (north to south) from a brittle fault (10-20 m thick) with uncertain sense and direction near Mount Shirley that widens to a ductile deformed zone greater than 1 km wide south of Sulphurets creek where sinistral offset is indicated.

Further south, in the Divelbliss, Duke and North Leduc areas, western series rocks record strongly heterogeneous deformation with a large component of simple shear in a ductile to semi-brittle environment (Lewis, 1994); these features indicate western series rocks should be included as part of the shear zone.

The eastern boundary of the shear zone is marked by a fault that separates the more deformed Late Triassic (or older) western series rocks from relatively undeformed Lower to Middle Jurassic eastern series rocks.

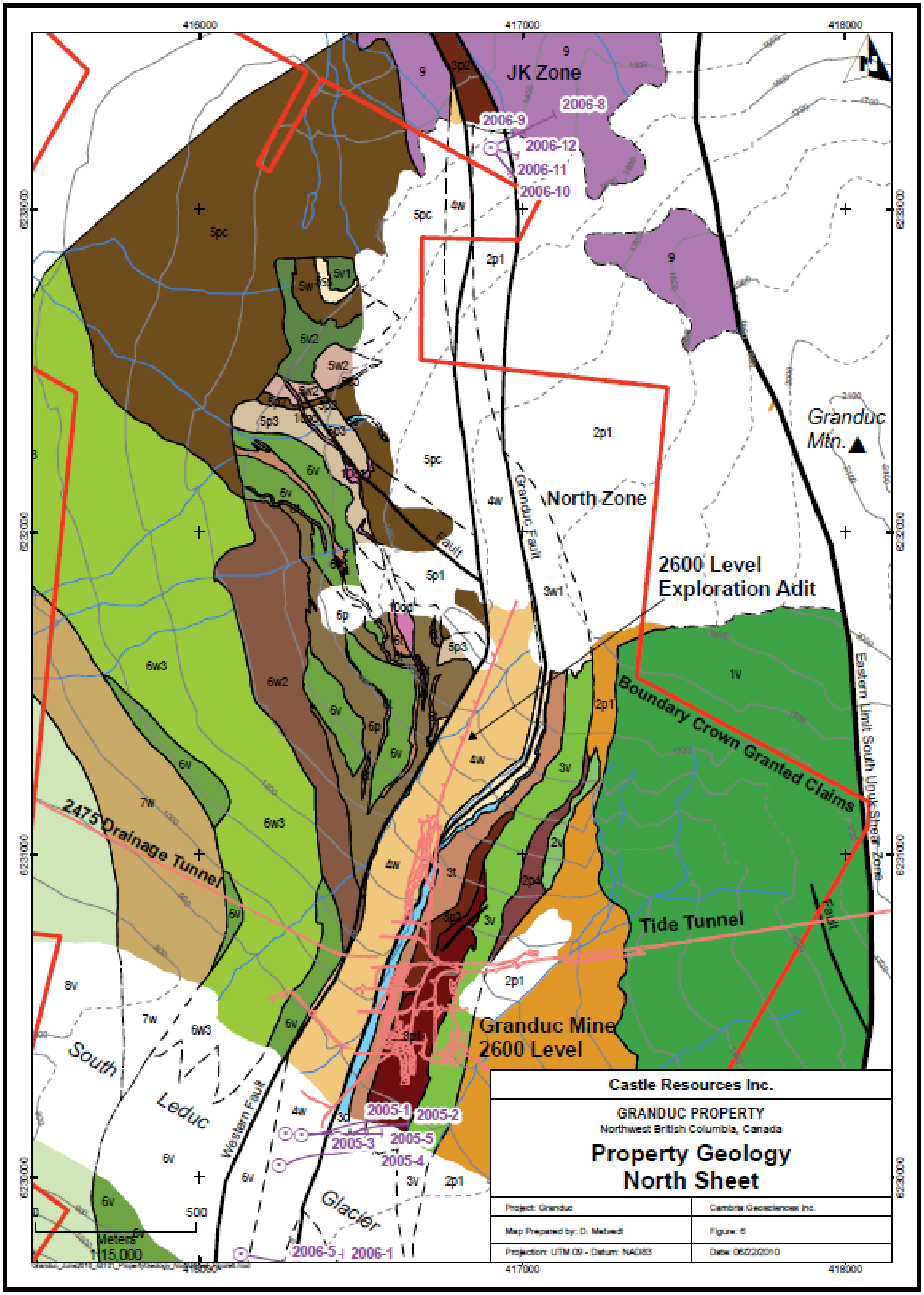

Figure 6.2: Granduc Property Geology Map (McGuigan, 2010)

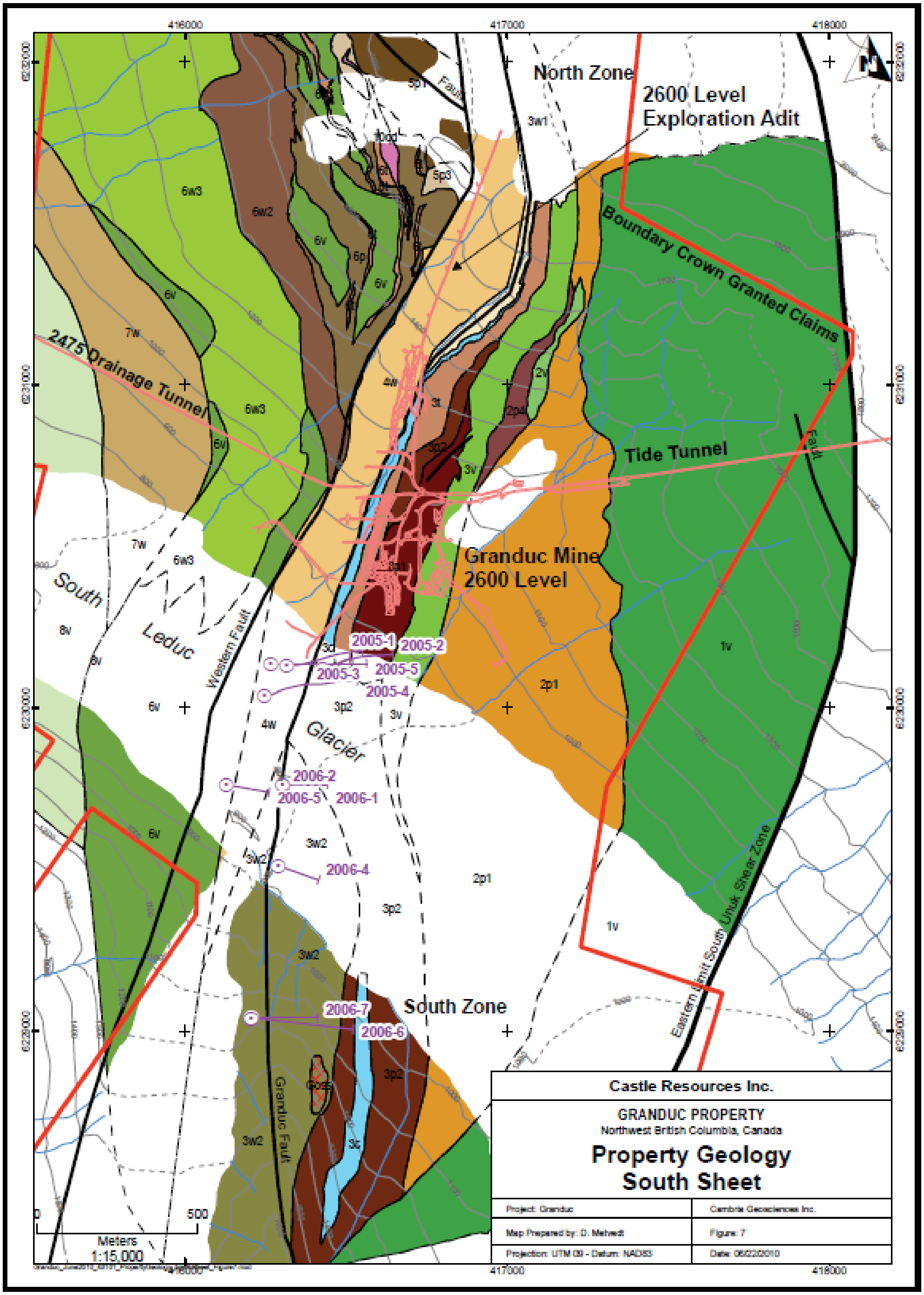

Figure 6.3: Property Geology, Granduc (McGuigan, 2010)

Figure 6.4: Legend for Figure 6.2 and 6.3

6.2 Property Geological Setting

Work on the Property that was supervised by the authors spanned three periods of work: 1979-1984; 1991-1994 and 2005. The best reference to the geology of the Property is offered in the report of the 1993 field program by Cambria (Dawson et al 1994).

Work on the Property during the 1993 study focused on re-logging and sampling selected drill holes for lithogeochemistry and geochronology. Surface mapping on Granduc mountain was limited to a few traverses to examine: (i) previous stratigraphic subdivisions (McGuigan and Marr, 1979; Klepacki and Read, 1981), (ii) previous structural analysis (Klepacki and Read, 1981), and (iii) to help with correlation of units logged in drill core and mapped north of the North Leduc glacier during the 1993 study (Lewis, 1994).

The following brief description of stratigraphy, structure and mineralization is based mainly on mapping by McGuigan and Marr (1979) and Klepacki and Read (1981), Lewis (1994) and re-logging selected drill holes (Dawson et al 1994).

The detailed map of the lithologies cannot be present herein, due to the size format of the current NI 43-101 standard. The reader is referred to McGuigan (2005) for the details of the local surface mine geology.

6.2.1 Stratigraphy

Previous surface mapping on the Property by McGuigan and Marr (1979) outlined three major rock assemblages: (i) Hangingwall series, (ii) Mine series, and (iii) the Footwall series—all of which are part of the western series rock assemblage. These assemblages were further subdivided by Klepacki and Read (1981) into 47 map lithologic units. Rapid facies changes, faulting and folding makes correlation of individual units difficult.

The western series rocks on Granduc Mountain are an assemblage of volcanic and sedimentary rocks approximately 1,500 m thick; the exact thickness is difficult to determine because of likely stratigraphic repetition, due to folding and faulting.

***Footwall series** rocks consist of pillowed and massive andesite to basalt flows which are overlain by flow breccias, crystal and lithic andesite tuff. **Mine series** rocks are cyclic mafic tuffs and chemical sediments that include chert, magnetite iron formation and sulphides. **Hangingwall** series rocks consist of siliceous and mafic wacke followed by andesite tuff, argillite, siltstone and limestone.*

As will be discussed herein in the section on Interpretations and Conclusions, the facing of the units described here is uncertain, due to folding and faulting, and local overturning of the section. The terms Footwall, Mine Series *and* Hangingwall *are the terms employed in earlier studies, and are repeated to maintain consistency with previous generations of mapping. They do not imply a particular stratigraphic order*.

Footwall series (Units 1 and 2)

Lower Footwall sequence

Footwall series rocks have been divided into a Lower Footwall *and an* Upper Footwall sequence. *The* Lower Footwall sequence *consists mainly of augite phyric andesite flows (1v), siliceous wacke (1w), and augite phyric andesite tuff (1t). These units are locally calcareous and contain rare disseminated magnetite, pyrrhotite and chalcopyrite. A thin ultramafic horizon consists of dunite, talc-chlorite schist and chlorite-serpentine schist; locally it marks the western fringe of the* Lower Footwall sequence.

Upper Footwall sequence

The Upper Footwall sequence *is distinctly more sedimentary and thinner bedded than the* Lower Footwall sequence. *It consists of argillite (2p2-5), phyllite (2p1), tuffaceous sandstone (2ss), and tuffaceous argillite and minor augite phyric andesite flows (2v). Locally, units are calcareous and contain disseminated magnetite, pyrrhotite and chalcopyrite.*

Mine series (Unit 3)

Mine series rocks consist primarily of interbedded tuff (3v1-2), chert (3c), and minor chloritic+calcareous wacke (3w1), argillite (3p1-2) and the Granduc limestone (3l). Mine series rocks were subdivided by McGuigan and Tucker (1981) into the: (i) Lower Mine unit, *(ii)* Middle Mine unit, *and (iii) the* Upper Mine unit. *They are separated by faults of small displacement. The three units each represent similar cycles of argillite, siltstone, mafic tuff deposition, marked by an interval of exhalative mineralization comprised of massive sulphide, graphite- and tourmaline-bearing chert and magnetite iron formation.*

These units are not distinguished on the surface map included in this report, as the contacts are defined only in detailed underground mapping.

Lower Mine Unit

The Lower Mine unit *is at the same stratigraphic level as the B1 and possibly the F ore body. The unit has a limited strike extent and does not extend north of 12000 N on surface. It consists of laminated brown chert at its base, succeeded by interbedded amphibolitic tuff, chert, and biotitic feldspar phyric dacite tuff (probably a mafic tuff, see the Section on Lithogeochemistry). The tuffs contain disseminated magnetite, pyrrhotite and chalcopyrite. The top of the unit consists of laminated brown chert. The B1 ore body consists of massive pyrrhotite, chalcopyrite within an interval of chert and magnetite iron formation (see the section on Mineralization).*

Middle Mine Unit

The Middle Mine unit *corresponds to the same stratigraphic level as the C and B2 ore bodies. Surface exposures are limited due to overburden and surface cave from underground mining. Underground, the unit consists of a lower tuff, a middle course chert marker, and an upper thinly laminated chert and tuff unit. Minor disseminated magnetite, pyrrhotite and chalcopyrite occur throughout the unit. It is separated from the Lower Mine unit by a minor fault (0.3 m fault gouge). The C and B2 ore bodies are comprised of cherty magnetite iron formations.*

Upper Mine Unit

The Upper Mine unit *corresponds to the same stratigraphic level as the A ore bodies underground. The unit consists of equal amounts of interbedded tuff and laminated brown chert. Tuff decreases northward where chert and fine grained siliciclastics predominate. Tuffaceous sulphide-bearing magnetite iron formation (1.5 - 3.0 m thick) occurs near the top of the formation.*

Granduc Limestone

Granduc limestone overlies the Upper Mine unit. *It consists of grey to black tuffaceous limestone and calcareous-chloritic dacite tuff. The unit grades upward into thick bedded feldspar phyric ash and lapilli tuff that is locally calcareous. The top of the unit is locally cut by the Granduc fault.*

Hangingwall series (Units 4 to 8)

Hangingwall series rocks are separated from the underlying Mine series by the Granduc fault (Figure 6.3). The unit has been subdivided into the: (i) *Gash Banded Tuff sequence*, (ii) *Varied sequence*, (iii) *Siliceous Wacke sequence*, and (iv) *Upper Volcanic sequence*.

Gash Banded Tuff

Gash Banded Tuff sequence *crops out mainly between the Granduc and Western faults (Figure 6.2 and 6.3). It consists of tuffaceous sandstone (4t), wacke (4w1-2), and massive limestone (4l). Fine carbonate*

veinlets are abundant in many of the sandstone and wacke beds, and are likely related to carbonate formation in extensional fractures adjacent to F3 folds and shears.

Varied sequence

Varied sequence *is separated from the underlying* Gash Banded Tuff sequence *by the Western fault (Figure 6.2 and 6.3). The sequence consists of a heterogeneous package of thinly bedded sediments and volcanic rocks. In decreasing order of abundance, they include argillite (5p1-6), siliceous wacke (5w1-2), foliated andesite volcanics (5v12), tuffaceous sandstone (5ss) and limestone (5c). Facing indicators throughout this unit are right-way up.*

Mafic Wacke sequence

Mafic Wacke sequence *conformably overlies the* Varied sequence *(Figure 6.2 and 6.3). It consists of dark green wacke (6w1-3), argillite (6p), foliated amphibole phyric tuff (6v), calcareous tuff and limestone (6t), chert (6c1-2) and feldspathic arenite (6s).*

Siliceous Wacke

Siliceous Wacke sequence *is separated from the underlying* Mafic Wacke *by a thin basal limestone (Figure 6.2 and 6.3). The rest of the unit is a relatively homogeneous fine to medium grained siliceous wacke (7w) that contains rare pyrite clots.*

Upper Volcanic sequence

Upper Volcanic sequence *conformably overlies the* Siliceous Wacke sequence *(Figure 6.2 and 6.3). It consists of foliated feldspar and augite phyric andesite flows and tuffs (8v), and white to black chert (8c).*

Lithogeochemistry

Thirty four rock samples were collected by Barrett (1994) from long drill holes mainly in the North Zone at Granduc Mountain for a lithogeochemical study. The objectives of the study were:

(i) to 'fingerprint' similar lithological units to aid in structural interpretations,

(ii) determine the magma series,

(iii) chemically classify the rocks, and

(iv) compare their compositions with those of known tectonic setting.

This section on lithogeochemistry is summarized from Barrett (1994):

Methods developed by MacLean (1988) and Barrett et al. (1992) were used by Barrett (1994) to evaluate the effects of primary igneous fractionation and the extent of alteration in volcanic rocks from Granduc Mountain. Initial interpretations by Barrett (1994) indicate most samples are mafic volcanics or an intermediate sill which have Zr/Y ratios equal to 3-4; this is consistent with an overall tholeiitic magmatic affinity. On a number of binary plots, the mafic volcanics show the following trends:

(i) increasing Al2O3 and Zr is interpreted to represent a mafic fractionation trend; two mafic samples and two cherty iron formation samples appear to be derived from a different magma source that has higher Zr and TiO2 content,

(ii) decreasing MgO and Cr_2O_3 *likely reflects the removal of olivine (Mg) and spinel (Cr) by fractionation,*

(iii) increasing Al_2O_3 *with decreasing* Cr_2O_3 *likely reflects increasing plagioclase content as olivine (Cr) and spinel (Cr) are removed by fractionation, and*

(iv) increasing Na_2O *with decreasing* SiO_2 *likely reflects fractionation with the mafic volcanic sequence involving increasingly more sodic plagioclase.*

Rare earth element (REE) plots by Barrett (1994) show that the mafic volcanic rocks have a uniform REE composition with La/Yb (chondrite normalized) ratios of 3.5 to 5.0 suggesting a transitional chemical affinity between mid-ocean ridge basalts (flat to slight light REE depleted pattern) and an island arc setting (enriched in large ion lithophile elements [LILE] and a gentle negative REE pattern). The slightly more differentiated intermediate sill has a similar, but higher REE pattern than the mafic volcanics that suggests they may be genetically related. Banded tuffaceous or volcaniclastic rocks logged as 'cherty tuff' or 'dacitic tuff' have REE patterns almost identical to those of the mafic volcanic rocks indicating they are not dacitic in composition as logged in the field.

Tectonic discrimination diagrams constructed from mafic volcanic rocks in modern day tectonic settings indicate that mafic volcanic samples from Granduc mountain (North Zone) plot mainly in *the low potassium tholeiite field on a Ti vs. Zr plot (Pearce and Cann, 1973). On a Nb/2 - Zr/4 - Y plot (Meschede, 1986), samples plot in the plume-mid ocean ridge basalt (P-MORB) and normal - mid ocean ridge basalt (N-MORB) fields, however, some samples plot along the line discriminating MORB from volcanic arc basalt (VAB) field. Samples plot in a straight line within the ocean floor basalt field (OFB) and along the discrimination line separating the calcalkaline basalt (CAB) and island arc basalt (IAB) field on a Ti/100 - Zr - Sr/2 plot (Pearce and Cann, 1973). This may indicate some Sr exchange with seawater during calcareous alteration of the basalt, since the Sr cation can exchange for the Ca cation in calcite. Samples plot mainly in the ocean floor basalt field (OFB), however some samples plot in the low potassium tholeiite field (LKT) on a Ti/100 - Zr - Y/3 plot (Pearce and Cann, 1973).*

6.2.2 Intrusions

Bucke Glacier stock

Bucke Glacier stock forms a northwesterly elongate body (approximately 10 km long by 2 km wide) in western series rocks north of Granduc Mountain. It consists of fine to coarse grained hornblende-biotite diorite to monzodiorite. The contacts of the stock are parallel to subparallel to regional foliation, and the stock is foliated itself, however, to a lesser degree than the enclosing western series rocks.

Intermediate intrusive rocks exposed on the north side of Granduc Mountain (Klepacki and Read, 1981) and intersected in North Zone drilling (Freckelton et al., 1982) are correlated with the Bucke Glacier suite based on similar lithologies and U-Pb (zircon) dates (Childe, 1994).

The age of the Bucke Glacier stock is constrained by two widely separated U-Pb (zircon) dates. To the north, near the northern most exposure of the stock, a foliated diorite phase of the stock returned a date of 221 ± 1 Ma (M.L. Bevier, personal communication to P. Lewis, 1994). To the south, near the southern most exposure of the stock, a hornblende quartz monzodiorite phase returned a date of 220 - 223 Ma. (J. Mortensen, personal communication to P. Lewis, 1994).

Similar composition sills on Granduc Mountain were 232 ± 3 Ma (Childe, 1994). In addition, a U-Pb (zircon) analysis from the footwall andesite on Granduc Mountain (North Zone) returned an identical date within error of 230.5 ± 14 Ma.

Syenite sills (and dykes)

Syenite sills (and minor dykes) form north-northwesterly trending elongate bodies (<1.5 km long and 10's of metres thick) in western series rocks north of Granduc Mountain. Sill contacts are parallel to sub-parallel to regional foliation and compositional layering measured in the enclosing western series rocks. The sills contain crowded megacrystic (<5 cm) potassium feldspar and are weakly foliated.

The age of these intrusions are not known but are likely early Jurassic or older.

Lee Brant stock

Tertiary Lee Brant stock forms a large stock in eastern series rocks north of Divelbliss Creek. The stock consists of undeformed hornblende - biotite quartz monzonite. A U-Pb (zircon) date of 55.6 ± 2

Ma was obtained from a sample collected along the eastern margin of the body north of Divelbliss Creek (J. Mortensen, personal communication to P. Lewis, 1994).

Similar composition intrusions cross-cut the Mine series, within the Granduc Mine and are, in turn, displaced by late movement on the Granduc and parallel faults. At the southern extremities of the Property, both the Stuhini and Hazelton group rocks are intruded by the Coast Range batholitic intrusions.

Structure

Folding

First Phase Deformation

Surface mapping on Granduc Mountain by Klepacki and Read (1981) identified four phases of folding. The earliest deformation is characterized by minor isoclinal folds (F1) that plunge shallow to the southeast in the northern part of the map, and to the southwest in the southern part of the map. The axial planes of these folds are parallel to layering. The intersection of axial planar cleavage (S1), defined by the alignment of biotite and muscovite, with bedding (So) results in lineations (L1) that plunge similar to the (F1) minor folds.

Second phase deformation

Second phase deformation is characterized by tight to open, minor to major folds (F2) that verge to the east. Axial planes of F_2 *folds strike north-northeasterly and dip steeply east or west.* F_2 *fold axes plunge steeply north in the northern part of the map, and steeply south in the southern part of the map. Locally, F2 minor folds have axial surfaces which diverge and form box-shaped folds.*

Third & Fourth phase deformation

Third phase deformation produced small open folds. F3 axial planes strike east to northeasterly and dip shallow to moderately south. They are best developed in the Gash Banded Tuff Unit (Unit 4) and appear to be spatially related to the Granduc and Western faults. Fourth phase deformation is defined by gentle warps that cause the gradual change in orientation of older features across the map sheet.

Progressive Deformation within the South Unuk Shear Zone

Lewis (1994) attributes S_1 *foliation,* F_1 *and* F_2 *folds on Granduc Mountain to progressive deformation associated with the South Unuk shear zone. The South Unuk shear zone is several km wide and has dominantly a sinistral sense of displacement. This new interpretation is significant because, previously, the consistent northerly striking and steeply west dipping* S_1 *foliation measured by Klepacki and Read (1981) was interpreted to represent the single limb of a major* F_1 *fold. According to Lewis (1994), a major* F_1 *fold is unlikely, and its postulated occurrence should not be used to guide exploration. For a more in-depth discussion of the South Unuk shear zone and associated structural elements the reader is referred to Lewis (1994).*

Faulting

South Unuk Shear Zone

The HFK fault mapped by McGuigan and Marr (1979) may represent the southern continuation of the South Unuk shear zone mapped north of Granduc Mountain by Lewis (1994). The South Unuk shear zone separates deformed Late Triassic western series (Stuhini Group) rocks in the west, that host the Granduc deposit, from less deformed Early to Middle Jurassic eastern series (Hazelton Group) rocks in the east.

Granduc and Western Faults

Younger faults identified by Klepacki and Read (1981) and all previous studies on the Property include the Granduc and Western faults. These faults strike northerly and dip moderately to steeply west. Analysis of the data by Klepacki and Read (1981) shows the Granduc and Western faults record movement in a right-lateral, strike slip sense, with approximately 4km of displacement, in total, across the two fault structures. Right lateral movement cross-cuts and displaces late quartz diorite dykes in the Granduc Mine series lithologies and the Hangingwall series.

7 Deposit Types

7.1 Mineralization and Deposit Style

The following information has been quoted from the technical report written by Paul J. McGuigan and Don J. Harrison of Cambria Resources in 2010 and remains a valid description of the Granduc deposit.

The principle exploration target on the Property is for volcanogenic massive sulphide (VMS) deposits of the Besshi-type. Besshi-type deposits are named after deposits on the southern Japanese island of Shikoku – Slack, 1993). The descriptive model name for this class of deposit is the mafic-siliclastic VMS.

Besshi VMS sulphide mineralization consists predominantly of iron sulphides (pyrite and/or pyrrhotite), with lesser chalcopyrite; sphalerite may or may not be present. Besshi deposits can contain highly varied and complex sulphide mineralogy, including arsenopyrite, galena, bornite, tetrahedrite-tennantite, cobaltite, stannite and molybdenite. Quartz (chert), tourmaline, carbonate, albite, sericite, chlorite and amphibole can be found as gangue minerals in the deposits. Barite is usually absent, but other chemical sedimentary rocks (chert, carbonates or oxide-facies iron beds) and/or magnetite may be associated.

