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QUARTERLY ACTIVITIES REPORT: QUARTER ENDED 30 JUNE 2011

HIGHLIGHTS

- Discovery of outcropping Archaean ultramafic/metabasalt closely associated with two adjacent VTEM anomalies (PMVA 4 and 5) in exploration licence E47/1097
- This discovery is prospective for komatiite-hosted Ni-Cu sulphide mineralisation and now has high priority for detailed exploration
- Ground EM surveys were completed over four airborne VTEM anomalies
- These ground EM surveys defined two probable Archaean-hosted basemetal sulphide conductors (PMVA 1 and 2) in exploration licence E47/1097; the shallower body (PMVA 2) is potentially an early-stage drill target
- First stage Heritage Agreement has been concluded with Ngaluma Corporation over the majority of Pilbara's tenements
- Pilbara has obtained sole access to proprietary geological mapping of the Fortescue Group and is using this and its VTEM and aeromagnetic database to explore for potential metalliferous sulphide targets in major igneous complexes of the Fortescue Group

CORPORATE

TENEMENTS (refer Figure 1, attached)

Subsequent to compulsory surrenders made during this June 2011 quarter, Pilbara Minerals Limited now holds 100% interests in 13 granted exploration licences totalling 464 blocks (approximately 1,490 km^2) in the West Pilbara Mining District, northwestern Western Australia.

The Company is the 100% applicant for three exploration licences in the same district; in December 2010, Application for Exploration Licence 47/2261 was recommended for granting. This application (area 41.7 km^2) includes a 3.5 km section of the eastern extension of the magnetic feature associated with the Mount Oscar iron deposit.

HERITAGE AGREEMENT COMPLETED

The Company has recently concluded a Heritage Agreement with Native Title Holders Ngaluma Corporation which provides for non ground-disturbing operations. This enables immediate access for ground geophysical surveys to follow up further high-priority EM targets identified by the 2010

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airborne VTEM survey. The Ngaluma Corporation owns native title over all the Company's exploration licences except for E47/1097, the most westerly licence.

Negotiations continue with Native Title Claimants Yaburara Coastal Marthudunera and Kuruma Marthudunera in relation to ground-disturbing exploration activities on exploration licence E47/1097.

EXPLORATION ACTIVITIES

WEST PILBARA PROJECT (W.A.)

Exploration Concepts

Pilbara Minerals is exploring for metallic mineral deposits in Archaean greenstone- sequences that underlie the widespread mostly flat-lying cover rocks of the Late Archaean Fortescue Group. Some of the targeted deposit types and examples elsewhere in the West Pilbara are:

- volcanogenic massive sulphide deposits (potentially Cu-Zn-Au-Ag) e.g. Whim Creek
- layered basic intrusives (potentially Ni-Cu-PGM) e.g. Munni Munni, Radio Hill, Mt Sholl
- magnetite-bearing sequences (potentially Fe) e.g. Mt Oscar

Airborne Geophysical Targets

As previously reported, 13 primary and high priority targets have been identified from the airborne magnetic and VTEM (versatile time domain electromagnetics) surveys flown in 2010.

The targeted conductive anomalies are estimated to lie at depths below surface of 100m to >300m. Two of the VTEM anomalies are now known to occur in areas of Archaean greenstone outcrop, the other prospective targets are covered by sub-horizontal Fortescue Group volcanics and sediments ranging from <100m to >200m thick.

Ground Geophysical and Geological Surveys of VTEM Targets

Ground geophysical surveys are used to model the conductive bodies and to define locations and depths of drill targets. Pilbara plans to drill the more prospective anomalies as soon as is practicable. Extended wet weather and high river levels prevented access to the targeted anomalies until late May.

In May and June, geophysical contractors carried out fixed loop TEM (time domain electromagnetic) ground surveys over four VTEM anomalies (PMVA 1, 2, 4 and 5) located in the southern part of exploration licence E47/1097 and approximately 30km north of Pannawonica township.

