

ASX Limited Company Announcements Office Announcement

25th March 2010

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### Gold Mineralised System (5km x 4km) Confirmed by Grid Based Soil Assays Andewa Project, Papua New Guinea

- Frontier Resources Ltd is extremely pleased to announce assay results from 21 sq km of grid based soil sampling that was conducted from mid to late 2010 at EL 1345 - Andewa.
- The 4,530 soil assays have confirmed that a very large scale gold mineralised system is present.
- Gold, copper, molybdenum, arsenic and antimony in soils are coincident (variably) with the high chargeability zones at 50m below topography and to depth.
- Conductive zones have been defined indicating the probability of semi-massive sulphides.
- Systematic drilling within the mineralised system is scheduled for May and has a high probability of ultimately demonstrating a World Class gold and/or gold-copper-molybdenum deposit.
- Andewa has good access by sea from the nearby port of Kimbe and requires only one bridge for land access by road. Strong relationships have been built with landowners living on the coast but it is noted that there are no permanent villages in or near the gridded area.
  - The total extent of the relatively cohesive gold in soil anomaly at the 0.02 g/t gold (20ppb) cutoff is in excess of 5km long (east to west) and 4 km wide (north to south) (refer to figure 2).
  - Peak soil assay grades were 18.9 g/t gold and 0.19% copper.
  - About 44% of the total samples are classified as anomalous (greater than 0.02 g/t gold) and cover an area of about 9.3 sq km or 44% of the gridded area.
  - About 11.3% of the assays and area noted above are moderately anomalous (0.05 to 0.10g/t gold) and cover an area of 2.4 sq km and an <u>additional 5.1%</u> of assays are strongly mineralised (greater than 0.10 g/t gold) and cover an additional area of about 1.1 sq km.
  - There is a very strong multi-element soil anomaly in the NE sector of the grid corresponding to an extensive near and on surface chargeability anomaly.
  - The area above has the strongest and most extensive gold in soil recorded on the gridded area and it also contains extensive and moderate to very strong copper, molybdenum, arsenic and antimony mineralisation indicative of epithermal and /or porphyry copper-gold-molybdenum mineralisation.
  - The main or central gold anomaly trends pseudo east west then turns to the north east. This anomaly is in excess of 5km long north east to south west at over 0.05 g/t gold (50 ppb).
  - There are 2 additional major gold in soil anomalies (over 0.05 g/t gold) that are approximately
    1.5km long and another that is approximately 1km long. The anomalies generally appear to

trend north easterly. In addition, there are eight multi-line /multi-point soil anomalies that warrant follow-up.

- The highest tenor and longest gold intercepts demonstrated by the grid based soil sampling were 425m of 0.46 g/t gold + 400 ppm copper, 800m of 0.12 g/t gold + 226 ppm copper, 275m of 0.21 g/t gold + 586 ppm copper, 525m of 0.12 g/t gold + 279 ppm copper and 800m of 0.09 g/t gold + 184 ppm copper, in different sectors of the grid. There are many additional significant intercepts.
- The gold in soil anomalies corresponds to the chargeability at 50m below topography quite well, but there are exceptions (as divergence as to be expected refer to figure 3).
- Gold in soils plotted on the 400m below topography chargeability plan also show generally good correlation between the chargeability anomalies and the higher tenor gold in soil results (see figure 4 and associated discussion).
- Gold in soil assays are plotted on an image of resistivity 50m below topography (figure 5) and some significant gold anomalies correspond to the shoulders of the highly resistive zones, but other strong gold anomalies appear to have an inverse relationship to the resistivity.
- Only very limited areas of the grid were below gold detection limits (they were not gold anomalous at all), which is very encouraging.
- The copper in soil anomaly is relatively coincident with the gold anomaly (at greater than 150 ppm and 0.05 g/t, respectively) and there is a good general correlation between higher tenor copper and higher tenor gold zones (that are greater than 300ppm and 0.1 g/t, respectively -see figure 6). Copper shows a generally inverse relationship with resistivity.