The Besshi massive sulphide deposits are stratiform and tabular. The massive sulphides may be finely or coarsely layered or massive and can be finely interlaminated with chert, tuff, calcareous sediment, and magnetite; the sulphide lenses can be just several metres thick but can extend for several kilometres. Chloritic alteration haloes are commonly in the host rocks surrounding the sulphide horizons, a relic of pre-deformational alteration. Other alteration minerals that may occur are quartz, carbonate, pyrite, sericite and graphite. Locally, tourmaline can be distinctly abundant.

Crosscutting the massive sulphide horizons, there may be veins of recrystallised pyrite and/or chalcopyrite, opened and filled when the horizons were deformed. In highly deformed environments, sulphides may be thickened in fold closures, and remobilized into axial plane shears.

The sulphide horizons generally occur in thick sequences of marine sedimentary rocks, ranging from black shale to arkose to greywacke. The clastic hosts themselves are generally finely laminated sedimentary rocks, possibly turbidites. There can also be tuffaceous interlayers. The clastic sediments are typically graphitic.

There are usually no felsic volcanic rocks present, though flows, and sub-volcanic sills of basalt are often present in the sequence of sediments. The basalts have a tholeiitic composition.

The host rocks, mineralogy and chemistry of Besshi deposits lie along a continuum between sedimentary-exhalative deposits and copper-zinc massive sulphides. The deposits are the products of hydrothermal exhalation at vent sites ("black smokers") or hydrothermal brine pools that formed on the seafloor depressions after exhalation. Some replacement mineralization of sub-seafloor clastic sedimentary rocks by sulphur-bearing hydrothermal fluids is postulated.

Besshi-type volcanogenic massive sulphide (VMS) deposits range in size from under a million to 300 million tonnes and grade between 0.64% and 3.3% copper. The Besshi deposits themselves contain

30 million tonnes of 2.5% copper and 0.3% zinc, plus 7 grams per tonne silver and 0.2 gram gold per tonne. The largest Besshi deposit in the world is the Windy Craggy, in northwestern British Columbia, which contains between 210 and 320 million tonnes grading 1.66% copper, 0.09% cobalt, 3.5 grams silver per tonne and 0.2 gram gold per tonne. Figures compiled by Slack (1993) are tabulated below (Table 7.1).

Besshi-type deposits appear to have formed in a variety of tectonic environments, from oceanic crust to early-forming rift basins in continental plates. The host rocks are thick, terrigenous clastic sedimentary sequences with lesser volumes of tholeiitic mafic magmatism. It has been suggested that the size of the deposit reflects the volume of mafic volcanic rocks in the ore-forming system; the more mafic volcanic rocks that occur in the basinal stratigraphy, the more copper there may be in the exhalative sulphide body.

Table 7.1: Major Besshi-type deposits (modified from Slack, 1993)

			Size		Grade		
Deposit	Location	Age	Mt	Cu (%)	Zn (%)	Ag (g/t)	Au (g/t)
Besshi	Japan	Jurassic	30	2.5	0.3	7	0.2
Hitachi	Japan	Jurassic?	29	1.4	0.7	5	0.5
Yanahara	Japan	Permian?	25	1.2	--	58	0.6
Ducktown	USA	Late Proterozoic	163 [a]	1.0	0.9	3	0.3
Gossan Lead	USA	Late Proterozoic	40 [b]	0.5	1.5	8	<0.1
Windy Craggy	Canada	Triassic	297	1.4	0.3 [c]	4 [c]	0.2 [c]
Granduc	Canada	Triassic	39	1.7	--	7	0.1
Rouez	France	Late Proterozoic	100	0.6	1.5	21	1.5
Liwu	China	Triassic	20	1.8	--	30	0.3

[a] includes 9 separate deposits; the largest (Cherokee) contained 70 Mt @ 0.7% Cu, 0.5% Zn.
[b] Estimated value. [c] Zn, Ag and Au are for North Zone only.

The methods employed to calculate the size and grades of the deposit examples cited in Table 7.1 have not been reviewed by the authors for compliance with the Instrument for reporting of Mineral Resources. The figures that have been cited in this table are therefore for geological information only.

The following information has been copied from a technical report written by Paul J. McGuigan and Don J. Harrison of Cambria Resources in 2010. The exploration data presented in this section is largely historic, completed prior to the acquisition of the property by CRI.

7.2 Volcanogenic Massive Sulphide Zones

"The principle copper-silver bearing volcanogenic massive sulphide zones on the Property are located in a north-south trending, steeply westward dipping strata of Unit 3 (Mine series) and Unit 2, part of the Late Triassic western series (Stuhini Group) (Figure 6.2 and 6.3). Three major mineralized zones have been identified-North Zone, Granduc deposit and South Zone (Figure 5.1)."

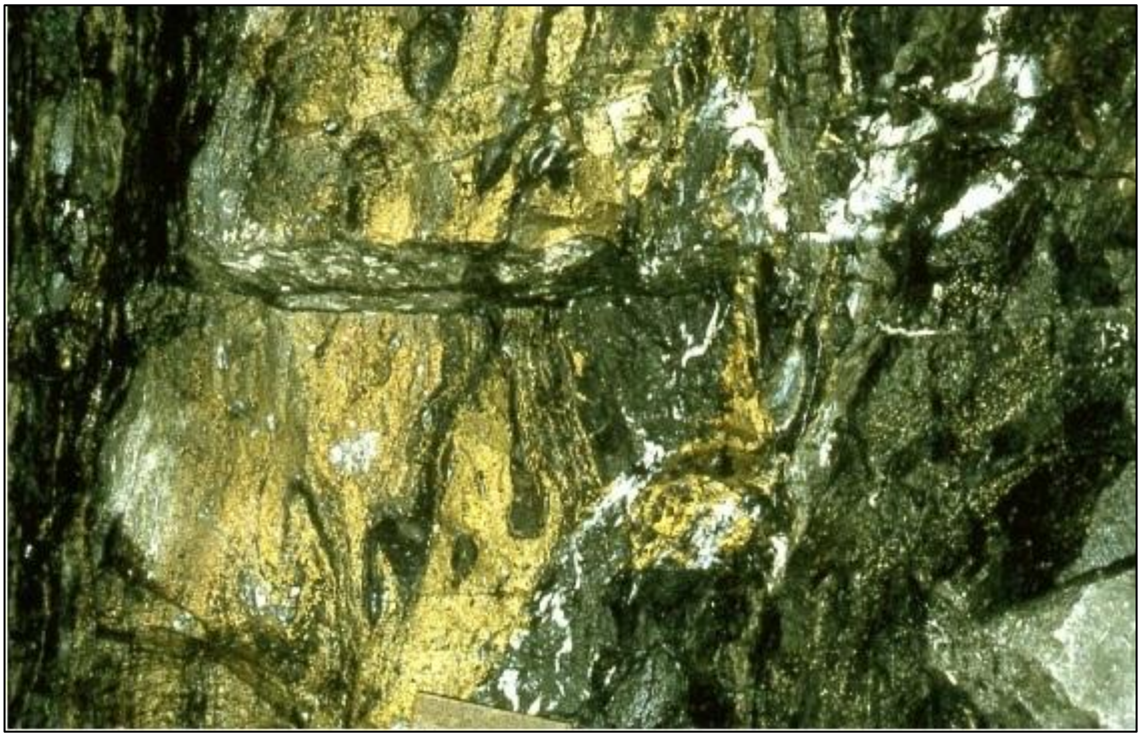

Figure 7.1: Massive Pyrrhotite-Chalcopyrite-Pyrite, Granduc Main Zone

Syngenetic mineralization consists of sulphides-pyrrhotite, chalcopyrite, pyrite, rare sphalerite and galena-and magnetite iron formation hosted within chert, mudstones and pyroclastic rocks of the Granduc Mine series. Subsequent deformation has remobilized and recrystalized the sulphides as disseminations, layers that parallel foliation, and crosscutting remobilized sulphide breccia zones along axial planar jointing and shear surfaces (Figure 8.1 and 8.2). The remobilized sulphides comprise angular to rounded distorted schistose wallrock and brittle chert and magnetite iron formation fragments in a recrystalized deformed sulphide groundmass consisting of more ductile sulphides such as chalcopyrite, pyrrhotite and lesser sphalerite and galena. The structure results from the detachment, fragmentation, rolling, kneading and grinding of wallrock, and brittle sulphide fragments, in a ductile sulphide groundmass.

7.3 Granduc Deposit

The main Granduc *deposit consists of a number of individual ore bodies-A, B1, B2, C and F-that are structurally controlled by south plunging F2 folds (Figure 5.1). The A, B1 and F ore bodies average 1.9% Cu, while the B2 and C ore bodies average 1.3% and 1.7% Cu, respectively. The deposit is separated into a northern and southern block that is separated by a weakly mineralized to barren zone. The F ore body lies in the northern block (north of 11 300 N at the 2600 level) while all others lie in the southern block. Mineralization is essentially stratabound, however deformation has caused sulphide remobilization resulting locally in cross-cutting relationships. It consists of varying proportions of chalcopyrite, pyrrhotite, magnetite, minor pyrite, and rare sphalerite and galena.*

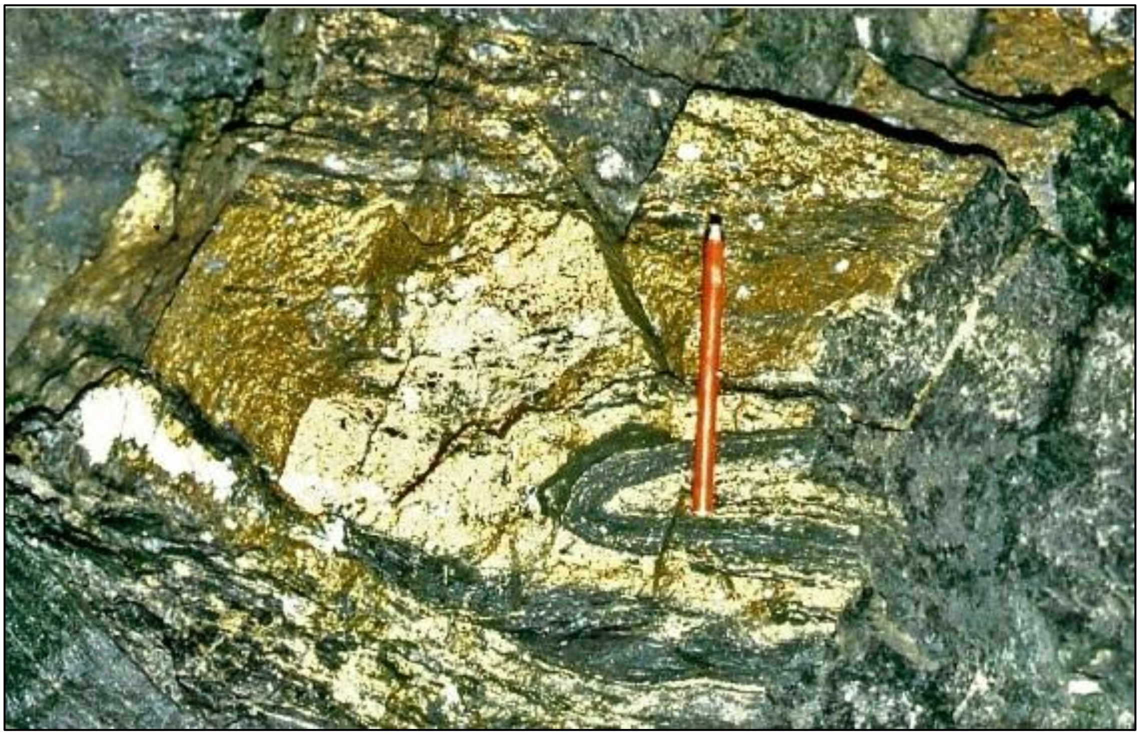

Figure 7.2: Small F2 Fold Closure in Massive Sulphides; Granduc Main Zone

Structurally modified sulphides form an important part of the B1, B2, C and F ore bodies. Based on measurements at the 2600 level, and higher in the mine, the thickest parts of those bodies plunge in fold closures with an average F2 fold axis orientation of 55° towards 230°. The average axial plane measurement was 020°/70°W (McGuigan and Tucker, 1981). Minor folds, and displacement across chloritic shear surfaces ("transpositional slips") indicate a dominance of left lateral shear displacement of the sulphide and the sulphide-bearing, cherty magnetite-rich mafic tuffs.

Figure 7.3: Remobilized Pyrrhotite-Chalcopyrite with Brecciated Mafic Tuff and Chert

North Zone

Within the North Zone, two separate mineralized zones were identified in the Upper Footwall series (Unit 2).

8 Exploration

CRI completed its first exploration program on the Granduc Property in August, September and October 2010. As discussed in Section 6, prior to this, the most recent exploration was completed by Bell Copper in 2005 and 2006. Between the mine closure in 1984 and 2005, various groups had control of the property and completed small exploration programs, most commonly surface sampling and mapping. All exploration work completed prior to 2010 is discussed in the History section of this report.

Historic datasets, as they pertain to the current analysis, are discussed below. All drilling data is discussed in Section 10.

8.1 Historic Datasets

Of the large amount of historical data associated with this project, only topographic, development and drill data were material used in the current analysis.

8.1.1 Topographic Control

Topography and control for work on the Granduc property has been provided by the use of a mine grid during advanced exploration and mining. The local mine grid was a cartesian imperial grid (in feet), generally aligned north-south, without a systematic rotation.

Most, if not all, data compiled prior to Bell Copper's 2005 work was completed in local mine grid coordinates. For the most part, surface and underground developments and drillholes were surveyed into this system using traditional line-of-site survey techniques provided by the mine survey department. After 2005, most new data was completed in UTM (NAD 83) zone 9, commonly captured as handheld or differentially corrected GPS coordinates, and converted to local grid coordinates.

Topographic surfaces have been captured at several stages in the 1980's and mid 2000's. These data appear to be compiled from ortho-rectified surface photos. There are currently at least two incarnations of surfaces data compiled in the form of 2m or 5m contours. There is a noted elevation difference for the glacier associated with the two datasets, presumably due to significant melting of the ice-mass.

SRK completed an analysis of local grid control captured with differential GPS into UMT coordinates (Bell Copper 2005-6) and found that a reasonable systematic conversion provides good accuracy between the coordinate systems.

In general, it is safe to say that positional control of exploration data points at Granduc appears to be adequate, given the topographical challenges and variety of data ages and coordinate systems. However, the current drillholes need re-surveying with differential GPS and all future drilling should have differential GPS tie-in to the historical coordinate system.

8.1.2 Mining and Development

Records of historical mining and development were recorded on a series of plans and sections. In a parallel program of analysis, SRK has compiled many of these plans and sections in order to collate a digital dataset of underground workings. Figure 8.1 shows an isometric view of the mine workings based upon captured line-work.

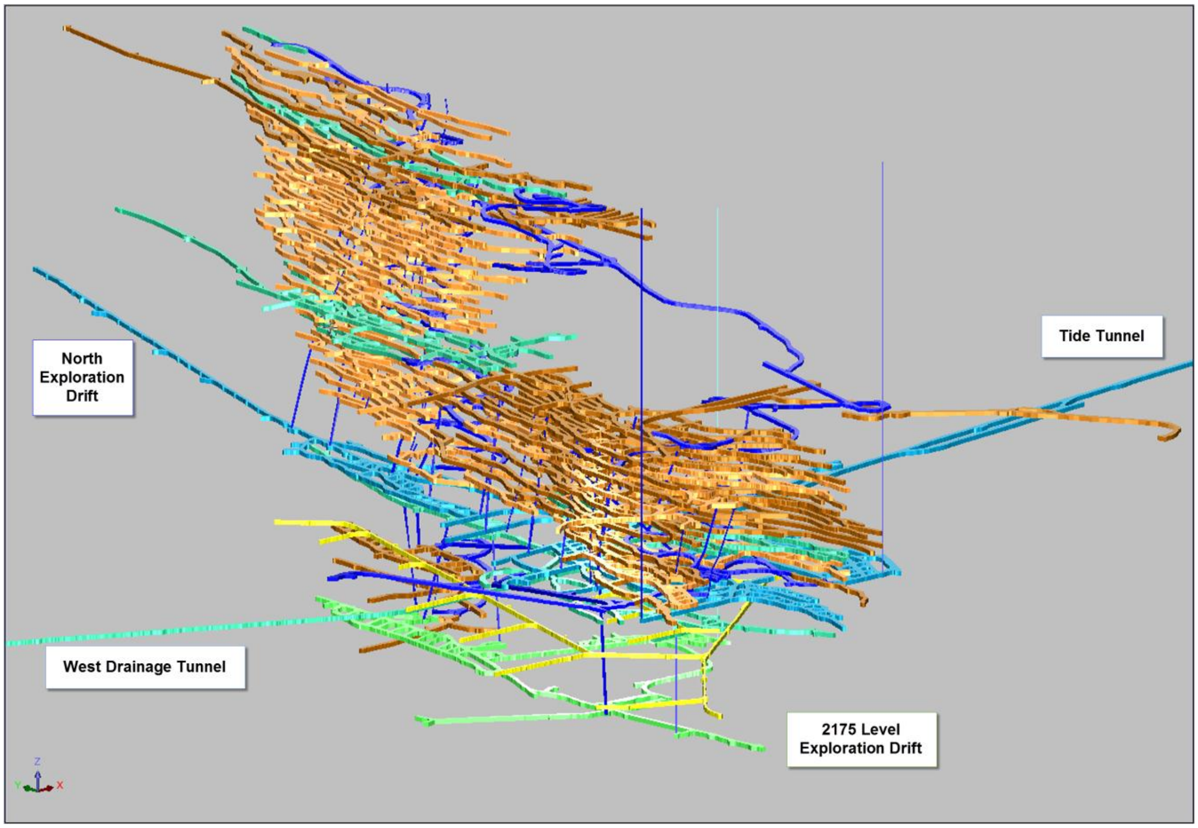

Figure 8.1: Summary of Historic Underground Development (isometric view, looking northeast)

A key long section was utilized to create limits for the mined areas in order to limit the Mineral Resource estimates to zones which have not been mined. This section was an official mine section, stamped January 1984, signed by the mine manager and filed with the government in mid-1984.

SRK has not yet had complete access to the underground workings to verify the development records.

8.2 Exploration Work Undertaken by Castle Resources Inc.

Most of CRI's initial exploration work involved confirmatory surface drilling into deeper mineralized domains within the Granduc Main Zone as discussed in Section 10 of this report. SRK is not aware of any significant surface mapping, surface sampling or geophysical surveys completed by CRI. CRI did not have underground access to the mineralized zones and therefore did not complete additional assessment of the deposit from underground.

9 Drilling

9.1 Historical Drilling

Drilling was first completed on the Granduc deposit in 1931. The drill campaigns between 1931 and 1968 lead to a decision to develop the deposit into a mine. Development and detailed exploration drilling between 1968 and 1970 provided the technical background for mining. Further mine exploration was completed over a variety of campaigns in the early 1980's.

The total drill holes and total length of drilling by company and approximate era is summarized in Table 9.1 and 9.2.

Table 9.1: Summary of Granduc Drilling by Company

Company	Years	Zones	Number of Holes	Total Metres
Various	1931 to 1984	Dominantly Main Zone	2012	148,083
Bell	2005 to 2006	North & South Zones	17	6,018
CRI	2010	Main Zone	18	8,263
CRI	2011	Main, South and North zones	58	30,706
Grand Total			2105	193,070

Table 9.2: Granduc Drillhole Summary by Year

Year Drilled	Number of Holes	Total Length (m)
Unknown Year	571	57,655
1931	1	61
1951	1	31
1955	4	327
1957	1	202
1958	13	2,120
1959	1	60
1961	13	4,013
1962	27	3,884
1963	26	4,186
1964	42	2,858
1967	5	478
1968	18	1,709
1969	33	2,235
1970	210	10,161
1971	317	16,779
1972	148	6,426
1973	158	6,072
1974	167	7,246
1975	35	2,576
1976	15	593
1978	1	709
1980	18	1,962
1981	99	3,972
1982	82	11,419
1983	5	344
1984	1	6
2005	5	2,091
2006	12	3,928
2010[1]	18	8,263
2011[1]	58	30,706
Grand Total	2105	193,072

[1] 2010 and 2011 holes are current drillholes completed by CRI

The drill holes listed in Tables 9.1 and 9.2 include holes located anywhere within the Granduc Property, as recorded in the current database. The bulk of the drilling would lie within the Main Zone; however, much of this zone has been mined and therefore many of the drill holes have no bearing on the Mineral Resources estimated in this report.

For most of the historic drill holes, the exact core size is unknown; however, much of the historic holes on hand at site or in Stewart, is AQ or AX diameter. More recent drilling was completed with NQ core size. Core recovery for the historic drilling is unknown.

Drill core and original logs are available for only a subset of the historic holes. In late 2010, SRK requested scans of approximately 364 randomly selected drill holes for validation of the historical assay database. CRI representatives were able to provide approximately 61 % of the requested records. It may be reasonable to assume a similar percentage of all holes may include some form of paper record or log.

CRI records indicate that 379 of approximately 2012 pre-2005 drill holes where stored in their Stewart BC storage yard, approximately 20% of the historic core. The completeness of these holes has not been thoroughly analyzed at this time. In 2010, CRI completed re-sampling of nine of these historic drill holes in order to validate the assay values from these holes. In 2011, CRI completed re-sampling of a further 156 of these historic drill holes. Resampling could only be completed on portions of these holes as often the preserved core is from intermittent intervals down the holes.

For the historical drill holes, collar survey, downhole survey and assay data has been compiled into an access database. No geological log information is currently in the compiled database and therefore is, for the most part, unavailable to SRK at this time.

SRK did not directly compile any of the historic drill data for the Granduc deposit. The historic drillhole database has been compiled from a variety of sources and by various companies since mine closure in 1984. The predominant compilation work has been completed by Bell Copper, Cambria Geosciences Inc and CRI Sources include paper logs, other compiled paperwork, plans and sections.

Validation of the drillhole database is discussed further in Section 11.

9.2 Castle Resources Inc. Drilling

2010 Drill Program

A total of 18 drill holes (GD10-01 through GD10-18), with a total length of 8,263 metres were drilled by CRI in the 2010 summer/fall drill program.

Drill collar sites were field marked using handheld GPS coordinates (UTM Zone 9, NAD 83). Drill pads were built over the collar site and the drill was mobilized to the size using helicopter support.

Upon completion of the hole, all drill collars were surveyed using a handheld GPS. Differential GPS surveying had been planned, but was not able to be completed prior to the closure of the field season.

Downhole surveys were completed using a Flex-it down-hole survey instrument at 30 foot intervals. The instrument collected azimuth, dip and magnetic intensity measurements for each survey point. The instrument is susceptible to external magnetic fields and therefore post processing by CRI and SRK was used to eliminate azimuth values that were erroneous.

Drill core was helicopter transported to camp on a regular basis, where it was secured within or near the core logging facility. Photographs were taken of all drill core, and all core recovered was geotechnically and geologically logged on site before any sampling was completed.

All drill holes were drilled from surface, with collars located west of the deposit, in the hanging-wall. The drill holes varied in dip between 41 and 80° downward from horizontal. Azimuths varied between 80 and 90 degrees. Generally, the drill cores were drilled relatively perpendicular to the mineralized zones. Hole lengths varied between 305 m and 689 m.

Core recovery was generally good, with 90-95% recovery in mineralized zones. Hanging wall fault zones had lower recoveries.

Figure 9.1 shows the 2010 (and 2011) drill holes in plan view, relative to the current interpreted mineralized zones.

2011 Drill Program

A total of 58 drill holes (GD11-01 through GD11-53), with a total length of 30,700 m, were drilled by CRI in the 2011 summer/fall drill program.

Drill collar sites were field marked using differential GPS coordinates (UTM Zone 9, NAD 83) with sub-metre accuracy. Drill pads were built over the collar site and the drill was mobilized to size using helicopter support. Upon completion of the hole and where safely possible, drill collars were resurveyed once again using a differential GPS. Collar dips and azimuths were also measured from casing using differential GPS.

Downhole surveys were completed using a gyroscope based down-hole survey instrument, commonly at approximately 5 m intervals. The instrument collected azimuth and dip measurements for each survey point. The instrument utilizes a gyroscope for directional change and is not susceptible to external magnetic fields.

Drill core was helicopter transported to camp on a regular basis, where it was secured within or near the core logging facility. Photographs were taken of all drill core, and all core recovered was geotechnically and geologically logged on site before any sampling was completed.

In 2010, all core was stored at the exploration camp at the completion of the program; however, upon completion of the 2011 program, all 2010 and 2011 CRI core was moved to CRI's core storage yard in Stewart BC.

All drill holes were drilled from surface, with collars located west of the deposit, in the hanging wall. The drill holes varied in dip between 48° and 83° downward from horizontal. Azimuths varied between 69 and 134 degrees. Generally, the drill cores were drilled relatively perpendicular to the mineralized zones. Hole lengths varied between 28 m and 1050 m.

Core recovery was generally good, with 85-95% recovery in mineralized zones. As with the 2010 program, hanging wall fault zones had lower recoveries.

Figure 9.1 shows the 2011 (and 2010) drillholes in plan view, relative to the current interpreted mineralized zones.

