

# PROTO



RESOURCES & INVESTMENTS LTD

## STOCK EXCHANGE ANNOUNCEMENT

April 30, 2012

### Quarterly Activity Report ending 31 March 2012

#### ASX Release: PRW

*Proto Resources & Investments Ltd ("Proto", "the Company") achieved important milestones across its projects in the first quarter of 2012. The resumption of drilling at Lindeman's Bore and the first exploration of the recently granted Doolgunna tenements were important exploration events during the quarter.*

#### Highlights

- Barnes Hill (Tasmania) – Proto continued to advance the Barnes Hill nickel-cobalt-iron project towards development during the quarter. As Proto announced during the period, part of the area of Australia's first iron ore mine, discovered in 1804, will be re-opened as part of the Barnes Hill development subject to positive confirmation of metallurgical upgrading and recovery tests currently in progress that will determine the commercial viability of an iron ore only operation. Obviously Proto would not proceed with an iron ore operation if it received uncommercial test results. The potential for iron ore production at Barnes Hill would increase the overall operating cash flow previously assessed for the nickel-cobalt resource that has been defined at Barnes Hill, which is already the subject of the 500,000 tonnes per annum feasibility study due to be delivered in the next quarter. Confirmation of upgrading grade and recovery, and of market inputs to support an independently calculated JORC-compliant iron ore resource are currently being assessed. Proto formally lodged a revised connection enquiry with Transend. Transend's response will set-out the plan for detailed design and construction of the electricity infrastructure for Barnes Hill. The estimated maximum power demand for the site is 22.5MW (approximately 25MVA) on expected energy consumption of approximately 16 GWh per month.
- Lindeman's Bore (NT) – During the period Proto continued an active exploration campaign with the recommencement of the deep diamond core hole (LBD-3) targeting a 500m by 500m bedrock airborne, ZTEM target at the Lindeman's Bore project that was further defined by ground EM. Drilling recommenced at 110m and reached 387m by the end of the quarter. The hole was then completed to 466.6m. As announced the hole intersected prospective geology including three mineralised zones of geological interest between 385-430m and particularly a 20m section of quartz/carbonate stringers in foliated and chloritic mafic rock that contained pyrite and chalcopyrite from 385m.

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- Doolgunna Projects (WA) – Detailed aerial magnetic and radiometric surveys were completed at the Company's tenements on the southern and eastern margins of the Yerrida Basin. The surveys were undertaken at 100m line intervals at a flying height of 25m above ground.
- Argyle Corridor/Ord Basin East (WA/NT) – Proto entered into a staged option over the Argyle Corridor (ELA80/4387 within Western Australia) and Ord Basin East (ELA24079 and ELA9784 within the Northern Territory) projects currently held by Uramin Pty Ltd and Kimberley Mining Pty Ltd. Under the option agreement, Proto has the right to purchase a 70% interest in the Argyle Corridor/Ord Basin East Project on acquisition payment within six months of the signing. Surveys to test the extension of known geochemical drainage copper anomalies, sometimes associated with visible copper mineralisation, into untested but prospective stratigraphy are the immediate focus for future exploration. In addition to these geochemical targets a number of electrical and magnetic geophysical anomalies have been identified by previous explorers (including Uramin in E80/4387) that are also immediate targets for investigation under Proto's Norilsk-Talnakh type Ni-Cu deposit exploration model.

### ***Barnes Hill, Tasmania (Nickel Laterite, Cobalt and Iron)***

Progressing the Barnes Hill nickel-cobalt-iron project towards production remained Proto's key focus during the quarter. On 6 February 2012 Metals Finance announced an update of the definitive feasibility study which noted the estimated capital cost of Barnes Hill on a 500,000 tonnes per annum throughput as being just \$98 million, with projected total revenues of more than \$1.1 billion over its full life. Proto's Managing Director Mr Andrew Mortimer stated: "We are very pleased with Metal Finance's progress towards the mid-2012 updated feasibility study that on current calculations will deliver an internal rate of return of 47%. This is an excellent result using Metals Finance's already developed flowsheet, though we expect the Barrier Bay technology to substantially enhance even this excellent outcome." In addition, the Barrier Bay technology is currently undergoing large scale pilot testing on a solution generated by the Barnes Hill leach program. If commercially proven, it has the potential to reduce operating costs to approximately US\$3/lb from significantly reducing the project's acid consumption. Site works at the Barnes Hill project for building the mine and processing plant are targeted to commence by the end of the year subject to the approvals being in place.

