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# **TECHNICAL REPORT ON THE INITIAL MINERAL RESOURCE ESTIMATE FOR THE NEWTON PROJECT, CENTRAL BRITISH COLUMBIA, CANADA**

**NI 43-101 Report**

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**November 9, 2012**



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Technical Report on the Initial Mineral Resource Estimate for the Newton Project, Central British Columbia, Canada

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# 1 SUMMARY

## EXECUTIVE SUMMARY

### INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by Amarc Resources Ltd. (Amarc) to prepare an independent Technical Report on the Newton Project (the Project), located in south-central British Columbia, Canada. The gold-silver mineralization outlined by the diamond drilling programs at Newton is associated with disseminated pyrite that is hosted primarily by a sequence of pyroclastic flows of felsic composition that have been intruded by younger dikes of intermediate composition. The Newton property consists of 58 claims comprising an area of approximately 128,996 ha. Amarc holds a 100% interest of the mineral rights of the Project; Amarc does not hold any surface rights.

This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects. Mr. Reno Pressacco, P.Geo., Principal Geologist with RPA, visited the property on June 19 and 20, 2012. During the site visit, Mr. Pressacco reviewed a number of mineralized intersections in drill core, carried out a personal inspection of selected trenches and drill hole collars, reviewed the procedures for core logging and sampling, and took a small number of samples of drill core for check assaying.

Amarc has been conducting exploration programs at the Newton Project to test for the presence of gold-silver mineralization in the northern extents of its large property holdings. Several different types of exploration activities have been completed at the Newton Project since the ground was acquired in 2009-2010. These include geophysical and geochemical surveying, mineralogical studies, re-logging of drill core generated from previous exploration programs, and diamond drilling.

### INTERPRETATION AND CONCLUSIONS

The exploration programs completed by Amarc have successfully identified a mineralized system that exhibits characteristics typical of bulk-tonnage, low to intermediate sulphidation epithermal gold-silver deposits. The disseminated gold and associated base metals mineralisation is primarily hosted by thick sequences of late Cretaceous-aged permeable felsic volcanoclastics and flows and contemporaneous felsic intrusions, emplaced into a

structurally active graben environment. The host rocks show strong, widespread sericite-quartz alteration with variable siderite and several percent pyrite and/or marcasite. Additional mineralization is hosted to a lesser degree by intrusive rocks of intermediate and felsic composition. Initial studies suggest that the gold occurs predominantly as high fineness electrum and is preferentially associated with marcasite-bearing alteration.

The drilling completed to date has outlined a significant, gold-silver deposit over an area of approximately 800 m by 800 m and to a depth of approximately 560 m from surface. The deposit occupies a restricted area within an extensive plus seven square kilometre hydrothermal system (as indicated by the outline of the 8 MV/V contour of the induced polarization (IP) chargeability anomaly) that exhibits widespread metal enrichment, and which remains to be fully explored. Drill results to date not only indicate that there is potential to expand the current bulk-tonnage gold resource but also suggest that there are possibilities to discover structurally controlled zones of higher grade gold mineralization and copper-gold porphyry-style mineralization in proximity to the initial resource. The quality assurance/quality control (QA/QC) programs employed by Amarc during the drilling and assaying programs meet current industry best practices.

Amarc has applied variable grade caps to the three principle domains that were used to prepare this Mineral Resource estimate. Review of the distribution of the silver grades suggested that no capping of the silver values is warranted.

Examination of contour plots of gold grades for selected elevations through the deposit reveals that no discernible, consistent trends appear to be present in the data examined. A grade-block model was prepared using the three principal domains to ensure proper coding of the model. "Hard" domain boundaries were used along the contacts of the mineralized domain model. Only data contained within the respective domain models were allowed to be used to estimate the grades of the blocks within the domain in question, and only those blocks within the domain limits were allowed to receive grade estimates. Only the capped, composited grades of the drill hole intersections were used to derive an estimate of a block's grade.

A series of polygons were created in sectional view that outlined those portions of the domain models that demonstrate continuity of mineralization to within 75 m of a drill hole.



These clipping polygons were then linked together to form a three-dimensional solid that was used as one of the constraints in the preparation of the Mineral Resource estimate.

A preliminary pit shell was generated using a Lerchs-Grossmann optimizer as an additional constraint in the preparation of this Mineral Resource estimate. A 50° overall pit wall slope angle was applied.

The Mineral Resources in this report were estimated in accordance with the definitions contained in the CIM Definition Standards on Mineral Resources and Mineral Reserves (CIM definitions) that were prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on November 27, 2010.

The mineralized material for each domain was classified by RPA into the Inferred Mineral Resource category on the basis of the search ellipse ranges obtained from the variography study, the application of an open pit shell along with a constraining volume, and its experience with these deposit types in the past.

The Mineral Resources are presented in Table 1-1. At a cut-off grade of 0.25 g/t Au, a total of 111,460,000 tonnes are estimated to be present at an average grade of 0.44 g/t Au (1,571,000 contained oz Au) and 2.1 g/t Ag (7,694,000 contained oz Ag).

**TABLE 1-1 SUMMARY OF MINERAL RESOURCES – JULY 4, 2012**  
**Amarc Resources Ltd. – Newton Project**

Cut-off Grade (g/t Au)	Tonnage (000 t)	Inferred Resources:			
		Grade (g/t Au)	Contained Metal (000 oz Au)	Grade (g/t Ag)	Contained Metal (000 oz Ag)
0.20	147,069	0.38	1,818	1.9	8,833
<b>0.25</b>	<b>111,460</b>	<b>0.44</b>	<b>1,571</b>	<b>2.1</b>	<b>7,694</b>
0.30	85,239	0.49	1,334	2.4	6,495
0.35	65,384	0.54	1,130	2.7	5,635
0.40	49,502	0.59	938	2.9	4,596
0.45	38,491	0.64	789	3.1	3,842
0.50	28,684	0.69	640	3.3	3,069

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated using a long-term gold price of US\$1,750 per ounce, and a US\$/C\$ exchange rate of 1.00.
3. Bulk density is 2.71 t/m<sup>3</sup>.
4. Numbers may not add due to rounding.
5. The effective date of the Mineral Resource estimate is July 4, 2012.

There are no Mineral Reserves estimated for the Newton Project.

## RECOMMENDATIONS

RPA recommends a two phased approach to additional diamond drilling proximal to the Newton resource aimed at:

1. Increasing the current gold-silver resource, and
2. Exploring for additional potential resources within the known plus seven square kilometre hydrothermal system.

A Phase 1 delineation and exploration diamond drill program comprising an approximately 4,000 m drill program is recommended to test:

1. The high-contrast magnetic low that extends to the northwest of the Newton currently delineated deposit, and
2. The vicinity, and to the south, of drill hole 12086, which is located south of both the current resource and the South Graben fault; this area has potential for repetition of the favourable, felsic volcanic strata which host gold mineralization immediately to the north.

A budget of \$1,500,000 is estimated for the Phase 1 program and is presented in Table 1-2 below.

**TABLE 1-2 PROPOSED PHASE 1 BUDGET  
Amarc Resources Ltd. – Newton Project**

	<b>C\$</b>
All-In Site and Analytical Costs	1,170,000
Technical Support	50,000
Community Relations/Environmental Studies	100,000
General and Administration	180,000
<b>TOTAL</b>	<b>1,500,000</b>

A follow-up Phase 2 program is suggested, which is contingent on the success of the Phase 1 program. A Phase 2 budget of up to \$6,000,000 is recommended and the associated program would consist of:

1. Infill diamond drilling to further delineate potentially economic mineralization identified in the Phase 1 program.

2. Drill testing areas within or immediately adjacent to the significant plus seven square kilometre hydrothermal system as outlined by the 8MV/V contour of the IP chargeability anomaly where felsic volcanic units are projected, or have the potential, to occur.
3. Additional detailed structural modelling completed within and proximal to the currently defined resource to assess the potential presence, and projected location, of zones of high-density veins and/or mineralized fractures. Such zones have the potential to host higher-grade, structurally controlled mineralization that would increase the tenor of the resource. As part of this exercise, detailed three-dimensional modelling of vein and fracture density is recommended to develop possible vectors toward prospective structural settings. Resulting targets should then be tested by diamond drill holes oriented appropriately to the projected plane of the controlling structures.
4. Preliminary metallurgical test work carried out to provide initial information regarding the hardness of the mineralized samples, and an initial evaluation of recovery methods.

In addition, it is recommended by RPA that the QA/QC protocols for the Newton Project be updated in relation to future drilling so that sampling programs include certified reference materials for silver and, in accordance with established protocols, the results be monitored for departures from the recommended values with respect to the silver standards.

RPA believes that acquisition of a more detailed topographic surface is justified for use in future project activities.

As the Project progresses through to more advanced stages, RPA recommends that a greater emphasis be placed on achieving a more accurate local estimate of the distribution of the gold and silver grades in future block models.

## **TECHNICAL SUMMARY**

### **PROPERTY DESCRIPTION AND LOCATION**

The area of the current work program is approximately 108 km west-southwest of Williams Lake, British Columbia. The property is road accessible via paved Highway 20 and all-weather forest service roads. Total driving time from Williams Lake to the Newton property is approximately 2.5 hours.

The Newton property consists of 58 claims comprising an area of approximately 128,996 ha. Amarc holds a 100% interest in the mineral rights of the Project; Amarc does not hold any

surface rights. British Columbia mining law allows for access and use of the surface for exploration through notification of surface rights holders. The Project is situated within the asserted traditional territory of the Tsilhqot'in National Government.

## **LAND TENURE**

In August 2009, Amarc entered into an agreement (the Newton Agreement) with Newton Gold Corp. (Newton Gold) (at that time named High Ridge Resources Inc. (High Ridge)), whereby Amarc acquired the right to earn an 80% interest in the Newton property.

The Newton Agreement is subject to an underlying option agreement (the Underlying Agreement) with arm's length parties, whereby Newton Gold had the right to acquire a 100% undivided interest in all the claims held under that Underlying Agreement. The claims defined in the underlying option agreement to the Newton Agreement are subject to a 2% net smelter return royalty (NSR), which royalty may be purchased by the parties for \$2,000,000. In May 2011, all the conditions in the Newton Agreement were met.

In June 2011, Amarc entered into the Newton Joint Venture Agreement with Newton Gold (the Newton JV Agreement) and agreed to incorporate mineral claims adjacent to the Newton discovery, then held by Amarc, into the Newton JV Agreement. The Newton Joint Venture had a 100% undivided interest in all claims held under the Newton JV Agreement.

Effective May 22, 2012, the participating interest of Newton Gold in the Newton Joint Venture was reduced to a 5% Net Profits Interest in accordance with the terms of the Newton JV Agreement. Amarc now holds a 100% interest in the Newton property.

## **HISTORY**

The earliest known work on the Newton property occurred in 1916 when Mr. Newton produced a quantity of gold from a small shaft and some open cuts. The first documented work at Newton Hill was by Cyprus Exploration Corporation Inc., which executed an exploration program in 1972. Additional exploration programs were carried out during the 1981 to 1997 period. High Ridge began working on the property in 2004. Part of their work involved re-assessing the 1972 IP geophysical data. In 2005, High Ridge conducted a geological investigation and a total field ground magnetic survey. In 2006, 12 diamond drill holes were completed for a total of 2,019.5 m.

## **GEOLOGY**

The most recent British Columbia Geological Survey regional geology compilation shows that rocks on the Newton property include Mesozoic-aged intrusive, volcanic, and sedimentary rocks of the Spences Bridge Group overlain by Cenozoic volcanic rocks and unconsolidated glacial till. More recently, it has been suggested that Mid- to Late Cretaceous calc-alkaline volcanism characterized by felsic pyroclastic units of the Kasalka Group and mafic to felsic flows and welded and non-welded ignimbrites of the Spences Bridge and Kingsvale Groups are contemporaneous and represent a chain of stratovolcanoes associated with subsiding, fault-bounded basins.

Stratified rocks at Newton Hill have been assigned provisionally to the Cretaceous Spences Bridge Group and consist of mafic volcanic rocks, sedimentary rocks derived from mafic to intermediate volcanic protoliths, rhyolite flows, and felsic volcanoclastic rocks. These rock types are believed to have been deposited in a graben. The sequence is dominated by felsic volcanic and volcano-sedimentary rocks that unconformably overlie epiclastic sedimentary rocks.

The volcano-sedimentary sequence at Newton Hill is cut by several types of intrusions. The oldest are sub-volcanic felsic quartz-feldspar porphyries that have a quartz monzonite composition and are interpreted to be directly related to the felsic volcanic rocks in the Spences Bridge Group. Minor mafic dykes present in the area are considered to be related to mafic volcanic rocks in the Spences Bridge Group. The early intrusions are cut by a complex of Cretaceous monzonite intrusions. These monzonites are intruded in turn by porphyritic plagioclase-hornblende diorites. The youngest intrusions observed are minor plagioclase- and biotite-phyric dykes which are believed to have formed after hydrothermal activity had ceased.

The Newton deposit is believed to have been formed within a structurally active volcanic environment. Felsic and mafic volcanic rocks were deposited in a rifted volcanic graben which was segmented along steeply dipping extensional faults. Two major structures have been recognized in the resource area. The South Graben fault (SGF) and the Newton Hill fault (NHF) can be correlated across much of the area of drilling within the Newton deposit.

Although gold and base metal mineralization have been encountered in all rock types within the Newton deposit, felsic volcanoclastic and flow rocks are the primary host rocks to the

mineralization. Quartz-feldspar porphyry and monzonite porphyry intrusions are also commonly, although not as consistently, well-mineralized. Mineralization in other rock types is more erratic. The felsic plagioclase and biotite porphyritic dykes are very late- or post-hydrothermal and do not contain significant concentrations of gold or base metals.

## **MINERALIZATION**

Gold-silver ± base metal mineralization is associated with both disseminated and veinlet-hosted styles of mineralization. Veinlet-hosted mineralization, although widespread, is volumetrically minor compared to disseminated mineralization.

Most mineralization formed during two sub-stages of quartz-sericite alteration. These are (1) earliest quartz-sericite-(siderite)-pyrite alteration associated with gold but with low concentrations of base metals; and (2) later quartz-sericite alteration associated with gold and relatively higher concentrations of base metals, during which early pyrite was replaced by marcasite. Mineralization also occurs in late polymetallic veinlets which contain abundant pyrite, chalcopyrite, sphalerite, galena, arsenopyrite, and, locally, molybdenite.

There is evidence to suggest that there is a large gold-bearing hydrothermal system present at Newton. Geochemically significant gold concentrations, exceeding 50 ppb (0.05 g/t) values occur over an area of at least 1,300 m by 1,800 m. Geologically important gold concentrations of more than 100 ppb (0.1 g/t) have been returned from drill intersections throughout an area which measures approximately 1,300 m by 900 m. Short intersections of more than 100 ppb have also been encountered outside of this area. The resource area is defined by variably spaced drilling over an area measuring 1,000 m by 900 m, which extends to a maximum depth of 685 m.

## **DEPOSIT TYPES**

Newton is viewed as a bulk-tonnage disseminated epithermal gold deposit with elevated base metal concentration. It shares many similarities with a group of deposits that have been recently recognized in central British Columbia. Key similarities include: (1) a spatial and genetic relationship with Late Cretaceous (~72 Ma) felsic pyroclastic rocks and high-level intrusions which formed in a structurally active environment; (2) a primary gold-silver signature; (3) elevated concentrations of copper, zinc, lead, and molybdenum; (4) an association of mineralization with extensive, pervasive quartz-sericite alteration, which

contains disseminated and vein-hosted pyrite, marcasite, chalcopyrite, sphalerite, galena, arsenopyrite, and sulphosalts; and (5) late stages of polymetallic vein formation.

## **EXPLORATION**

Amarc has completed several different types of exploration at the Newton Project since the ground was acquired in 2009-2010. These include airborne and ground-based geophysical surveys, soil sampling mineralogical analysis, and hyperspectral logging. In addition, Amarc re-logged core from 12 drill holes completed in 2006. Diamond drilling programs completed by Amarc include a 14-hole diamond drill program in 2009-2010 totalling 4,076.5 m of core to investigate the southeastern continuation of gold and copper mineralization encountered by drilling completed in 2006 by High Ridge; a wide-spaced, 29-hole diamond drill program in 2010-2011 totalling 7,646.6 m to investigate the extent of the gold-silver mineralization encountered by previous drilling programs across an area of seven square kilometres as well as to follow up a chargeability anomaly in the area of the Newton discovery; and a 46-hole delineation diamond drill program totalling 16,221.4 m completed in 2011-2012 to determine the grade and extent of the main gold-silver zone.

## **DRILLING**

A number of drill campaigns have taken place on the Newton property since the first hole was completed in 1972. A total of 33,707 m has been completed in 128 holes up to hole 12088. This work includes 27,944 m in 89 holes in the four years since Amarc became project operator in 2009. All drill cores from the historical programs were originally stored at the Newton Project site. In early 2011, Amarc salvaged what remained of this historical core and moved it to a secure location at Gibraltar Mine, near McLeese Lake, British Columbia.

All drill hole collar surveys by Amarc were recorded in UTM NAD 83, Zone 10 coordinates. Downhole orientation surveys were performed at various intervals using a Reflex E-Z shot tool. Drill core was geologically logged and photographed prior to sampling. No geotechnical logs or core density measurements were made during the 2009 drilling program. Geological and geotechnical logging of the HQ diameter drill core, as well as bulk density measurements and core photography, was performed prior to sampling for subsequent drilling campaigns. The remaining drill core from the Amarc drilling programs is stored either at the Gibraltar mine or in Williams Lake, British Columbia.



Much of the large Newton sulphide-bearing alteration zone, as defined by Amarc's 2010 IP survey, has not been thoroughly explored. For example, the Newton gold deposit lies within a northwest trending total field magnetic low that extends approximately 500 m to the northwest beyond the deposit as defined by the densest drilling. This area is only sparsely drilled and needs further testing. In addition, to the north, mineralization in hole 12076 has not been fully investigated and in the south, the mineralized intervals in hole 12086 are indicative of resource potential in this vicinity.

### **SAMPLE PREPARATION, ANALYSES, AND SECURITY**

A number of analytical laboratories have carried out analytical work on sample from the property over the years. Amarc has had their analytical work carried out by the Acme Analytical facilities in Vancouver as the primary laboratory. The check assay laboratory was ALS Chemex. Both the Acme and ALS Minerals facilities are independent of Amarc.

The half-core samples were crushed at Acme (Vancouver or Smithers) to greater than 80% passing 10 mesh (2 mm), then a 500 g sub-sample was split and pulverized to >85% passing 200 mesh (75 µm). Prior to hole 11045, a 250 g sub-sample was split and pulverized to >85% passing 200 mesh. The coarse rejects and pulps from the assay samples are retained at the secure, long-term storage facility of Hunter Dickinson Services Inc. (HDSI) at Port Kells, British Columbia. The gold content was determined by 30 g fire assay fusion with Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP-AES) finish (Acme method code: 3B01). The concentrations of copper, silver, and 32 additional elements were analyzed using a 1.0 g sample aqua regia digestion with ICP-AES or Inductively Coupled Plasma - Mass Spectroscopy finish (Acme method code: 7AX).

Amarc implemented and maintained an effective external QA/QC system consistent with industry best practice from 2009 to 2012. This program is in addition to the QA/QC procedures used internally by the analytical laboratories. Standards (Certified Reference Materials) were randomly inserted into the sample stream at a frequency of 1 in 20. Duplicate samples were created by taking an additional split from the remaining pulp reject, coarse reject quarter-core or half-core remainder at a frequency of 1 in 20 on a random basis. Blank samples were inserted into the sample stream at a frequency of 1%.

A total of 1,494 bulk density (or specific gravity, SG) measurements have been taken by site personnel using the water immersion method since 2010.



Drill hole logs are entered into notebook computers running the Amarc Access data entry module for the Newton Project at the core logging area on site. The core logging computers are synchronized on a daily basis with the master site entry database at the site geology office. Core photographs are also transferred to the site geology office computer on a daily basis. In the geology office, the logs are printed, reviewed, and validated and initial corrections made.

## **DATA VERIFICATION**

For the 2009 through 2012 drill programs, the validation steps completed by Hunter Dickinson Inc. (HDI) staff during the preparation of the drill hole database included printing and review of the QA/QC and assay results, visual review of the downhole charts with lithologic and selected assays, generation of external QA/QC charts for the standard reference materials, blank sample and duplicate samples. The QA/QC programs employed by Amarc during the drilling and assaying programs meet current industry best practices.

During its site visit, RPA examined the existing site infrastructure and access and visited a number of drill hole collar sites. The on-site logging and sampling facilities were also reviewed and the procedures followed were discussed. RPA believes that the logging and sampling procedures that were used have been carried out to the highest industry standards employed. The lithologies, structure, alteration, and mineralization encountered by in selected drill holes were examined and compared with the descriptions presented in the drill hole logs. No material discrepancies were noted.

A small program of check assaying was carried out by RPA where a total of 10 samples from drill holes 12083 and 12072 were selected. While such a small number of check samples cannot be considered as adequate to confirm the accuracy of all of the assays contained with the Newton Project drill hole database, RPA is satisfied that it has independently confirmed the presence of gold in approximately similar quantities as have been reported by Amarc in the selected samples.

RPA carried out a program of validating the digital drill hole database by means of spot checking a selection of drill holes that intersected the mineralized material. Approximately 10% of the drill hole database was selected for validation. RPA discovered no material discrepancies as a result of its spot-checking of the drill hole database. As a result of its data

verification activities, RPA believes that the drill hole database assembled by Amarc is suitable for use in the preparation of a Mineral Resource estimate.

## **MINERAL RESOURCE ESTIMATE**

### ***DESCRIPTION OF THE DATABASE***

A digital database was provided to RPA by Amarc in which drill hole information such as collar location, downhole survey, lithology, and assays was stored in comma delimited format. The cut-off date for the drill hole database is July 4, 2012. In total, the database contains information for 128 drill holes and 10,945 assay records as of the cut-off date.

### ***GEOLOGICAL DOMAIN INTERPRETATION***

Using the borehole database, surface geological map, vertical sections and plans, a three-dimensional (3D) model for the Newton Project was developed for this estimate.

Sets of parallel, east-west, vertical cross-sections spaced 50 m apart were created covering the resource area from north to south. On each section, boundaries for the felsic mineralized rocks were interpreted based on the logged lithology. RPA reviewed the interpreted wireframe models in relation to the drill hole and topographic information and agrees that the solid models that have been created honour the lithologic information presented in the drill holes. In brief, it can be seen that the wireframe solids models are dominated by the presence of two large blocks of felsic volcanic rocks that have been displaced by the moderately west-dipping Newton Hill fault. In all, three domains were created.

### ***GRADE CAPPING***

All samples contained within the three domains were coded in the database and extracted for analysis. Normal histograms were generated from these extraction files for both the gold and silver assays. The grade caps for the gold assays were selected by examining the gold histograms for the grade at which outlier assays begin to occur. A capping value of 5.45 g/t Au was selected for Domain 1, 4.69 g/t Au for Domain 2 and 2.59 g/t Au for Domain 3. RPA agrees with Amarc's selection of the capping values for the gold assays in the three domains. RPA conducted a capping sensitivity analysis for the silver values in each of the three domains separately and found that the silver values were relatively insensitive to capping level changes. RPA agrees with Amarc's election to not apply capping values to the silver assays.

**COMPOSITING METHODS**

All samples contained within the three domain models were composited using the fixed-length method. In this method, the composite sample lengths for a given drill hole intersection are adjusted to yield a set of equal length composite samples across the width of a mineralized zone. RPA carried out an analysis of the distribution of the sample lengths for the gold samples within the three domains and agrees with Amarc's election to use a nominal three metre core length in calculating the fixed-length composites.

**BULK DENSITY**

A total of 1,182 density measurements were used to estimate bulk density into the block model. Obvious spurious values were removed from the data set prior to use and the mean density was determined to be 2.71 t/m<sup>3</sup>. Specific gravities were estimated using an inverse distance squared estimator and an anisotropic search.

**TREND ANALYSIS**

As an aid in carrying out variography studies of the continuity of the gold grades in the three mineralized domains, RPA conducted a short study of the overall trends that may be present within each of these domains. For this exercise, a data file was prepared that contained the average gold grade for three selected benches (1200, 1100, and 1000 benches).

In general, no discernible, consistent trends appear to be present in the data examined.

**VARIOGRAPHY**

Amarc constructed downhole variograms for gold using the capped, equal length composited sample data, with the objective of determining an appropriate value for the global nugget (C0). Experimental pairwise relative semi-variograms and 2-structure exponential models were used to search for any anisotropies that may be present. This resulted in coherent variograms for Domain 1 with reasonably good model fits that identified maximum ranges of approximately 150 m to 160 m. Efforts to identify the anisotropies associated with the Domain 2 mineralization were not successful. Similarly, the variogram analysis for Domain 3 did not produce meaningful variograms.

**BLOCK MODEL CONSTRUCTION**

An upright, non-rotated, whole-block model (i.e., no partial percentage or sub-blocking was applied) with the long axis of the blocks oriented along an azimuth of 090° and dipping vertically (i.e., -90°) was constructed by Amarc using the Datamine Studio v.3 software

package. The selected block size was 10 m x 10 m x 5 m (width, length, height). The selection of the search radii was guided by modelled ranges from variography for gold 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. “Hard” domain boundaries were used along the contacts of the mineralized domain model. Only data contained within the respective domain models were allowed to be used to estimate the grades of the blocks within the domain in question, and only those blocks within the domain limits were allowed to receive grade estimates. Only the capped, composited grades of the drill hole intersections were used to derive an estimate of a block’s grade.

### ***BLOCK MODEL VALIDATION***

The Newton Project block model validation included a visual inspection of the interpolated block model grades versus the drill hole composite grades, comparison of the block grades to the contoured grade distribution for selected benches, and a comparison of the average block grades versus composite gold grades for each domain. The visual examination and the comparison of block grades versus contoured values reveals that the interpolation process has resulted in a smoothing of the gold and silver grades. However, the analysis of the composite-to-block average grades reveals that the mean grades for gold and silver in the block model are in good agreement with the informing samples suggesting that, on balance, no bias is indicated to be present in the average gold and silver grades in the block model. Given the current status of the project, RPA is of the opinion that the block model that has been prepared is appropriate for use in the estimation of the global tonnage and average grades of gold and silver for the Newton Project.

### ***CUT-OFF GRADE***

Given the early stage of Newton Project, no recent studies have been undertaken that have contemplated potential operating scenarios. For the purposes of this assignment, a conceptual operating scenario was developed in which mineralized material would be excavated using a conventional truck and shovel open pit mine and the material then being processed using either a conventional flotation-leach or whole ore leach circuit. This conceptual scenario will likely change as more information becomes available for this deposit.

RPA believes that a gold price of US\$1,750/oz and a silver price of US\$25/oz, in conjunction with an exchange rate of \$1.00 (US\$:C\$) and a gold recovery of 92% and a silver recovery of 45%, is appropriate for use in the estimation of a cut-off grade for this project.

Application of these input parameters yields a minimum cut-off grade of 0.11 g/t Au for the Newton deposit. However review of similar bulk tonnage gold deposits in the region suggests that a 0.25 g/t Au is a more appropriate threshold for use in preparation of a Mineral Resource estimate.

## 2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) was retained by Amarc Resources Ltd. (Amarc) to prepare an independent Technical Report on the Newton Project (the Project), located in south-central British Columbia, Canada. The purpose of this report is to disclose the results of the initial Mineral Resource estimate for the gold-silver mineralization outlined by recently completed diamond drilling programs at the Newton Project. The gold-silver mineralization outlined by the diamond drilling programs at Newton is associated with disseminated pyrite that is hosted primarily by a sequence of pyroclastic flows of felsic composition that have been intruded by younger dikes of intermediate composition.

This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects. Mr. Reno Pressacco, P.Geo., Principal Geologist with RPA, visited the property on June 19 and 20, 2012. During the site visit, Mr. Pressacco reviewed a number of mineralized intersections in drill core, carried out a personal inspection of selected trenches and drill hole collars, reviewed the procedures for core logging and sampling, and took a small number of samples of drill core for check assaying. Mr. Pressacco was accompanied on the site visit by Ms. Elena Guszowaty, Project Manager and Mr. Fraser Adams who provided access to all materials requested and answered all questions. Both Ms. Guszowaty and Mr. Adams are employees of the Hunter Dickinson Services Inc. (HDSI).

A series of meetings were held on June 21, 2012, in the Vancouver offices of Amarc where discussions with the following personnel from Amarc and HDSI, took place:

- Mr. David Gaunt, P. Geo., Vice President Resource and Database
- Mr. Deon van der Heever, Senior Manager, Resource and Database
- Mr. Eric Titley, P. Geo., Senior Manager Resource Geology
- Dr. Diane Nicolson, Executive Vice President, Amarc

The sources of information used by RPA in preparation of this report include data provided to it by Amarc such as drill hole locations, descriptions of the lithologies encountered and the assay results, digital interpretations of the structural setting of the deposit and results of structural analyses carried out on the deposit. As well, public domain information was also accessed and is listed in detail in Section 27 References section at the end of this report. All measurement units used in this report are metric, and currency is expressed in Canadian dollars unless stated otherwise.

**LIST OF ABBREVIATIONS**

a	annum	kWh	kilowatt-hour
A	ampere	L	litre
bbbl	barrels	lb	pound
btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C\$	Canadian dollars	M	mega (million); molar
cal	calorie	m <sup>2</sup>	square metre
cfm	cubic feet per minute	m <sup>3</sup>	cubic metre
cm	centimetre	μ	micron
cm <sup>2</sup>	square centimetre	MASL	metres above sea level
d	day	μg	microgram
dia	diameter	m <sup>3</sup> /h	cubic metres per hour
dmt	dry metric tonne	mi	mile
dwt	dead-weight ton	min	minute
°F	degree Fahrenheit	μm	micrometre
ft	foot	mm	millimetre
ft <sup>2</sup>	square foot	mph	miles per hour
ft <sup>3</sup>	cubic foot	MVA	megavolt-amperes
ft/s	foot per second	MW	megawatt
g	gram	MWh	megawatt-hour
G	giga (billion)	oz	Troy ounce (31.1035g)
Gal	Imperial gallon	oz/st, opt	ounce per short ton
g/L	gram per litre	ppb	part per billion
Gpm	Imperial gallons per minute	ppm	part per million
g/t	gram per tonne	psia	pound per square inch absolute
gr/ft <sup>3</sup>	grain per cubic foot	psig	pound per square inch gauge
gr/m <sup>3</sup>	grain per cubic metre	RL	relative elevation
ha	hectare	s	second
hp	horsepower	st	short ton
hr	hour	stpa	short ton per year
Hz	hertz	stpd	short ton per day
in.	inch	t	metric tonne
in <sup>2</sup>	square inch	tpa	metric tonne per year
J	joule	tpd	metric tonne per day
k	kilo (thousand)	US\$	United States dollar
kcal	kilocalorie	USg	United States gallon
kg	kilogram	USgpm	US gallon per minute
km	kilometre	V	volt
km <sup>2</sup>	square kilometre	W	watt
km/h	kilometre per hour	wmt	wet metric tonne
kPa	kilopascal	wt%	weight percent
kVA	kilovolt-amperes	yd <sup>3</sup>	cubic yard
kW	kilowatt	yr	year

### **3 RELIANCE ON OTHER EXPERTS**

This report has been prepared by Roscoe Postle Associates Inc. (RPA) for Amarc Resources Inc. (Amarc). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by Amarc and other third party sources.

For the purpose of this report, RPA has relied on ownership information provided by Amarc. RPA has not researched property title or mineral rights for the Newton Project and expresses no opinion as to the ownership status of the property.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.



## 4 PROPERTY DESCRIPTION AND LOCATION

### LOCATION

The Newton property is located in west central British Columbia, in the Clinton Mining Division, on NTS map sheet 92O/13, and BCGS maps 092O.072, 073, 082 and 083. The area of the current work program is approximately 108 km west-southwest of Williams Lake, British Columbia, at 51° 47.85' N Latitude and 123° 37.26' W Longitude; or UTM Zone 10 (NAD 83) at 5,738,700 m N and 457,175 m E, as shown in Figures 4-1 and 4-2.

The property is road accessible via paved Highway 20 and all-weather forest service roads. Total driving time from Williams Lake to the Newton property is approximately 2.5 hours. Access to the property is gained from the 7000 Road, west of Alexis Creek, British Columbia.

### LAND TENURE

The Newton property consists of 58 claims comprising an area of approximately 128,996 ha (Figure 4-2). All claims are held by Amarc. The core claim, NEWTON I, was staked in 1987. The surrounding eight claims were staked in 2004 and 2005. The “NEWT”, “NEWS”, “BIG”, and “KNEW” claims were staked in 2009 and 2010. A complete list of the project claims, the expiration dates, and the area of each claim is contained in Table 4-1.

**TABLE 4-1 LIST OF CLAIMS**  
**Amarc Resources Ltd. – Newton Project**

<b>Tenure No.</b>	<b>Claim Name</b>	<b>Date Recorded</b>	<b>Expiry Date</b>	<b>Area (ha)</b>
208327	NEWTON I	1987/Sep/14	2020/Sep/14	500.00
414743	NWT 5	2004/Oct/07	2020/Jun/19	375.00
507905		2005/Feb/25	2020/Jun/19	699.86
507914		2005/Feb/25	2020/Jun/19	399.65
511965	NWT 7	2005/May/02	2020/Jun/19	399.61
511967	NWT 8	2005/May/02	2020/Jun/19	299.94
514976		2005/Jun/22	2020/Jun/19	559.68
514979		2005/Jun/22	2020/Jun/19	499.92
514981		2005/Jun/22	2020/Jun/19	379.78
606674	NEWT 19	2009/Jun/26	2018/Jun/19	499.90
606675	NEWT 04	2009/Jun/26	2018/Jun/19	500.13
606676	NEWT 20	2009/Jun/26	2018/Jun/19	499.90
606677	NEWT 31	2009/Jun/26	2018/Jun/19	499.30
606678	NEWT 05	2009/Jun/26	2018/Jun/19	500.13
606679	NEWT 21	2009/Jun/26	2018/Jun/19	299.94
606680	NEWT 06	2009/Jun/26	2018/Jun/19	500.12
606681	NEWT 32	2009/Jun/26	2018/Jun/19	499.35
606682	NEWT 07	2009/Jun/26	2018/Jun/19	500.37
606683	NEWT 33	2009/Jun/26	2018/Jun/19	499.35
606684	NEWT 22	2009/Jun/26	2018/Jun/19	199.89
606685	NEWT 36	2009/Jun/26	2018/Jun/19	499.12
606686	NEWT 23	2009/Jun/26	2018/Jun/19	499.67
606687	NEWT 08	2009/Jun/26	2018/Jun/19	500.37
606688	NEWT 37	2009/Jun/26	2018/Jun/19	499.12
606689	NEWT 09	2009/Jun/26	2018/Jun/19	500.37
606690	NEWT 24	2009/Jun/26	2018/Jun/19	299.80
606691	NEWT 38	2009/Jun/26	2018/Jun/19	499.07
606692	NEWT 25	2009/Jun/26	2018/Jun/19	439.48
606693	NEWT 18	2009/Jun/26	2018/Jun/19	480.53
606694	NEWT 17	2009/Jun/26	2018/Jun/19	480.53
606695	NEWT 34	2009/Jun/26	2018/Jun/19	459.56
606696	NEWT 26	2009/Jun/26	2018/Jun/19	499.32
606697	NEWT 03	2009/Jun/26	2018/Jun/19	500.13
606698	NEWT 35	2009/Jun/26	2018/Jun/19	479.26
606699	NEWT 02	2009/Jun/26	2018/Jun/19	500.13
606700	NEWT 43	2009/Jun/26	2018/Jun/19	299.33
606701	NEWT 10	2009/Jun/26	2018/Jun/19	500.37
606702	NEWT 27	2009/Jun/26	2018/Jun/19	479.39
606703	NEWT 11	2009/Jun/26	2018/Jun/19	500.37
606704	NEWT 44	2009/Jun/26	2018/Jun/19	399.13
606705	NEWT 16	2009/Jun/26	2018/Jun/19	480.54
606706	NEWT 45	2009/Jun/26	2018/Jun/19	399.13

Tenure No.	Claim Name	Date Recorded	Expiry Date	Area (ha)
606707	NEWT 28	2009/Jun/26	2018/Jun/19	419.30
606708	NEWT 15	2009/Jun/26	2018/Jun/19	240.27
606709	NEWT 46	2009/Jun/26	2018/Jun/19	479.00
606710	NEWT 29	2009/Jun/26	2018/Jun/19	419.18
606711	NEWT 14	2009/Jun/26	2018/Jun/19	300.34
606712	NEWT 30	2009/Jun/26	2018/Jun/19	179.68
606713	NEWT 13	2009/Jun/26	2018/Jun/19	400.32
606714	NEWT 31	2009/Jun/26	2018/Jun/19	379.17
606715	NEWT 12	2009/Jun/26	2018/Jun/19	120.06
606716	NEWT 32	2009/Jun/26	2018/Jun/19	219.49
606717	NEWT 01	2009/Jun/26	2018/Jun/19	240.05
615743	NEWT47	2009/Aug/07	2018/Jun/19	59.94
615803	NEWT 48	2009/Aug/07	2018/Jun/19	19.99
615843	NEWT 49	2009/Aug/07	2018/Jun/19	19.99
615863	NEWT 50	2009/Aug/07	2018/Jun/19	39.96
616023	NEWT 51	2009/Aug/07	2018/Jun/19	79.92
681843	NEWS 100	2009/Dec/09	2013/Dec/09	502.37
681844	NEWS 101	2009/Dec/09	2013/Dec/09	502.36
681863	NEWS 102	2009/Dec/09	2015/Dec/09	502.37
681883	NEWS 103	2009/Dec/09	2015/Dec/09	502.36
681903	NEWS 200	2009/Dec/09	2013/Dec/09	441.38
681904	NEWS 104	2009/Dec/09	2015/Dec/09	502.35
681923	NEWS 105	2009/Dec/09	2013/Dec/09	502.36
681924	NEWS 201	2009/Dec/09	2013/Dec/09	501.77
681925	NEWS 106	2009/Dec/09	2013/Dec/09	502.36
681926	NEWS 202	2009/Dec/09	2013/Dec/09	501.55
681927	NEWS 107	2009/Dec/09	2013/Dec/09	502.36
681928	NEWS 203	2009/Dec/09	2013/Dec/09	501.37
681929	NEWS 204	2009/Dec/09	2013/Dec/09	501.32
681930	NEWS 108	2009/Dec/09	2013/Dec/09	502.13
681931	NEWS 109	2009/Dec/09	2013/Dec/09	502.13
681932	NEWS 205	2009/Dec/09	2013/Dec/09	461.74
681933	NEWS 110	2009/Dec/09	2013/Dec/09	502.13
681943	NEWS 111	2009/Dec/09	2015/Dec/09	502.13
681944	NEWS 206	2009/Dec/09	2013/Dec/09	502.13
681963	NEWS 112	2009/Dec/09	2015/Dec/09	502.14
681964	NEWS 207	2009/Dec/09	2013/Dec/09	502.36
681983	NEWS 208	2009/Dec/09	2013/Dec/09	481.88
682003	NEWS 113	2009/Dec/09	2015/Dec/09	502.13
682004	NEWS 209	2009/Dec/09	2013/Dec/09	502.13
682024	NEWS 114	2009/Dec/09	2013/Dec/09	502.14
682025	NEWS 210	2009/Dec/09	2013/Dec/09	502.36
682043	NEWS 211	2009/Dec/09	2015/Dec/09	502.59
682044	NEWS 115	2009/Dec/09	2013/Dec/09	502.14
682063	NEWS 212	2009/Dec/09	2015/Dec/09	502.59

Tenure No.	Claim Name	Date Recorded	Expiry Date	Area (ha)
682065	NEWS 116	2009/Dec/09	2013/Dec/09	501.92
682089	NEWS 117	2009/Dec/09	2013/Dec/09	501.92
682094	NEWS 118	2009/Dec/09	2013/Dec/09	501.92
682095	NEWS 213	2009/Dec/09	2015/Dec/09	502.82
682098	NEWS 214	2009/Dec/09	2015/Dec/09	502.81
682100	NEWS 119	2009/Dec/09	2013/Dec/09	501.92
682104	NEWS 215	2009/Dec/09	2013/Dec/09	502.13
682106	NEWS 216	2009/Dec/09	2013/Dec/09	502.36
682107	NEWS 120	2009/Dec/09	2013/Dec/09	501.92
682111	NEWS 217	2009/Dec/09	2013/Dec/09	502.59
682112	NEWS 121	2009/Dec/09	2013/Dec/09	501.92
682114	NEWS 218	2009/Dec/09	2013/Dec/09	502.81
682116	NEWS 122	2009/Dec/09	2013/Dec/09	501.92
682123	NEWS 219	2009/Dec/09	2015/Dec/09	503.04
682124	NEWS 123	2009/Dec/09	2013/Dec/09	501.91
682143	NEWS 220	2009/Dec/09	2015/Dec/09	503.26
682144	NEWS 124	2009/Dec/09	2013/Dec/09	60.21
682163	NEWS 221	2009/Dec/09	2015/Dec/09	503.03
682164	NEWS 125	2009/Dec/09	2013/Dec/09	501.69
682183	NEWS 222	2009/Dec/09	2015/Dec/09	503.26
682184	NEWS 126	2009/Dec/09	2013/Dec/09	501.69
682185	NEWS 223	2009/Dec/09	2013/Dec/09	503.03
682203	NEWS 127	2009/Dec/09	2013/Dec/09	501.69
682204	NEWS 224	2009/Dec/09	2013/Dec/09	462.99
682205	NEWS 128	2009/Dec/09	2013/Dec/09	501.69
682206	NEWS 225	2009/Dec/09	2015/Dec/09	503.49
682207	NEWS 129	2009/Dec/09	2013/Dec/09	501.69
682208	NEWS 226	2009/Dec/09	2015/Dec/09	503.49
682209	NEWS 130	2009/Dec/09	2013/Dec/09	501.69
682210	NEWS 227	2009/Dec/09	2013/Dec/09	503.67
682212	NEWS 131	2009/Dec/09	2013/Dec/09	501.69
682213	NEWS 228	2009/Dec/09	2013/Dec/09	161.10
682214	NEWS 132	2009/Dec/09	2013/Dec/09	501.46
682223	NEWS 133	2009/Dec/09	2013/Dec/09	501.46
682225	NEWS 229	2009/Dec/09	2015/Dec/09	502.58
682226	NEWS 134	2009/Dec/09	2013/Dec/09	501.46
682227	NEWS 230	2009/Dec/09	2015/Dec/09	502.58
682228	NEWS 135	2009/Dec/09	2013/Dec/09	501.46
682229	NEWS 231	2009/Dec/09	2015/Dec/09	502.59
682230	NEWS 136	2009/Dec/09	2013/Dec/09	501.46
682232	NEWS 232	2009/Dec/09	2015/Dec/09	502.58
682233	NEWS 137	2009/Dec/09	2013/Dec/09	501.46
682234	NEWS 233	2009/Dec/09	2015/Dec/09	502.59
682235	NEWS 138	2009/Dec/09	2013/Dec/09	501.46
682236	NEWS 234	2009/Dec/09	2015/Dec/09	502.59