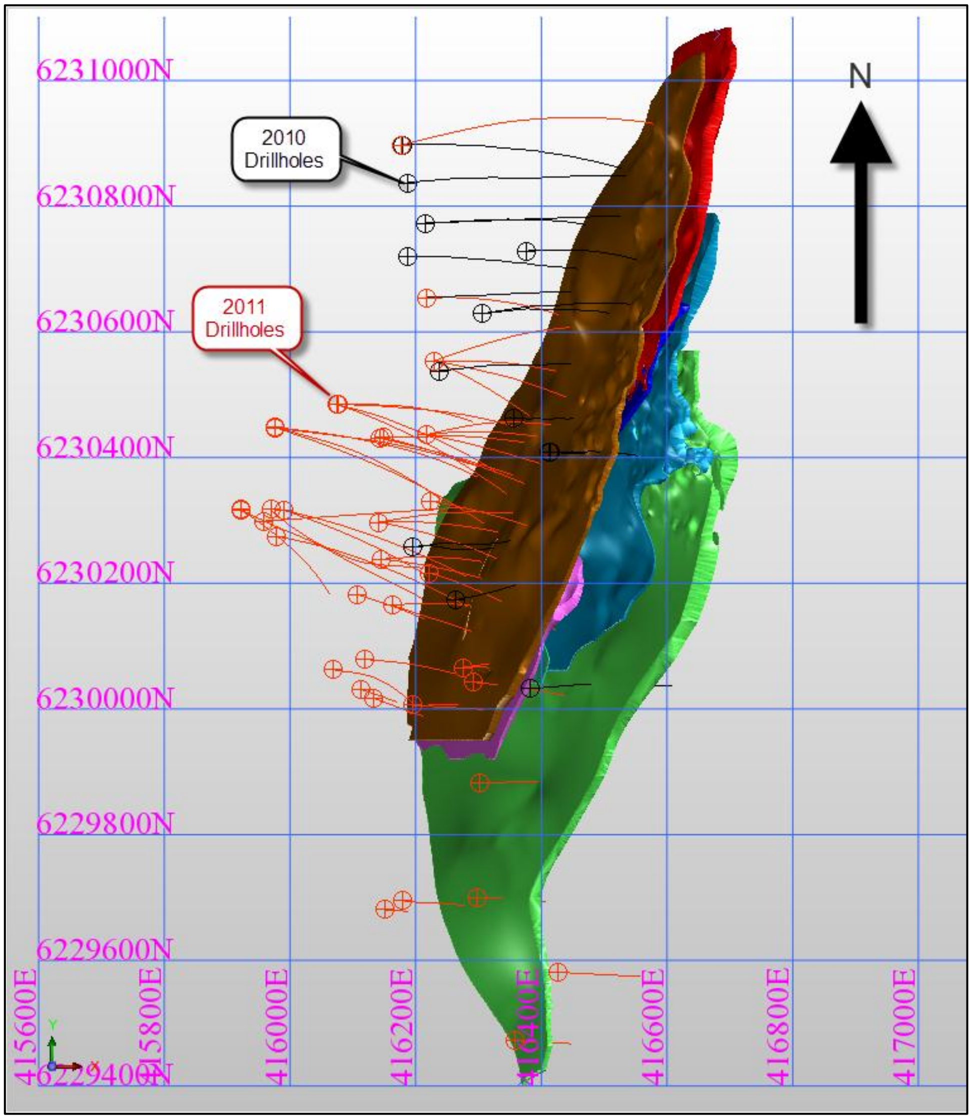

Figure 9.1: Castle Resources Inc. 2010 and 2011 Drillholes (100m grid)

10 Sample Preparation, Analyses, and Security

All sampling utilized in preparation of this technical report is based upon diamond drill core sampling. No RC drilling, trenching or underground channel sampling has been completed.

10.1 Historical Sampling

There are no records of historical sampling procedures conducted at the Granduc Project by previous project operators between 1930 and 1984. It is inferred by the bulk of the historical data that an in-house mine assay laboratory completed most assays. Although the current database largely contains only copper assays, there is an indication that assaying for zinc, lead, gold and silver were completed from time to time. The exact procedures and methods used are not known.

Review of historic drill core stored on site and at the Stewart facility, indicates core was typically split lengthwise in half, with one half sent for assay and the other half replaced in the core box for archive. The majority of samples are 1.5 metres in length or less. Analysis of the sample locations indicate that only material containing visible sulphide minerals were sampled.

A selection of historic specific gravity analyses were provided by CRI in a binder compiled during the 1980's. A subset of samples was used by SRK in the current density estimation. The exact methods used for these analyses are also unknown.

10.2 CRI Sample Preparation and Analyses

For samples taken by CRI during the 2010 and 2011 programs, all aspects of the sampling, handling and dispatching to the assay laboratory was conducted under the supervision of qualified geologists, under the supervision of Brad Leonard, P.Geo, and Exploration Manager for CRI. SRK has no reason to believe that data tampering has occurred on this project.

Prior to sampling, all core was photographed and logged for geological, structural and geotechnical features.

Core assay samples were collected from half core either cut or split lengthwise with a diamond saw. Core was typically sampled at 1 m intervals in well mineralized zones and at 2 m in weakly mineralized intervals. All rock types were sampled where visual mineralization could be identified. Sampling intervals were marked by a geologist and core was typically sampled continuously across the sulphide zones and generally included shoulder samples either side of a mineralized zone. Care was taken to split the core perpendicular to the sulphide mineralization. One half was used for assaying and the other half replaced in the core box.

All samples submitted for assaying were sealed in individual plastic bags on site and shipped in sealed sacks by helicopter and truck to the Eco Tech / ALS in Stewart BC, Canada, which is located only 40 km from the site. Pulps were created in Stewart and then shipped to Kamloops or Vancouver for analysis. All sample pulps and rejects are currently stored at a secure storage location in Stewart BC.

CRI used one primary laboratory, Eco Tech, for preparing and assaying all core samples collected on the Granduc Project. However, during the 2011 program, Eco Tech was purchased by the ALS Group ("ALS"), a large worldwide laboratory. ALS continued to operate the Stewart based preparation facility in a similar fashion to Eco Tech. However, pulp analysis moved from the Eco Tech Kamloops analytical facility to the Vancouver based ALS facility during the program.

The Eco Tech Laboratory is part of the Stewart Group, a global assay group and now part of ALS. The geochemical and assay division participates in round robin evaluations run by Geostats and CANMET. Eco Tech is registered for ISO 9001:2008 by KIWA International (TGA-ZM-13-96-00) for the “provision of assay, geochemical and environmental analytical services”. The laboratory operates an extensive quality control/quality assurance program, which covers all stages of the analytical process from sample preparation through to sample digestion and instrumental finish and reporting. All work is supervised by a BC certified assayer.

ALS Minerals is the leading full-service provider of analytical geochemistry services for the global mining industry. With over 60 laboratories located in key mining districts on six continents, ALS Minerals provides unparalleled global coverage for a mobile industry that seeks consistent reliability and quality in the analytical work that is so vital to success. At Eco Tech / ALS, core samples were prepared using industry standard preparation procedures. After reception, samples were organized into batches and weighed. The entire sample was then crushed, split and pulverized as follows; fine crush entire sample to >70 percent passing two millimetres (-10 mesh), split off 250 gram (“g”) subsample and pulverize split to >95 percent passing -140 mesh screen.

All core samples submitted to Eco Tech / ALS were assayed for: gold using a fire assay procedure on a thirty grams sub-sample with atomic absorption spectroscopy finish; and for a suite of 33 elements using a four-acid digestion and ICP-Atomic Emission Spectroscopy (“AES”) on a 0.5 g sub-sample. High grade and over-limit analyses were analyzed using the same four-acid digestions with either an AAS or AES finish. The Eco Tech lower detection limits (“LDL”) are summarized in Table 10.1.

Acme Labs (“Acme”) was used for umpire pulp duplicate analysis. The analysis techniques selected for the duplicate analyses are similar to those used by Eco Tech and ALS. Acme is ISO 9001:2008 accredited for geochemical analysis.

Table 10.1: Eco Tech & ALS Assay Detection Limits

MULTI-ELEMENT ICP-AES ANALYSIS					
Element	**Unit**	**LDL**	**Element**	**Unit**	**LDL**
Ag	ppm	0.5	**Mn**	ppm	5
Al *	%	0.01	**Mo**	ppm	1
As	ppm	5	**Na ***	%	0.01
Ba *	ppm	2	**Ni**	ppm	1
Be *	ppm	1	**P**	%	0.001
Bi	ppm	5	**Pb**	ppm	3
Ca *	%	0.01	**S ***	%	0.01
Cd	ppm	1	**Sb**	ppm	5
Co	ppm	1	**Sn ***	ppm	5
Cr *	ppm	2	**Sr ***	ppm	2
Cu	ppm	2	**Ti ***	ppm	10
Fe *	%	0.01	**U**	ppm	5
Hg	ppm	5	**V**	ppm	2
K *	%	0.01	**W ***	ppm	5
La *	ppm	2	**Y ***	ppm	1
Li *	ppm	2	**Zn**	ppm	2
Mg *	%	0.01			
Au	ppb	30	Fire Assay (Au2-30)		

10.3 Specific Gravity Data

During the 2010 drill program, specific gravity (“SG”) measurements were not collected. However, in later 2010 and throughout 2011, CRI completed SG measurements on newly acquired and historic drill core.

SG measurements were completed both in-house and by external laboratories. In both cases, SG was measured through differential weight of 10-20 cm samples within air and water. The laboratory measurements were made with wax-sealed samples; however, the in-house measurements were not sealed in wax. SRK does not expect that porosity within the Granduc drill core to be significant, therefore, the waxed samples are not likely to be any more accurate than the un-waxed samples.

Historic SG data was also captured from production data captured from 1980’s era assay binder. No direct verification of these historic records could be completed; however, the specific gravity data delivered by the laboratory were checked against specific gravity measurements from the historic records. The datasets showed a degree of high correlation and nearly identical average values within each domain.

10.4 Quality Assurance and Quality Control Programs

Quality control measures are typically set in place to ensure the reliability and trustworthiness of exploration data. These measures include written field procedures and independent verifications of aspects such as drilling, surveying, sampling and assaying, data management and database integrity. Appropriate documentation of quality control measures and regular analysis of quality control data are important as a safeguard for project data and form the basis for the quality assurance program implemented during exploration.

Analytical control measures typically involve internal and external laboratory control measures implemented to monitor the precision and accuracy of the sampling, preparation and assaying. They are also important to prevent sample mix-up and to monitor the voluntary or inadvertent contamination of samples. Assaying protocols typically involve regular duplicate and replicate assays and insertion of quality control samples to monitor the reliability of assaying results throughout the sampling and assaying process. Check assaying is typically performed as an additional reliability test of assaying results. It typically involves re-assaying a set number of sample rejects and pulps at a secondary umpire laboratory.

SRK cannot comment on the QC measures used by previous project operators, only on the work completed by CRI.

The exploration works conducted by CRI was carried out using quality assurance and quality control ("QA/QC") programs generally meeting industry best practices. All aspects of the exploration data acquisition and management including mapping, surveying, drilling, sampling, sample security, and assaying and database management were conducted under the supervision of appropriately qualified geologists. This included simple steps such as procedures for core handling and sampling, pre-printed sample tags as well as an analytical QA/QC program

The analytical QC data for the Granduc project include both internal and external quality control measures. Eco Tech implemented internal laboratory measures consisting of inserting quality control samples (blanks and certified reference materials and duplicate pulp) within each batch of samples submitted for assaying.

CRI also implemented external analytical quality control measures. According to CRI's procedures;

This included inserting QC samples (blanks and certified reference standards) with each batch of core drilling samples. CRI inserted blanks at a frequency of one in 20 samples and standards at a frequency of one in every 35 samples. CRI routinely inserted duplicate samples of quartered core with each batch at a frequency of one duplicate every 50 samples. Pulp duplicates were completed at a frequency of one duplicate for every 50 samples, with the duplicate sent to an umpire laboratory Acme for similar analysis.

Blank material is locally derived quartzite material, which is relatively devoid of copper, gold and silver mineralization. The reference standard material used by CRI was a combination of certified reference standards and non-certified standards. In the future, SRK recommends using only certified reference standards.

In the opinion of SRK, the exploration data from the Granduc project was acquired by CRI using adequate quality control procedures that generally meet industry best practices for a drilling stage exploration property.

10.5 SRK Comments

In the opinion of SRK the sampling preparation, security and analytical procedures used by CRI are consistent with generally accepted industry best practices and are therefore adequate.

11 Data Verification

11.1 Verification by Castle Resources Inc.

CRI derived the current historical dataset from the previous property owner, Bell Copper and their representatives, Cambria Geosciences. These groups had completed a large amount of analysis and compilation of historic data. CRI completed some verification of this data, largely by comparing data to scanned historic sections and plans followed by comparison of the data, to the original drill logs when the data in the database was in conflict with the sections and plans. The main thrust of CRI's work was to capture any missing drill holes from the sections and plans located in areas not mined out and identified by Newmont and Esso as mining Block 3 and Block 4. Several holes were added to the database in this way.

CRI has future plans of capturing all geological data from the original drill logs, but this has not yet been completed.

11.2 Verification by SRK

11.2.1 Site Visit

In accordance with NI 43-101 guidelines, Marek Nowak from SRK visited the Granduc Project between August 23 and 26, 2010, while active drilling was ongoing. Between May 28 and June 1 and again between July 25 and July 28 2011, Michael D. Johnson of SRK visited the property while active exploration drilling was underway The purpose of the site visits was to inspect the property, witness the extent of the exploration work carried out on the property and assess quality control programs and their implementation.

During the site visits, SRK examined drill core from several drill holes (GD10-01 and GD10-02 in 2010; many holes in 2011). Considering that the Granduc Mine was a well-known producer and copper mineralization is visible in the drillcore, no samples were taken to ascertain presence of copper mineralization. SRK also examined several collar locations in support of quality control checks. The differences between CRI and SRK measured coordinates were within accuracy of the receivers.

While on-site and off-site in the company’s Stewart office, SRK interviewed project management and project personnel regarding the exploration strategy, field and sampling procedures used by CRI. SRK was given full access to project data.

11.2.2 Database Verifications

Historical Data

SRK entered more than 5,000 historical data into Excel from original mine assays report binder, dating back to early 1980s. The binder data were compared with current database:

Collar Coordinates

A total of 424 collar coordinates within the resource domains have been compared against drill hole log master file coordinates. Differences were found for 41 drill holes. Most of them were associated with switching coordinates from northing to easting or from easting to northing in the current database. The differences were checked, and it was decided that the database coordinates fit the overall trends of the assays better.

Downhole Survey

A total of 1,115 survey records from 521 drill holes within the resource area have been compared against a drill hole log master file. This represents roughly 50% of all survey data within the resource area. A total of 89 records with large differences between the logs and the database (more than 10° difference in azimuth and dip) were further compared with drill hole locations in 3D and reviewed for best fit to mineralized intersections. The comparison indicated that the database surveys fit quite well with locations of mineralized zones. Four drillhole azimuths and dips were changed based on this analysis as well as comparing the overall trend of the mineralization.

Assays

Part of the difficulty of comparing the original assays with the assays in the database was lack of sample-ids in the current database. Therefore, only assays from drill holes with identical number of sample intervals in the current database with number of assays in the binder were used. The comparison was made under the assumption that increasing sample-ids in the binder are linked to increasing sample intervals in the database.

More than 2,200 assay pairs from 85 drill holes within the resource area were compared. In almost 13% of the data some differences were found. Only in one drill hole average assay grades were significantly different (0.9% in assay database as opposed to 0.79% from the binder). The inability to compare directly on sample numbers is most probably to be blamed on this relatively large proportion of assays different from the original assays. Therefore, SRK concluded that, based on this specific comparison, the current database is a proper reflection of the assay grades documented in historical source files.

CRI scanned large number of the original historical logs. SRK entered a portion of those logs from drill holes located within the resource area into Excel. Those data were compared with current database:

Collar Coordinates

A total of 126 drillhole data with collar coordinates; downhole survey and assay values were entered. From these, it was possible to compare 105 drill holes with current database. In 18 drill holes some differences were noted. In a few cases, the differences were associated with switched coordinates. After the review with drillhole locations in 3D, the database coordinates were deemed to correctly represent actual collar locations.

Downhole Survey

A total of 184 downhole survey records from historical logs were compared with the current database. Only the dip data were available for all of them from the logs. Out of 184 pairs, 30 pairs had dips which differed by more than 3°.

Assays

A total of 3,832 assays from the logs were compared with the database assays. In close to 5% of the assays, some differences were found with the current database.

CRI re-sampled and re-logged some historical core from nine drill holes. In addition, Bell Copper sampled sporadically from 22 historical drill holes. Although most of the samples were not taken along identical intervals, 561 of them were found within the limits of historical sample intervals in the current database. Of these, only approx 50% have identical intervals to original samples. Figure 11.1 shows a comparison between Cu assays from the original and recent duplicate samples. On average, the assays are quite similar with historical assays generally higher at lower concentrations and lower at higher concentrations.

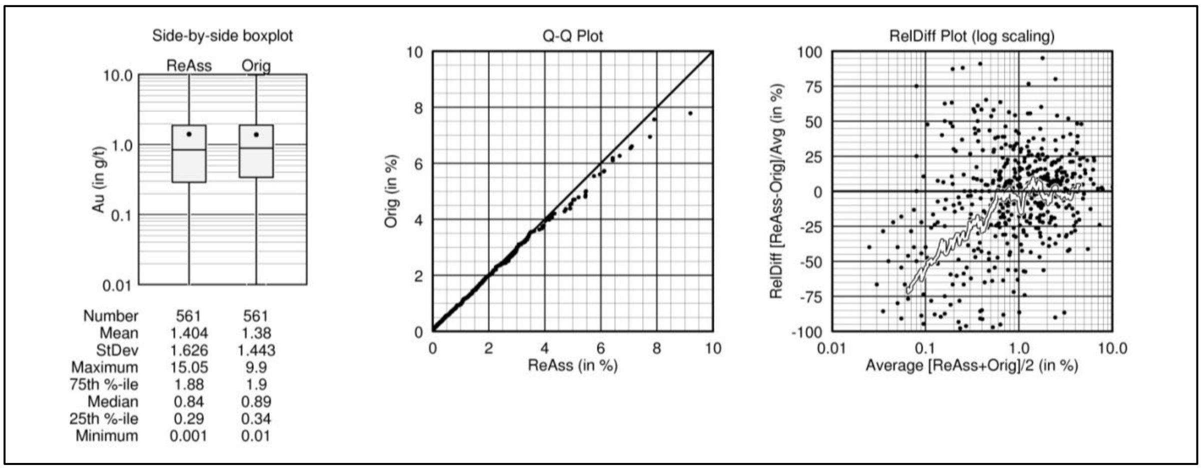

Figure 11.1: Comparison Between Cu Assays from Original and Recent Duplicate Samples

Historical versus New Assays

Recent drilling by Bell Copper in 2004-2006 and CRI in 2010 and 2011 was geared towards expanding known mineralized zones and validating historical information. For validation, CRI drilled seven holes into the areas penetrated by ten historical holes. To compare the historical assays with new assays, SRK created nearest neighbour block model. Block grades were estimated in the mineralized zones separately from historical and new assays with a search ellipsoid of 10 m x 10 m x 10 m. Only the blocks estimated from both datasets were compared. Figure 13.2 shows a Q-Q plot of the block estimates from the historical and new data. Note that the historical data are on average higher than the new data. Based on a t-test, the difference is not statistically significant; therefore SRK concluded that new drilling confirmed presence of Cu mineralization similar to historical assays.

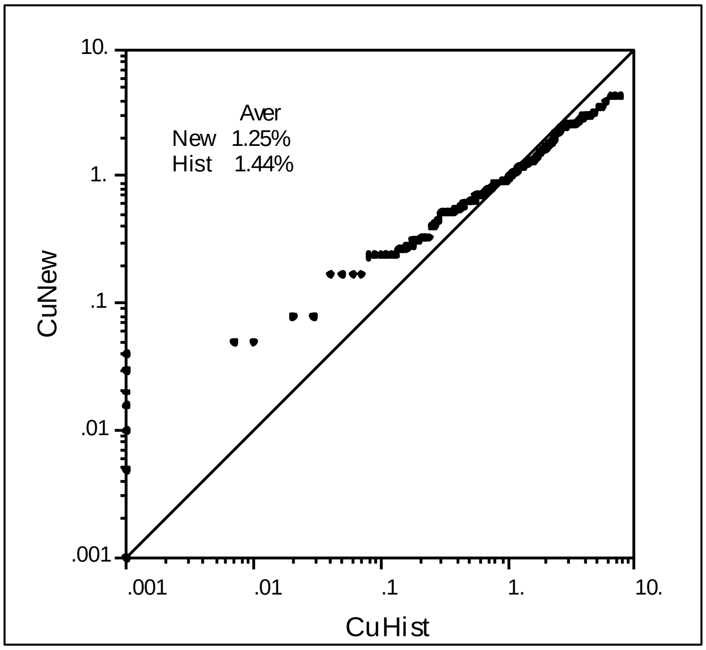

Figure 11.2: Q-Q Plot of Historical and Modern Assay Data at Close Vicinity to Each Other

Further re-sampling of historic drillcore was completed by CRI in 2011 which provided another opportunity to compare modern and historic assay data. In this case, more than 3700 intervals of historic core were re-sampled and assayed according to CRI's procedures. Approximately 1469 of these intervals were collected with identical "from" and "to" locations, making the samples true duplicates of the historic data. SRK compared the modern copper assay measurements to the historic results for samples with identical intervals.

Figure 11.3 shows a scatter plot of these samples. The correlation between historic and modern assays is nearly 1:1; however, there is significant scatter which is to be expected with this type of highly variable mineralization. The average of the historic samples is 1.07% Cu while the average of the CRI (modern) samples is 1.11% Cu. SRK believes that these datasets compare very well and this supports the validity of the historic copper analytical results..

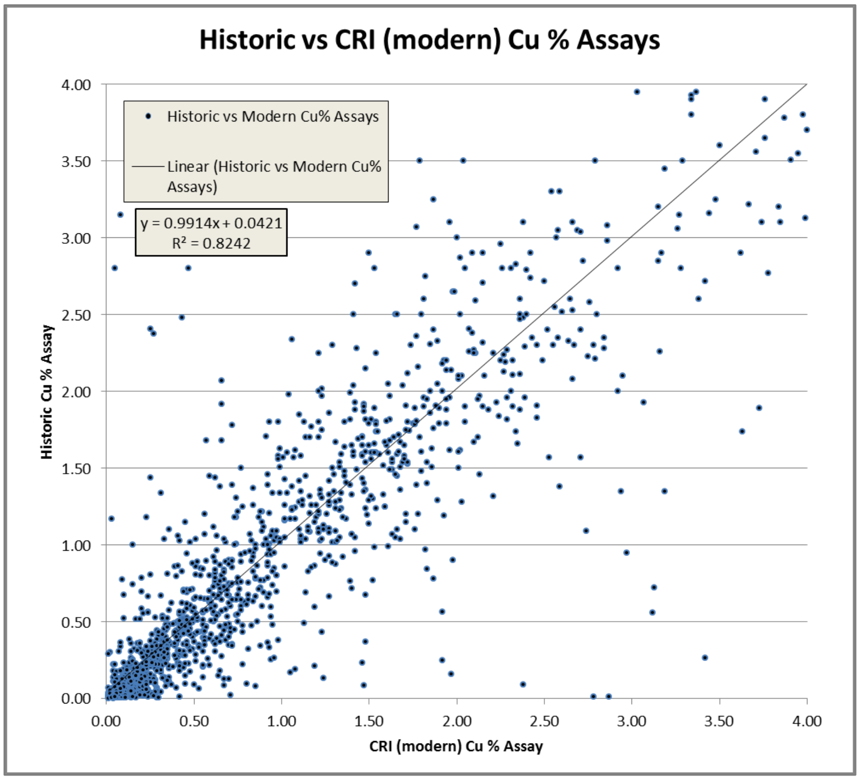

Figure 11.3: Comparison of Historic and Modern Cu Assay Results

2010 and 2011Data Verifications

For 2010 and 2011 CRI drill holes, assay data were verified against laboratory electronic files and field records.

Collar locations were compared to topographic data and, considering very steep terrain, found to match relatively well. The 2010 collar locations were measured with handheld GPS only and this does impose a 4-5 m location uncertainty; however, these holes were re-surveyed in 2011 and the updated coordinates were used in the current analysis and Mineral Resource estimate.

Downhole survey data was reviewed by SRK. The data had been collected with a Flex-it down-hole tool and the data had been affected by external magnetic fields caused by the magnetite bearing rocks. SRK filtered the data to create the most robust survey data possible; however it is recommended that future surveys are completed with a gyroscopic tool.

Sample intervals were compared with geology information in order to validate the mineralization values in terms of geological context. Assay results generally aligned well with visual sulphide occurrences.

All assay data from the program were independently downloaded from Eco Tech or ALS laboratories in order to validate the assay results. All records were compared to the downloaded files and no significant discrepancies were noted.

The drilling records from the 2010 and 2011 exploration data were validated based upon the background records provided by CRI, in conjunction with the site visit and laboratory records provided by Eco Tech and ALS. After review, SRK is of the opinion that the Granduc drilling database is sufficiently reliable for resource estimation.

Specific Gravity Data

SG data was not captured during the 2010 drill program but was captured during the 2011 resampling and drill program. Late in 2010 and again in 2011, CRI completed SG analyses of selected historic drill cores in order to sufficiently quantify the density of the mineralized material at Granduc. All 2011 drill core had SG measurements completed. CRI has not yet completed SG measurements on the 2010 drill cores.

SRK verified the independent laboratory SG measurements against the digital records acquired directly from the laboratory. In-house and laboratory measurements matched very well within each domain.

SRK believes that the SG data captured so far is sufficient for the current Mineral Resource estimate. Nevertheless, SG data will have to be collected from the 2010 drill cores and all new drill holes completed in future exploration programs.

11.2.3 Verification of Analytical Quality Control Data

CRI made available to SRK the assay results for analytical quality control data accumulated on the Granduc project during the 2010 and 2011 drill program as well as those associated with the re-sampling of historic drill core. No analytical quality control data was available for historical samples.