Chairman / Managing Director Peter McNeil M.Sc. commented:

Frontier's exploration in 2010, subsequent to announcing the OTML JV, focussed solely on the Andewa licence. The enormous 3D-IP grid that we completed was a calculated risk during a time of global uncertainty. The program was remarkably successful and has now rewarded directors and shareholders for their faith in the concept and the project.

Andewa's geological / structural location is conceptually identical to Lihir's (based on my own experience working there) and Frontier have now geochemically and geophysically demonstrated the <u>potential</u> for a similar, large scale World Class epithermal gold deposit.

Frontier's drilling on this highly prospective project area will now commence later in May due to shipping issues. I await this program with anticipation and plan to be onsite initially to supervise the drilling.

The 3D-IP geophysical program demonstrated 3 very strong to intense chargeability anomalies covering a total area of 7 sq km, plus numerous related and proximal (or coincident) resistivity and conductivity anomalies that warrant drilling in their own right.

Rock chip-channel outcrop sample results recently released demonstrated gold mineralisation on surface that was widely distributed throughout the gridded area. This scattering of outcrops is partly to mostly due to their limited occurrences, that are normally restricted to creeks. Two highly significant outcrops were discovered and sampled, returning intercepts including 15m grading 15.48 g/t gold. Significant higher grade silver was also noted locally.

The high gold and silver assays in rocks are likely related to structurally controlled, epithermal gold / silver mineralisation and further at depth to other deposit variants including possible 'telescoped' porphyry copper-gold-molybdenum mineralisation. However, the true nature of both the geophysical and geochemical anomalies at Mt Andewa can only be determined via mechanical surface trenching and subsequent diamond core drilling. Frontier has begun planning for this next phase of the operation.

Hand trenching of conductivity anomalies (likely representing concentrations of semi-massive sulphides as opposed to chargeability anomalies that likely represent disseminated sulphide) and

gold anomalies is currently being undertaken, along with infill soil sampling to better define the gold anomalous zones and assist in discriminating drilling targets.

The Andewa gold in soil anomaly, as it is now known, is 9.3 sq km and is the largest in extent or total area I have ever worked upon. The strongly mineralised soils cover a total area of approximately 1.2 sq km and peak at 18 g/t gold. The generally high tenor of the soils is very interesting because only 6% or about 1.2 sqkm of the 21 sq km grid were below the limits of detection [BDL]. This is a very low ratio for an enormous soil grid in PNG), which means 94% of the grid is to some level gold anomalous.

There is locally good correlation between higher tenor soil assays and higher chargeability zones, with the very low chargeability zones virtually always very weakly or unmineralised. This is very encouraging for the probability of demonstrating mineralisation associated with the chargeability anomalies (because the gold in soils have already correlated well to them.

Much of the gold anomalous area within the Andewa crater has now been adequately defined in my opinion for first pass exploration. However, both the geophysical and the soil + rock geochemical anomalies extend of the grid in the south-east and south-central sectors, indicating that additional follow up grid based soil sampling and 3D-IP will be eventually required to fully close off the mineralised system within the crater area.

SRTM Figure 1. (Shuttle Radar Topography Mission) topographic image showing the location of the Andewa Exploration Licence and the surrounding Mt Exploration Schrader Licence Application in West New Britain Province. Frontier's Likuruanga EL and East and Central New Britain EL applications in Joint Venture with Ok Tedi Mining Ltd are also shown on the plan.



### Table 1.

Approximate statistics relating to the grid based gold in soil assays.

Significantly, 45% of the total samples are classified as anomalous (greater than 0.02 g/t gold) and cover an area of about 9.3 sq km or 44% of the gridded area.

About 11% of the assays are moderately anomalous (0.05 to 0.10g/t gold) and cover an area of 2.4 sq km. An additional **5.1**% are strongly mineralised (greater than 0.10 g/t gold) and cover an area of 1.1 sq km.

Soil Assay Range (g/t gold)		Number of	Percentage	Approximate
From	То	Samples	of lotal	Area (sq km)
>1.0		10	0.2%	0.05
0.50	1.00	14	0.3%	0.06
0.10	0.50	210	4.6%	0.97
0.05	0.10	514	11.3%	2.4
0.02	0.05	1247	27.5%	5.8
BDL	0.02	2534	56.0%	11.7

Figure 2.

