



31st January 2012

Company Announcement Office
Australian Securities Exchange

Exchange Tower
Suite 411
530 Little Collins Street
Melbourne Victoria
Australia. 3000

Telephone 61 3 9620 5866
Facsimile 61 3 9620 5822
e-mail: rimfire@rimfire.com.au
website: www.rimfire.com.au

QUARTERLY EXPLORATION AND ACTIVITIES REPORT

(For the period 1st October 2011 to 31st December 2011)

Foundation Established for Confirmation of Gold Potential in wider Fifield District

Exploration activities in the period concentrated on the gold potential in the wider Fifield district, where 11 areas (EA1 to EA11) continue to be assessed with a variety of exploration techniques, including soil geochemistry, auger bedrock geochemistry, geological mapping, rock chipping, structural interpretation, including airphoto and geophysics reviews.

The RC drill programs completed on the Sorpresa gold (Au) prospect during 2011 and additional knowledge gained in the adjacent locations within the 20km² prospective area identified at Fifield NSW for gold mineralisation have formed the basis for geological model development using the important interpretation of the **gold receptive horizon of black silica** now identified.

Inclusive of the main Sorpresa prospect (EA 1), a 4km² area has been identified as having a target potential of 0.5 million to 1.5 million ounces of Au.¹ Details of the basis for the assessment can be seen in the 2011 AGM Presentation ².

The Company intends to continue its assessment and delineation of the Main Sorpresa Prospect, whilst advancing the development of additional areas for new Au discoveries. It is the Company's firm view that the district is likely to host a range of gold discoveries, some similar in character to the Sorpresa area, so ensuring a suitable balance between new exploration and delineation is important. **The overall geological setting and Au mineralised potential both continue to show impressive scale and promise in the wider Fifield district of 20km².**

In this report a number of Appendices and links are shown to help illustrate the areas for discussion (Appendix 2), historic drilling focus, exploration planning and geological models being developed at Sorpresa and adjacent areas for Au at Fifield:

Highlights in the Reporting Period at Fifield NSW

- **Geological Model and Au potential established as a conceptual target based on Au receptive Black Silica horizon**
- **Currently eleven prospective areas for Au mineralization (EA1 to EA11) are identified and exploration programs commenced**
 - Extensive soil sampling, auger drilling, geological mapping and interpretation is underway at numerous prospects.
 - Includes areas Main Sorpresa (EA1), areas EA2~EA7, and area EA11 Yoes Lookout
- **Sorpresa Au Prospect results were examined and next phase of RC drilling planned for commencement 1st Quarter 2012**
 - RC drilling will occur on a range of non Sorpresa targets also
- **A geophysical survey (IP - Pole to Dipole) was due for completion January 2012 for Sorpresa in parts of EA1 and EA3**
 - The purpose is to assist location of deeper sulphide based mineralization targets that could also exist at Sorpresa
 - These targets would be additional to the near surface position currently identified at Sorpresa
- **Logistics, equipment and geological staff acquisitions were underway to enable delivery of the 2012 expanded exploration**

¹ **Disclaimer** - "That the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource, and that it is uncertain if further exploration will result in the determination of a Mineral Resource."

² AGM 2011 Presentation at link <http://www.rimfire.com.au/PDF/1051660-AGM-2011-Presentation.pdf>

The Executive Chairman, John Kaminsky, commented:

“The last Quarter of 2011 enabled us to start expanding our exploration beyond the immediate Sorpresa gold discovery area, where we have a strong knowledge base which we are now rapidly applying to the district.

The establishment of a geological model, focused on the gold receptive horizon of the black silica geology has allowed us to start seeking more “Sorpresa like” discoveries nearby. There is a well-reasoned basis to target a gold system of substantial size at Fifield, so our plan is to ramp up our activities in 2012 to reflect our level of optimism we feel towards the opportunities in front of us.

Even away from Sorpresa, we are seeing encouraging signs within prospects like Yoes Lookout, which appears to be delivering some interesting gold in soil geochemistry. This will receive more attention over the next period.

It is the firm view of the Company that Sorpresa is only a small component of the bigger gold story unfolding at Fifield and we are expecting to have more exploration success over the coming year.

We want to be building these discoveries into resource estimates and will be finely balancing the need for exploration activities to make new discoveries and the market demands for delineation programs on known discoveries like the Main Strike at Sorpresa.

Shareholders should look to a very exciting year in 2012.”

The Head of Exploration, Colin Plumridge, stated:

“The geological model we have announced at Fifield, incorporating the black silica gold receptive horizon, represents a breakthrough for the Company. The geological mapping of this important geological unit over an area in excess of 4km² shows us that it is a key component in parts of the gold system operating at Fifield.

We are not expecting all black silica areas to be gold bearing, but we do know that there appear to be important cross cutting shears positions that heavily influence the gold position potential within this geology.

We now know that the area within Sorpresa at Trench 31 represents a well-organized gold lens, that was partly eroded, thus enabling our geochemistry exploration to discover its position. We are expecting many more gold lenses, including gold mineralization that is poorly exposed, to be sitting within the gold receptive horizon, to be discovered over the ensuing period.

Our exploration programs and techniques will be deployed to achieve more discoveries in 2012 and cover as much of the ground position as we can. We have a very clear vision of our process and will be looking to prove up our discoveries to reserves, wherever possible. The style of gold mineralization encountered to date leads us to believe we are yet to see the best gold grades at Fifield.”

Exploration outline undertaken in the December 2011 Quarter

The Company undertook important remedial and environmental permit obligations within the Sorpresa Main Au prospect area (EA 1) as part of its post drill program work requirements. The Government authority was very satisfied with the standard of the Company’s remediation, care and planning of exploration in the permitted area and this is important for further permit applications that will be required in due course.

The Company shut down for the holiday season for a period of two weeks in the December/January period. Weather was a negative factor in parts of the quarter with rain delays affecting access or sampling programs, nevertheless, significant programs have continued to be deployed over a range of prospects as follows.

Each of these areas will be further examined to define the character and relevance of the results received to date to determine the best next steps for a targeted subsurface test of mineralization of anomalism identified, or whether extension sampling programs are warranted.