### ***Iron Ore Resource Assessment***

On 6 February 2012 Proto announced that work is continuing on the iron ore potential of the Barnes Hill nickel project. Barnes Hill has been commercially mined in the past for both iron ore and chromite, and a local historian has recently made public research strongly suggesting that Barnes Hill was both Australia's first iron ore and metallic mine. Figure 1 below shows the Barnes Hill ironstone.



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*Figure 1 – Barnes Hill area ironstone (left: in stock, right: on collection)*

The mine was found in 1804 by Lieutenant Colonel William Patterson who made use of drilling equipment supplied and paid for by Sir Joseph Banks, who assessed mineral samples from Barnes Hill that were sent back to him in the early 19<sup>th</sup> century.

The Barnes Hill development contains several distinct classes of iron ore species that are hosted across the domains of the nickel laterite resource and reserve already defined at Barnes Hill. These include (1) an ironstone cap that sits in the uppermost layers, and two forms of limonitic iron ore, being (2) a higher iron grade less friable limonite with a relatively lower clay content and (3) a lower grade more friable limonite with a higher content of orange/yellow ochreous clay that is the main host of nickel at Barnes Hill. This material has already been drill tested through the 641 drill holes that Proto has completed at Barnes Hill as well as the 73 historic drill holes.

As announced on 16 February 2012, Proto commenced analytical work on the upgrading of limonitic iron ore found at Barnes Hill. This pre-existing drilling database will allow rapid definition of a limonitic iron ore resource once satisfactory upgrading and sales channels are demonstrated. Limonitic material has had a long history as a source of iron ore and Proto firmly believes that limonite will in the future again form an important element of Australian iron-ore production. Chinese producers dominate current limonite mining and have developed well-established technology for processing it.<sup>1</sup>

Proto is also continuing testwork on the ironstone cap that lies above the limonite across parts of Barnes Hill. Proto has already drilled an area containing 3,040,076 tonnes of this caprock and plans to estimate and release a JORC-compliant resource once beneficiation testwork is completed. The testwork aims to rigorously show that commercial grades can be achieved and that gangue waste rock can be efficiently separated out. If these planned studies indicate that a sufficiently attractive product can be produced, then Proto will aim to have an ironstone resource estimated by mid-year, which would be followed later by a limonite resource estimation program later in the year.

As subsequently announced, the iron caprock material is a lump mixture of haematite-goethite-limonite up to approximately 30cm in size. Proto has been encouraged to undertake testwork as aircore drill holes BHA140, 552 and 553 delivered assays of Fe<sub>2</sub>O<sub>3</sub> up to 61.2% within the upper few metres of the holes.

Proto had already sourced ferruginous caprock and ferruginous laterite materials for testing from the January 2011 Reverse Circulation drilling program and through subsequent collection of two tonnes of bulk sample from two specific sites in October 2011. This consisted primarily of weathered hematite ironstone with minor goethite and limonite. This is an economically strong proposition given the negligible incremental mining costs involved, as the majority of the iron ore would, by necessity, need to be moved for the mining of the nickel laterite deposit.

Towards the end of the quarter, Proto's geological team collected selective representative samples from previously drilled material from the aircore and diamond programs performed in 2010 and 2011. Tasfreight in Launceston then shipped a bulka-bag containing Fe-samples (approximately 150kg) from Proto's field office in Beauty Point to Robbins Metallurgical Services in Queensland, where the required work will be undertaken with guidance from specialists at Metals Finance's Queensland headquarters.