SRK aggregated the assay results for the external quality control samples for further analysis, focussing on assay results for copper only at this time. Sample blanks, and certified reference materials data were summarized on time series plots to highlight any potential failure. Field and umpire pulp duplicate paired assay data were analysed using bias charts and ranked half absolute relative deviation charts.

The analytical quality control data produced by Granduc are summarized in Table 11.1

Table 11.1: Analytical Quality Control Data Produced by CRI (2010 and 2011).

	2010 Core	(%)	2011 Core	(%)
Sample Count	1,906		9,465	
Blanks	108	6%	578	6%
Standards	67	4%	286	3%
STD GD-1			27	
STD GD-3			25	
STD 153a			24	
STD 50c	17		79	
STD 54pa			23	
STD 93	25		50	
STD 95	25		58	
Field Duplicates	48	3%	124	1%
Total QC Samples	**223**	**12%**	**988**	**10%**

CRI aslo utilized more than 160 Umpire duplicates during the 2011 QA/QC program.

The analytical QA/QC sample insertion rates conform to CRI's procedures. As noted in Section 11, SRK would prefer to see a 5% insertion rate for blanks, duplicates, and standards, rates that SRK believes are industry standards.

Performance of Field Blanks

Field blanks are used to monitor contamination introduced during sample preparation and to monitor analytical accuracy of the lab. True blanks should not have any of the elements of interest much higher than the detection levels of the instrument being used. The blanks used in the 2010 and 2011 drill programs consistently returned measurable copper values higher than five times the detection limit, a generally accepted failure threshold for blank samples. This suggests that the material used is not a true copper blank, (rather than persistent contamination at the laboratory).

It appears that three different materials were used as blanks during the 2010 program. Each of the sources was an apparently barren historic drill core of dike material that was visually inspected to be free of veins and sulphide mineralization. However, the blank material appears to have background copper values and each re-sampling of such material seemed to have increased copper levels. This is demonstrated in Figure 11.3. The 2011 blank material was collected from a quartzite near Stewart BC. Figure 11.4 shows the results of the 2011 blanks, which once again are highly variable and return average copper values of 15 ppm Cu, approximately 15 times the detection limit. However, when compared the to the Mineral Resource cut-off of approximately 0.70% Cu (7000 ppm), the blank values are very low.

Elevated copper values in blank samples are not uncommon problems in SRK's experience. In this case, the values recovered in the blanks are orders of magnitude lower than typical Granduc copper grades.

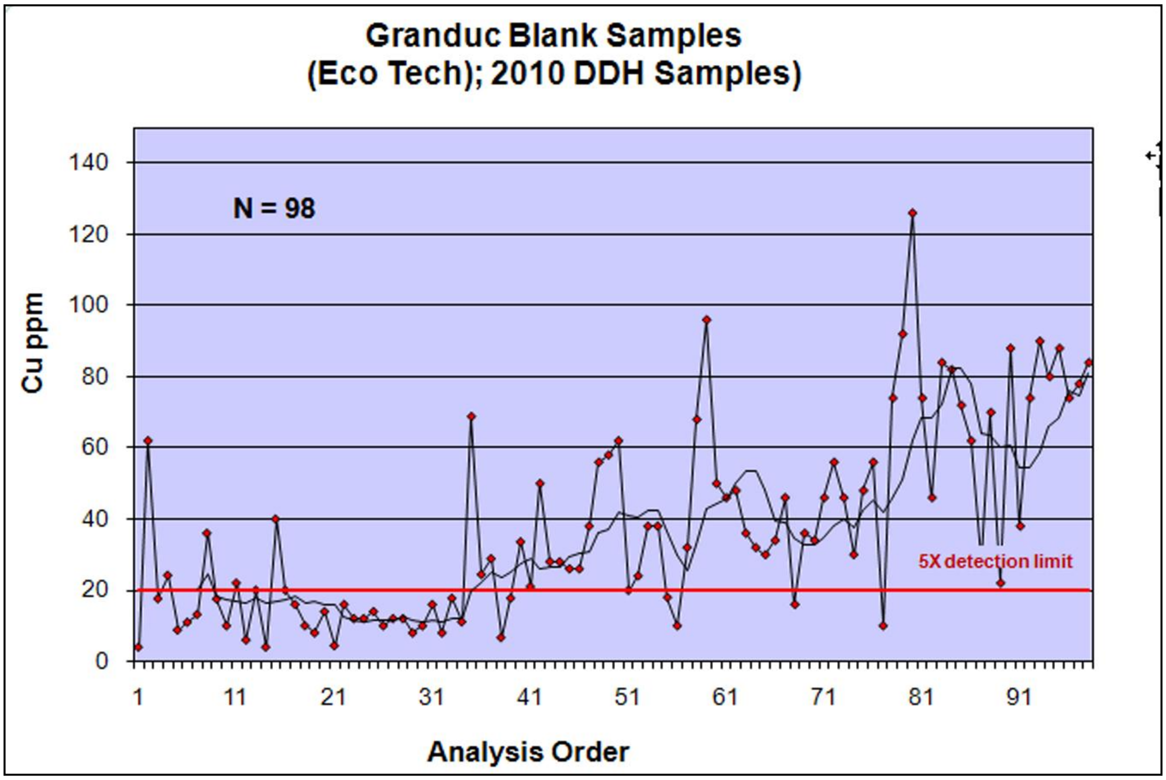

Figure 11.4: Granduc 2010 Assay Blank Performance

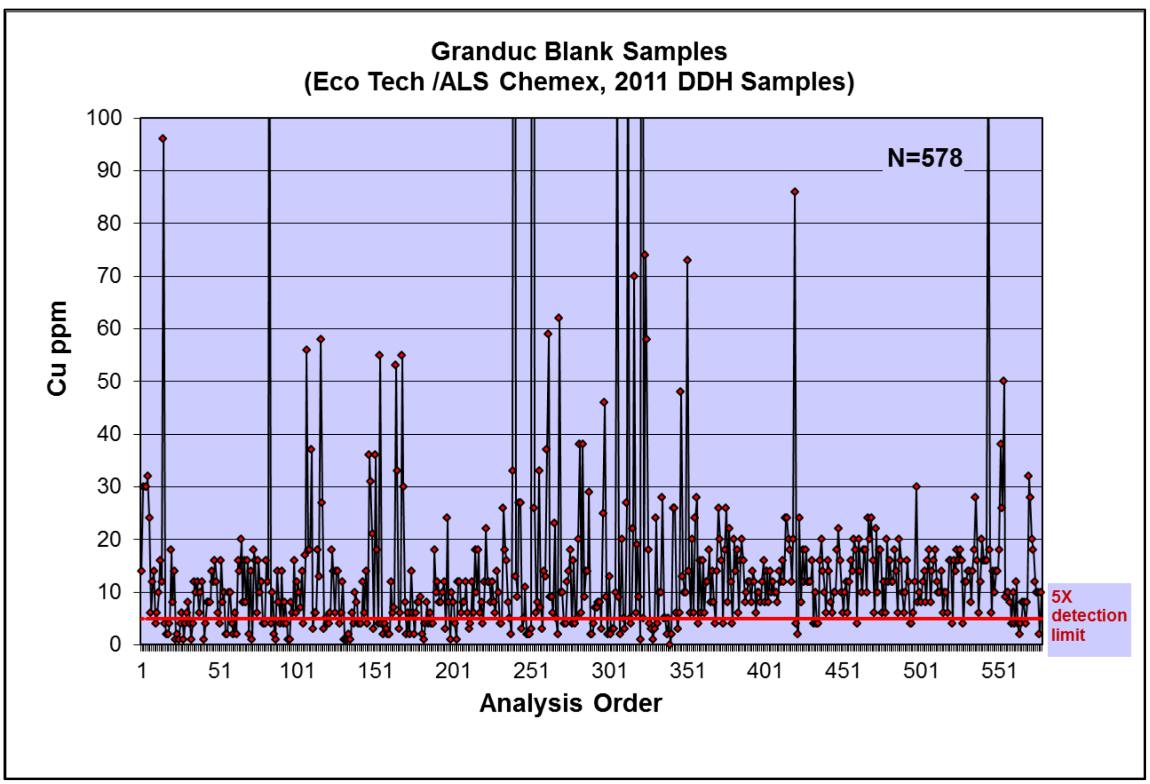

Figure 11.5: Granduc 2011 Assay Blank Performance

In the 2010 data, there is some indication that the lab may be contaminating between higher grade samples and the next sample, likely in sample preparation. Figure 11.6 highlights this issue by comparing the QA/QC blank to the previous sample value. Indications are that if contamination was a problem, it was sporadic and had relatively small effect of approximately 25 to 50 ppm (0.005 %) copper and is not considered to have a material effect at this time.

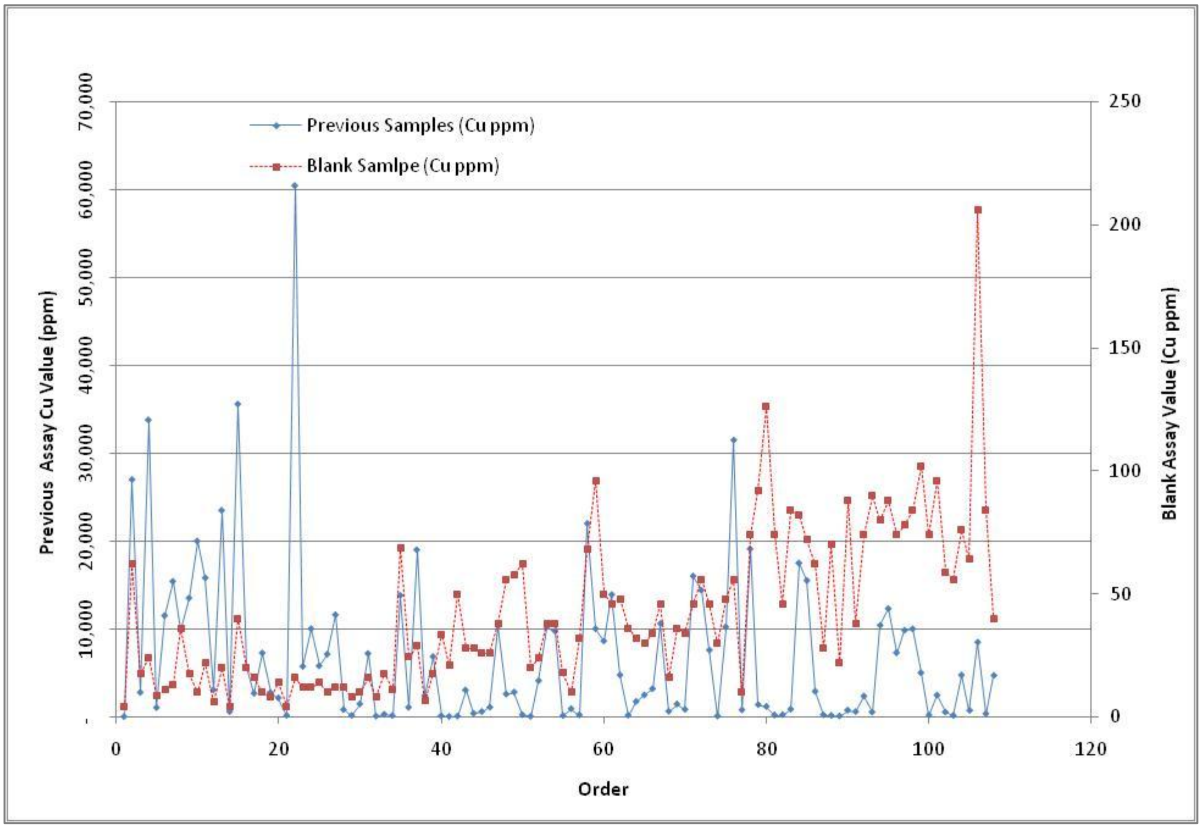

Figure 11.6: 2010 Blank Sample Values Compared to Values of Previous Samples

In 2011, the Au and Ag values of blanks were also reviewed. The blank material appears to be a very good Au and Ag blank, returning below detection limit values in almost every case.

Overall, SRK believes the blank performance for Cu, Au and Ag to be sufficient for this stage of the analysis.

Performance of Reference Material

Reference material control samples provide a means to monitor the precision and accuracy of the laboratory assay deliveries.

In 2010, three reference materials were utilized, with expected grades of 0.58%, 2.55% and 0.75% copper. In 2011, seven reference materials were utilized. These materials had a Cu grade range of 0.71% to 3.38%, covering a wide spectrum of grades which are common at Granduc; including reference material relatively near the average grade of the mineralization.

The performance of the 2010 control samples used by CRI is excellent, with no assay results falling outside two standard deviations from the mean and showing no evidence of bias. Figure 11.7 shows an example of the reference material relative to expectation and two standard deviation variations.

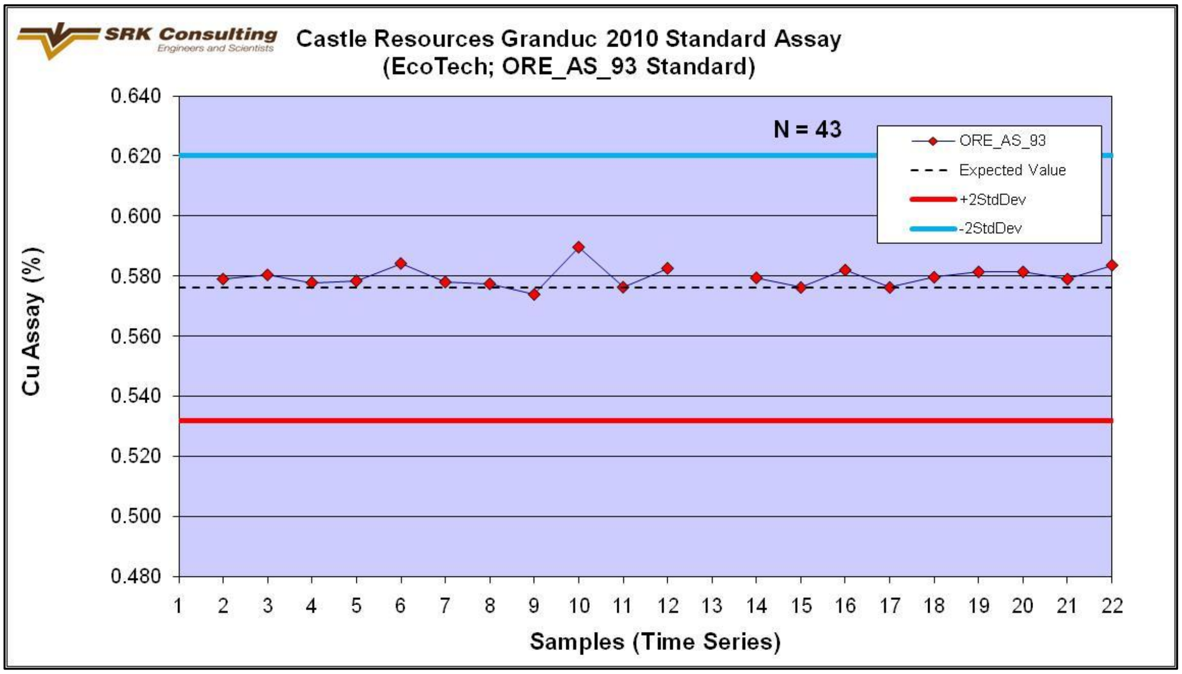

Figure 11.7: Granduc 2010 Certified Reference Performance

For 2011 reference standard results, approximately 13% of all standard results fall outside of two standard deviations, a common threshold for failure; however, most fall within three standard deviations (a less conservative threshold). The highest failure rate was with a non-certified (GD-1) standard, which may have poor homogeneity or poorly defined expected values, which accounted for 52% of the failures. To alleviate such problems, only certified reference material should be used in future programs. Sample batches with reference standards outside two standard deviations, should be considered for re-analysis.

Figure 11.8 shows the copper 2011 reference standard results for Standard 93 while Figure 11.9 shows the copper results of reference standard GD-1 in 2011.

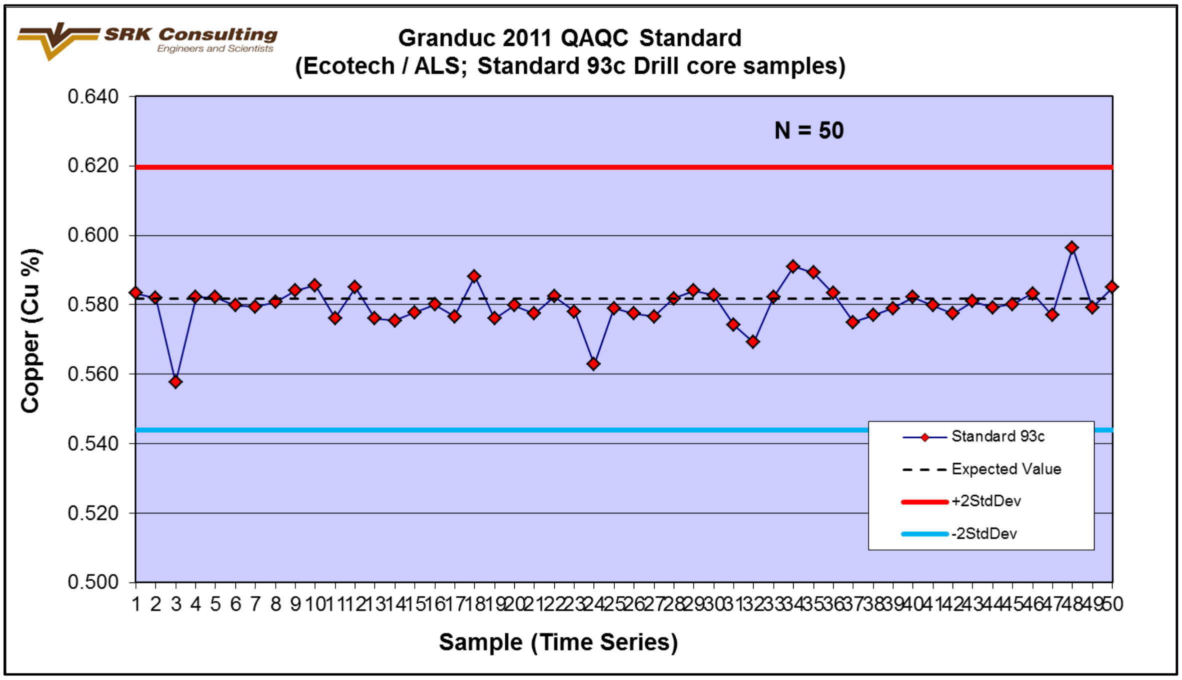

Figure 11.8: 2011 Standard 93c Copper Results

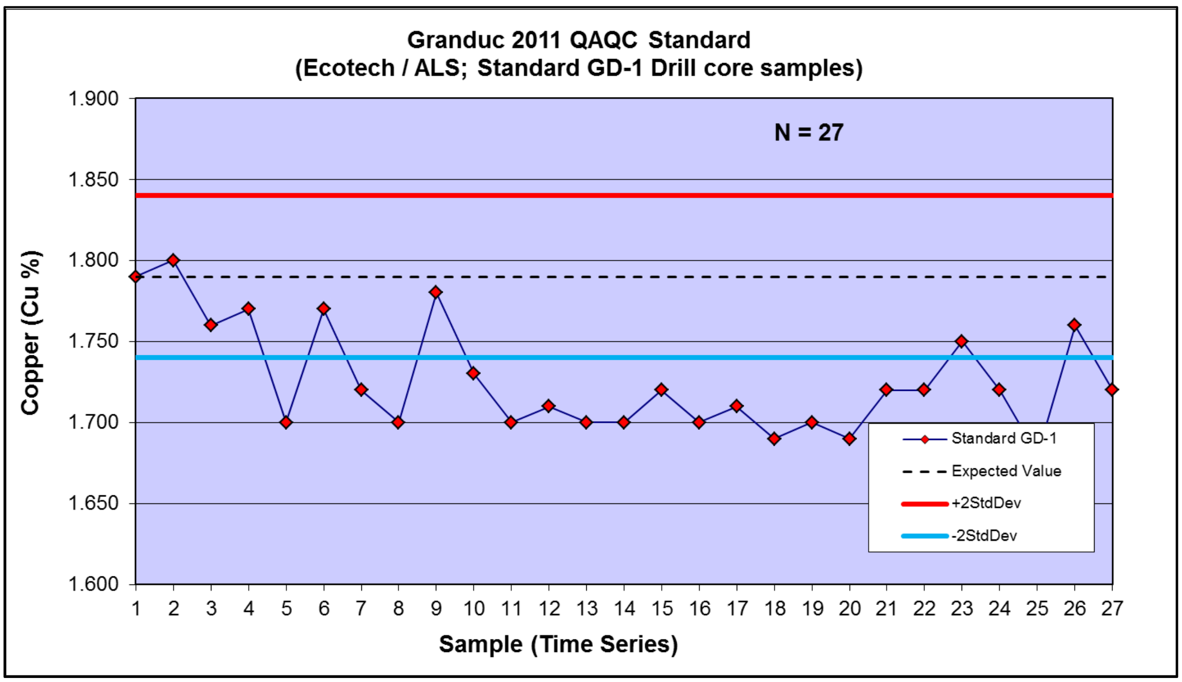

Figure 11.9: 2011 Standard GD-1 Copper Results

The copper results for STD 93 show no evidence of bias and all results fall within tolerances. As mentioned above, STD GD-1 results are much poorer, with 70% of the results falling outside tolerances. SRK believes that this is probably a poorly defined standard and not an issue with the laboratory.

Where the reference materials were quantified for gold and silver, the performance of the standards was very good with very few failures. Figure 11.10 shows the reference material performance for standard STD 95, which has no bias and no values outside of two standard deviations.

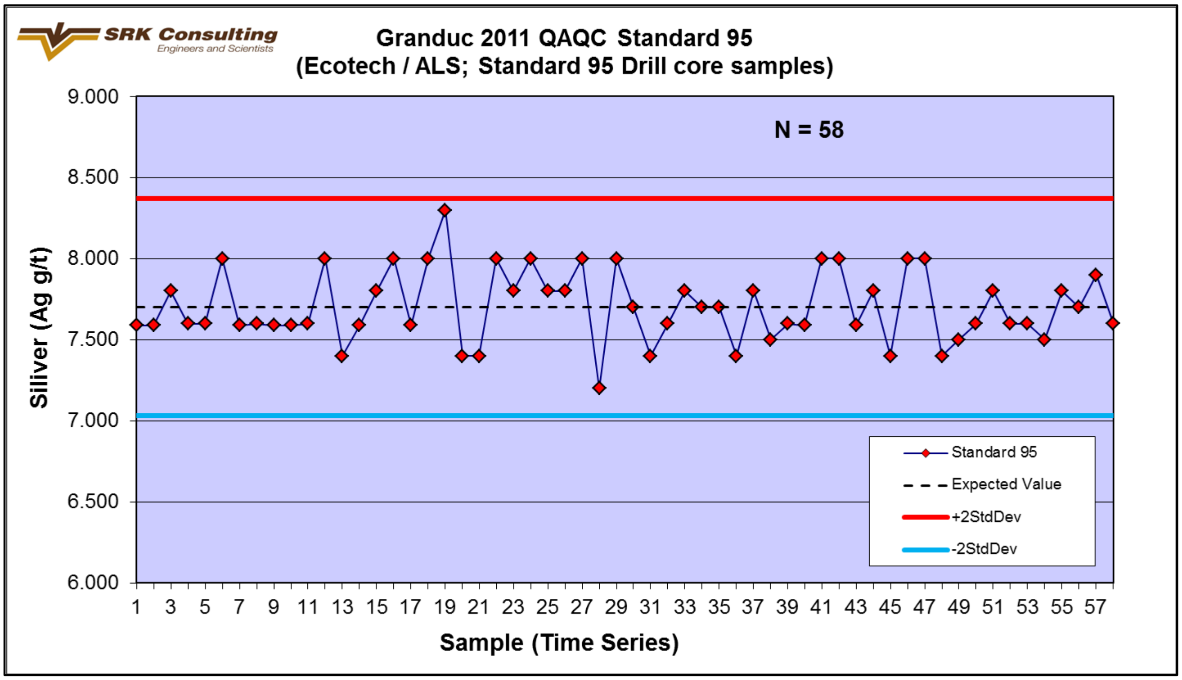

Figure 11.10: 2011 Silver Reference Standard Results for STD 95

Overall, SRK finds the performance of reference standards to be adequate; however, CRI should improve their monitoring of reference standards and request re-analysis where sample standard results fall outside of the two standard deviations of expectation.

Performance of Duplicates

Both field and umpire or “check” duplicates were collected by CRI. Field duplicate samples are typically collected to monitor sample preparation, as well as homogeneity of the sample submitted for assaying. Umpire duplicates are pulp duplicates, and used as check assays on the accuracy of the primary laboratory.

2010 Duplicate Performance

Review of field duplicate assay paired data show no significant bias between the original and duplicate assay value at either high or low copper values. Although the pairs show relatively large scatter, this is not unexpected in this type of environment where heterogeneity in samples would be common.