Tenure No.	Claim Name	Date Recorded	Expiry Date	Area (ha)
682243	NEWS 139	2009/Dec/09	2013/Dec/09	280.89
682244	NEWS 235	2009/Dec/09	2015/Dec/09	502.81
682245	NEWS 236	2009/Dec/09	2015/Dec/09	502.81
682246	NEWS 140	2009/Dec/09	2013/Dec/09	461.32
682263	NEWS 237	2009/Dec/09	2015/Dec/09	502.81
682283	NEWS 238	2009/Dec/09	2015/Dec/09	502.81
682284	NEWS 141	2009/Dec/09	2013/Dec/09	501.23
682285	NEWS 239	2009/Dec/09	2015/Dec/09	502.81
682286	NEWS 240	2009/Dec/09	2015/Dec/09	502.81
682287	NEWS 142	2009/Dec/09	2013/Dec/09	501.23
682288	NEWS 241	2009/Dec/09	2015/Dec/09	503.04
682289	NEWS 143	2009/Dec/09	2013/Dec/09	501.23
682290	NEWS 242	2009/Dec/09	2015/Dec/09	503.04
682291	NEWS 144	2009/Dec/09	2013/Dec/09	501.23
682303	NEWS 243	2009/Dec/09	2015/Dec/09	503.04
682304	NEWS 145	2009/Dec/09	2013/Dec/09	501.23
682305	NEWS 244	2009/Dec/09	2015/Dec/09	503.04
682306	NEWS 146	2009/Dec/09	2013/Dec/09	501.23
682307	NEWS 245	2009/Dec/09	2013/Dec/09	503.05
682308	NEWS 147	2009/Dec/09	2013/Dec/09	501.23
682309	NEWS 246	2009/Dec/09	2015/Dec/09	503.26
682310	NEWS 148	2009/Dec/09	2013/Dec/09	501.24
682311	NEWS 247	2009/Dec/09	2015/Dec/09	503.27
682312	NEWS 248	2009/Dec/09	2013/Dec/09	503.27
682315	NEWS 249	2009/Dec/09	2013/Dec/09	503.49
682317	NEWS 250	2009/Dec/09	2013/Dec/09	503.50
682319	NEWS 251	2009/Dec/09	2013/Dec/09	503.28
682320	NEWS 252	2009/Dec/09	2013/Dec/09	503.74
682323	NEWS 153	2009/Dec/09	2012/Dec/09	501.27
682324	NEWS 253	2009/Dec/09	2013/Dec/09	503.75
682327	NEWS 254	2009/Dec/09	2013/Dec/09	503.73
682328	NEWS 155	2009/Dec/09	2012/Dec/09	360.77
682329	NEWS 156	2009/Dec/09	2012/Dec/09	420.86
682330	NEWS 255	2009/Dec/09	2013/Dec/09	463.42
682332	NEWS 256	2009/Dec/09	2013/Dec/09	503.51
682334	NEWS 159	2009/Dec/09	2013/Dec/09	501.01
682335	NEWS 160	2009/Dec/09	2013/Dec/09	501.01
682336	NEWS 160	2009/Dec/09	2013/Dec/09	501.01
682337	NEWS 162	2009/Dec/09	2013/Dec/09	501.00
682338	NEWS 257	2009/Dec/09	2013/Dec/09	503.51
682343	NEWS 163	2009/Dec/09	2013/Dec/09	501.00
682344	NEWS 258	2009/Dec/09	2013/Dec/09	503.28
682345	NEWS 164	2009/Dec/09	2013/Dec/09	501.00
682346	NEWS 259	2009/Dec/09	2013/Dec/09	502.59
682347	NEWS 165	2009/Dec/09	2013/Dec/09	500.99

Tenure No.	Claim Name	Date Recorded	Expiry Date	Area (ha)
682348	NEWS 260	2009/Dec/09	2013/Dec/09	502.60
682349	NEWS 261	2009/Dec/09	2013/Dec/09	502.82
682350	NEWS 166	2009/Dec/09	2013/Dec/09	500.99
682351	NEWS 262	2009/Dec/09	2013/Dec/09	502.84
682352	NEWS 167	2009/Dec/09	2013/Dec/09	500.76
682353	NEWS 263	2009/Dec/09	2013/Dec/09	503.05
682354	NEWS 168	2009/Dec/09	2013/Dec/09	500.77
682363	NEWS 169	2009/Dec/09	2013/Dec/09	500.77
682364	NEWS 264	2009/Dec/09	2013/Dec/09	503.05
682365	NEWS 170	2009/Dec/09	2013/Dec/09	500.77
682366	NEWS 265	2009/Dec/09	2013/Dec/09	503.07
682367	NEWS 171	2009/Dec/09	2013/Dec/09	500.78
682368	NEWS 266	2009/Dec/09	2013/Dec/09	503.28
682369	NEWS 267	2009/Dec/09	2013/Dec/09	503.29
682370	NEWS 172	2009/Dec/09	2013/Dec/09	500.78
682371	NEWS 268	2009/Dec/09	2013/Dec/09	503.30
682372	NEWS 173	2009/Dec/09	2013/Dec/09	480.73
682373	NEWS 269	2009/Dec/09	2013/Dec/09	503.51
682374	NEWS 174	2009/Dec/09	2013/Dec/09	480.73
682375	NEWS 270	2009/Dec/09	2013/Dec/09	503.52
682376	NEWS 175	2009/Dec/09	2013/Dec/09	480.73
682377	NEWS 271	2009/Dec/09	2013/Dec/09	503.52
682384	NEWS 272	2009/Dec/09	2013/Dec/09	503.75
682404	NEWS 273	2009/Dec/09	2013/Dec/09	503.75
682406	NEWS 274	2009/Dec/09	2013/Dec/09	503.75
682407	NEWS 275	2009/Dec/09	2013/Dec/09	402.86
682408	NEWS 179	2009/Dec/09	2012/Dec/09	280.444
682414	NEWS 276	2009/Dec/09	2013/Dec/09	501.13
682417	NEWS 277	2009/Dec/09	2013/Dec/09	500.90
682423	NEWS 278	2009/Dec/09	2013/Dec/09	501.08
682424	NEWS 279	2009/Dec/09	2013/Dec/09	501.77
682426	NEWS 280	2009/Dec/09	2013/Dec/09	501.54
682428	NEWS 281	2009/Dec/09	2013/Dec/09	501.32
682444	NEWS 282	2009/Dec/09	2013/Dec/09	501.08
682464	NEWS 283	2009/Dec/09	2013/Dec/09	501.77
682484	NEWS 284	2009/Dec/09	2013/Dec/09	501.54
682503	NEWS 285	2009/Dec/09	2013/Dec/09	501.31
682506	NEWS 286	2009/Dec/09	2013/Dec/09	501.07
682511	NEWS 291	2009/Dec/09	2013/Dec/09	481.87
682514	NEWS 191	2009/Dec/09	2013/Dec/09	460.52
682515	NEWS 293	2009/Dec/09	2013/Dec/09	502.13
682520	NEWS 296	2009/Dec/09	2013/Dec/09	502.36
682604	NEWS 299	2009/Dec/09	2013/Dec/09	502.59
682610	NEWS 402	2009/Dec/09	2013/Dec/09	502.81
682611	NEWS 302	2009/Dec/09	2013/Dec/09	400.46

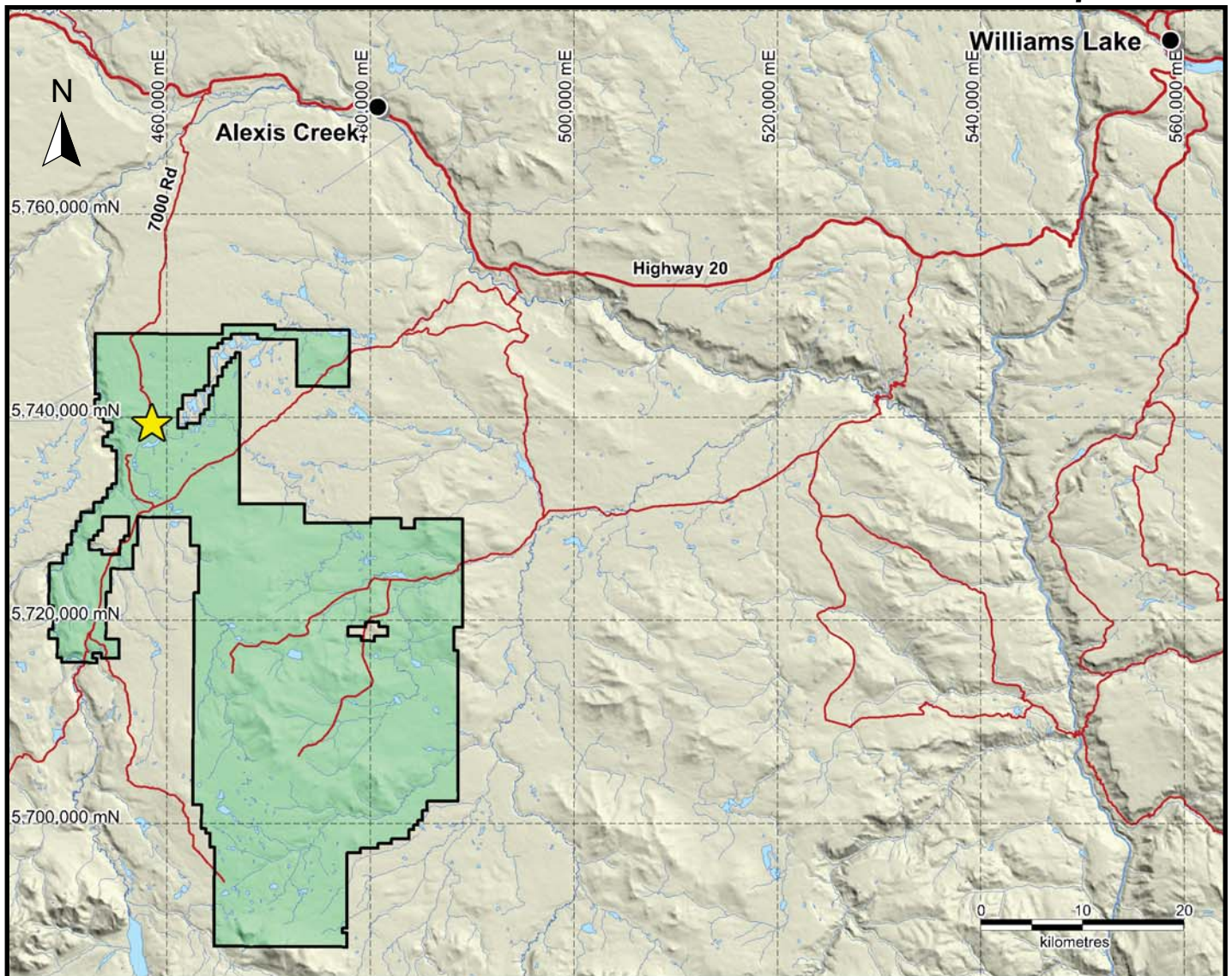
Tenure No.	Claim Name	Date Recorded	Expiry Date	Area (ha)
682615	NEWS 303	2009/Dec/09	2013/Dec/09	320.36
682616	NEWS 405	2009/Dec/09	2013/Dec/09	503.03
682621	NEWS 408	2009/Dec/09	2013/Dec/09	402.59
683343	NEWS 311	2009/Dec/10	2012/Dec/10	20.04
684043	KNEW	2009/Dec/11	2012/Dec/11	479.26
684044	KNEW 2	2009/Dec/11	2012/Dec/11	479.26
684045	KNEW 3	2009/Dec/11	2012/Dec/11	479.09
684046	KNEW 4	2009/Dec/11	2012/Dec/11	479.09
684047	KNEW 5	2009/Dec/11	2012/Dec/11	478.91
684048	KNEW 6	2009/Dec/11	2012/Dec/11	478.91
684843	KNEW 7	2009/Dec/14	2012/Dec/14	119.70
684863	KNEW 8	2009/Dec/14	2012/Dec/14	339.17
684883	KNEW 9	2009/Dec/14	2012/Dec/14	199.53
685683	BIG 1	2009/Dec/15	2014/Dec/09	503.98
685684	BIG 2	2009/Dec/15	2014/Dec/09	503.98
685685	BIG 3	2009/Dec/15	2014/Dec/09	503.98
685686	BIG 4	2009/Dec/15	2014/Dec/09	503.98
685687	BIG 5	2009/Dec/15	2014/Dec/09	503.98
685703	BIG 6	2009/Dec/15	2014/Dec/09	503.97
685704	BIG 7	2009/Dec/15	2014/Dec/09	504.20
685705	BIG 8	2009/Dec/15	2014/Dec/09	504.20
685706	BIG 9	2009/Dec/15	2014/Dec/09	504.20
685707	BIG 10	2009/Dec/15	2014/Dec/09	504.21
685708	BIG 11	2009/Dec/15	2014/Dec/09	504.21
685709	BIG 12	2009/Dec/15	2014/Dec/09	504.21
685723	BIG 13	2009/Dec/15	2014/Dec/09	504.42
685724	BIG 14	2009/Dec/15	2014/Dec/09	504.42
685743	BIG 15	2009/Dec/15	2014/Dec/09	504.43
685763	BIG 16	2009/Dec/15	2014/Dec/09	504.44
685764	BIG 17	2009/Dec/15	2014/Dec/09	504.44
685765	BIG 18	2009/Dec/15	2014/Dec/09	504.44
685767	BIG 19	2009/Dec/15	2014/Dec/09	504.65
685783	BIG 20	2009/Dec/15	2014/Dec/09	504.64
685784	BIG 21	2009/Dec/15	2014/Dec/09	504.65
685785	BIG 22	2009/Dec/15	2014/Dec/09	504.66
685786	BIG 23	2009/Dec/15	2014/Dec/09	504.66
685803	BIG 24	2009/Dec/15	2014/Dec/09	484.48
742582	NEWS 417	2010/Apr/07	2013/Apr/07	500.69
742602	NEWS 418	2010/Apr/07	2013/Apr/07	440.74
742622	NEWS 419	2010/Apr/07	2013/Apr/07	500.85
742642	NEWS 420	2010/Apr/07	2013/Apr/07	480.84
742662	NEWS 421	2010/Apr/07	2013/Apr/07	300.40
742682	NEWS 422	2010/Apr/07	2013/Apr/07	480.66
762342	NEWS 423	2010/Apr/30	2013/Apr/30	480.88
762362	NEWS 424	2010/Apr/30	2013/Apr/30	440.99



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Tenure No.	Claim Name	Date Recorded	Expiry Date	Area (ha)
762382	NEWS 425	2010/Apr/30	2013/Apr/30	501.32
762402	NEWS 426	2010/Apr/30	2013/Apr/30	441.11
762462	NEWS 429	2010/Apr/30	2013/Apr/30	481.48
762482	NEWS 430	2010/Apr/30	2013/Apr/30	501.56
762502	NEWS 431	2010/Apr/30	2013/Apr/30	481.47
762522	NEWS 432	2010/Apr/30	2013/Apr/30	481.70
762542	NEWS 433	2010/Apr/30	2013/Apr/30	461.65
762582	NEWS 435	2010/Apr/30	2013/Apr/30	281.11
762602	NEWS 436	2010/Apr/30	2013/Apr/30	461.84
762622	NEWS 437	2010/Apr/30	2013/Apr/30	501.93
762762	NEWS 444	2010/Apr/30	2013/Apr/30	460.66
840950	NEWS 450	2010/Dec/16	2018/Jun/19	19.98
840951	NEWS 451	2010/Dec/16	2018/Jun/19	19.99
840952	NEWS 452	2010/Dec/16	2018/Jun/19	19.97
840953	NEWS 453	2010/Dec/16	2018/Jun/19	19.95
840954	NEWS 454	2010/Dec/16	2012/Dec/16	79.81
840955	NEWS 455	2010/Dec/16	2012/Dec/16	19.95





- Paved road
- Gravel road
- Newton Property

**Projection:** UTM Zone 10 (NAD 83)

Figure 4-1

**Amarc Resources Ltd.**

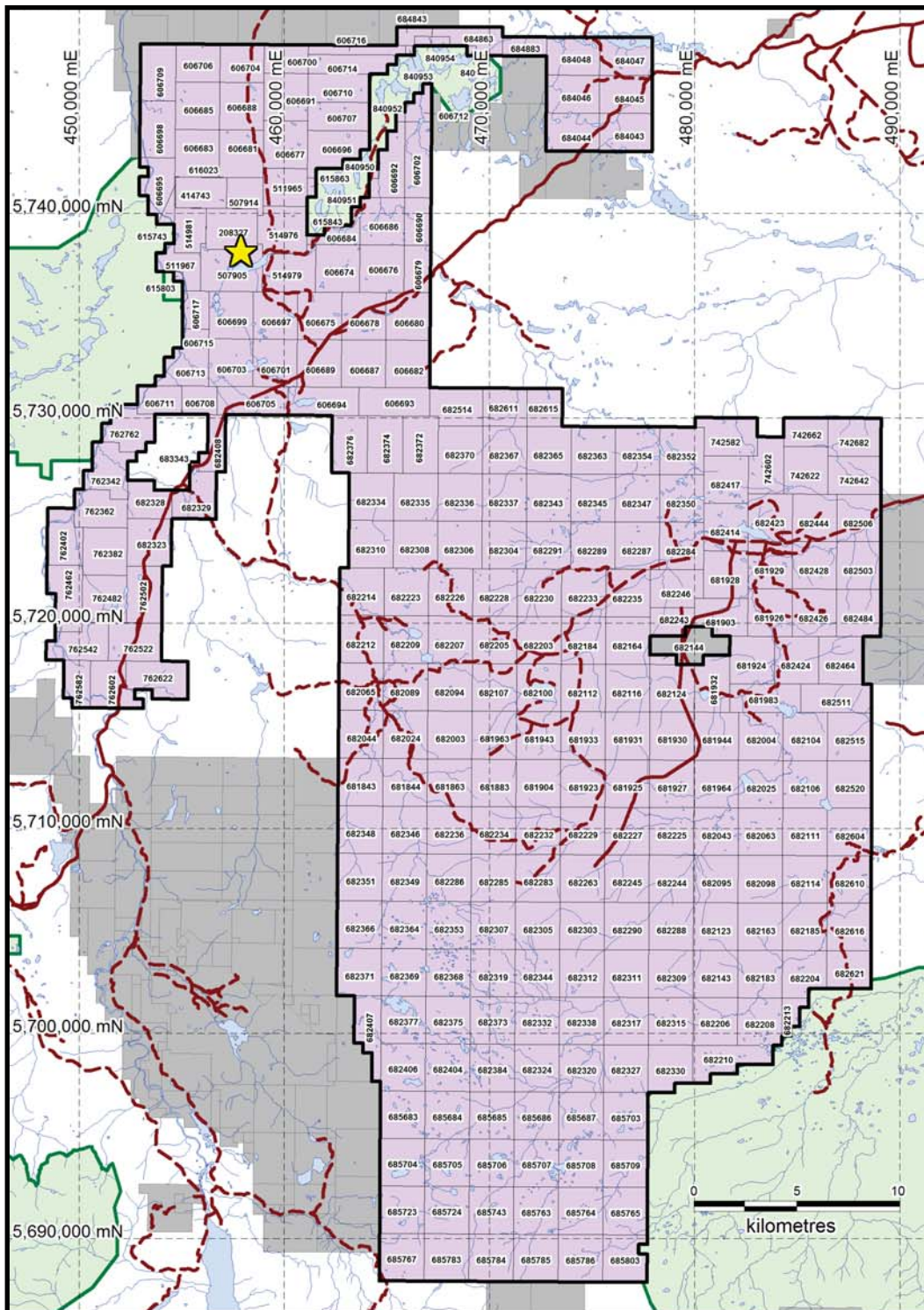
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**Newton Project**  
Clinton Mining Division  
British Columbia, Canada

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**Location Map**





- Road
- - - Limited use road
- Park, staking reserve
- ★ Newton deposit
- Amarc claims
- Claims held by others (as of June 21, 2012)

**Projection:** UTM Zone 10 (NAD 83)

November 2012

Source: Amarc, 2012.

Figure 4-2

**Amarc Resources Ltd.**

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**Newton Project**  
British Columbia, Canada

**Claim Map**

## **NATURE AND EXTENT OF ISSUER'S TITLE**

Amarc holds a 100% interest of the mineral rights of the tenures listed above. To keep these claims in good standing in accordance with the Mineral Tenure Act, a minimum value of work or cash-in-lieu is required annually. These values are currently set at \$5 per hectare in the first two years of holding the tenure, \$10 per hectare in the third and fourth years, \$15 per hectare for the fifth and sixth years, and \$20 per hectare for subsequent years. Cash-in-lieu values are double the work values.

Amarc does not hold any surface rights. British Columbia mining law allows for access and use of the surface for exploration through notification of surface rights holders. There are several lots of private land on some of the claims, as shown in Figure 4-3. None of the claims are covered by placer mining claims.

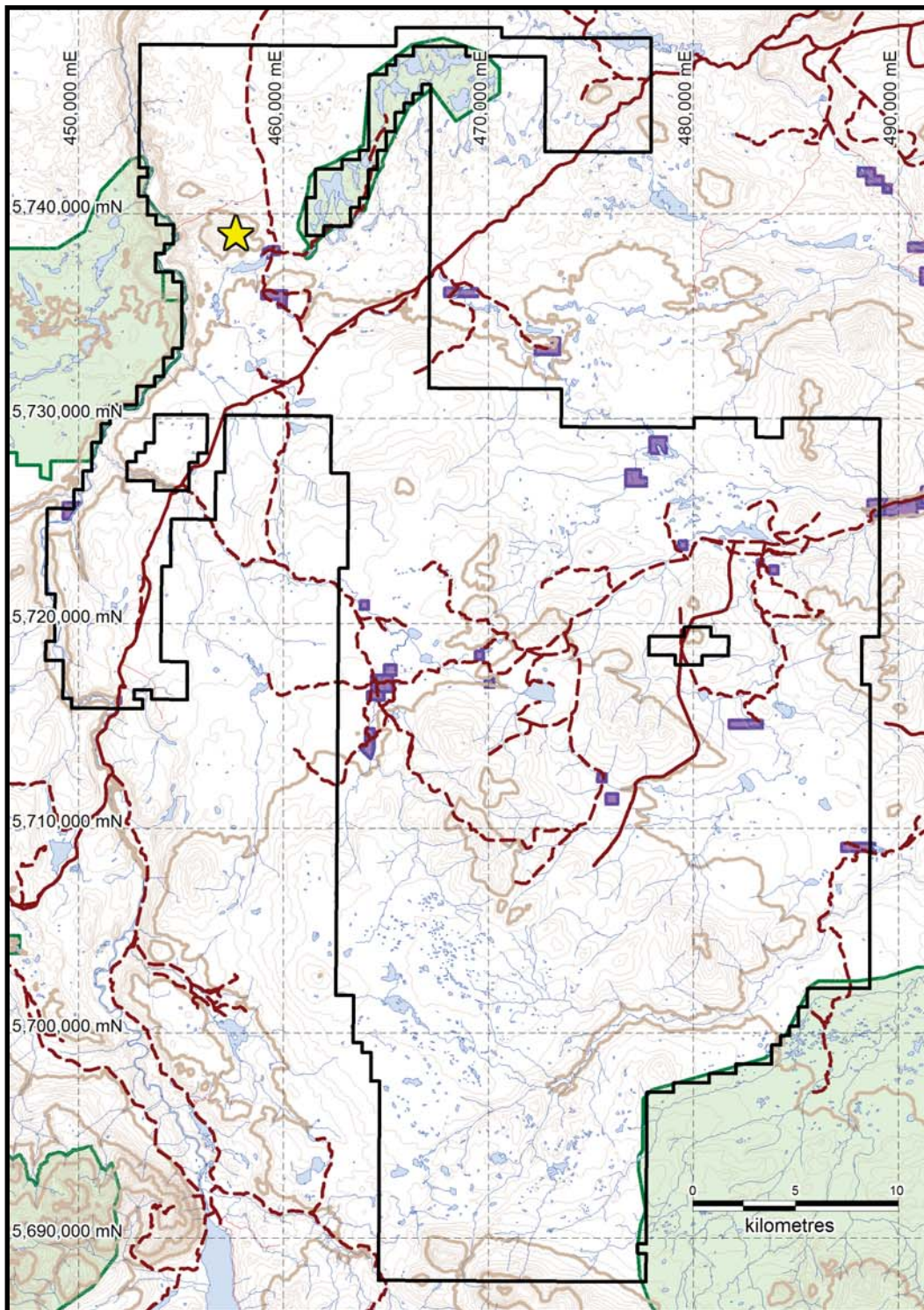
The Project is situated within the asserted traditional territory of the Tsilhqot'in National Government.

## **PROPERTY AGREEMENTS**

In August 2009, Amarc entered into an agreement (the Newton Agreement) with Newton Gold Corp. (Newton Gold) (at that time named High Ridge Resources Inc. (High Ridge)), whereby the Amarc acquired the right to earn an 80% interest in the Newton property by making certain cash and share payments to the underlying owners and funding \$4,940,000 in exploration expenditures over seven years from the effective date of the agreement.

The Newton Agreement is subject to an underlying option agreement (the Underlying Agreement) with arm's length parties, whereby Newton Gold had the right to acquire a 100% undivided interest in all the claims held under that Underlying Agreement through a series of staged payments and share issuances, in addition to required exploration expenditures. The claims defined in the underlying option agreement to the Newton Agreement are subject to a 2% net smelter return royalty (NSR), which royalty may be purchased by the parties for \$2,000,000.





- Contour, 100 m interval
- Index contour, 1,000 m interval
- Road
- Limited use road
- Trail
- Park, staking reserve
- Private land
- Newton Deposit

**Projection:** UTM Zone 10 (NAD 83)

November 2012

Source: Amarc, 2012.

Figure 4-3

**Amarc Resources Ltd.**

---

**Newton Project**  
British Columbia, Canada

**Location of Private Land**

In May 2011, all the conditions in the Newton Agreement were met, and Amarc's 80% interest in the Newton property then vested. In June 2011, Amarc entered into the Newton Joint Venture Agreement (the Newton JV Agreement) with Newton Gold, which maintained a 20% participating interest.

In June 2011, Amarc and Newton Gold also agreed to incorporate mineral claims adjacent to the Newton discovery, then held by Amarc, into the Newton JV Agreement. The Newton Joint Venture had a 100% undivided interest in all claims held under the Newton JV Agreement.

Effective May 22, 2012, the participating interest of Newton Gold in the Newton Joint Venture was reduced to a 5% Net Profits Interest in accordance with the terms of the Newton JV Agreement. Amarc now holds a 100% interest in the Newton property.

## **PERMITS AND ENVIRONMENTAL LIABILITIES**

Most of the Newton mineral claims are located on Crown land (see Figure 4-3 for location of private land parcels), and the area is open to mineral exploration and development. None of the mineral claims are covered by placer mining claims. The Project is situated within the asserted traditional territory of the Tsilhqot'in National Government.

The project area is being actively logged and lies within an area of extensive beetle kill. The logging roads are extensive and in heavy use.

To perform the exploration work that will cause a physical disturbance, Amarc must first file, and receive approval of, a Notice of Work and Reclamation as required by Section 10 of the Mines Act of the Province of British Columbia. Amarc currently holds Permit No. MX-4-558, which expires on December 31, 2013. It is expected to be sufficient for the proposed Phase 1 and Phase 2 work programs.

To the extent of RPA's knowledge, there are no environmental liabilities present on the property.

## **OTHER FACTORS**

Amarc, in accordance with its internal protocols with respect to archeological studies, has through both desk-based Archeological Oversight Assessments (AOA) and Preliminary Field Reviews (PFR) conducted in conjunction with local First Nations, identified restricted areas of high archeological potential around the Newton Hill area. As observed during the course of the RPA site visit, these restricted areas have been cordoned off by Amarc with no access permitted.

## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **ACCESSIBILITY**

The Newton property is readily accessible by vehicle from Highway 20 and all-weather forest service roads (see Figure 4-1). Distance by road from the City of Williams Lake (population 11,000), the major business and service centre that is closest to the property, is 180 km.

Total driving time from Williams Lake to the Newton Property is approximately 2.5 hours. Access to the property is gained from the 7000 Road, west of Alexis Creek.

### **LOCAL RESOURCES INFRASTRUCTURE**

The district is well served by existing transportation and power infrastructure and a skilled workforce, which support a number of operating mines, as well as late-stage mineral development and exploration projects.

### **PHYSIOGRAPHY**

The Newton property is situated in the Chilcotin Forest District of the Southern Interior Forest Region. The region has been extensively logged and lies within an area of extensive beetle kill. The drilled area of the Newton property is open forest populated primarily by Douglas fir with minor lodge pole pine and rare aspen.

Topography is generally flat to gentle, varying from 1,200 m at Scum Lake to 1,375 m at the top of Newton Hill. The Taseko River cuts through the western side of the claim area, along a deeply incised valley with a relief of 350 m at Newton Hill.

## **CLIMATE**

Temperatures in Williams Lake can average 18°C to 22°C in summer and -10°C to +2°C in winter, with maximums up to 35°C in summer and minimums down to -30°C in winter. Annual rainfall and snowfall in 2010 averaged 29.5 cm and 192 cm, respectively (The Weather Network Website <http://www.theweathernetwork.com>). The main exploration period is between mid-May and late October; however, year-round diamond drilling is possible, as water can be trucked from a local lake or river and a winterized camp can be established.

## **SUFFICIENCY OF SURFACE RIGHTS FOR MINING**

Amarc does not currently hold any surface rights; however, the surface rights remain available should the project progress to more advanced stages. While the project is still at a very early stage of its history, the size and topography of the Newton property in the vicinity of the mineralized zone is amenable to mine development.



## 6 HISTORY

### PRIOR OWNERSHIP

The earliest known work on the Newton property occurred in 1916 when Mr. Newton produced gold from a small shaft and some open cuts (Durfeld, 1994). No further work is reported until 1965. A detailed summary of the ownership changes since 2009 has been provided in Section 4 – Property Agreements of this report.

### EXPLORATION AND DEVELOPMENT HISTORY

The following summary of the exploration history of the Newton property is taken from Assessment Report 29088 (Hantelmann, 2007). A summary of historical work is shown in Table 6-1.

**TABLE 6-1 EXPLORATION HISTORY  
Amarc Resources Ltd. – Newton Project**

Year(s)	Owner/Operator	Work Done	Assessment Report(s)
1916	Mr. Newton	Shaft and open cuts	
1965	Southwest Potash (Amex)	Soils	
1971/2	Cyprus Exploration Corp	Induced polarization, magnetometer, geology 10 diamond drill holes (1,615 m)	
1981/2	Taseko Mines Limited	8 percussion drill holes (2,095 ft) 4 diamond drill holes (1,913 ft)	11001
1987/8	R. Durfeld, A. Schmidt	Resampled/assayed soils, rock, core	18081
1989/90	Rea Gold Corp.	Soils	20585
1990/4	Rea Gold Corp. and Verdstone Gold Corp.	Geology, soils, rocks, trenching (4,048 ft), ground magnetometer, induced polarization 5 diamond drill holes	22198, 23114, 23660
1996	Verdstone Gold Corp.	Minor trenching (90 m) and surveying	24724
1997	Verdstone Gold Corp.	Minor infill soils	25264
2004	High Ridge Resources Inc.	Revisited old induced polarization data	27497
2005	High Ridge Resources Inc.	Geology, ground magnetometer, soils orientation	28011
2006	High Ridge Resources Inc.	12 diamond drill holes (2,019.5 m)	29088

In 1965, South-West Potash (Amex) and K. W. Livingstone reportedly performed soil surveys in the Newton area; results were not considered to be significant.

The first documented work at Newton Hill was by Cyprus Exploration Corporation Inc. which, in 1972, completed geological mapping, magnetometer, and induced polarization (IP) geophysical surveys, followed by 1,615 m of BQ-sized diamond drilling. The IP survey delineated an elliptical chargeability anomaly encompassing a gossanous zone and identified an estimated 5% sulphide halo around Newton Hill. Results from the diamond drilling failed to identify ore grade copper mineralization. No analyses were made for gold.

Taseko Mines Limited acquired what were the Ski claims in 1981. Eight percussion holes were drilled, totalling 638.6 m (2,095 ft), and another 583.1 m (1,913 ft) in four diamond drill holes were completed in 1982. Selected samples were analyzed for copper, gold, and silver, however, the results were not considered significant at that time.

R. M. Durfeld and A. J. Schmidt acquired the rights to the Newton Hill claims in 1987. A soil geochemical survey, consisting of 82 samples, and re-assaying of selected core samples from the 1972 drilling program were completed in 1988.

In 1989, in conjunction with Rea Gold Corp. (Rea Gold), additional soil sampling was undertaken. A total of 218 soil samples were collected and analyzed for copper, gold, silver, and arsenic.

From 1990 through 1992, Rea Gold/Verdstone Gold Corp. (Verdstone Gold) conducted geological mapping, soil sampling, trenching, and diamond drilling. In 1990, an 18.5 line-mile grid was constructed and a total of 1,153 soil samples were subsequently collected and analyzed for copper, gold, arsenic, mercury, and molybdenum. Twelve trenches, totalling 1,233.8 m (4,048 ft), were excavated and 606 rock samples were collected and analyzed.

In 1996, Verdstone Gold completed 90 m of trenching using Global Positioning System surveying. The trenches identified anomalous copper and gold values.

In 1997, Verdstone Gold conducted minor soil sampling to infill gaps and to look for extensions to the previously identified copper geochemical anomalies.

High Ridge began working on the property in 2004. Part of their work involved re-assessing the 1972 IP geophysical data. In 2005, High Ridge conducted a geological investigation and

a total field ground magnetic survey. In 2006, 12 diamond drill holes were completed for a total of 2,019.5 m.

## **HISTORICAL MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES**

To RPA's knowledge, no historical mineral resource or mineral reserve estimates have been prepared for the Newton property. Apart from a quantity of gold produced during 1916, no further production has taken place on the property.

## 7 GEOLOGICAL SETTING AND MINERALIZATION

### REGIONAL GEOLOGY

The Nechako-Chilcotin region is underlain by Mesozoic island arc assemblages of the Stikinia Terrane and is bordered to the west and east by the major Yalakom and Fraser faults, respectively. These bounding structures represent major regional tectonic events of the North-American Cordillera. Post-accretionary (Stikina) Cretaceous to Early Eocene crustal-scale extension resulted in northwest-trending extensional faults with a dextral component, including the Yalakom fault and contemporaneous northeast-trending strike-slip faults. This crustal-scale extensional event was accompanied by Late Cretaceous and Eocene volcanism. To the east, the Nechako-Chilcotin region is bounded by the north-trending Fraser fault which has both normal and dextral movement components; displacement began during northwest-oriented extension in the Early Eocene to Early Oligocene (Figure 7-1).

The most recent British Columbia Geological Survey regional geology compilation (Riddell, 2006; Figure 7-2) shows that rocks on the Newton property include Mesozoic intrusive, volcanic and sedimentary rocks of the Spences Bridge Group overlain by Cenozoic volcanic rocks and unconsolidated glacial till. More recently, Bordet et al. (2011) suggest that Mid- to Late-Cretaceous calc-alkaline volcanism characterized by felsic pyroclastic units of the Kasalka Group and mafic to felsic flows and welded and non-welded ignimbrites of the Spences Bridge and Kingsvale Groups are contemporaneous and represent a chain of stratovolcanoes associated with subsiding, fault-bounded basins.

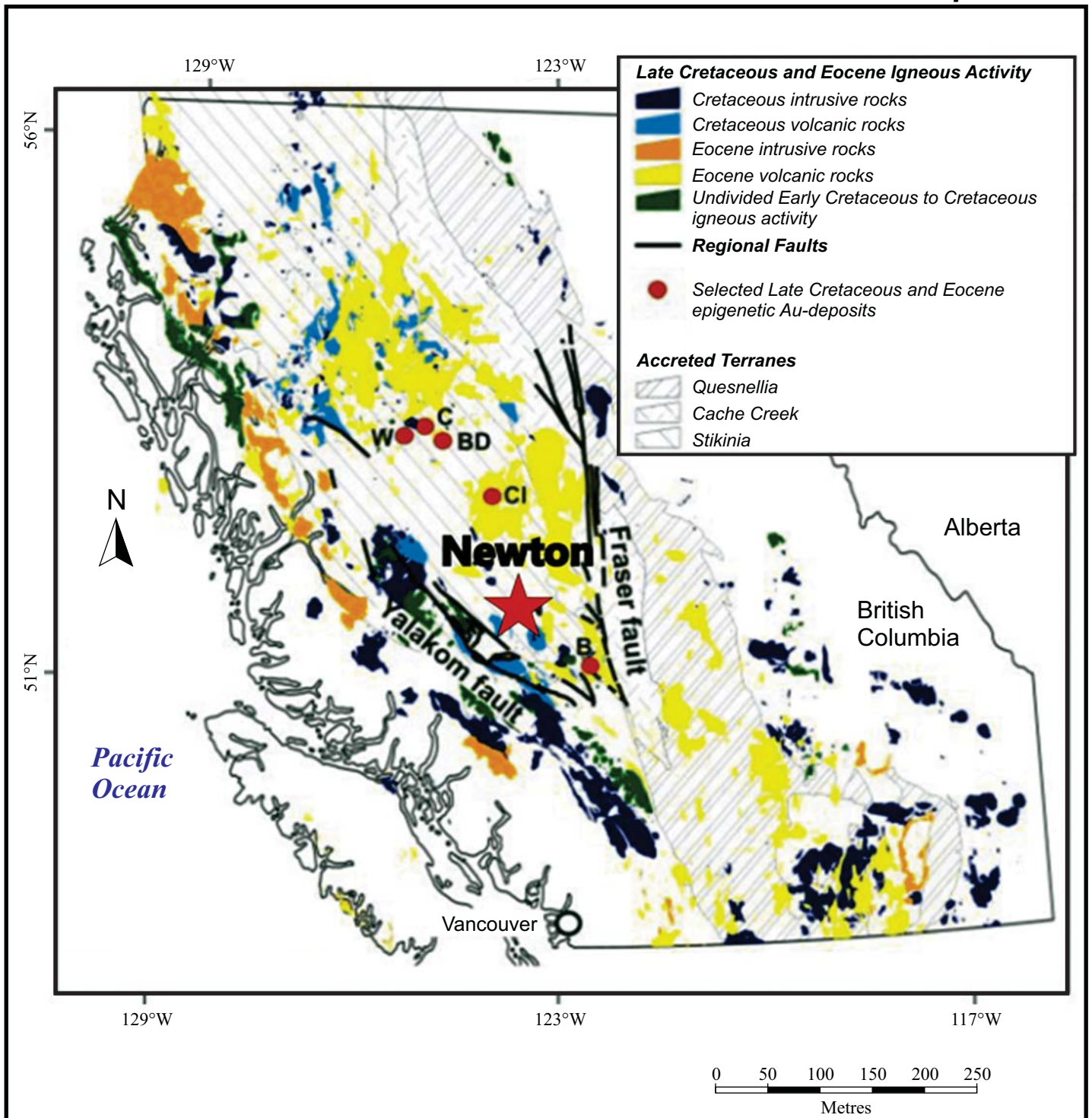


Figure 7-1

**NOTE:** Cretaceous to Eocene volcanic and intrusive rocks relative to regional fault systems and tectonostratigraphic terranes. Red dots are the location of Cretaceous to Eocene Au deposits; (B) Blackdome Mine, (BD) Blackwater Davidson, (C) Capoose, (CI) Clisbako, (W) Wolf.