<sup>1</sup> [http://en.cnki.com.cn/Article\\_en/CJFDTOTAL-ZGKA200605013.htm](http://en.cnki.com.cn/Article_en/CJFDTOTAL-ZGKA200605013.htm)

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### **Electricity Connection**

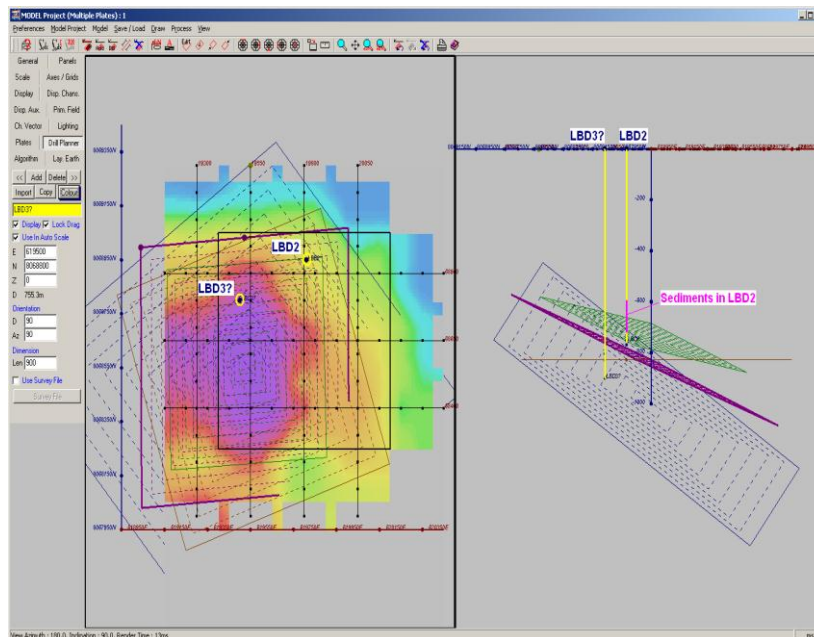
On 13 January 2012, Proto released an update on electricity provision for the Barnes Hill proposed mine. This noted that in late December 2011 Proto had formally lodged a revised connection enquiry request with Transend, the Tasmanian transmission network operator. The enquiry sets firm usage parameters in relation to the Barnes Hill nickel-cobalt project located approximately 5 km west of Beaconsfield, Tasmania. The power usage at Barnes Hill will enable the extraction of iron and magnesium products in addition to the nickel and cobalt produced, enhancing project economics and drastically reducing the environmental footprint.

The estimated maximum power demand for the site is 22.5MW (approximately 25MVA) on expected energy consumption of approximately 16 GWh per month. The electrolytic processing plant will involve four stages, each with various stack configurations of electrolytic cells. These electrolytic cells will be supplied via rectifiers and this will comprise approximately 85% of the connected load at Barnes Hill. Transend has advised that it explicitly recognises that electricity infrastructure for mining needs to be location suitable and constructed to a specification that reflects the life of the mine.

### **Lindeman's Bore, NT (Nickel Sulphide, Copper and PGEs)**

On 23 March 2012, Proto recommenced drilling of the deep diamond hole at the Company's Lindeman's Bore project located 380km southwest of Katherine in the Northern Territory. Drilling was postponed due to the onset of the wet season but was able to recommence once Proto put in place appropriate logistics to support commencement including a pumped water supply and appropriate land transportation.

LBD-3 recommenced from the previously drilled 109m with the geophysical target modelled at between 250m and 350m. The location of the geophysical electromagnetic ("EM") target and LBD-3 is shown relative to hole LBD-2 in Figure 2 below.



