



12<sup>th</sup> April 2011

Company Announcement Office  
Australian Securities Exchange

## **Sorpresa Bedrock Gold Zones Confirmed in Auger Drilling** **- RC Drill Program to Commence in April**

The Company has received positive bedrock geochemistry assay results for the samples taken at the Sorpresa Fine Gold (Au) prospect. The results provide Au mineralisation in coherent zones and demonstrate a degree of continuity in the tested areas. These bedrock gold results are further enhanced with the observation of co-incident gravity anomalism obtained in a recently completed micro gravity survey.

### **Key Summary Points:**

- **Bedrock geochemistry confirms distinct gold zones available for deeper RC drilling program**
- **A strong elevated Silver zone has emerged in the NE corner of the Sorpresa Prospect**
- **A Gravity Survey conducted gives co-incident anomalism to the gold bedrock geochemistry mineralisation position**
- **Additional bedrock exploration has also been submitted for gold assay to assist geological understanding**
- **RC Drilling is due to commence 28th April, permit is lodged and awaits final approval**

The latest Au in bedrock results achieved are consistent with and enhance the earlier bedrock chemistry results in auger drilling in 2010. The Sorpresa Au anomaly continues to be demonstrating a coherent shape well suited to RC drill testing.

Executive Chairman, John Kaminsky stated *"The additional bedrock Au results provide an excellent coherent basis for the RC drill program to focus on high quality gold targets. The gravity survey results appear to confirm a direct correlation to the mineralised bedrock chemistry giving a high degree of confidence to the depth of mineralisation...."*

Head of Exploration, Colin Plumridge advised *"...the gold zones now seen at Sorpresa appear to have a definite structural control as evidenced by the extensive testing of the bedrock leading to focused gold zones. The microgravity survey gives extra weight to the notion that we have steep dipping mineralisation with likely sulphides in association with the pervasive silica observed for some time at Sorpresa..."*

*...at this stage the high silver results obtained in the North East corner of Sorpresa are yet to be properly interpreted. We do note that in 2008 our RC holes intersected silver associated with the gold and these new auger bedrock results are 400m west of this. The microgravity survey shows strong anomalies co-incident with this mineralisation also...the highly zoned nature of the mineralisation has similarities to Cobar and Canbelego styles of mineralisation."*

### **Update on the Current Exploration Work at Sorpresa – Geological Comments**

The bedrock assessment in the near surface continues to provide valuable and coherent interpretation of the gold mineralisation at Sorpresa.

Sorpresa is a large fault controlled mineralised system featuring disseminated gold in broad areas of replacement pervasive silica. The sulphide content is likely to be important, but remains largely unresolvable from soil and auger drilling alone.



Auger drilling into bedrock – Coherent Au zones

The gold occurs in several mineralising episodes, some with base metals including silver (e.g. in the North East) and some areas with gold, but devoid of other metals (e.g. in the South West).

The broad areas of disseminated gold are well located by soil sampling and auger drill bedrock gold assays. The actual grade of these areas needs reverse circulation (RC) drilling into reliable deeper zones. This is the next step at Sorpresa

Within the broad gold disseminations there are high Au grade areas of complex geometry. RC drilling will be attempting to obtain a true total grade in such areas. It is important to remember there is no past mining at Sorpresa, and no outcrop, so orientation guidance on the mineralisation is very limited to date.

#### **A Note on the Bedrock Geochemistry results at Sorpresa**

The Company conducts extensive bedrock assessment to help determine mineralisation location, geology and associated structure and orientation. The program is ongoing, but a major update of gold mineralisation encountered is provided and shown as coherent zones in **Appendix 1**. The Company now has four clear RC drill targets within the Sorpresa project area, for RC drilling in April.

Values consistent with previous auger drilling (2010) were seen in the interpreted coherent gold zones, typically ranging from 0.1g/t to 1.5g/t. A high value of 9.6g/t was encountered towards the northern part of the prospect. A cut off grade of 50ppb Au in bedrock was used as determining the extent of the gold zones. The Company maintains the view that the near surface gold position in the bedrock auger drilling understates the gold potential, due to likely depletion in the more vulnerable Au positions.

It is anticipated that more gold zone targets will be generated on an ongoing basis using auger drilling as a precursor to additional RC drilling beyond the current April program under design.

Interestingly, the bedrock position in the North-East corner at Sorpresa demonstrates gold mineralisation and a high silver component, with values up to 20g/t silver. The 2008 RC drill holes, 400m to the east of the recent auger program, contained elevated silver also. An interpretation of this observation cannot be made at this point, but the possibility of highly zoned, Cobar Style mineralisation has not been discounted.

Results reflected as Au zones and the methods used are included in **Appendix 1** for the bedrock chemistry. Silver results are shown in **Appendix 3**.

In addition, the use of trenching has been highly limited due to its time consuming nature and little or no orientation on the subsurface mineralisation available. It was thought originally, that up to six trenches may be undertaken, however, this idea has been superseded with a direct move planned to RC drilling instead. This has been decided after a second trench was undertaken, but encountered very hard silicified material, which was difficult to trench, sample and interpret. This second trench proved an inconclusive exercise. The strike of mineralisation was not apparent, so the effectiveness to cut across the elevated Au zone remains in doubt.

At this location, 450m NE of trench 31, the company had undertaken an auger traverse that was conducted in October 2010 and later extended in February 2011. The combined auger zone, encountered elevated Au over 70m (assuming a cut-off grade of 100ppb Au, and elevations to 1.4g/t). Trench 2 was then established to examine the geology, but the material encountered was difficult to sample, due to the larger silicified component and the contrasting softer, irregular, narrow contact operating in this location. It is the company's view that the mineralisation was poorly suited to trenching at this location and the orientation on the Au mineralisation was not effectively established. Despite these hurdles, elevations in Au were received in the trench, typically in the range 0.1g/t to 0.5g/t and a high value of 0.84g/t Au was seen within an aggregate length of approx. 35m. RC drilling will be used to more effectively test this location.