**Amarc Resources Ltd.**

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**Newton Project**  
British Columbia, Canada  
**Regional Geology**





### STRATIGRAPHIC UNITS

#### MIOCENE TO PLEISTOCENE

**MiPICvb**  
Chilcotin Group  
basalt

#### EOCENE TO OLIGOCENE

**EQlv**  
basalt, andesite, rhyolite, tuff

#### EOCENE

**Evc**  
volcaniclastic rocks

#### CRETACEOUS TO TERTIARY

**KTvc**  
volcaniclastic rocks

#### UPPER CRETACEOUS

**uKPovc**  
Powell Creek Formation  
volcaniclastic rocks

#### LOWER TO UPPER CRETACEOUS

**luKTb**  
Taylor Creek Group - Beece Creek Succession  
sedimentary rocks

**luKsv**  
marine sedimentary and volcanic rocks

#### LOWER CRETACEOUS

Jackass Mountain Group  
**IKJ, LKJs**  
sedimentary rocks  
**IKJsc**  
coarse clastic sedimentary rocks

#### JURASSIC TO CRETACEOUS

**JKca**  
calc-alkaline volcanic rocks

#### JURASSIC TO LOWER CRETACEOUS

**Jksc**  
coarse clastic sedimentary rocks

#### LOWER TO MIDDLE JURASSIC

**ImJHN**  
Huckleberry Mountain Formation  
fine clastic sedimentary rocks

#### UPPER TRIASSIC

**uTrCHs, uTrCs**  
Cadwallader Group  
sedimentary rocks

#### MIDDLE TO UPPER TRIASSIC

**muTrIm**  
limestone, marble, calcareous  
sedimentary rocks

#### MISSISSIPPIAN TO MIDDLE JURASSIC

**MmJBgs**  
Bridge River Complex  
greenstone, greenschist

#### PALEOZOIC TO MESOZOIC

**PzMzus**  
serpentinite

### INTRUSIVE ROCKS

#### EOCENE

**Egd**  
granodiorite  
**Eto**  
tonalite

#### LATE CRETACEOUS TO PALEOGENE

**LKTdr**  
diorite  
**LKTg**  
granite, granodiorite, tonalite  
**LKTgd**  
granodiorite  
**LKTqp**  
quartz phyrlic felsic intrusion  
**LKTfp**  
feldspar porphyry

#### EARLY CRETACEOUS

**EKMAqd**  
Mount Alex Plutonic Complex  
quartz diorite, granodiorite  
**EKP**  
Piltz Peak and Mt. Wales Plutonic Suite  
diorite

#### JURASSIC TO CRETACEOUS

**JKg**  
granodiorite, diorite, quartz diorite  
**JKPP**  
Piltz Peak and Mt. Wales Plutonic Suite  
tonalite

Figure 7-2A

**Amarc Resources Ltd.**

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**Newton Project**  
British Columbia, Canada

**Property Geology Legend**

Cretaceous rock types in the region can be subdivided into three major groups (after Riddell, 2006):

1. Early to Late Cretaceous Spences Bridge Group. This group includes andesite and dacite flows, breccia and tuff; volcano-sedimentary rocks, and minor basalts and rhyolites.
2. Jurassic-Cretaceous intrusions. These comprise granodiorite, diorite, quartz diorite, quartz monzonite, and tonalite intrusions.
3. Cretaceous feldspar porphyry. These rocks are dominated by feldspar  $\pm$  biotite porphyry, felsite, and hornblende-biotite-feldspar porphyry intrusions.

Cenozoic rocks are primarily Miocene to Pleistocene basalts assigned to the Chilcotin Group. Quaternary cover consists of unconsolidated glacial till and glaciofluvial deposits.

Outcropping rock types at Newton Hill comprise volcanic and sedimentary rocks of the Early to Late Cretaceous Spences Bridge Group which may, in the vicinity of the Newton deposit, include rock types correlative with the Late Cretaceous Kasalka Group, and Late Cretaceous feldspar porphyry intrusions. Intrusions of the Jurassic to Cretaceous suite are well-exposed along the Taseko River valley to the west and northwest of Newton Hill.

## **LOCAL GEOLOGY**

### **DEPOSIT GEOLOGY**

Stratified rocks at Newton Hill (Figures 7-3 to 7-5) have been assigned provisionally to the Cretaceous Spences Bridge Group, bearing in mind the uncertainties in regional correlation noted above, and consist of mafic volcanic rocks, sedimentary rocks derived from mafic to intermediate volcanic protoliths, rhyolite flows, and felsic volcanoclastic rocks. These rock types are believed to have been deposited in a graben. The sequence is dominated by felsic volcanic and volcano-sedimentary rocks that unconformably overlie epiclastic sedimentary rocks (Figures 7-4 and 7-5). The epiclastic rocks consist of pebble conglomerates that are interbedded with sandstone and siltstone, similar to Cretaceous Churn Creek conglomerates that have been correlated with both the Silverquick-Powell Creek Formation (Riesterer et al., 2001) and the Spences Bridge Group (Riddell, 2006).



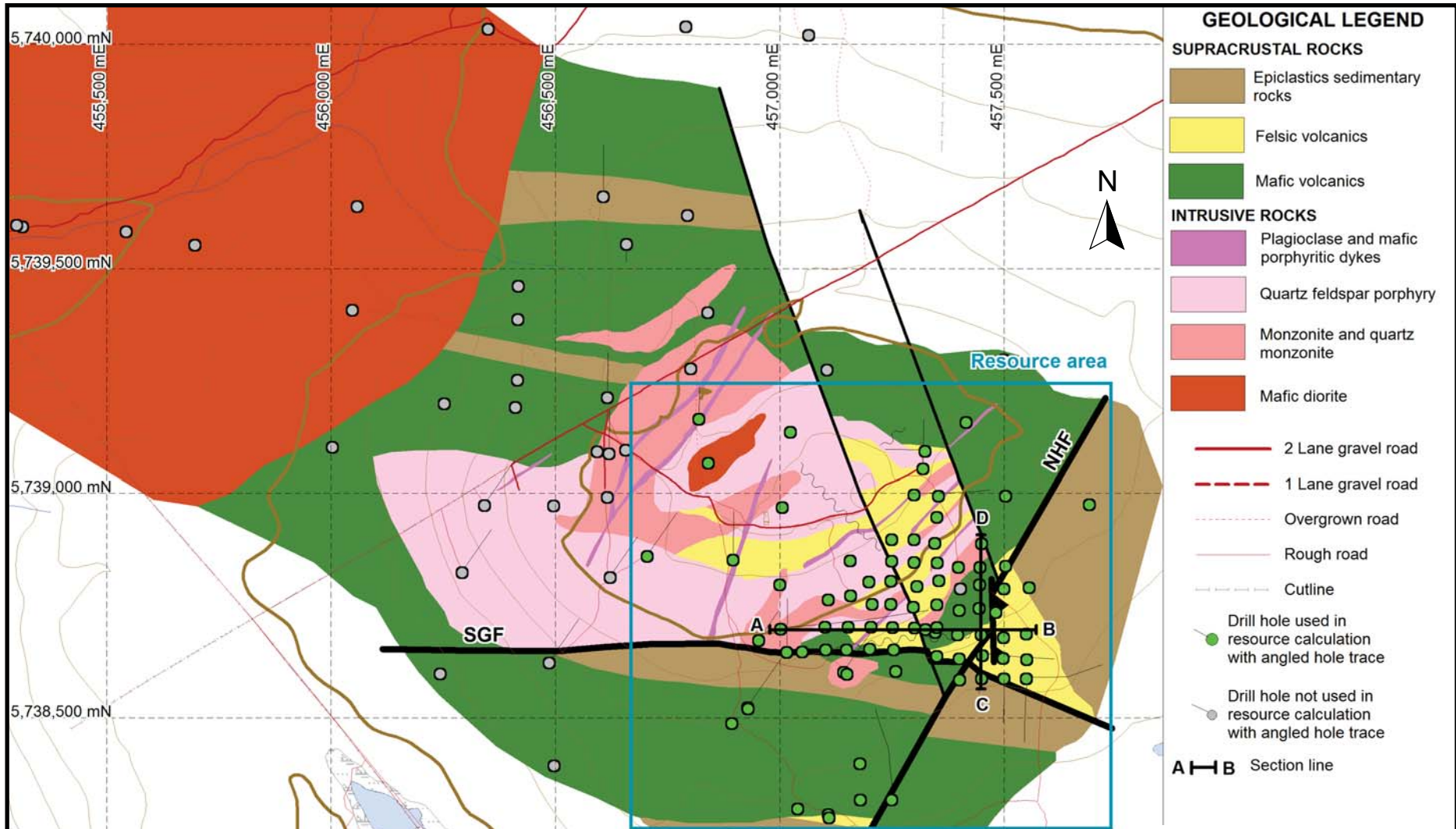


Figure 7-3

**Amarc Resources Ltd.**

**Newton Project**  
British Columbia, Canada

**Geology of the  
Newton Deposit Area**

**NOTE:** Lines A-B and C-D refer to sections in Figures 7-4 and 7-5, respectively.

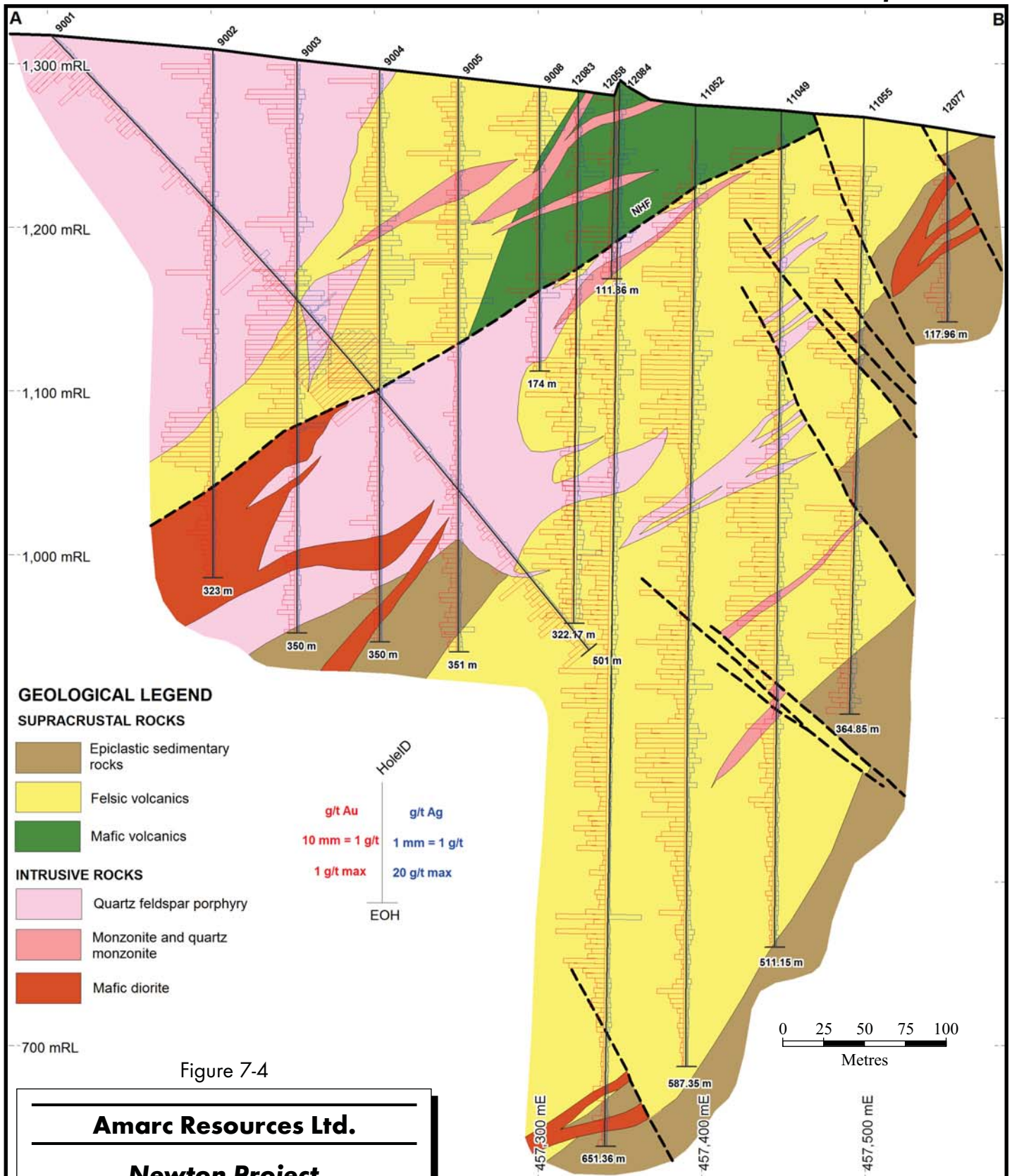


Figure 7-4

**Amarc Resources Ltd.**

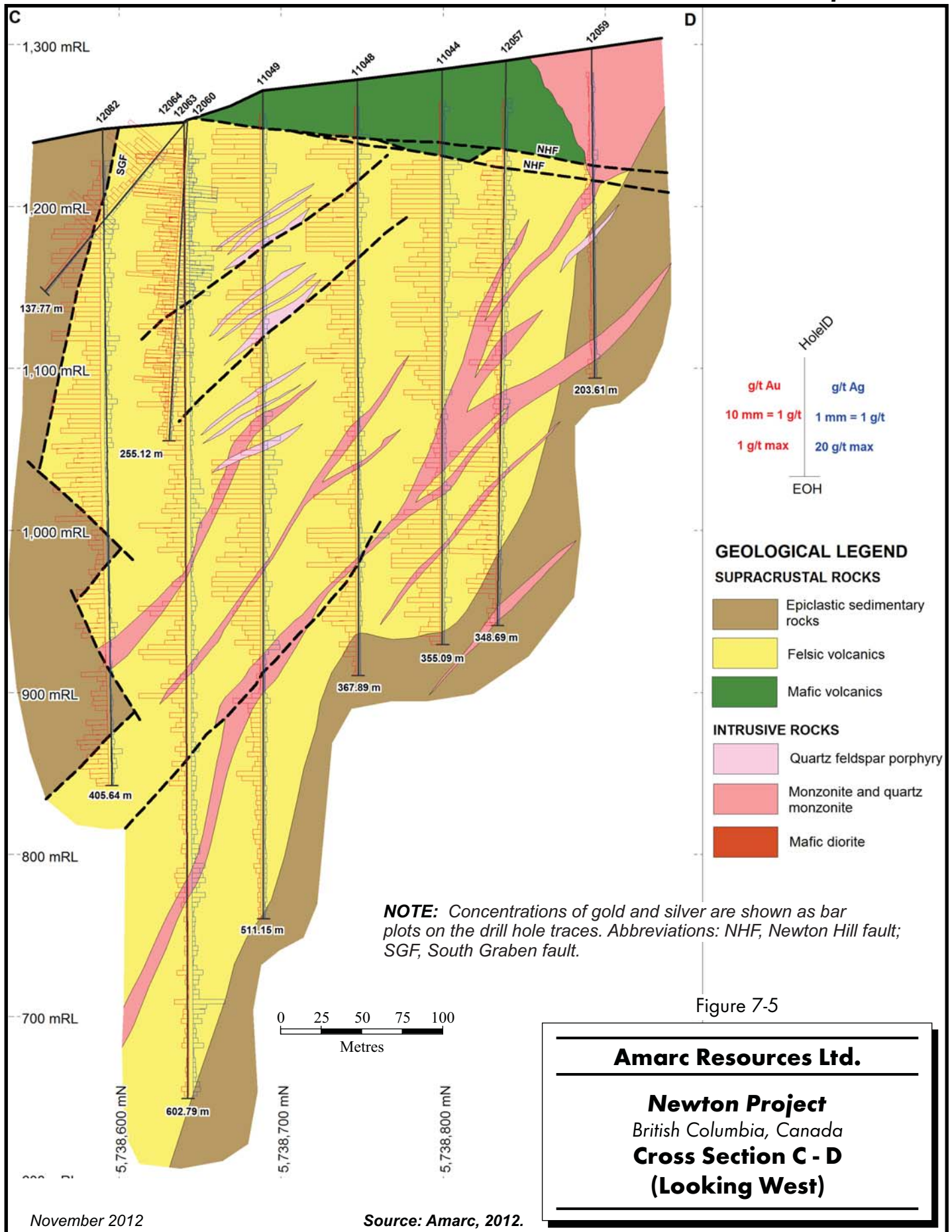
**Newton Project**  
 British Columbia, Canada  
**Cross Section A - B**  
**(Looking North)**

**NOTE:** Concentrations of gold and silver are shown as bar plots on the drill hole traces. Abbreviations: NHF, Newton Hill fault.

November 2012

Source: Amarc, 2012.





The volcano-sedimentary sequence at Newton Hill is cut by several types of intrusions (Figure 7-3). The oldest are sub-volcanic felsic quartz-feldspar porphyries that have a quartz monzonite composition and are interpreted to be directly related to the felsic volcanic rocks in the Spences Bridge Group. Minor mafic dykes present in the area are considered to be related to mafic volcanic rocks in the Spences Bridge Group. The early intrusions are cut by a complex of Cretaceous monzonite intrusions which broadly strike about azimuth 030° and dip steeply to the northwest. These monzonites are intruded in turn by porphyritic plagioclase-hornblende diorites. The youngest intrusions observed are minor plagioclase- and biotite-phyric dykes which are believed to have formed after hydrothermal activity had ceased.

### **SPENCES BRIDGE GROUP**

Within the Newton deposit, the Spences Bridge Group comprises epiclastic wackes, felsic tuffs and flows, and mafic flows.

### **Epiclastic Rocks**

This is stratigraphically the oldest rock type and occurs mostly to the northeast, east, and south of Newton Hill (Figure 7-3) and at depth on the east side of the deposit (Figure 7-4). It is unconformably overlain by the felsic and mafic volcanic rock sequences (Figures 7-4 and 7-5); fragments of epiclastic rocks are locally found at the base of the felsic volcanic section near its contact with the underlying epiclastic rock package. The epiclastic rocks range from green to beige in colour and comprise interbedded pebble conglomerate, sandstone, and siltstone. The conglomerate beds are poorly sorted and immature, with 5% to 60% sub-angular to rounded clasts (Figure 7-6a) supported in a matrix of fine-grained sand. The fragments comprise mafic volcanic and sedimentary rocks, felsic volcanic rocks and intrusions and chert, all of which are from an undetermined provenance. The sandstone and siltstone interbeds are less abundant and commonly display normal-facing, upward-fining graded bedding.

### **Felsic Volcanic Rocks**

The felsic volcanic rocks found at the Newton Project are mostly pyroclastic deposits which range from ash tuffs to tuff breccias (Figures 7-6b and c). These units form several thick beds (Figures 7-4 and 7-5) that represent multiple depositional cycles of ash fall and poorly welded ignimbrite deposits. Felsic volcanic rocks have been found to occur both above and

below the Newton Hill fault (Figure 7-4; see descriptions below); those below the fault strike approximately  $300^{\circ}$  to  $320^{\circ}$  and dip  $65^{\circ}$  to  $70^{\circ}$  to the southwest. These units have been dated at  $72.09 \pm 0.63$  Ma (Cretaceous) by U-Pb methods on zircon (Oliver, 2010).

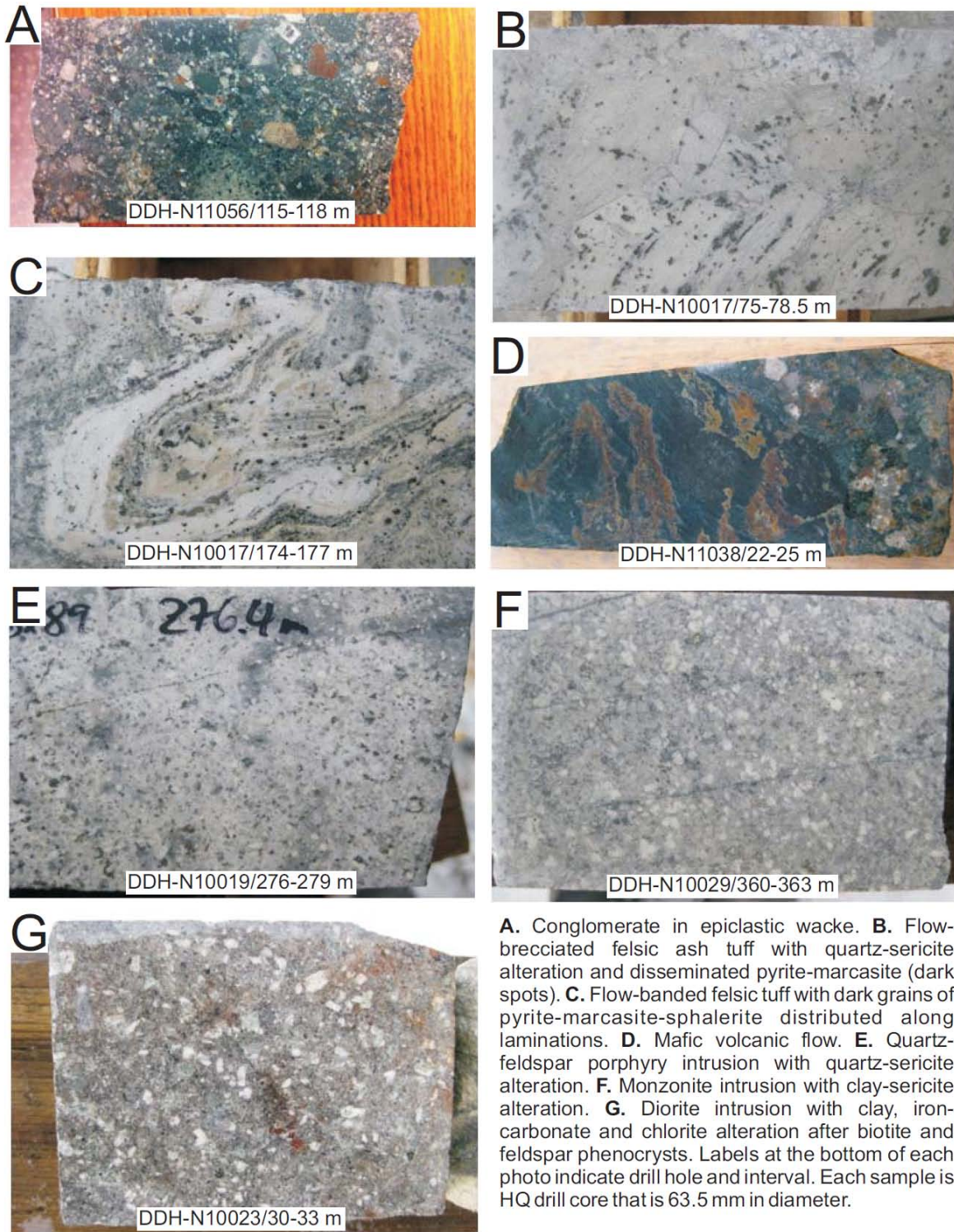
The felsic tuffs are light grey, aphanitic to very fine grained and consist predominantly of devitrified glass shards and feldspar microliths. The ash tuffs locally contain up to 3% rounded quartz crystals. Although some ash tuffs are massive, most are characterized by convoluted laminations and flow-bands (Figure 7-6c), and are commonly autobrecciated (Figure 7-6c). Overall, the tuffs are poorly welded, although limited intervals exhibit stronger welding textures.

Interbedded units within the tuffs contain centimetre-scale angular and sub-angular lithic fragments which consist mostly of felsic intrusive rocks and hematitic fragments of uncertain provenance in a tuff matrix. Minor, immature, clast-supported conglomerate interbeds are interpreted to be locally derived from the thicker beds of felsic tuff.

Felsic flows also occur within the felsic volcanoclastic sequence. The flows are rhyolite to rhyodacite in composition, grey to white in colour, commonly glassy, flow-banded, autobrecciated, and competent. The flows are locally porphyritic with up to 10% combined quartz and plagioclase grains one millimetre to three millimetres in size. The grey to white colour variation is likely a consequence of small differences in composition, degree of devitrification and later alteration. Felsic flows typically contain orbicular, millimetre- to centimetre-scale, pale cream-coloured devitrification features such as spherulites and lithophysae.



**FIGURE 7-6 EXAMPLES OF ROCK TYPES FOUND IN THE NEWTON DEPOSIT**



**A.** Conglomerate in epiclastic wacke. **B.** Flow-brecciated felsic ash tuff with quartz-sericite alteration and disseminated pyrite-marcasite (dark spots). **C.** Flow-banded felsic tuff with dark grains of pyrite-marcasite-sphalerite distributed along laminations. **D.** Mafic volcanic flow. **E.** Quartz-feldspar porphyry intrusion with quartz-sericite alteration. **F.** Monzonite intrusion with clay-sericite alteration. **G.** Diorite intrusion with clay, iron-carbonate and chlorite alteration after biotite and feldspar phenocrysts. Labels at the bottom of each photo indicate drill hole and interval. Each sample is HQ drill core that is 63.5 mm in diameter.

### **Mafic Flows, Volcaniclastic Sediments, and Mafic Volcanic Derived Sediments**

Mafic flows are basaltic or andesitic in composition, dark green and massive in texture (Figure 7-6d). They are predominantly aphanitic in grain size but, locally, may contain 2% to 3% (chloritized) pyroxene phenocrysts from two millimetres to four millimetres in size and up to 10% plagioclase phenocrysts between one millimetre to three millimetres in size. Flow fabrics and autobrecciation textures are rare. The mafic flows are mostly found in the hanging wall to the Newton Hill fault (Figures 7-4 and 7-5).

Sedimentary strata derived from a mafic source commonly form narrow interbeds within mafic flow sequences. They are most commonly encountered to the north and northeast of Newton Hill. The sedimentary rocks are green to black, very thinly bedded, non-graded and range from mudstone to sandstone; in rare cases, they contain black, lapilli-sized fragments of mafic volcanic rock. These sedimentary intervals are characterized by alternating beds of non-magnetic, green siltstone/sandstone and magnetic black mudstone.

Other rock types with a mafic composition include hematitic andesite tuffs, coarse mafic volcaniclastic rocks, and mafic epiclastic sedimentary rocks that contain millimetre- to centimetre-scale fragments of mafic volcanic rocks in a fine-grained chloritic matrix. These rock types are volumetrically very minor in the Newton Hill area.

### **CRETACEOUS INTRUSIONS**

#### **Quartz-Feldspar Porphyry**

These intrusions are quartz monzonite in composition. They contain 5% to 10% rounded, commonly myrmekitic quartz phenocrysts one millimetre to three millimetres in size set in a white to cream coloured aphanitic and quenched groundmass (Figure 7-6e). Feldspar phenocrysts that are less than one millimetre to two millimetres in size form under 5% to 15% of the intrusions. Locally, up to 3% biotite phenocrysts approximately one millimetre in size are preserved. Oliver (2010) reports that both the quartz-feldspar porphyry intrusions and the felsic volcanic rocks have high-K, calc-alkaline, rhyolite to rhyodacite compositions and lie within the field of volcanic arc granites on tectonic discrimination plots. As such, the volcanic and intrusive rocks are interpreted to be broadly cogenetic on a regional scale. This is consistent with a single U-Pb date of  $70.91 \pm 0.49$  Ma on zircon from a quartz-feldspar porphyry intrusion (Oliver, 2010) which overlaps, within error, the date reported above for the felsic volcanic sequence.

### **Mafic Dykes**

Volumetrically very minor, mafic dykes of basaltic to andesitic composition locally intrude other rock types at Newton Hill. The dykes are fine-grained and mostly equigranular, although a few examples contain 5% to 25% plagioclase phenocrysts, ranging from two millimetres to four millimetres in size and up to 10% hornblende and biotite phenocrysts between one millimetre and three millimetres in size. The mafic dykes are interpreted to be related to the mafic volcanic component of the Spences Bridge Group.

### **Monzonite Porphyry**

The most common intrusive rock type at Newton are green to grey, fine- to medium-grained monzonite porphyry dykes (Figure 7-6f). These intrusions are characterized by 10% to 30% plagioclase phenocrysts of between one millimetre and eight millimetres in size, accompanied locally by up to 5% biotite ± hornblende phenocrysts that are up to three millimetres in size. The groundmass is fine-grained, felted, and composed of tightly interlocking feldspar (± mafic) grains. These intrusions typically lack free quartz, although in a few cases up to 2% quartz phenocrysts from one millimetre to three millimetres in size are present. In a few cases, these intrusions contain abundant xenoliths of adjacent host rocks.

### **Diorite**

Diorite intrusions (Figure 7-6g) are medium-grained, magnetic and commonly exhibit flow foliation. They are variably altered and their colour ranges from brown, where biotite-altered, to pale green, where altered to chlorite. This rock type contains 20% to 30% plagioclase phenocrysts from one millimetre to four millimetres in size, up to 20% mafic (hornblende >> biotite > pyroxene) phenocrysts and trace magnetite phenocrysts from one millimetre to two millimetres in size. Locally, the host rocks to the diorite intrusions may be converted to hornfels.

### **Felsic Plagioclase and Biotite Porphyritic Dykes**

A set of plagioclase and/or biotite phyric dykes cut the felsic volcano-sedimentary sequence, the quartz-feldspar porphyry intrusions, and the monzonite porphyry intrusions. These dykes mainly strike to the southwest and have steep dips (Figure 7-3). They are characterized by 25% to 35% plagioclase phenocrysts from one millimetre to two millimetres in size, up to 8% biotite phenocrysts between one millimetre to two millimetres in size, and up to 2% millimetre-scale quartz phenocrysts in an aphanitic groundmass. They are volumetrically minor and were emplaced very late to post hydrothermal activity.



## **STRUCTURE**

The Newton deposit is believed to have been formed within a structurally active volcanic environment. Felsic and mafic volcanic rocks were deposited in a rifted volcanic graben which was segmented along steeply dipping extensional faults. The South Graben fault (SGF) and the Newton Hill fault (NHF) can be correlated across much of the area of drilling within the Newton deposit (Figures 7-4 and 7-5).

The SGF is located to the south of Newton Hill. It has an easterly strike and is approximately vertical with dips between  $85^{\circ}$  to the south and  $85^{\circ}$  to the north. It is locally segmented and cut by younger faults. Displacement across the SGF is north-side-down and believed to be a minimum of 600 m. An unconstrained component of dextral strike-slip movement may also be present (Oliver, 2012).

The NHF is a gently west-dipping normal fault which may have listric attributes. Near the surface, this fault strikes approximately  $027^{\circ}$  and dips  $31^{\circ}$  to  $35^{\circ}$  to the northwest, whereas at depth the fault rotates to a strike of approximately  $060^{\circ}$  and the dip decreases to about  $24^{\circ}$ . The NHF is between five metres and 30 m in width; it comprises an intensely sheared core, marked by massive clay gouge and black, pyritic seams, flanked by a brecciated rock mass that less commonly exhibits shear fabrics. Absolute normal displacement is estimated to be 300 m to 350 m with no strike-slip component. Cross-cutting relationships indicate that the NHF is younger than the SGF. The low angle of dip on the NHF has been attributed to post-fault rotation (Oliver, 2012).

Narrow fault zones are common, particularly in the hanging wall to the NHF in the central part of Newton Hill (Figure 7-3). These faults generally strike north-northwest and dip  $60^{\circ}$  to  $85^{\circ}$  to the west-southwest. They are characterized by one centimetre to tens of centimetres thickness of clay gouge and/or fault breccia and are also commonly associated with quartz-carbonate  $\pm$  gypsum extension veins. Individual fault planes cannot be confidently correlated between drill holes.

## **ALTERATION**

### **Quartz-Sericite Alteration**

Quartz-sericite alteration (Figure 7-7a and b) occurs predominantly in the felsic volcanoclastic and pyroclastic units located in both the hanging and footwall of the NHF. The alteration comprises pervasive quartz and sericite. It may be weakly to intensely developed and is

characterized by a white to light green colour. Quartz-sericite alteration is more weakly developed in quartz-feldspar porphyry and monzonite porphyry intrusions. Quartz-sericite alteration is associated with the presence of most of the gold and base metals in the Newton deposit.

Quartz-sericite alteration comprises two pervasive alteration assemblages and also occurs in association with late polymetallic base metal veinlets:

- The oldest sub-stage of quartz-sericite alteration comprises a pervasive assemblage of quartz, sericite, minor siderite, and several percent pyrite. This alteration is seen to be associated with a significant amount of the gold and, to a lesser degree, base metal mineralization to a much lesser degree. In addition, pervasive alteration quartz-sericite-pyrite alteration envelopes are noted in association with quartz-sericite-pyrite  $\pm$  molybdenite veinlets; however, these veinlets and associated alteration envelopes typically form less than 1% of the affected rock mass.
- In the subsequent sub-stage of quartz-sericite  $\pm$  siderite alteration, the early pyrite is partially to completely replaced by marcasite. Inclusions of both early pyrite and trace early chalcopyrite are commonly seen to be enclosed within the younger marcasite. This alteration also appears to be associated, at least spatially, with precipitation of gold but is distinguished by a markedly higher concentration of base metals, which include elevated concentrations of zinc and copper above and below the Newton Hill fault, respectively. It is not clear whether additional quartz veinlets with associated alteration envelopes formed during this stage of alteration or if this alteration phase is entirely typified by pervasive alteration.

Textural evidence suggests that late polymetallic veinlets (Figure 7-7c) cut the early pyrite- and marcasite-dominated sub-types of quartz-sericite alteration. These veinlets are typically less than one centimetre in width and contain various combinations of pyrite, chalcopyrite, sphalerite, galena, arsenopyrite and, locally, molybdenite. The extent to which these veins may be associated with the introduction of gold to the deposit is not known.

### **Argillic Alteration**

Argillic alteration, which replaces quartz-sericite alteration, is most commonly encountered in the monzonite porphyry and quartz-feldspar porphyry intrusions. Argillic alteration comprises kaolinite, sericite, calcite and/or iron-bearing carbonates, minor chlorite and up to approximately 5% pyrite. Kaolinite is commonly more abundant than sericite. This alteration is characterized by strong selective to pervasive alteration of feldspar phenocrysts by kaolinite-sericite, chlorite alteration of hornblende and biotite phenocrysts, and a less intense replacement of the igneous groundmass. Monzonite porphyry and quartz-feldspar porphyry

intrusions affected by argillic alteration locally have a spotted appearance defined by orbicular aggregates of green to blue clays belonging to the kaolinite ± smectite group (Figure 7-7d; McClenaghan, 2010). Similar green and blue clay alteration is rare in the felsic volcanic sequence. The clay aggregates are interpreted to be altered mafic phenocrysts or mafic fragments.

### **Propylitic Alteration**

Propylitic alteration mainly affects the mafic flows and mafic sedimentary rocks and is approximately contemporaneous with early quartz-sericite alteration. This alteration assemblage consists of pervasive green chlorite variably accompanied by patchy epidote, albite, calcite ± ankerite and minor quartz. The quartz and carbonate minerals most commonly occur in veinlets. Locally, magnetite grains one millimetre to two millimetres in size are intergrown with or replace epidote, particularly in the alteration envelopes to veinlets filled predominantly by quartz-iron-carbonate minerals.

### **Potassium-silicate alteration**

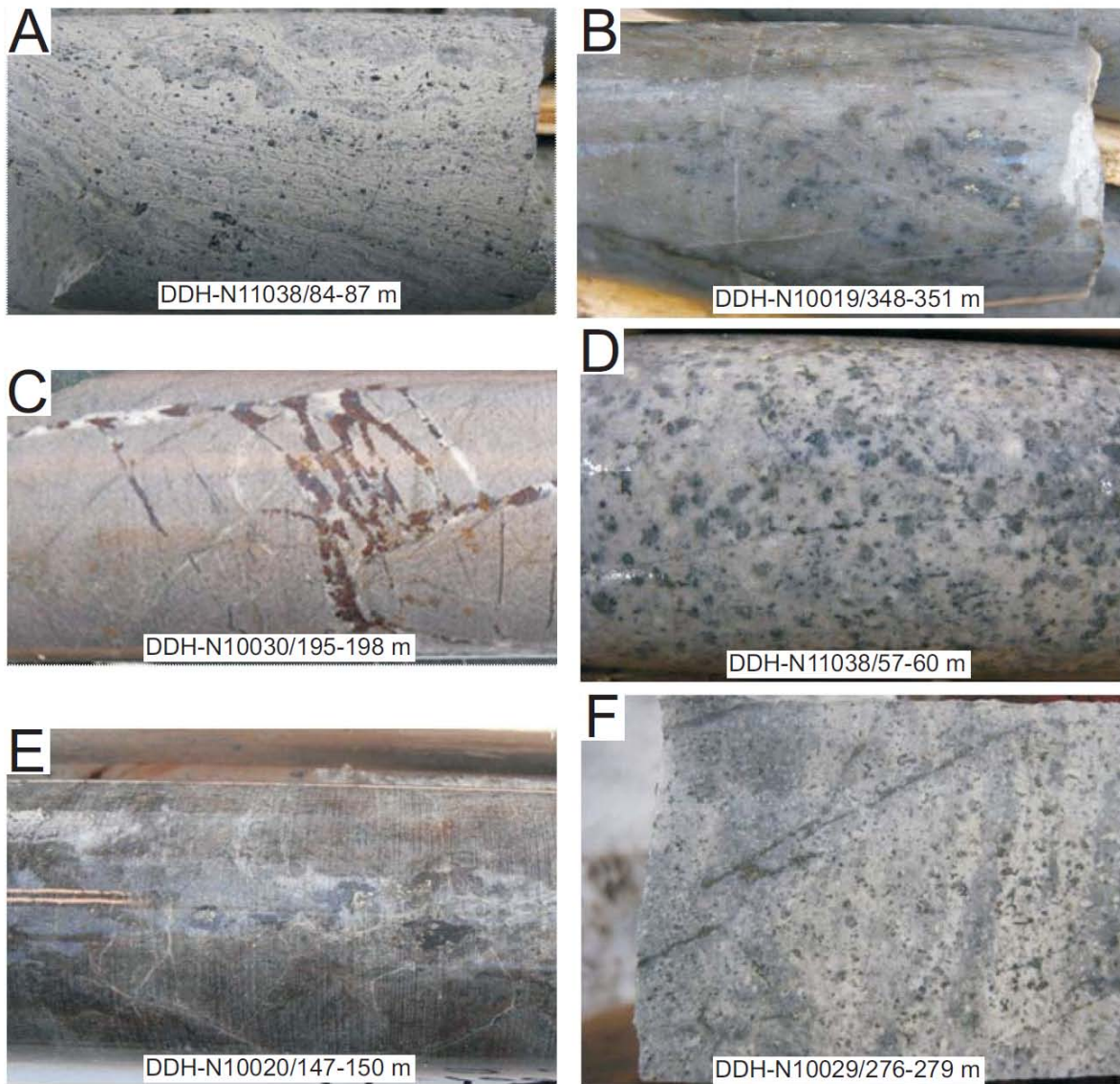
Potassium-silicate alteration is the least common assemblage observed at Newton and replaces other alteration types. It is characterized by fine-grained, brown hydrothermal biotite ± magnetite (Figure 7-7e). It occurs mostly within the chilled margins of monzonite porphyry and diorite intrusions in contact with quartz feldspar porphyry intrusions, mafic flows, and/or mafic sedimentary rocks. It is also locally observed as alteration envelopes to some quartz-veinlets which cut mafic rock types in proximity to intrusive contacts. The distribution and timing of the potassium-silicate alteration may indicate that it represents a biotite hornfels related to late-hydrothermal diorite intrusions.

### **Other Alteration Types**

Silicification and albite alteration have been noted in some drill holes. These alteration types are spatially associated and are interpreted to comprise a single quartz, albite, chlorite, and minor iron-carbonate assemblage. The silica-albite alteration is most commonly observed in quartz-feldspar porphyry bodies that have been intruded by monzonite porphyry. An early stage of strong silicification locally replaces an even earlier stage of moderate albite alteration and produces unusual textures that include grey and white colour banding and laminae (Figure 7-7f). In a single drill hole, texturally destructive silicification (Figure 7-7e,f) was observed to have overprinted mineralized felsic tuffs in the footwall of the NHF. Silica-

albite alteration is locally present in mafic volcanic rocks, epiclastic wacke and diorite intrusions, where it commonly overprints propylitic alteration.

The youngest alteration type thus far identified is characterized by extensional, one millimetre to 20 mm wide, carbonate veinlets. These late veinlets are found in all rock types on Newton Hill.

**FIGURE 7-7 EXAMPLES OF ALTERATION TYPES FOUND IN THE NEWTON DEPOSIT**

**A.** Quartz-sericite alteration with pyrite-marcasite in felsic ash tuff. **B.** More strongly siliceous example of quartz-sericite alteration with disseminated pyrite-marcasite in a felsic ash tuff. **C.** Sphalerite-rich polymetallic veinlets cutting a mafic volcanic flow affected by pervasive silica-albite alteration. **D.** Argillic alteration characterized by orbicular zones of clay alteration in a monzonite intrusion. **E.** K-silicate alteration, comprising biotite, quartz and minor magnetite, in a mafic volcanic flow. **F.** Silicification and albitization in a quartz feldspar porphyry intrusion. Labels at the bottom of each photo indicate drill hole and interval. Each sample is HQ drill core that is 63.5 mm in diameter.



## MINERALIZATION

Although gold and base metal mineralization have been encountered in all rock types within the Newton deposit, felsic volcanoclastic and flow rocks are the primary host rocks to the mineralization (Figure 7-3 to 7-7). The close spatial relationship between mineralization and the felsic volcanic rocks may reflect a higher relative primary permeability to fluid flow in felsic volcanic rocks compared to other rock types. A typical grade in the felsic volcanic rocks is in the order of 0.4 to 1.5 g/t Au. Quartz-feldspar porphyry and monzonite porphyry intrusions are also commonly, although not as consistently, well-mineralized.