Individual gold in soil assays at the Andewa Project plotted on a thematic contoured image of the gold results (inverse distance algorithm), showing the location and major trends of the mineralised zones.

Note that 0.02 g/t gold (20 ppb) was chosen as the base mineralised threshold to define the total extent of the system and this is represented basically by light green and hotter colours (blue is NOT mineralised).

economically The significant areas however are greater than 0.05 g/t gold (50 ppb) and particularly greater than 0.10 g/t gold (100ppb); these zones are represented basically by yellow and hotter colours and by orange and hotter colours, respectively.



Figure 3.

Gold in soil assay value ranges plotted as coloured dots on an image of chargeability at 50m below topography.

Note that there is locally good correlation between higher tenor soil assays and higher chargeable zones, but it is not a 1:1 correlation.

The zones that are NOT anomalous in soils generally have a very good correlation with very low chargeability zones.

This is very encouraging for the probability of demonstrating mineralisation associated with the chargeability anomalies, because the soils already do such.



Figure 4. Gold in soil assays at the Andewa Project on an image of chargeability 400m below topography.

There is good general correlation between higher tenor soil assays and higher tenor chargeable zones.

The gold anomalies at the Ekhos Zone (in the east) correspond very well to the subsurface highly chargeable zone.

The large cohesive anomaly in the central west appears to have a zone with no gold in soil anomalism above it, however, this is only as the apparent, chargeable zone dips to the north-east from the surface further to the south-west and hence it plunges under the zone with no gold anomalies.



Figure 5. Gold in soil assays on an image of resistivity 50m topography. Note that there are some significant gold anomalies correspond to shoulders of the highly resistive zones, but other strong anomalies such as in the north-east of the grid, appear to have an inverse relationship to the resistivity (i.e. assays the strongest where the resistivity is weakest). FOI DEIS



Figure 6.

Copper in soil assays on an image of chargeability 50m below topography.

There is a reasonable correlation between stronger copper assays and stronger chargeability zones.



Figure 7.

Very tightly located molybdenum in soil assays.

There is a good correlation between stronger assays, molybdenum and arsenic assays and a major NW trending chargeability zone. Elevated molybdenum assays can be indicative of porphyry mineralisation and is a useful vector. FOI DEIS



For additional information relating to Frontier Resources please visit our website at <u>www.frontierresources.com.au</u> or feel free contact me.

FRONTIER RESOURCES LTD

to MYM

P.A.McNeil, M.Sc. CHAIRMAN / MANAGING DIRECTOR

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by, or compiled under the supervision of Peter A. McNeil - Member of the Aust. Inst. of Geoscientists. Peter McNeil is the Managing Director of Frontier Resources, who consults to the Company. Peter McNeil has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2004 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter McNeil consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

### ABOUT FRONTIER RESOURCES LTD

# FRONTIER IS FOCUSED ON EXPLORING FOR AND DEVELOPING MINERAL DEPOSITS IN THE HIGHLY MINERALISED PACIFIC 'RIM OF FIRE' IN PAPUA NEW GUINEA AND THE HIGHLY PROSPECTIVE DOLCOATH GRANITE AND MT READ VOLCANICS OF TASMANIA, AUSTRALIA

- The Company is an innovative and socially responsible ASX listed junior mineral explorer whose shares also trade on the Frankfurt, Berlin and Munich Stock Exchanges.
- Frontier's Directors have more than 150 years combined experience in PNG and Australia to serve the interests of the company and its shareholders.
- Frontier operates with a general policy of 'DRILLING' our quality projects using our purpose built and self manufactured, cost effective, environmentally friendly, man-portable diamond core rig.
- The Company has a 100% interest in four Exploration Licences (approx. 1,140 km<sup>2</sup>) and three Exploration Licence Applications (approx. 2,212km<sup>2</sup>) in PNG. Three ELs and two ELAs are subject to Joint Ventures with PNG producer Ok Tedi Mining Ltd.
- Frontier also has two Exploration Licences and a Retention Licence (123 km<sup>2</sup>), + three EL Applications and an ERA in Tasmania.
- The tenement portfolio offers excellent mineral deposit potential. Primary targets are World Class copper-gold-molybdenum porphyry, high grade gold epithermal, gold–base metal & tungsten skarns + polymetallic VMS (zinc-lead-silver-gold) deposits.
- The projects <u>all</u> have high-grade exploration results in rock, trenches and/or drill hole and are in the same or similar geological terranes as existing World Class and/or major mines.