(Previous details already announced to ASX on 13<sup>th</sup> October 2010<sup>1</sup>, 28<sup>th</sup> October 2010<sup>2</sup>, 15<sup>th</sup> December 2010<sup>3</sup> and 25<sup>th</sup> January 2011<sup>4</sup>, 21<sup>st</sup> February 2011<sup>5</sup> and 8<sup>th</sup> March 2011<sup>6</sup> provide important context to the ongoing programs at Sorpresa **with hyperlinks below**).

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<sup>1</sup> ASX Announcement – [13<sup>th</sup> October 2010 Bedrock Assays Confirm Sorpresa Fine Gold Potential at Fifield](#)

<sup>2</sup> ASX Announcement – [28<sup>th</sup> October 2010 Sorpresa Fine Gold Prospect Trench Produces Excellent Assay Results](#)

<sup>3</sup> ASX Announcement – [15<sup>th</sup> December 2010 Sorpresa Fine Gold Prospect Further Examined at Fifield NSW](#)

<sup>4</sup> ASX Announcement – [25<sup>th</sup> January 2011 Gold Mineralisation Examined in more detail at Sorpresa Prospect](#)

<sup>5</sup> ASX Announcement – [21<sup>st</sup> February 2011 Positive Soil Line Assays At Sorpresa Gold Prospect](#)

<sup>6</sup> ASX Announcement – [8<sup>th</sup> March 2011 Bedrock Auger Drill Program Completed Sorpresa Gold Project](#)

## Micro Gravity Survey – Interpretation of Co-incident Anomaly

A Micro Gravity survey was undertaken (**Appendix 2**) to see whether the known geochemical expression (both soil and bedrock) could have a geophysical signature through gravity, which potentially can determine differences in rock types, based on rock “specific gravity”. The gravity survey results with 10m sample spacings show very detailed data and appear to be of excellent quality.

The Company’s has conducted considerable near surface auger drill testing into the bedrock at Sorpresa. Although not fully resolved, the gold mineralisation is relatively well known in terms of associated geology. On this basis the Company feels it is able to offer a reasonable explanation as to the microgravity responses seen at Sorpresa.

**In the Company’s preliminary interpretation, there is a direct correlation between the gold position and the gravity signature.** The gravity anomaly highs tend to be around 70m widths, indicating mineralised source rocks about 30m widths. The source rocks appear to come virtually to surface and are likely steep dipping.

In particular, one of the key markers for the gold position has been gossan (with up to 50% pyrite) with brown pervasive silica associated with the gold positions at Sorpresa. It is the Company’s view that the most likely explanation for elevated specific gravity response in this survey is fine pyrite in steep dipping structures.

The micro gravity survey response has assisted the RC drill hole placement.

## RC Drill program due to commence end of April 2011

The Company has engaged an RC drill contractor to conduct the first pass program on the Sorpresa gold project commencing end of April 2011. An initial program of 2,000m will be undertaken on the four prominent gold target areas already clearly identified in previous bedrock testing in auger drilling and trenching.

The permit application has been submitted and is expected to be approved shortly.

Final location details will be released prior to drilling commencement.

## Background Explanation on Exploration Approach and Work to Follow at Sorpresa

The Company will be trying to establish the correlation variability between auger traverse Au grades in bedrock and the true bedrock Au grades. Some trial and error will be a feature of this work, testing both high and low grade Au results in the augered bedrock, to help determine better defined bedrock targets for deeper RC drilling.

*The approach being adopted represents conventional exploration. It should enable rapid exploration of Sorpresa over a large area, with focussed subsurface targets that are identified and tested quickly, in a fairly continuous manner.*

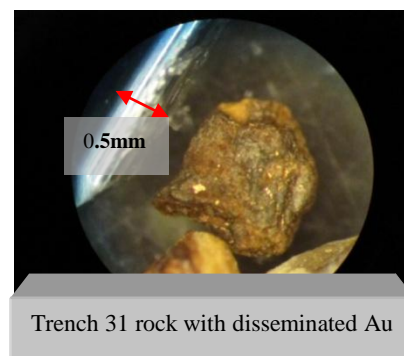
## Sorpresa Au and Base Metal Area – Background Summary

*Whilst it is still at an early stage, in the Company’s opinion, the larger Sorpresa area is already established as a disseminated fine gold area of considerable promise. The mineralisation is amenable to both surface based geochemical prospecting and RC drill evaluation. This straightforward technical pathway greatly enhances the chance of economic success.*

The project area is located immediately south of the Township of Fifield NSW and sits within the well established, highly mineralised regional corridor, the Lachlan-Cadia Lineament<sup>7</sup>. This corridor includes the Riotinto owned North Parkes Copper-Au mine and the Newcrest owned Cadia Valley Au-Copper mines amongst others.

The larger Sorpresa area was covered with broad spaced lines of soil geochemistry earlier in 2010 (100m line spacings and 25m sample interval). This coverage was based on the early concept that the originally discovered Sorpresa style of mineralisation could be extensive, but unrecognised.

The assay data on the soil geochemistry combined with the October/December 2010 auger traverses and Trench 31 placed over selected Au anomalies within these soil results confirms that the larger Sorpresa area represents Au anomalism that is large and significant.



<sup>7</sup> See Appendix 6 – Location maps

## ***Mineralisation***

As indicated by the soil geochemistry, the mineralisation seems to occur in three parallel lines dominated by breccia zones with associated disseminated sulphide gossan and alteration, but very low in vein quartz.