The objective is to cover the prospective areas, fast, effectively and develop quality targets for RC drilling where appropriate.

Individual areas will be reported as data is collated and an understanding of the results is properly interpreted for better context and the next stages of the exploration program developed.

Exploration Sampling Undertaken at Fifield in December Quarter				
Fifield Area Reference	Prospect Name	Sample Type	No of Samples	Brief Comments
EA 7	Western Block	Creek/Stream Sediment	34	Elevations in Au , including a peak of 39 ppb to be followed up with further sampling
EA 2	Pit One	Auger Bedrock	63	Very Minor Pt and Au anomalism. Permit area to be remediated.
EA 11	Yoes Lookout & Glen Iris	Soil	210 (3km ²)	Some very encouraging results for Au in the general range 8 to 100ppb, with a peak value of 171ppb , awaiting auger bedrock and detailed geological mapping interpretation. A surface feature identified 400m x 200m and open
EA 6	Northern Gold	Auger Bedrock	90	Encountered black silica and low elevations in Au anomalism worthwhile to pursue
EA 2	South of Pit One	Trenching	42	Low level elevations in Pt, noted for possible followup
EA3, EA5, EA11	Various	Rockchips	18	Noted anomalism, including Cu, Au, with the single rockchip sampled at EA 11 yielding 1.54g/t Au
EA1 & EA2	Sorpresa	Auger Bedrock	39	Au anomalism, confirming elevations up to 30ppb in east extension from RC Hole Fi107
EA 3	New Black Silica SW of Sorpresa	Soil	134	Low level Au anomalism in parts, soil character part alluvium, further checks needed

An updated map of metal zoning interpretation is provided and location maps for prospects shown in the appendices.

Next Stage RC Drilling at Fifield – Specific Plans and Progress

The Company is acutely aware that the project areas commenced at Sorpresa and those new areas being prospected elsewhere at Fifield will need large scale RC drilling over the ensuing 12 to 18 months. It is the Company's goal to have the RC drilling as best sited as possible on the appropriate targets through proper customized precursor exploration, using soil sampling, auger drilling, geological mapping, geophysics and other techniques if appropriate. This is to ensure better orientation of the more expensive deeper RC drilling.

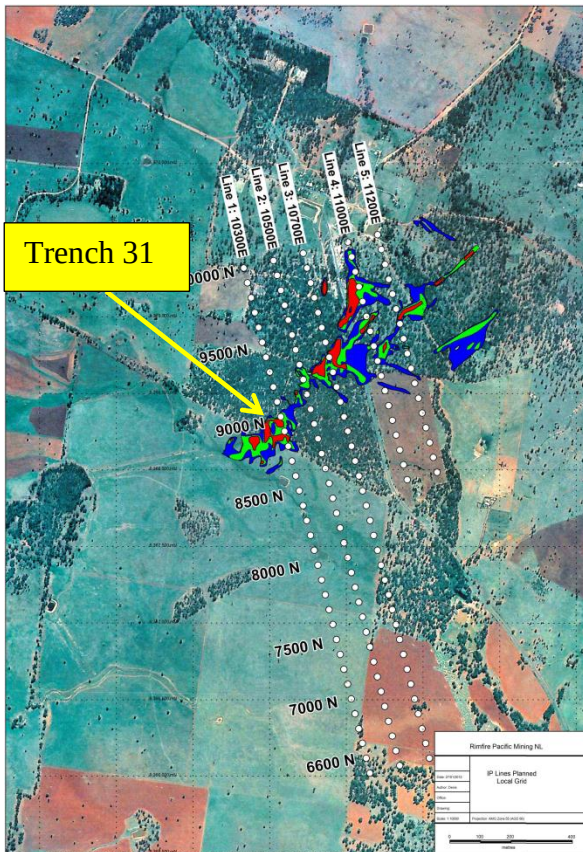
Data compilation from the various component exploration programs conducted is well advanced, and the outline of specific drilling plans are being created, with **expected RC drilling to commence in the 1st Quarter 2012** (subject to weather and permitting). The Company has obtained additional equipment to assist with the required drilling and expects to appoint more personnel shortly to enable an expansion of activities at Fifield.

The next phase of RC drilling proposes to cover both the Main Sorpresa Area (EA 1) and a range of other target areas at Fifield for Au mineralization (EA 2 to EA 11). A base load of approx. 6,000m of RC drilling is forecast for the first half year, with capacity to increase this if deemed desirable, in the period. A drill plan by prospect is shown in the appendix 3.

Geophysical Survey – IP Pole to Dipole at Sorpresa Au Mineralised Area EA1 – Looking for Sulphides at Depth

The positive mineralization results received at the Main Sorpresa Au Prospect combined with the geological knowledge now gained at that location has encouraged the Company to examine electrical geophysical techniques to help determine if the possibility exists for deeper conductive sulphide mineralization.

An IP Pole-Dipole survey is being conducted, and has the potential to profile conductivity contrasts between the differing geological units that exist at Sorpresa at depths to 400m.



The survey consisting of 5 lines (total approx. 12km) at Sorpresa, with 100m electrode spacing separations and will be completed and analysed within the first quarter 2012.

The diagram opposite highlights the IP Survey lines at Sorpresa on an airphoto of the location. The Sorpresa Au in soil contours are also shown as a backdrop, with the red areas representing >25ppb Au in soil

COMMENTS ON THE GOLD MINERALISATION AT MAIN SORPRESA (EA1) – INCLUDING TR31 AREA

The cumulative RC drilling results were examined at the area within the main Sorpresa anomaly, known as Tr31 location to determine the current 3D mineralisation orientation, and hence gain an understanding of the size and extent of this specific sub-location.