In late June, Pilbara Minerals geologists conducted ground and aerial reconnaissance of several of the targeted VTEM anomalies.

Discovery of Archaean outcrop in the area of anomalies PMVA 4 and 5 (refer Figure 2, attached)

During June, geological reconnaissance and aeromagnetic interpretation clearly showed that both of these VTEM anomalies occur in a geological setting that is particularly prospective for Kambalda style Ni-Cu mineralisation hosted by komatiite ultramafic flows in Archaean greenstones.

Pilbara Minerals is very encouraged by the discovery of exposed Archaean rocks which have significant geological potential for base metal mineralisation; this is a particularly important development in the Company's West Pilbara exploration programme.

VTEM anomalies PMVA 4 and PMVA 5 which are two km apart, are associated with outcrops of Archaean ultramafics and basic metavolcanics exposed in the flanks of the Fortescue River valley. These greenstone outcrops occur within a window of approximately 4 km x 2 km area which is surrounded by younger Fortescue Group rocks. The Archaean rocks are moderately to strongly magnetic and are readily identified and traced by aeromagnetics.

The PMVA 4 anomaly and an adjacent magnetic feature extends along a northeast-striking contact of serpentinised ultramafics and metabasalt/gabbro outcrops that appear to be well exposed over a strike length of about 1,500m.

VTEM anomaly PMVA 5, though mostly alluvium covered, is sub-parallel to a linear magnetic feature that is interpreted to correlate with the PMVA 4 host sequence.

Ground TEM surveys have recently been carried out over both PMVA 4 and PMVA 5. Some inconsistencies have shown up between the outcomes of the aerial and the ground geophysical survey datasets and the data are being re-interpreted. Local field tests have been carried out and laboratory geophysical measurements are underway.

Pilbara Minerals' immediate focus of exploration is this recently recognised Archaean ultramafic/metavolcanic sequence and its associated geophysical anomalies. In the next few weeks, the Company will carry out detailed geochemical sampling and geological mapping over the entire PMVA 4 - 5 area in order to systematically explore and assess the potential for Ni-Cu sulphide mineralisation.

Anomalies PMVA 1 and PMVA 2 (refer Figure 2, attached)

At PMVA 1, preliminary geophysical assessment and modelling of the recent ground TEM survey shows a well- defined bedrock conductor situated in an interesting position at a depth of 350m-400m. It is associated with a more deeply seated magnetic intrusive body that extends some five km to the southwest. The conductive body is shallow dipping, approximately 350m x 700m in area and has a conductance consistent with significant concentrations of pyrite/base metal sulphides.

About 3 km east of PMVA 1, initial geophysical modelling of the PMVA 2 ground TEM survey results have defined a weak bedrock conductor with a depth to source of 150-175m. The body dips 20^{O}-30^{O} northwestward and is approximately 250m x 350m in size. Its conductivity is similar to that of PMVA 1 (indicative of significant sulphide concentrations) and it lies on the northeast extension of the deep magnetic body associated with PMVA 1.

In geophysical terms, the PMVA 1 and PMVA 2 conductors appear to resemble the Archaean bedrock conductors at the West Whundo, Radio Hill and Mt Sholl basemetal deposits that are located some 70-80 km northeastward. Both conductive bodies are covered by basaltic flows of the Fortescue Group. The moderate dip and the conductivity of the smaller PMVA 2 conductor are indicative of a sulphidic body hosted within folded Archaean rocks. Given its relatively shallow depth (approximately 150m) this is a potentially attractive base metal sulphide drill target under relatively shallow Fortescue cover.

Depth to the Fortescue - Archaean contact is variable in this area and it is possible that the deeper PMVA 1 body occurs within Archaean bedrock. If so, it is a likely base metal sulphide body but, at a

depth of 350m or more, is presently considered a low priority drill target. Alternatively, if the Fortescue Group is more than 350m thick, the anomaly could be due to conductive basal sediments; this is expected to be resolved as further geological data comes to hand.