The mineralisation decomposes to soil, leaving little or no trace of its presence on the surface. The Au being both very fine and disseminated did not suit the miners of past eras even if it had been located. Modern exploration and processing techniques make this mineralisation an ideal style to pursue.

The Au is very fine and disseminated through the breccia as confirmed with the Trench 31 sampling (October 2010) undertaken producing repeatable Au assays.

## ***Interpreting Trench 31 within the Sorpresa area***

- The high Au grade of Trench 31 confirms that the Sorpresa-Trench 31 corridor has a strength of gold mineralisation that is encouraging to the Company's opinion that this area is an unexplored gold field.
- Both tested areas of the currently known Sorpresa-Trench 31 corridor are centred on brecciated sediments, with fine gold contained in a strong mineralised zone with negligible vein quartz, 1.2km apart and open ended.
- The larger **Sorpresa prospective gold area at April 2011 is currently located within an 1.9km x 0.4km and is essentially open ended**<sup>8</sup>

The Company has noted many fine disseminated gold occurrences focused on sediments in the Fifield district over a number of years, of which Sorpresa is only one such area<sup>9</sup>.

## ***Earlier Background (2008) on Sorpresa Area***<sup>10</sup>

The Sorpresa prospect originally consisted of a relatively small Au and base metals in soil anomaly located near an historic shaft, after a rock chip from the shaft returned a value of 8.8g/t Au<sup>11</sup>. The prospect was RC drilled by Rimfire in 2008 and a body of Au mineralization inferred from the analyses of the RC drill hole samples. The host to mineralization was also a brecciated sediment with an uncertain size and orientation. The Company was of the view at that time that this mineralisation may not have occurred in isolation and this has proven to be correct.

***Explanatory video is provided by the Company for the purpose of better understanding the Sorpresa Area and style of work conducted.*** These videos can be found on the Company website at [www.rimfire.com.au](http://www.rimfire.com.au) in the **Presentations and Videos** section.

**The spot closing metal prices (Ask) as at 8<sup>th</sup> April 2011 in New York were Platinum USD\$1,819/oz and Gold USD\$1,476/oz (Reference [KITCO.com](http://www.kitco.com)).**



**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, each 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 Competent Persons 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 their information in the form and context in which it appears.*

<sup>8</sup> See Appendix 4

<sup>9</sup> See Appendix 5

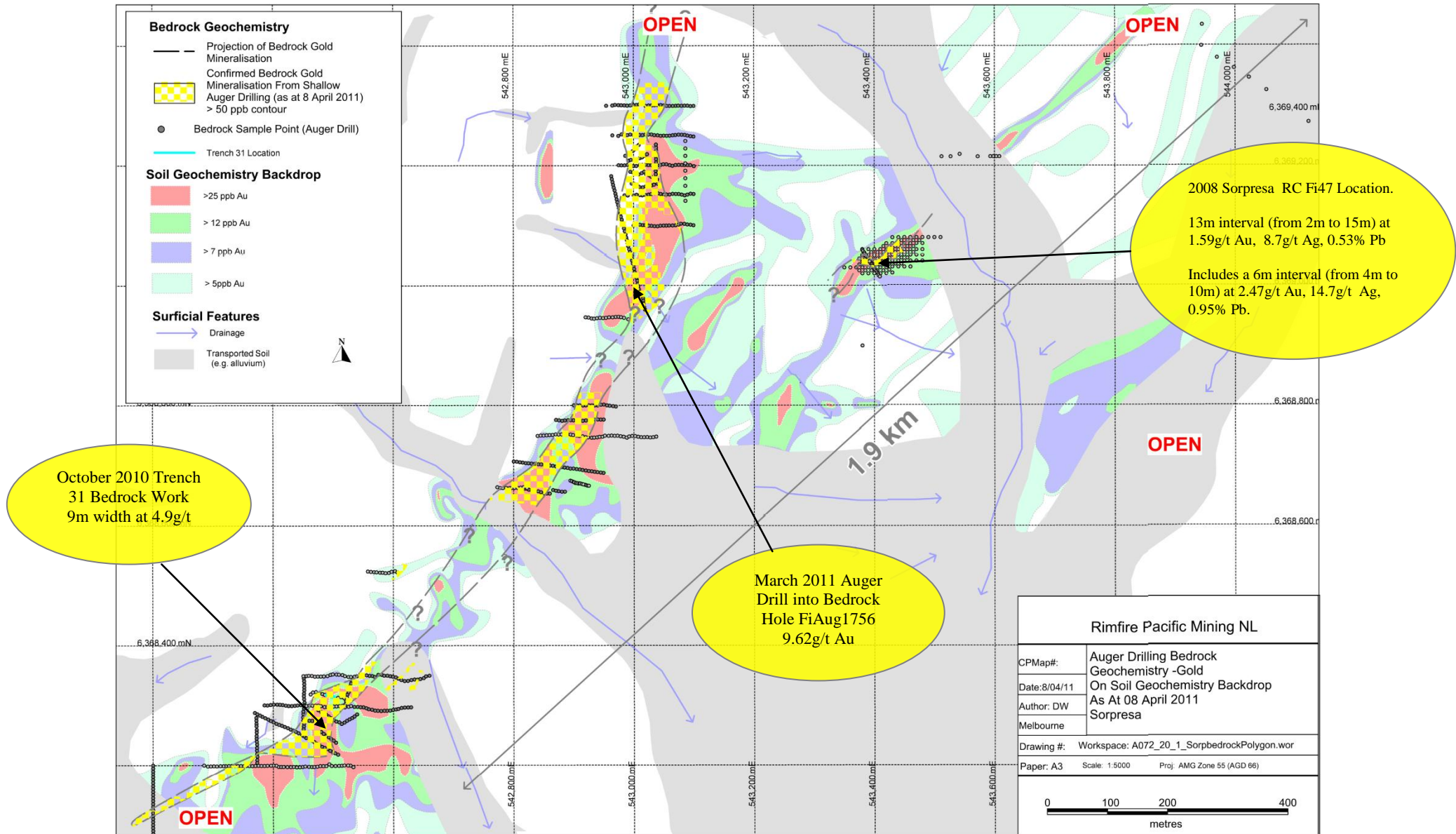
<sup>10</sup> [Rimfire Exploration Report June Quarter 2008 pages 5~7](#)