#### THE 100% OWNED MT ANDEWA EL IN PNG HAS EXCELLENT GOLD AND COPPER MINERALISATION POTENTIAL

- Frontier undertook a major three dimensional Induced Polarisation (3D-IP) geophysical program over a 21 sq km grid at the Andewa gold and copper Project on the island of New Britain in Papua New Guinea in 2010 and collected in excess of 5,000 soil and rock samples. The soil and rock assays are now being collated for announcement.
- The 3D-IP survey was a remarkable success that showed three exceptionally extensive, voluminous and intense, chargeability anomalies that compellingly demonstrate the presence of very large sulphide systems from on-surface to more than 800m deep...
- The total chargeability anomaly (>30ms) area is approximately seven square kilometres, consisting of three very large, spatially related and intense chargeability anomalies called the Core Chargeability (CCZ), Ber and Ekhos Zones. The Ekhos chargeability anomaly is 3.3 Km<sup>2</sup> in area, the CCZ is 3.0 km<sup>2</sup> and Ber is approximately 0.5 km<sup>2</sup> (at 150m below sea level).
- The total anomalous chargeability area is approximately 5,400m long (E-W) and 3,000 wide (N-S). The Ekhos chargeability anomaly is approximately 3,850m long x 1,750m wide. It averages about 1,000m wide and has a higher grade chargeability core zone that is approximately 2,400m long and 1,000m wide (at >30ms and 400m below topography). The CCZ is approximately 2,900m long (NW to SE) and a maximum of 2,100m wide, averaging 1,000m wide.
- Ekhos is the largest and closest to surface 3D-IP chargeability anomaly at Andewa, with much of it very intense at >45ms; it is open to the south and east but appears defined in general at depth. The CCZ chargeability anomaly is open to the south AND at depth, however, it's very intense core (>45ms) appears to be adequately resolved. The CCZ also has large anomalous areas at >45ms chargeability that extend to depths greater than the 800m modelled maximum.
- Each major chargeability anomaly is surrounded by a sub-circular high-resistivity anomaly that appears to merge near the edge and off the grid, to become one approximately 6km diameter resistivity anomaly in the centre of the Mt Andewa crater, with 'holes' in it where the strong chargeability anomalies exist.

- Frontier has previously drilled gold mineralisation at Komsen on the western margin of the CCZ from surface to a maximum depth of 320m below surface in a limited program, with drill intercepts containing significant gold and base metals such as 2m of 5.43 g/t gold + 95 g/t silver + 11.1% zinc + 2.3% lead + 0.12% copper and 7.9m of 10.01g/t gold.
- Field crews are again in the field conducting infill soil sampling and preparing for a deep drilling program scheduled for May 2011 with our own drilling rigs and crews.

### HIGHLY PROSPECTIVE TENEMENTS AND FRONTIER'S EXPLORATION SUCCESS IN PNG CULMINATED IN AN EXCELLENT STRATEGIC ALLIANCE - JOINT VENTURE WITH WORLD CLASS COPPER PRODUCER OK TEDI MINING LTD (OTML)

- Three ELs and two ELAs are subject to 2 joint ventures that require a total earn-in of US\$60 million over 6 years, consisting of US\$12 million for each of the 5 projects.
- Frontier then has a deferred carry to completion of a Bankable Feasibility Study on each tenement.
- The Company will retain a 42% interest (dilutable) in the Bulago and Leonard Schultz ELs and a 19.9% interest (non-dilutable) in the Likuruanga EL + Central and East New Britain ELAs, to the completion of a Bankable Feasibility Study.
- ✤ The JVs cover a total area of 2,763 km<sup>2</sup>.
- OTML have completed large aeromagnetic and radiometric programs at each EL in the Joint Venture to discriminate and rank targets for follow up exploration, including drilling in 2011.
- OTML is a major producer of copper concentrate from the Ok Tedi mine (that started operations in 1984) and has become the single largest business contributor to the economy of PNG. In 2009, OTML's export earnings were K4 billion, representing 33% of PNG's total export earnings. The contributions of the mine to PNG are not simply economic, with employment, education and health services all facilitated by the mine.