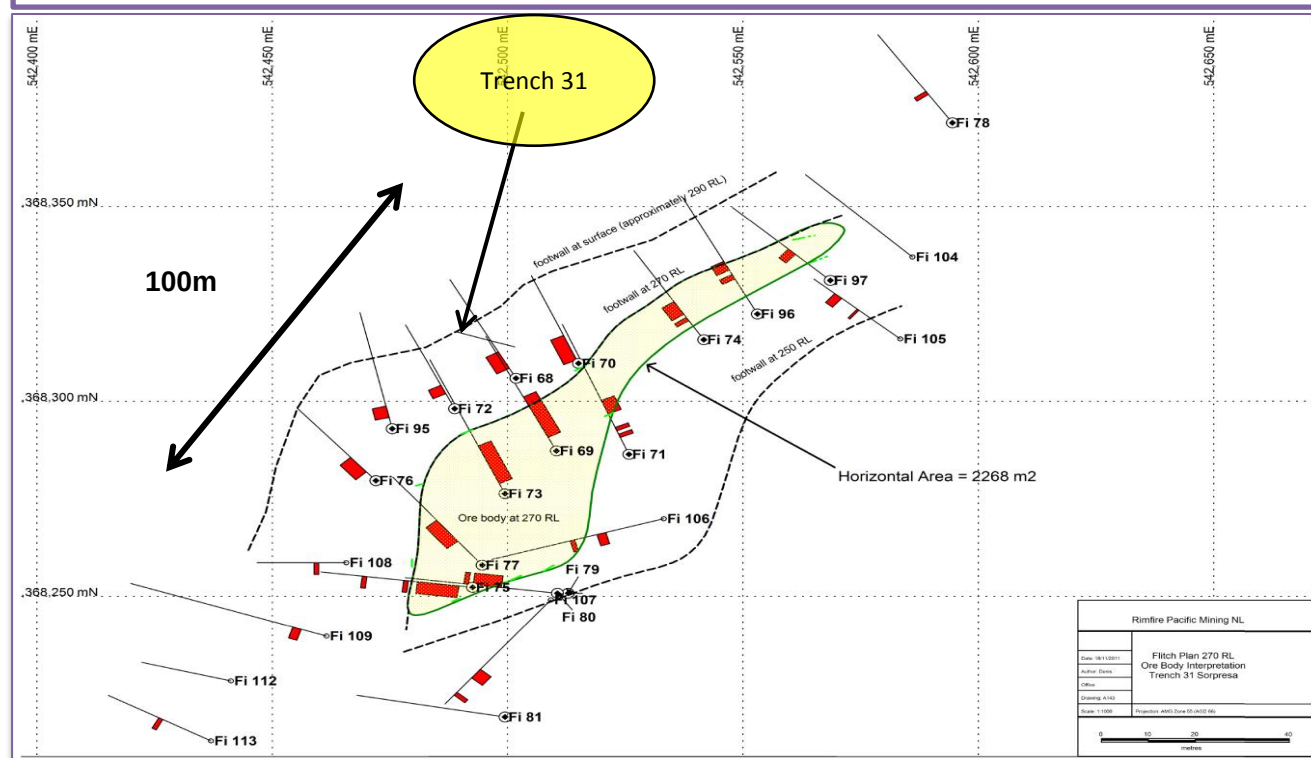
No resource estimate has yet been calculated and the mineralisation is open in direction, however, a framed “target estimate” has been used to give a sense of the scale encountered to date, using 16 RC drill holes. Applying a tonnage estimate of 200,000 to 300,000 tonnes and a Au grade range of 2.0g/t to 2.2g/t to an assumed depth of 40m the exploration target represents 13,000 to 21,000 ounces of Au³.

Essentially the “discovery RC drill programs” in this location are of high quality and are close to a delineation of the Au lens being established in this part of Sorpresa, which the Company considers a very good outcome to date. Further drilling work is required in expanding the size of the mineralisation and a detailed calculation of data needed to work towards an estimation of any possible resource.

It should be noted that the mineralisation in RC hole Fi 107 in particular, is open to the south east at a depth of 54m already, below the base of oxidation. **Area 1 (the Trench 31 lens locality) has an inter-play between two shear zones.** The net effect means the better Au grade mineralisation has a curved plunge to the south east through hole Fi 107.

³ **Disclaimer** - “That the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource, and that it is uncertain if further exploration will result in the determination of a Mineral Resource.”

Au Target Estimate at the Trench 31 location within the Main Sorpresa Au Prospect



Background on the 2011 RC Drilling Results at Sorpresa Main Strike EA 1 and Geological Model Development

The Company considered the broader implications of the exploration to date at the Sorpresa area and its surrounds. This also included important observations from both the May and September 2011 RC Drilling programs.

On 23rd August 2011 the Company reported its highly encouraging final assay results for the first pass RC drill program conducted in April/May 2011 at the Sorpresa area, in 4 locations over a distance of approx. 1.3km focused on gold mineralisation. The full results can be accessed at the [hyperlink](#) to the ASX release on 23rd August 2011: [RC Drill Program Starts within 14 days At Sorpresa Gold Project](#)

Sorpresa consists of disseminated gold and silver mineralisation with associated traces of arsenic (As), lead (Pb) and antimony (Sb) as reliable pathfinders. This was again consistently and clearly reflected in the round of RC drilling in September 2011.

The mineralisation is largely hosted by special parts of a **30m thick black, carbonaceous shale horizon**. This horizon becomes replaced by pervasive silica during mineralisation to finally yield the distinct “black silica horizon”.

The extent of the black silica horizon is not yet fully defined, however, **an area of 2km x 2km is already indicated and growing as mapping continues to the south of Sorpresa. The gold mineralization appears disseminated, coherent and amenable to reliable assays with capacity for high grade.**

Black Silica Samples in Section – Important Au Receptive Geology



Additions to this mineralized area are likely as exploration continues. It should be noted that the gold mineralization encountered continues to be located well outside of this indicated area, and not necessarily always within the proximal black silica. The mineralisation has entered the black shale, black silica horizon via multiple, interacting shear zones. Hence, it is now concluded that the Sorpresa position is a large area of black shale that is receptive to mineralisation and pervasive silica replacement. The multiple interacting shear zones provide numerous locations where mineralisation hydrothermal fluids can access the receptive horizon.

This represents a highly promising geological context for large scale discoveries and confirms the Company's earlier views that "Company Making" Au mineralization is likely to occur in this setting.