<sup>11</sup> [Rimfire Exploration Report March Quarter 2009, pages 4~5](#)

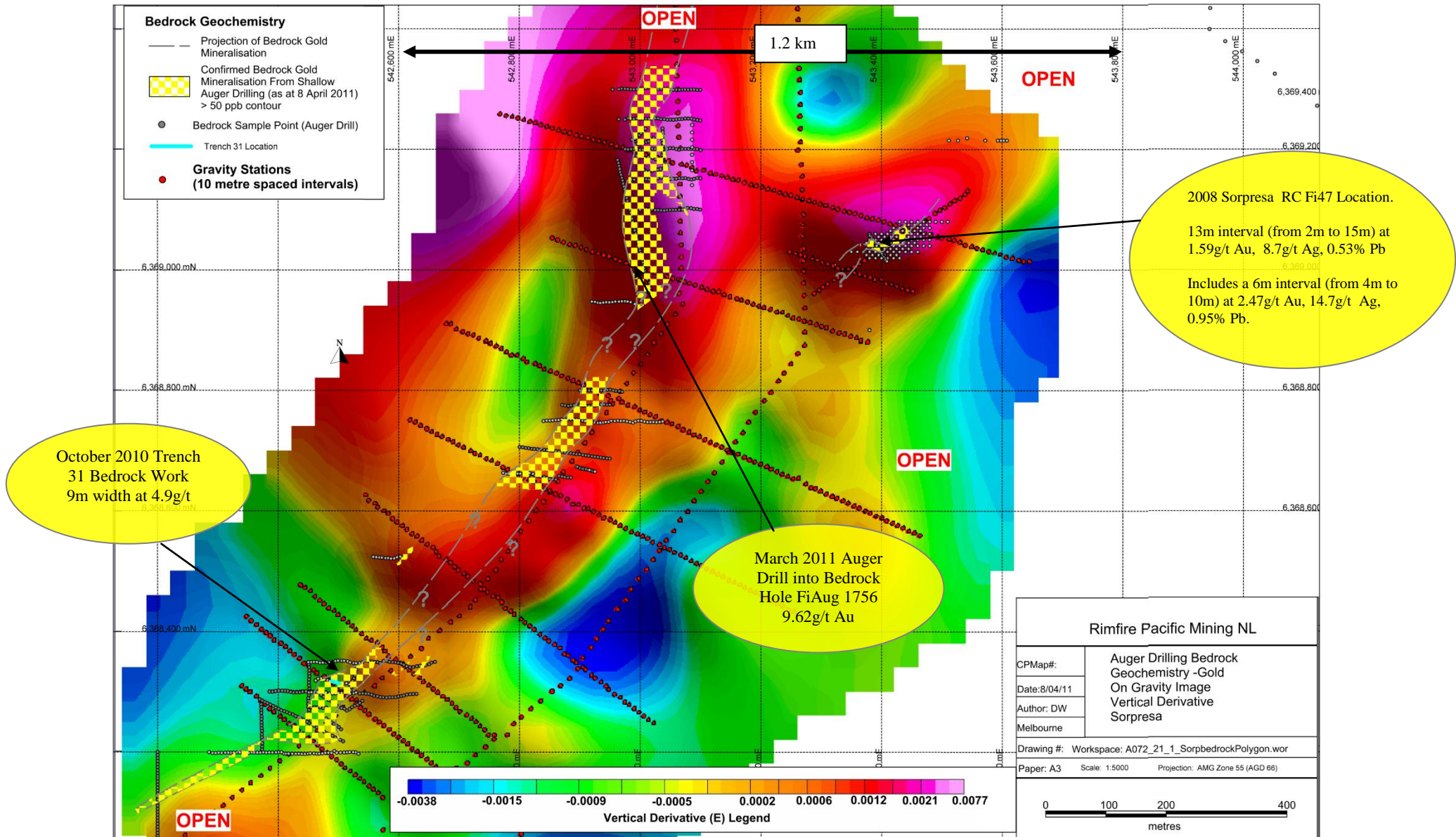
# Appendix 1

## Sorpresa Bedrock Auger Drilling - Gold Zones with 50ppb cutoff

Assays were carried out by independent laboratory, ALS Laboratories, using standard Fire Assay Methods for Gold, namely Au-AA22 (for Au values below 1g/t) and Au-AA26 (for Au values above 1g/t). The sample charge size for assay was 50g. Location details for samples are shown below with values.