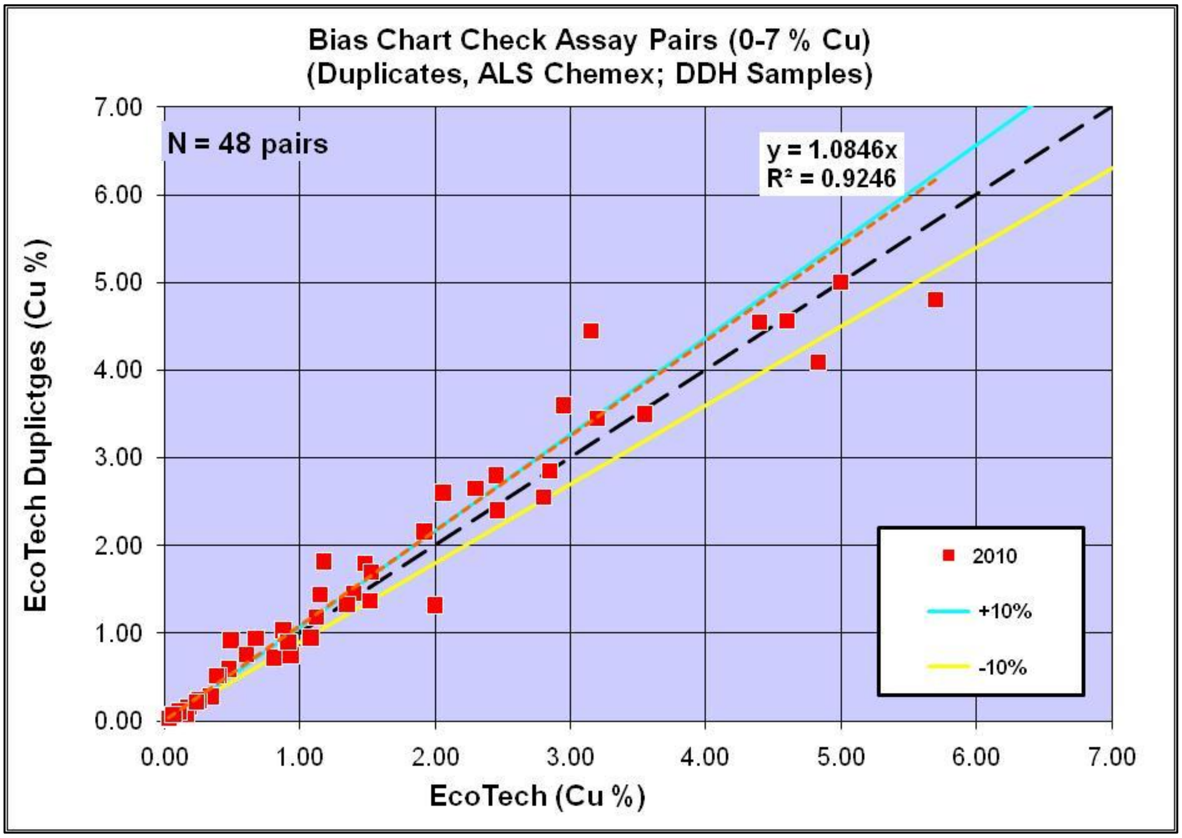

Figure 11.11: Comparison of 2010 Original versus Duplicate Field Assays

Although there is no bias, the umpire pulp duplicates show a higher degree of variability (see Figure 13.6) than would be expected for pulp duplicates. Figure 13.7, a ranked half absolute deviation plot for the umpire duplicates, shows that only 72% of the duplicate pairs deviate by less than 10%, which is similar to the value derived from the field duplicates. For pulp duplicates, less deviation would be expected.

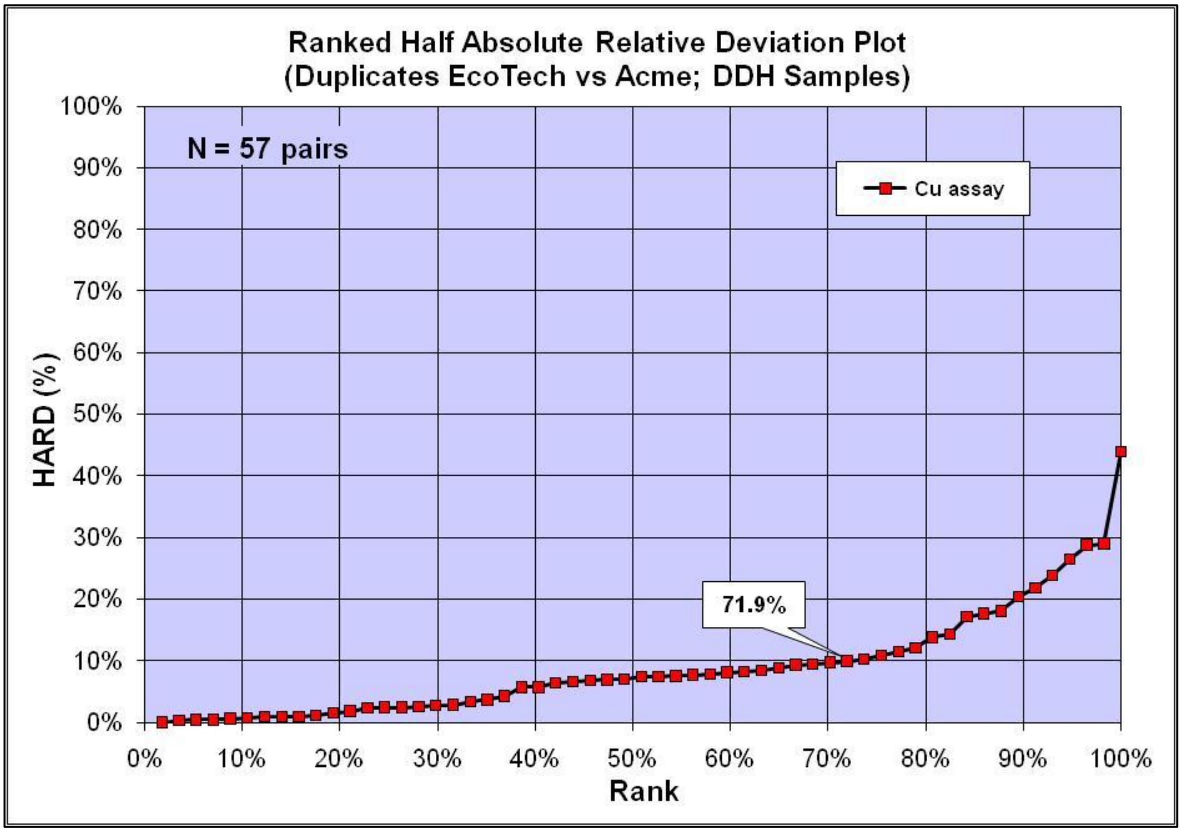

Figure 11.12: 2010 Ranked Relative Differences Between the Original and Pulp Duplicates

2011 Duplicate Performance

Review of field duplicate assay paired data from 2011 show no significant bias between the original and duplicate assay value at either high or low copper values. Once again, the pairs show relatively large scatter. Figure 11.13 shows a Q-Q plot of the paired field duplicates. Approximately 60% of the duplicates are within 10% of each other, which is in line with the 2010 results and expectations.

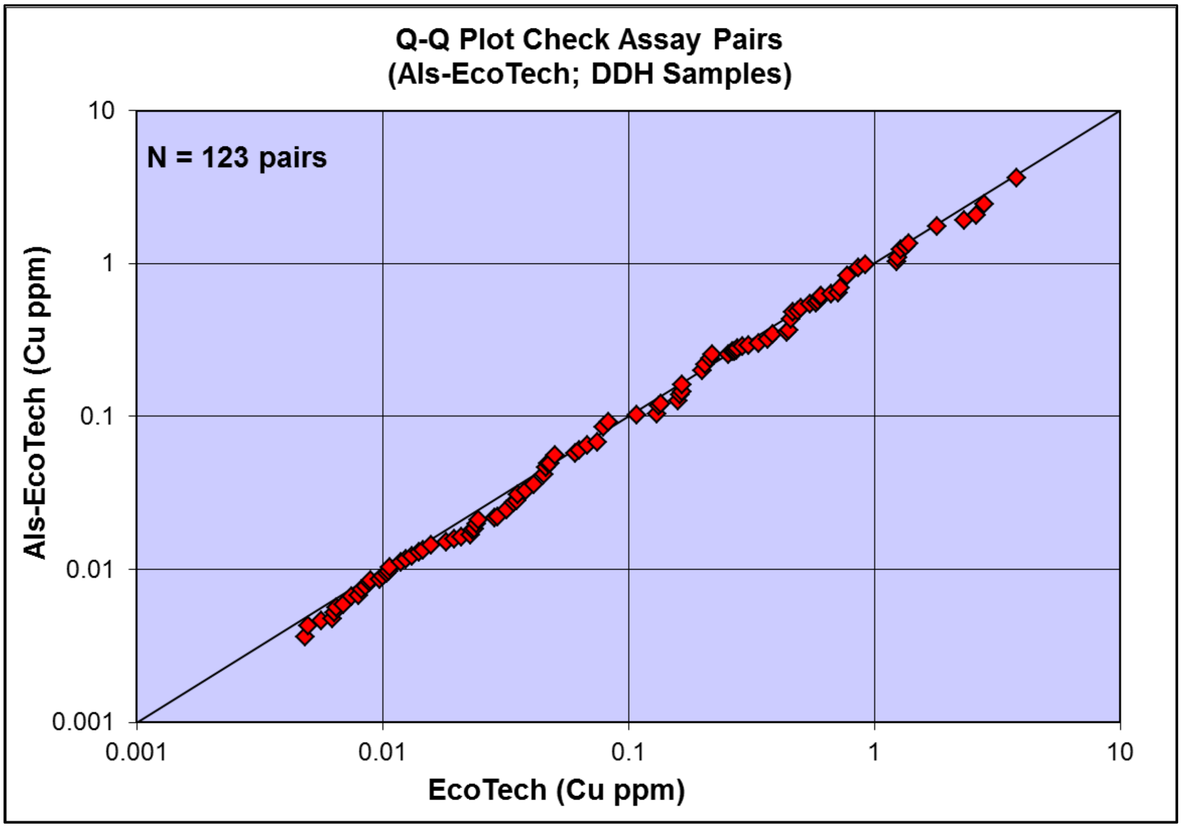

Figure 11.13: Q-Q Plot Comparing 2011 Field Duplicates

Umpire duplicate copper values show only a slightly better correlation than field duplicates, which is unusual. 72% of the 2011 umpire duplicates are within 10% of their pair. This is shown in Figure 11.14. There is a slightly low bias in the umpire duplicates compared to the original data.

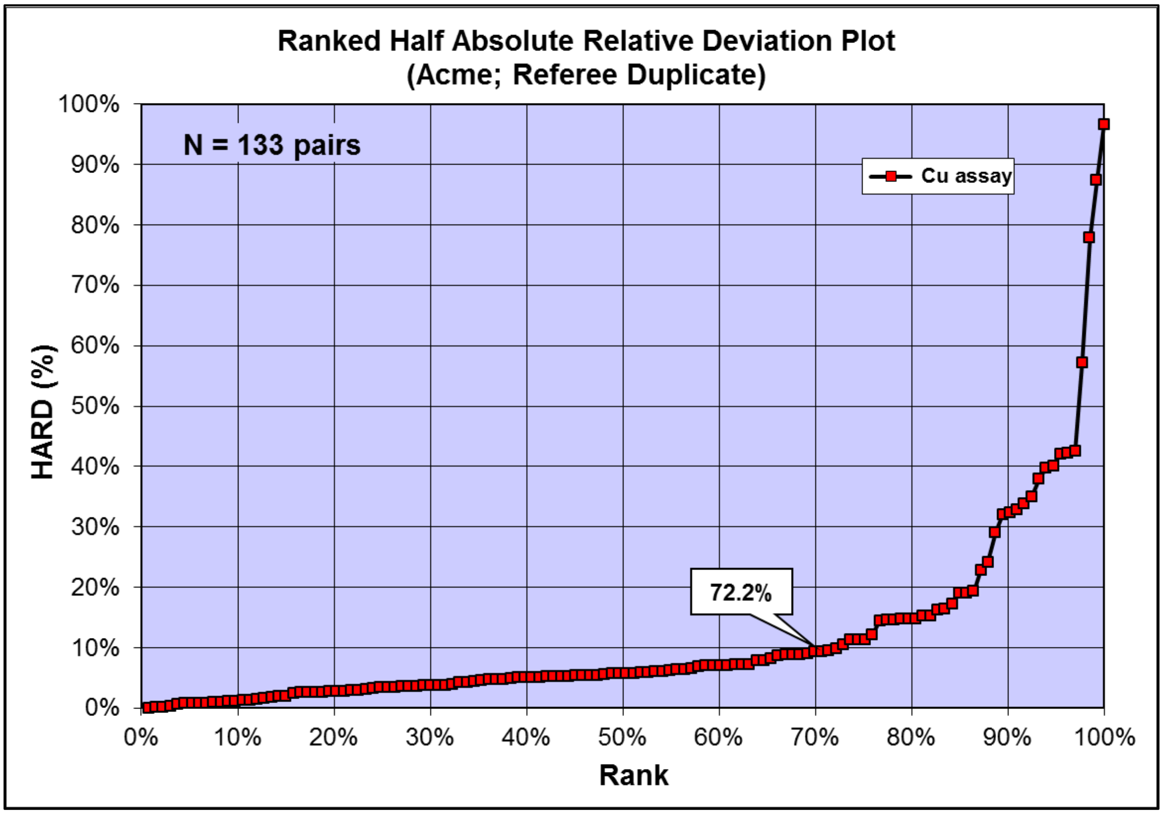

Figure 11.14: Ranked Half Absolute Relative Deviation Plot, 2011 Umpire Samples

11.3 SRK Comments

In general, the analytical quality control data examined by SRK suggest that copper grades can be reasonably reproduced, suggesting that the assay results reported by the primary assay laboratory are generally reliable for the purpose of resource estimation. Variability in the field duplicates is supported by the variography analysis which does suggest a relatively high nugget.

In the opinion of SRK, the analytical results delivered by Eco Tech and ALS are sufficiently reliable for the purpose of resource estimation.

12 Mineral Processing and Metallurgical Testing

Prior to 2011, CRI had not completed any metallurgical testing. In the 2010 technical report, SRK utilized historical data and reasonable assumptions to determine that the mineralization quantified in the current Mineral Resource analysis, has reasonable prospects of being processed with industry standard techniques and associated costs. In 2011, CRI completed preliminary metallurgical test work that has been incorporated into the Mineral Resource cut-off calculations. Nevertheless, SRK believes that significant work will have to be undertaken prior to any higher confidence economic analysis.

The Granduc deposit was mined commercially from 1971 to 1984. The material mined during this period is simply material up-dip and adjacent to the material estimated in the Mineral Resource. There is no reason to believe that the remaining Mineral Resource is necessarily different from that processed during mining.

During mining operations, a concentrator facility was constructed at Tide Lake, 17 km east of the deposit. The concentrator was connected to the mine site with the 18 km Tide Tunnel and rail system.

The milling process included crushing to minus 6” size and then further reduction to minus 0.5” product. Grinding was completed using rod and pebble mills. Mill discharges were combined and pumped to the cyclones. Cyclone underflow provided feed to the pebble mills (recirculation) and cyclone overflow fed the floatation circuit.

The floatation circuit consisted of six banks of twelve 60 cubic foot cells and two banks of twelve 120 cubic foot cells for rougher floatation. Rougher floatation concentrates are reground and upgraded by cleaning in twenty-four 60 cubic foot cells in 4 banks.

The re-cleaned concentrate flowed by gravity to thickener facilities. The underflow from the thickener was pumped to a disc filter. The concentrate was dried in an 80 inch by 40 foot Lougheed Haggarty dryer. The dried product was then transferred to a 7000 ton storage area and loaded into concentrate haulage trucks for transport to tidal shipping at Stewart, BC.

All processing facilities were removed and reclaimed from the site upon closure in 1984.

In 1982, Esso Minerals reviewed the cost effectiveness of recovering magnetite as a commercial product. SRK has not reviewed this work.

In 2006 and 2007, Bell Copper commissioned UBC to review pre-concentration methods using magnetic separation. SRK has not significantly reviewed this data at this time.

12.1 2011 CRI Metallurgical Testwork

As part of the ongoing technical analysis at Granduc, CRI prepared a metallurgical test composite that was used for metallurgical testing at G&T Metallurgical Services Ltd. SRK was asked to provide an independent review of the metallurgical program and results.

Discussion

G&T Metallurgical Service Ltd (G&T), a respected commercial metallurgical laboratory, conducted a preliminary metallurgical program on a test composite developed from core intervals from three drill holes in the Main Zone of the Granduc deposit. The objectives of this program were to:

- Conduct preliminary grindability studies to assess SAG and ball mill grinding requirements;
- Complete open circuit flotation tests to determine the metallurgical response to primary grind size, rougher and cleaner flotation pH, collector type and rougher concentrate regrind size;
- Conduct locked-cycle flotation tests under the best test conditions to assess the impact of recirculation of intermediate test products on overall metal recovery and concentrate grade;
- Evaluate the final concentrate for the presence of minor deleterious elements;
- Investigate the potential of producing a magnetic concentrate from the copper flotation tailing; and
- Generate samples of rougher tailing for environmental testing.

Test Composite

The test composite was formulated from mineralized core intervals from three drill holes (GD11-003, GD11-004 and GD11-006) located in the Main Zone. Drill hole GD11-003 represented 65% of the composite and drill hole GD11-006 represented 26% of the composite with only 9% contributed from drill hole GD11-004. Analysis on a head sample showed that the Main Zone test composite contained 1.47% copper, 0.16 g/t gold, and 9 g/t silver. This is in line with the 1.4% average copper grade that is currently being carried for the indicated and inferred resource at Granduc. Based on historical production, 0.2 g/t gold and 15 g/t silver is carried in the resource.

Grindability Studies

SAG Mill Comminution (SMC), Bond ball mill work index and Bond abrasion tests were completed on the test composite. The SMC test is an empirical test that has been developed for small test samples to gain a preliminary measure of the SAG mill grinding requirement. This test resulted in an A*b value of 37.5, classifying this composite as moderately hard with respect to breakage in a SAG mill. A Bond ball mill work index of 11.7 kWh/tonne indicates that the mineralization is relatively soft with respect resistance to ball mill grinding.

Rougher Flotation Studies

Initial rougher flotation studies were conducted to evaluate the primary grind fineness over the range from 80% passing size (“P_{80}”) of 112 microns to a P_{80} of 212 microns. These studies demonstrated that copper recovery was relatively insensitive to grind over the range tested, with copper recoveries into the rougher concentrate ranging from 95-98%. All subsequent tests were conducted at a primary grind of P_{80} 160 microns.

Cleaner Flotation Studies

A series of cleaner flotation studies were conducted to evaluate the effect of regrinding the rougher concentrate to a P_{80} of 32 microns and P_{80} of 18 microns. The results of this work in open circuit cleaner flotation tests indicated that at a regrind P_{80} of 32 microns almost 90% of the copper, 58% of the gold and 92% of the silver could be recovered into a cleaner flotation concentrate containing 25.4% copper, 2.22 g/t gold and 166 g/t silver. At a regrind fineness P_{80} of 18 microns almost 89% of the copper, 87% of the gold and 91% of the silver was recovered into a cleaner flotation concentrate containing 30.3% copper, 2.35 g/t gold and 204 g/t silver.

Locked-Cycle Flotation Studies

Two five-stage locked-cycle tests were conducted under the best conditions determined during this study. The test flowsheet included primary grinding to P_{80} 160 microns followed by copper rougher flotation. The rougher flotation concentrate was reground to P_{80} 18 microns and then upgraded in three stages of cleaner flotation. The second-stage and third-stage cleaner tailings were recycled to the first-stage cleaner flotation. The rougher flotation tailing and the first-stage cleaner tailing were final tailings.

The first locked-cycle test demonstrated that 93% of the copper, 74.9% of the gold and 89.9% of the silver could be recovered into a final copper concentrate containing 29.1% copper, 2.78 g/t gold and 189 g/t silver. The second locked-cycle test demonstrated that 90.4% of the copper, 57.5% of the gold and 81.9% of the silver could be recovered into a final copper concentrate containing 31.8% copper, 2.81 g/t gold and 189 g/t silver. The average of these two tests resulted in average recoveries of almost 92% of the copper, 66% of the gold and 86% of the silver.

It is worth noting that the average of both locked-cycle tests resulted in 5% of the copper, 8% of the silver and 20% of gold reporting the first-stage cleaner tailing. Normally this intermediate product would be recycled back to the head of rougher flotation, or to the primary grinding circuit. On this basis, reported locked-cycle metal recoveries likely understate what could be achievable in a continuous circuit. It is recommended that future locked-cycle testwork include recycling of the first-stage cleaner tailing in order to obtain a better understanding of achievable overall metal recoveries.

Concentrate Quality

A multi-element analysis was conducted on a sub-sample of the final copper concentrate from the first locked-cycle test. A review of these assays indicates that the concentrate is very clean and unlikely to attract any significant smelter penalties.

Iron Recovery Test

A single test was conducted to evaluate the potential of recovering magnetite from the copper rougher flotation tailing using a bench-scale Davis Tube test. This test demonstrated that about 78% of the contained iron could be recovered into a concentrate containing about 57% iron and 1.32% sulfur. Photomicrographs of the iron concentrate showed that pyrrhotite and copper sulfide minerals were imbedded in the magnetite. More work will be required to assess the potential of increasing the iron content reducing the sulfur content of the iron concentrate. This work should likely include regrinding of the iron rougher concentrate followed by bulk sulfide flotation and additional stages of magnetic separation.

Conclusions and Recommendations

The following conclusions and recommendations are made regarding the results of the metallurgical test program conducted by G&T:

- This preliminary test program was conducted on a test composite formulated from just three drill core holes in the Main Zone. The grade of the test composite was similar to the average grade of the resource as currently defined. It is recommended that subsequent testwork be conducted on a variety of test composites designed to evaluate variability in mineralization, lithology and grade.

- The test program conducted by G&T was performed in a competent manner using test procedures and methodologies commonly accepted in the industry. Very good agreement between assay heads and calculated heads confirms the validity of the assay procedures and QA/QC procedures employed by G&T.
- Locked-cycle testing, in which intermediate test products are recycled, is regarded as the best bench-scale test method for evaluating metal recoveries achievable in a continuous processing circuit. The average result of two locked-cycle tests demonstrated that almost 92% of the copper, 66% of the gold and 86% silver was recovered into a final flotation concentrate grading about 30% copper, 2.8 g/t gold and 189 g/t silver.
- A multi-element analysis was conducted on a sub-sample of the final copper concentrate from the first locked-cycle test. A review of these assays indicates that the concentrate is very clean and unlikely to attract any significant smelter penalties
- It is possible that an iron by-product could be produced; however, additional testwork will be required to demonstrate whether a product can be produced that meets the required impurity specifications, particularly for sulfur.

13 Mineral Resource and Mineral Reserve Estimates

13.1 Introduction

To the best of SRK's knowledge, and as earlier described, there are currently no title, legal, taxation, marketing, permitting, socio-economic or other relevant issues that may materially affect the Mineral Resources described in this Technical Report. It is emphasized that SRK's findings are based on reviews of readily available data sources only. Future changes to legislation (mining, taxation, environmental, human resources and related issues) and/or government or local attitudes to foreign investment cannot be, and have not been evaluated within the scope of the current technical analysis.

The Mineral Resource presented herein represents an update to the 2011 NI 43-101 compliant Mineral Resource estimate for the Granduc Copper Project. The historical Granduc Mine opened in 1971 and was closed and was reclaimed in 1984. The current Mineral Resource was completed using historical drilling data completed up to 2006 as well as recent drilling completed by CRI during fall 2010 and summer 2011. The goal of this technical analysis and resource estimate is to justify further evaluation by CRI in 2012 and beyond.

The resource evaluation presented in this report was completed by Mr. Michael D. Johnson, P.Geo. The work has been internally reviewed by Dr. Gilles Arseneau, P.Geo. The effective date of this Mineral Resource is February 17, 2012.

This section describes the work undertaken by SRK and key assumptions and parameters used to prepare the initial Mineral Resource model for the Granduc deposit together with appropriate commentary regarding the merits and possible limitations of such assumptions.

In the opinion of SRK, the block model resource estimate and resource classification reported herein are a reasonable representation of the global Mineral Resources found in the Granduc deposit at the current level of data collection. The Mineral Resources presented herein have been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines and are reported in accordance with Canadian Securities Administrators' NI 43-101. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserves. Mineral Reserves can only be estimated as a result of an economic evaluation as part of a preliminary feasibility study or a feasibility study of a mineral project. Accordingly, at the present level of analysis since the closure of the mine, there are no Mineral Reserves on the Granduc project.

Geological and mineralization wireframes were constructed using Gemcom Surpac™ and Leapfrog™ software. Estimation was also completed in Surpac™ while statistical analysis and variography were completed with non-commercial software and with Sage2001™.

13.2 Resource Database

Topography surface was supplied in the form of detailed dxf's compiled from air photo analysis. There appears to be several generations of topographic data. The melting history of the South Leduc glacier is recorded in the different eras of topographic data.

The current drill hole dataset evaluated by SRK is comprised of drill hole data including collar location, down-hole surveys, assays and specific gravity data. Geological logs were not digitally available within the database other than a small subset of scans from selected historic drill holes and digital logs of the 18 drill holes completed in 2010 and 58 drill holes completed in 2011.

The database includes data from more than 2000 drill holes and consists of more than 50,000 assays and 5,900 specific gravity measurements. For the purposes of this document, historical drill holes are those completed prior to 2010 and the current drilling includes holes completed by CRI in 2010 and 2011.

Although the historical drill holes were captured in a local mine grid coordinates system, all drill hole collar locations were translated to UTM NAD83 Zone 9 for this analysis. 2010 drill holes were initially located using handheld GPS in this coordinate system; however, 2010 and 2011 drill holes have now been surveyed by sub-metre differential GPS. Bell Copper drilling from 2005-6 was also located with differential GPS in this coordinate system. SRK completed an analysis on the mine grid relative to GPS locations in order to properly convert all historic holes to UTM NAD83 Zone 9.

Downhole survey information methodology and quality of data capture is highly variable. Most holes have relatively few data points while the 2010 drilling has very dense readings using the Flex-it downhole tool. Approximately 38% of the drill holes have no down-hole survey information other than a collar azimuth and dip. Most down-hole survey measurements from the historical data are acid tests only, providing dip changes only. Because most of the drillholes are relatively short, SRK believes that the overall impact of the lack of survey data on the current resource is minimal.