The delineation of the gold and silver mineralisation is underway, but the vast majority of the black silica horizon awaits the drilling intense exploration phase.

Whilst the full geological context at Sorpresa is still under examination, it now seems highly probable that **an area of much larger gold potential exists at Fifield (see Appendices maps).**

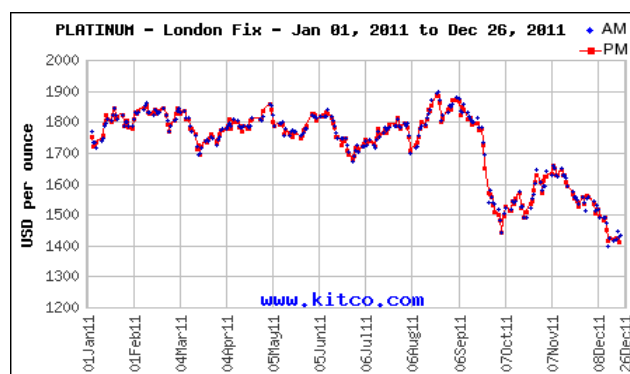
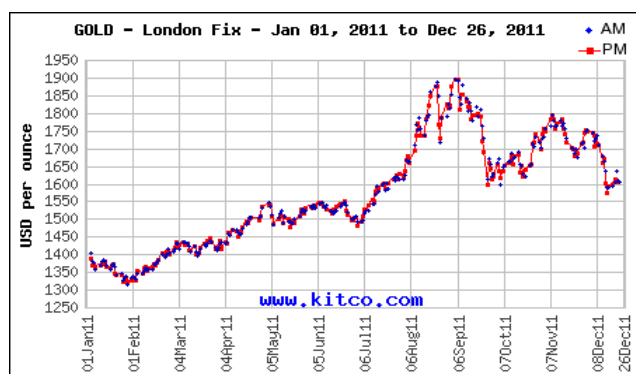
The Historic Thread of the ASX releases related to the Sorpresa Greenfield Discovery

It is worthwhile to be mindful of past ASX releases on the Sorpresa gold area that contribute to the context of the work performed by the Company and the exploration process being undertaken.

Previous details already announced to ASX on 13th October 2010⁴, 28th October 2010⁵, 15th December 2010⁶ and 25th January 2011⁷, 21st February 2011⁸, 8th March 2011⁹, 12th April 2011¹⁰, 6th July 2011¹¹, 23rd August 2011¹² and September Quarterly 2011¹³ provide important context to the ongoing programs for gold at Fifield, **with hyperlinks below.**

COMMODITY PRICING FOR THE DECEMBER 2011 QUARTER

The price of Platinum fluctuated in the period, and was still trading at an historic discount to Gold. The price of Gold whilst also traded in a volatile manner in the quarter, however, both Platinum and Gold traded substantially higher in January 2012. (www.kitco.com).



As at 27th January 2011, the prices for metals in New York based on closing Ask in USD were as follows:

Gold	\$1,738/oz
Platinum	\$1,628/oz
Silver	\$34/oz

CORPORATE ACTIVITIES

The Company held a very successful AGM, with attendance of approximately 20% of the voting shares at the meeting. An excellent presentation was made on the Exploration achievements and outlook for the next 12 months.

⁴ ASX Announcement – [13th October 2010 Bedrock Assays Confirm Sorpresa Fine Gold Potential at Fifield](#)

⁵ ASX Announcement – [28th October 2010 Sorpresa Fine Gold Prospect Trench Produces Excellent Assay Results](#)

⁶ ASX Announcement – [15th December 2010 Sorpresa Fine Gold Prospect Further Examined at Fifield NSW](#)

⁷ ASX Announcement – [25th January 2011 Gold Mineralisation Examined in more detail at Sorpresa Prospect](#)

⁸ ASX Announcement – [21st February 2011 Positive Soil Line Assays At Sorpresa Gold Prospect](#)

⁹ ASX Announcement – [8th March 2011 Bedrock Auger Drill Program Completed Sorpresa Gold Project](#)

¹⁰ ASX Announcement – [12th April 2011 Sorpresa Bedrock Gold Zones Confirmed in Auger Drilling - RC Drill Program to Commence in April](#)

¹¹ ASX Announcement – [6th July 2011 Assays confirm Significant Gold and Silver at Sorpresa](#)

¹² ASX Announcement – [23rd August 2011 RC Drill Program Starts within 14 days At Sorpresa Gold Project](#)

¹³ ASX Announcement - [September 2011 Quarterly Exploration Report](#)

Tenement Position

The Company tenements held remained unchanged.

Cash, Facilities and Investments

As at 31st December 2011 the Company had approximately \$2.18 million in cash.