Mineralization in other rock types is less consistent; however strong mineralization has been observed at least locally in mafic epiclastic sedimentary rocks (e.g., 24 m grading 0.83 g/t Au and 0.09% Cu in drill hole 10030), mafic volcanic rocks (e.g., three metres grading 2.31 g/t Au and 33 m grading 0.34 g/t Au in drill hole 10027 and 29.9 m grading 0.48 g/t Au and 0.22% Zn in drill hole 10020), and diorite (e.g., 15 m grading 0.35 g/t Au in drill hole 10023). The gold grade in diorite is typically less than 0.20 g/t Au, whereas in epiclastic and mafic rocks it is typically less than 0.10 g/t Au. The felsic plagioclase and biotite porphyritic dykes are very late- or post-hydrothermal and do not contain significant concentrations of gold or base metals.

Gold-silver ± base metal mineralization is associated with both disseminated and veinlet-hosted styles of mineralization (Figure 7-8). Veinlet-hosted mineralization, although widespread, is volumetrically minor compared to disseminated mineralization; overall, the total concentration of veinlets in altered and mineralized rock is estimated at less than one percent by volume. In felsic volcanic rocks and in quartz-feldspar porphyry intrusions proximal to the felsic volcanic sequence, mineralization is predominately disseminated in style (Figure 7-8a, b, c) and veinlets are rare. Mineralization in the monzonite porphyry and quartz-feldspar porphyry intrusions is also characterized by disseminated sulphide minerals; however, quartz ± sulphide veinlets with strong quartz-sericite-pyrite alteration envelopes are estimated to be comparatively more common than in other rock types (Figure 7-8d). Mineralization also locally occurs as a sulphide matrix to brecciated rocks (Figure 7-8e).

Most mineralization formed during the two sub-stages of quartz-sericite alteration. These are (1) earliest quartz-sericite-(siderite)-pyrite alteration associated with gold but with low concentrations of base metals; and (2) later quartz-sericite alteration associated with gold

and relatively higher concentrations of base metals, during which early pyrite was replaced by marcasite. Mineralization also occurs in late polymetallic veinlets which contain abundant pyrite, chalcopyrite, sphalerite, galena, arsenopyrite, and, locally, molybdenite, but it is not known how much of the gold is associated with these late polymetallic veinlets.

The total concentration of sulphide minerals is estimated to range from 0.5% to 15% in felsic volcanic rocks. Gold mineralization of similar tenor occurs across intervals with both high and low concentrations of sulphide minerals. There is, however, a general spatial coincidence of gold and base metal mineralization, although close elemental correlations have not been recognized at sample-scale.

No visible gold has been observed in drill core. Preliminary optical petrography and scanning electron microscopy studies by Gregory (2011) have identified the following relationships with respect to gold:

- Electrum inclusions occur within siderite, chalcopyrite, and pyrite in felsic ash tuff samples affected by the later quartz-sericite-marcasite alteration.
- Petzite ( $\text{Ag}_3\text{AuTe}_2$ ), undifferentiated Au-Bi-Te minerals, and minor electrum inclusions occur in pyrite in felsic ash tuff samples altered by the early quartz-sericite-pyrite assemblage.
- Electrum inclusions hosted by pyrite in felsic ash tuff and epiclastic sedimentary rock samples altered by the early quartz-sericite-pyrite assemblage.
- Volumetrically, electrum associated with the marcasite-bearing alteration may make the largest contribution to the overall gold budget in the Newton deposit.

Partial oxidation occurs along fractures in the upper 10 m to 30 m of the Newton deposit. Minor chalcocite has been identified within the zone of partial oxidization, but no other significant effects have been noted. Mineralization below this level is wholly hypogene in character.

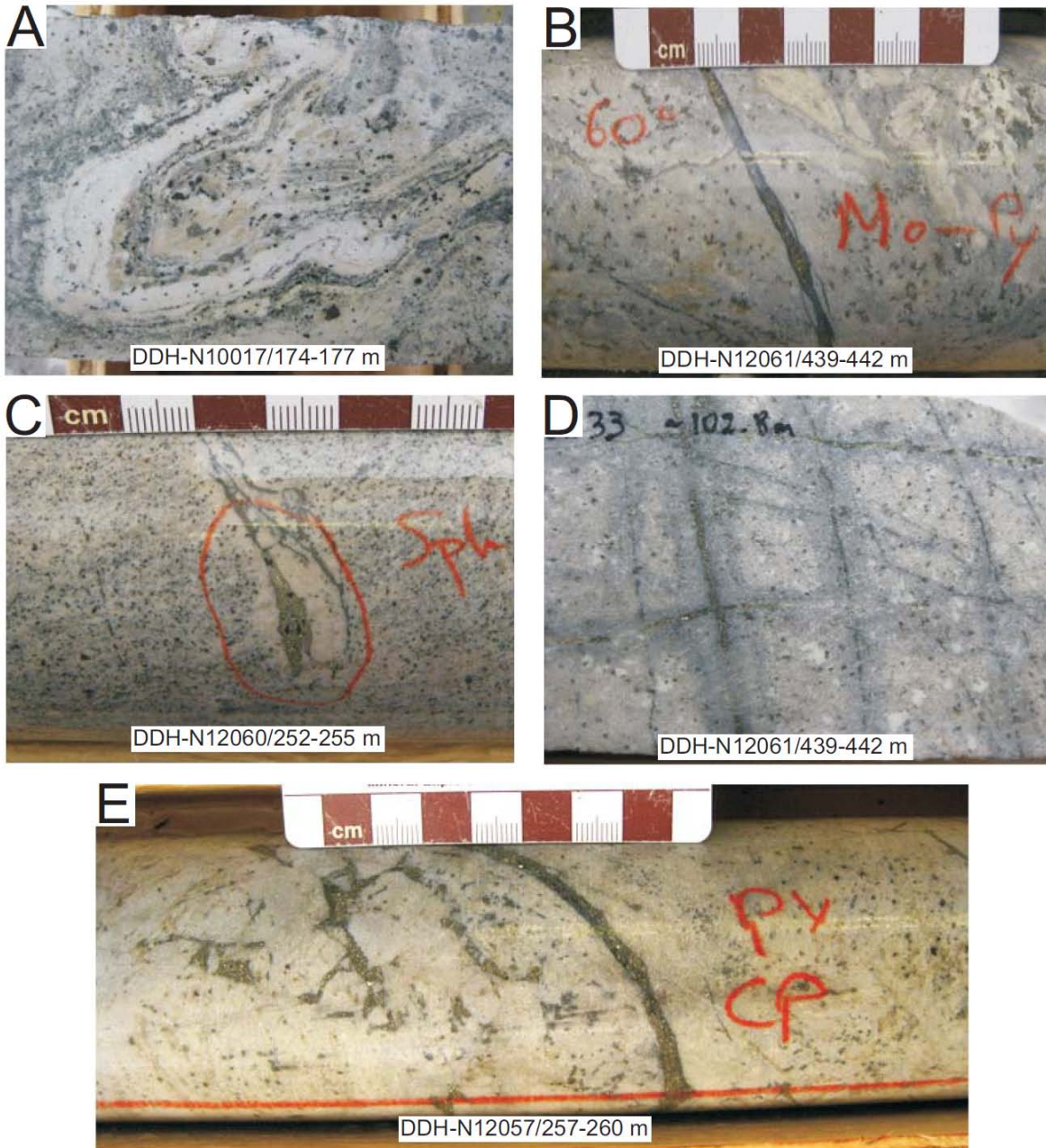
A rhenium-osmium date of  $72.1 \pm 0.3$  Ma was obtained on molybdenite from a quartz vein hosted by quartz-feldspar porphyry (McClenaghan, 2012). This date establishes near contemporaneity among quartz feldspar porphyry intrusions, felsic volcanic rocks, and the hydrothermal system which precipitated gold mineralization at Newton. In addition, the date indicates that the mineralization at Newton is nearly identical in age to the mineralization at the Capoose and Blackwater deposits.

There is evidence to suggest that there is a large gold-bearing hydrothermal system present at Newton. Geochemically significant gold concentrations, exceeding 50 ppb (0.05 g/t) values occur over an area of at least 1,300 m by 1,800 m. Geologically important gold concentrations of more than 100 ppb (0.1 g/t) have been returned from drill intersections throughout an area which measures approximately 1,300 m by 900 m. Short intersections of more than 100 ppb have also been encountered outside of this area.

The resource area is defined by variably spaced drilling over an area measuring 1,000 m by 900 m, which extends to a maximum depth of 685 m.



**FIGURE 7-8 EXAMPLES OF MINERALIZATION TYPES FOUND IN THE NEWTON DEPOSIT**



**A.** Disseminated pyrite-marcasite with minor sphalerite in a flow-laminated felsic ash tuff. **B.** A felsic volcanic flow with disseminated pyrite, cut by a quartz-pyrite-molybdenite veinlet. **C.** Disseminated marcasite accompanied by minor chalcopyrite in an auto-brecciated felsic tuff, cut by pyrite-sphalerite veinlets. **D.** A stockwork of pyrite veins with strong quartz-sericite alteration envelopes in a monzonite intrusion. **E.** Early disseminated pyrite-marcasite mineralization in a felsic tuff, subsequently brecciated with pyrite-chalcopyrite cement. Labels at the bottom of each photo indicate drill hole and interval. Each sample is HQ drill core that is 63.5 mm in diameter.

## 8 DEPOSIT TYPES

Newton is considered to be a bulk-tonnage disseminated epithermal gold deposit with elevated concentrations of base metals. It shares many similarities with a group of deposits that have been recently recognized in central British Columbia, including the Blackwater-Davidson and Capoose deposits, owned by New Gold Inc., that are located some 175 km northwest of Newton. Key similarities among these deposits include: (1) a spatial and genetic relationship with Late Cretaceous (~72 Ma) felsic pyroclastic rocks and high-level intrusions which formed in a structurally active environment; (2) a primary gold-silver signature; (3) elevated concentrations of copper, zinc, lead, and molybdenum; (4) an association of mineralization with extensive, pervasive quartz-sericite alteration, which contains disseminated and vein-hosted pyrite, marcasite, chalcopyrite, sphalerite, galena, arsenopyrite, and sulphosalts; and (5) late stages of polymetallic vein formation.

The Newton hydrothermal system shares many hydrodynamic features consistent with the epithermal model recently presented by Rowland and Simmons (2012) for the Taupo Volcanic Zone, New Zealand. These features include magmatically induced, convective hydrothermal circulation, permeable host rocks receptive to hydrothermal fluid flow (e.g., a high primary porosity in felsic pyroclastic flows) and fault-fracture permeability created by volcanism and tectonism (e.g., basin and graben structures).

Although the Newton deposit appears to be similar to low-sulphidation epithermal systems under the classification system of Sillitoe and Hedenquist (2003), it also has characteristics compatible with intermediate sulphidation epithermal gold-silver deposits, that may display a close spatial association with porphyry base and precious metal deposits that formed in extensional basins or rifted grabens. Other low-sulphidation epithermal systems that have a close spatial and genetic association to Cu-Au porphyry deposits are present in the Iskut region of northern British Columbia, and include the Snowfields (Armstrong et al., 2011) and Sulphurets (Ghaffari et al., 2011) deposits.

## 9 EXPLORATION

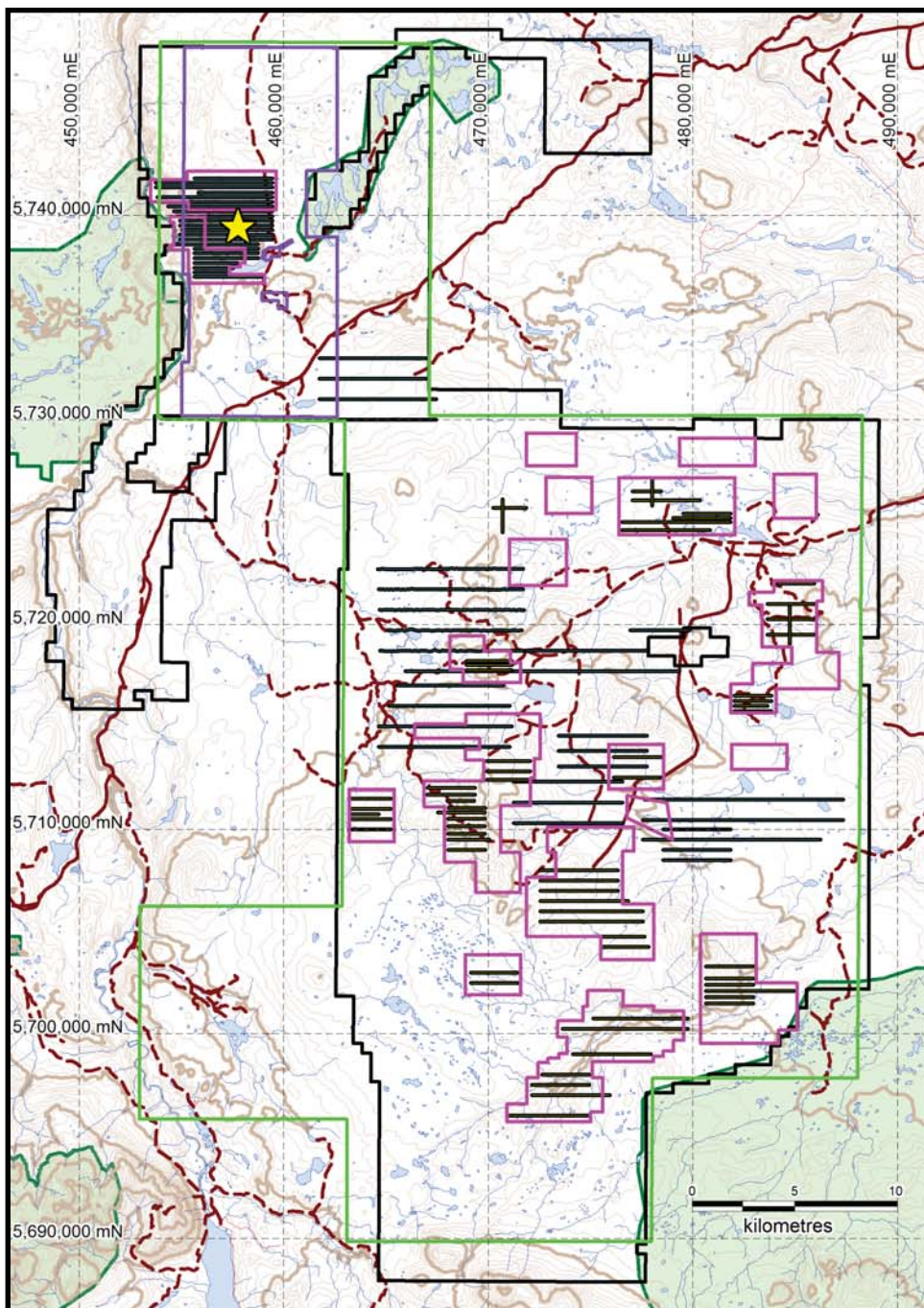
Amarc has completed several different types of exploration at the Newton Project since the ground was acquired in 2009-2010. Table 9-1 summarizes all of the exploration (apart from drilling, which is addressed in a later section of this report) undertaken by Amarc at the Newton Project. The areas of the property covered by the different types of exploration are shown in Figure 9-1.

**TABLE 9-1 WORK COMPLETED BY AMARC ON THE NEWTON PROJECT**  
**Amarc Resources Ltd. – Newton Project**

Year	Work	Methods	Results
2010	ZTEM survey	7,114.3 line-km, with lines spaced 200 m apart. Flown by helicopter at a mean height of 155 m above the ground.	Several targets identified for IP surveys and soil sampling.
2010	Soil sampling	13,572 samples collected on 19 grids with sample spacing of 50 m.	Three copper- and molybdenum-in-soil anomalies identified for follow-up work.
2010	Induced polarization survey	248.9 line-km on 13 grids, with line spacing varying from 200 m to 700 m, depending on the grid.	Three chargeability anomalies coincident with the soil anomalies identified for follow-up drilling; including chargeability anomaly at Newton.
2011	QEMSCAN	Analysis of 19 samples to characterize mineral assemblages of two visually distinct alteration types and to establish characteristics of gold mineralization.	Discovered two mineralogically-distinct alteration types and sulphide assemblages associated with gold.
2011	Induced polarization survey	188.9 line-km on 5 grids, with line spacing varying from 500 m to 1,000 m, depending on the grid.	One chargeability anomaly identified for follow-up drilling.
2011	Magnetic Survey	25 line-km at 50-m line spacing.	Total field magnetic low.
2012	Induced polarization survey	96.5 line-km completed on three grids.	Completed.
2012	Hyperspectral logging	Visible light spectral analysis of core.	Completed.

In addition, in 2009, Amarc re-logged core from 12 drill holes completed in 2006. Seventy-five selected core samples were analyzed with shortwave infrared spectroscopy using a TerraSpec spectrometer.





- Contour, 100 m interval
- Index contour, 1,000 m interval
- Road
- Limited use road
- Trail
- Park, staking reserve
- Newton Deposit
- Area of IP completed in 2012
- IP line completed in 2011
- IP line completed in 2010
- Areas of 2010 soil surveys
- Outline of ZTEM survey completed in 2010 and ground magnetic survey completed in 2012

**Projection:** UTM Zone 10 (NAD 83)

November 2012

Source: Amarc, 2012.

Figure 9-1

**Amarc Resources Ltd.**

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**Newton Project**  
British Columbia, Canada

**Areas Covered by Amarc  
Exploration Programs**

Diamond drilling programs completed by Amarc from 2009 to 2012 are described in detail in Section 10 – Drilling. The Amarc drilling included a 14-hole diamond drill program completed in 2009-2010 totalling 4,076.5 m of core that was designed to confirm and expand the gold-silver mineralization encountered by drilling completed previously in 2006 by High Ridge in the southeast sector; a 29-hole diamond drill program in 2010-2011 totalling 7,646.6 m to investigate extensions to the gold-silver mineralization in the southeast sector of the system and to search for additional centres of gold-silver mineralization within the extensive hydrothermal system; and a 46-hole delineation diamond drill program totalling 16,221.4 m completed in 2011-2012 to determine the grade and extent of the main gold-silver zone.

#### **2010 INDUCED POLARIZATION SURVEY**

Figure 9-2 illustrates the plus seven square kilometre extent of the hydrothermal sulphide system at Newton as indicated by the 8 MV/V contour of the chargeability anomaly defined by the 2010 IP geophysical survey. The results of the survey indicate that the current Newton resource occupies only a small portion of the anomaly in the southeast sector of this significant hydrothermal system which remains to be fully explored.

The results were derived from an 85 line-km survey carried out by contractor Peter E. Walcott & Associates. Survey lines were spaced at 200 m intervals within the zone of hydrothermal alteration and peripheral lines at 400 m. The survey was conducted using a pulse type system, using the “pole-dipole” method. The principal components of the system were manufactured by Walcer Geophysics of Emskillen, Ontario, and Instrumentation GDD of St. Foy, Québec.

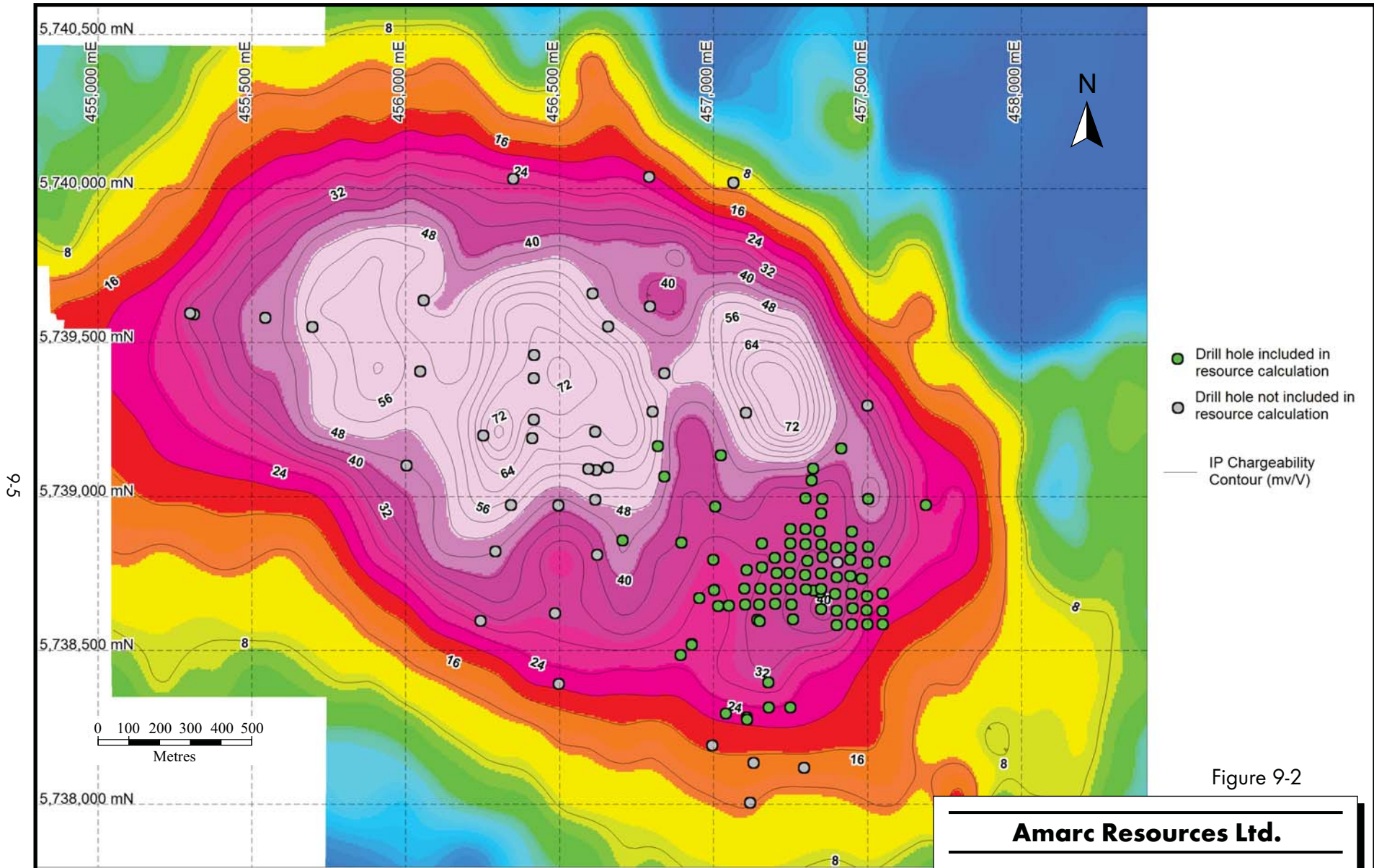
#### **2012 MAGNETIC SURVEY**

Figure 9-3 presents a map that shows the Total Field Magnetics and the location of drill hole collars in the Newton deposit-area. The results show that the Newton gold deposit lies within a northwest trending total field magnetic low that extends approximately 500 m to the northwest beyond the deposit, as defined by the higher density of drill holes, into an area that contains only a few, widely-spaced reconnaissance drill holes.

These results were derived from a detailed ground magnetic survey carried out in late spring of 2012 by contractor by Peter E. Walcott & Associates. The survey employed three GSM19W GPS enabled magnetometers manufactured by Gem Systems Inc. of Markham, Ontario – two rovers and one base station. The survey grid was established using real time

differential GPS guidance using a series of predefined waypoints uploaded to the respective magnetometers. The survey maintained a nominal line spacing of some 50 m, using a one second sampling interval over 21 north-south orientated lines. A total of some 22 line-kilometres in the Newton deposit area were traversed. Data were subsequently downloaded daily from the respective units, base station corrected, and loaded into Oasis Montaj for subsequent processing, filtering, and final presentation.





- Drill hole included in resource calculation
- Drill hole not included in resource calculation
- IP Chargeability Contour (mv/V)

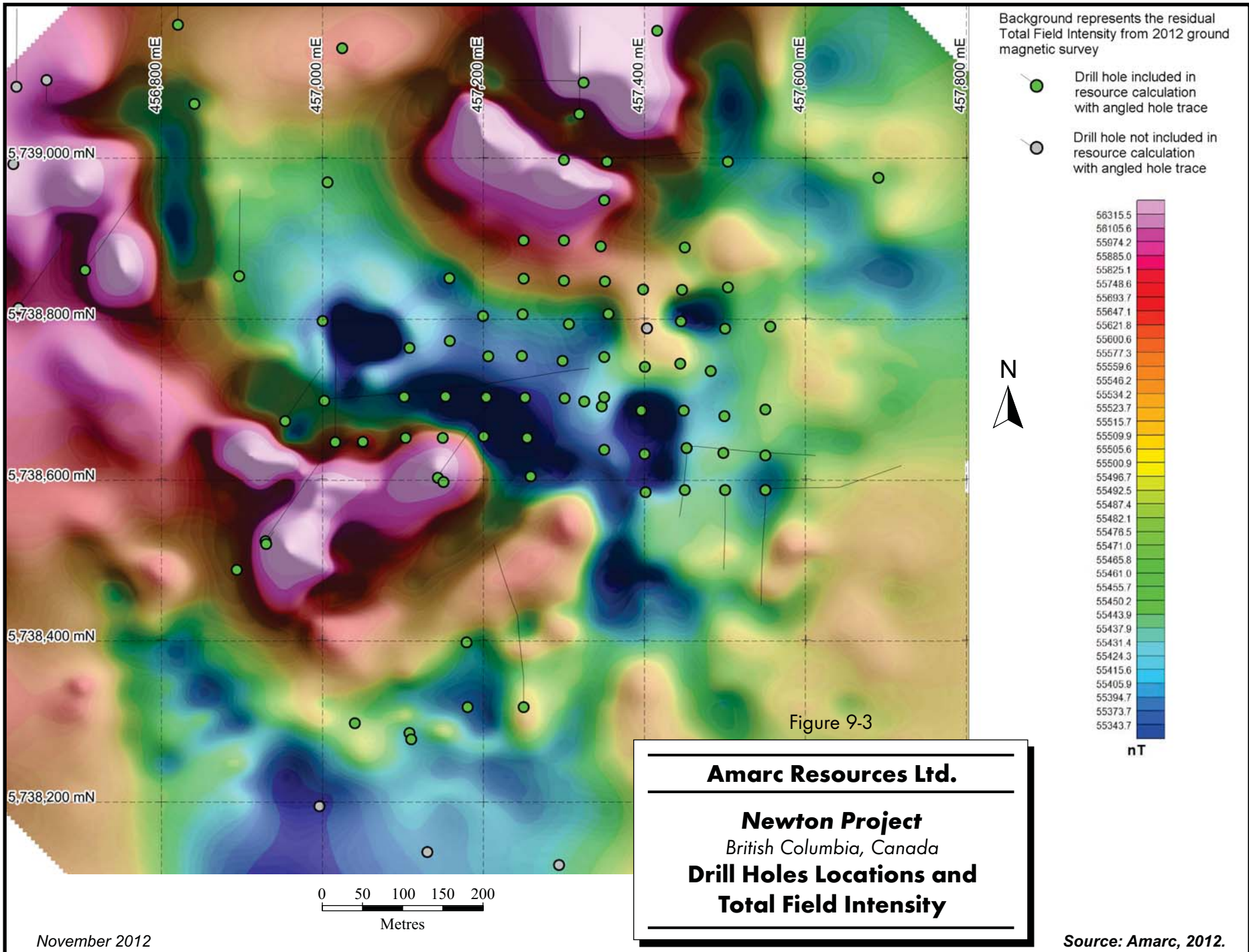
Figure 9-2

**Amarc Resources Ltd.**

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**Newton Project**  
British Columbia, Canada

**Drill Holes Locations and  
IP Chargeability Contours**





## 10 DRILLING

A number of drill campaigns have taken place on the Newton property since the first hole was completed in 1972. A total of 33,707 m has been completed in 128 holes up to hole 12088. This work includes 27,944 m in 89 holes in the four years since Amarc became project operator in 2009. A summary of the various drilling programs that have been completed on the project over the years is provided in Table 10-1 and a plan of drill hole locations is illustrated in Figure 10-1.

**TABLE 10-1 SUMMARY OF DRILLING PROGRAMS  
COMPLETED ON THE NEWTON PROJECT  
Amarc Resources Ltd. – Newton Project**

<b>Operator</b>	<b>Year</b>	<b>Drill Hole ID</b>	<b>No. of Holes</b>	<b>Size</b>	<b>Metres</b>
Cyprus	1972	72-01 to 72-10	10	BQ	1,634.3
Taseko	1982	82-01 to 82-04	4	Core	553.8
		P82-01 to P82-08	8	Percussion	559.3
Rea Gold	1992	92-01 to 92-05	5	NQ	970.3
High Ridge	2006	06-01 to 06-12	12	HQ/NQ	2,044.5
Amarc	2009	9001 to 9014	14	HQ	4,076.5
Amarc	2010	10015 to 10031	17	HQ	5,260.1
Amarc	2011	11032 to 11056 <sup>(1)</sup>	26	HQ	7,349.9
Amarc	2012	12057 to 12088	32	HQ	11,258.0
<b>Total</b>			<b>128</b>		<b>33,706.7</b>

Notes:

- 1) Includes 11051A (abandoned at 18.79 m)

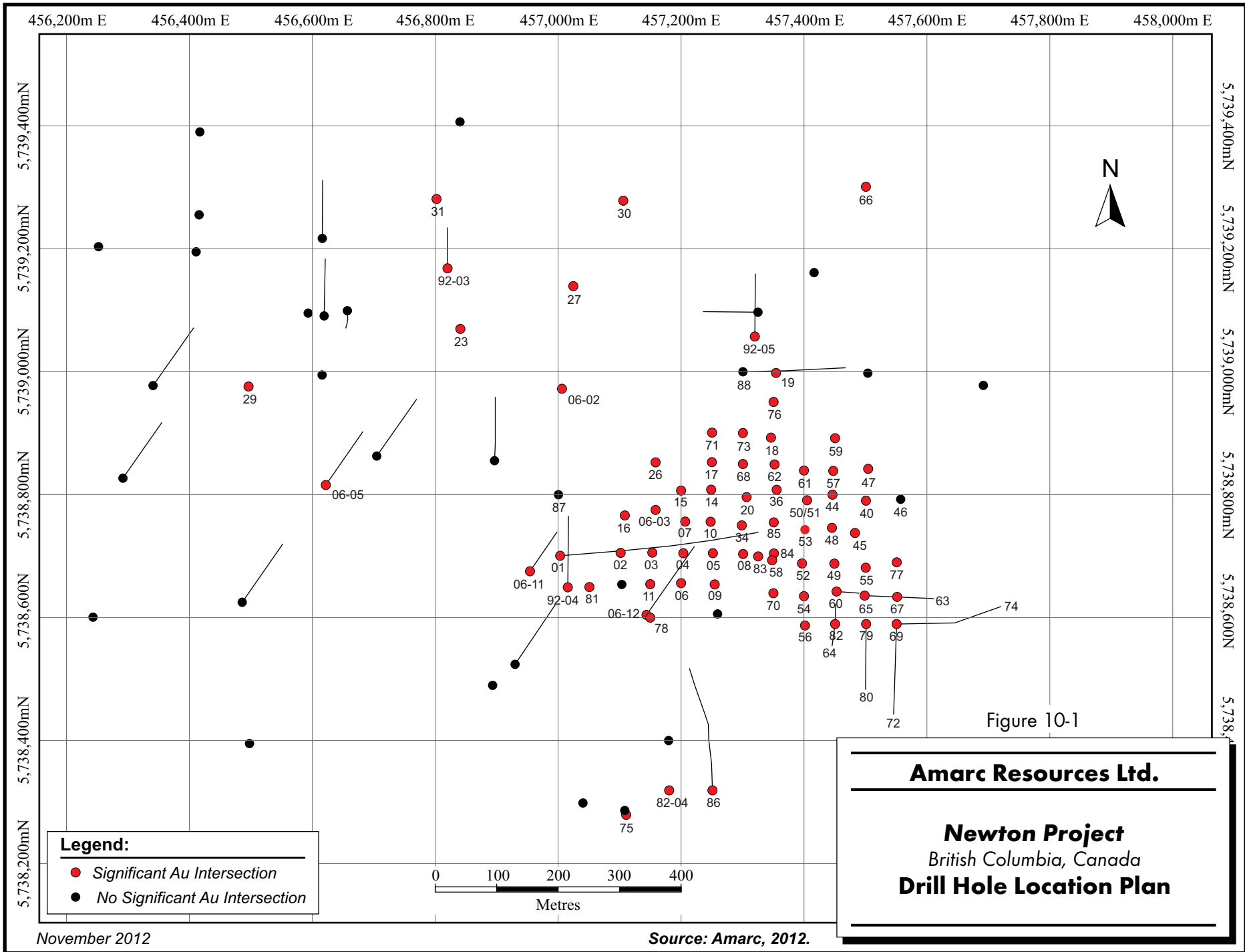


Figure 10-1

**Amarc Resources Ltd.**

**Newton Project**  
 British Columbia, Canada  
**Drill Hole Location Plan**

**Legend:**  
 ● Significant Au Intersection  
 ● No Significant Au Intersection

0 100 200 300 400  
 Metres

### **CYPRUS DRILLING – 1972**

Cyprus Exploration Corporation (Cyprus) acquired the property in 1972 and completed 1,634 m of BQ diamond drilling in 10 holes as a follow-up to other exploration work on the property. Diamond drilling failed to encounter significant supergene enrichment and low copper grades were intercepted, so the company did not pursue the project any further. As copper was the primary target at the time, no systematic gold analyses were performed. The 1972 drill core was subsequently re-sampled and re-assayed in 1987 by Rea Gold.

### **TASEKO DRILLING – 1982**

In 1981, Taseko Mines Limited (Taseko) acquired the property. They completed four diamond drill holes (554 m) in 1982 and eight percussion holes (559 m) on the outer parts of the large IP anomaly that was outlined by a survey in 1972. Note that the position of the 1982 drill holes is uncertain. Amarc drilled in the same apparent area, but encountered different rock types.

### **REA GOLD DRILLING – 1992**

As a follow up to previous work on the property, in 1992 Rea completed five diamond drill holes with a total length of 970 m.

### **HIGH RIDGE DRILLING – 2006**

High Ridge completed 12 drill holes numbered 06-01 through 06-12 on the property in 2006 for a total length of 2,045 m. Drilling was conducted by Hy-Tech Drilling Ltd. (Hy-Tech) using a portable drill and a helicopter for drill moves. Most holes were initiated with HQ (63.5 mm diameter) core then reduced to NQ (47.6 mm diameter). The predominant drill hole orientation was at an azimuth of 35° (measured clockwise from due north) and an inclination (dip) of -50°, with the following exceptions; 06-02 was drilled vertically, 06-03 at -87° dip, 0° azimuth, and 06-10 at -50° dip, 0° azimuth (Table 10-2). Reflex downhole directional surveys were taken at the bottom of two of the 2006 drill holes.

In the 2006 drill program by High Ridge, drill core was boxed at the drill rig and transported by drill truck to the logging facility on site. The remaining core after sampling was stored on site near the top of Newton Hill.

In 2009, Amarc photographed, re-logged, and took representative quarter core samples of the material from this program.

All drill cores from the historical programs were originally stored at the Newton Project site. In early 2011, Amarc salvaged what remained of this historical core and moved it to a secure location at Gibraltar Mine, near McLeese Lake, British Columbia. All data from the historical drilling, such as the drill hole locations, drill logs, and analytical results, is derived from the Durfeld and Rea compilations, assessment reports, and information provided by High Ridge.

**TABLE 10-2 DRILL HOLE DETAILS, HIGH RIDGE DRILLING PROGRAM  
Amarc Resources Ltd. – Newton Project**

Hole-ID	Length (m)	Azimuth (°)	Dip (°)
06-01*	25	35	-50
06-02	212.5	0	-90
06-03	210	0	-87
06-04	204	35	-50
06-05	167	35	-50
06-06	180	35	-50
06-07	180	35	-50
06-08	177	35	-50
06-09	183	35	-50
06-10	175	0	-50
06-11	121	35	-50
06-12	210	35	-50

\*Drill hole 06-01 was abandoned at a depth of 25 m

### **AMARC DRILLING - 2009**

In 2009, Amarc completed 14 drill holes (holes 9001 through 9014) for a total of 4,076.5 m. The drilling contractor, Hy-Tech, used an LS-5 drill to recover HQ core. Most holes were drilled vertically with the exception of hole 9001, which was drilled at -45° dip, 90° azimuth (Table 10-3).

A Magellan ProMark3 differential GPS incorporating a Base Station and Rover was used to take the 2009 drill collar surveys. All surveys by Amarc were recorded in UTM NAD 83, Zone 10 coordinates. Downhole orientation surveys were performed at 60 m to 175 m intervals by Hy-Tech using a Reflex E-Z shot tool. Drill core was geologically logged and



photographed prior to sampling. No geotechnical logs or core density measurements were made during the 2009 drilling program.

**TABLE 10-3 DRILL HOLE DETAILS, AMARC 2009 DRILLING PROGRAM**  
**Amarc Resources Ltd. – Newton Project**

Drill Hole-ID	East-X (m)	North-Y (m)	Elev-Z (m)	Length (m)	Azimuth (°)	Dip (°)
9001	457,002.3	5,738,700.9	1,317.3	501.0	90	-45
9002	457,101.2	5,738,705.7	1,308.9	323.0	0	-90
9003	457,152.7	5,738,705.8	1,302.3	350.0	0	-90
9004	457,203.3	5,738,705.1	1,296.9	350.0	0	-90
9005	457,251.4	5,738,704.6	1,291.7	351.0	0	-90
9006	457,200.4	5,738,656.4	1,287.9	306.5	0	-90
9007	457,206.1	5,738,756.1	1,306.6	252.0	0	-90
9008	457,300.9	5,738,703.7	1,286.0	174.0	0	-90
9009	457,254.1	5,738,654.5	1,282.4	186.0	0	-90
9010	457,247.5	5,738,756.3	1,300.2	233.0	0	-90
9011	457,149.1	5,738,654.4	1,290.5	252.0	0	-90
9012	457,258.6	5,738,606.7	1,272.4	228.0	0	-90
9013	457,103.2	5,738,654.4	1,294.7	288.0	0	-90
9014	457,248.4	5,738,808.2	1,310.7	282.0	0	-90

### AMARC DRILLING - LATE 2010 AND EARLY 2011

From October 2010 to January 2011, Amarc completed 29 diamond drill holes numbered 10015 through 11043, for a total of 7,691 m. The drilling contractor, Black Hawk Drilling Ltd. (Black Hawk), recovered HQ diameter core from the holes which were all drilled vertically or near vertically (Table 10-4). Drill hole collar coordinates were surveyed using a differential GPS as in 2009. Downhole surveys were performed at 75 m to 125 m intervals using a Reflex E-Z shot tool.

Geological and geotechnical logging, as well as bulk density measurements and core photography, was performed prior to sampling. The related logging data was entered into an Microsoft Access entry database on site and then transferred to an SQL database in the Vancouver office of Amarc. In the drilling program, a total of 2,458 drill run measurements were taken and an overall average core recovery of 92.6% was calculated. Among them, 770 measurements have 100% recovery.

**TABLE 10-4 DRILL HOLE DETAILS, AMARC 2010/2011 DRILLING PROGRAM**  
**Amarc Resources Ltd. – Newton Project**

<b>Drill Hole-ID</b>	<b>East-X (m)</b>	<b>North-Y (m)</b>	<b>Elev-Z (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>
10015	457199.3	5738806.2	1319.0	306.9	295.8	-88.6
10016	457108.1	5738766.4	1321.4	346.6	190.6	-89.8
10017	457249.7	5738852.7	1319.0	352.7	0.0	-90.0
10018	457345.7	5738892.6	1310.6	169.8	210.4	-89.1
10019	457353.6	5738997.7	1322.9	415.4	278.0	-88.7
10020	457306.1	5738796.1	1301.6	300.8	0.0	-90.0
10021	457179.0	5738400.8	1246.8	240.7	0.0	-90.0
10022	456996.1	5738197.0	1229.4	220.1	0.0	-90.0
10023	456840.8	5739069.8	1331.1	310.0	0.0	-90.0
10024	457415.6	5739160.6	1317.3	145.4	252.8	-89.4
10025	457690.6	5738977.9	1277.5	242.9	275.4	-89.7
10026	457157.6	5738853.0	1329.7	329.8	51.8	-89.4
10027	457024.4	5739138.7	1343.0	370.9	0.0	-90.0
10028	456615.9	5738994.6	1312.4	337.4	144.2	-89.6
10029	456496.5	5738975.7	1303.4	416.7	0.0	-90.0
10030	457105.6	5739277.3	1329.0	337.4	169.7	-89.6
10031	456802.2	5739280.2	1304.2	416.7	0.0	-90.0
11032	456794.2	5739621.9	1260.3	300.8	0.0	-90.0
11033	456058.5	5739641.7	1169.1	262.1	0.0	-90.0
11034	457298.2	5738750.2	1293.1	178.9	0.0	-90.0
11035	455697.1	5739556.3	1127.9	43.9	0.0	-90.0
11036	457355.0	5738808.6	1296.7	185.0	0.0	-90.0
11037	455697.1	5739556.3	1127.9	181.4	0.0	-90.0
11038	457503.5	5738997.6	1302.5	178.0	0.0	-90.0
11039	456497.7	5738396.0	1239.5	188.1	0.0	-90.0
11040	457500.1	5738790.5	1277.5	295.4	0.0	-90.0
11041	456252.2	5739202.7	1248.3	216.1	0.0	-90.0
11042	456003.2	5739105.1	1216.9	228.4	0.0	-90.0
11043	456243.4	5738601.5	1226.7	172.8	0.0	-90.0

### AMARC DRILLING - LATE 2011

Amarc completed 14 HQ size core holes between September and December 2011. A total of 4,919 m of drilling was completed by contractor Black Hawk. These holes numbered 11044 through 11056 (including 11051A), were all drilled vertically (Table 10-5). Collar coordinates were surveyed by differential GPS, as described in the 2009 and 2010 programs. Downhole surveys were performed using Reflex E-Z shot equipment on all holes except for 11044, 11050, and 11051A. The downhole survey measurement interval ranged between 75 m and 100 m.