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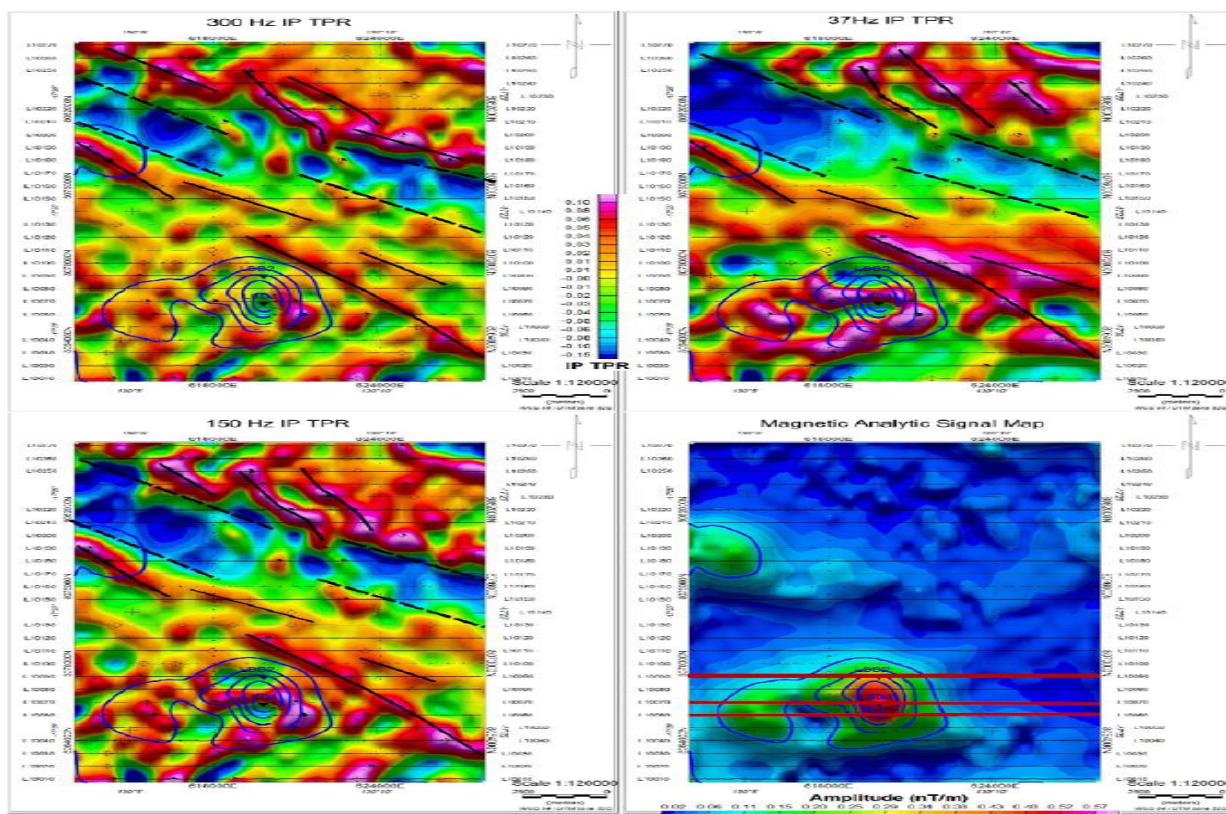
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**Figure 2 – EM Geophysical target at LBD-3**

The core recovered from the first 109m consisted of fine grained laminated carbonate rich sediments interpreted to be correlated to the Mallabah Dolostone. This unit lies stratigraphically above the Invermay Metamorphics in which the modelled EM target is potentially hosted. The Invermay Metamorphics are metasedimentary rocks that consist of a heterogeneous series of low grade metamorphic carbonate-rich sedimentary rocks including relatively common carbonate breccias, minor mudstone and sandstone.

Proto considered that the tabular 500m by 500m EM anomaly was potentially sulphide bearing and geophysical signatures of the target are presented in Figure 3 below. Minor chalcopyrite mineralisation developed in vuggy silicified dolomitic siltstone was intersected in drill hole LBD01 in the Limbunya Group between 385-396m and Proto considered that the EM conductor at LBD03 may represent similar but stronger mineralisation of this Mississippi style and hence represented a potential target model.

Drill hole intersected un-mineralised shallow marine mudstones and siltstones of the Limbunya Group from 0-341m before passing into Invermay Metamorphics below an unconformity at 341m to the end of hole at 466.6m. The Invermay Metamorphics consist of a complex mix of metamorphosed black shales and metavolcanics. In LBD03 the metavolcanic rocks dominate and are interpreted to be metabasalt flows and possibly some doleritic sills.