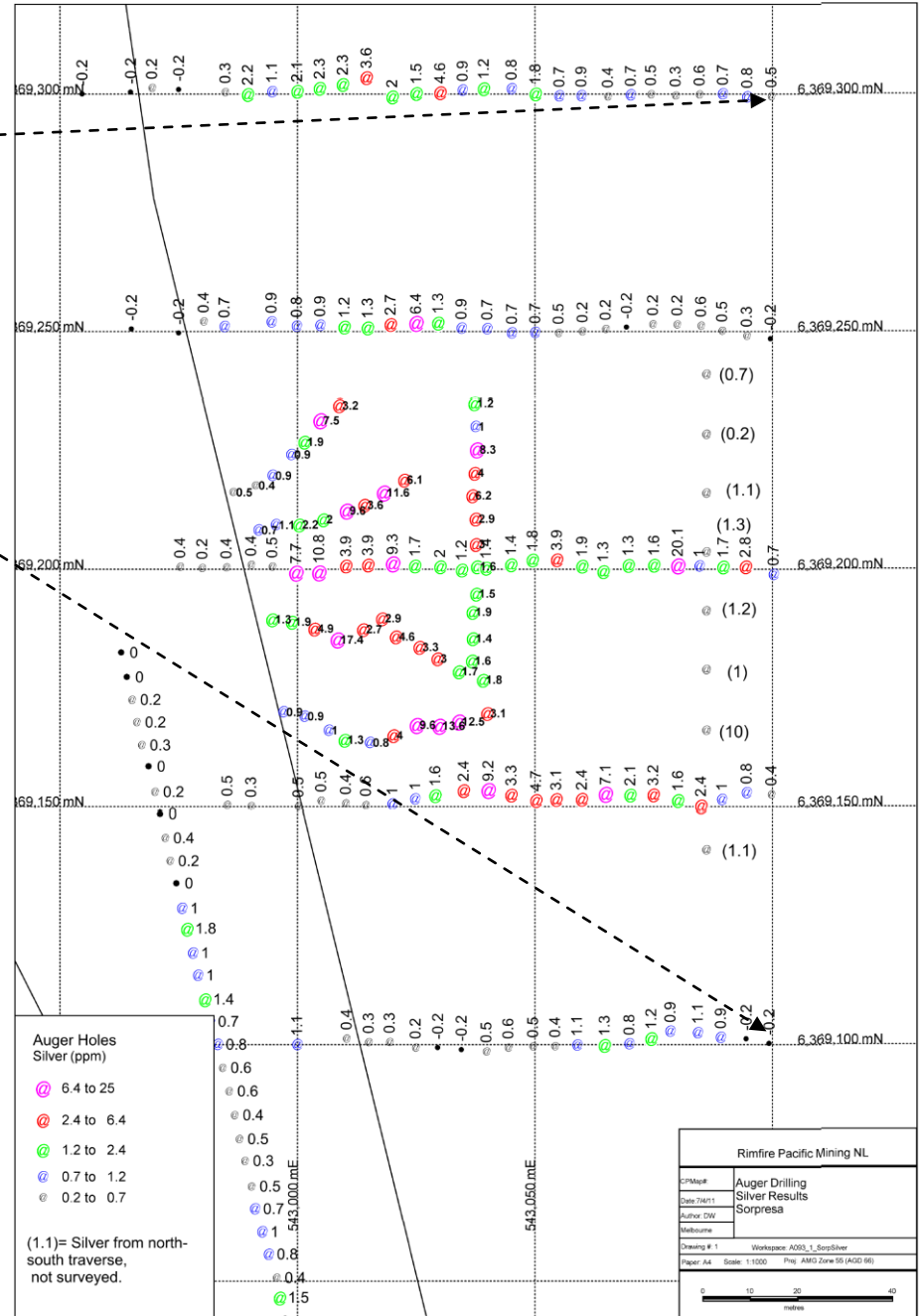
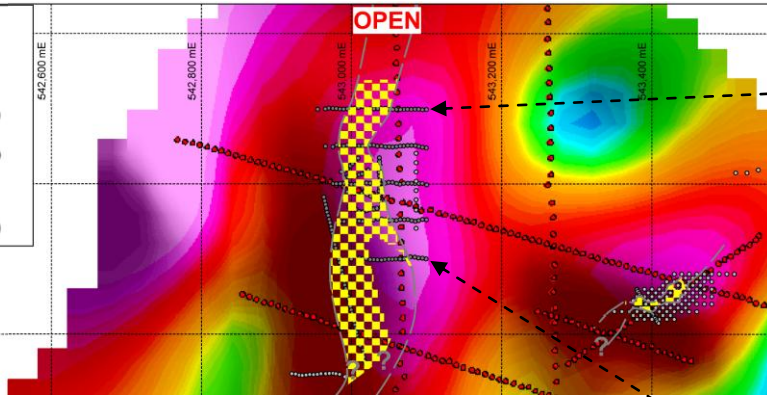
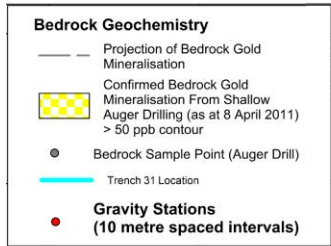


# The Sorpresa Micro Gravity Survey with Anomalous Bedrock Gold Zone Identified to Date



APPENDIX 3

**The Sorpresa Micro Gravity Survey with Anomalous Bedrock Gold Zone Identified to Date**



Recent silver geochemistry results in shallow auger drilling into bedrock in the North East of the Sorpresa Gold anomaly.