Decisions and plans for drilling the PMVA 2 target and possibly others at PMVA 4 and 5, are expected to be made around the end of the current quarter, following completion of the current geophysical and geological exploration programmes.

New Target Concepts and Geological - Geophysical Interpretations

The Company is progressing its interpretation of proprietary un-published geological information relating to the Fortescue Group rocks of the Pilbara region.

New and developing geological insights into the Fortescue Group, are being integrated with the Company's proprietary multi-source geophysical survey data. There is excellent potential to generate a second set of economically significant base and precious metal exploration targets within the existing tenement package.

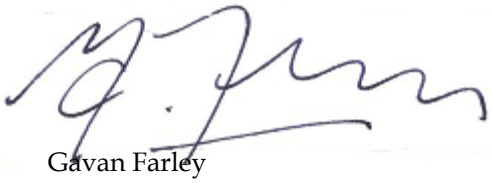
Thus, in addition to its initial concept of exploring for massive sulphide bodies in the Archaean basement sequence, Pilbara is utilising the same geophysical data to locate potential metalliferous sulphide targets in major igneous complexes within the overlying Fortescue Group sequence.

NEW PROJECTS

Pilbara continues to seek to acquire an interest in a "company maker" mineral project having good prospects for near-term development. This would support and complement the Company's greenfields exploration programmes in the Pilbara Region.

The Company continues to receive and appraise a range of offerings from a variety of sources both local and international.

At this time, Pilbara's principal commodity focus is on base metals, particularly copper, and gold-silver. Regions of significant interest include Western Australia, South America and southern Africa.



Gavan Farley
Director

The information pertaining to the technical content of this announcement has been compiled by Robert (Bob) Adamson, B.Sc., M.Sc. (Hons Geol), MAusIMM, CP (Geo). Mr Adamson is the principal of Robert G Adamson Consultants and a director of Pilbara Minerals Limited and has sufficient experience which is 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 December 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (The JORC Code). Mr Adamson consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

