

Nubian Resources



Annual technical report EL4/2019 (Stavely Tasmania Pty Ltd)

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1 Executive Summary

During 2023-24 Nubian Resources was operating at a reduced operational tempo due to poor equity market conditions. Work on EL4/2019 was limited to data compilation, geophysical data compilation and review and the acquisition and processing of Sentinel 2 Hyperspectral data. With improved market conditions and significant work program is planned for 2024-25.

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3 Introduction

The Mathinna gold project lies in NE Tasmania, ~60km East of the major city of Launceston. The Mathinna gold field is part of the historic Mangana-Waterhouse goldfields which includes the Mangana, Tower Hill, Mathinna, Dan Rivulet, Alberton, Warrentinna, Forester and Waterhouse goldfields (Threader, 1968). Mineralisation at Mathinna has been correlated with the major Victorian goldfields, with recent work placing an age on mineralisation of 395-385Ma (Bierlein et al., 2005). The fields were worked between 1870 and 1920 and produced ~54 tonnes of gold (Bottrill et al. 1992)

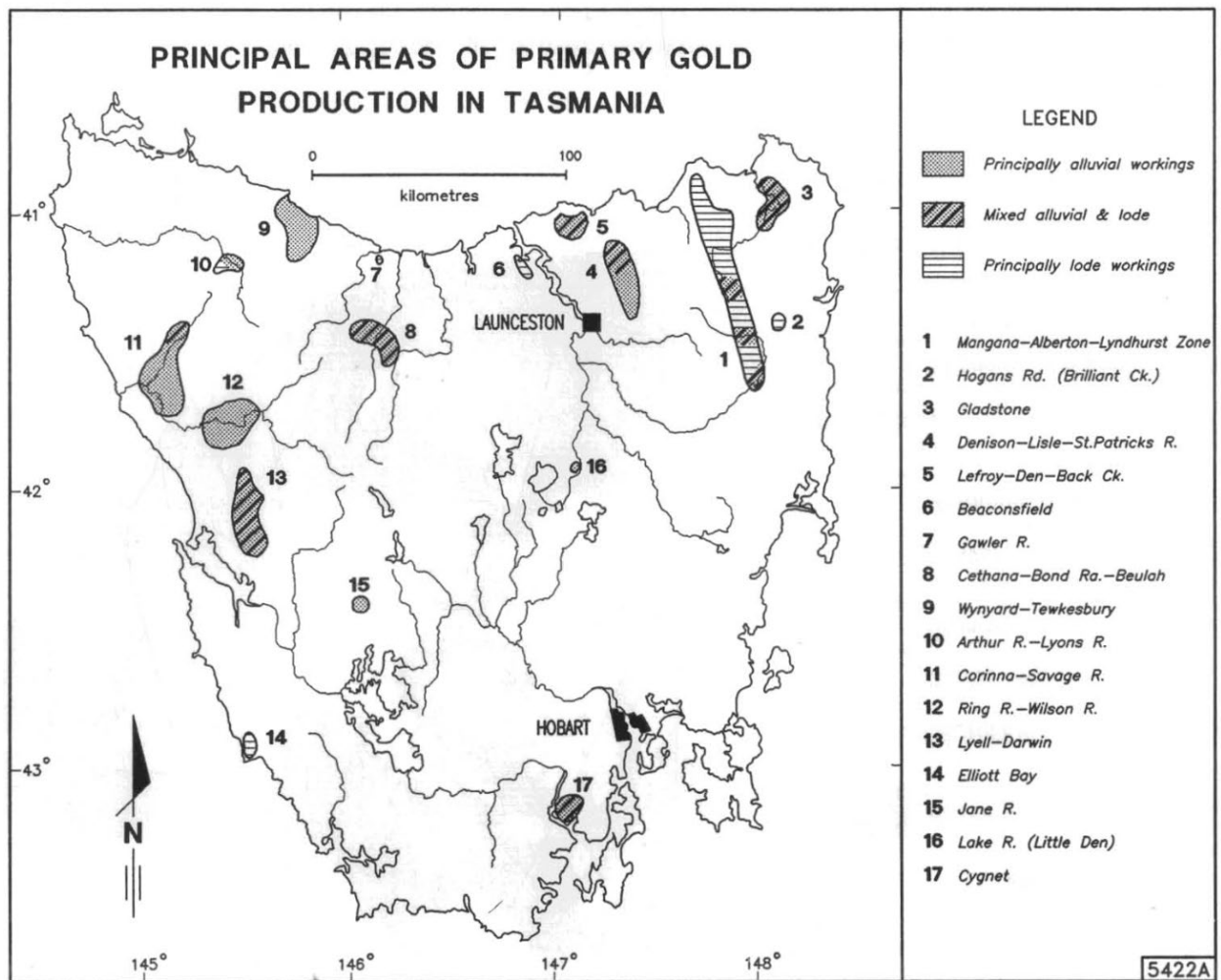


Figure 1 - Areas of gold production in Tasmania (reproduced from Bottrill et al. 1992)