### PNG exploration results from the JV projects have included:

- The Bulago JV has 10 zones of high-grade gold in outcrop channel samples at the Suguma and Funutu Prospects from continuous chip outcrop channel samples. Trench intercepts included 27m of 66.8 g/t gold, 4m of 135.6 g/t gold, 9m of 64.0 g/t gold, 16m of 36.5 g/t gold, 18m of 40.3 g/t gold, 7.5m of 67.0 g/t gold and 9m of 24.0 g/t gold.
- The Kru and nearby Wasi Prospects in the Leonard Schultz JV have excellent gold outcrop trench channel sample assay results including 16m of 18.60 g/t gold contained within 76m of 5.35 g/t gold. Additional significant assay results included 22m of 2.71 g/t and 36m of 1.15 g/t (within 384.3m of 0.67 g/t gold) in outcrop trench.
- Likuruanga JV Esis Prospect has 27m of supergene mineralisation grading 0.71% copper (from 33m depth), plus 66m of primary grading 0.42% copper (from 86.6m to end of hole), with the last 7.6m of the hole grading 0.49% copper.

## EXPLORATION IS RAMPING UP ON FRONTIER'S TASMANIAN EXPLORATION AND RETENTION LICENCES, TARGETING KNOWN HIGH-GRADE (PLUS POTENTIALLY BULK MINEABLE) TUNGSTEN, GOLD AND BASE METAL DEPOSITS

The Cethana Project covers an E-W spine of the highly mineralised Dolcoath Granite and a number of skarn and vein deposits, from east to west (proximal to distal) including silver, tin, tungsten, molybdenum, gold+ silver + zinc + lead (Narrawa), zinc+ gold (not FNT's), fluorine (not FNT's) and gold + bismuth (Stormont).

#### Frontier is specifically targeting tungsten along with other metals in this highly mineralised district.

- There are at least 55 historic workings (shafts, adits and small open pits) within the targeted area testifying to its highly prospective and mineralised status.
- The primary commodity mined in the district was tungsten in at least 23 workings, tin in 9 workings and gold in 7 workings (many are unspecified).
- Previous Frontier tungsten drill intersections included 1m grading 1.98% WO<sub>3</sub> near the NW end of the Narrawa Deposit, within a broad low grade geochemical halo that averaged 14m of 0.20% WO<sub>3</sub> (from 21m).

Narrawa is a stratabound/stratiform skarn Deposit hosted within 4 steeply dipping on/near surface lodes, which could be mined by open pit mining methods.

- The deposit contains an Indicated and Inferred resource with 14,125 ounces of gold, plus 131,300 ounces of silver, 2,765 tonnes of lead and 2,335 tonnes of zinc (at 0.5g/t gold cut-off grade), that is up to 220m long, 20m wide and 60m deep, within 209,330 tonnes of rock grading 2.10 g/t gold, 19.5 g/t silver, 1.32% lead and 1.12% zinc.
- The Indicated Resource consists of 162,755 tonnes grading 2.11 g/t gold, 20.5 g/t silver, 1.42% lead and 1.2% zinc.
- The Inferred Resource consists of 46,574 tonnes grading 2.07 g/t gold, 16 g/t silver, 0.98% lead and 0.81% zinc.

### Frontier's detailed exploration and expenditure submission to Mineral Resources Tasmania for the Stormont Deposit - ERA 834 was successful and should be granted in due course.

- The 9 km<sup>2</sup> ERA consolidates Frontier's tenement portfolio in the Central-North of Tasmania and provides additional highly prospective ground for exploration.
- ERA 834 contains the on-surface Stormont Deposit, with an Inferred Resource of 14,250 ounces of gold plus 304 tonnes bismuth, within 112,500 tonnes of mineralised rock grading 3.94 g/t gold plus 0.27% bismuth (1.0g/t gold cut-off grade).
- It is planned to increase the size of the resource and upgrade it from Inferred to Indicated.