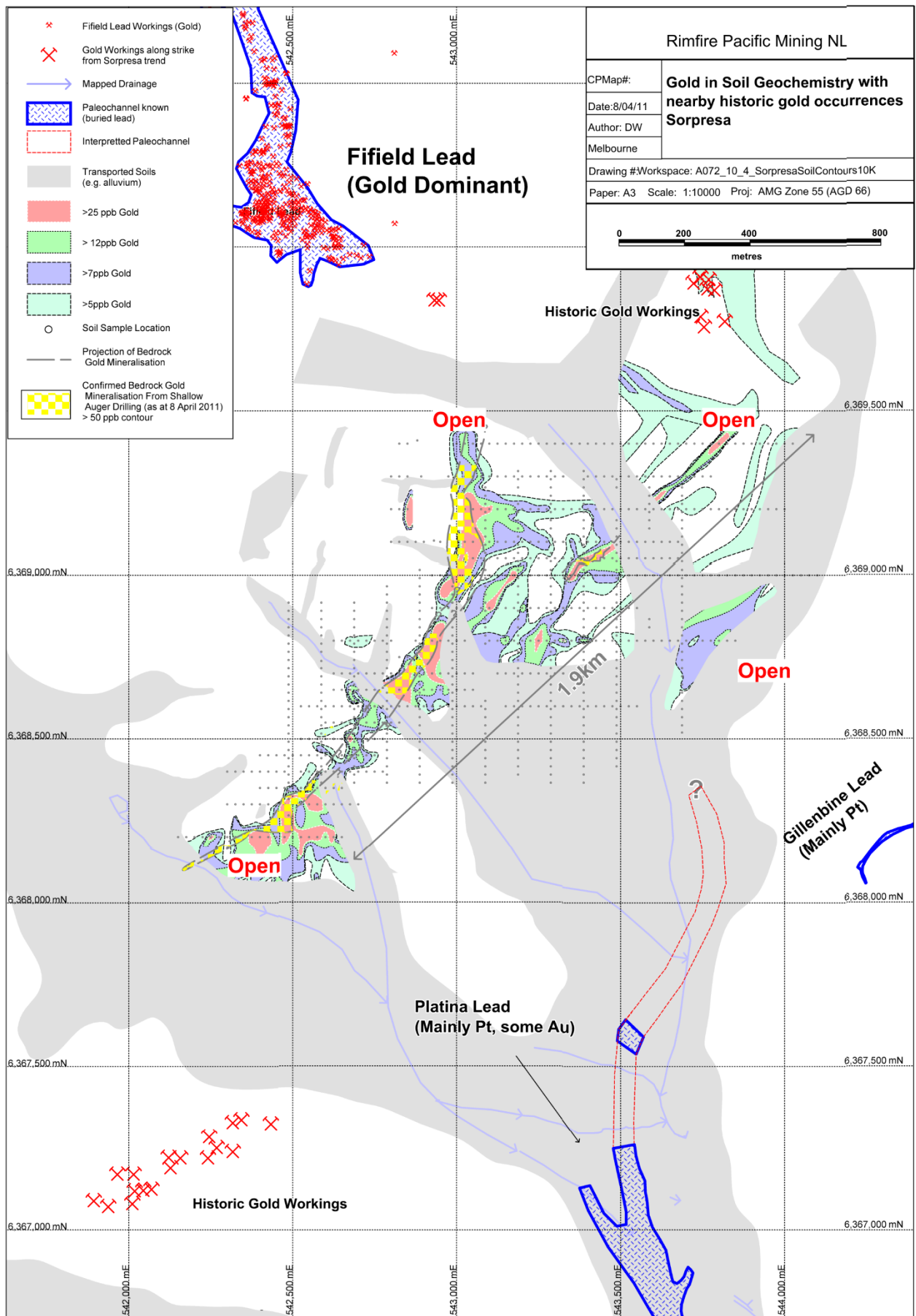
Distinct metal zoning is noted, with elevated silver values up to 20g/t Ag seen in the near surface bedrock.

Interpretation of silver values is not concluded, but it was noted that silver was seen with gold in the RC drill holes in 2008, 400m east of the current 2011 auger drill location.

The assay method for Ag was ME-ICP41, performed by ALS Laboratories

## Appendix 4

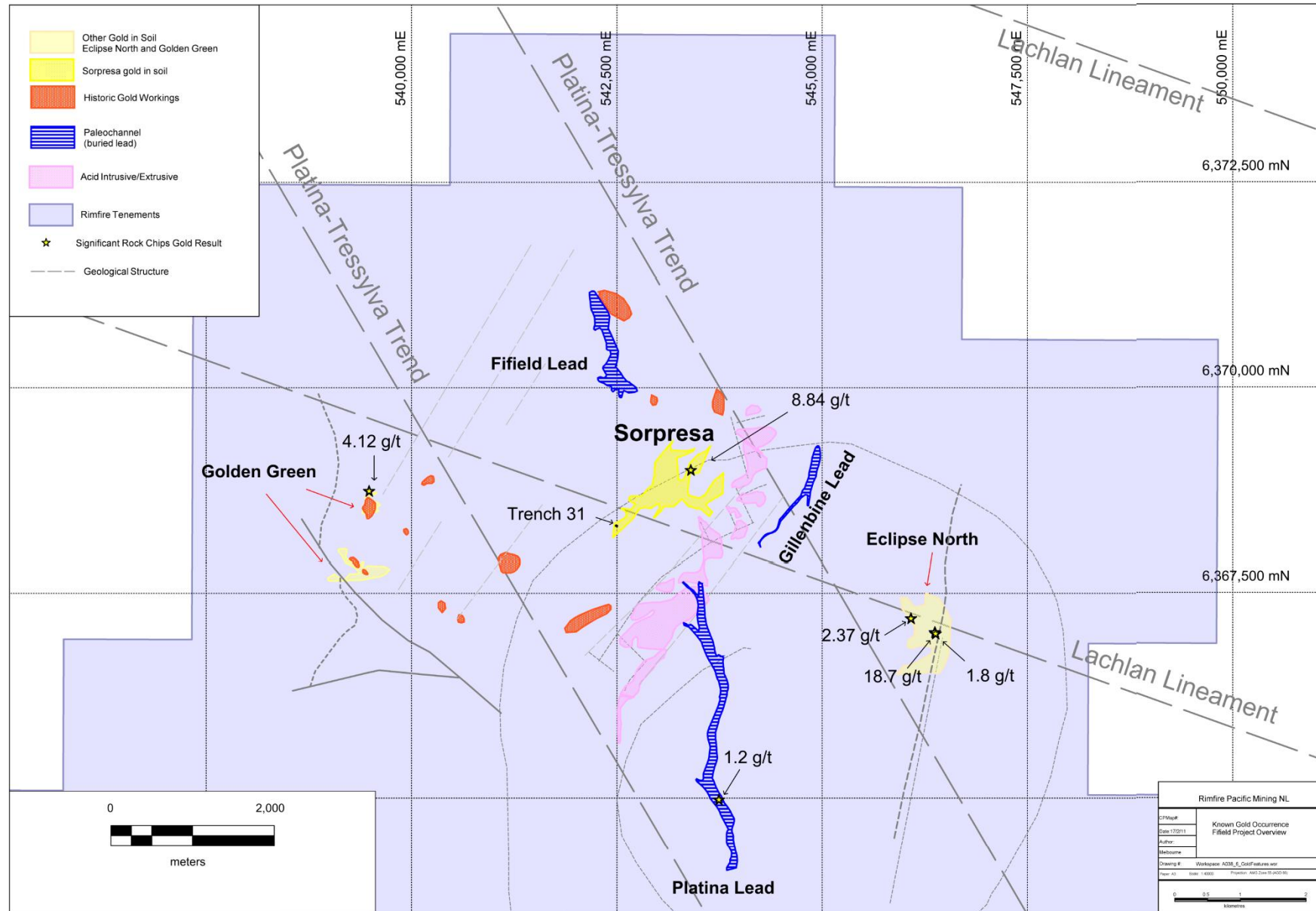
# Sorpesa Gold in Soil Anomaly in a wider Context – Untested Areas and Adjacent Historic Workings