A total of 1,545 drill runs were measured and an overall average core recovery of 94.6% was calculated. Among the intervals measured, 396 have 100% recovery.

**TABLE 10-5 DRILL HOLE DETAILS, AMARC LATE 2011 DRILLING PROGRAM  
Amarc Resources Ltd. – Newton Project**

Drill Hole-ID	East-X (m)	North-Y (m)	Elev-Z (m)	Length (m)	Azimuth (°)	Dip (°)
11044	457450	5738790	1275	355.09	0	-90
11045	457500	5738740	1262	290.78	0	-90
11046	457550	5738790	1265	154.53	0	-90
11047	457500	5738840	1275	121.92	0	-90
11048	457450	5738740	1270	367.89	0	-90
11049	457450	5738690	1264	511.15	0	-90
11050	457400	5738790	1282	63.09	0	-90
11051	457400	5738790	1282	572.08	0	-90
11051A	457400	5738790	1282	18.79	0	-90
11052	457400	5738690	1265	587.35	0	-90
11053	457400	5738740	1275	577.61	0	-90
11054	457400	5738640	1260	614.78	0	-90
11055	457500	5738690	1255	364.85	0	-90
11056	457400	5738590	1250	319.13	0	-90

### AMARC DRILLING - 2012

Up to June 2012, Amarc completed 32 HQ size core holes with a total length of 10,258.0 m. These holes, numbered 12057 through 12088, were drilled by the drilling contractor Black Hawk. Most of the holes were drilled vertically except for holes 12063, 12064, 12072, 12074, 12080, 12086, and 12088, which were drilled at a dip of -50° with azimuths of 90°, 180°, or 360°. Table 10-6 lists the collar coordinates and orientations.

Collar coordinates were surveyed by differential GPS as described in the 2009 and 2010 programs. Downhole surveys were performed using Reflex E-Z shot equipment on all holes. The measuring interval for the downhole surveys ranged from 50 m to 100 m.

Geological and geotechnical logging, as well as bulk density measurements and core photography, was performed at site prior to sampling. The related logging data were entered into Microsoft Access entry database on site and then transferred to an SQL database in Amarc's Vancouver office.

In the 2012 drilling, a total of 3,568 drill runs were measured and an overall average core recovery of 95.1% was calculated. Among the intervals measured, 847 have 100% recovery.

**TABLE 10-6 DRILL HOLE DETAILS, AMARC 2012 DRILLING PROGRAM**  
**Amarc Resources Ltd. – Newton Project**

Hole-ID	East-X (m)	North-Y (m)	Elev-Z (m)	Length (m)	Azimuth (°)	Dip (°)
12057	457446.80	5738838.68	1289.99	348.69	0	-90
12058	457346.76	5738693.62	1280.48	111.86	0	-90
12059	457449.87	5738891.42	1297.76	203.61	0	-90
12060	457452.18	5738642.16	1253.50	602.79	0	-90
12061	457398.21	5738839.16	1283.36	526.69	0	-90
12062	457351.01	5738849.02	1290.70	557.41	0	-90
12063	457452.18	5738642.16	1253.50	255.12	90	-50
12064	457452.18	5738642.16	1253.50	137.77	180	-50
12065	457497.77	5738636.01	1261.72	511.15	0	-90
12066	457500.00	5739300.00	1290.00	306.93	0	-90
12067	457550.40	5738632.89	1257.99	322.17	0	-90
12068	457300.00	5738850.00	1300.00	386.18	0	-90
12069	457550.00	5738590.00	1245.00	383.13	0	-90
12070	457350.00	5738640.00	1268.00	452.63	0	-90
12071	457250.00	5738900.00	1324.00	364.85	0	-90
12072	457550.00	5738590.00	1245.00	267.31	90	-50
12073	457300.00	5738900.00	1316.00	247.33	0	-90
12074	457550.00	5738590.00	1245.00	227.69	180	-50
12075	457110.00	5738280.00	1230.00	151.49	0	-90
12076	457350.00	5738950.00	1310.00	687.93	0	-90
12077	457550.00	5738690.00	1260.00	117.96	0	-90
12078	457150.00	5738600.00	1270.00	267.31	0	-90
12079	457500.00	5738590.00	1242.00	331.32	0	-90
12080	457500.00	5738590.00	1250.00	154.53	180	-50
12081	457050.00	5738650.00	1285.00	224.64	0	-90
12082	457450.00	5738590.00	1248.00	405.64	0	-90
12083	457325.00	5738700.00	1280.00	322.17	0	-90
12084	457350.00	5738705.00	1290.00	651.36	0	-90
12085	457350.00	5738755.00	1295.00	644.35	0	-90
12086	457250.00	5738320.00	1228.00	343.51	0	-50
12087	457000.00	5738800.00	1315.00	471.53	0	-90
12088	457300.00	5739000.00	1310.00	270.97	90	-50

## SUMMARY OF RESULTS

A summary of the significant intervals of mineralization from the drill holes used in the preparation of the mineral resource estimate is shown in Table 10-7. It is to be noted that the

lengths of the mineralized intersections presented below represent core lengths and thus do not necessarily reflect the true width of the mineralization.

**TABLE 10-7 SUMMARY OF SIGNIFICANT DRILL HOLE RESULTS  
Amarc Resources Ltd. – Newton Project**

Drill Hole <sup>2</sup> ID	Incl.	From (m)	To (m)	Int. <sup>3</sup> (m)	Au (g/t)	Ag (g/t)	AuEQ <sup>1</sup> (g/t)
Historical Drill Holes							
82-03		28.0	142.7	114.6	0.17		0.17
82-04		22.0	150.0	128.0	0.25		0.25
82-04	incl.	116.4	134.7	18.3	0.51		0.51
P82-1		3.0	86.9	83.8	0.34	2.4	0.38
92-03		36.0	90.0	54.0	0.50		0.50
92-03	incl	36.0	66.0	30.0	0.70		0.70
92-04		10.0	130.0	120.0	0.42		0.42
92-04	incl.	14.0	74.0	60.0	0.69		0.69
92-04	and	14.0	40.0	26.0	0.90		0.90
92-05		190.0	214.6	24.6	0.57		0.57
92-05	incl.	196.0	200.0	4.0	2.76		2.76
06-02		175.0	212.5	37.5	0.33	2.1	0.37
06-03		115.0	210.0	95.0	0.52	4.2	0.59
06-03	incl.	159.0	210.0	51.0	0.60	5.7	0.69
06-04		183.0	187.0	4.0	0.39	2.4	0.43
06-06		151.0	159.0	8.0	0.50	0.9	0.52
06-11		3.0	49.0	46.0	0.54	0.5	0.55
06-12		105.0	210.0	105.0	1.15	11.8	1.35
06-12	incl.	169.0	210.0	41.0	2.49	20.0	2.83
Drill Holes Completed by Amarc							
9001		3.0	39.0	36.0	0.60	0.9	0.62
9001		228.0	297.0	69.0	1.41	10.9	1.59
9001	incl.	233.1	234.0	0.9	11.19	22.2	11.56
9001	incl.	252.8	297.0	44.2	1.74	15.9	2.00
9001		441.0	477.0	36.0	0.34	0.6	0.35
9002		222.0	255.2	33.2	0.96	2.8	1.01
9002	incl.	234.0	252.0	18.0	1.10	3.3	1.15
9003		3.0	224.5	221.5	0.60	5.6	0.69
9003	incl.	18.0	39.0	21.0	0.71	2.3	0.75
9003	incl.	96.0	224.5	128.5	0.84	8.9	0.99
9003	and	156.0	198.0	42.0	1.25	16.8	1.53
9004		6.0	195.0	189.0	1.56	7.9	1.69
9004	incl.	54.0	195.0	141.0	2.01	10.0	2.17
9004	and	96.0	195.0	99.0	2.76	12.2	2.96
9004	and	126.0	195.0	69.0	3.79	9.1	3.94



Drill Hole <sup>2</sup> ID	Incl.	From (m)	To (m)	Int. <sup>3</sup> (m)	Au (g/t)	Ag (g/t)	AuEQ <sup>1</sup> (g/t)
9004	and	129.0	132.0	3.0	13.47	14.4	13.71
9004	and	168.9	195.0	26.1	5.54	12.5	5.75
9005		12.0	27.0	15.0	0.32	1.4	0.34
9005		41.0	54.0	13.0	0.44	4.4	0.51
9005		76.0	163.2	87.2	0.50	7.1	0.62
9005	incl.	88.0	89.0	1.0	16.56	221.6	20.25
9005		279.0	303.0	24.0	0.34	0.8	0.35
9006		9.0	306.5	297.5	0.26	2.3	0.29
9006	incl.	78.0	192.2	114.2	0.32	3.7	0.38
9006	incl.	264.0	306.5	42.5	0.43	0.6	0.43
9007		48.0	252.0	204.0	0.33	4.5	0.41
9007	incl.	48.0	66.0	18.0	0.49	1.9	0.52
9007	incl.	135.0	216.0	81.0	0.46	8.0	0.59
9007	and	183.0	216.0	33.0	0.62	13.4	0.84
9008		18.0	42.0	24.0	0.44	6.4	0.55
9008		123.7	129.0	5.3	0.44	8.0	0.58
9009		15.0	147.9	132.9	0.25	5.9	0.35
9009	incl.	66.0	114.0	48.0	0.36	6.3	0.47
9010		35.4	189.0	153.6	0.29	3.0	0.34
9010	incl.	35.4	69.0	33.6	0.52	3.2	0.58
9011		83.4	207.0	123.6	0.44	2.3	0.47
9011	incl.	149.0	207.0	58.0	0.60	2.4	0.64
9011	and	186.0	207.0	21.0	1.13	2.9	1.18
9014		72.0	210.0	138.0	0.74	4.2	0.81
9014	incl.	147.0	210.0	63.0	1.17	6.8	1.28
9014	and	168.0	207.0	39.0	1.45	6.5	1.56
9014	and	204.0	207.0	3.0	11.70	50.8	12.55
10015		95.0	134.0	39.0	0.35	3.1	0.41
10015		194.0	230.0	36.0	0.43	4.7	0.51
10016		141.0	249.0	108.0	0.37	1.5	0.40
10016	incl.	231.0	249.0	18.0	0.57	1.8	0.60
10017		75.0	215.0	140.0	0.35	2.3	0.39
10017	incl.	138.0	168.0	30.0	0.52	3.4	0.58
10017		307.3	311.5	4.3	1.13	4.6	1.21
10018		54.0	60.0	6.0	0.47	0.8	0.49
10018		141.0	150.0	9.0	0.45	2.6	0.49
10019		33.0	42.0	9.0	0.21	4.7	0.29
10019		321.2	393.0	71.8	0.48	1.9	0.51
10020		18.0	156.0	138.0	0.46	4.1	0.53
10020	incl.	63.0	98.7	35.7	0.58	2.3	0.62
10020	incl.	116.8	156.0	39.3	0.79	10.5	0.97
10020	and	116.8	132.0	15.3	1.55	5.9	1.65

Drill Hole <sup>2</sup> ID	Incl.	From (m)	To (m)	Int. <sup>3</sup> (m)	Au (g/t)	Ag (g/t)	AuEQ <sup>1</sup> (g/t)
10020		294.0	297.0	3.0	6.58	1.0	6.59
10023		30.0	39.0	9.0	0.46	2.0	0.49
10023		249.0	288.0	39.0	1.21	2.0	1.24
10023	incl.	249.0	273.0	24.0	1.81	1.6	1.84
10023	and	267.0	273.0	6.0	5.15	2.6	5.19
10026		185.0	221.0	36.0	0.41	2.7	0.45
10027		75.0	78.0	3.0	2.31	0.2	2.31
10027		102.0	135.0	33.0	0.34	6.2	0.44
11034		9.1	33.0	23.9	0.34	3.0	0.39
11036		10.0	31.0	21.0	0.25	1.3	0.27
11040		15.4	171.0	155.6	0.58	2.9	0.63
11040	incl.	15.4	42.0	26.6	1.12	4.2	1.19
11040	incl.	69.0	108.0	39.0	0.71	3.6	0.77
11044		56.4	350.0	293.6	0.61	2.3	0.65
11044	incl.	56.4	204.0	147.6	0.73	3.1	0.79
11044	and	56.4	92.0	35.6	1.43	6.0	1.53
11044	incl.	272.0	338.0	66.0	0.84	1.8	0.87
11044	and	272.0	317.0	45.0	1.02	2.0	1.05
11045		16.3	178.0	161.7	1.05	3.6	1.11
11045	incl.	52.0	178.0	126.0	1.24	4.1	1.31
11045	and	79.0	157.0	78.0	1.71	5.1	1.80
11045	and	79.0	115.0	36.0	2.51	8.7	2.65
11045	and	85.0	88.0	3.0	12.50	18.5	12.81
11046		68.0	83.0	15.0	0.23	1.7	0.26
11047		17.0	50.0	33.1	0.54	3.1	0.59
11048		34.0	175.0	141.0	0.65	1.7	0.68
11048	incl.	34.0	49.0	15.0	0.80	4.1	0.86
11048	incl.	73.0	109.0	36.0	1.23	2.2	1.26
11048		277.0	337.0	60.0	0.60	2.1	0.63
11049		23.5	144.0	120.5	0.86	2.2	0.90
11049	incl.	23.5	84.0	60.5	1.21	2.3	1.24
11049		213.0	342.0	129.0	0.71	3.4	0.76
11049	incl.	228.0	261.0	33.0	1.00	5.2	1.08
11049	incl.	297.0	315.0	18.0	1.40	2.3	1.43
11051		81.0	129.0	48.0	0.77	3.7	0.84
11051	incl.	81.0	102.0	21.0	0.96	5.5	1.05
11051		315.0	408.0	93.0	0.76	1.8	0.79
11051	incl.	366.0	408.0	42.0	1.21	0.8	1.22
11052		48.0	456.0	408.0	0.60	2.6	0.64
11052	incl.	48.0	207.0	159.0	0.84	3.1	0.89
11052	and	99.0	207.0	108.0	1.00	3.6	1.06
11052	and	138.0	207.0	69.0	1.23	4.7	1.31

Drill Hole <sup>2</sup> ID	Incl.	From (m)	To (m)	Int. <sup>3</sup> (m)	Au (g/t)	Ag (g/t)	AuEQ <sup>1</sup> (g/t)
11052	and	168.0	171.0	3.0	7.70	3.6	7.76
11052	incl.	318.0	456.0	138.0	0.60	2.8	0.65
11052	and	378.0	456.0	78.0	0.73	2.8	0.78
11052	and	378.0	426.0	48.0	0.93	3.8	0.99
11053		79.0	94.0	15.0	0.47	1.9	0.50
11053		166.0	187.0	21.0	0.65	1.4	0.67
11053		235.0	271.0	36.0	0.87	1.5	0.90
11053	incl.	235.0	238.0	3.0	3.58	1.4	3.60
11053	and	256.0	259.0	3.0	4.89	3.5	4.95
11053		445.0	475.0	30.0	0.64	1.0	0.66
11054		43.0	442.0	399.0	0.50	2.4	0.54
11055		30.1	151.0	120.9	0.70	2.4	0.74
11055	incl.	78.0	151.0	73.0	0.86	2.0	0.90
11055		238.0	286.0	48.0	0.57	2.8	0.62
12057		68.0	134.0	66.0	0.60	3.3	0.65
12057	incl.	89.0	134.0	45.0	0.70	3.5	0.76
12057		149.0	164.0	15.0	0.63	2.0	0.67
12057		239.0	254.0	15.0	1.30	2.7	1.35
12057		269.0	305.0	36.0	0.54	0.9	0.56
12058 <sup>4</sup>		36.0	42.0	6.0	0.47	7.8	0.60
12060		11.6	332.9	321.3	0.55	3.0	0.60
12060	incl.	11.6	179.9	168.3	0.71	3.8	0.77
12060	and	21.0	99.0	78.0	0.93	6.2	1.03
12060	and	75.0	99.0	24.0	1.84	12.4	2.04
12060	and	147.0	177.0	30.0	0.69	1.5	0.72
12061		82.0	154.0	72.0	0.31	1.6	0.34
12061		334.0	343.0	9.0	0.48	2.3	0.52
12062		354.0	372.0	18.0	0.49	1.2	0.51
12062		390.0	435.0	45.0	0.41	1.5	0.43
12063		28.0	34.0	6.0	1.13	4.6	1.21
12063		52.0	208.0	156.0	0.40	12.7	0.61
12063	incl.	52.0	139.0	87.0	0.49	19.9	0.82
12063	and	52.0	76.0	24.0	0.71	24.1	1.11
12064		22.4	43.0	20.6	0.65	2.7	0.70
12064		76.0	91.0	15.0	0.55	6.1	0.65
12065		19.2	28.0	8.8	0.39	5.5	0.48
12065		43.0	388.0	345.0	0.43	3.6	0.49
12065	incl.	46.0	67.0	21.0	0.49	7.7	0.62
12065	incl.	97.0	112.0	15.0	0.37	17.5	0.66
12065	incl.	205.0	388.0	183.0	0.55	2.0	0.59
12065	and	244.0	328.0	84.0	0.72	2.0	0.76
12065	and	244.0	259.0	15.0	1.09	2.3	1.13

Drill Hole <sup>2</sup> ID	Incl.	From (m)	To (m)	Int. <sup>3</sup> (m)	Au (g/t)	Ag (g/t)	AuEQ <sup>1</sup> (g/t)
12065	and	292.0	328.0	36.0	0.82	2.5	0.86
12067		19.5	100.0	80.5	0.32	7.3	0.45
12067	incl.	19.5	55.0	35.5	0.44	6.6	0.55
12067		160.0	250.0	90.0	0.30	2.7	0.35
12068		33.0	39.0	6.0	0.47	1.8	0.50
12068		66.0	162.0	96.0	0.46	2.8	0.51
12068	incl.	126.0	162.0	36.0	0.69	4.0	0.75
12068	and	147.0	162.0	15.0	1.02	5.9	1.12
12068		246.0	252.0	6.0	0.92	2.0	0.96
12069		28.0	102.0	74.0	0.40	3.9	0.47
12069	incl.	63.0	72.0	9.0	0.76	3.8	0.82
12069	incl.	90.0	102.0	12.0	0.56	4.8	0.64
12069		279.0	306.0	27.0	0.49	2.8	0.54
12070		74.0	104.0	30.0	0.38	3.0	0.43
12070		203.0	221.0	18.0	0.35	0.8	0.36
12070		266.0	293.0	27.0	0.80	3.1	0.86
12070	incl.	278.0	293.0	15.0	1.12	4.9	1.20
12071		104.0	113.0	9.0	0.33	0.3	0.33
12071		203.0	218.0	15.0	0.40	1.9	0.43
12073		115.0	124.0	9.0	0.37	0.8	0.38
12074		37.0	46.0	9.0	0.40	2.0	0.43
12076		288.0	459.0	171.0	0.69	2.1	0.73
12076	incl.	321.0	447.0	126.0	0.82	2.2	0.86
12076	and	321.0	342.0	21.0	0.96	4.6	1.04
12076	and	384.0	447.0	63.0	1.07	1.5	1.09
12077		94.0	106.0	12.0	0.33	0.8	0.35
12079		20.2	173.0	152.8	0.70	4.7	0.78
12079	incl.	23.0	53.0	30.0	1.08	9.8	1.24
12079	incl.	116.0	173.0	57.0	0.78	3.8	0.84
12081		130.0	139.0	9.0	0.53	1.2	0.55
12082		38.0	242.0	204.0	0.71	3.1	0.76
12082	incl.	56.0	98.0	42.0	0.84	4.7	0.92
12082	incl.	125.0	131.0	6.0	3.40	6.0	3.50
12082	incl.	158.0	188.0	30.0	0.85	4.2	0.92
12082	incl.	194.0	224.0	30.0	0.82	1.5	0.85
12082		305.0	314.0	9.0	0.52	3.9	0.58
12082		365.0	401.0	36.0	0.42	1.9	0.45
12083		106.0	118.0	12.0	0.66	3.6	0.72
12083		136.0	145.0	9.0	0.36	0.9	0.37
12083		160.0	205.0	45.0	0.57	2.1	0.60
12083	incl.	160.0	184.0	24.0	0.79	1.7	0.82
12083		259.0	289.0	30.0	0.57	4.5	0.64

Drill Hole <sup>2</sup> ID	Incl.	From (m)	To (m)	Int. <sup>3</sup> (m)	Au (g/t)	Ag (g/t)	AuEQ <sup>1</sup> (g/t)
12084		69.0	72.0	3.0	4.71	1.3	4.73
12084		90.0	99.0	9.0	1.01	8.0	1.14
12084		153.0	195.0	42.0	0.56	3.7	0.62
12084	incl.	156.0	180.0	24.0	0.70	5.0	0.78
12084		243.0	279.0	36.0	2.63	2.4	2.67
12084	incl.	249.0	252.0	3.0	21.10	1.2	21.12
12084		291.0	549.0	258.0	0.44	1.4	0.47
12084	incl.	360.0	432.0	72.0	0.58	1.1	0.60
12084	incl.	507.0	546.0	39.0	0.76	2.2	0.80
12086		14.6	23.0	8.4	0.32	1.0	0.34
12086		173.0	179.0	6.0	1.80	5.2	1.89
12086		260.0	290.0	30.0	0.38	1.0	0.39

Notes:

- 1) Gold equivalent calculations use metal prices of Au US\$1,200/oz and Ag US\$20/oz.
- 2) Metallurgical recoveries and net smelter returns are assumed to be 100%.
- 3) All holes are vertical, except for holes 92-03, 92-04, 92-05, 06-04, 06-06, 06-11, 06-12, 9001, 12063, 12064, 12072, 12074, and 12080
- 4) Widths reported are drill widths, such that true thicknesses are unknown.
- 5) All assay intervals represent length weighted averages.
- 6) Hole lost at 112 m when entering favoured host rock.
- 7) No significant intersection in holes 9012, 9013, 10021, 10024, 10025, 11038, 11056, 12059, 12066, 12072, 12075, 12078, 12080, 12085, 12087 and 12088.
- 8) No assays recorded for holes 72-1, 72-3, 72-10, and 06-01

## EXPLORATION POTENTIAL

Much of the large Newton sulphide-bearing alteration zone, as defined by Amarc's 2010 IP survey, has not been thoroughly explored. For example as described in Chapter 9, the Newton gold deposit lies within a northwest trending total field magnetic low that extends approximately 500 m to the northwest beyond the deposit as defined by the densest drilling, to an area where the few exploration holes returned geologically important intersections of greater than 100 ppb (0.1 g/t) Au, such as hole 92-03 that returned 54 m grading 0.50 g/t Au including 30 m grading 0.70 g/t Au, and hole 23 that returned 39 m at 1.21 Au, indicating potential to host additional resources. In addition, to the north, mineralization in hole 12076 (see Table 10-7) has not been fully explored and in the south, the mineralized intervals in hole 12086 are indicative of resource potential in this vicinity.



# 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

A summary of the various preparation and analytical laboratories that carried out analytical work on samples from the Newton property is summarized by year in Table 11-1.

**TABLE 11-1 SUMMARY OF THE SAMPLE PREPARATION AND ANALYTICAL LABORATORIES FOR THE NEWTON PROJECT**  
Amarc Resources Ltd. – Newton Project

Year	Sample Preparation Laboratory	Primary Assay Laboratory	Check Assay Laboratory
1972	Unknown	Unknown	—
1982	Kamloops Research Assay Lab (KRAL)	KRAL, Kamloops	—
1988	Min-En, North Vancouver	Min-En, North Vancouver	—
1989	Min-En, North Vancouver	Min-En, North Vancouver	—
1990	Acme, Vancouver	Acme, Vancouver	—
1991	Vangeochem, Vancouver	Vangeochem, Vancouver	—
1992	Unknown	Unknown	—
1994	Min-En, North Vancouver	Min-En, North Vancouver	—
1996	Min-En, North Vancouver	Min-En, North Vancouver	—
1997	Min-En, North Vancouver	Min-En, North Vancouver	—
2005	Acme, Vancouver	Acme, Vancouver	—
2006	Acme, Vancouver	Acme, Vancouver	Acme <sup>(1)</sup> , Vancouver
2009	Acme, Smithers or Vancouver	Acme, Vancouver	ALS Chemex, North Vancouver
2010 - 2012	Acme, Vancouver	Acme, Vancouver	Acme <sup>(2)</sup> , Vancouver and ALS Minerals <sup>(3)</sup> , North Vancouver

Notes:

- 1) High Ridge selected 81 pulp samples for re-analysis by Acme in 2006.
- 2) In-line ¼-core and in-line coarse reject duplicate assays.
- 3) Inter-laboratory pulp duplicate assays on 5% of 2010 through 2012 drill core.

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## HISTORICAL SAMPLES (PRE-2006)

Descriptions of the sample preparation or analytical protocols used by Cyprus in 1972, and in a few of the later year programs, are not mentioned in the available reports. Site security measures are also not mentioned in any of the available reports prior to the arrival of Amarc in 2009. It is assumed that sample preparation, analytical, and site security protocols consistent with industry standards of the day were in place during these programs.

For the 1982 Taseko drilling, Kamloops Research & Assay Laboratory Limited (KRAL) performed the sample preparation and analytical work (Assessment Report-11001, 1982). Gold, silver, copper, and zinc were determined for drill holes 82-03 and 82-04; however, the procedures used by KRAL to perform the sample preparation and analysis work are not mentioned.

In 1988, 129 drill core samples (from 1972 Cyprus drill core) and 82 soil samples were collected and sent to Min-En Labs in North Vancouver (Assessment Report-18081, 1988). The core samples were crushed with a jaw crusher and pulverized by ceramic plated pulverizer or ring mill pulverizer. The soil samples were dried at 95°C and screened through an 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The gold content was determined by Min-En Labs using a special multi-acid digestion with Atomic Absorption Spectroscopy (AAS) finish. Silver, copper, lead, zinc, antimony, and arsenic were determined by Min-En Labs using aqua regia plus HClO<sub>4</sub> digestion with Inductively Coupled Plasma – Atomic Emission Spectroscopy (ICP-AES) finish.

In 1992, 462 core samples were collected from five drill holes (hole 92-01 through 92-05) and assayed for gold and copper. The assay laboratory and the procedures are not mentioned in the available reports.

The core from the pre-2006 programs was likely split or sawn in half lengthwise, with one half sent for assay and the other half retained in the core box for archival purposes. Most historical samples are two metre in length. Table 11-1 lists the laboratories mentioned in the historical reports. In many cases, the laboratories and methods used are not described definitively and the original assay certificates are generally not available for review. Gold analysis on the drill core samples was likely by the fire assay fusion method on a one assay ton (30 g) sample followed by an AAS or gravimetric finish. Methods and laboratories used

for analysis of drill core samples for other elements are also not fully documented. It seems that a variety of analytical methods, digestions, and finishes were used.

## **HIGH RIDGE SAMPLES – 2006**

In 2006, the drill core was logged, cut with a diamond saw, and stored on site near the top of Newton Hill. The core was cut in half lengthwise using a gas-powered core saw. Most mineralized core was sampled in two metre intervals with a few exceptions to accommodate structural and lithological changes.

High Ridge used Acme Analytical Laboratories Ltd. (Acme) of Vancouver, British Columbia, to prepare and assay all core samples collected on the Newton Project. A total of 936 samples were assayed for multiple elements including gold, copper, and silver by Acme, which used an aqua regia digestion of a 0.5 g sample followed by an Inductively Coupled Plasma – Mass Spectroscopy (ICP-MS) finish (Acme method code: Group 1DX). In addition, 81 pulp samples were re-assayed by Acme using the same method. It should be noted that gold was not assayed by fire assay (except for two re-assay pulp samples numbered 925 and 927). For the 2006 High Ridge samples, gold was determined by the multi-element assay method described above.

The coarse reject and pulp samples from this program were discarded shortly after the assays were received by High Ridge.

## **AMARC SAMPLES – 2009 THROUGH 2012**

The Amarc drill programs of 2009, 2010, 2011, and 2012 used the same sampling, sample preparation, analytical, site security, and sample storage protocols. Shipment security was expanded in the 2011 and 2012 programs.

The core was boxed at the rig and transported by truck to the logging facility on site where it was logged and sampled. The core was cut in half lengthwise using a diamond saw. One half was collected as an assay sample and the other half was retained in the core box. Most core samples are three metres in length with some exceptions made to accommodate structural and lithological changes. Core samples were placed in plastic sample bags, checked for sample sequence integrity, and then shipped along with external quality control

(QC) samples (standards, blanks and duplicates) by commercial carrier to the laboratory. In the last two drill programs, samples and external QC samples were collected in white sacks and placed into a sealed wooden tote for shipment. The half core remaining after sampling was transported to a secure facility at Gibraltar Mine (to hole 59) and at Mueller Electric in Williams Lake (holes 60-88) for long term storage.

Samples were shipped to the Acme laboratory facility located in Vancouver, British Columbia, for sample preparation with the exception of 2009 holes 9003 through 9014 which were processed at the Acme facility located in Smithers, British Columbia. Acme was the primary analytical laboratory used, and ALS Minerals, North Vancouver, British Columbia, was the check laboratory. Both the Acme and ALS Minerals facilities are independent of Amarc.

The following information regarding laboratory certification is published on the web site maintained by Acme:

Foreseeing the need for a globally recognized mark of quality in 1994, Acme began adapting its Quality Management System to an ISO 9000 model. Acme implemented a quality system compliant with the International Standards Organization (ISO) 9001 Model for Quality Assurance and ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories. On November 13, 1996, Acme became the first commercial geochemical analysis and assaying lab in North America to be registered under ISO 9001. The laboratory has maintained its registration in good standing since then. Vancouver expanded the scope of its registration to include the Smithers preparation facility in June of 2009, Yellowknife in April 2010 and Whitehorse in May 2010.

October 2011 the Vancouver laboratory received formal approval of its ISO/IEC 17025:2005 accreditation from Standards Council of Canada for the tests listed in the approved scope of accreditation (see link below). The lab will continue to add methods to this scope. The Santiago hub laboratory is also working toward ISO 17025:2005 accreditation and is expected to complete the accreditation process within the next year.

The following information regarding laboratory certification is published on the web site maintained by ALS Minerals:

ALS Minerals has developed and implemented at each of its locations a Quality Management System (QMS) designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of ISO standards.

The QMS operates under global and regional Quality Control (QC) teams responsible for the execution and monitoring of the Quality Assurance (QA) and Quality Control programs in each department, on a regular basis. Audited both internally and by outside parties, these programs include, but are not limited to, proficiency testing of a variety of parameters, ensuring that all key methods have standard operating procedures (SOPs) that are in place and being followed properly, and ensuring that quality control standards are producing consistent results.

### **Accreditation**

Perhaps the most important aspect of the QMS is the process of external auditing by recognized organizations and the maintaining of ISO registrations and accreditations. ISO registration and accreditation provides independent verification for our clients that a QMS is in operation at the location in question. Most ALS Minerals laboratories are registered or are pending registration to ISO 9001:2008, and a number of analytical facilities have received ISO 17025 accreditations for specific laboratory procedures.

The half-core samples were crushed at Acme (Vancouver or Smithers) to greater than 80% passing 10 mesh (2 mm), then a 500 g sub-sample was split and pulverized to >85% passing 200 mesh (75 µm). Prior to hole 11045, a 250 g sub-sample was split and pulverized to >85% passing 200 mesh. The coarse rejects and pulps from the assay samples are retained at the secure, long-term storage facility of Hunter Dickinson Services Inc. (HDSI) at Port Kells, British Columbia.

The gold content was determined by 30 g fire assay fusion with ICP-AES finish (Acme method code: 3B01). The concentrations of copper, silver and 32 additional elements were analyzed using a 1.0 g sample aqua regia digestion with ICP-AES or ICP-MS finish (Acme method code: 7AX). For hole 9001, the first 39 samples were also analyzed for multiple elements using 1.0 g sample digested in aqua regia with ICP-AES finish (Acme method code: 7AR). For hole 9007, the samples were also analyzed for multiple elements using a 1.0 g sample and four acid digestion with ICP-AES or ICP-MS finish (Acme method code: 7TX).

Duplicate samples were assayed by ALS Minerals using similar methods to those employed by Acme. The gold content was determined using a 30 g fire assay with ICP finish (ALS method code: Au-ICP21). The concentrations of copper, silver and 49 other elements were analyzed with a 0.5 g sample aqua regia digestion with ICP-AES/ICP-MS finish (ALS method code: ME-MS41).



Core sampling by Amarc included: 1,443 samples in 2009, 2,474 samples in the late 2010 to early 2011 program, 1,557 samples in the late 2011 program, and 3,613 samples in 2012. In addition, 145 pairs of in-line quarter core field duplicates were taken in the late 2010 and early 2011 program, 95 in-line duplicates (quarter core for hole 11044 and coarse rejects for remaining holes) in the late 2011 program, and 211 in-line reject duplicates in 2012. The quarter core duplicates (performed on all drill holes of late 2010 and early 2011 and hole 11044 of late 2011), and reject duplicates (hole 11045 onwards) were prepared and assayed by Acme using the same methods.

In addition, a total of 25 samples were selected from late 2011 Newton drill core rejects for determination of the gold content by the screen-metallics fire assay method (Acme method G602). A minimum 500 g of the coarse reject split was pulverized, weighed to the nearest gram and then sieved at 150 mesh (0.1 mm). The coarse fraction was weighed to the nearest 0.01 g, fire assayed in its entirety and the gold content weighed to the nearest 0.005 mg. A one assay ton aliquot of the fine fraction was subject to fire assay fusion with an ICP-AES finish, or a gravimetric finish if in excess of 30 ppm Au. The total gold in the coarse fraction, the fine-fraction gold concentration, and a weighted average gold concentration for the entire sample are reported in the results.

The sample preparation and analytical flow chart for the 2009 through 2012 drill programs is shown in Figure 11-1.

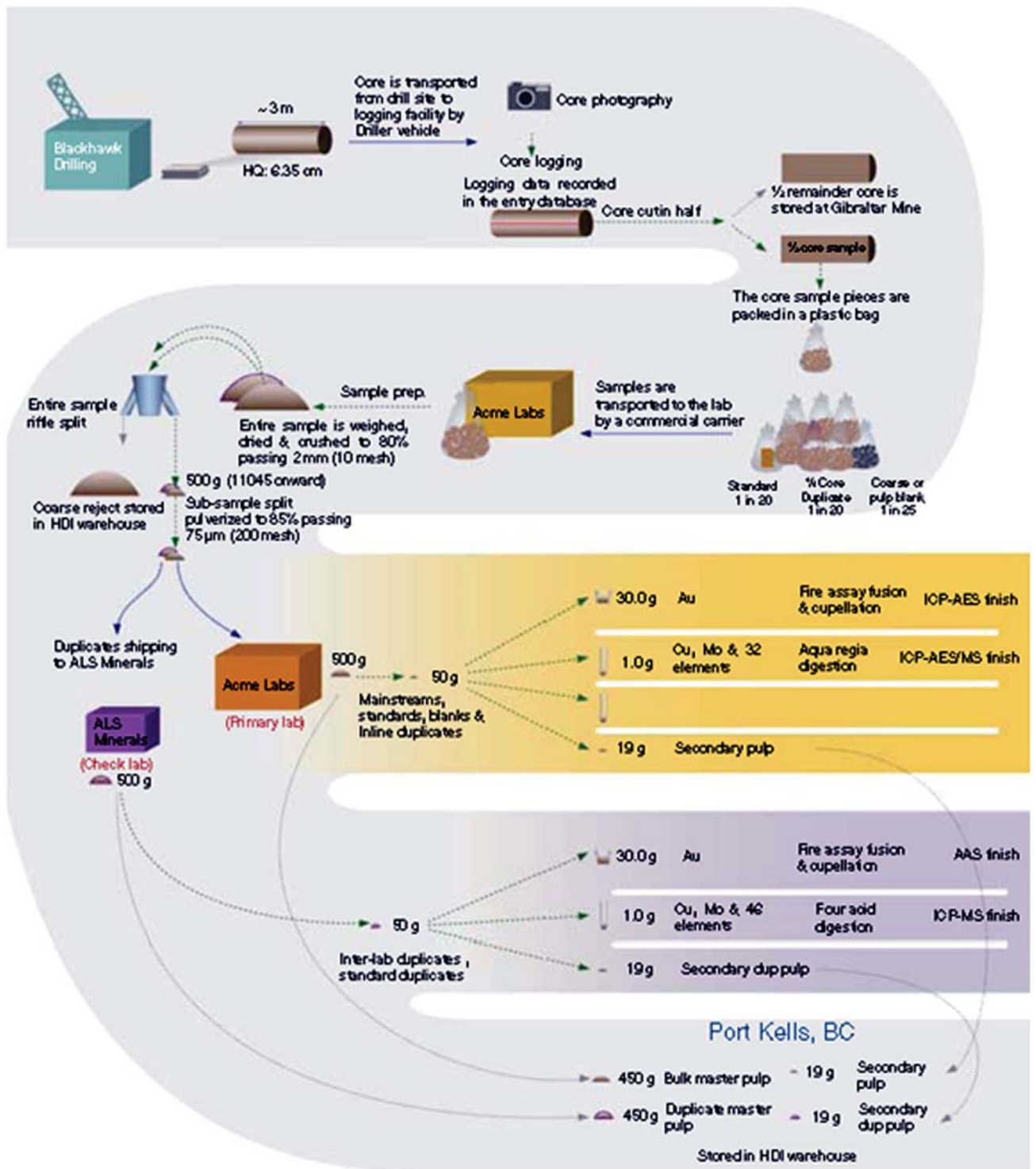


Figure 11-1

**Amarc Resources Ltd.**  
**Newton Project**  
*British Columbia, Canada*  
**Sample Preparation & Analytical**  
**Flow Chart Employed for the**  
**2011/2012 Drilling Program**

## SUMMARY OF QUALITY ASSURANCE/QUALITY CONTROL MEASURES

Quality assurance (QA) is a set of systems and measures whose purpose is to assure that the results meet the standards of quality. Quality control (QC) is the use of processes and tools to check and ensure that the desired level of quality is achieved in the results. Since quality assurance and quality control are closely related they are often referred as QA/QC.

Amarc implemented and maintained an effective external QA/QC system consistent with industry best practice from 2009 to 2012. This program is in addition to the QA/QC procedures used internally by the analytical laboratories. Table 11-2 describes the types of external QA/QC sample types used in this program.

**TABLE 11-2 SUMMARY OF EXTERNAL QA/QC SAMPLE TYPES USED  
Amarc Resources Ltd. – Newton Project**

QC Code	Sample Type	Description	Percent of Total
MS	Regular Mainstream	Regular samples submitted for preparation and analysis at the primary laboratory.	90%
ST	Standard (Certified Reference Material or CRM)	Mineralized material in pulverized form with a known concentration and distribution of element(s) of interest. Randomly inserted using pre-numbered sample tags.	5% or 1 in 20
DQ/DX	Duplicate or Replicate	An additional split taken from the remaining pulp reject (DP), coarse reject (DX), ¼ core (DQ) or ½ core remainder. Random selection using pre-numbered sample tags.	5% or 1 in 20
SD	Standard Duplicate	Standard reference sample submitted with duplicates and replicates to the check laboratory.	<1%
BL	Blank	Basically a standard with no appreciable grade used to test for contamination.	1%

Table 11-3 is a summary of the external QA/QC samples used by year.

### HISTORICAL QA/QC (PRE-2006)

There is no mention of external QA/QC samples inserted along with core samples for the historical drilling prior to 2006 in the available reports.

**HIGH RIDGE 2006 DRILL PROGRAM QA/QC**

For the 2006 drill program, High Ridge re-assayed 81 pulp samples (pulp duplicates) for external quality control purposes. No external standards or blanks were inserted to control the assay results. In addition, gold was not assayed by the fire assay method (with the exception of two re-assay pulp samples - 925 and 927). Instead, gold was determined by digestion of a 0.5 g sample in Aqua Regia followed by an ICP-AES finish.

**TABLE 11-3 EXTERNAL QA/QC SUMMARY BY YEAR**  
**Amarc Resources Ltd. – Newton Project**

Year (Phase)	MS	DP	DQ/DX	SD	ST	BL	ST%
Pre-2006	672	-	-	-	-	-	-
2006	934	81	236*	-	-	-	-
2009	1,443	75		5	77	23	5
Late 2010 - Early 2011	2,474	145	145*	11	144	108	5
Late 2011	1,557	95	95	7	93	73	6
2012	3,613	203	211	15	216	170	6
<b>ALL</b>	<b>10,693</b>	<b>599</b>	<b>687</b>	<b>38</b>	<b>530</b>	<b>374</b>	<b>4</b>

\* Quarter core samples taken by Amarc for gold fire assay and multi-element analysis.

**AMARC 2009 DRILL PROGRAM QA/QC**

For the 2009 drill program, Amarc implemented a rigorous QA/QC program. Mr. C. Mark Rebagliati, P. Eng., a Qualified Person as defined under NI 43-101, supervised the drilling, quality assurance and quality control program. This program was in addition to the QA/QC procedures used internally by the analytical laboratories.