Issued Capital – Exercise of Options

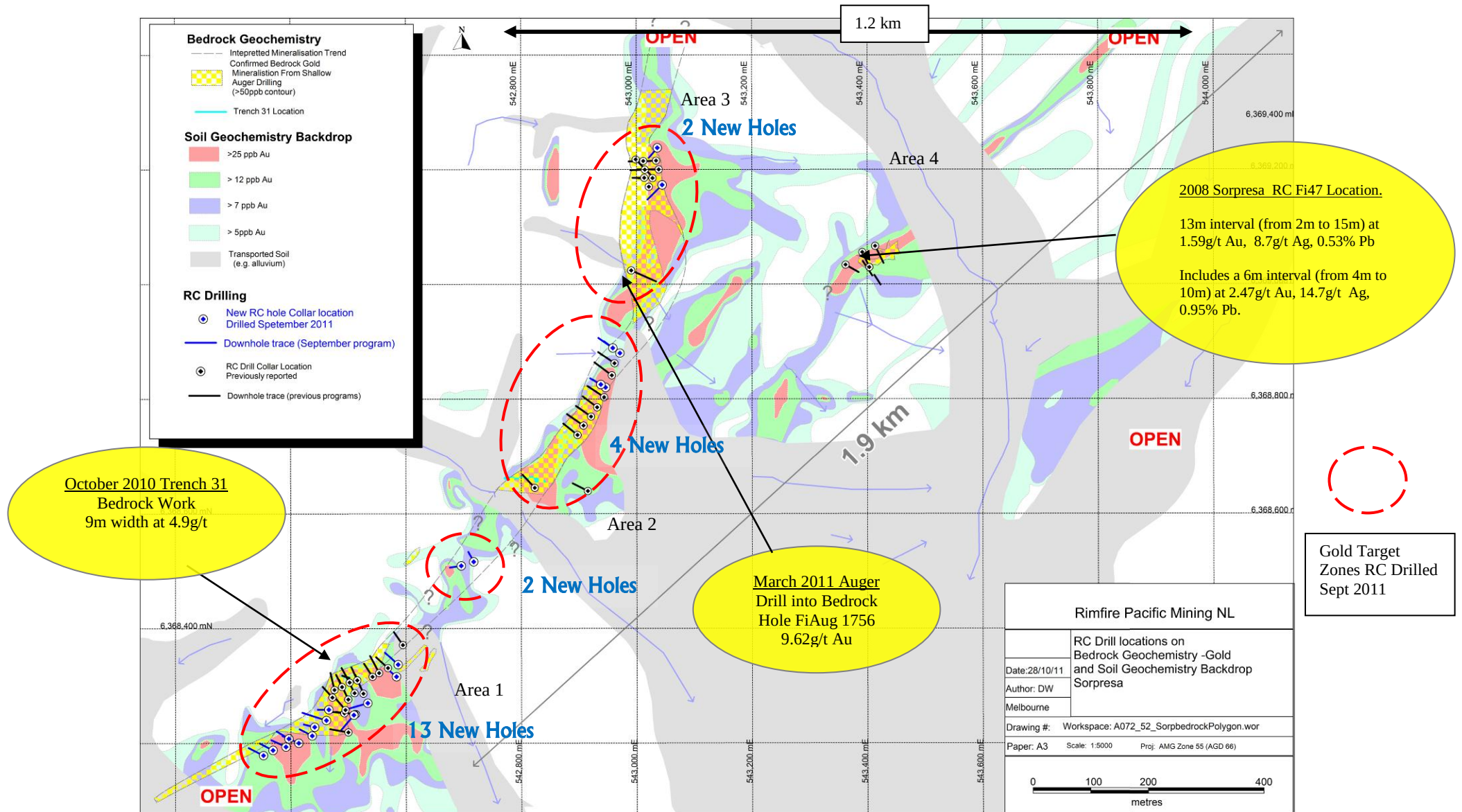
The issued capital at the close of business at 31st December 2011 was 525,846,643 ordinary shares.



JOHN KAMINSKY
Executive Chairman

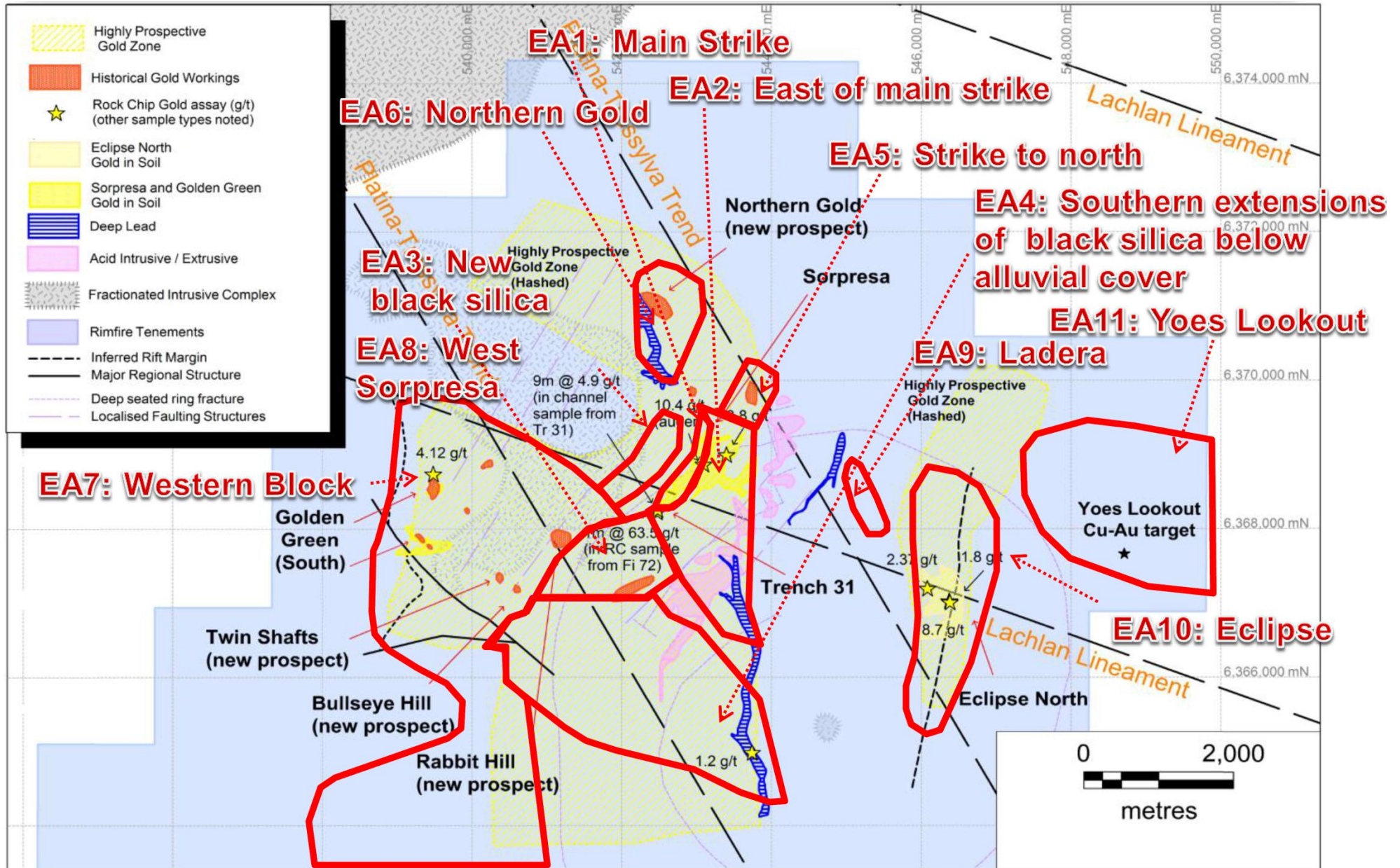
The information in the report to which this statement is attached that relates to Exploration Results is compiled by Mr Colin Plumridge, who is a Member of The Australian Institute of Mining and Metallurgy, with over 40 years experience in the mineral exploration and mining industry. Mr Plumridge is employed by Plumridge & Associates Pty. Ltd. and is a consulting geologist to the Company. He has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which is being undertaken to qualify as a Competent Person as defined in the 2004 edition of the "Australian Code for Reporting of Mineral Resources and Ore reserves". Mr Plumridge consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