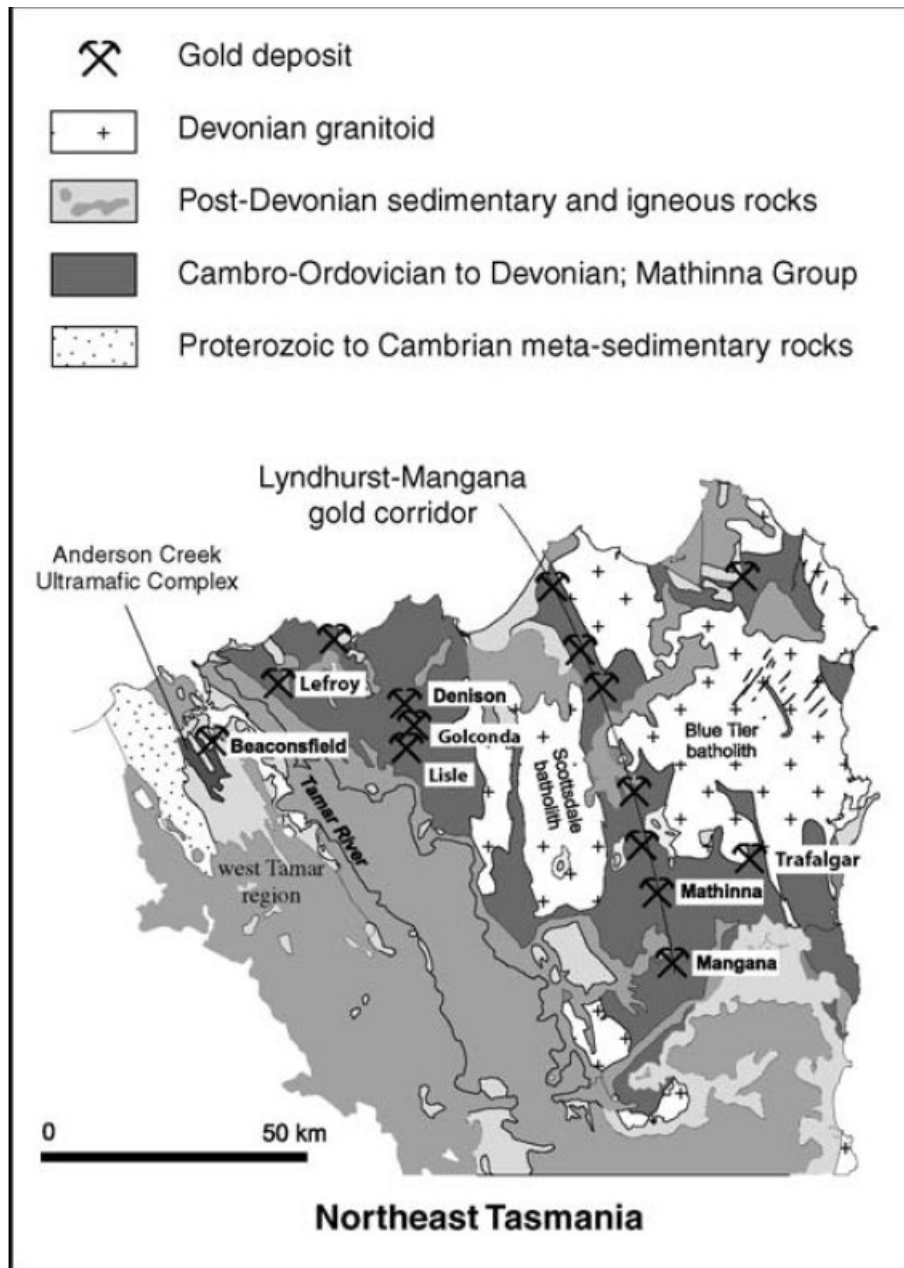


Figure 2 - Overview of the geology of NE Tasmanian gold deposits from (Bierlein et al., 2005)

4 History

Mathinna was mined at its peak between 1870 and 1920. Government records indicated that ~290,000 ounces were produced from the hard rock mines, although this may significantly underestimate true production due to the omission of alluvial production. This historical shafts sit on the side of a hill, the location can be seen in the Figure 3 below.