During this period, a total of 77 standards, 80 check duplicates, including 75 coarse reject duplicates (DX) and five standard duplicates (SD), and 23 coarse granitic blanks (BL) were included with the regular assay samples for external QC purposes (Table 11-3). In 2009, Amarc took 236 quarter core duplicate samples from some of the half core remaining from the 2006 High Ridge sampling program for re-analysis by a gold fire assay fusion method at Acme.

**AMARC LATE 2010 AND EARLY 2011 DRILL PROGRAM QA/QC**

For the late 2010 and early 2011 drill program, Amarc continued with a similar QA/QC program to 2009. The major difference was that a field duplicate was taken from a quarter

core sample instead of the coarse reject. During the period, a total of 144 standards, 145 duplicates and 108 blanks were included with the regular assay samples for external QC purposes. The blanks consisted of 61 certified pulp blanks and 47 coarse granitic blanks.

### **AMARC LATE 2011 DRILL PROGRAM QA/QC**

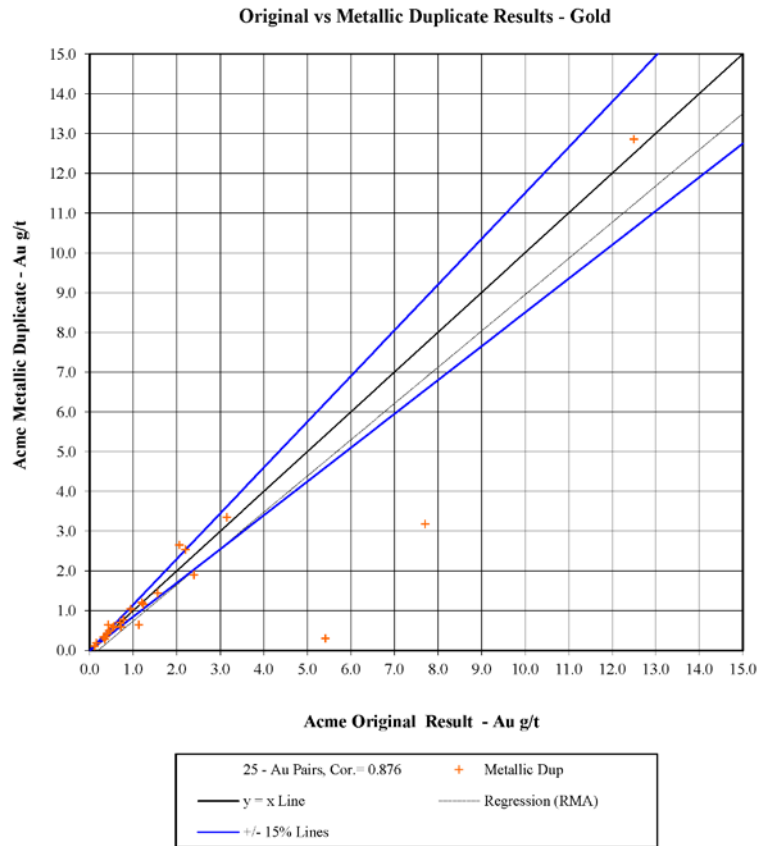
For the late 2011 drill program, Amarc continued with a similar QA/QC program. During this phase, a total of 93 standards (ST), 95 in-line quarter core duplicates (DQ) and coarse reject duplicates (DX), 95 inter-laboratory pulp duplicates (DP), and 73 blanks (BL) were included with the regular assay samples for external quality control purposes. The blanks consisted of 35 certified pulp blanks and 38 coarse granitic blanks.

In addition, 25 samples were selected from late 2011 Newton drill core rejects for gold fire assay screen analysis at 150 mesh (0.1 mm) to provide an indication of the “metallic” gold component. Eleven samples from drill hole 11055 were selected because they had higher than anticipated variability in the original in-line duplicate results. The remaining 14 samples were randomly selected. A scatter plot of the results of the gold metallics assays and the original gold assays is shown in Figure 11-2. The plus 150 mesh gold component of the total gold assay for the 25 samples is shown in red in Figure 11-3. The metallic gold component ranges from 0.4% to 23.9% with a median value of 5.4% for the samples in this study.

A scatter plot of the results of the gold metallics assays and the original gold assays is shown in Figure 11-2. The metallic gold component of the total gold assay for 25 samples is shown in red in Figure 11-3.

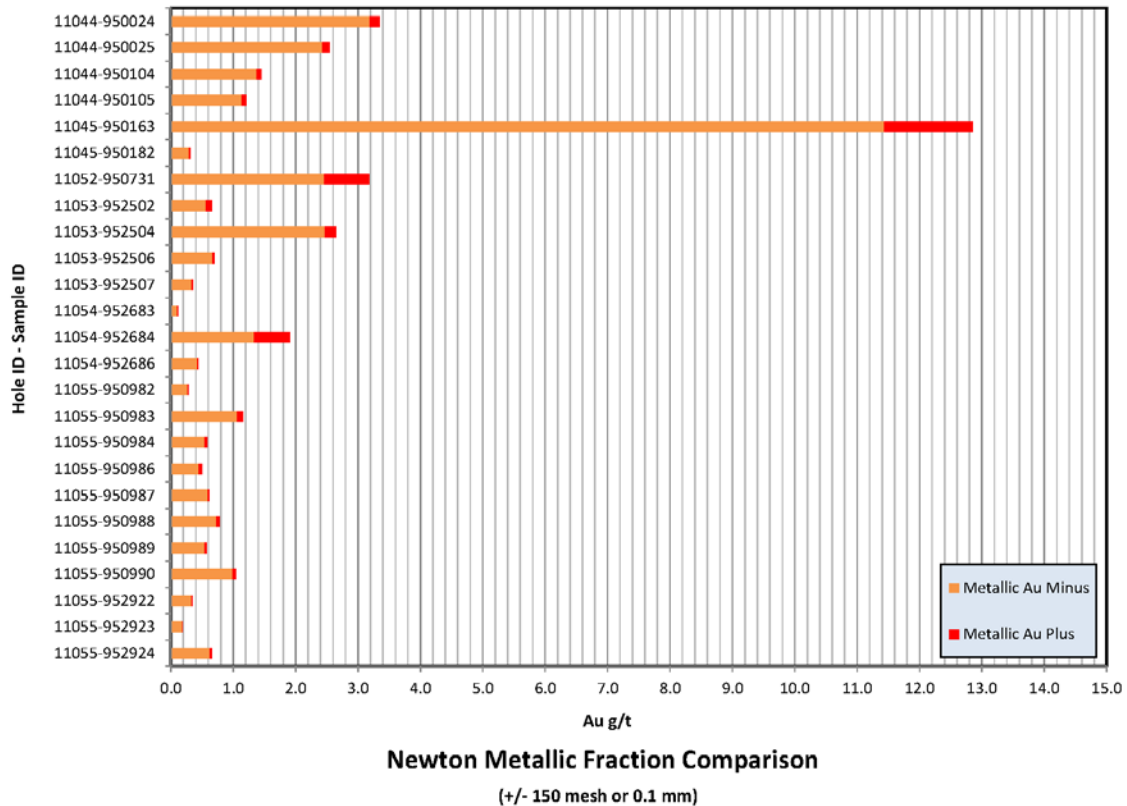


**FIGURE 11-2 SCATTER PLOT OF METALLIC GOLD ASSAY AND ORIGINAL GOLD ASSAY**



As shown in Figure 11-2, two notable outliers occurred: 7.7 vs. 3.2 and 5.4 vs. 0.3 are from 11052-950731 and 11045-950182, respectively. They may indicate small gold “nuggets” were found in the original assay pulp, but not in the 500 gram metallic assay pulp. The reverse situation did not occur, presumably because the test population is quite limited. Most pairs, including the highest value pair in the test group (12.5 vs. 12.9) from 11045-950163, match quite closely. Ongoing in-line duplicate gold results should be monitored to determine if any further metallic gold analyses are needed.

**FIGURE 11-3 METALLIC GOLD COMPONENT (RED)**



**AMARC 2012 DRILL PROGRAM QA/QC**

In the 2012 drilling program, a total of 216 standards (ST), 211 in-line coarse reject duplicates (DX), and 170 blanks (BL) were inserted and assayed along with the regular assay samples for external quality control purposes. The blanks consisted of 103 certified pulp blanks and 67 coarse granitic blanks.

**STANDARDS**

Table 11-4 provides a list of the standards that were used in the 2012 exploration program. Monitoring of the results from the regular assay results for gold was controlled based on a statistical analysis determined from the round-robin analysis of the standards at a number of independent laboratories as follows:

$$\text{Mean} \pm 3 \text{ Standard Deviations}$$

During the course of the regular assaying of the drill core samples, a standard is deemed to have failed when the gold result falls outside the control limits for the element of interest. The

laboratory is notified and the affected range of the samples is re-run for that element until the included standard passes (falls within the control limits). The silver analyses were not subjected to the same level of scrutiny as were the gold values, consequently the range of these values will be larger.

In respect of silver, only one of the selected standards shown in Table 11-4 had a certified recommended value for silver. Consequently, a recommended value was determined using the assay data received from the Acme laboratory. The mean silver value was determined after first removing significant outlier results. The upper and lower control limits were set at  $\pm 12\%$  of the mean silver value.

In summary, the QA/QC methods used by Amarc meet current industry best practices. RPA recommends that the QA/QC protocols for the Newton Project be updated in future drilling and that sampling programs include certified reference materials for silver and monitor the results for departures from the recommended values.

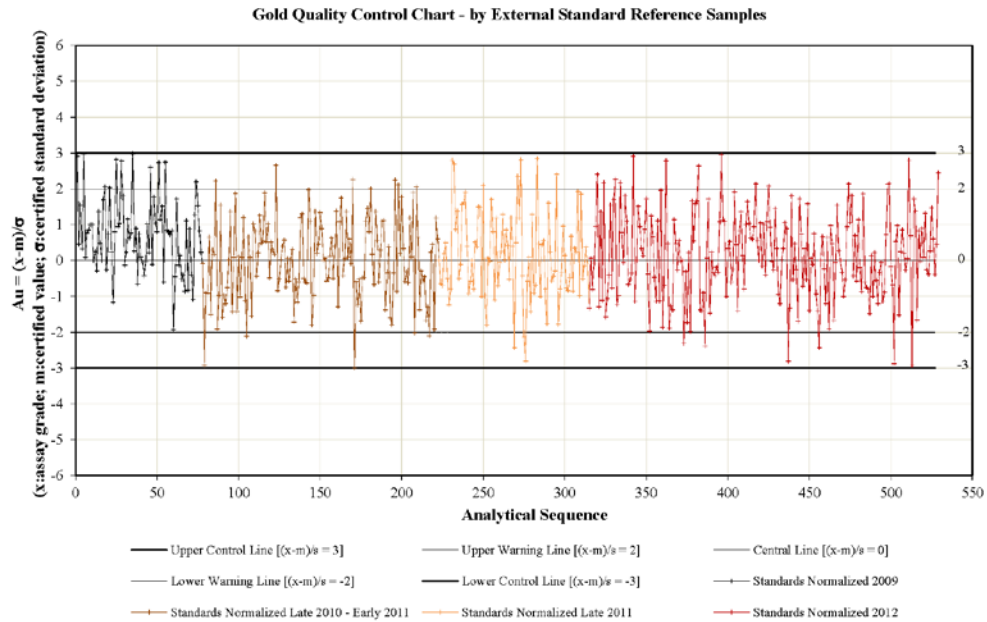
**TABLE 11-4 LIST OF STANDARDS USED IN THE 2012 DRILL PROGRAM  
Amarc Resources Ltd. – Newton Project**

Standard	Times Used	Au g/t	Ag (g/t)
CM-7	30	0.427	2.42*
CM-8	10	0.910	3.60*
CM-11A	46	1.014	1.89*
CM-12	54	0.686	4.04*
CM-13	8	0.740	3.38*
CM-17	6	1.370	14.90
CGS-29	62	0.228	1.96*

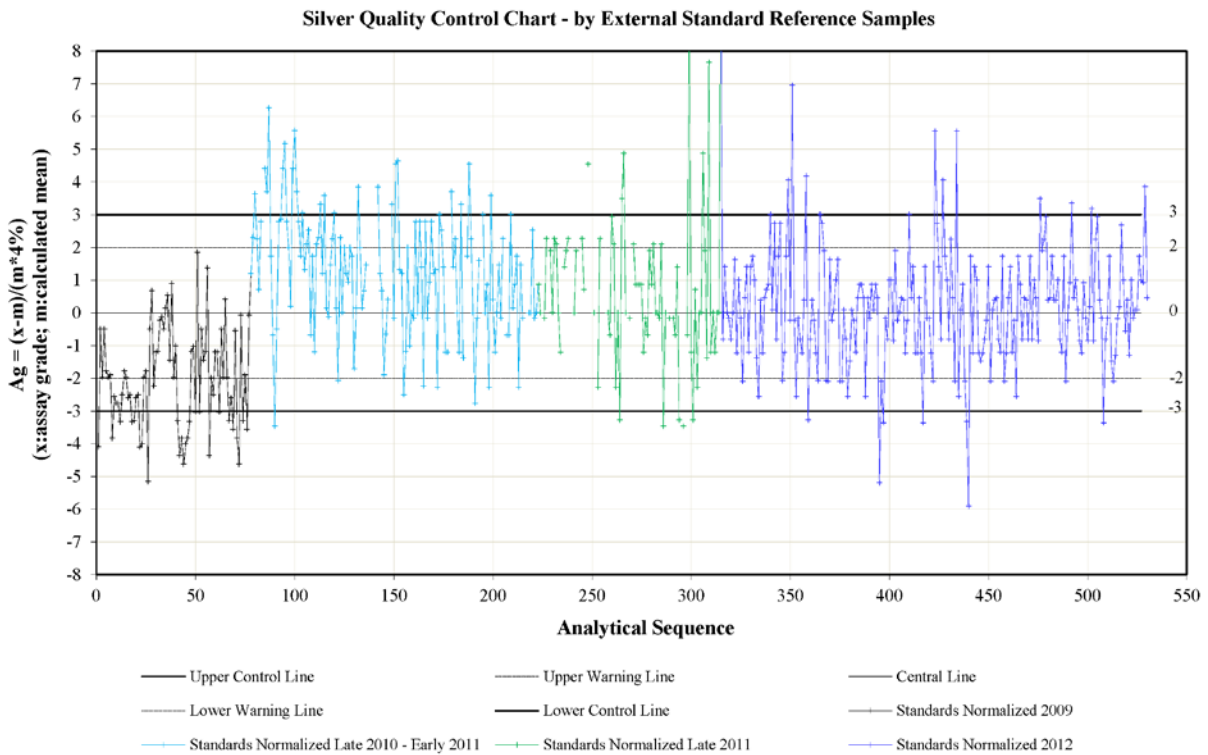
Note: \* A certified recommended value for silver is not available for this standard.

Figures 11-4 and 11-5 show the standard control charts after re-runs.

**FIGURE 11-4 GOLD QUALITY CONTROL CHART FOR THE AMARC 2009-2012 DRILLING PROGRAMS**



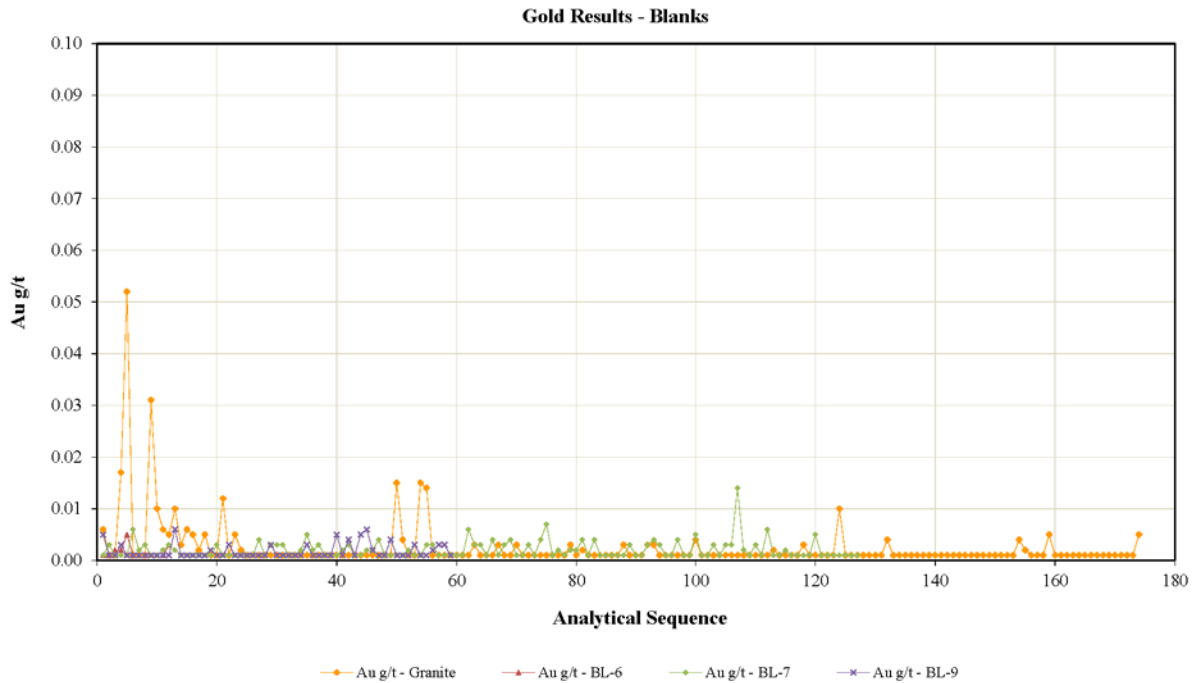
**FIGURE 11-5 SILVER QUALITY CONTROL CHART FOR THE AMARC 2009-2012 DRILLING PROGRAMS**



**BLANKS**

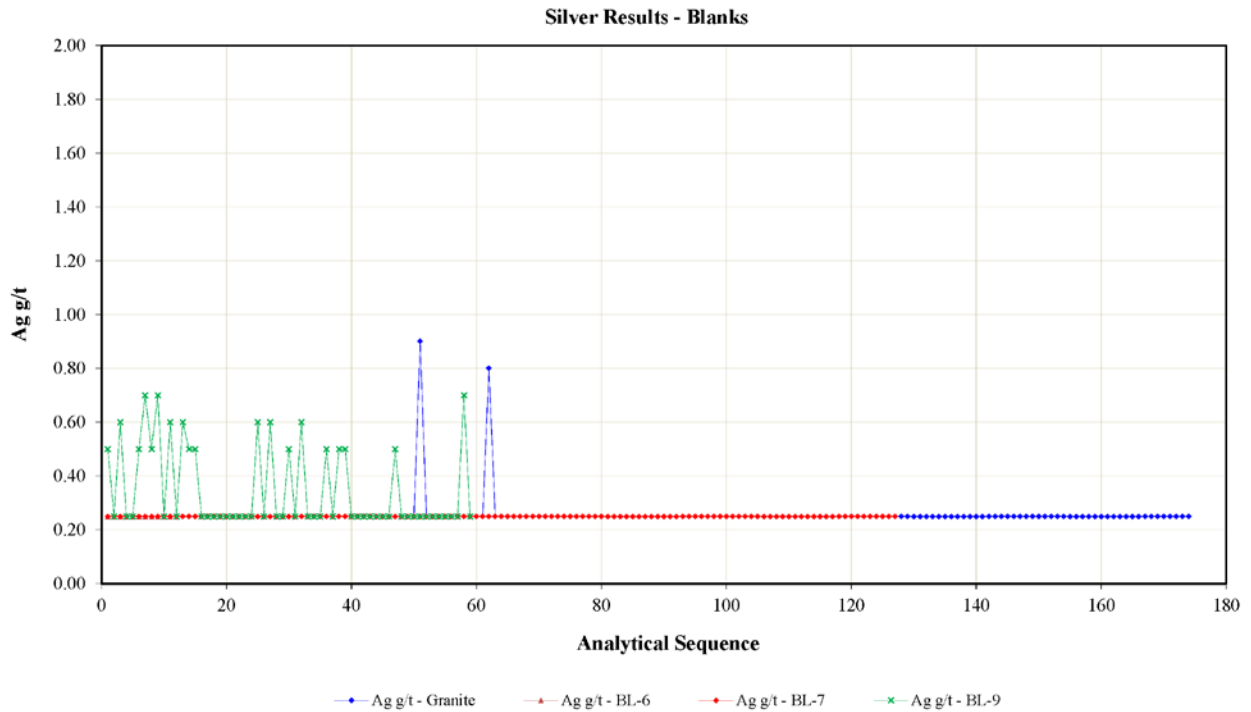
During the 2012 drilling program, a total of 170 external blanks, including 67 barren rock blanks (coarsely crushed granodiorite), and 103 commercial pulp blanks (BL-7 and BL-9), were inserted with the regular assay samples to monitor potential contamination. The assay results (Figures 11-6 and 11-7) indicate that no significant cross-contamination occurred during sample preparation and assay.

**FIGURE 11-6 GOLD MONITORING CHART OF BLANKS FOR THE AMARC 2009-2012 DRILLING PROGRAMS**





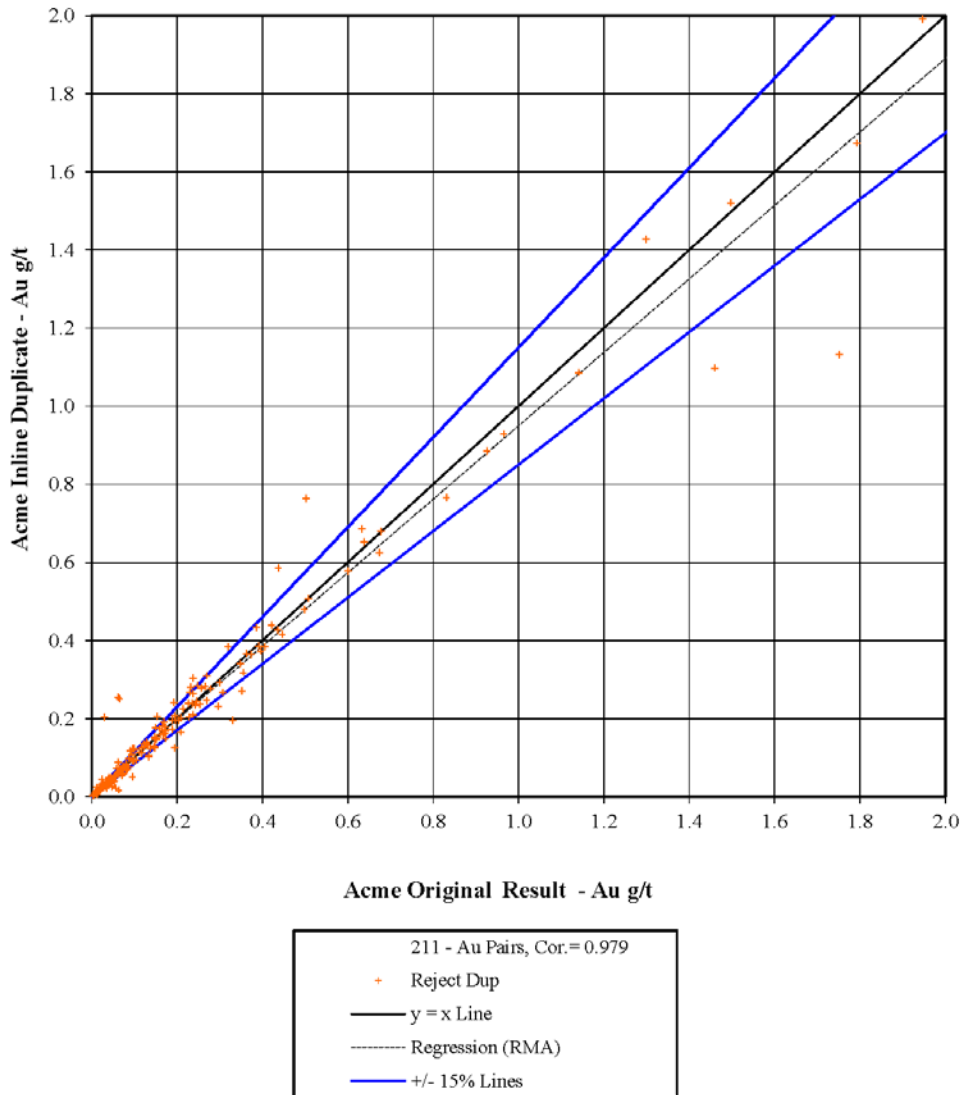
**FIGURE 11-7 SILVER MONITORING CHART OF BLANKS FOR THE AMARC 2009-2012 DRILLING PROGRAMS**



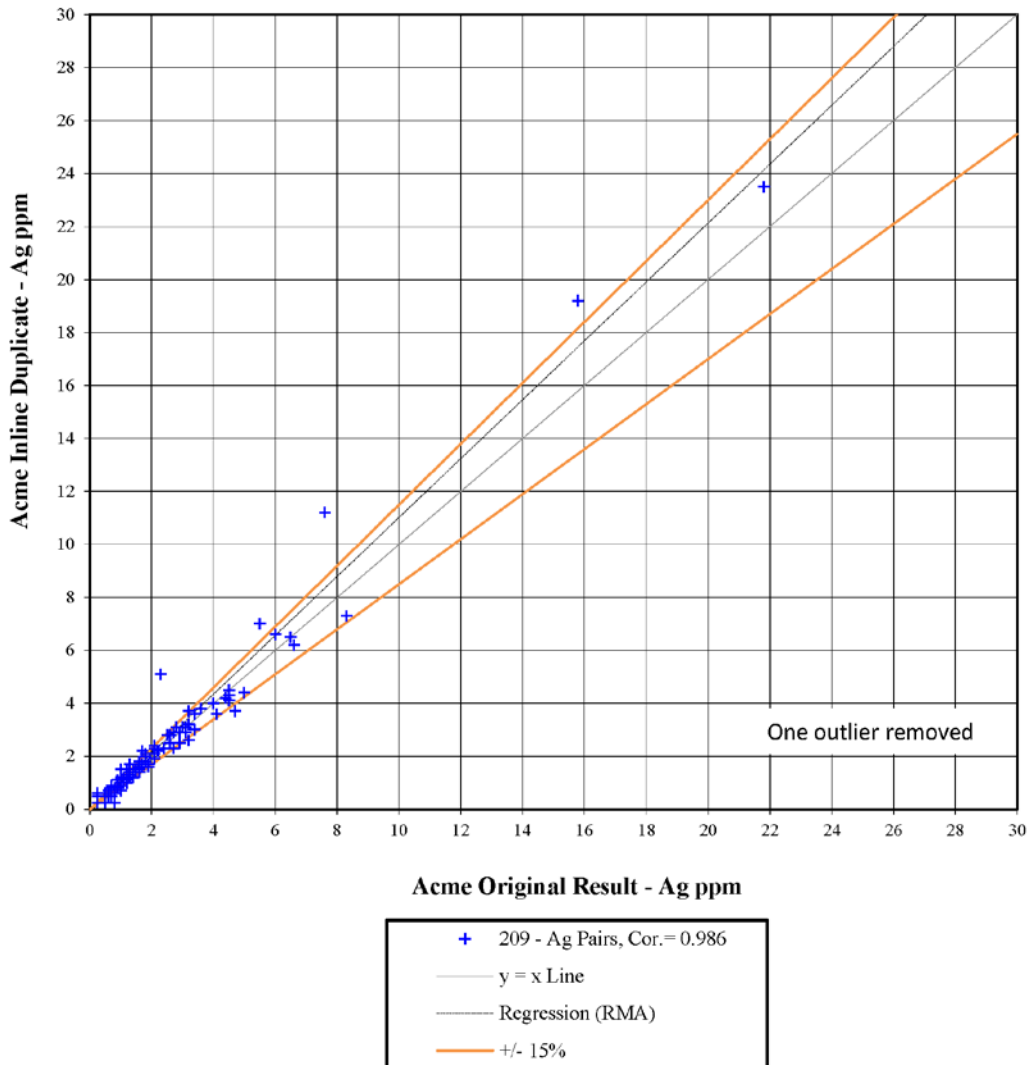
**DUPLICATES**

During 2012, 211 in-line reject duplicates (DX) were inserted and assayed along with the regular assay samples to monitor the repeatability (precision) of the primary assay laboratory. The results are shown in Figures 11-8 and 11-9. Analyses of the inter-laboratory duplicate samples were performed for gold and 51 additional elements on original pulps by ALS Minerals in Vancouver using similar analytical methods to Acme.

**FIGURE 11-8 SCATTER PLOT OF GOLD IN-LINE DUPLICATE SAMPLES FOR THE AMARC 2012 DRILLING PROGRAM**



**FIGURE 11-9 SCATTER PLOT OF SILVER IN-LINE DUPLICATE SAMPLES FOR THE AMARC 2012 DRILLING PROGRAM**



**DENSITY DATA**

A total of 1,494 bulk density (or specific gravity, SG) measurements have been taken by site personnel using the water immersion method since 2010.

The procedures of the water immersion method are as follows:

- Dry, whole core samples, typical of the surrounding rock selected
- Weigh sample in air (Ma)
- Weight sample suspended in water (Mw)
- Read Mw quickly after balance stabilizes to minimize water incursion into rock pores

- Calculation of the specific gravity as per the formula:  $SG = Ma / (Ma - Mw)$

A summary of the original density results is shown in Table 11-5.

**TABLE 11-5 SUMMARY OF DENSITY READINGS**  
**Amarc Resources Ltd. – Newton Project**

Year	Number of Samples	SG Median
Pre-2010	-	-
2010	384	2.69
2011	425	2.70
2012	685	2.68
<b>Overall</b>	<b>1,494</b>	<b>2.69</b>

#### **DATA ENVIRONMENT**

All drill logs and surface exploration samples collected on the project site are compiled in an SQL database with tables that are compatible with Microsoft Access.

Drill hole logs are entered into notebook computers running the Amarc Access data entry module for the Newton Project at the core logging area on site. The core logging computers are synchronized on a daily basis with the master site entry database at the site geology office. Core photographs are also transferred to the site geology office computer on a daily basis. In the geology office, the logs are printed, reviewed, and validated and initial corrections made.

Drill hole data from the project site is transmitted to the Vancouver office on a weekly basis. There, the logging data are imported into the master SQL drill hole database and merged with digital assay results provided by the analytical laboratories. A further printing, validation and verification step follows after import.

Edits to the drill logs are submitted to the site office for correction. Analytical re-runs are submitted to the analytical laboratories and corrections to analytical results within the database are made in the Vancouver office. Compiled data are exported to the site entry database, to resource modelling and other users.

***DATA PROCESSING***

Project data are processed so that they can be rapidly assessed with respect to the requirements of ongoing exploration and timely disclosure of material information by Amarc management. In this regard, compiled drill data and assay results are made available to Amarc management, the technical team, and project consultants advancing the project immediately after the initial error trapping and analytical QA/QC appraisal processes are completed. The data are then subjected to more extensive, through-going validation, verification, QA/QC and error correction processes. The findings of these longer-term reviews are assessed as to their impact on previously released data and the necessity for further disclosure, if there is a material change.



## 12 DATA VERIFICATION

### DATA VERIFICATION – AMARC

For the 2009 through 2012 drill programs, the following data verification and validation steps were completed by Hunter Dickinson Inc. (HDI) staff during the preparation of the drill hole database:

- Print and review the merged sampling, analytical and QA/QC information as assay results are returned from the laboratory;
- Generate downhole charts with lithologic and selected assay element columns, for visual comparison and identification of possible errors;
- Generate external QA/QC charts to monitor standard performance, identify failures and request re-runs;
- Generate blank monitoring charts to identify possible contamination;
- Generate duplicate monitoring charts to monitor assay reproducibility;
- Correct mis-labelled and mis-entered data entries, keypunching errors, typos and any other errors found; and
- Verify SG data from the 2010 and 2011 drill programs against downhole plots and core photos and identify outliers.

### DATA VERIFICATION – RPA

#### DRILLING, LOGGING AND SAMPLING PROCEDURES

Mr. Reno Pressacco, Principle Consulting Geologist with RPA, carried out a site visit on June 19 and 20, 2012, accompanied by Ms. Elena Guszowaty and Mr. Fraser Adams. During the site visit, Mr. Pressacco examined existing site infrastructure and access. He visited the location of a number of surface-based drill hole collars and discussed diamond drilling procedures with the project geologist. RPA believes that the drilling at the Newton Project has been carried out to the highest industry standards currently employed.

A review of the on-site logging and sampling facilities for processing the drill core was also carried out. At the time of the site visit, the logging and sampling operations had been completed, however the procedures followed were discussed and described by Ms.

Guszowaty and Mr. Adams. RPA believes that the logging and sampling procedures that were used have been carried out to the highest industry standards employed.

Selected intervals of drill core were examined at two separate storage sites (in Williams Lake and at the Gibraltar mine site). The lithologies, structure, alteration, and mineralization encountered by these drill holes were examined and compared with the descriptions presented in the drill hole logs. No material discrepancies were noted.

### CHECK SAMPLES

A small program of check assaying was carried out by RPA where a total of 10 samples from drill holes 12083 and 12072 were selected. The half-sawed core samples that remained in the core boxes were selected and sent to the SGS analytical facility (SGS) located in Vancouver, British Columbia, where the gold content was determined using SGS's FAI313 method code (Fire Assay fusion and ICP-ES analysis). The results of these check assays are presented in Table 12-1. While such a small number of check samples cannot be considered as adequate to confirm the accuracy of all of the assays contained with the Newton Project drill hole database, RPA is satisfied that it has independently confirmed the presence of gold in approximately similar quantities as have been reported by Amarc in the selected samples.

**TABLE 12-1 RESULTS OF THE RPA CHECK ASSAYING PROGRAM**  
**Amarc Resources Ltd. – Newton Project**

Hole ID	From (m)	To (m)	Length (m)	Sample No.	Check Assay (g/t Au)	Original Assay (g/t Au)	Difference (g/t Au)
12072	81.00	84.00	3.00	953869	0.181	0.153	+0.028
	84.00	87.00	3.00	953870	0.215	0.237	-0.022
	87.00	90.00	3.00	953871	0.358	0.200	+0.158
	90.00	93.00	3.00	953872	0.214	0.216	-0.002
	93.00	96.00	3.00	953873	0.181	0.161	+0.020
12083	268.00	271.00	3.00	956508	0.354	0.351	+0.003
	271.00	274.00	3.00	956509	0.284	0.313	-0.029
	274.00	277.00	3.00	956510	0.919	0.543	+0.376
	277.00	280.00	3.00	956511	1.950	1.731	+0.219
	280.00	283.00	3.00	956512	1.310	0.468	+0.842

## **DATABASE VALIDATION**

RPA carried out a program of validating the digital drill hole database by means of spot checking a selection of drill holes that intersected the mineralized material. Approximately 10% of the drill hole database was selected for validation. The assay values for gold and silver contained in the digital database for the selected drill holes were compared against the original information. For the newly completed drill holes, the assays were compared with the original laboratory certificates directly on the laboratory's web site. For the older drill holes for which original the assay certificates were not available, the digital data were compared with the information contained in the drill hole logs.

RPA discovered no material discrepancies as a result of its spot-checking of the drill hole database.

As a result of its data verification activities, RPA believes that the drill hole database assembled by Amarc is suitable for use in the preparation of a Mineral Resource estimate.

## **13 MINERAL PROCESSING AND METALLURGICAL TESTING**

There has been no metallurgical testing by Amarc on samples from the Newton Project.

RPA believes that Amarc is justified to begin conducting metallurgical testing on mineralized samples from the Newton Project.

# 14 MINERAL RESOURCE ESTIMATE

## SUMMARY

RPA carried out an audit of the grade-block model developed by Amarc for the gold mineralization discovered at the Newton deposit, and subsequently prepared a Mineral Resource estimate using the supplied grade-block model. Table 14-1 summarizes the RPA Mineral Resource estimates at a cut-off grade of 0.25 g/t Au.

The mineralized material for each domain was classified by RPA into the Inferred Mineral Resource category on the basis of the search ellipse range obtained from the variography study, the application of an open pit shell along with a constraining volume, and its experience with these deposit types in the past.

**TABLE 14-1 SUMMARY OF MINERAL RESOURCES – JULY 4, 2012**  
**Amarc Resources Ltd. – Newton Project**

Cut-off Grade (g/t Au)	Tonnage (000 t)	Inferred Resources:			
		Grade (g/t Au)	Contained Metal (000 oz Au)	Grade (g/t Ag)	Contained Metal (000 oz Ag)
0.20	147,069	0.38	1,818	1.9	8,833
<b>0.25</b>	<b>111,460</b>	<b>0.44</b>	<b>1,571</b>	<b>2.1</b>	<b>7,694</b>
0.30	85,239	0.49	1,334	2.4	6,495
0.35	65,384	0.54	1,130	2.7	5,635
0.40	49,502	0.59	938	2.9	4,596
0.45	38,491	0.64	789	3.1	3,842
0.50	28,684	0.69	640	3.3	3,069

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated using a long-term gold price of US\$1,750 per ounce, and a US\$/C\$ exchange rate of 1.00.
3. Bulk density is 2.71 t/m<sup>3</sup>.
4. Numbers may not add due to rounding.
5. The effective date of the Mineral Resource estimate is July 4, 2012.

## DESCRIPTION OF THE DATABASE

A digital database was provided to RPA by Amarc in which drill hole information such as collar location, downhole survey, lithology, and assays was stored in comma delimited format. The cut-off date for the drill hole database is July 4, 2012. Drill hole information in

this database includes both historical data, gathered by prior operators described Section 6 History, and new drill holes completed by Amarc in support of the preparation of this Mineral Resource estimate. In total, the database contains information for 128 drill holes and 10,945 assay records as of the cut-off date. The drilling completed was carried out in the UTM NAD83, Zone 10 grid coordinate system.

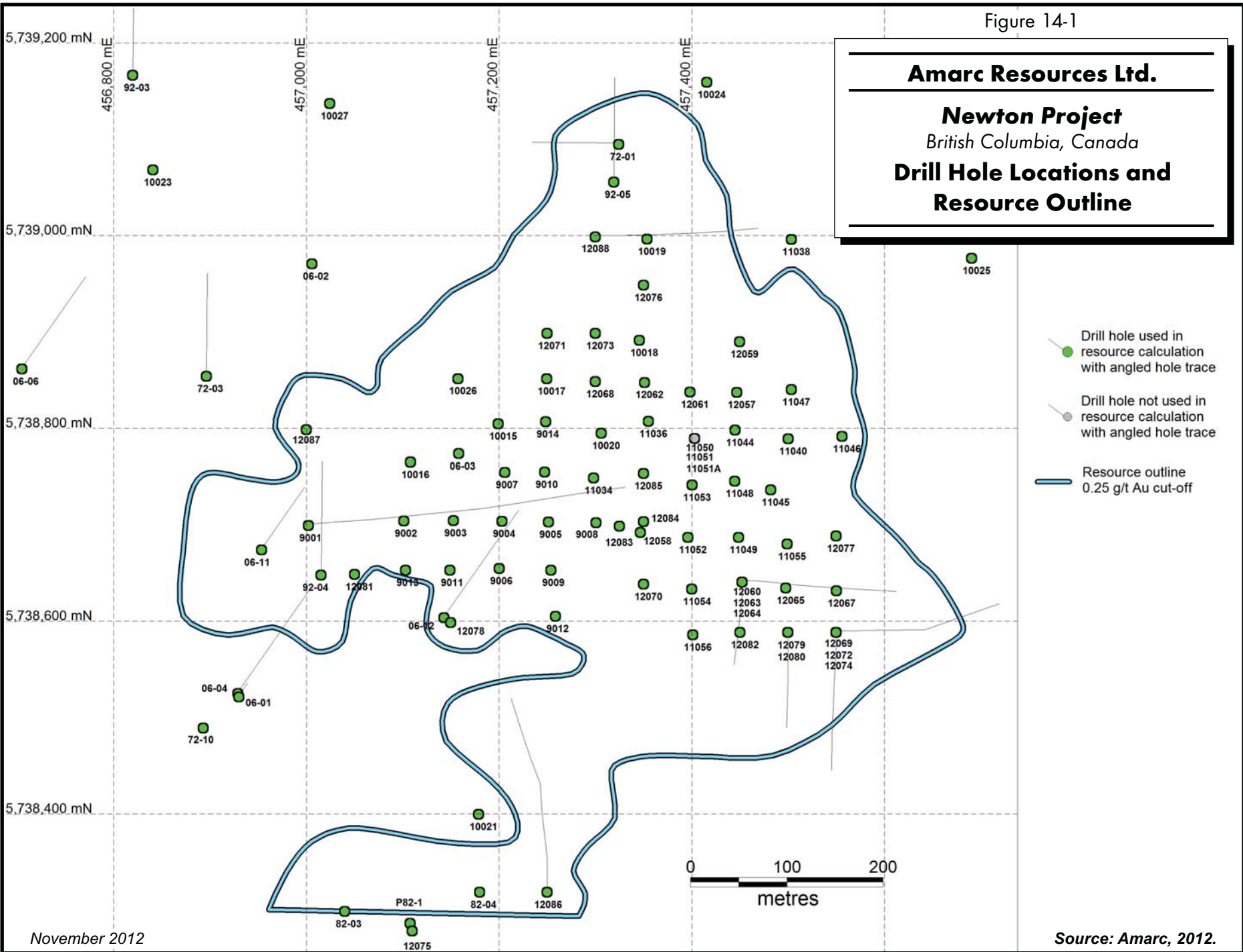
This drill hole information was modified slightly so as to be compatible with the format requirements of the Gemcom-Surpac v.6.3 mine planning software and was imported into that software package. A plan view sketch showing the drill hole locations in the resource area is provided in Figure 14-1.