APPENDIX 1
Completed RC Drilling Collar Hole Locations (2 programs) at Sorpresa Main Strike (EA 1) 2011
(Shown against Gold in Bedrock Auger Zones and Soils previously established)



Appendix 2

Eleven Potential Gold Areas (EA 1 to EA 11) Identified at Wider Fifield District



Appendix 3

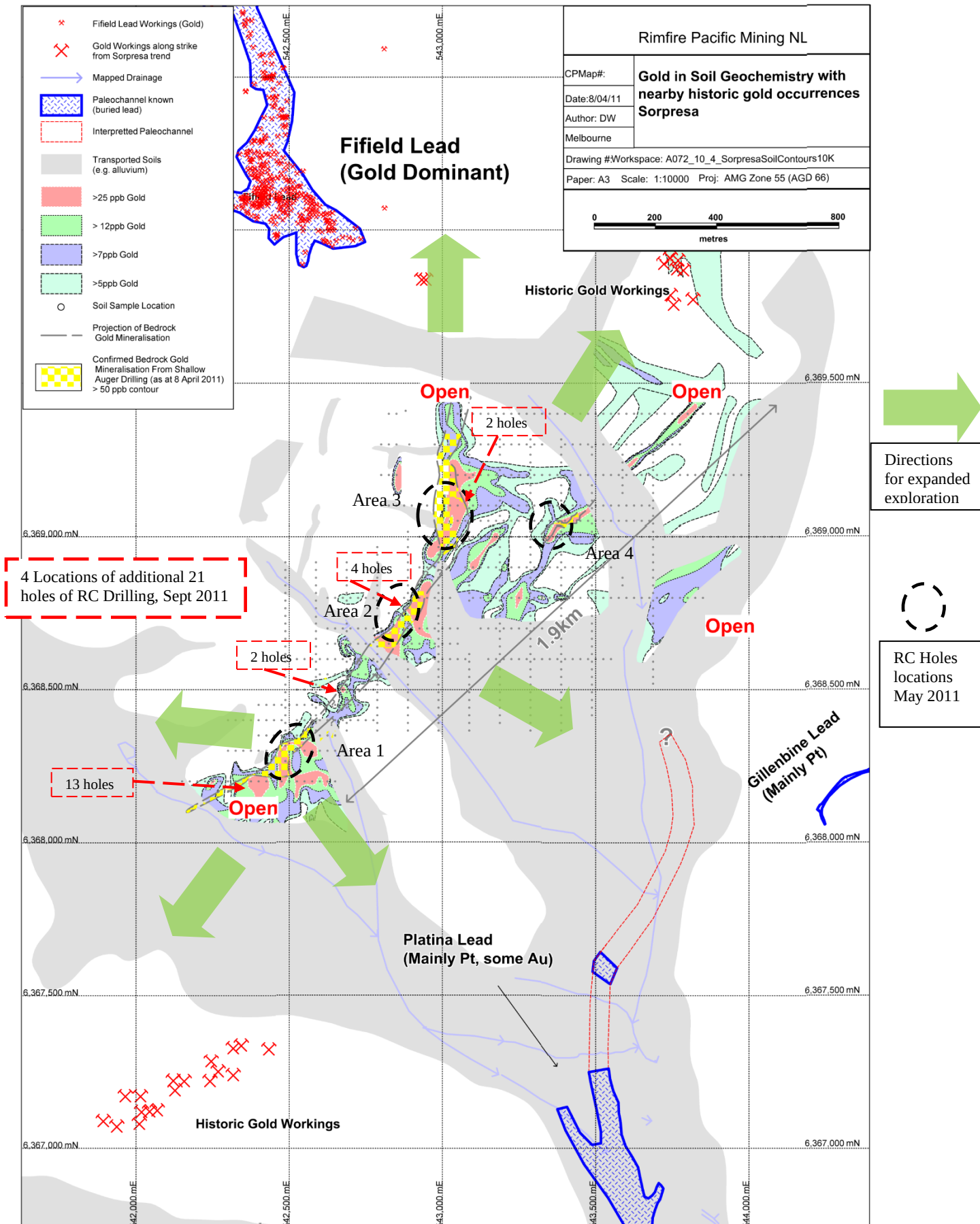
RC Drilling for Fifield – Base Plan First Half 2012