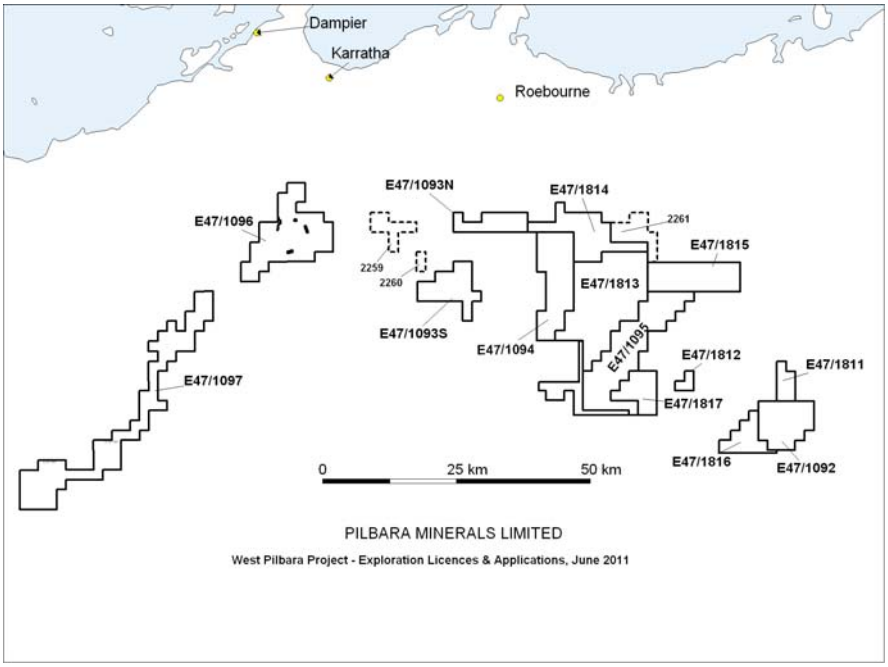


FIGURE 1

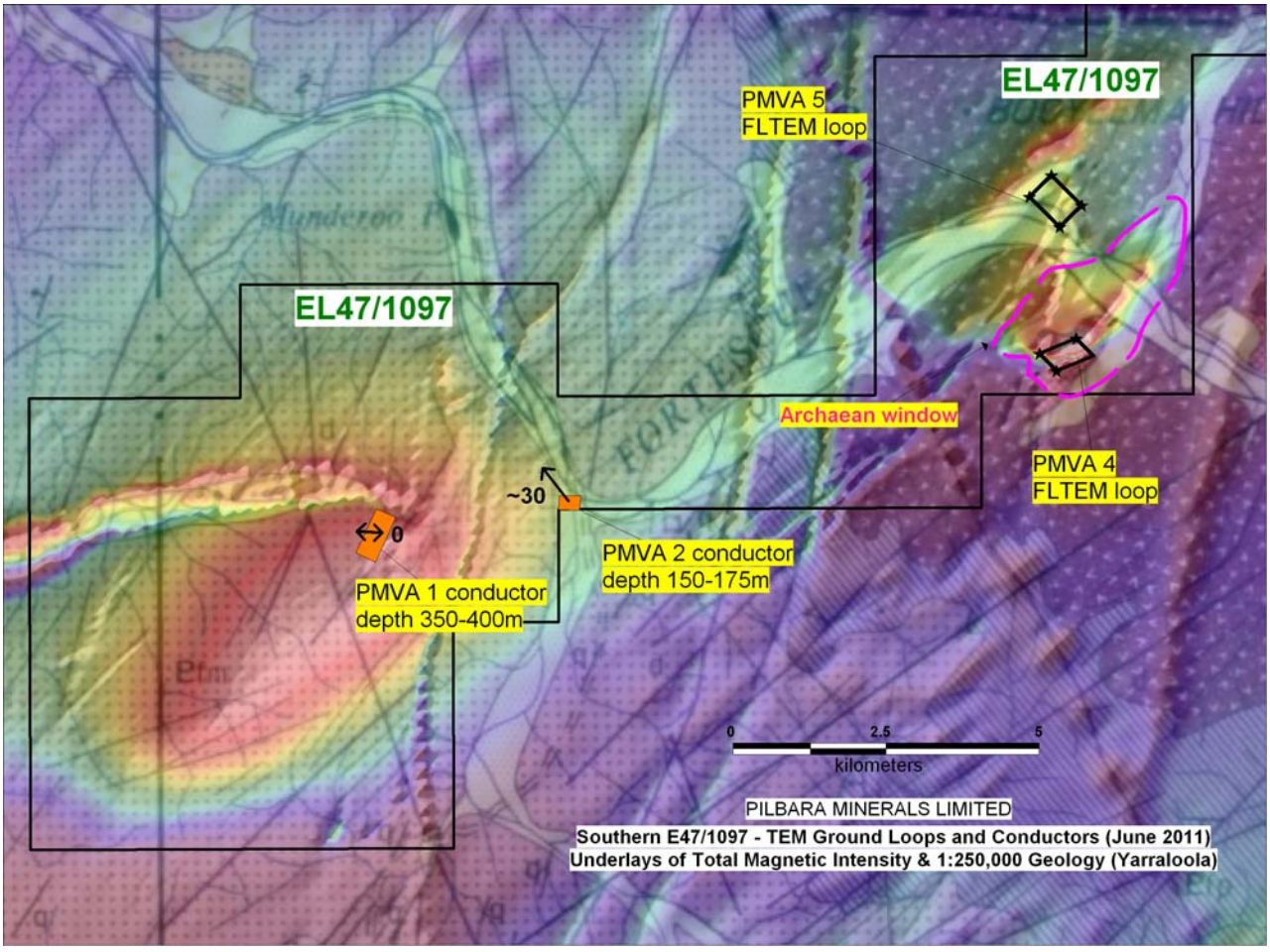


FIGURE 2