Frontispiece

1. NEW GOLDEN GATE AND TASMANIAN CONSOLS MINES.

Figure 3 - 1914 Photo of the Mathinna gold mine (looking west).

4.1 Geological Setting

The North East Tasmanian Goldfields are located in the northeastern part of Tasmania, Australia. This region is part of the larger Tasmanian Geological Province, which primarily consists of ancient Precambrian to Paleozoic rocks.

4.2 Regional Geology

- **Mathinna:** The Mathinna area is situated in the eastern part of the North East Tasmanian Goldfields. It features rocks from the Mathinna Group, which include various metamorphosed sediments and volcanic rocks. The Mathinna Group is part of the broader Ben Lomond Zone. The area is characterized by complex geological structures, including folded and faulted rocks.

4.3 Gold Mineralization:

Gold deposits in the North East Tasmanian Goldfields are typically found in quartz veins that cut through the metamorphosed sedimentary and volcanic rocks of the

Mathinna Group. The mineralization is often associated with structural features such as faults and shear zones, where the gold is concentrated. The gold is commonly found as native gold within quartz veins, sometimes accompanied by other minerals like pyrite.

4.4 Mining History

Gold was discovered in the North East Tasmanian Goldfields in the mid-19th century, leading to significant mining activity. Mathinna, Lefroy, and Alberton became notable gold mining centers during the gold rush era. Mining methods included panning, sluicing, and underground mining. Despite the initial flurry of activity, production decreased over time, though some of the old mines have seen renewed interest due to advancements in mining technology and exploration techniques.

5 Regional geophysics

The Nubian Mathinna project sits in the contact aureole of a major regional Batholith which sits ~1.5-3km from the eastern boundary of the tenement package (see Figure 3). It is interpreted that this batholith played a role in driving the mineralisation encountered at the Mathinna project. There is a NW trending regional fabric seen in the 1VD magnetics which the historical mineral occurrences follow.