January 2012 Rimfire RC Drilling Fifield - First Half Base Plan									
Prospect Area Name	Focal Point Area	Ref.	Sub area name	Orientation	Commodity Focus	Priority Ranking	RC Drilling/RC Blade		
		EA			(major, minor)		No. Holes	Depth (m)	Total (m)
Main Sorpresa Strike	Known Strike Down Dip	1	Trench 31		Au, Ag	High	12	30	360
Main Sorpresa Strike	Known Strike Down Dip	1	Trench 31	NE & SW ends	Au, Ag	High	8	40	320
Main Sorpresa Strike	Known Strike Down Dip	1	Trench 31	SE	Au, Ag	High	20	15	300
Main Sorpresa Strike	Known Strike Down Dip	1	Trench 31	IP Anomaly	Au, Ag	High	3	60	180
Main Sorpresa Strike	Known Strike Down Dip	1	Boundary Gate	East	Au, Ag	High	3	60	180
Main Sorpresa Strike	Known Strike Down Dip	1	Roadside	3D study	Au, Ag	High	10	30	300
Main Sorpresa Strike	Known Strike Down Dip	1	Roadside	100m out to South and East	Au, Ag	High	8	25	200
East of Main Sorpresa Area	4km2 Block, Include Monzonite Corridor	2	Sorpesa Original	North	Au, Ag	Med/High	8	25	200
East of Main Sorpresa Area	4km2 Block, Include Monzonite Corridor	2	East of main strike	geochem and geophysics targets	Au, Ag	Med/High	25	25	625
East of Main Sorpresa Area	4km2 Block, Include Monzonite Corridor	2	East of main strike	geochem and geophysics targets	Au, Ag	Med/High	8	50	400
New Black Silica Area South Tr31	Black silica geology	3			Au	High	30	15	450
Covered Black Silica Belt Extension & Lower Platina Fine Au	Platina Lead Floor and adjacent geology	4		soil/rock/auger geochem	Au, Pt, Cr	Medium	10	15	150
Main Sorpresa Strike North	North Extension	5		old bedrock workings	Au, Ag	High	5	20	100
Northern Gold area	Fifield Lead Area and adjacent bedrock	6		old bedrock workings	Au	Medium	5	20	100
Western Block 20km2	Many new prospects, BEH, TS, RH etc.	7		geochem and geophysics targets	Au	Medium	1150m of RC yet to be defined		0
West of Greater Sorpresa Area	Intrusive Contact	8			Au, Pt	Medium			0
Ladera Iron Cemented Gravel	Elevated structure initial grade test	9		Rimfire previous trials	Au	Medium			0
Ladera Iron Cemented Gravel	Elevated structure second stage	9		Rimfire previous trials	Au	Medium			0
Eclipse Region Fine Au	Rift margin	10			Au, Cu	Medium			0
Glen Iris	Porphyry Copper	11		Soil Geochem	Cu, Au	Medium			0
Yoes Lookout	Porphyry Copper	11		Soil Geochem	Cu, Au	High	10	50	500
					Totals		165		4,365

Appendix 4

Main Strike Sorpresa Gold Area EA 1 in Soil Anomaly Context

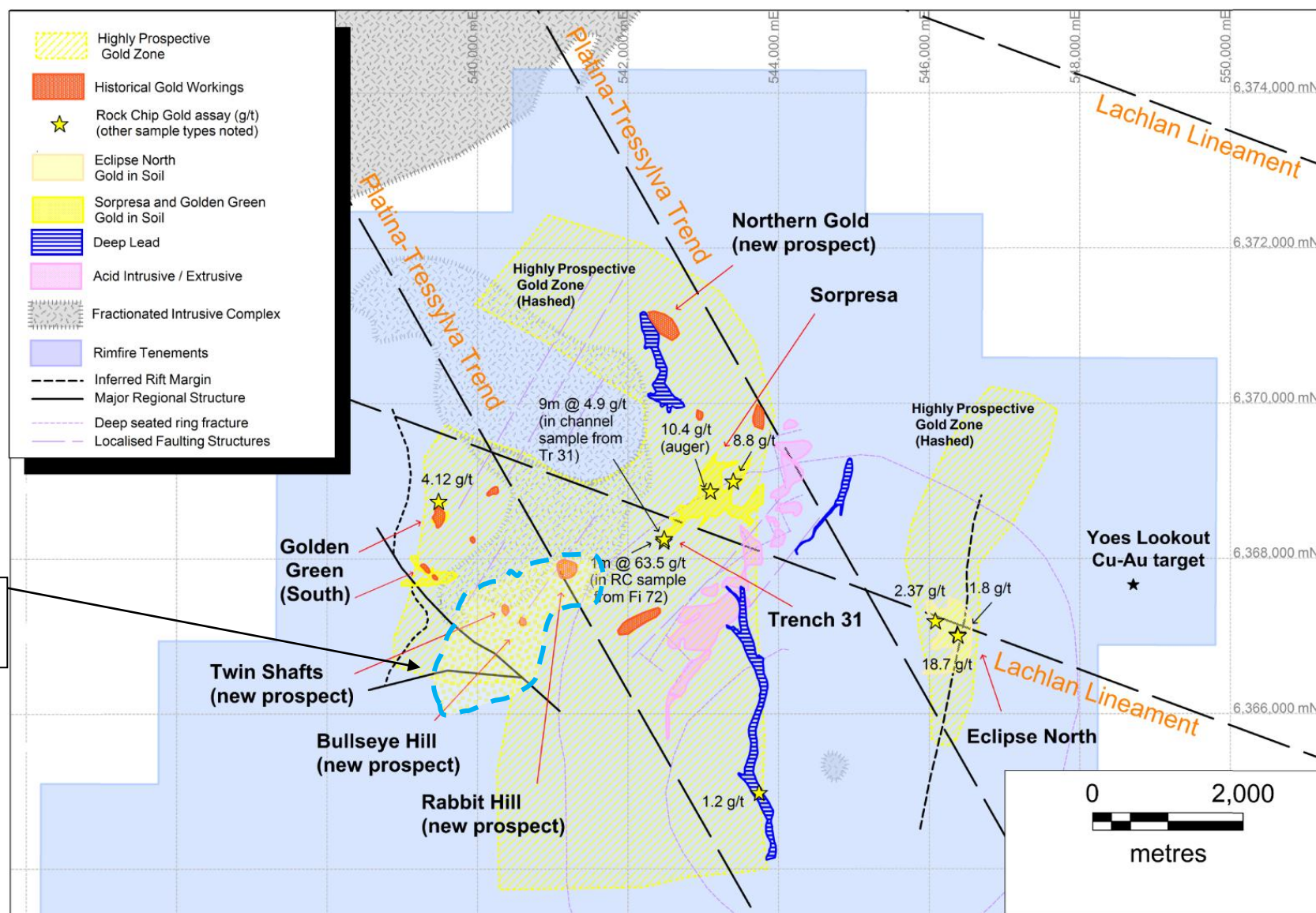
– Untested Areas and Adjacent Historic Au Workings