**Figure 3 – ZTEM – In-phase TPR Geophysical at target LBD3**

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As announced on 12 April 2012 the hole intersected strong quartz-carbonate-chlorite-hematite-sericite alteration co-incident with a strong vertical shear foliation with the alteration developed along the foliation. Three mineralised zones were intersected between 385-430m and particularly a 20m section of quartz/carbonate stringers in foliated and chloritic mafic rock that contained pyrite and chalcopyrite from 385m.

Proto Resources is very pleased with the results of LDB-3, and believes that the Company may have intersected the Western edge of a large hydrothermal system. The assays from LBD-3 are pending. Depending on the results, Proto is planning on ground geophysical surveys prior to a fourth angled hole into the centre of the EM anomaly.

### ***Doolgunna Projects, WA (Copper, Gold and Lead)***

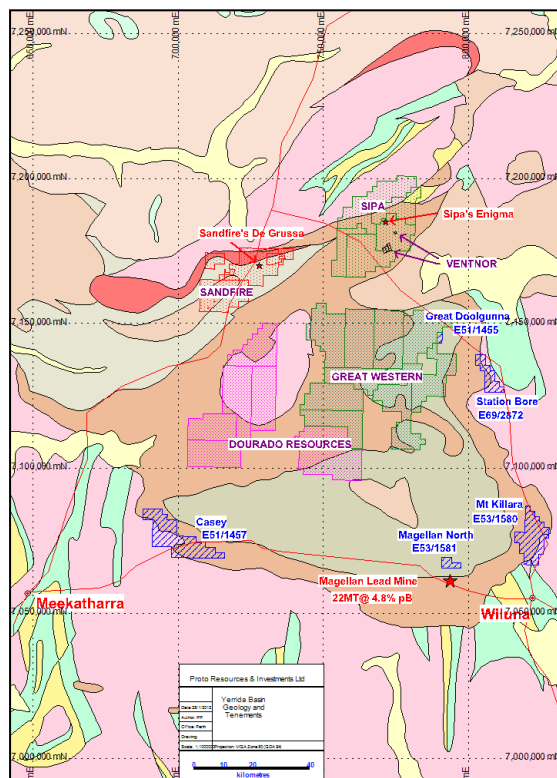
On 7 March 2012 Proto announced plans to undertake first work on its Yerrida Basin tenements. The work covers five licenses originally applied for in 2010, being Mt Killara (E53/1580), Magellan North (E53/1581), Casey (E51/1457), Great Doolgunna (E51/1455) and Station Bore (E69/2872).

Just after the end of the quarter on 3 April 2012, Proto was able to announce that these detailed aerial magnetic and radiometric surveys have been completed on the Company's tenements on the southern and eastern margins of the Yerrida Basin. The fifth license at Station Bore (E69/2872) was granted, in time to also be included in this work, along with the previously granted four licenses originally applied for in 2010, being Mt Killara (E53/1580), Magellan North (E53/1581), Casey (E51/1457) and Great Doolgunna (E51/1455). These tenements are shown in relation to surrounding ones in Figure 4 below. The Company is looking to commence ground work almost immediately, and hopes to prepare drill targets for the second half of this year.





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**Figure 4 – Yerrida Basin Tenement Locations**

Proto will be exploring these tenements in pursuit of copper and gold mineralisation associated with hydrothermal or volcanic massive sulphide events directly and in joint venture. Proto believes that a significant portion of the broader region is prospective for Sandfire-style mineralisation as other companies, such as Sipa Resources Limited (ASX: SRI), Ventnor Resources Ltd (ASX: VRX) and Dourado Resources Limited (ASX: DUO), have already returned promising results in nearby drilling. Proto is targeting copper as its secondary focus (after nickel) on the basis of its commercial potential and strong forward outlook.