Table 13.1 summarizes the downhole survey data by number of survey points per drill hole within the resource area.

Table 13.1: Down-hole Survey Data Summary

Number of DH Survey Data Points	Number of Drillholes	% of Drillholes
1	232	35%
2	111	17%
3	88	13%
4	61	9%
5	31	5%
6	26	4%
7	10	2%
8	9	1%
9	7	1%
10+	88	13%
Grand Total	665	100%

Assays have been completed at a variety of sample lengths between 0.03 and 36.88 m. Long intercepts appear to be largely assay values captured from sections where interval composite values were recorded. The most common sampling length is 1.5 m, while the 2010 and 2011 drill core was most commonly sampled at 1 m intervals. Generally, the core has been sampled only where mineralization was identified or expected. All missing assay intervals were assigned a dummy code of -1 and eventually assigned zero grades during the estimation of copper; however, missing values were not assigned zero for the gold and silver estimation.

Historic sampling may have included assays of Cu, Pb, Zn and Au; however, in the currently compiled database only Cu, Au and Ag values have been tabulated. As part of the 2012 update to the Mineral Resource, Cu, Au and Ag values have been estimated. 2010 and 2011 drill hole sampling included a full spectrum of ICP assays.

Table 13.2, summarizes the basic statistics of the assay data in terms of copper values and sample length. Table 13.3 summarizes the assay data for gold and silver.

Table 13.2: Copper Assay Summary

	Copper Assay Database	
	Assay Length	**Cu %**
Mean	1.56	0.93
Standard Error	0.004	0.0066
Median	1.52	0.39
Mode	1.52	0.04
Standard Deviation	0.86	1.4
Sample Variance	0.74	1.95
Kurtosis	251.44	31.88
Skewness	8.94	3.85
Range	36.85	39
Minimum	0.03	0
Maximum	36.88	39
Count		44998

Table 13.3: Gold and Silver Assay Summary

	Precious Metal Assay Database		
	Assay Length	**Au (g/t)**	**Ag (g/t)**
Mean	1.22	0.1	5.5
Standard Error	0.0038	0.0067	0.1328
Median	1	0.04	1.6
Mode	1	0.015	0.1
Standard Deviation	0.42	0.75	14.84
Sample Variance	0.18	0.57	220.25
Kurtosis	18.4	7740.26	2795.22
Skewness	2.47	80.94	39.46
Range	7.74	74.5	1139.85
Minimum	0.09	0	0.05
Maximum	7.83	74.5	1139.9
Count			12483

Table 13.4: Summary of Domain Copper Assay Statistics

Descriptive Stats	Domain 100	Domain 150	Domain 200	Domain 250	Domain 300	Domain 410	Domain 500
Mean	1.43	1.34	1.27	1.35	1.28	1.55	1.48
Median	1.00	0.96	0.97	0.85	0.98	1.00	1.07
Standard Deviation	1.49	1.36	1.33	1.46	1.25	1.70	1.52
Sample Variance	2.23	1.84	1.76	2.13	1.57	2.89	2.30
Kurtosis	10.05	7.80	17.82	8.79	21.29	4.68	8.23
Skewness	2.55	2.32	3.21	2.51	3.20	1.91	2.37
Minimum	-	-	-	-	-	-	-
Maximum	13.60	10.72	13.50	10.13	15.10	9.41	12.78
Count	1,778	2,057	725	182	2,030	92	2,982
Units, where applicable are Cu %							

Table 13.5: Summary of Domain Gold Assay Statistics

Descriptive Stats	Domain 100	Domain 150	Domain 200	Domain 250	Domain 300	Domain 410	Domain 500
Mean	0.16	0.15	0.14	0.15	0.15	0.18	0.18
Median	0.11	0.10	0.11	0.11	0.10	0.10	0.11
Standard Deviation	0.22	0.15	0.16	0.14	0.17	0.19	0.39
Sample Variance	0.05	0.02	0.03	0.02	0.03	0.04	0.15
Kurtosis	182.88	7.15	32.75	3.30	17.62	3.67	319.85
Skewness	10.61	2.39	4.55	1.84	3.46	1.94	15.31
Minimum	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Maximum	4.30	0.94	1.67	0.75	1.59	0.87	9.45
Count	688	247	280	135	832	78	1,344
Units, where applicable are Au g/t							

Table 13.6: Summary of Domain Silver Assay Statistics

Descriptive Stats	Domain 100	Domain 150	Domain 200	Domain 250	Domain 300	Domain 410	Domain 500
Mean	7.08	10.90	8.90	6.63	13.64	11.77	15.90
Median	5.00	8.00	6.75	4.60	10.80	7.95	11.05
Standard Deviation	16.09	9.81	8.23	6.37	13.69	12.49	34.21
Sample Variance	258.96	96.23	67.71	40.52	187.45	155.97	1,170.54
Kurtosis	519.06	4.24	3.76	8.33	44.15	9.15	868.85
Skewness	21.33	1.71	1.70	2.37	4.42	2.44	26.66
Minimum	0.10	0.10	0.10	0.10	0.10	0.05	0.05
Maximum	400.00	64.40	50.20	42.70	200.00	77.00	1,139.90
Count	688	247	280	135	832	78	1,344
Units, where applicable are Ag g/t							

SG data was absent in the historic drill hole database, but during the 2010 and 2011 re-sampling and exploration programs, as well as data from historic records, a significant SG dataset has been created. However, the 2010 drilling had not yet completed SG measurements. In 2010 and 2011, CRI completed re-analysis of selected historic drill holes. In total, 1,023 historic SG measurements, 1156 re-analysis of historic core, and 3763 measurements of 2011 drill core were utilized in the Mineral Resource analysis. Specific gravity measurements from these differing generations were found to match relatively well so both populations were used to assign an average bulk density to each mineralized lens. The mineralized lenses were assigned an average specific gravity independently based on the SG measurements within each domain. Wall rocks were assigned a value of 2.75g/cm3 based on the analysis of SG measurements in un-mineralized rocks.

The extents of underground mining were also compiled in order to "cut-off" the resource at the historic mining boundary. This information was found on a March 1984 closure long-section which showed the areas of the mine that were mined to the 2600 ft level (792m) or the 2175ft level (663m). A surface was created based upon these long sections and used to code the mined and un-mined blocks appropriately. Since the mining limits were only available from a single long-section, it has been assumed that all zones have been mined to the deepest levels shown on the section. Once access to the underground workings is available, potentially in 2012, the actual mined areas can be re-evaluated. SRK believes that the current boundary used is reasonably accurate.

13.3 Evaluation of Extreme Assay Values

Block grade estimates may be unduly affected by high-grade outliers. To mitigate this potential problem, assay data are generally evaluated for high grade outliers.

The capping values were chosen by establishing a correlation between indicators of assays in the same drill holes at different thresholds and by reviewing probability plots. The inflection points on probability plots at high end of grade distributions were interpreted as thresholds to high grade populations and candidates for choice of capping. Capping was completed on original assays and copper is presented in Table 13.7 and precious metal in 13.8.

Table 13.7: Capping of Original Copper Assays

Lens	Ndat	Maximum Value (%)	Cap Value (%)	Number Capped	Lost Au Metal (%)
100	1778	13.6	7	22	2
150	2057	10.7	7	16	1
200	725	13.5	7	6	1
250	182	10.1	6	3	2
300	2030	15.1	7	6	1
410	92	9.4	6	2	3
500	2982	12.8	7	38	2
NZ-1L	62	9.9	5	1	4
NZ-5U	56	4.52	5	0	0
*Lost Au Metal is (*Aver - AverCap)/Aver**100 where *Aver* is the average grade assays before capping and *AverCap* is the average grade assays after capping					

Table 13.8: Capping of Original Gold and Silver Assays

Lens	Ndat	Au Cap Value (g/t)	Ag Cap Value (g/t)
100	688	0.8	40
150	247	0.7	40
200	280	0.8	25
250	135	0.5	20
300	832	0.8	40
410	78	0.6	35
500	1,344	2.0	80

Average lost metal due to capping for precious metals is 2 - 5 % for Au and 1 - 6 % for Ag.

13.4 Solid Modelling

The Granduc deposit has been interpreted as a Besshi-type Volcanogenic massive sulphide deposit (VMS).These deposits consist of iron sulphides with lesser chalcopyrite and may or may not include sphalerite. The deposits are stratiform and tabular however remobilization of mineralization can occur during structural deformation. The sulphide horizons generally occur in thick sequences of marine sedimentary rocks (black shales to arkose to greywacke). The clastic hosts themselves are typically finally laminated sedimentary rocks, possibly turbidites. (McGuigan, 2010)

SRK created models to honour the data as well as to honour the generalized deposit model. Sections and plans from 1977 and 1983 were used as a guideline, however much of the zones below the 750 m level had not been previously mapped in detail. Detailed geology was not available and structural data has not yet been sufficiently compiled. Although this is sufficient for this stage of the interpretation, further refinement of the geology model will be necessary for future refinement of the Mineral Resources.

The resulting solids form tabular bodies that are stacked and offset from one another, are generally assumed to be statrigraphic mineralization horizons which have been folded and faulted. In reality, further compilation of data, underground mapping and drilling may lead to a more robust model that may indicate primary and remobilized mineralization domains, as well as connection or further separation of the domains established in the current analysis. The solids are currently grade shells only. Further compilation of historical data, in conjunction with new data collected in 2012 should be utilized to continue to update these solids.

The solids were created by digitizing top and bottom of each grade interval from the raw assay results, using a minimum thickness of approximately 2 m. Once the footwall and hangingwall of each mineralized domain have been established at each drillhole intercept, Leapfrog 3D software was used to create surfaces through the tops and bottoms of the domains. Next, Leapfrog was used to extrude solids between the two surfaces, while keeping a minimum width of 1.5 m and retaining the drillhole intercept points. The solids were evaluated and contact points were re-classified as required in order to create the most realistic models possible. Additional control points were included where necessary to limit overlaps or crossovers. Surfaces were then created in long sections to create Y-Z plane limitations for each of the solids and the solids were clipped to these extents. The orebodies were also clipped to one another if they intersected, so that relatively few overlaps existed in the final solids. Generally, the solids were created to extend approximately 50-100 m above the estimated mining levels so that estimation could be completed through the boundary between the mined material and the resource.

Mineralization in the Main and South Zones has been modelled as a dominantly continuous set of domains between 6,231,050 m north and 6,229,400 m north, a distance of 1.7 km. This generally conforms to imperial mine grid northings between 7,100 ft north and 12,500 ft north. The Main-South Zone mineralization remains open to the south and at depth.

Within the Main and South Zones, 7 mineralization solids or lenses have been defined numerically labelled 100, 150, 200, 250, 300, 410 and 500. This interpretation replaces the 2010 models which included 11 lenses, as some lenses have been combined in the current interpretation. The updated models are shown in plan view in Figure 13.1 and in isometric view in Figure 13.2. The interpreted solids reflect the stacked stratigraphic zones which have been tightly folded and partly dismembered by faulting or further folding at a scale below the resolution of the interpretation.

Two additional mineralisation solids have been defined in the North Zone. These are shown in an isometric view in Figure 13.3 and are termed NZ_5U and NZ_1L. The North Zone lenses are less well constrained by drilling and for the most part form a large part of the exploration potential defined in the current analysis. Only the deeper, southern portions of these domains are classified as Inferred Mineral Resource. The two domains occur in a lower stratigraphic unit than the Main Zone and appear to be relatively less folded and faulted than the Main Zone, however; this may be only a reflection of the density of drilling data. The North Zone mineralization models remain open at to the north and south and at depth; however, to the south the mineralization is limited by the Main Zone drill data.

The solid models defined by SRK for the Main Zone loosely compare to those previously defined for the deposit. Historical interpretations included mineralized zones A, B1, B2, C and F, in addition to two North Zone models.

Lenses 100 and 250 correspond to the historical zone A. Lenses 150, 200 and 400 corresponds to historical zone C and F. Lenses 300 and 500 correspond to historical B zones. Historically, the North

Zone interpretation was much less advanced; however, the limited historical interpretations align well with the current interpretation of an upper (NZ_5U) and lower (NZ_1L) zone.

The shape of the Main Zone mineralized solids in plan view (see Figure 13.1) highlights the thickening of the domains by structural modification. The mineralization at Granduc has been squeezed from higher stress areas and remobilized into pressure shadow areas. As previously stated by McGuigan (2010) and others, these thickened lenses tend to plunge along the F2 fold axis which is generally southward in the planes at a dip of approximately 55°. These structural modifications create localized variability in both mineralization shape and grade. This necessitates detailed delineation and sampling data for accurate local modelling and estimation.

Currently, because of the lack of detailed geological information and/or multi-element analysis, there is uncertainty in correlating the zones in areas of wider spaced drilling, dominantly in the Exploration Potential and to a lesser degree in the Inferred Mineral Resource. SRK believes that although this creates additional local uncertainty, the global volume is reasonably represented by the mineralized zones.

The average thickness of the Main Zone ranges from 4 m in domain 250 to 10 m in domain 500, but is typically 6.5 m on average. Current interpretations of North zones domains indicate average thicknesses of 4 m to 6 m.

All defined solid models were read into the database and used to restrict the compositing and estimation process described below.

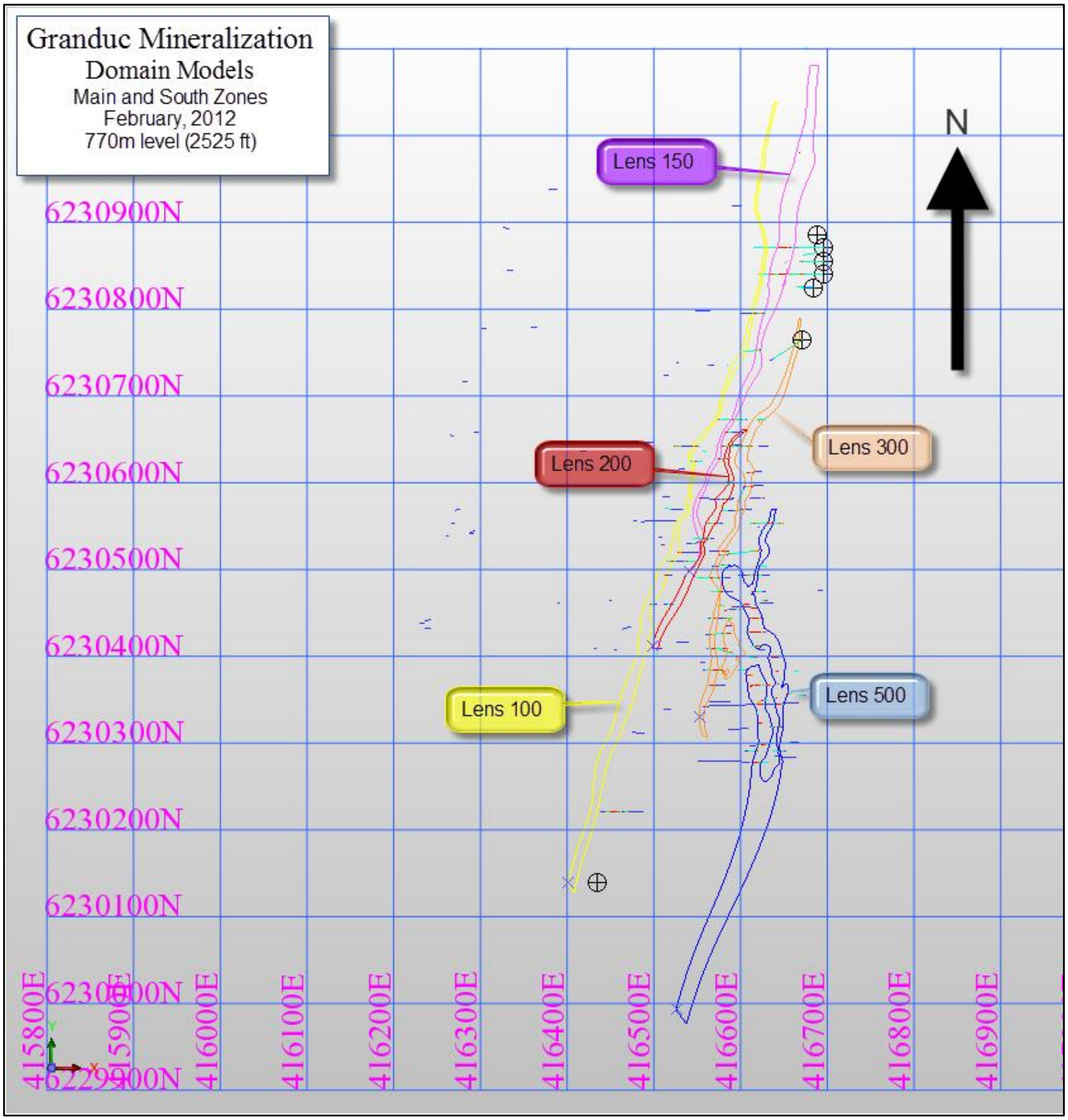

Figure 13.1: Interpreted Grade Shell Boundaries, Main Zone

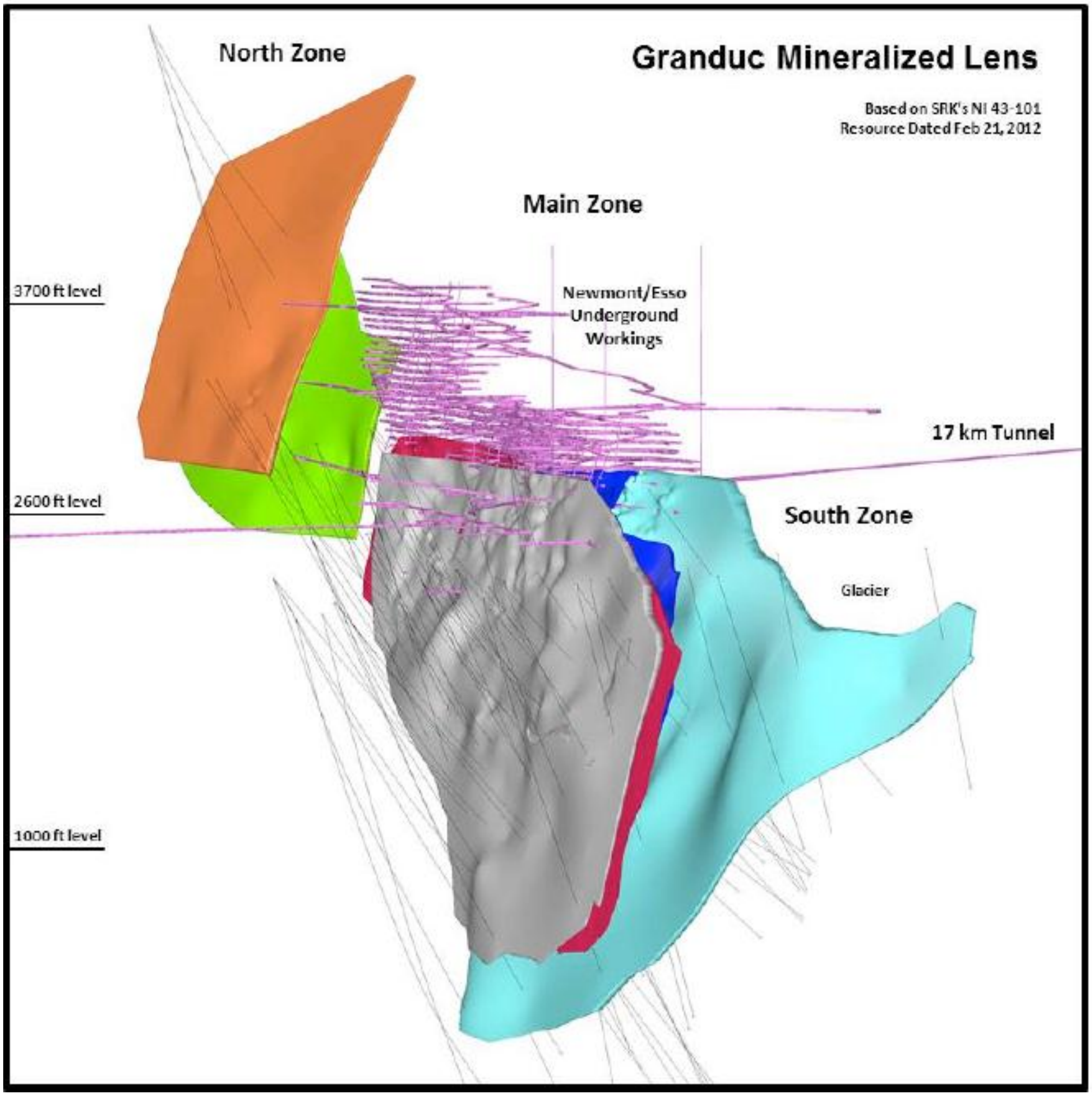

Figure 13.2: Isometric View of Interpreted Main, South and North Domains

(Isometric view looking northeast, no fixed scale)

13.5 Compositing

Assay lengths were analyzed in order to define the proper assay composite length to be used in the estimation process.

A large proportion of all samples inside the mineralized domains were collected at 1.5 m and shorter intervals (Figure 13.3). Basic statistics of capped assays composited to 1.5 m lengths for the various mineralized units are presented in Table 13.9.

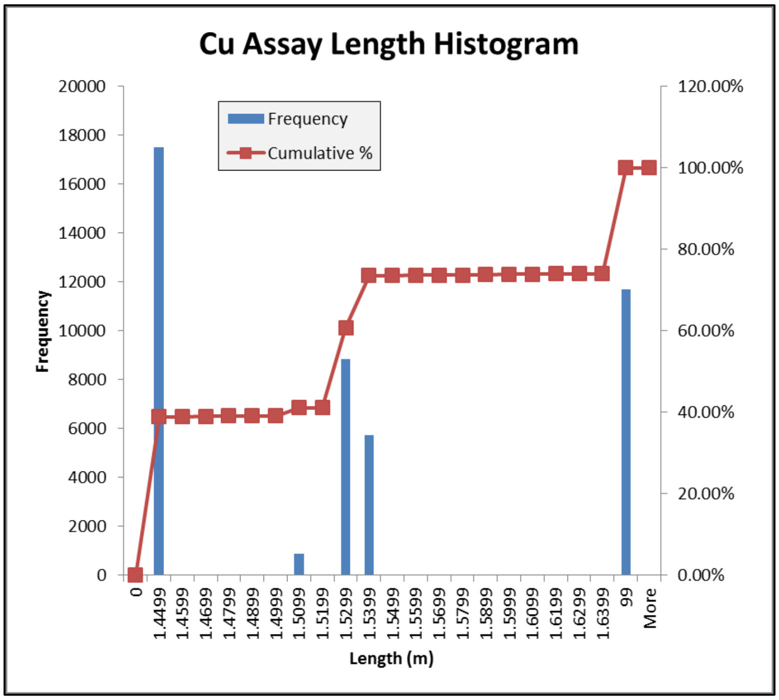

Figure 13.3: Histogram of Sample Lengths in the Mineralized Zones

Table 13.9: Basic Statistics for Capped 1.5 m Copper Composite Assay

Descriptive Stats	Domain 100	Domain 150	Domain 200	Domain 250	Domain 300	Domain 410	Domain 500	Domain NZ-1L	Domain NZ-5U
Mean	1.35	1.27	1.14	0.98	1.22	1.57	1.34	1.53	1.24
Median	1.04	0.98	1.01	0.74	1.01	1.29	1.10	1.27	1.08
Standard Deviation	1.17	1.09	0.94	1.06	0.99	1.30	1.15	0.82	0.83
Sample Variance	1.37	1.20	0.89	1.13	0.97	1.69	1.32	0.67	0.69
Kurtosis	2.75	3.88	3.37	3.39	3.76	(0.01)	3.89	3.19	3.90
Skewness	1.54	1.69	1.52	1.71	1.60	0.89	1.61	1.68	1.64
Minimum	0	0	0	0	0	0	0	0.14	0.02
Maximum	7.00	7.00	5.70	5.51	7.00	4.82	7.00	4.76	4.52
Count	1,531	1,860	662	150	1,848	59	2,633	97	74
Lower Quartile	0.55	0.51	0.47	0.08	0.55	0.65	0.52	1.02	0.78
Upper Quartile	1.83	1.70	1.56	1.31	1.63	2.34	1.86	1.81	1.60
Units, where applicable, are Cu %									

13.6 Variography

Experimental variograms and models were generated copper within all mineralized domains. Correlogram model rotations were based on general attitude of the mineralized zones. The nugget effects (that is, copper variability at very close distance) were established from down-hole variograms for each of the mineralized zones. The nugget values range from 20 % to 30 % of the total sill. Note that the sill represents the grade variability at a distance beyond which there is no correlation in grade. Major ranges of continuity were quite short ranging from 30 m in Lens 500 to 60 m in others. Figure 13.4 and 13.5 presents examples of modelled variograms in domains 100 and 500. Variogram models for Cu grade estimation are summarized in Table 13.10.