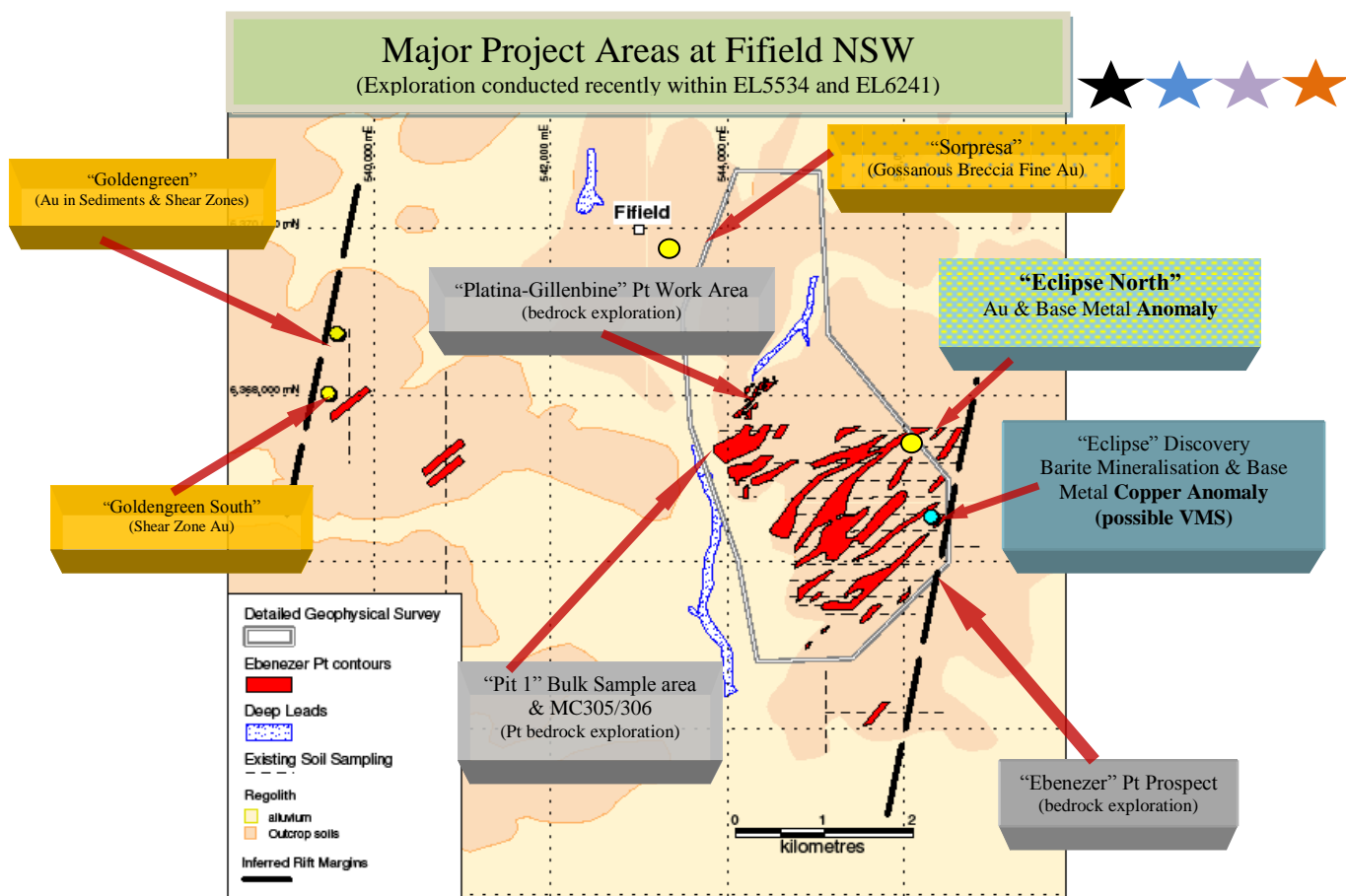
**APPENDIX 5**

**The Sorpresa Area Anomalous Gold Zone – within the wider Fifield Gold Observations**

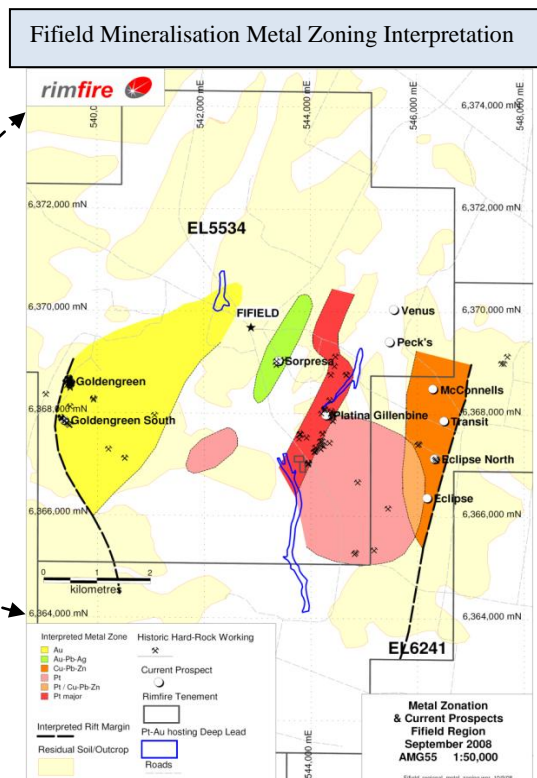
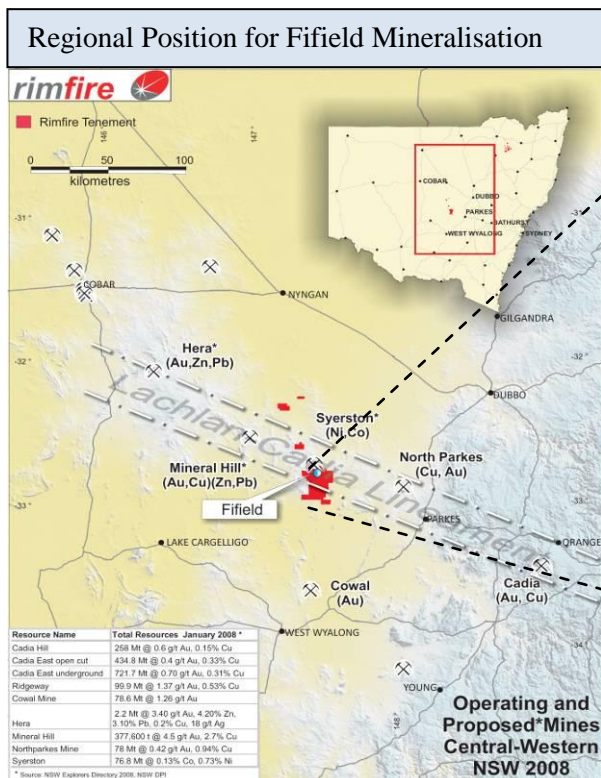


# Appendix 6

## Project Areas Fifield NSW and Metal Zoning Interpretations



★ Bulk sampling    
 ★ Auger drilling    
 ★ Trenching    
 ★ Mapping    
 ★ Assays



## **Appendix 7**

### **Project and Mineralisation Background – Fifield NSW**

The systematic exploration by Rimfire within the immediate Fifield region has continued to develop a wide variety of mineralised prospects. Each prospect has a strong geochemical surface expression, a highly relevant geological context and favourable development criteria.

There is a significant variation in mineralisation styles at Fifield, which includes Au, Pt and Cu/Base Metal prospects, with these occurring across a zone of less than 10km width. This observation also provides further support to the interpretation of the region as being a complex volcanic rift setting, with evidence for multiple, polymetallic mineralisation events associated with sub-volcanic intrusives, shearing and brecciation at various scales.

*Accordingly, the exploration shows that metal zoning remains an important feature of the regional geology at Fifield. The under explored Fifield area represents an excellent exploration setting for discovery of commercial mineralisation in the Company's view (Appendix 6).*

*The major mineralisation target for exploration by the Company at Fifield remains focused on gravity recoverable coarse grain Platinum. The Platina-Gillenbine area is of particular importance in understanding and delineating the bedrock mineralisation.*