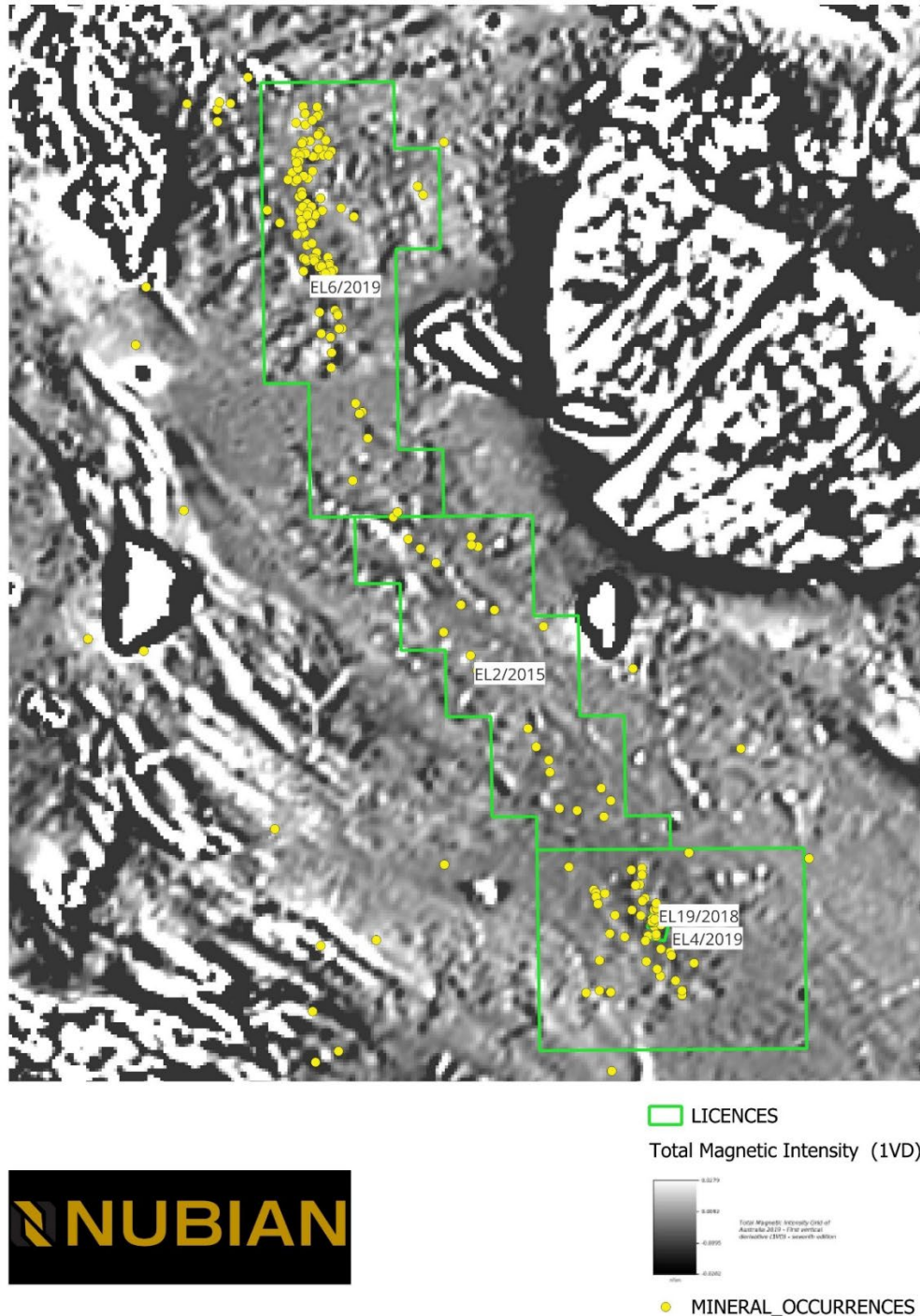


Figure 4 - Nubian tenure with government 1VD magnetics

6 Work competed

During the year Nubian completed field visits to the historical workings and collated historical information. This work is outlined in the following sections.

6.1 Historical data compilation

Nubian has compiled an historical drilling data base in access format – this is included in the associated data package.

6.2 Historical drilling highlights

2 phases of modern exploration have been completed at Mathinna – in 1998 and 1999 by Defiance mining and in 2019-20 by Stavely Minerals. Defiance drilled 77 RC holes in 1998-99, the top 10 intercepts are tabulated below:

Table 1 – Defiance mining drilling highlights

Hole_ID	NAT_East	NAT_North	mFrom	Width	Au_ppm
MT050	574696.6	5406908	112	1	67.6
MT055	574701.3	5406948	46	1	56.8
MT075	574728.4	5406908	220	1	46.4
MT041	574566.8	5406769	23	1	41.4
MT046	574702.9	5406928	93	1	40.2
MT029	574573.5	5406809	33	1	38.1
MT052	574582.2	5406748	27	1	30
MT039	574682.1	5406930	51	1	29.1
MT068	574709.7	5406969	109	1	27.8
MT080	574671.1	5406988	74	1	26.3

The historical highlights are shown in Figure 5 below. Stavely only drilled 8 diamond holes – Nubian geologists believe the drilling was too sparse and was poorly located and therefore ineffective.