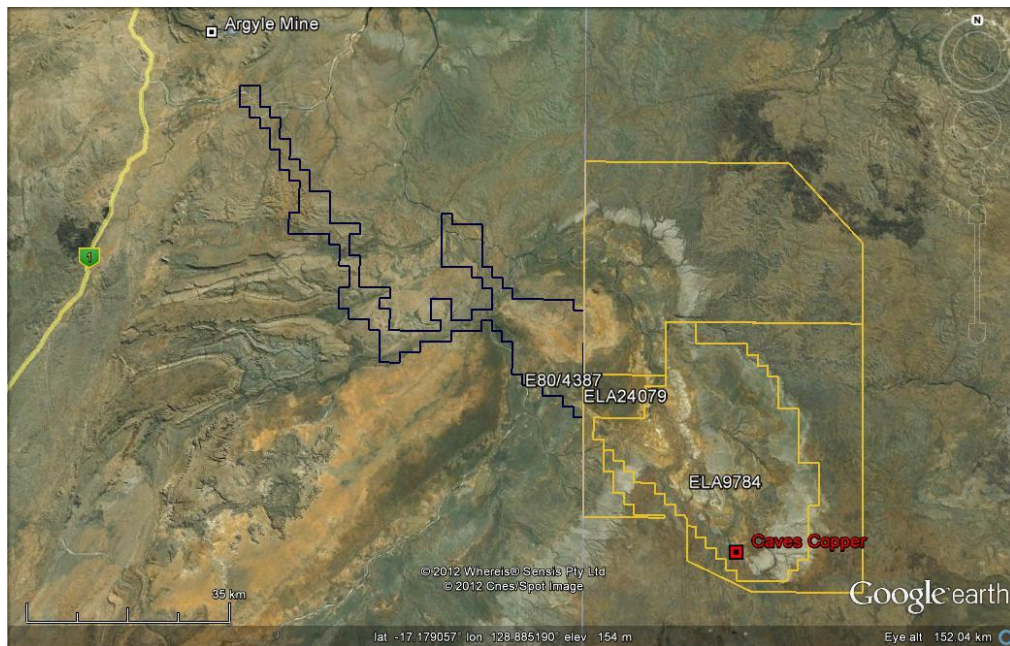
**Argyle Corridor and Ord Basin East (Copper, Gold and PGEs)**

On 16 March 2012, Proto announced that it had entered into a six month option agreement to acquire a 70% interest in a substantial ground holding in the Ord Basin of the Northern Territory and Western Australia. The agreement is between Uramin Pty Ltd over ELA80/4387 in Western Australia and adjoining ELA24079 and ELA9784 held by Kimberley Mining Pty Ltd in the Northern Territory (see Figure 5). In total the ground holdings cover an area of 1648km<sup>2</sup>. All three tenements have considerable synergies with Proto's existing extensive landholding in the Northern Territory with Proto's Waterloo and Lindeman's Bore Projects located respectively to the north and east of ELA's 24079 and 9784. Once the option is exercised, Proto will not only have a commanding position in the Northern Territory in exploring for Norilsk-Talnakh type Ni-Cu deposits but will also expand its potential for Keeweenawan Cu style mineralisation.

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**Figure 5 – Location of E80/4387 and ELA's 24079 and 9784**

Proto has entered into a staged option, where Proto makes an initial non-refundable option payment to conduct on-the-ground due diligence and initial geochemical assessment. Under the option, Proto has the right to purchase a 70% interest in the Argyle Corridor/Ord Basin East Project on acquisition payment within six months of the signing of the Option Agreement. License details are listed in the table below:

| Project         | Tenement     | Km <sup>2</sup> | State |
|-----------------|--------------|-----------------|-------|
| Argyle Corridor | ELA9784      | 956             | NT    |
| Ord East Basin  | ELA24079     | 165             | NT    |
| Ord East Basin  | E80/4387     | 527             | WA    |
|                 | <b>Total</b> | <b>1648</b>     |       |

The three tenements cover the Panton sub-basin of the Ord Basin; a sequence of marine shelf limestone and shale of the late Cambrian Negri subgroup which in turn is overlain by intertidal and fluvial sands of the Elder subgroup. The sediments overlie an early Cambrian basement of tholeiitic basalt of the Antrim Plateau Volcanics. The basalts are extensive across this part of northern Australia but are thickest in this area, suggesting that the Ord Basin may have developed over a major eruptive centre associated with extension and rifting, enhancing the potential for Norilsk-Talnakh style Cu-Ni mineralisation. The emphasis on this area has been confirmed by work performed by Proto's specialist vulcanologist, Dr Mike Widdowson, who is currently under secondment to Proto from the Open University in the United Kingdom.