APPENDIX 5

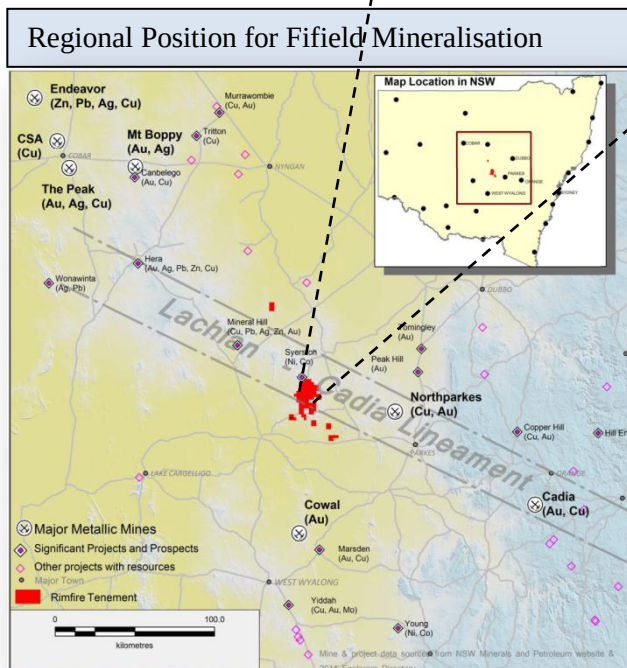
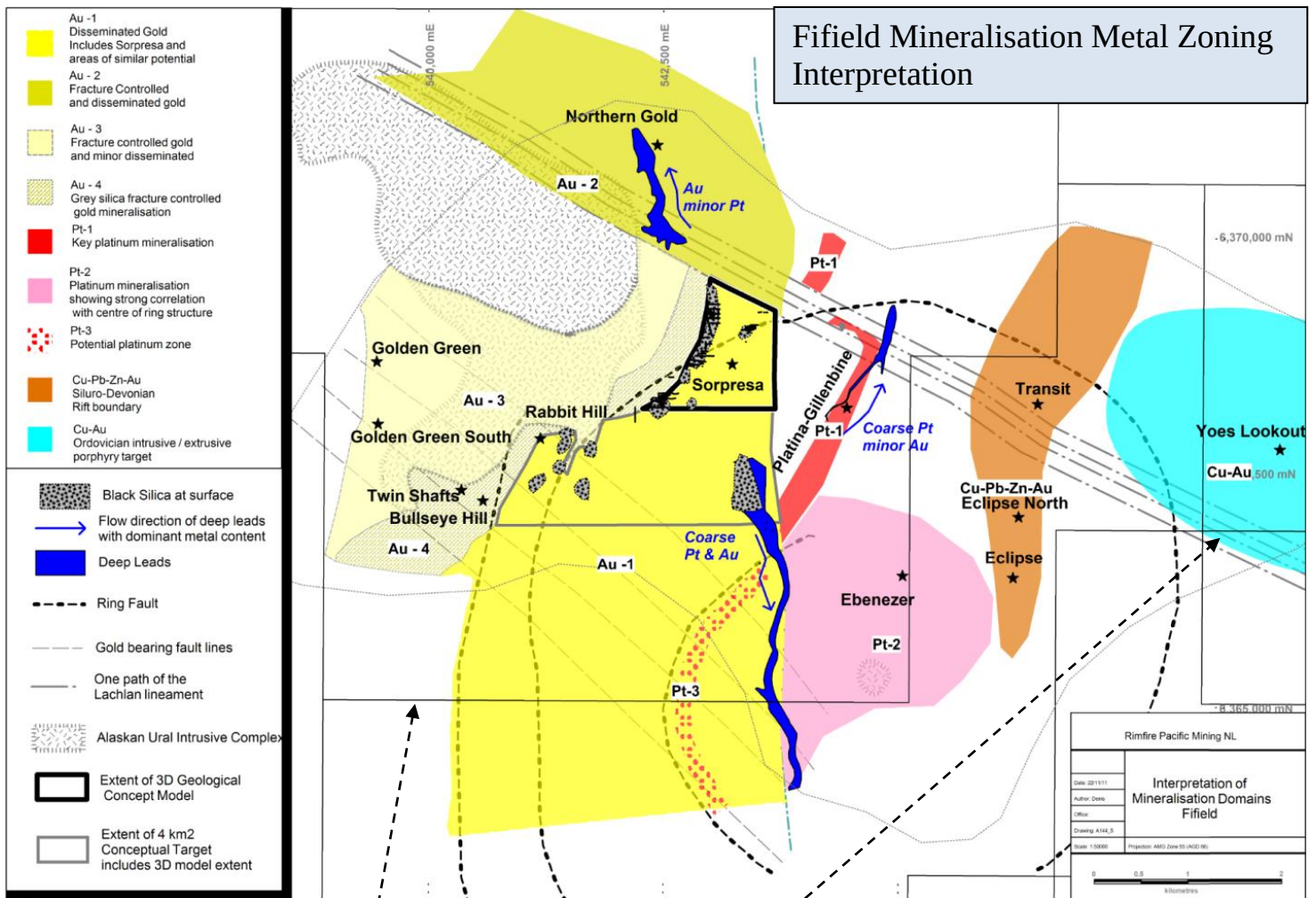
The Main Strike Sorpresa Area EA 1 Anomalous Gold Zone

– within the wider Fifield Gold Observations “Some” New Prospects Highlighted



Appendix 6

Project Locations at Fifield NSW within Lachlan-Cadia Lineament and Metal Zoning Interpretations at Rimfire Fifield Project Areas



Rimfire tenements shown in red (at left) within the Lachlan-Cadia Lineament.

Metal zoning interpreted (above) within key Rimfire Tenements at Fifield, making this an exciting location for discoveries.

Note the Black Silica areas (above) mapped as part of the Au receptive horizon inferred