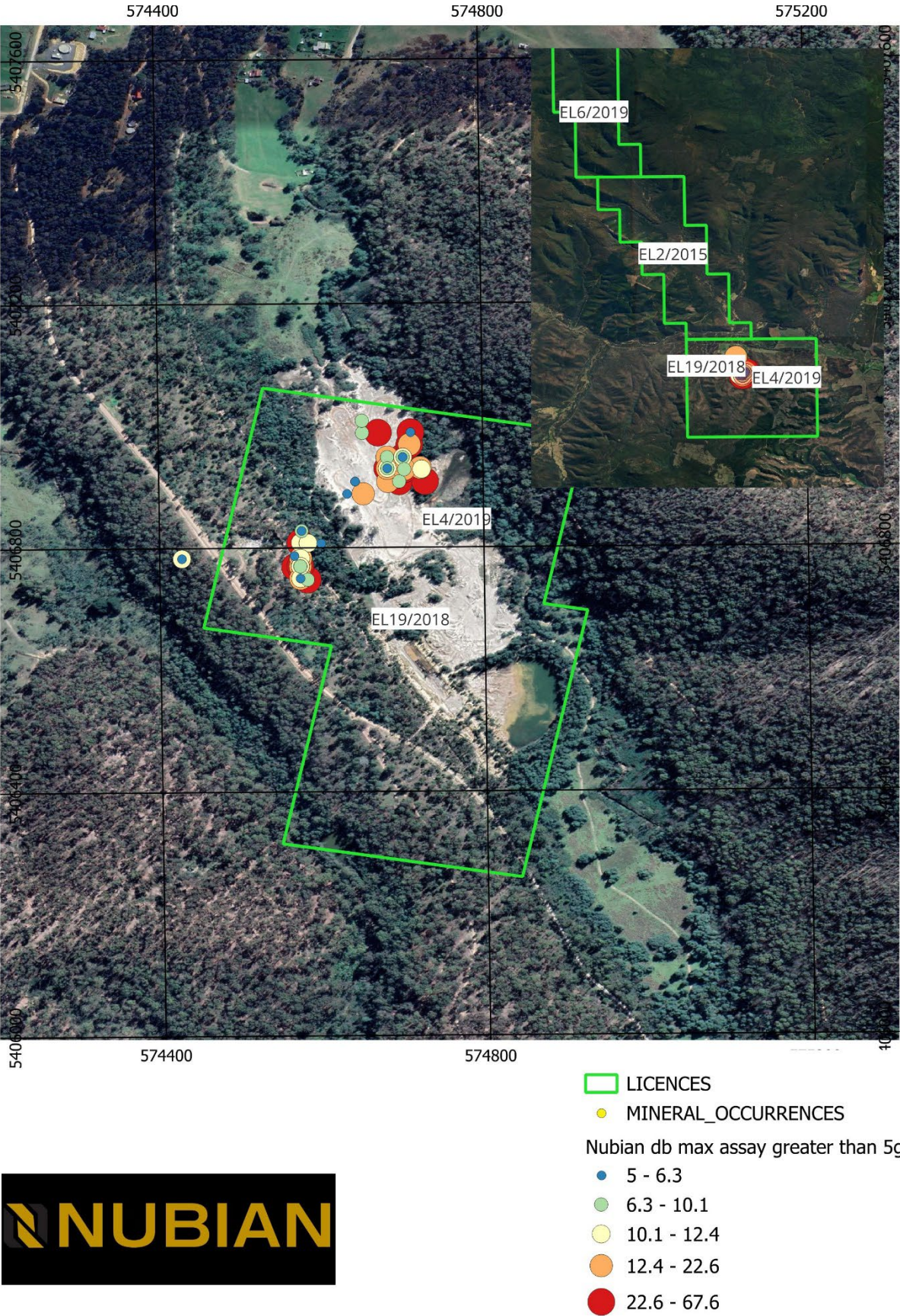


Figure 5 - Historical drilling highlights

7 Field investigation

Limited field investigations were undertaken in the year. Coupled with detailed review of the historical work, Nubian has determined that historical workers were possibly drilling on the wrong orientation. Figure 6 below is a photo taken in the main pit of the new golden gate mine. The photo orientation is 356 degrees (~due north) and it can be clearly seen that the mined lode was dipping to the west. Figure 7 is a figure reproduced from a Stavely Minerals announcement from 23/4/2020 – all diamond drilling that was completed was drilled on a westerly azimuth. Putting these 2 observations together, it follows that future drilling around the new golden gate mine should be drilled on an easterly azimuth.



Figure 6 - Photo from the New golden gate mine main pit. Photo orientation is 356 degrees, note the westerly dip of the mined lode.