The genesis of the Panton sub-basin with attendant inter-cratonic extensional tectonics, rifting, graben formation, major basic volcanism and reactive rock types provide the potential for a number of styles of

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mineralisation. In addition to the potential for Norilsk-Talnakh style Cu-Ni mineralisation, the juxtaposition of the thick sequence of Antrim Plateau Volcanics in contact with reactive rock types such as the limestone and sulphidic shales of the Negri subgroup adjacent to major structures such as the Negri Fault provide the potential for analogues of the Keeweenawan Cu deposits in the northern USA.

This potential has been demonstrated historically by a number of exploration companies including Metals Exploration NL, Amoco Minerals Australia Ltd and CRA Exploration Ltd amongst others. Copper mineralisation in the form of native copper filling vesicles in basalt flow tops and as secondary copper within limestone and shale sequences has been noted in numerous locations within the Panton sub-basin. To date none of these occurrences has proved economic although significant grades were reported by Metals Exploration NL from the Caves Prospect that locates within ELA9784, which returned drill hole assays of 2.0% Cu over 33 feet from both vesicle-filling and disseminated and veinlet malachite and chalcocite mineralisation within the basalt of the Antrim Plateau Volcanics. Similar mineralisation was reported by Amoco Minerals from the Bigley Springs prospect where drill intercepts of 1m @ 0.62%Cu, 2m @ 1.7% Cu and 5m @ 0.62% Cu were reported.

Previous exploration has included significant geochemical programs by Metals Exploration, CRA, and Burdekin Resources Ltd, which have confirmed the extensive nature of copper mineralisation within the Panton sub-basin, with drainage copper anomalies, sometimes associated with visible copper mineralisation, extending over tens of kilometres. These anomalies and the extensions of these surveys into untested but prospective stratigraphy provide an immediate focus for future exploration.

### **Corporate Activities**

During the quarter, Proto continued to develop its corporate strategy of gaining its first earnings from the Barnes Hill nickel-cobalt-iron project. In addition to this, the Company continued to look at new projects to strengthen the project pipeline for the commencement of Company earnings. A strong project pipeline will help the Company to grow swiftly and allow capital expenditure to date to be properly harnessed by applying the knowledge gained through this process to other projects that can be developed more quickly and cheaply. Proto also continued its new focus on copper and gold, by continuing vigorous exploration in the Northern Territory and Western Australia where the Company hopes to have a significant discovery as a result of this on-going work, The Company also continued its policy of partnering with tertiary institutions, and technical consulting groups to further increase the knowledge base from which the Company has to draw on.

On 17 January 2012, Proto announced that the Company would make a pro rata non-renounceable offer of up to 235,285,351 New Options at an issue price of \$0.004 (0.4 cents) per New Option. The New Options offered will be listed Options, have an exercise price of \$0.05 (5 cents) and an expiry date of 1 September 2014. On 24 February 2012, Proto was able to announce that the offer had closed and that the shortfall of the issue (being 173,855,253 Options) was oversubscribed, with very strong international interest from Germany and Switzerland as well as Australia. The entire entitlement issue was placed in accordance with section 1.9 of the Prospectus.

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## **Competent Persons Statement**

*The information in this release that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Carl Swensson, who is a Member of the Australasian Institute of Mining & Metallurgy. Mr Swensson is a director of Swensson Integrated Resource Management Services and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Swensson consents to the inclusion in the release of the matters based on his information in the form and context in which it appears.*

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