Figure 14-1

**Amarc Resources Ltd.**

**Newton Project**  
British Columbia, Canada  
**Drill Hole Locations and  
Resource Outline**



14-3

## GEOLOGICAL DOMAIN INTERPRETATION

Using the borehole database, surface geological map, vertical sections and plans, a three-dimensional (3D) model for the Newton Project was developed for this estimate. The construction of the 3D wireframes was conducted by Mr. Deon Van der Heever, Professional Natural Scientist (Pr.Sci.Nat.) Senior Manager, Resources and Database at HDI, based on the geological interpretation prepared by site geologists. Sets of parallel, east-west, vertical cross-sections spaced 50 m apart were created covering the resource area from north to south. On each section, boundaries for the felsic mineralized rocks were interpreted based on the logged lithology.

Two-dimensional strings were constructed on each section and connected to generate the closed wireframe solids. Time was then spent refining and updating the wireframes to honour interpreted geological controls and half-distances between holes.

Several 3D wireframes were constructed in Datamine software for resource modelling; these include:

**Felsic wireframe solids:** consists of solids for the main felsic horizons, and minor sub-horizons that in places coalesce and bifurcate. The felsic domain was further split into domains 1 (footwall block) and 2 (hanging wall block) by the Newton Hill fault.

**Dyke wireframes solids:** consists of solids of the larger and more mappable monzonitic and mafic dykes, and quartz-feldspar porphyry units.

**Newton Hill Fault:** a surface constructed from the mapping of fault structures on surface and in drill-holes.

**Topography wireframe:** a surface constructed from five metre contours. RPA believes that acquisition of a more detailed topographic surface is justified for use in future project activities.

RPA reviewed the interpreted wireframe models in relation to the drill hole and topographic information and agrees that the solid models that have been created honour the lithologic information presented in the drill holes. In brief, it can be seen that the wireframe solids

models are dominated by the presence of two large blocks of felsic volcanic rocks that have been displaced by the moderately west-dipping Newton Hill fault. A number of syn- to post-mineralization dikes are present which cross-cut these two blocks of felsic volcanic material. A wireframe was also created to represent the bottom of the overburden and was used to apply the appropriate code into the block model. In all, the wireframe model of the felsic volcanic rocks has been developed along a north-south direction of approximately 550 m, an east-west direction of approximately 600 m, and to a depth of approximately 600 m from surface. In all, three domains were created and an example of the resulting wireframes is presented in Figure 14-2.

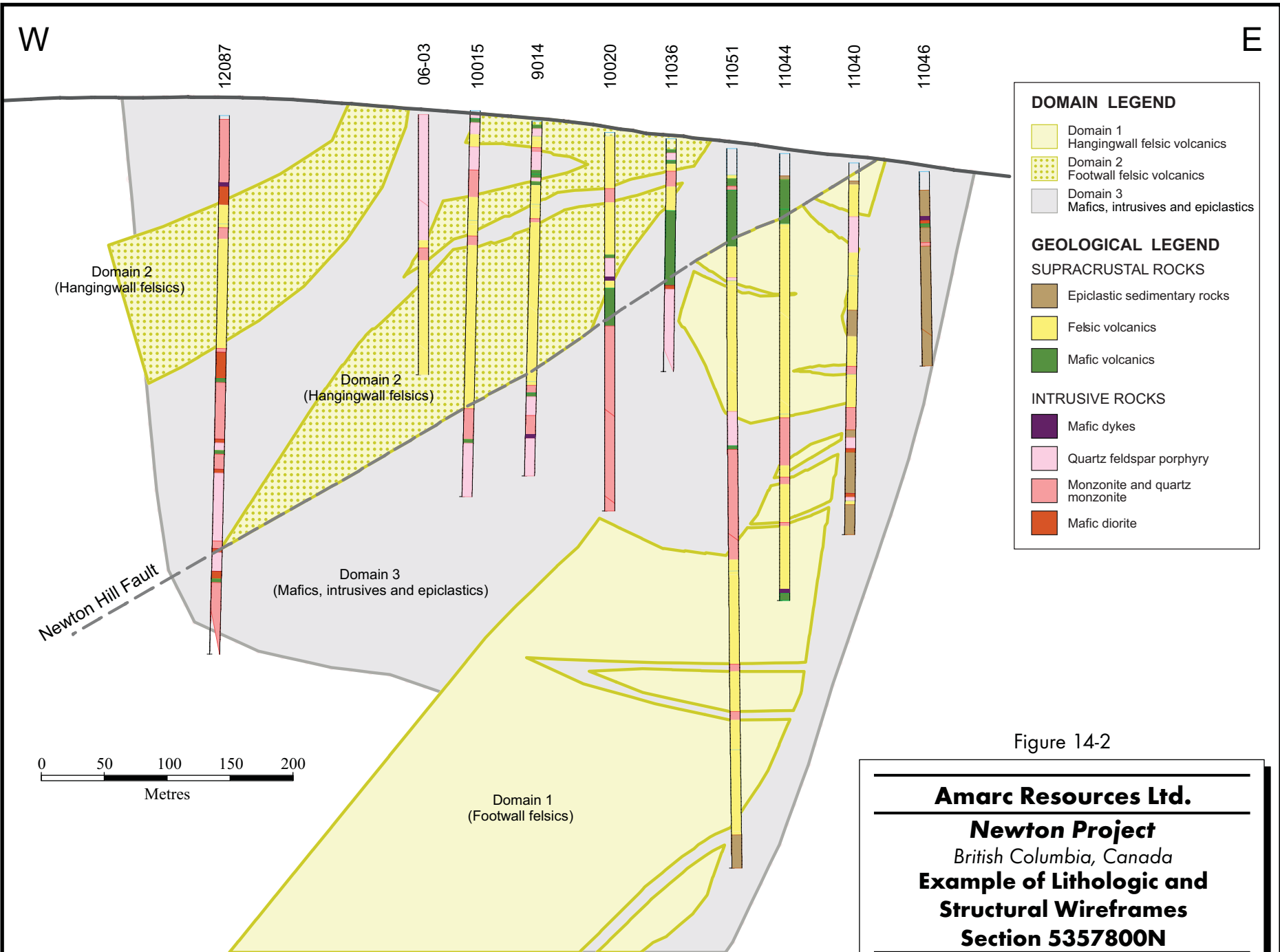


Figure 14-2

**Amarc Resources Ltd.**  
**Newton Project**  
 British Columbia, Canada  
**Example of Lithologic and Structural Wireframes**  
**Section 5357800N**

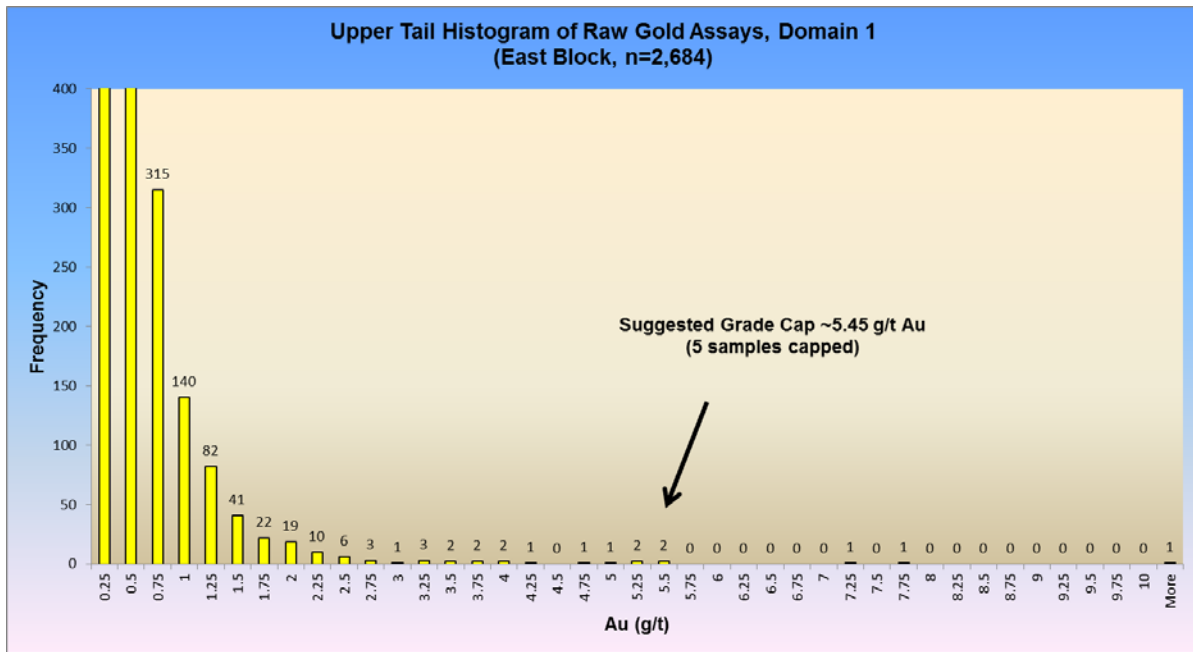
## GRADE CAPPING

In RPA's experience, the influence of high grade assays must be addressed during the preparation of a Mineral Resource estimate, as many instances have occurred in the industry where the average grade of a deposit has been overestimated due to the typically limited continuity of such high grade values. Several methods are currently in common use by industry practitioners and include grade capping (also known as top cutting), restricting the influence of high grade assays during the estimation of block grades, or Indicator Kriging methods. RPA believes that application of a grade cap is an appropriate approach for this assignment to deal with high grade assay values in order to prevent undue bias in the average grade of the Mineral Resource estimate.

All samples contained within the three domains were coded in the database and extracted for analysis. Normal histograms were generated from these extraction files for both the gold and silver assays (Figures 14-3 through 14-8, inclusive) and the descriptive statistics of the sample data sets are presented in Table 14-2. The grade caps for the gold assays were selected by examining the gold histograms for the grade at which outlier assays begin to occur. RPA compared its selection of suggested capping values with the capping values selected by Amarc for use in the preparation of the mineral resource estimate. RPA agrees with Amarc's selection of the capping values for the gold assays in the three domains. A summary of the gold capping grades is presented in Table 14-3 and the descriptive statistics of the capped gold values for the three domains is presented in Table 14-2.

RPA conducted a capping sensitivity analysis for the silver values in each of the three domains separately and found that the silver values were relatively insensitive to capping level changes. RPA agrees with Amarc's election to not apply capping values to the silver assays.

**FIGURE 14-3 UPPER TAIL HISTOGRAM OF RAW GOLD ASSAYS, DOMAIN 1**



**FIGURE 14-4 UPPER TAIL HISTOGRAM OF RAW GOLD ASSAYS, DOMAIN 2**

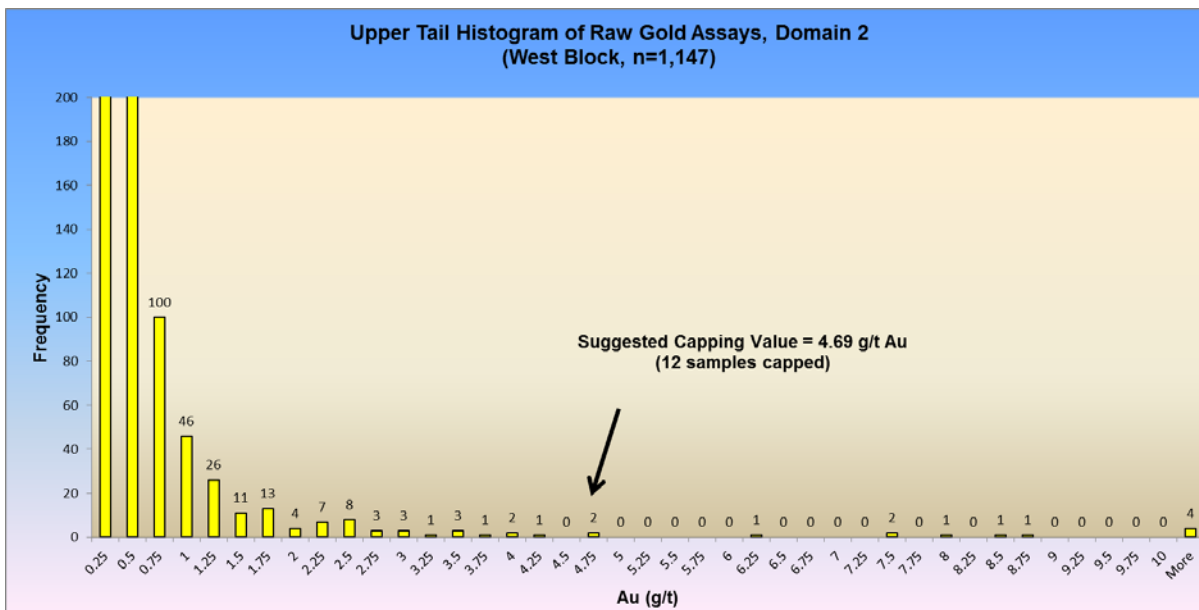




FIGURE 14-5 UPPER TAIL HISTOGRAM OF RAW GOLD ASSAYS, DOMAIN 3

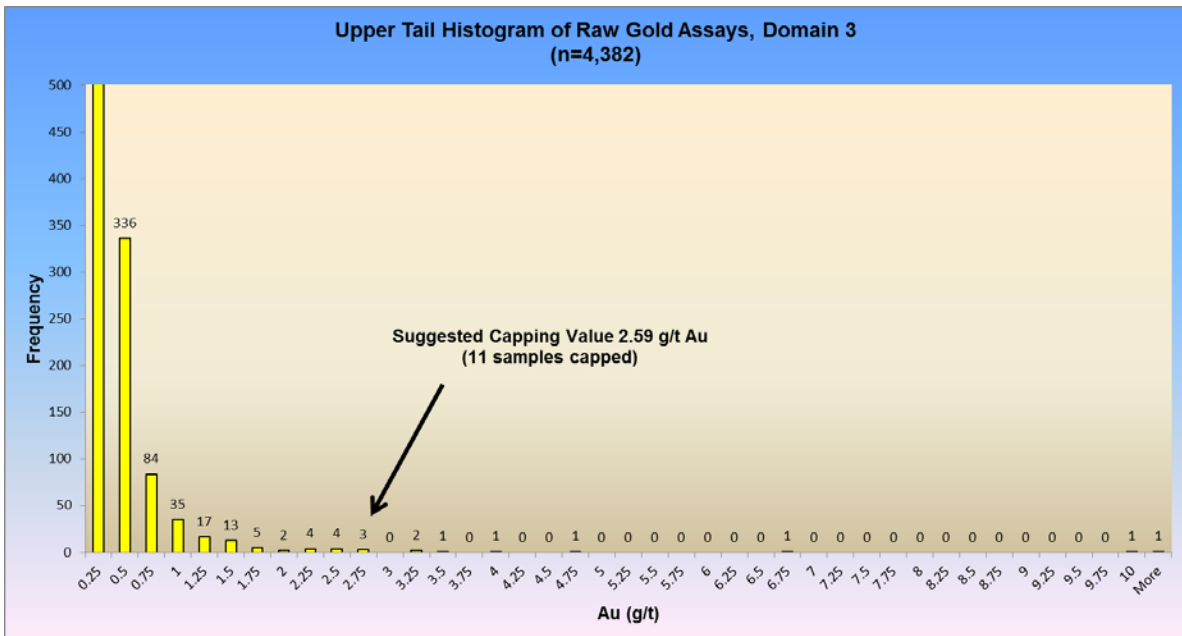


FIGURE 14-6 UPPER TAIL HISTOGRAM OF RAW SILVER ASSAYS, DOMAIN 1

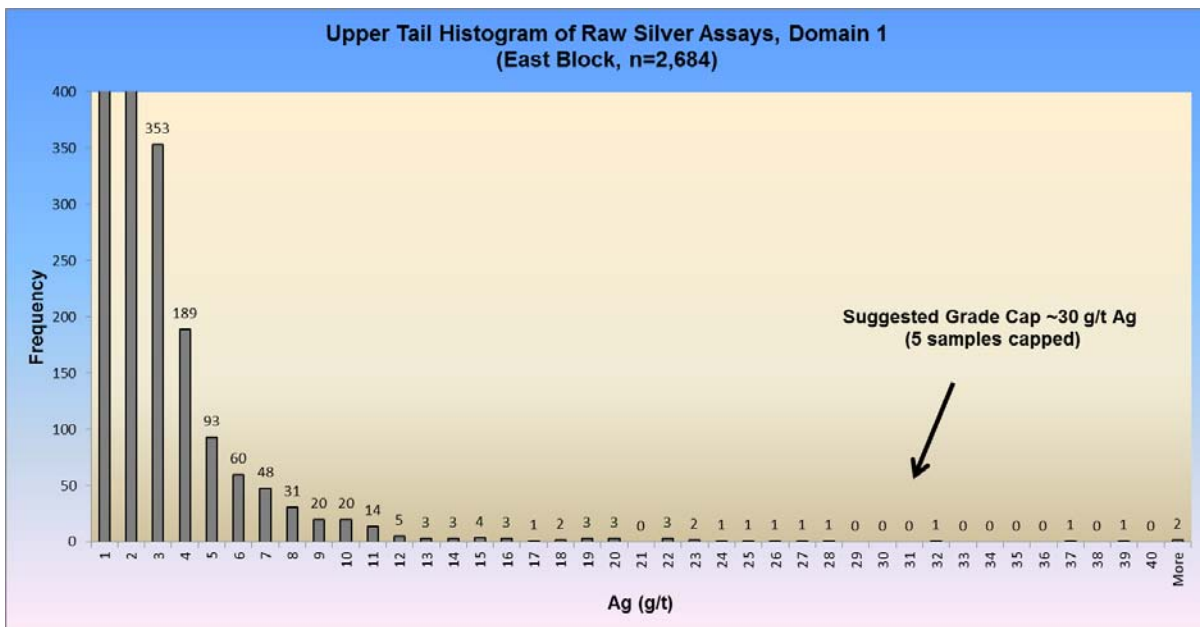


FIGURE 14-7 UPPER TAIL HISTOGRAM OF RAW SILVER ASSAYS, DOMAIN 2

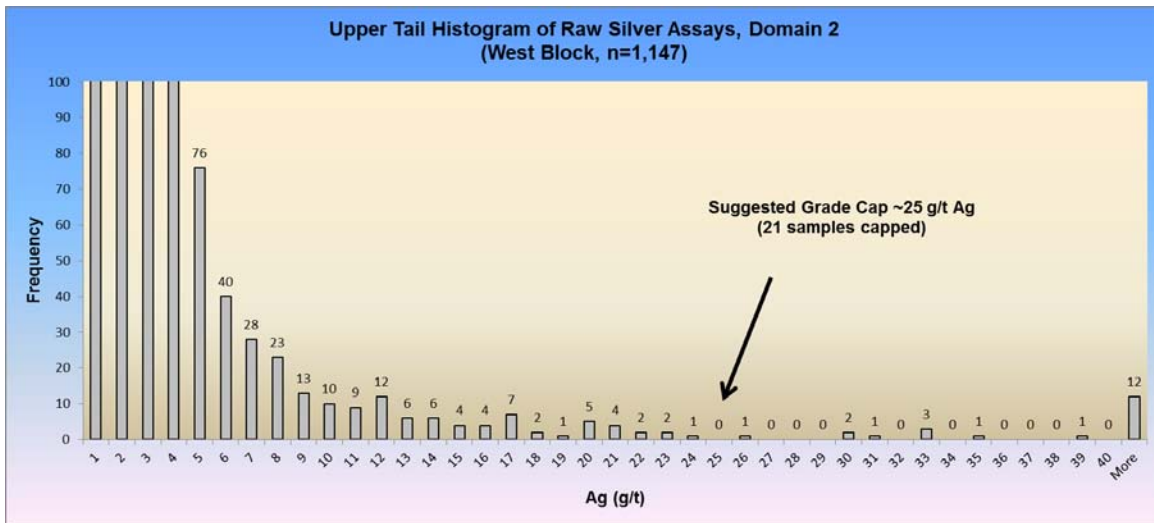
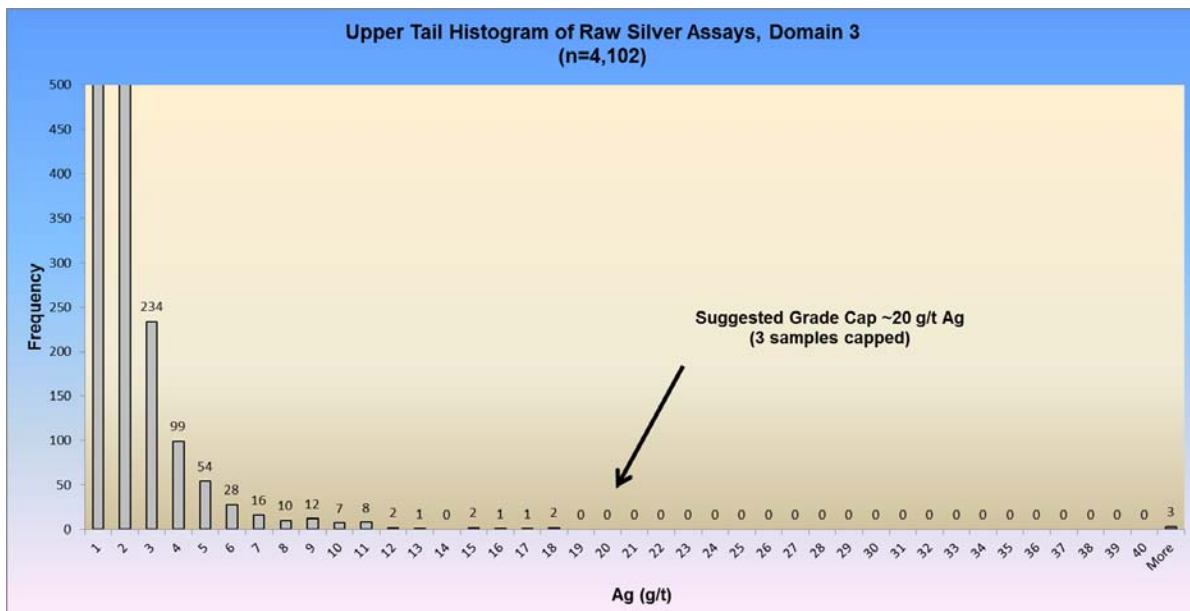


FIGURE 14-8 UPPER TAIL HISTOGRAM OF RAW SILVER ASSAYS, DOMAIN 3



**TABLE 14-2 DESCRIPTIVE STATISTICS OF UNCAPPED AND CAPPED  
ASSAY VALUES BY DOMAIN**  
Amarc Resources Ltd. – Newton Project

Gold	Domain 1		Domain 2		Domain 3	
	Au_Raw (g/t)	Au_Cap (g/t)	Au_Raw (g/t)	Au_Cap (g/t)	Au_Raw (g/t)	Au_Cap (g/t)
Arithmetic Mean	0.40	0.39	0.47	0.42	0.14	0.13
Length-Weighted Mean	0.40	0.39	0.43	0.40	0.13	0.13
Standard Error	0.01	0.01	0.03	0.02	0.01	0.00
Median	0.25	0.25	0.21	0.21	0.06	0.06
Mode	0.06	0.06	0.08	4.69	0.03	0.03
Standard Deviation	0.57	0.51	1.10	0.67	0.35	0.23
CV-Arithmetic	1.43	1.30	2.35	1.59	2.54	1.79
CV-Weighted	1.43	1.30	2.53	1.66	2.57	1.80
Sample Variance	0.32	0.26	1.20	0.44	0.12	0.05
Kurtosis	107.35	32.84	96.48	20.30	481.46	50.71
Skewness	7.52	4.60	8.67	4.13	17.78	6.12
Range	12.50	5.45	16.56	4.69	11.70	2.59
Minimum	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	12.50	5.45	16.56	4.69	11.70	2.59
Sum	1,068.27	1,057.39	534.93	480.80	595.80	569.85
Count	2,684	2,684	1,147	1,147	4,382	4,408

Silver	Domain 1		Domain 2		Domain 3	
	Ag_Raw (g/t)	Ag_Cap (g/t)	Ag_Raw (g/t)	Ag_Cap (g/t)	Ag_Raw (g/t)	Ag_Cap (g/t)
Arithmetic Mean	2.3	2.2	4.0	3.5	1.0	1.0
Length-Weighted Mean	2.3	2.3	3.7	3.4	1.0	1.0
Standard Error	0.1	0.1	0.3	0.1	0.0	0.0
Median	1.4	1.4	2.0	2.0	0.5	0.5
Mode	0.3	0.3	0.3	0.3	0.3	0.3
Standard Deviation	4.7	2.9	9.2	4.6	1.9	1.5
CV-Arithmetic	2.1	1.3	2.3	1.3	1.9	1.5
CV-Weighted	2.1	1.3	2.4	1.4	1.9	1.5
Sample Variance	22.3	8.5	84.0	21.6	3.6	2.3
Kurtosis	853.2	30.4	286.3	9.1	272.8	42.2
Skewness	23.6	4.6	13.6	2.9	12.7	5.3
Range	185.0	29.8	221.5	24.9	50.8	20.0
Minimum	0.3	0.3	0.1	0.1	0.1	0.1
Maximum	185.2	30.0	221.6	25.0	50.8	20.0
Sum	6,095.5	5,887.6	4,572.4	4,022.7	4,137.9	4,057.0
Count	2,684	2,684	1,147	1,147	4,102	4,103

CV – coefficient of variation

**TABLE 14-3 SUMMARY OF GOLD CAPPING GRADES BY DOMAIN**  
**Amarc Resources Ltd. – Newton Project**

	Domain 1	Domain 2	Domain 3
Gold Capping Grade (g/t Au)	5.45	4.69	2.59

## COMPOSITING METHODS

All samples contained within the three domain models were composited using the fixed-length method. In this method, the composite sample lengths for a given drill hole intersection are adjusted to yield a set of equal length composite samples across the width of a mineralized zone. By comparison, the traditional method of applying a constant composite sample length down hole along the length of the drill hole (e.g., 1.5 m) typically results in one sample along the footwall contact which is not a full length sample and thus can lead to a local bias in the grades for those blocks located along the contact of the domain under consideration. RPA believes that the fixed-length method is appropriate for this style of mineralization. RPA carried out an analysis of the distribution of the sample lengths for the gold samples within the three domains (Table 14-4) and agrees with Amarc's election to use a nominal three metre core length in calculating the fixed-length composites.

**TABLE 14-4 DESCRIPTIVE STATISTICS OF RAW ASSAY**  
**SAMPLE LENGTHS BY DOMAIN**  
**Amarc Resources Ltd. – Newton Project**

Sample Lengths (m)	Domain 1	Domain 2	Domain 3
Mean	2.99	2.77	2.86
Standard Error	0.00	0.01	0.01
Median	3.00	3.00	3.00
Mode	3.00	3.00	3.00
Standard Deviation	0.10	0.50	0.50
Sample Variance	0.01	0.25	0.25
Kurtosis	147.08	2.70	501.02
Skewness	-5.56	-1.75	11.98
Range	3.57	3.85	21.85
Minimum	1.20	0.60	0.10
Maximum	4.77	4.45	21.95
Sum	8,038.07	3,175.70	12,627.71
Count	2,684	1,147	4,408

A comparison of the descriptive statistics for the capped, composited gold assays with the capped raw assays for the three domains is presented in Table 14-5.

**TABLE 14-5 COMPARISON OF CAPPED ASSAY VALUES VS. COMPOSITED SAMPLES BY DOMAIN**  
Amarc Resources Ltd. – Newton Project

Gold	Domain 1		Domain 2		Domain 3	
	Capped Assay	Composite Samples	Capped Assay	Composite Samples	Capped Assay	Composite Samples
Arithmetic Mean	0.39	0.40	0.42	0.40	0.13	0.13
Length-Weighted Mean	0.39	0.38	0.40	0.39	0.13	0.12
Standard Error	0.01	0.01	0.02	0.02	0.00	0.00
Median	0.25	0.27	0.21	0.22	0.06	0.07
Mode	0.06	0.16	4.69	4.69	0.03	0.02
Standard Deviation	0.51	0.47	0.67	0.59	0.23	0.21
CV-Arithmetic	1.30	1.19	1.59	1.47	1.79	1.67
CV-Weighted	1.30	1.22	1.66	1.50	1.80	1.76
Sample Variance	0.26	0.22	0.44	0.34	0.05	0.05
Kurtosis	32.84	26.79	20.30	23.14	50.71	48.79
Skewness	4.60	4.06	4.13	4.28	6.12	5.90
Range	5.45	5.45	4.69	4.69	2.59	2.59
Minimum	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	5.45	5.45	4.69	4.69	2.59	2.59
Sum	1,057.39	1,045.26	480.80	420.90	569.85	530.73
Count	2,684	2,637	1,147	1,055	4,408	4,151

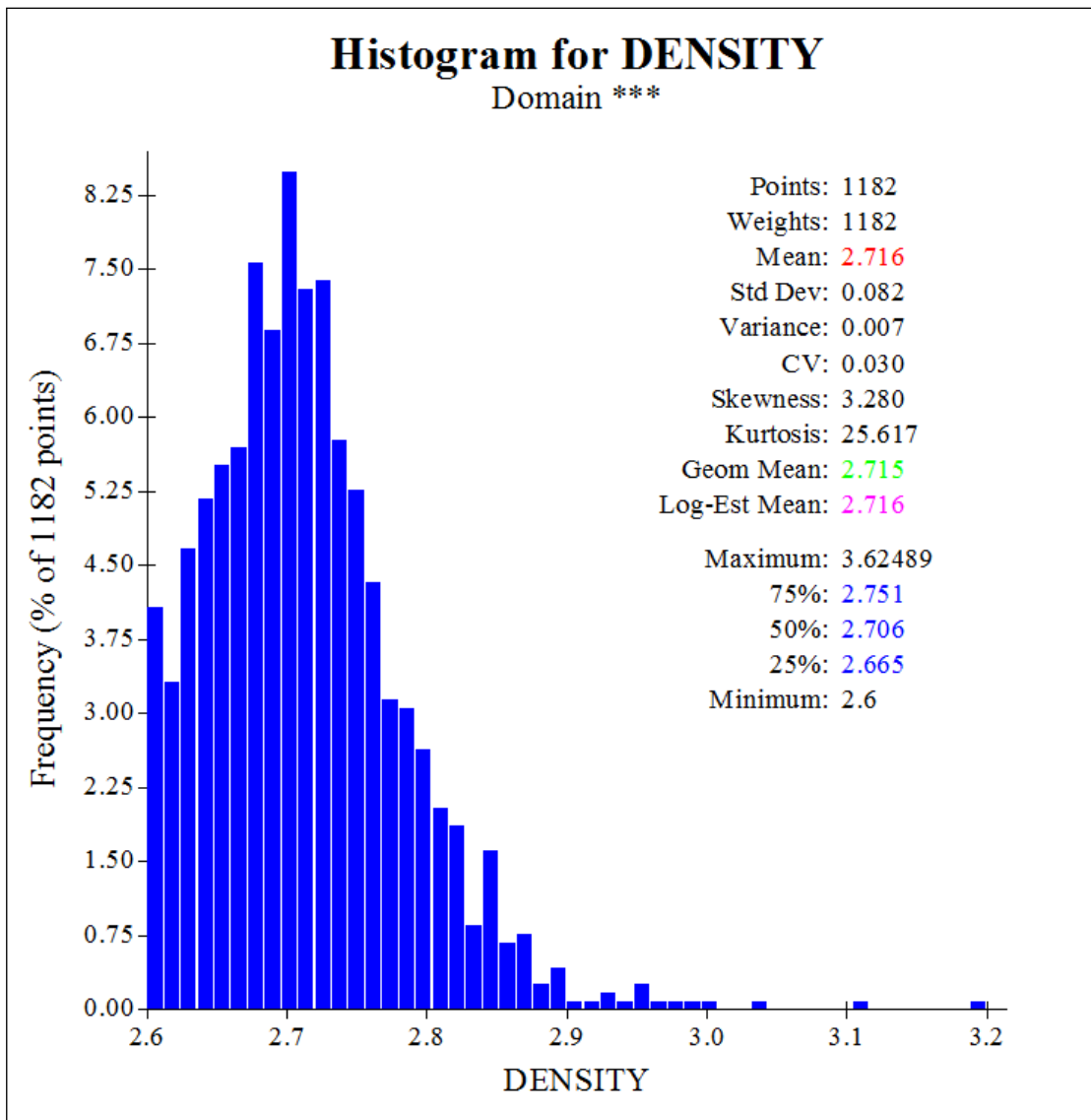
Silver	Domain 1		Domain 2		Domain 3	
	Capped Assay	Composite Samples	Capped Assay	Composite Samples	Capped Assay	Composite Samples
Arithmetic Mean	2.2	2.3	3.5	3.7	1.0	1.0
Length-Weighted Mean	2.3	2.2	3.4	3.7	1.0	0.9
Standard Error	0.1	0.1	0.1	0.2	0.0	0.0
Median	1.4	1.4	2.0	2.0	0.5	0.5
Mode	0.3	0.3	0.3	0.3	0.3	0.3
Standard Deviation	2.9	4.0	4.6	6.4	1.5	1.7
CV-Arithmetic	1.3	1.8	1.3	1.7	1.5	1.7
CV-Weighted	1.3	1.8	1.4	1.7	1.5	1.9
Sample Variance	8.5	16.1	21.6	40.5	2.3	2.9
Kurtosis	30.4	344.8	9.1	39.9	42.2	253.4
Skewness	4.6	14.5	2.9	5.5	5.3	11.5
Range	29.8	118.6	24.9	77.2	20.0	50.8
Minimum	0.3	0.3	0.1	0.1	0.1	0.1
Maximum	30.0	118.8	25.0	77.3	20.0	50.8
Sum	5,887.6	6,029.4	4,022.7	3,947.7	4,057.0	3,918.7
Count	2,684	2,637	1,147	1,055	4,103	3,931

CV – coefficient of variation

### BULK DENSITY

A total of 1,182 density measurements were used to estimate bulk density into the block model. A description of the procedures used to take the density measurements was provided in Section 11. Obvious spurious values were removed from the data set prior to use. Specific gravities were estimated using an inverse distance squared estimator and an anisotropic search. A histogram of specific gravity (SG) values is presented in Figure 14-9.

**FIGURE 14-9 HISTOGRAM OF DENSITY VALUES USED FOR BLOCK MODEL INTERPOLATION**





## **TREND ANALYSIS**

As an aid in carrying out variography studies of the continuity of the gold grades in the three mineralized domains, RPA conducted a short study of the overall trends that may be present within each of these domains. For this exercise, a data file was prepared that contained the average gold grade for three selected benches (1200, 1100, and 1000 benches). The resulting gold grades were contoured in plan view using the contouring package contained within the Surpac software mine modelling package. No anisotropy was applied when generating the contour lines. The results are presented in Figures 14-10, 14-11, and 14-12. It can be seen that, in general, the gold values are distributed as relatively large areas of grades of less than 1 g/t Au that surround smaller areas of higher gold grades. No discernible, consistent trends appear to be present in the data examined.