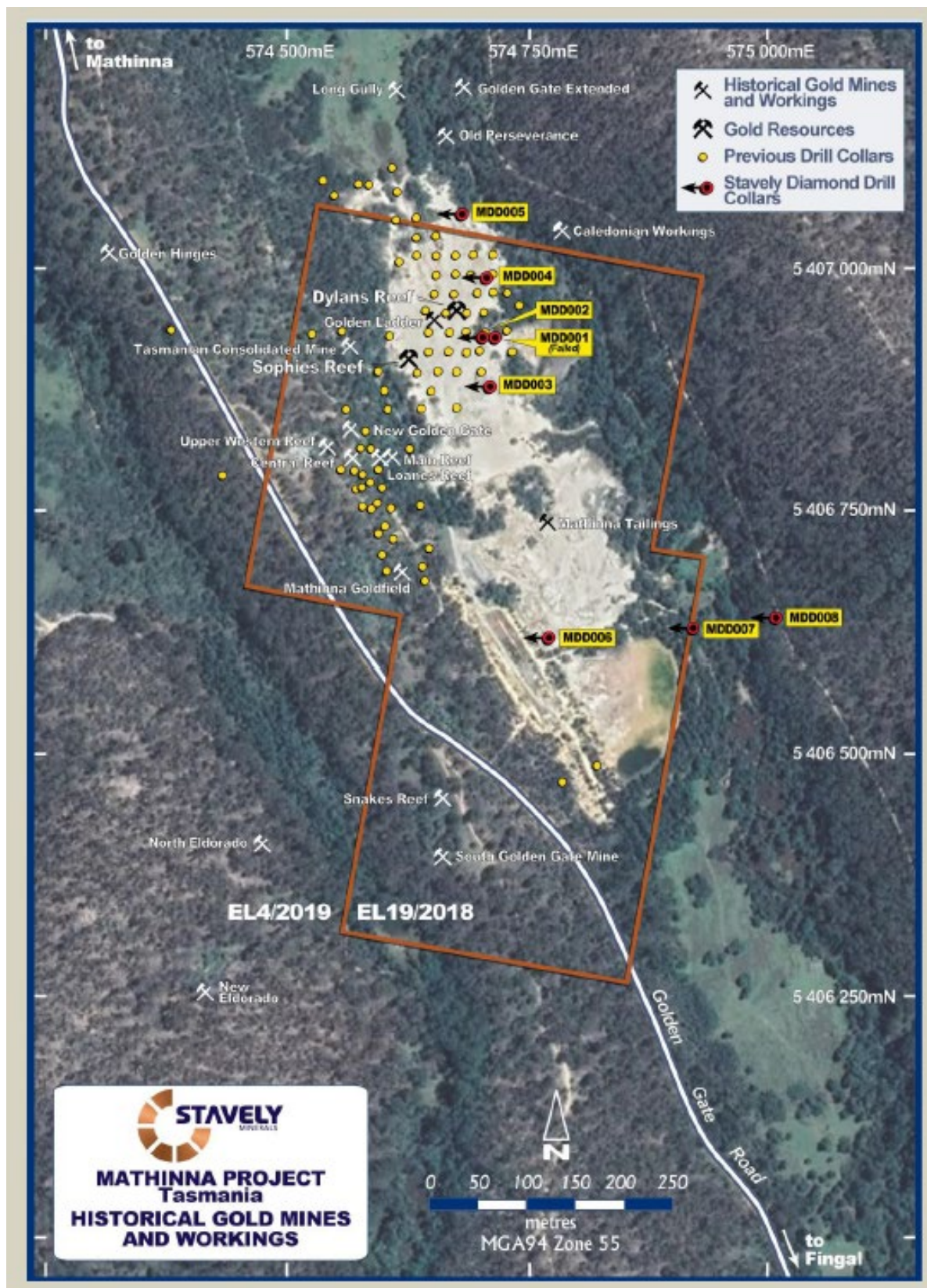


Figure 7 - Figure 2 from Stavely Minerals announcement dated 23/4/2020 - note that all diamond holes were drilled on a westerly azimuth

8 New Geological interpretation

Based on the data compilation completed a new geological interpretation has been proposed. The historical mineralisation at Mathinna is currently believed to inhabit the eastern and western limbs of a fold structure that plunges to the north. This plunge has been determined by the differing orientation of mineralisation on each limb. It is proposed that moving north from the historical goldfield the mineralisation will get deeper and coalesce in the axial plane of the fold structure (see Figure 5). This has opened up the possibility of higher grades and greater volumes of mineralisation lying to the north.