A key feature of the exploration landscape at Fifield NSW is the minimal outcrop available for examination. However, in many instances the depth to bedrock is less than two metres, so a combination of soil geochemistry assays, auger drilling and trenching to bedrock with complementary bulk sampling is rapid and effective way to explore for significant mineralisation. These activities are also relatively low cost to undertake.

*Historic Pt mining at Fifield yielded in excess of a reported 20,000 oz of Pt from the deep leads and surface soil mining (circa. 1890~1930). The major deep lead was the Platina Lead, worked at a depth from 12m to 25m over a length of 2.8km with a reported grade of approx. 15g/t gravity recovered Pt equivalent.*

The northern extent of the Platina Lead was not able to be defined historically. This northern section represents an important component of the Pt bearing alluvial system, both with respect to its commercial potential and the exploration knowledge base the lead provides, in relation to the source area(s) for Pt entering the alluvial system along the full extent of the Platina Lead. *A further 500m of the Platina Lead has now been demonstrated to be present (2009), but this un-mined section has not yet been tested by the Company.*

The Company's key overall objective remains, "to establish a potential open cut minable resource(s) within the various project areas including the Sorpresa Gold area and also the 6km<sup>2</sup> zone of currently identified Pt mineralisation noted within the Platina-Gillenbine and Ebenezer project areas"<sup>12</sup>, which includes both alluvial targets and the greater bedrock system.

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<sup>12</sup> Appendix 6 for details of locations