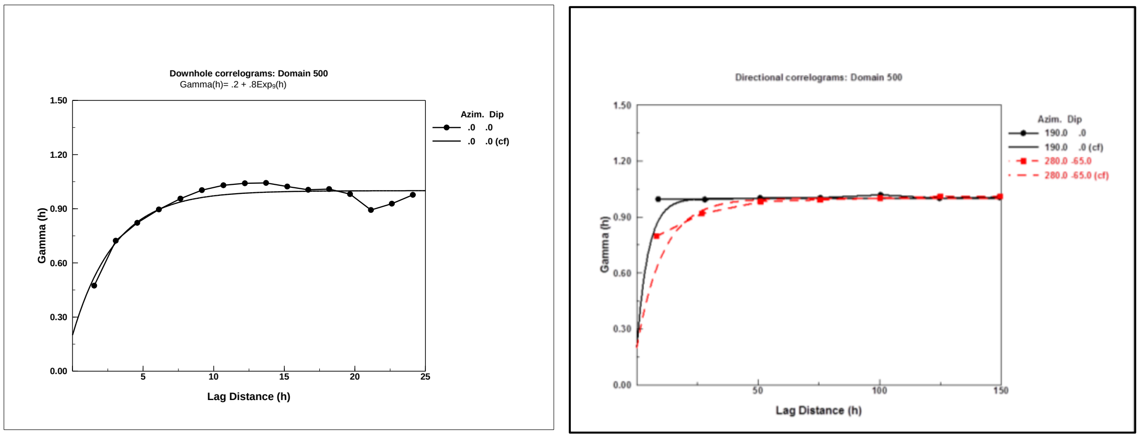

Figure 13.4: Directional Correllograms (left) and Downhole Correllograms (right) in Lens 500

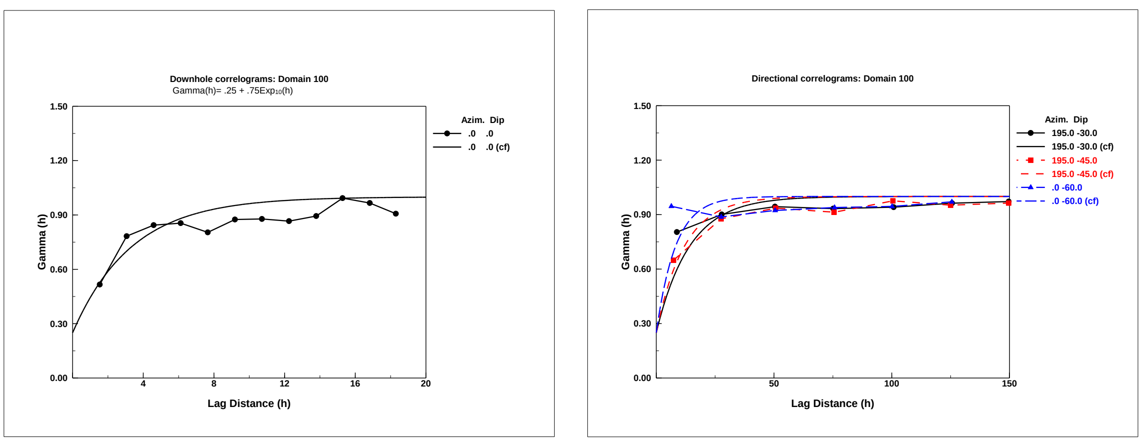

Figure 13.5: Directional Correllograms (left) and Downhole Correllograms (right) in Lens 100

Table 13.10: Spherical Variogram Models in the mineralized domains

Domain	Nugget C_0	Sill C_1 and C_2	Gemcom Rotations (RRR rule)			Range a		
			around Z	around Y	around Z	X-Rot	Y-Rot	Z-Rot (Across)
Lens 100	0.25	0.75	165	75	30	50	25	10
Lens 150	0.30	0.45	165	65	35	20	10	5
		0.25	165	65	35	60	35	20
Lens 200	0.23	0.30	175	60	35	8	8	5
		0.47	175	60	35	60	30	13
Lens 250	0.25	0.30	165	65	35	40	40	5
		0.45	165	65	35	60	43	9
Lens 300	0.15	0.85	175	65	40	40	30	8
Lens 400	0.23	0.30	175	60	35	8	8	5
		0.47	175	60	35	60	30	13
Lens 500	0.20	0.80	170	60	0	14	30	9

13.7 Resource Estimation Methodology

The Mineral Resource was estimated into two block models, one for the Main Zone and one for the North Zone. The following tables summarize the geometric parameters of block model utilized for Main and North zones.

Table 13.11: Granduc Block Model Extents and Parameters, Main Zone

Description	East (X)	North (Y)	Elevation (Z)
Block Origin (m)	416,100	6,229,250	0
Parent Block Dimension (m)	2	10	10
Number of blocks	350	185	100
Minimum Sub Block Dimension (m)	0.5	2.5	2.5
Rotation	0	0	0

Table 13.12: Granduc Block Model Extents and Parameters, North Zone

Description	East (X)	North (Y)	Elevation (Z)
Block Origin (m)	416,750	6,231,400	500
Parent Block Dimension (m)	2	10	10
Number of blocks	300	100	120
Minimum Sub Block Dimension (m)	0.5	2.5	2.5
Rotation	0	0	0

A 2 m x 10 m x 10 m primary block was deemed detailed enough to capture the relatively thin (x dimension) domains while creating a reasonable block model size. Sub-blocking at ¼ block size in all dimensions was used to more accurately reflect the volume of the zones.

The Mineral Resources were completed with hard boundaries between the mineralized domains, from composites located in those domains. In the Main Zone, copper grade interpolation was completed using ordinary kriging (“OK”) and inverse distance squared (“ID^2”) methods, however OK methods were used for the final results. Gold and silver grades were estimated within the Main and South zones only and ID^2 estimation methods were utilized. ID^2 estimation was used for the two North Zone domains, where only copper was estimated.

The interpolation was completed in three passes termed “Svol” 1 through 3. In each pass, the search ellipse size, minimum number of samples and number of drill holes required was controlled for appropriate grade interpolation. Tables 13.13 and 13.14 summarize the estimation parameters for each domain.

Table 13.13: Summary of Search Ellipse Parameters

Domain	Gemcom Rotations (RRR rule)			Svol1_Distances			Svol2 Radius Multiplier	Svol3 Radius Multiplier
	around Z	around Y	around Z	X	Y	Z		
Lens 100	165	75	35	50	25	25	2	4
Lens 150	165	75	35	50	25	25	2	4
Lens 200	165	75	35	50	25	25	2	4
Lens 250	165	75	35	50	25	25	2	4
Lens 300	165	75	35	50	25	25	2	4
Lens 400	165	75	35	50	25	25	2	4
Lens 500	165	75	35	50	25	25	2	4
NZ_5U	175	65	-35	40	60	40	2	4
NZ_1L	175	65	-35	40	60	40	2	4

The search ellipses were generally aligned along the main mineralization trend and dipping along the dominant fold axis, dipping southward in the plane of mineralization at approximately 50 degrees.

This direction corresponded with the variography as well as the expected trend of the mineralization continuity.

The selection of the search radii was guided by modelled ranges from variography and was established to estimate a large portion of the blocks within the modelled area with limited extrapolation. The parameters were established by conducting repeated test resource estimates and reviewing the results as a series of plan views and sections.

Table 13.14: Summary of Estimation Sample Limitations for Cu, Au and Ag

Domain	Metal	Maximum Samples	Minimum Samples / Max Samples per drill holes			Allowable Empty Octants		
			Svo1	Svol2	Svol3	Svo1	Svol2	Svol3
All domains	Cu	24	8/4	5/4	2/2	5	6	any
All domains	Au / Ag	16	6/4	5/4	2/2	6	5	any

A visual example of the grade distribution for domains 100 and 500 are shown in long section Figure 13.6 and 13.7.

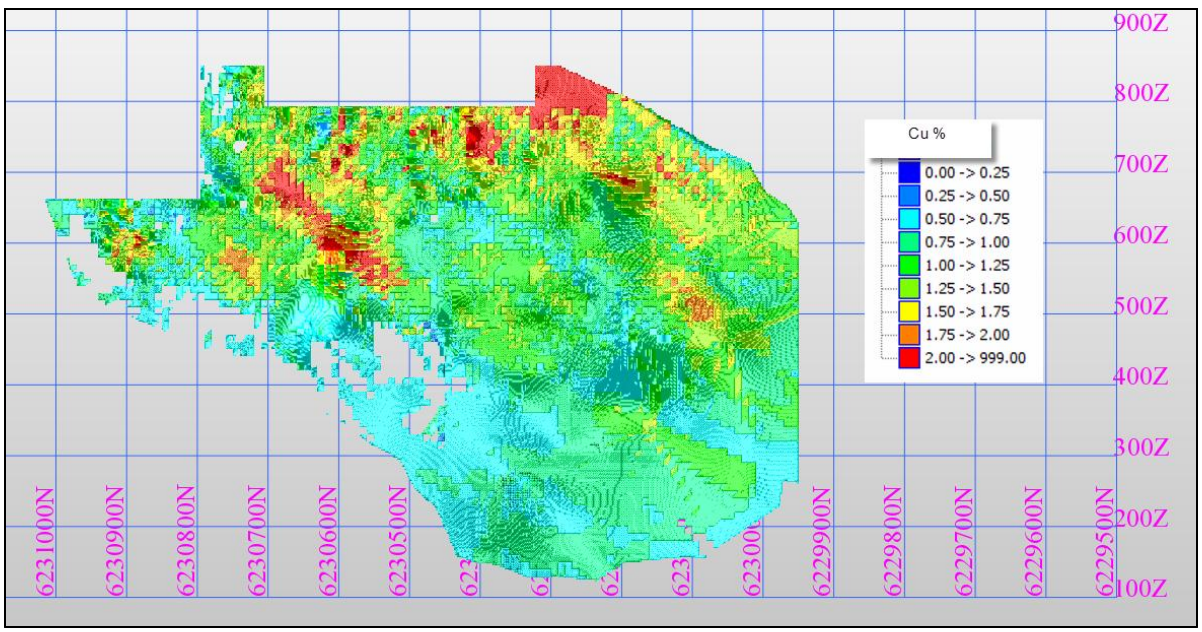

Figure 13.6: Domain 100 in Long-Section Showing Cu Grade Variation.
(100m grid, looking east, showing only blocks > 40$ NSR)

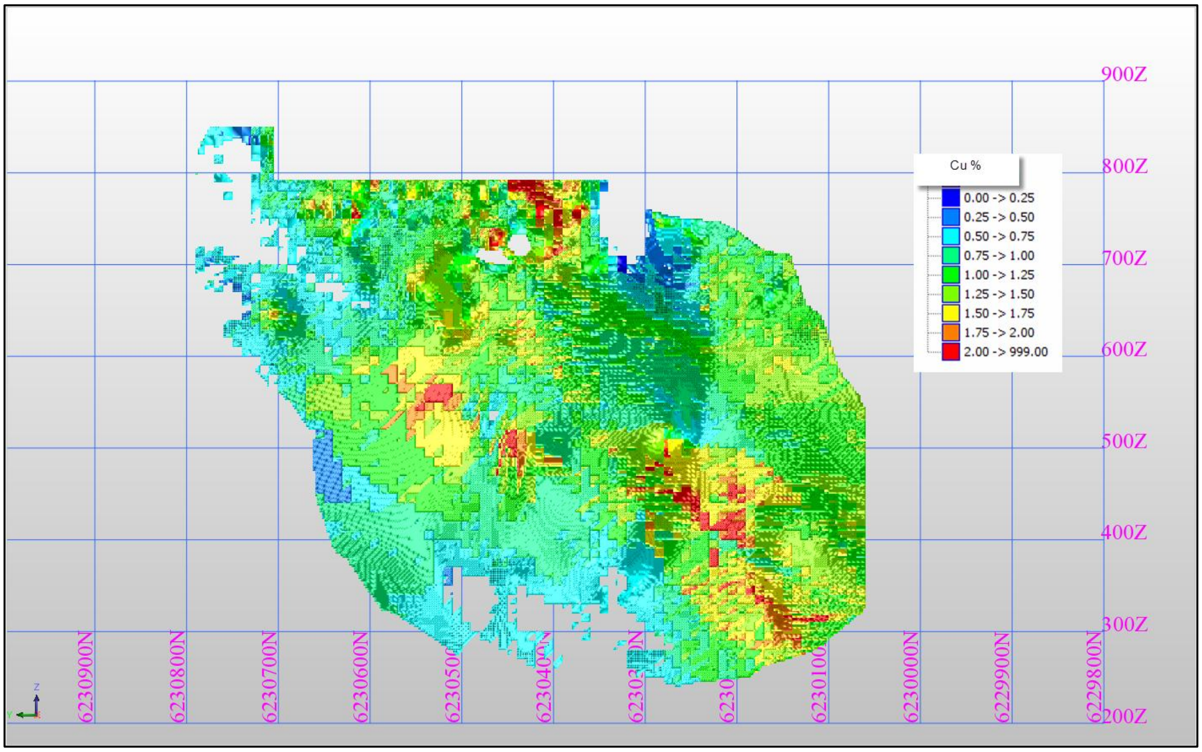

Figure 13.7: Domain 300 in Long-Section Showing Cu Grade Variation.
(100m grid, looking east, showing only blocks > 40$ NSR)

13.8 Density Estimation

Approximately 1,250 SG data were used to assign global bulk densities to the mineralized domains. The SG data were assigned to the mineralized domains and the average values for each domain were calculated. Table 13.15 summarizes the bulk densities estimated for each mineralization domain.

Table 13.15: Estimated Bulk Densities

Domain / Lens	Bulk Density (g/cm^3)
100	2.93
150	2.96
200	2.90
250	2.94
300	3.05
410	3.05
500	2.99
NZ_5U	2.95
NZ_1L	2.95

The un-mineralized rocks were assigned an average density value of 2.75 g/cm^3 based on the analysis of the average SG values outside of all domains.

13.9 Mineral Resource Classification

The Mineral Resource was classified considering a variety of parameters including;

- Drillhole and sample density;
- Data source era and confidence;
- Mineralization model confidence;
- Domain variograms;
- Proximity to historic mining; and
- Search volume (Svol) designation.

SRK determined that the data was sufficient for classification of Indicated and Inferred Mineral Resource at this time.

Blocks immediately below the lower limits of the underground mining where density of underground drilling was highest and most blocks were populated from the first search ellipse (Svol 1) were classified as Indicated. Blocks further away from the mining levels where drillhole spacing was wider and there is less certainty in correlating between mineralized intercepts, were classified as Inferred.

An envelope was interpreted for each of the Inferred and Indicated volumes and the estimated blocks in order to capture contiguous zones of commonly classed material. The estimated blocks within these zones were tagged appropriately. The remaining estimated material was deemed as Exploration Potential. Figure 13.8 graphically demonstrates the relative locations of the Mineral Resource classes in long section.

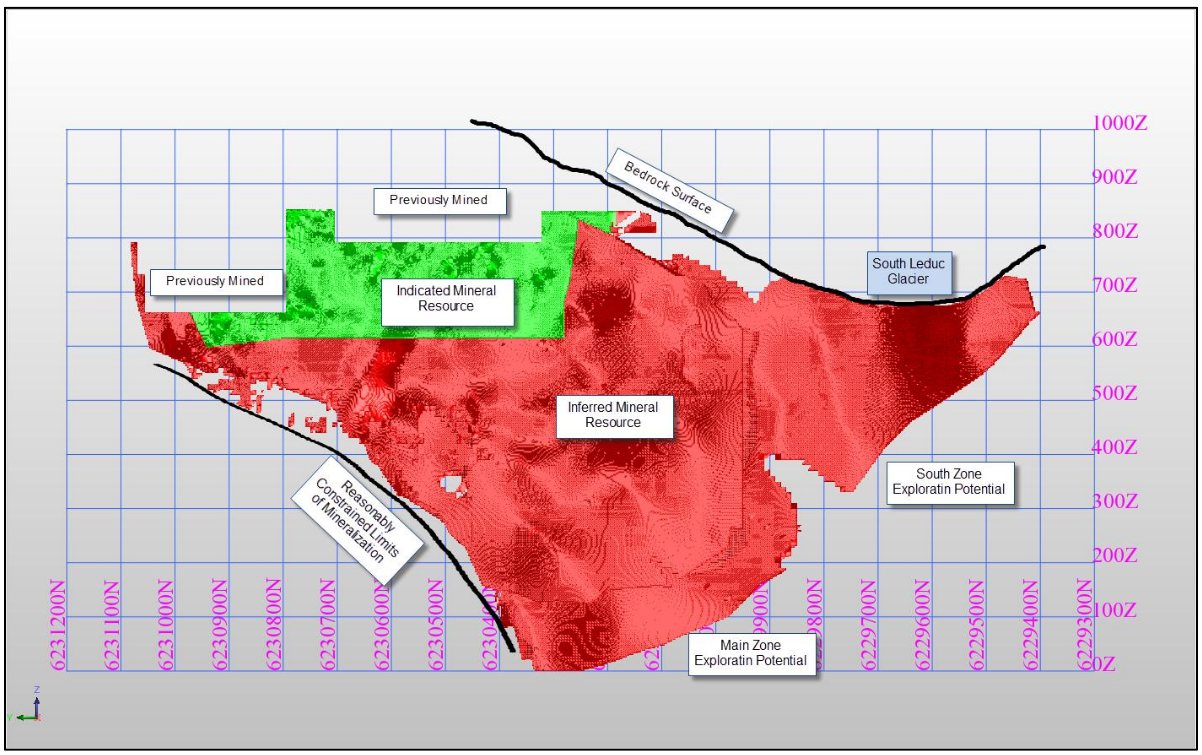

Figure 13.8: Long-section of Main Zone Block Model Highlighting Mineral Resource Classification

(100m grid, looking east, only blocks > 40$ NSR)

Only Inferred Mineral Resources were classified in the North zone, with most estimated blocks classed as Exploration Potential only. The Mineral Resource material is clustered around the north exploration drift and drilling collared from this drift, on an above the 2600 ft level (792 m). The Inferred Mineral Resource in the North Zone has significantly wider drill spacing than the Main Zone and will require additional work to upgrade to an Indicated Mineral Resource.

13.10 Block Model Validation

The Granduc resource block model was validated by completing a series of visual inspections and by:

- Comparison of local "well-informed" block grades with composites contained within those blocks; and
- Comparison of average assay grades with average block estimates along different directions – swath plots.

Figure 13.9 shows a comparison of estimated gold block grades with borehole composite assay data contained within those blocks within two major mineralized domains: Zone1p and Zone11p. On average, the estimated blocks are similar to the composite data, although there is a large scatter of points around the x = y line. This scatter is typical of smoothed block estimates compared to the more variable assay data used to estimate those blocks. This is indicated by a thick white line. The thick white line that runs through the middle of the cloud is the result of a piece-wise linear regression smoother. Note relatively low correlation between the assays and the block grades. This is probably a result of short ranges of continuity modelled from variograms.

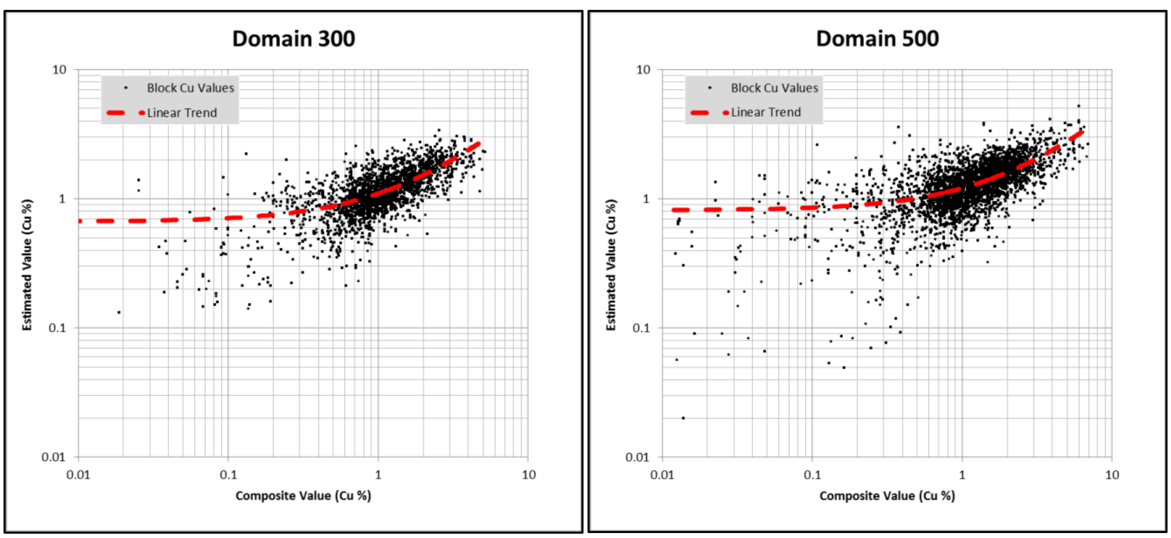

Figure 13.9: Comparison of Block Estimates with Composite Data within the Blocks for Lenses 300 and 500

As a final check, average composite grades and average block estimates were compared along different directions. This involved calculating de-clustered average composite grades and comparison with average block estimates along east-west, north-south, and horizontal swaths. Figure 13.10 shows the swath plots in the Lenes 300 and 500. The average composite grades and the average estimated block grades are quite similar in all directions. Similar behaviour was documented for all other mineralized zones. Overall, the validation shows that current resource estimates are a very good reflection of drillhole assay data.

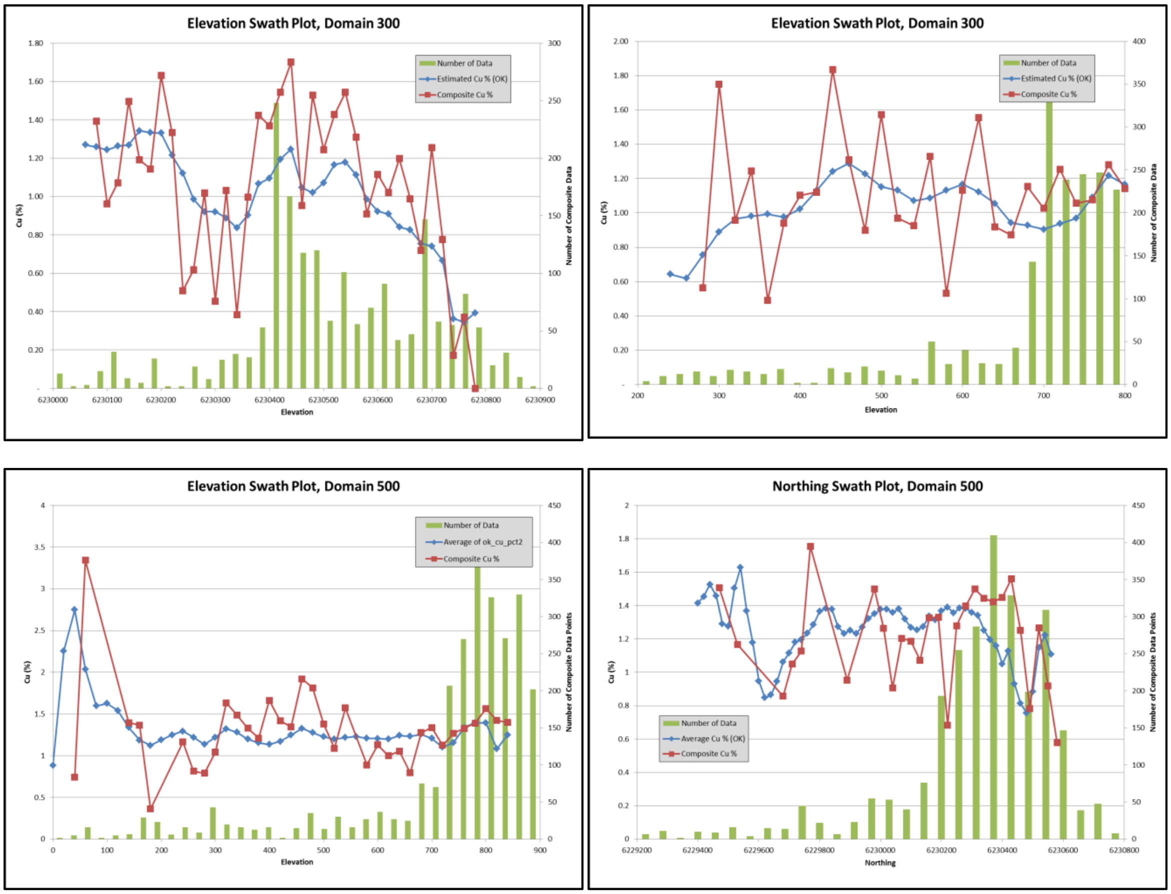

Figure 13.10: Z (elevation) and Y (Northing) Swath Plots for Domain 300 (top) and 500 (bottom)

13.11 Precious Metal Potential

Historically, drill samples have not been systematically assayed for gold and silver; however, the relative value has dramatically increased and may make precious metals a more important element in the Granduc deposit.

The mine reported gold and silver production during mining. In 1983, in an attempt to include them in the reserves, samples from 96 boreholes in Block 4 of the mine were assayed for precious metals (Merber & Tyler, 1983). Within this block, they estimated copper grades of 2.03% with gold grades of 0.43 g/t and 12.6 g/t for silver. Diluted precious metal production during mining averaged 0.13 g/t gold and 8 g/t silver compared to copper grades of 1.22% (Minfile, 2011).

CRI, in the 2010 drill campaign, assayed all samples for precious metals. In addition, the historical drill core that was re-sampled in 2010 has also been assayed for gold and silver. Again in 2011, CRI completed precious metal analysis of all 2011 drill holes as well as re-sampling more historic core.

This has allowed SRK to estimate precious metal content for the first time as part of the updated Mineral Resource.

13.12 Net Smelter Return Value Calculation

The current update to the Mineral Resource now includes gold and silver grade estimates. A Net smelter return ("NSR") calculation has been utilized to normalize the value of the mineralization to a common unit (C$) inclusive of copper, gold and silver mineralization value. The NSR takes into account commodity prices, recoveries, smelter payables and selling costs. The NSR and cut-off parameters are based upon preliminary test work and reasonable assumptions based upon similar deposits.

Table 13.16 summarizes the assumptions and parameters of the NSR calculation.