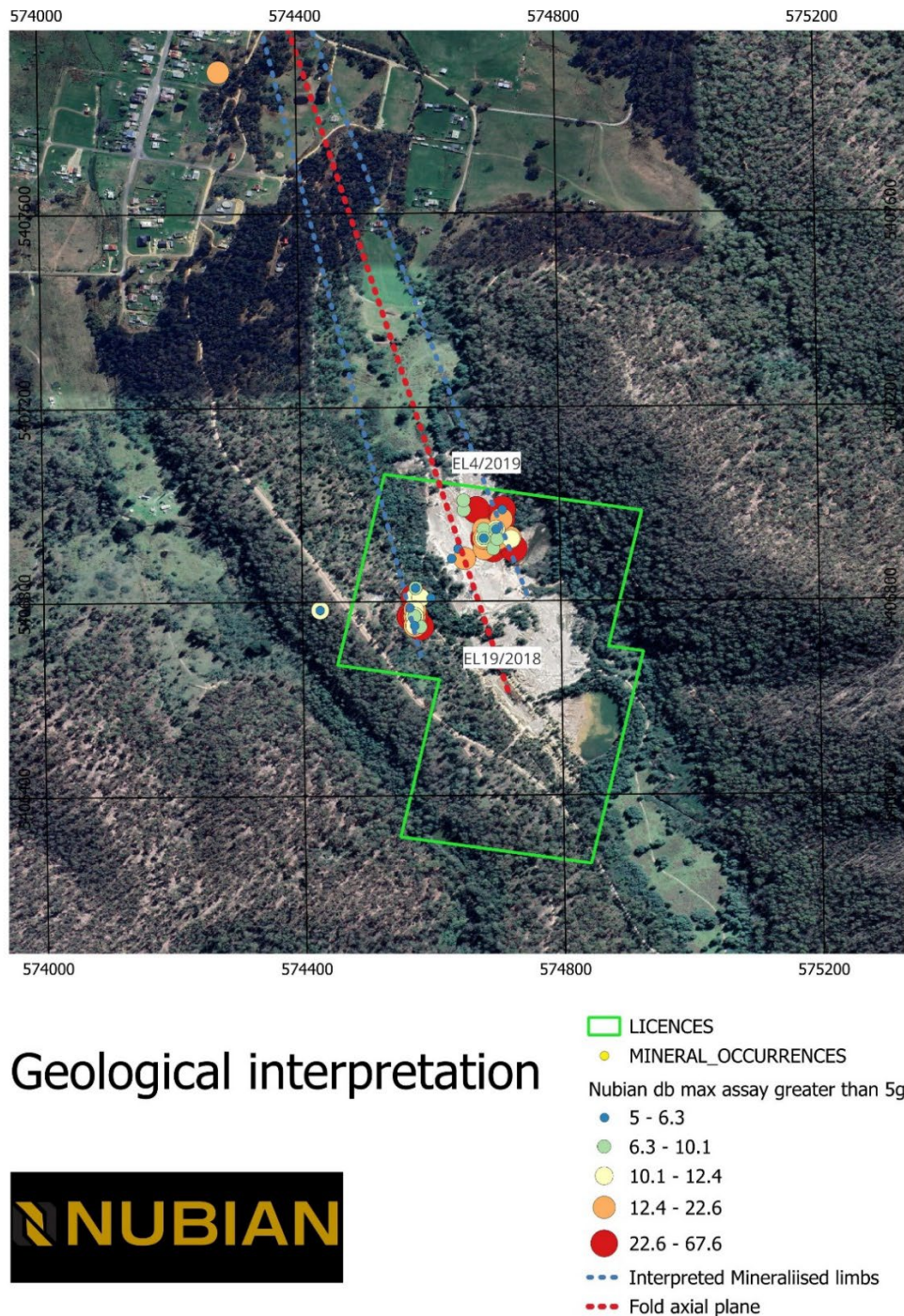


Figure 8 - Geological interpretation of the Mathinna mineralisation

9 Upcoming work

In order for Nubian to test the new geological interpretation Electromagnetic and Induced polarization surveys are planned for November. Initially 2 lines of EM and IP will be completed to enable a comparison of the 2 methods and their applicability to Mathinna. The high sulphide content observed during field investigations is expected to produce an EM and/or IP response that will enable a larger survey to be conducted which could lead to further significant gold mineralisation being discovered. Following the geophysical program a shallow aircore program is planned to better define shallow mineralisation. Following aircore a new program of diamond drilling will be undertaken.

References

- Bierlein, F.P., Foster, D.A., Gray, D.R., Davidson, G.J., 2005. Timing of orogenic gold mineralisation in northeastern Tasmania: implications for the tectonic and metallogenetic evolution of Palaeozoic SE Australia. *Miner. Deposita* 39, 890–903.
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- Threader, V., 1968. The geology of the Mangana-Waterhouse goldfields : with particular reference to structure and mineralisation 166 p.
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