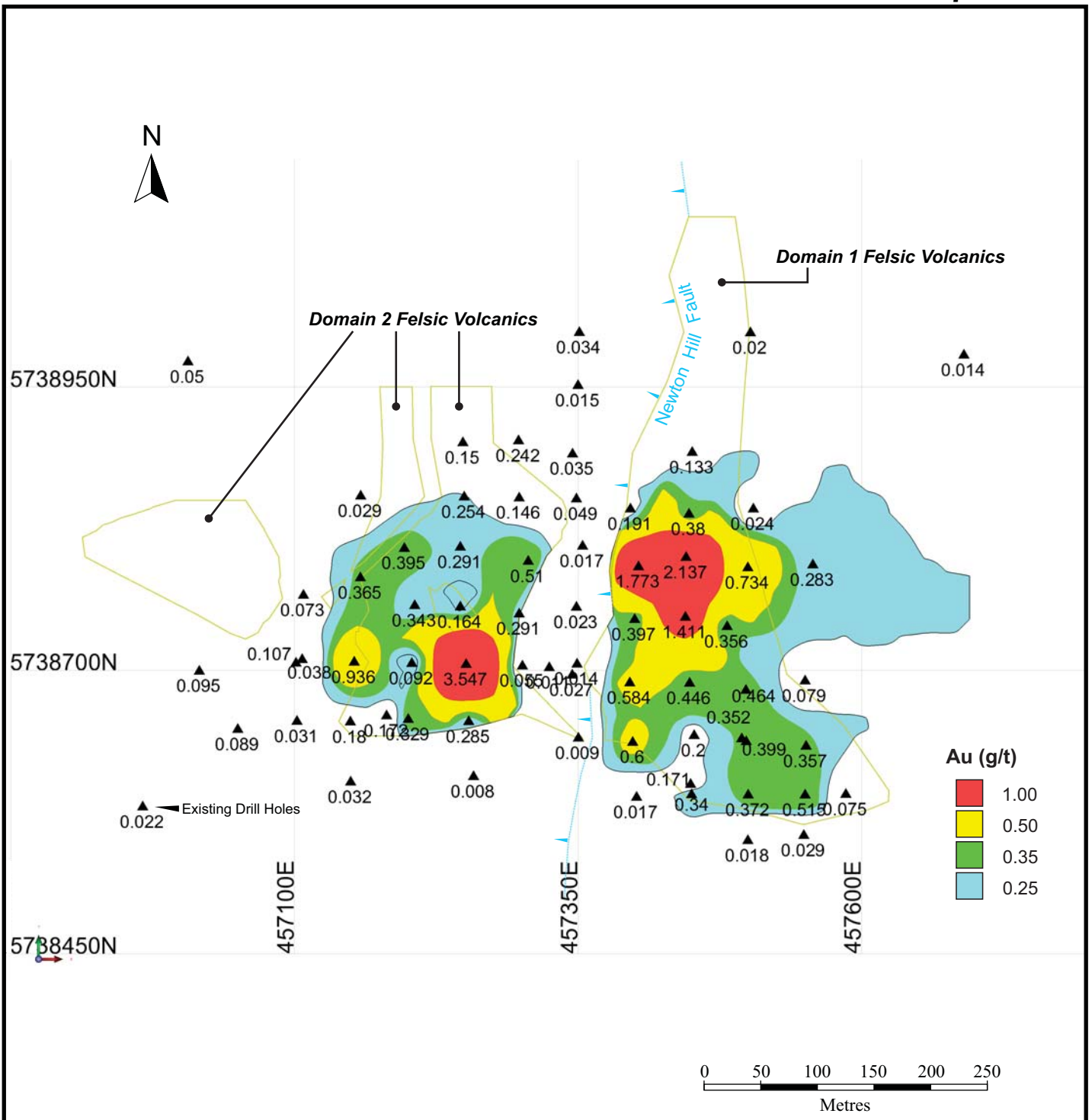


Figure 14-10

**Amarc Resources Ltd.**

**Newton Project**  
British Columbia, Canada

**Contoured Gold Values**  
**1200 Bench**

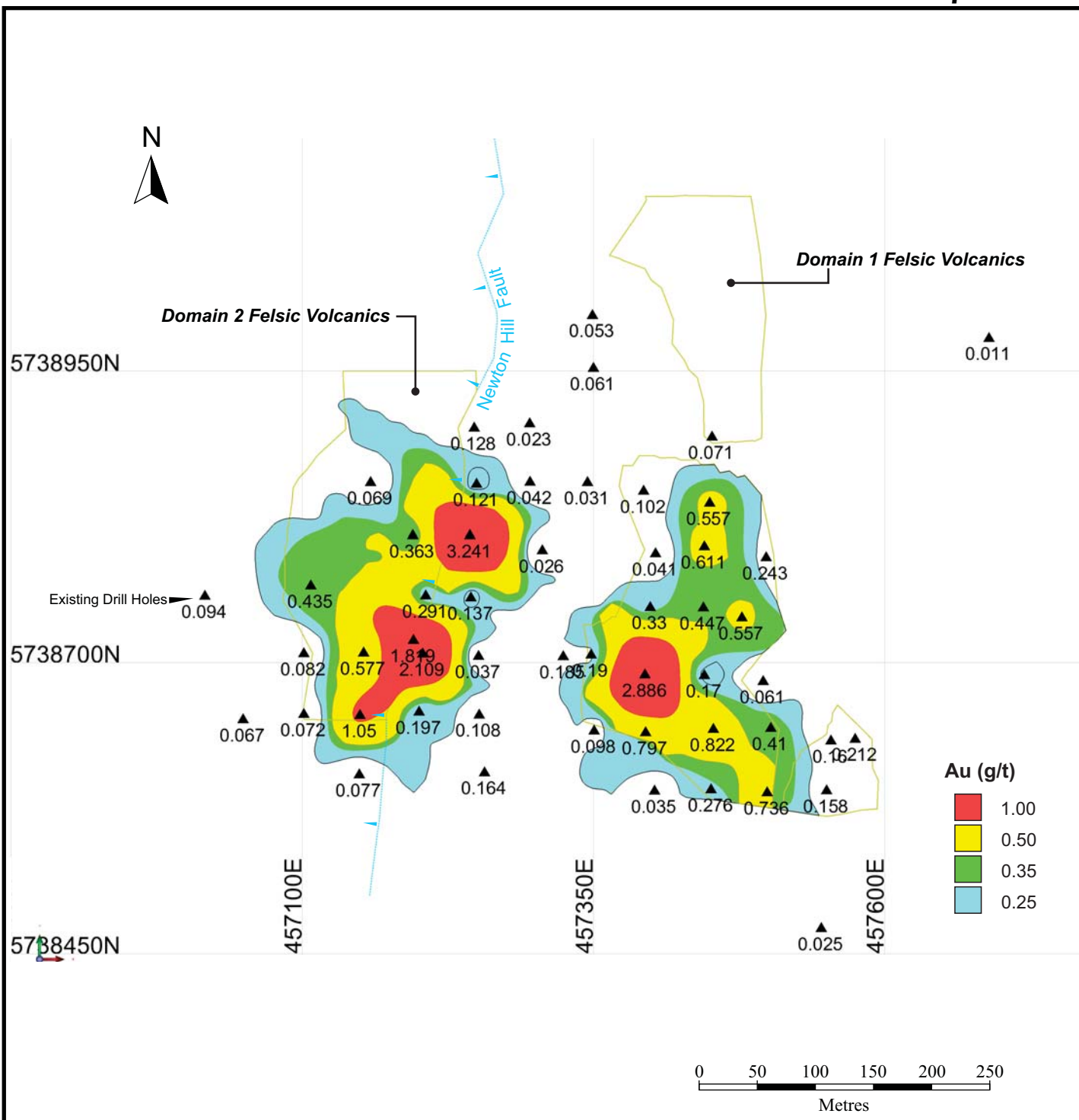


Figure 14-11

**Amarc Resources Ltd.**

**Newton Project**  
British Columbia, Canada

**Contoured Gold Values**  
**1100 Bench**

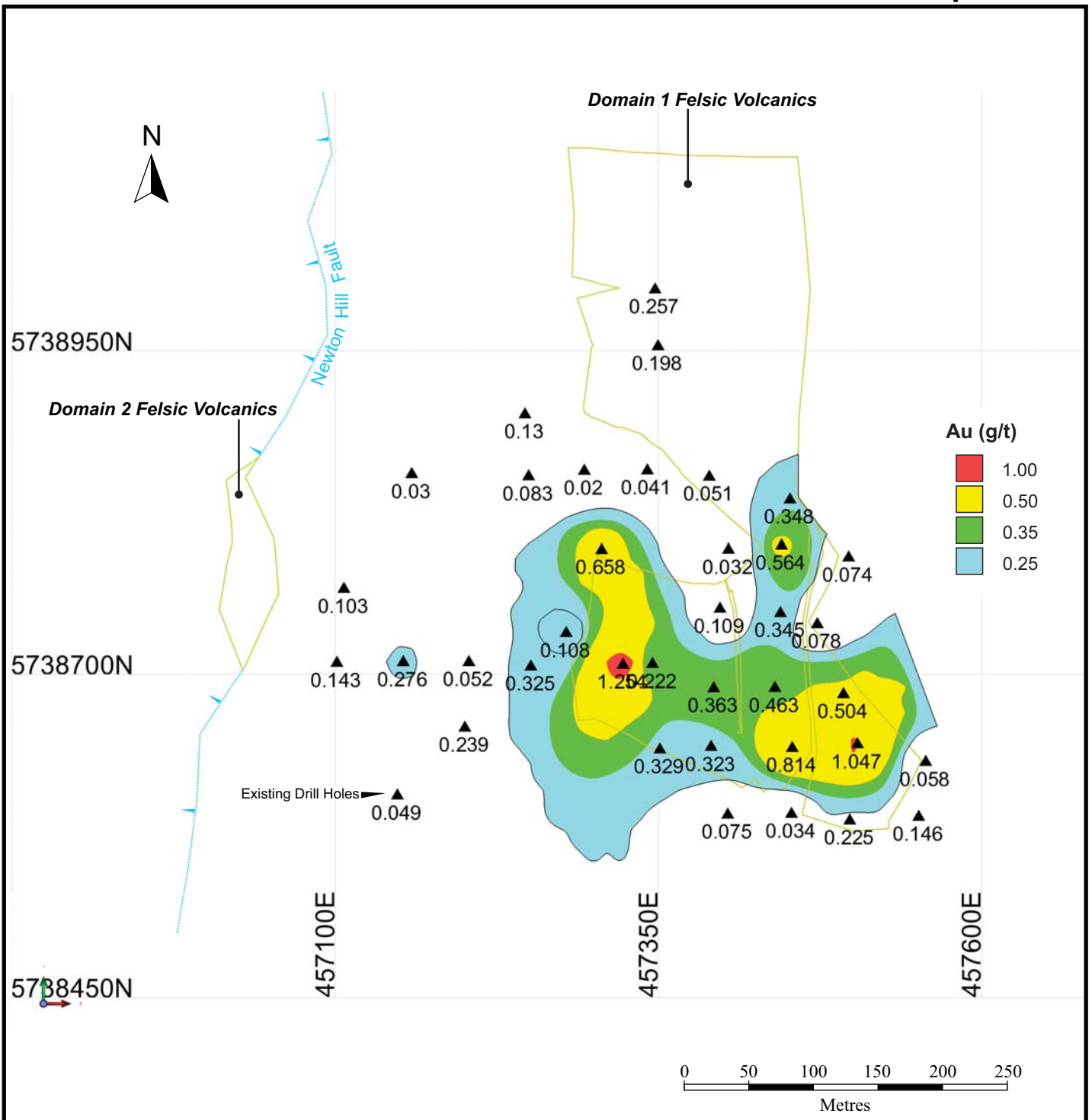


Figure 14-12

**Amarc Resources Ltd.**

**Newton Project**  
British Columbia, Canada

**Contoured Gold Values**  
**1000 Bench**

## VARIOGRAPHY

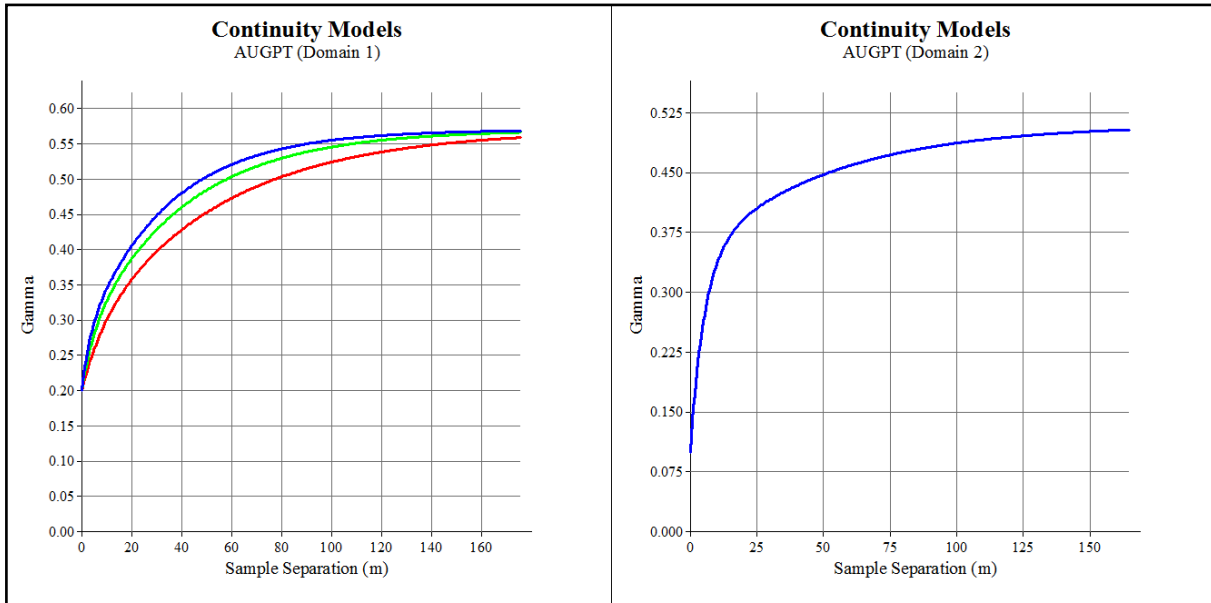
Amarc constructed downhole variograms for gold using the capped, equal length composited sample data, with the objective of determining an appropriate value for the global nugget (C0). Experimental pairwise relative semi-variograms and 2-structure exponential models were used to search for any anisotropies that may be present. This resulted in coherent variograms for Domain 1 with reasonably good model fits that identified maximum ranges of approximately 150 m to 160 m. Efforts to identify the anisotropies associated with the Domain 2 mineralization were not successful. Similarly, the variogram analysis for Domain 3 did not produce meaningful variograms.

A summary of the variogram parameters derived for Domains 1 and 2 is presented in Table 14-6, and the resulting semi-variogram models are presented in Figure 14-13.

**TABLE 14-6 SUMMARY OF DIRECTIONAL EXPONENTIAL VARIOGRAM MODELS BY DOMAIN**  
Amarc Resources Ltd. – Newton Project

Gold		Domain 1	Domain 2
Rotation	1 <sup>st</sup>	90	0
	2 <sup>nd</sup>	80	0
	3 <sup>rd</sup>	90	0
Rotation Axis	1 <sup>st</sup>	Z	Z
	2 <sup>nd</sup>	X	X
	3 <sup>rd</sup>	Z	Z
Nugget		0.2	0.1
Structure 1	Long axis (m)	25	15.5
	Intermediate axis (m)	15	15.5
	Short axis (m)	10	15.5
	First Sill (c1)	0.07	0.24
Structure 2	Long axis (m)	160	150
	Intermediate axis (m)	120	150
	Short axis (m)	100	150
	Second Sill (c2)	0.26	0.17

**FIGURE 14-13 CONTINUITY MODELS FOR DOMAINS 1 AND 2**



Note. Domain 1: red=major distance, green=intermediate distance, blue=minor distance.  
 Domain 2: blue=omni-directional variogram.

## BLOCK MODEL CONSTRUCTION

An upright, non-rotated, whole-block model (i.e., no partial percentage or sub-blocking was applied) with the long axis of the blocks oriented along an azimuth of 090° and dipping vertically (i.e., -90°) was constructed by Amarc using the Datamine Studio v.3 software package and the parameters presented in Table 14-7. The selected block size was 10 m x 10 m x 5 m (width, length, height). A number of attributes were also created to store such information as metal grades, distances to, and the number of informing samples, domain codes, density, and resource classification codes.

**TABLE 14-7 BLOCK MODEL PARAMETERS**  
**Amarc Resources Ltd. – Newton Project**

Type	Y (North)	X (East)	Z (Elevation)
Minimum Coordinates	5738250	456700	600
Maximum Coordinates	5739250	457750	1365
User Block Size	10	10	5
Rotation	0.000	0.000	0.000

Gold grades were estimated for Domains 1 and 2 using ordinary kriging and for silver were estimated using inverse distance squared. Gold and silver grades for Domain 3 were



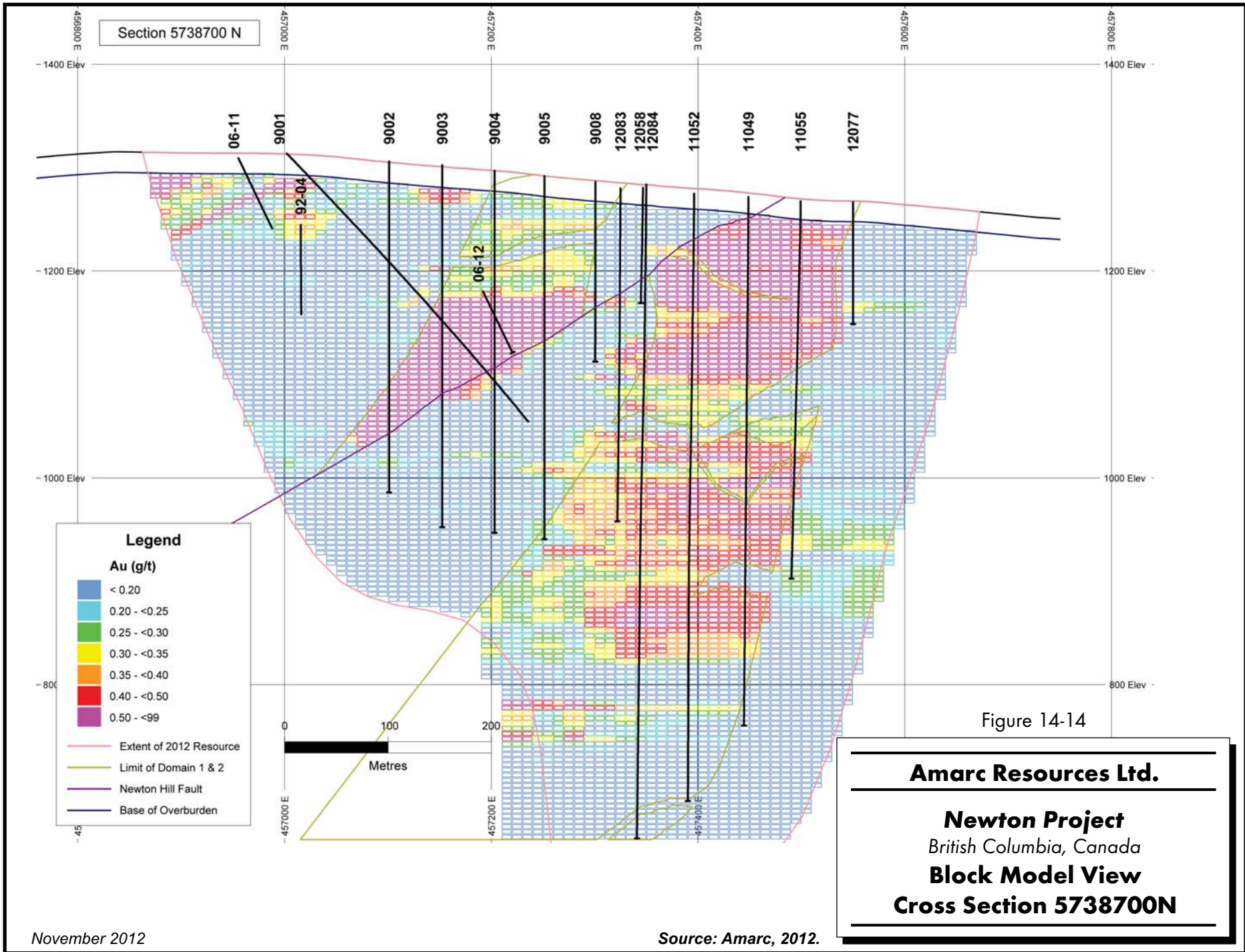
estimated using the inverse distance squared interpolation algorithm. The metal grade estimation work involved a two-step approach (Table 14-8). The first step considered a relatively small search ellipsoid, which was increased in size for the second step. Since no clear anisotropy could be established, the search orientation domains were kept isotropic.

The selection of the search radii was guided by modelled ranges from variography for gold 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.

“Hard” domain boundaries were used along the contacts of the mineralized domain model. Only data contained within the respective domain models were allowed to be used to estimate the grades of the blocks within the domain in question, and only those blocks within the domain limits were allowed to receive grade estimates. Only the capped, composited grades of the drill hole intersections were used to derive an estimate of a block’s grade. A sample cross section and level plan are presented in Figures 14-14 and 14-15, respectively.

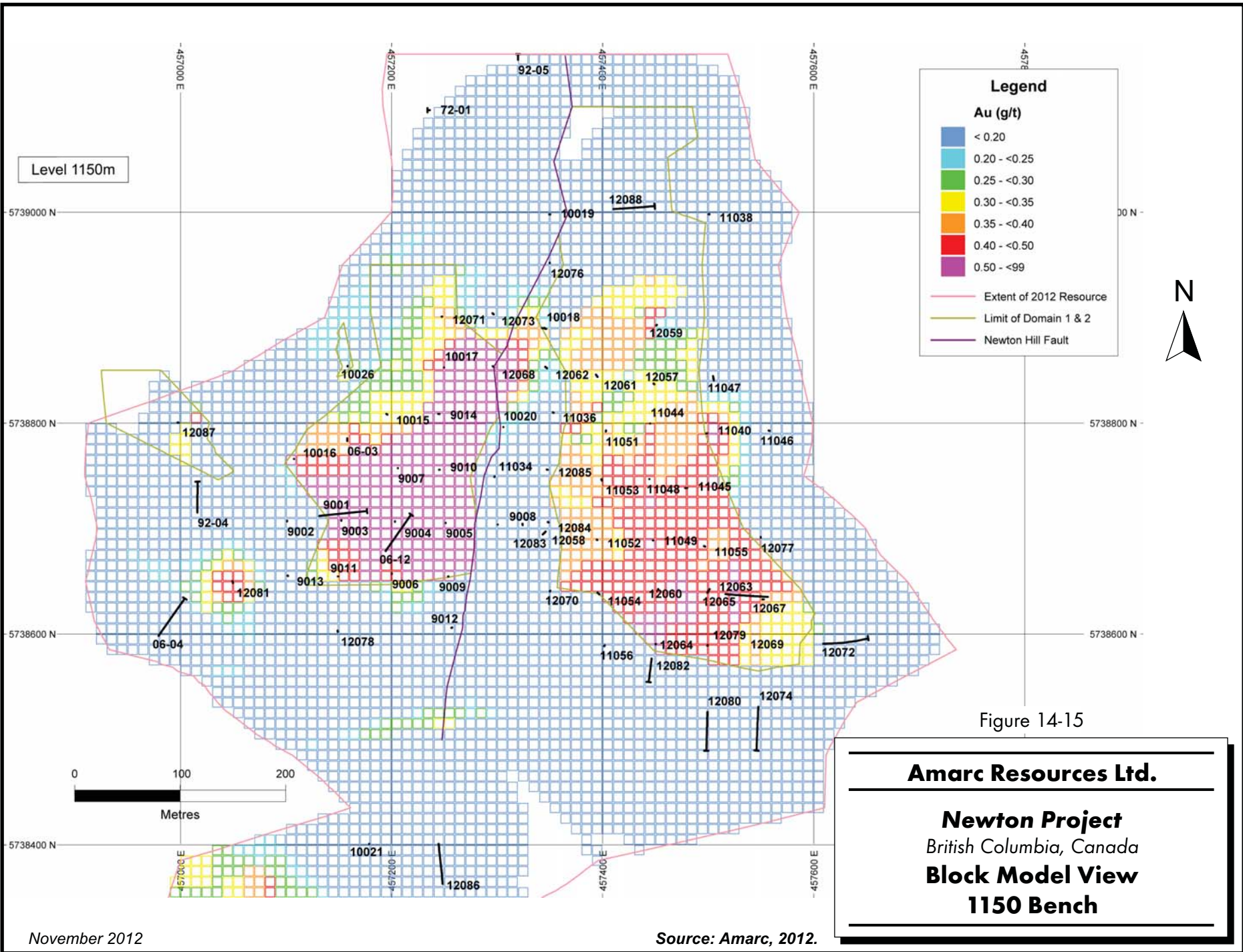
**TABLE 14-8 SUMMARY OF SEARCH ELLIPSE STRATEGY**  
**Amarc Resources Ltd. – Newton Project**

Search Parameters	All domains
Step 1 search radius (m)	100
Step 2 search radius (m)	150
Search Ellipsoid orientation	Isotropic
Step 1 minimum and maximum number of samples	6,20
Step 2 minimum and maximum number of samples	4,20
Maximum samples used per drill-hole	3



14-22





14-23

## **BLOCK MODEL VALIDATION**

The Newton Project block model validation included a visual inspection of the interpolated block model grades versus the drill hole composite grades, comparison of the block grades to the contoured grade distribution for selected benches, and a comparison of the average block grades versus composite gold grades for each domain.

The reconciliation report for the composite-to-block average is presented in Table 14-9. It can be seen that there is good correlation between the average block and composite gold and silver grades for each domain.

The visual examination and the comparison of block grades versus contoured values reveals that the interpolation process has resulted in a smoothing of the gold and silver grades. However, the analysis of the composite-to-block average grades reveals that the mean grades for gold and silver in the block model are in good agreement with the informing samples suggesting that, on balance, no bias is indicated to be present in the average gold and silver grades in the block model.

Given the current status of the project, RPA is of the opinion that the block model that has been prepared is appropriate for use in the estimation of the global tonnage and average grades of gold and silver for the Newton Project. As the project progresses through to more advanced stages, RPA recommends that a greater emphasis be placed on achieving a more accurate local estimate of the distribution of the gold and silver grades.

**TABLE 14-9 COMPARISON OF COMPOSITE ASSAY VALUES VS. AVERAGE  
BLOCK GRADES BY DOMAIN**  
Amarc Resources Ltd. – Newton Project

Gold	Domain 1		Domain 2		Domain 3	
	Composite Samples	Block Averages	Composite Samples	Block Averages	Composite Samples	Block Averages
Arithmetic Mean	0.40	0.33	0.40	0.40	0.13	0.13
Length-Weighted Mean	0.38	0.33	0.39	0.40	0.12	0.13
Standard Error	0.01	0.00	0.02	0.00	0.00	0.00
Median	0.27	0.31	0.22	0.32	0.07	0.10
Mode	0.16	0.13	4.69	0.31	0.02	
Standard Deviation	0.47	0.21	0.59	0.30	0.21	0.11
CV-Arithmetic	1.19	0.63	1.47	0.75	1.67	0.83
CV-Weighted	1.22	0.63	1.50	0.75	1.76	0.83
Sample Variance	0.22	0.04	0.34	0.09	0.05	0.01
Kurtosis	26.79	1.90	23.14	3.45	48.79	8.86
Skewness	4.06	1.11	4.28	1.76	5.90	2.27
Range	5.45	1.31	4.69	1.82	2.59	1.74
Minimum	0.00	0.02	0.00	0.04	0.00	0.00
Maximum	5.45	1.33	4.69	1.86	2.59	1.74
Sum	1,045.3	23,759.9	420.9	7,861.1	530.7	31,320.5
Count	2,637	71,373	1,055	19,772	4,151	241,910

Silver	Domain 1		Domain 2		Domain 3	
	Composite Samples	Block Averages	Composite Samples	Block Averages	Composite Samples	Block Averages
Arithmetic Mean	2.3	1.7	3.7	3.0	1.0	0.7
Length-Weighted Mean	2.2	1.7	3.7	3.0	0.9	0.7
Standard Error	0.1	0.0	0.2	0.0	0.0	0.0
Median	1.4	1.2	2.0	2.1	0.5	0.7
Mode	0.3	0.4	0.3	0.3	0.3	
Standard Deviation	4.0	1.8	6.4	3.1	1.7	1.7
CV-Arithmetic	1.8	1.04	1.7	1.05	1.7	2.51
CV-Weighted	1.8	1.04	1.7	1.05	1.9	2.51
Sample Variance	16.1	3.1	40.5	9.8	2.9	2.8
Kurtosis	344.8	141.3	39.9	17.7	253.4	25.3
Skewness	14.5	7.5	5.5	3.3	11.5	-4.4
Range	118.6	66.9	77.2	41.6	50.8	35.4
Minimum	0.3	0.3	0.1	0.3	0.1	-9.0
Maximum	118.8	67.2	77.3	41.9	50.8	26.4
Sum	6,029.4	119,687.0	3,947.7	58,836.5	3,918.7	162,387.2
Count	2,637	71,373	1,055	19,772	3,931	241,910

CV – coefficient of variation

## CUT-OFF GRADE

Given the early stage of Newton Project, no recent studies have been undertaken that have contemplated potential operating scenarios. For the purposes of this assignment, a conceptual operating scenario was developed in which mineralized material would be excavated using a conventional truck and shovel open pit mine and the material then being processed using either a conventional flotation-leach or whole ore leach circuit. This conceptual scenario will likely change as more information becomes available for this deposit.

RPA believes that a gold price of US\$1,750/oz and a silver price of US\$25/oz, in conjunction with an exchange rate of \$1.00 (US\$:C\$), are appropriate values for use in the estimation of a cut-off grade for this project.

Given the present stage of the project's history, no current detailed information is available on such input parameters as operating costs for mining, processing, general and administration, and the like in respect of a potential open pit mining operation. Metallurgical recoveries that were achieved from comparable deposits located in the region are available, however.

RPA reviewed the values for these input parameters put forward by Amarc as shown in Table 14-10. On the basis of its experience in the region, from publically available information for comparable operations and projects in the region, and from general knowledge, RPA is of the opinion that the proposed input parameters are reasonable for use in the preparation of this initial Mineral Resource estimate. It is important to note that the estimates presented are only for the purpose of developing a cut-off grade to aid in the preparation of Mineral Resource reporting criteria. The assumed values will likely change as new information is obtained as a result of further work. For further clarity, these parameters are not intended for use in mine planning and scheduling, or the preparation of cash flow models. Application of these input parameters yields a minimum cut-off grade of 0.11 g/t Au for the Newton deposit. However review of similar bulk tonnage gold deposits in the region suggests that a 0.25 g/t Au is a more appropriate threshold for use in preparation of a Mineral Resource estimate.



**TABLE 14-10 SUMMARY OF INPUT PARAMETERS FOR CUT-OFF GRADE ESTIMATE**  
**Amarc Resources Ltd. – Newton Project**

Item	Parameter Value
Operating Costs-Mining	C\$1.26/tonne (plus \$0.01/bench)
Operating Costs-Milling + G&A	C\$5.55/tonne
Metallurgical Recoveries	92% (Gold), 45% (Silver)
Gold Price	US\$1,750/oz (\$56.27/g)
Silver Price	US\$25/oz (\$0.80/g)
Exchange Rate (C\$:US\$)	1.00 : 1.00

A series of polygons were created in sectional view that outlined those portions of the domain models that demonstrate continuity of mineralization to within 75 m of a drill hole. These clipping polygons were then linked together to form a three-dimensional solid that was used as one of the constraints in the preparation of the Mineral Resource estimate.

A preliminary pit shell was generated using a Lerchs-Grossman optimizer as an additional constraint in the preparation of this Mineral Resource estimate. A 50° overall wall slope angle was applied.

## **MINERAL RESOURCE CLASSIFICATION CRITERIA**

The Mineral Resources in this report were estimated in accordance with the definitions contained in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards on Mineral Resources and Mineral Reserves that were prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on November 27, 2010 (CIM definitions).

The mineralized material for each domain was classified by RPA into the Inferred Mineral Resource category on the basis of the search ellipse ranges obtained from the variography study, the application of an open pit shell along with a constraining volume, and its experience with these deposit types in the past.

## RESPONSIBILITY FOR ESTIMATION

The estimate of the Mineral Resources for the Newton deposit presented in this report was prepared by Mr. Reno Pressacco, M.Sc. (A), P.Geo., who is a Qualified Person as defined in NI 43-101, and is independent of Amarc Resources Inc.

## MINERAL RESOURCE ESTIMATE

As a result of the concepts and processes described in this report, the Mineral Resources for the Newton deposit include all blocks that are located within the respective domain models defined based on a 0.25 g/t Au cut-off grade, within the pit shell, and within the clipping polygon.

The estimated Mineral Resources, using the capped gold grades, are set out in Table 14-11. At a cut-off grade of 0.25 g/t Au, a total of 111,460,000 tonnes are estimated to be present at an average grade of 0.44 g/t Au (1,571,000 contained oz Au) and 2.1 g/t Ag (7,694,000 contained oz Ag). An analysis of the impact upon the Mineral Resource estimate as the cut-off grade is changed is also presented in Table 14-11.

**TABLE 14-11 SUMMARY OF MINERAL RESOURCES – JULY 4, 2012**  
**Amarc Resources Ltd. – Newton Project**

Cut-off Grade (g/t Au)	Tonnage (000 t)	Inferred Resources:			
		Grade (g/t Au)	Contained Metal (000 oz Au)	Grade (g/t Ag)	Contained Metal (000 oz Ag)
0.20	147,069	0.38	1,818	1.9	8,833
<b>0.25</b>	<b>111,460</b>	<b>0.44</b>	<b>1,571</b>	<b>2.1</b>	<b>7,694</b>
0.30	85,239	0.49	1,334	2.4	6,495
0.35	65,384	0.54	1,130	2.7	5,635
0.40	49,502	0.59	938	2.9	4,596
0.45	38,491	0.64	789	3.1	3,842
0.50	28,684	0.69	640	3.3	3,069

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated using a long-term gold price of US\$1,750 per ounce, and a US\$/C\$ exchange rate of 1.00.
3. Bulk density is 2.71 t/m<sup>3</sup>.
4. Numbers may not add due to rounding.
5. The effective date of the Mineral Resource estimate is July 4, 2012.

Categories of Inferred, Indicated, and Measured Mineral Resources are recognized in order of increasing geological confidence. However, Mineral Resources are not equivalent to Mineral Reserves and do not have demonstrated economic viability. There can be no assurance that Mineral Resources in a lower category may be converted to a higher category, or that Mineral Resources may be converted to Mineral Reserves. Inferred Mineral Resources cannot be converted into Mineral Reserves as the ability to assess geological continuity is not sufficient to demonstrate economic viability. Due to the uncertainty which may attach to Inferred Mineral Resources, there is no assurance that Inferred Mineral Resources will be upgraded to Indicated or Measured Mineral Resources with sufficient geological continuity to constitute Proven and Probable Mineral Reserves as a result of continued exploration.

There is a degree of uncertainty to the estimation of Mineral Reserves and Mineral Resources and corresponding grades being mined or dedicated to future production. The estimating of mineralization is a subjective process and the accuracy of estimates is a function of the accuracy, quantity, and quality of available data, the accuracy of statistical computations, and the assumptions used and judgments made in interpreting engineering and geological information. There is significant uncertainty in any Mineral Resource/Mineral Reserve estimate, and the actual deposits encountered and the economic viability of mining a deposit may differ significantly from these estimates. Until Mineral Reserves or Mineral Resources are actually mined and processed, the quantity of Mineral Resources/Mineral Reserves and their respective grades must be considered as estimates only. In addition, the quantity of Mineral Reserves and Mineral Resources may vary depending on, among other things, metal prices. Any material change in quantity of Mineral Reserves, Mineral Resources, grade, or stripping ratio may affect the economic viability of the properties. In addition, there can be no assurance that recoveries in small scale laboratory tests will be duplicated in a larger scale tests under on-site conditions or during production. Fluctuation in metal or commodity prices, results of additional drilling, metallurgical testing, receipt of new information, and production and the evaluation of mine plans subsequent to the date of any estimate may require revision of such estimate. The volume and grade of reserves mined and processed and recovery rates may not be the same as currently anticipated. Estimates may have to be re-estimated based on changes in mineral prices or further exploration or development activity. This could materially and adversely affect estimates of the volume or grade of mineralization, estimated recovery rates, or other important factors that influence estimates. Any material reductions in estimates of Mineral Reserves and Mineral Resources,

or the ability to extract these mineral reserves, could have a material adverse effect on the Company's financial condition, results of operations, and future cash flows.

RPA has considered the Mineral Resource estimates in light of known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, and other relevant issues and has no reason to believe at this time that the Mineral Resources will be materially affected by these items. Given the current stage of the Newton deposit's exploration and discovery history, no studies have yet been completed that examine whether the Mineral Resources may be materially affected by mining, infrastructure, or other relevant factors. No metallurgical testing has been completed on samples taken from the newly discovered mineralization, however, historical information regarding metal recoveries is available for comparable operations and projects in the area.

## **15 MINERAL RESERVE ESTIMATE**

There are no Mineral Reserves on the Newton property.

## **16 MINING METHODS**

This section is not applicable.



## 17 RECOVERY METHODS

This section is not applicable.

## 18 PROJECT INFRASTRUCTURE

This section is not applicable.

## **19 MARKET STUDIES AND CONTRACTS**

This section is not applicable.

## **20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT**

This section is not applicable.

## 21 CAPITAL AND OPERATING COSTS

This section is not applicable.

## **22 ECONOMIC ANALYSIS**

This section is not applicable.



## 23 ADJACENT PROPERTIES

The New Prosperity copper-gold project, located 40 km to the south of the Newton deposit but adjacent to Amarc's property holdings, hosts a porphyry gold-copper deposit with Proven and Probable Mineral Reserves of 830 million tonnes grading 0.41 g/t Au and 0.23% Cu at a C\$5.50 NSR/t cut-off, using metal prices of US\$650/oz for gold and US\$1.65/lb for copper (Taseko Mines Limited News Release dated November 2, 2009).

RPA has been unable to verify the information on the New Prosperity property and the information is not necessarily indicative of the mineralization on the Newton property.

## **24 OTHER RELEVANT DATA AND INFORMATION**

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

## 25 INTERPRETATION AND CONCLUSIONS

Amarc has been conducting exploration programs at the Newton Project to test for the presence of gold-silver mineralization in the northern extents of its large property holdings. Several different types of exploration activities have been completed at the Newton Project since the ground was acquired in 2009-2010. These include geophysical and geochemical surveying, mineralogical studies, re-logging of drill core generated from previous exploration programs, and diamond drilling.

The exploration programs completed by Amarc have successfully identified a mineralized system that exhibits characteristics typical of bulk-tonnage, low to intermediate sulphidation epithermal gold-silver deposits. The disseminated gold and associated base metals mineralisation is primarily hosted by thick sequences of late Cretaceous-aged permeable felsic volcanoclastics and flows and contemporaneous felsic intrusions, emplaced into a structurally active graben environment. The host rocks show strong, widespread sericite-quartz alteration with variable siderite and several percent pyrite and/or marcasite. Additional mineralization is hosted to a lesser degree by intrusive rocks of intermediate and felsic composition. Initial studies suggest that the gold occurs predominantly as high fineness electrum and is preferentially associated with marcasite-bearing alteration.

The drilling completed to date has outlined a significant, gold-silver deposit over an area of approximately 800 m by 800 m and to a depth of approximately 560 m from surface. The deposit occupies a restricted area within an extensive plus seven square kilometre hydrothermal system (as indicated by the outline of the 8 MV/V contour of the IP chargeability anomaly) that exhibits widespread metal enrichment, and which remains to be fully explored. Drill results to date not only indicate that there is potential to expand the current bulk-tonnage gold resource but also suggest that there are possibilities to discover structurally controlled zones of higher grade gold mineralization and copper-gold porphyry-style mineralization in proximity to the initial resource. The QA/QC programs employed by Amarc during the drilling and assaying programs meet current industry best practices.

Amarc has applied variable grade caps to the three principle domains that were used to prepare this Mineral Resource estimate. Review of the distribution of the silver grades suggested that no capping of the silver values is indicated.

Examination of contour plots of gold grades for selected elevations through the deposit reveals that no discernible, consistent trends appear to be present in the data examined. A grade-block model was prepared using the three principal domains to ensure proper coding of the model. “Hard” domain boundaries were used along the contacts of the mineralized domain model. Only data contained within the respective domain models were allowed to be used to estimate the grades of the blocks within the domain in question, and only those blocks within the domain limits were allowed to receive grade estimates. Only the capped, composited grades of the drill hole intersections were used to derive an estimate of a block’s grade.

A series of polygons were created in sectional view that outlined those portions of the domain models that demonstrate continuity of mineralization to within 75 m of a drill hole. These clipping polygons were then linked together to form a three-dimensional solid that was used as one of the constraints in the preparation of the Mineral Resource estimate.

A preliminary pit shell was generated using a Lerchs-Grossman optimiser as an additional constraint in the preparation of this Mineral Resource estimate. A 50° overall pit wall slope angle was applied.

The Mineral Resources in this report were estimated in accordance with the definitions contained in the CIM Definition Standards on Mineral Resources and Mineral Reserves that were prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on November 27, 2010.

The mineralized material for each domain was classified by RPA into the Inferred Mineral Resource category on the basis of the search ellipse range obtained from the variography study, the application of an open pit shell along with a constraining volume, and its experience with these deposit types in the past.

The Mineral Resources are presented in Table 25-1. At a cut-off grade of 0.25 g/t Au, a total of 111,460,000 tonnes are estimated to be present at an average grade of 0.44 g/t Au (1,571,000 contained oz Au) and 2.1 g/t Ag (7,694,000 contained oz Ag).

**TABLE 25-1 SUMMARY OF MINERAL RESOURCES – JULY 4, 2012**  
**Amarc Resources Ltd. – Newton Project**

Cut-off Grade (g/t Au)	Tonnage (000 t)	Inferred Resources:			
		Grade (g/t Au)	Contained Metal (000 oz Au)	Grade (g/t Ag)	Contained Metal (000 oz Ag)
0.20	147,069	0.38	1,818	1.9	8,833
<b>0.25</b>	<b>111,460</b>	<b>0.44</b>	<b>1,571</b>	<b>2.1</b>	<b>7,694</b>
0.30	85,239	0.49	1,334	2.4	6,495
0.35	65,384	0.54	1,130	2.7	5,635
0.40	49,502	0.59	938	2.9	4,596
0.45	38,491	0.64	789	3.1	3,842
0.50	28,684	0.69	640	3.3	3,069

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Mineral Resources are estimated using a long-term gold price of US\$1,750 per ounce, and a US\$/C\$ exchange rate of 1.00.
3. Bulk density is 2.71 t/m<sup>3</sup>.
4. Numbers may not add due to rounding.
5. The effective date of the Mineral Resource estimate is July 4, 2012.

There are no Mineral Reserves estimated for the Newton Project.

## 26 RECOMMENDATIONS

RPA recommends a two phased approach to additional diamond drilling proximal to the Newton resource aimed at:

1. Increasing the current gold-silver resource, and
2. Exploring for additional potential resources within the known plus seven square kilometre hydrothermal system.

A Phase 1, delineation and exploration diamond drill program comprising an approximately 4,000 m drill program is recommended to test:

3. The high-contrast magnetic low that extends to the northwest of the Newton currently delineated deposit, and
4. The vicinity, and to the south, of drill hole 12086, which is located south of both the current resource and the South Graben fault; this area has potential for repetition of the favourable, felsic volcanic strata which host gold mineralization immediately to the north.

A budget of \$1,500,000 is estimated for the Phase 1 program and is presented in Table 26-1 below.

**TABLE 26-1 PROPOSED PHASE 1 BUDGET  
Amarc Resources Ltd. – Newton Project**

	<b>C\$</b>
All-In Site and Analytical Costs	1,170,000
Technical Support	50,000
Community Relations/Environmental Studies	100,000
General and Administration	180,000
<b>TOTAL</b>	<b>1,500,000</b>

A follow-up Phase 2 program is suggested, which is contingent on the success of the Phase 1 program. A Phase 2 budget of up to \$6,000,000 is recommended and the associated program would consist of:

1. Infill diamond drilling to further delineate potentially economic mineralization identified in the Phase 1 program.



2. Drill testing areas within or immediately adjacent to the significant plus seven square kilometre hydrothermal system as outlined by the 8 MV/V contour of the IP chargeability anomaly where felsic volcanic units are projected, or have the potential, to occur.
3. Additional detailed structural modelling completed within and proximal to the currently defined resource to assess the potential presence, and projected location, of zones of high-density veins and/or mineralized fractures. Such zones have the potential to host higher-grade, structurally controlled mineralization that would increase the tenor of the resource. As part of this exercise, detailed three-dimensional modelling of vein and fracture density is recommended to develop possible vectors toward prospective structural settings. Resulting targets should then be tested by diamond drill holes oriented appropriately to the projected plane of the controlling structures.
4. Preliminary metallurgical test work carried out to provide initial information regarding the hardness of the mineralized samples, and an initial evaluation of recovery methods.

In addition, it is recommended by RPA that the QA/QC protocols for the Newton Project be updated in relation to future drilling so that sampling programs include certified reference materials for silver and, in accordance with established protocols, the results be monitored for departures from the recommended values with respect to the silver standards.

RPA believes that acquisition of a more detailed topographic surface is justified for use in future project activities.

As the Project progresses through to more advanced stages, RPA recommends that a greater emphasis be placed on achieving a more accurate local estimate of the distribution of the gold and silver grades in future block models.

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## 28 DATE AND SIGNATURE PAGE

This report titled “Technical Report on the Initial Mineral Resource Estimate for the Newton Project, Central British Columbia, Canada” and dated November 9, 2012, was prepared and signed by the following author:

**(Signed & Sealed) “*Reno Pressacco*”**

Dated at Toronto, ON  
November 9, 2012

Reno Pressacco, M.Sc (A)., P.Geo.  
Principal Geologist

## 29 CERTIFICATE OF QUALIFIED PERSON

### RENO PRESSACCO

I, Reno Pressacco, P.Geol., as an author of this report entitled "Technical Report on the Initial Mineral Resource Estimate for the Newton Project, Central British Columbia, Canada" prepared for Amarc Resources Ltd. and dated November 9, 2012, do hereby certify that:

1. I am Principal Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON M5J 2H7.
2. I am a graduate of Cambrian College of Applied Arts and Technology, Sudbury, Ontario, in 1982 with a CET Diploma in Geological Technology, Lake Superior State College, Sault Ste. Marie, Michigan, in 1984, with a B.Sc. degree in Geology and McGill University, Montreal, Québec, in 1986 with a M.Sc.(A) degree in Mineral Exploration.
3. I am registered as a Professional Geologist in the Province of Ontario (Reg.# 939). I have worked as a professional geologist for a total of 26 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Review and report as a consultant on numerous exploration and mining projects around the world for due diligence and regulatory requirements, including preparation of Mineral Resource estimates and NI 43-101 Technical Reports.
  - Numerous assignments in North, Central and South America, Finland, Russia, Armenia and China in a variety of deposit types and in a variety of geological environments; commodities including Au, Ag, Cu, Zn, Pb, Ni, Mo, U, PGM and industrial minerals.
  - A senior position with an international consulting firm.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I visited the Newton Project on June 19 and 20, 2012.
6. I am responsible for all sections of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 9<sup>th</sup> day of November, 2012

**(Signed & Sealed) “Reno Pressacco”**

Reno Pressacco, M.Sc.(A), P.Geo.