Table 13.16 NSR Parameters and Assumptions

Parameter	Unit	Value
Metal Price : Copper	US$ / lb.	$3.25
Metal Price : Gold	US$ / troy ounce	$1,275.00
Metal Price : Silver	US$ / troy ounce	$21.00
Concentrator Recovery: Copper	%	95.0%
Concentrator Recovery: Gold	%	88.0%
Concentrator Recovery: Silver	%	68.0%
Payable Percentage: Copper	%	96.6%
Payable Percentage: Gold	%	92.0%
Payable Percentage: Silver	%	92.0%
Port Charges	Cost: US$ / Concentrate Tonne	$13.00
Transportation Charges	Cost: US$ / Concentrate Tonne	$50.00
Treatment Charges	Cost: US$ / Concentrate Tonne	$80.00
Refining Charges	Cost: US$ / Concentrate lb.	$0.08
Concentrate Grade	% Cu	28%
Currency Exchange	US$ / C$	$0.92

13.13 Mineral Resource Statement

The Mineral Resource for the Granduc deposit, effective February 17, 2012, is summarized in Table 13.17. All tables summarize the combined Main and North Zone domains.

Table 13.17: Mineral Resource Statement[1] Granduc Deposit[2], Stewart BC, SRK Consulting February 17, 2012.

Resource	Cut-off	Quantity	Copper Grade	Gold Grade	Silver Grade	Contained Copper	Contained Gold	Contained Silver
Category	***(NSR C$/t)***	***(millions of tonnes)***	***(% Cu)***	***(g/t Au)***	***(g/t Ag)***	***(millions of lbs)***	***(ounces)***	***(ounces)***
Indicated	**40**	**10.4**	**1.25**	**0.14**	**10.6**	**286.1**	**47,000**	**3,500,000**
Inferred	**40**	**36.6**	**1.26**	**0.13**	**9.7**	**1013.2**	**155,000**	**11,400,000**

1. Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures are rounded to reflect the relative accuracy of the estimate. All composites have been capped where appropriate.
2. NSR calculation using the following parameters. US$ to C$ Exchange is 1 : 0.92, Cu Price = US$ 3.25 / lbs., Au Price = US$ 1275 / troy ounce, Ag Price = US$ 21 / troy ounce Cu recovery at 91.7%, Au recovery = 62.56%, Ag recovery = 80.96%, Selling cost for Cu at US$ 0.312 / lbs., Au at US$ 5 / ounce, Ag at US$ 0.35 / ounce, Conversions: 31.1035 g / troy ounce, 2204.6 lbs. / tonne

The Mineral Resources summarized above are not Mineral Reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. SRK is not aware of any environmental, permitting, legal, title, taxation, socio-political or marking issues that would materially affect the Mineral Resource. The resource estimate was completed by QP Michael Johnson, P.Geo., a Senior Consultant with SRK, who is independent of the Company.

When compared to the 2010 Mineral Resource estimate, which was reported at a 0.8% copper cut-off, the Mineral Resource estimate has increased from 3.8 Mt of Indicated and 15.8 Mt of Inferred material to 8.9 Mt of Indicated and 31.1 Mt of Inferred material. The average grade of the Indicated material has dropped from 1.59 % Cu to 1.35 % Cu, while the grade of the Inferred material remained essentially unchanged at 1.34 % Cu.

In the current Mineral Resource, gold and silver values were estimated for the first time, but within the Main-South Zones only. The North Zone lacks sufficient data to estimate precious metals at this time. Gold and silver assay results were based upon the 2005/6 Bell Copper drill holes, the 2010 and 2011 Castle sampling, as well as 2010 and 2011 re-sampling of historic drill holes. Gold and silver values have not been estimated for the North Zone, which accounts for approximately 10% of the Inferred Mineral Resource. The density of the gold and silver sample data is less than the copper data and results in a reasonable, but less confident estimate of gold and silver grade. Considering that the gold and silver mineralization contributes a small portion of the Mineral Resource estimate value, the data is considered sufficient for this stage of exploration.

Tables 13.18 and 13.19 summarized the sensitivity of the Mineral Resources to different NSR cut-off grades. NSR parameters remain the same as those shown in Table 13.18.

Table 13.18: NSR Cut-off Sensitivity for Granduc Indicated Mineral Resource

Cut-off	Quantity	Copper Grade	Gold Grade	Silver Grade	Contained Copper	Contained Gold	Contained Silver
(NSR C$/t)	*(millions of tonnes)*	*(% Cu)*	*(g/t Au)*	*(g/t Ag)*	*(millions of lbs)*	*(millions of ounces)*	*(millions of ounces)*
20	11.0	1.20	0.14	10.4	291.1	0.049	3.7
30	10.8	1.22	0.14	10.5	289.8	0.049	3.6
40	10.4	1.25	0.14	10.6	286.1	0.047	3.5
45	10.1	1.27	0.14	10.7	282.6	0.046	3.5
50	9.8	1.29	0.14	10.8	278.1	0.045	3.4
55	9.4	1.32	0.15	10.9	272.6	0.044	3.3
60	8.9	1.35	0.15	11.0	264.8	0.042	3.2
65	8.3	1.39	0.15	11.2	253.8	0.040	3.0
70	7.7	1.42	0.15	11.3	241.4	0.038	2.8
80	6.2	1.51	0.16	11.8	206.9	0.032	2.3
100	3.3	1.77	0.19	12.9	128.6	0.020	1.4

Table 13.19: NSR Cut-off Sensitivity for Granduc Inferred Mineral Resource

Cut-off	Quantity	Copper Grade	Gold Grade	Silver Grade	Contained Copper	Contained Gold	Contained Silver
(NSR C$/t)	*(millions of tonnes)*	*(% Cu)*	*(g/t Au)*	*(g/t Ag)*	*(millions of lbs)*	*(millions of ounces)*	*(millions of ounces)*
20	38.1	1.22	0.13	9.5	1028.4	0.157	11.6
30	37.7	1.23	0.13	9.6	1025.7	0.157	11.6
40	36.6	1.26	0.13	9.7	1013.2	0.155	11.4
45	35.6	1.27	0.13	9.8	999.9	0.152	11.2
50	34.4	1.30	0.13	10.0	983.5	0.149	11.1
55	32.7	1.33	0.14	10.2	956.3	0.144	10.7
60	30.7	1.36	0.14	10.3	920.5	0.138	10.2
65	28.1	1.41	0.14	10.6	871.8	0.129	9.6
70	25.9	1.45	0.15	10.9	826.7	0.122	9.1
80	21.2	1.54	0.15	11.7	718.5	0.105	8.0
100	12.5	1.74	0.17	13.2	480.6	0.069	5.3

The Mineral Resources are limited to un-mined areas based on a model of the historic mining limits. The historic mining limits were determined from mine closure records filed with the government in 1984. At this time SRK has not gained underground access and therefore cannot directly verify the boundary. SRK believes that this boundary has been accurately defined based on the most reliable records available.

13.13.1 Exploration Potential

In addition to the Mineral Resources, SRK assessed the Exploration Potential defined by wider spaced drilling data. In 2011, the Exploration Potential was defined throughout the North, Main and South Zones. At this this time, Exploration Potential has been limited to material in the North and South Zones as the Main Zone has reasonably quantified the limits of the mineralization. The current Exploration Potential is based upon approximately 16 North Zone drill holes that have been correlated with the resource domains, but are too widely spaced to define a resource. In the South Zone, 2011 drilling was unable to reach the southern limits of mineralization below an elevation of approximately 400 m AMSL. In the south, the Exploration Potential is defined by the down-dip extension of mineralization between 200 m and 400 m AMSL as well as some peripheral gaps in the estimate where drill density was insufficient to quantify resource material.

In the North Zone, the Exploration Potential has been defined by correlating widely space drill holes largely above the Mineral Resource. The resource is defined in an area where drilling density from an exploration drift was high enough to accurately quantify the resource. Fans of drilling from widely spaced surface and underground holes have been used to quantify the Exploration Potential. In 2011, three holes were completed in the North Zone and all holes intersected significant mineralization which exceeded expected thickness; however, the data was insufficient to modify the Mineral Resources in the North Zone.

Table 13.20 summarizes the Exploration Potential currently defined for the Granduc Copper Project. The potential quantity and grade of the exploration potential is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the exploration targets being delineated as a Mineral Resource.

Table 13.20: Summary of Granduc Exploration Potential, SRK, Feb 17, 2012

Estimated Tonnage (Mt)	Estimated Copper Grade Range (Cu %)
15 to 25	1.2 % to 1.5 %
Based upon a NSR cut-off of approximately 40 C$	

Gold and silver grades have not been estimated within the Exploration Potential.

14 Adjacent Properties

SRK has not completed any analysis of properties adjacent to the Granduc deposit at this time.

15 Other Relevant Data and Information

There is no other relevant data or information pertaining to the Granduc Copper Project..

16 Interpretation and Conclusions

SRK has reviewed and audited the exploration data currently available for the Granduc project. SRK believes that the exploration data accumulated for the Granduc project is generally reliable for the purpose of resource estimation.

In addition, SRK modelled mineralized domains based on data provided by CRI. A total of nine separate wireframes have been constructed. SRK considers that the models provide a reasonable interpretation for the Granduc mineralization at the current level of sampling and are therefore sufficiently reliable for resource estimation. However, the current wireframes are grade shells based upon a modelling cut-off of approximately 0.7% copper. As more information, either a newly acquired data or further compilation of historical data, is available for better understanding of the geological controls for the Granduc mineralization, the models will need to be continually updated.

SRK populated the Mineral Resource block model for the Granduc deposit by constraining grade interpolation to within the nine modelled mineralization domains. After validation and classification, SRK considers that the Mineral Resources for the Granduc project are appropriately reported at a NSR cut-off of 40 C$, considering the expected bulk underground mining methods that would be used to extract this mineralization.

Mineral Resources for the Granduc deposit have been estimated in conformity with generally accepted CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” Guidelines. In the opinion of SRK, the block model resource estimate and resource classification reported herein are a reasonable representation of the copper Mineral Resources found in the Granduc deposit. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into Mineral Reserve.

CRI 2010 and 2011 drill program has confirmed the mineralization extends well below bottom of the mined out areas. Further drilling by CRI will be instrumental in refining the resource estimates within both Main-South and North Zones.

- The accuracy of spatial data is sufficient for definition of Inferred and Indicated Mineral Resource, but needs higher drilling density for Measured Resources and significantly increasing Indicated Mineral Resources;
- Mineralization models are currently sufficient for defining Inferred and Indicated Mineral Resources, but need multi-element assays, geology / structural data and litho-geochemistry for more reliable interpretation necessary for mine engineering analysis;
- Grade shell interpretations are sufficient for the current level of analysis, but should be replaced with geological models where possible;
- Accuracy of interpretation is higher at highest elevations (700-790 m), but the accuracy of the models is lessened with depth and lower density of drill holes;
- Orebody thickness, and to a lesser degree grade, vary widely both within and between interpreted domains;
- The Mineral Resources are appropriately reported at a NSR cut-off of 40 C$ based on current metal prices and expectation of bulk tonnage mining;

- Estimates are sufficiently accurate for global estimation but need further validation, increased data density, and geology mapping to increase local estimate accuracy;
- The Indicated Mineral Resource is based largely on a huge amount of closely spaced sample data, but significant copper and precious metal analyses lack concrete verification;
- The Inferred Mineral Resource is largely based on widely spaced drilling data in a relatively complex mineralization environment, making local estimation and interpretation more uncertain;
- North Zone Inferred Mineral Resources are supported by more widely spaced drilling than those of the Main Zone; and,
- A drill hole intercept spacing of approximately 30 m is required for converting Inferred Mineral Resources to Indicated.

17 Recommendations

It was previously recommended that CRI complete a drill program to confirm the depth extension of the Granduc deposit. In 2010, CRI completed an eighteen hole drill program which confirmed that the mineralization extends to depths below the 1300 ft level (400 m AMSL). In addition, CRI completed a re-sampling program of selected historical drill holes and demonstrated similar copper mineralization to what was previously reported. In 2011, CRI completed a 58 hole drill program which confirmed that the Main Zone mineralization extends through the zone historically referred to as South Zone, extending the Main-South mineralization to a strike length of almost 1.8km. In addition, CRI completed a re-sampling program of selected historical drill holes and demonstrated similar copper assay values to what was historically reported. The current and historical data have been used to create an update to the resource estimate completed in 2011.

The current mineralization model for the Granduc deposit is in part based on the interpretation from widely spaced drilling information and consequently the modelled wireframe geometries can be uncertain. Therefore, the overall volume and continuity of the interpreted mineralization domains remain uncertain in folded/faulted areas and at the limits of the interpreted zones. The current interpretation is also largely based on analysis of copper grade values and the wireframe models of grade shells. In order to more accurately understand the mineralization at Granduc, continual improvement in the understanding of the structural geology and geological controls is required.

SRK recommends that additional drilling and other exploration work is undertaken throughout all domains to improve the confidence in the geological interpretation, increase the density of sampling and expand the Mineral Resource and Exploration Potential.

Considering the complex folded and faulted geometry, the stacked nature of the sulphide zones, and the rugged topography, underground exploration offers the most efficient means to explore for the depth and lateral extensions of the mineralization. Closely spaced drilling from underground stations will result in a much better definition of the mineralization envelopes and improve the confidence in the Mineral Resource estimates. At the moment, however, the underground workings at the Granduc deposit are not accessible and will require rehabilitation, some of which CRI plans to complete in 2012. In 2011, CRI completed much of the rehabilitation of the Tide tunnel, providing access to some of the underground workings. Alternatively, long surface drill holes could be completed, but this type of drilling would very likely be sufficient only for expanding Inferred Mineral Resources. In most cases, the dense drilling required for Indicated Mineral Resources will require underground access.

Due to the geometry of the Granduc deposit, dipping steeply west, the most ideal location for completing the drilling is from hanging-wall drifts and cross-cuts, or from the west side of the deposit at surface. Surface drilling to expand Exploration Potential or Inferred Mineral Resources would typically require 300 to 600 m holes. Shorter surface holes would be required in the southern limits of the main zone where topography drops closer to unexplored portions of the deposit. Underground drilling from the hanging-wall drifts would require much shorter holes, but may require some additional development in order to get better angles for drilling to expand Mineral Resources below the 500 m level.

Based on statistical continuity observed with the existing datasets, SRK is of the opinion that drilling at approximately 30 m spacing is required for converting Inferred Mineral Resources to Indicated category. Measured Mineral Resource will require demonstration of physical continuity by underground excavation and closely spaced underground drilling and historical data indicates that 15 m spacing is required for this level of confidence. This highly dense drilling is required largely due to the complex structural modification that the deposit has undergone, creating highly variable geometry and grade. Underground mapping and sampling would also allow confirming the interpreted geometry derived from the geological and structural model for this deposit. Some historical structural data remains to be compiled and it is recommended that the compilation is done during the 2012 program. Collection of new structural and geological data at the lower levels of the development is also warranted and oriented core should be considered.

There is also potential to discover and expand upon additional sulphide zones outside the Main Zone of the Granduc property. To further evaluate the North Zone, additional underground drilling is recommended. The South Zone mineralization has not been analyzed as part of the current work. It is recommended that surface drilling be completed between the Main and South Zones in order to understand the transition between the zones and better quantify the South Zone potential.

A number of factors have been identified by SRK that may affect the quality and quantity of the current estimates, and thereby highlight opportunities for improvement. The following factors remain opportunities for future work:

Methodology:

- Complete differential GPS survey of all surface holes possible;
- Complete underground and surface collar survey including azimuth/dips where practical; and,
- Purchase / develop a field useable database and eliminate spreadsheet use.

Drilling and Sampling

- Continue to complete re-sampling program on mineralized zones of stored historical core;
- Complete surface drill holes to expand mineralization at depth within the South Zone;
- Complete underground drill holes to convert Inferred Mineral Resources to Indicated as warranted by preliminary economic assessment; and,
- Complete surface and underground drill holes to expand knowledge of North Zone mineralization.

Geology and Structure

- Complete structural and geology mapping in the lowest production levels (2100 ft or 2600 ft) and at surface, to refine the geological modelling.

Analytical Techniques

- Increase insertion rate of reference standards to one in twenty;
- Utilize a reference standard at the average grade of the copper mineralization, as well as one above this value, and one near cut-off values; and,
- Utilize appropriate precious metal standards for all new analyses.

Modelling, Statistics and Estimation

- Complete a model of all mineralization within the historically mined out areas.

- Continue to collect precious metal content upon further compilation of historical data, re-sampling of available historic core and any future drilling data.

In light of the analysis and resource evaluation presented herein, SRK considers that another 30,000 m drilling program is warranted to test the depth and lateral extension of the mineralization within the South and North Zones. This work should be completed firstly via a surface drilling program followed by an underground drilling program if warranted by preliminary economic analysis. The goal of this work would be to continue to identify continuous zones of thick and high grade material which can potentially be exploited by bulk underground mining methods.

SRK recommends continued analysis of the overall economics of the Granduc Copper Project and completion of a scoping study or Preliminary Economic Assessment (“PEA”). The results of the PEA can then be utilized to drive the focus of exploration either toward expansion of the Inferred Mineral Resources or toward refinement of further Indicated Mineral Resources. From this analysis, more refined recommendations can be derived for further resource definition and further economic characterization.

If warranted by a successful PEA, underground drilling and potential development could be utilized to convert Inferred to Indicated Mineral Resources. In order to complete the underground drilling, as well as to complete confirmation surveying within the underground development, SRK recommends finalizing the rehabilitation of the Tide Tunnel access to the site as well as key components of the development such as selected access ramps and exploration drifts..

The total costs for the recommended work program are estimated at approximately C$15.4 million (Table 17.1). At a unit cost of approximately C$350 per metre of drilling (all inclusive), drilling related activities would form the bulk of the budget. Underground rehabilitation and surveying would form a very significant portion of the budget at approximately C$3 million. The costs are based on CRI’s cost estimates from previously completed drill programs at the Granduc Copper Project and SRK’s experience with similar projects. Engineering studies are budgeted at C$300,000. A 5% administration and contingency has been built into the budget.

Table 17.1: Summary of Recommended Exploration Program for the Granduc Project

Activity	Quantity	Unit	Unit cost (C$)	Cost Estimate (C$)
Exploration				
Surface Drilling	30,000	Metres	$350.00	$10,500,000
Underground and Structural Mapping				$100,000
Underground Development and Rehabilitation				
Continued Underground Development Rehabilitation				$3,000,000
Underground surveying				$100,000
Engineering Analysis				
Completion of Preliminary Economic Assessment				$300,000
Sub-total				$14,000,000
Administration			5%	$700,000
Contingency			5%	$700,000
Total				$15,400,000

18 References

Alldrick, D.J., Britton, J.M., Webster, I.C.L. and Russell C.W.P. (1989): Geology and Mineral Deposits of the Unuk River area. British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Survey Branch, Open File Map 1989-10.

Barrett, T.J. (1994): Preliminary Lithogeochemical Data for the Granduc Mine, Northern British Columbia. In: Mineral Deposits Research Unit " Volcanogenic Massive Sulphide Deposits of the Cordillera", First Annual Technical Report, The University of British Columbia.

Barrett, T.J., Cattalani, S., Hoy, L., Riopel, J. and Lafleur, P.J. (1992): Massive sulphide deposits of the Noranda area, Quebec, The Mobrun Mine. Canadian Journal of Earth Sciences, Vol. 29, pp. 1349- 1374.

Bartsch, R.D. (1993): Volcanic Stratigraphy and Lithogeochemistry of the Lower Jurassic Hazelton Group, host to the Eskay Creek Precious and Base Metal Volcanogenic deposit. Unpublished MSc Thesis, The University of British Columbia, 179 p.

BC Ministry of Engergy, Minfile No 140B 021 Granduc, Leduc, Vaughn K., Gedna may, www.minfile.gov.bc.ca (2011)

Childe, F. (1994): Radiogenic Isotopic Investigations of the Granduc Volcanic Hosted Massive Sulphide Deposit. Unpublished data.

Dawson, G.L., Barrett, T.J., Childe, F., Lewis, P.D., and Price, G. (1994): Geology, Lithogeochemistry, and Geochronological Study of the Granduc Property, Skeena Mining Division. Assessment Report.

Freckelton, D., Fraser, S., Beckett, R., McDonald, J.A., (1982): Compilation and Economic Evaluation of Mineralization in the North Area of Granduc Mine. Canada Wide Mines Ltd. and Esso Minerals Canada Ltd. Unpublished company report.

Klepacki, D.W. and Read, P.B. (1981): Surface structural analysis of the Granduc Mine area. Company report for Esso Minerals Canada Ltd. by Geotech Consultants Ltd.

Lewis, P. D. (1994): Regional Geological Setting of the Granduc Deposit, Stewart Mining Camp, British Columbia. A field report prepared for the Mineral Deposits Research Unit (MDRU), The University of British Columbia.

Lewis, P.D. (1993): Structural Evolution of the Iskut River area: Preliminary Results. In: Mineral Deposits Research Unit "Metallogeny of the Iskut River Area, British Columbia", Second Annual Technical Report, The University of British Columbia. 38

Lewis, P.D., MacDonald, A.J. and Bartsh, R.D. (1993): Hazelton and Bowser Lake Group stratigraphy in the Iskut River area: Progress and Problems. In: Mineral Deposits Research Unit "Metallogeny of the Iskut River Area, British Columbia", Second Annual Technical Report, The University of British Columbia.

Maclean, W.H. (1988): Rare earth element mobility at constant inter-REE ratios in the alteration zone at the Phelps Dodge massive sulphide deposit, Matagami, Quebec, Mineralia Deposita, Vol. 23, pp. 231-238.

McGuigan, P., Harrison, D., Techncial Report, Grandcu Peropty, Northwestern British Columbia, Canada. Cambria Geosciences, Vancouver, BC (2010)

McGuigan, P.J. (2005) Granduc Property, Northwestern BC, Canada. Technical Report for Bell Resources Corporation.

McGuigan, P.J. and Marr, J. (1979): Surface geology of the Granduc Mine Area Progress Report, Esso Minerals Canada Ltd. Unpublished company report.

McGuigan, P.J. and Tucker, D.C., (1981): Granduc Mine Underground Geological Mapping Project. Esso Minerals Canada Ltd. Unpublished company report.

Melnyk, W. (1991): Geological and Geochemical Report on the Granduc Property. Company report for Granduc Mines Ltd. (N.P.L.) by Cambria Geological Ltd. Unpublished company report.

Merber, D, Tyler, P, Block 4 Silver and Godl Reserves. Esso Minerals internal Report, Stewart, BC (1984)

Pearce, J.A., and Cann, J.R. (1973): Tectonic setting of basic volcanic rocks determined using trace element analysis. Earth and Planetary Science Letters, Vol. 19, pp. 290-300.

Rudd, J. (2005): Report on a Helicopter-Borne AeroTEM© II Electromagnetic & Magnetometer Survey, Aeroquest Job #05010, for Bell Resources Corporation. Technical Report on the ARIS system #28167.

Schmidt, W., Tyler, P. and Dereniwski, T. (1983): Economic Potential at Granduc, Unpublished company report, 63 pages.

Slack, J.F., 1993, Descriptive and grade-tonnage models for Besshi-type massive sulfide deposits, in Kirkham, R. V., Sinclair, W.D., Thorpe, R.I., and Duke, J.M., eds., Mineral deposit modeling, Geological Association of Canada Special Paper 40, p. 343-372.

Walker, M.R., The Salvage, Reclamation and Abandonment of the Granduc Mine. Proceedings of the 9th Annual British Columbia Mine Reclamation Symposium in Kamloops, BC, 1985. The Technical and Research Committee on Reclamation (1885)

Wasteneys, H. (2007): Diamond Drilling and Geochemistry at Granduc, for Bell Resources Corporation. Technical Report on ARIS system # 28912.

19 Acronyms and Abbreviations

Distance	
µm	micron (micrometre)
mm	millimetre
cm	centimetre
m	metre
km	km
"	inch
in	inch
'	foot
ft	foot
Area	
m^2	square metre
km^2	square km
ac	acre
Ha	hectare
Volume	
l	litre
m^3	cubic metre
ft^3	cubic foot
usg	US gallon
lcm	loose cubic metre
bcm	bank cubic metre
Mbcm	million bcm
Mass	
kg	kilogram
g	gram
t	metric tonne
Kt	kilotonne
lb	pound
Mt	megatonne
oz	troy ounce
wmt	wet metric tonne
dmt	dry metric tonne
Pressure	
psi	pounds per square inch
Pa	pascal
kPa	kilopascal
MPa	megapascal
Elements and Compounds	
Au	gold
Ag	silver
Cu	copper
Fe	iron
NaCN	sodium cyanide

Other	
°C	degree Celsius
°F	degree Fahrenheit
Btu	British Thermal Unit
cfm	cubic feet per minute
elev	elevation above sea level
masl	m above sea level
hp	horsepower
hr	hour
kW	kilowatt
kWh	kilowatt hour
M	Million
mph	miles per hour
ppb	parts per billion
ppm	parts per million
s	second
s.g.	specific gravity
usgpm	US gallon per minute
V	volt
W	watt
Ω	ohm
A	ampere
tph	tonnes per hour
tpd	tonnes per day
mtpa	million tonnes per annum
Ø	diam
Acronyms	
SRK	SRK Consulting (Canada) Inc.
CIM	Canadian Institute of Mining
NI 43-101	National Instrument 43-101
ABA	Acid- base accounting
AP	Acid potential
NPTIC	Carbonate neutralization potential
ML/ARD	Metal leaching/ acid rock drainage
PAG	Potentially acid generating
non-PAG	Non-potentially acid generating
RC	reverse circulation
IP	induced polarization
COG	cut-off grade
NSR	net smelter return
NPV	net present value
LOM	life of mine
Conversion Factors	
1 tonne	2,204.62 lb
1 oz	31.1035 g

20 Date and Signature Page

This technical report was written by the following "Qualified Persons" and contributing authors. The effective date of this technical report is February 17, 2012.

Qualified Person	Signature	Date
Michael D. Johnson, P.Geo	"Original Signed"	April 5, 2012

Reviewed by

"Original Signed"

Gilles Arseneau, PhD., P.Geo

Project Reviewer

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices