Northern Quarries (788) Iron Deposit
Cuprona-Natone Iron Trend.
North West Tasmania -
Resource Estimate

Grant MacDonald (B.Sc. Hons.), M.A.I.G.

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Executive Summary

Resource

An Inferred Resource has been estimated for the Northern Quarries (788) hematite deposit at Cuprona in northwest Tasmania utilising recent drill and historical drill and channel sample data.

The total resource stands at **4,432,741t at 44.58% Fe** (and 33.02% SiO_2). Most of the resource lies above a relative level of 120m.a.s.l. Here the total resource is **4,094,086 at 44.01% Fe** (and 33.1% SiO_2).

The resource is classified as Inferred on the basis of

1. limited sampling,
2. potential positional inaccuracies in sample location, and
3. the use of historical data without field duplication.

Caution is recommended in any reliance on the accuracy of this resource estimation.

Geology and Assay Data

The Northern Quarries (788) hematite deposit is a northeast striking, approximately 70° southeast dipping, body of massive hematite+/-silica hosted in a belt of Cambrian sediments. The deposit lies at the northeastern end of the Cuprona – Natone Iron Trend.

As modelled the deposit has a strike length of 430m (open ended along strike), vertical extent of 180m (open ended down dip) and a thickness that ranges from 10m to 30m.

The deposit was apparently discovered in ~1891 and prospected in the 1890's with some limited production (some small parcels of ore were also mined during the Second World War), and has been described by a number of government and industry geologists.

In 1919 the Commonwealth Government carried out systematic sampling with a view to purchasing the deposit (Boyd *et. al.*, 1919). They sampled the deposit in six surface trenches and the Upper Tunnel in the Northern Quarries (788) area, as well as the outcrop and workings on either side of the Blythe River, with their sampling considered of sufficient quality for inclusion in this estimation.

In the mid 1960's the Mines Department drilled three drill holes beneath the deposit with two considered worthy of sampling (BR1 and BR3).

In 2015 Lottah Mining drilled four diamond and three reverse circulation drill holes into the deposit.

These three data sources constitute the assay sample data used in the estimation.

Sample data from open hole percussion drilling by CW Davis in the upper part of the deposit, whilst substantial, has not been included this estimation as assay results are strongly positively biased with respect to the other three data sets.

Data Quality

The data used in the estimation is limited and of variable quality hence the Inferred status.

Early sampling by Boyd *et. al.* (1919) and Noldart (1966) has no laboratory QA/QC reported but appears to be of acceptable quality and has been used with caution. Lottah Mining Pty Ltd's sampling is of current industry standard.

However, the low positional accuracy of the trenches sampled by Boyd *et. al.* (1919) and similarly collar locations for government drill holes BR1 and BR3 and more recent drillholes by Lottah Mining means the orebody wireframe has a lower confidence level.

Further work to address this deficiency is detailed below but includes accurate collar surveying, further assaying and field duplicating some of Boyd *et. al.'s* (1919) sampling.

Estimation and Block Model

Modelling was done in SURPAC. A 045° oriented model with 10mY x 5mX x 10mZ blocks and sub-blocking to 2.5mY x 1.25mX x 2.5mZ was generated.

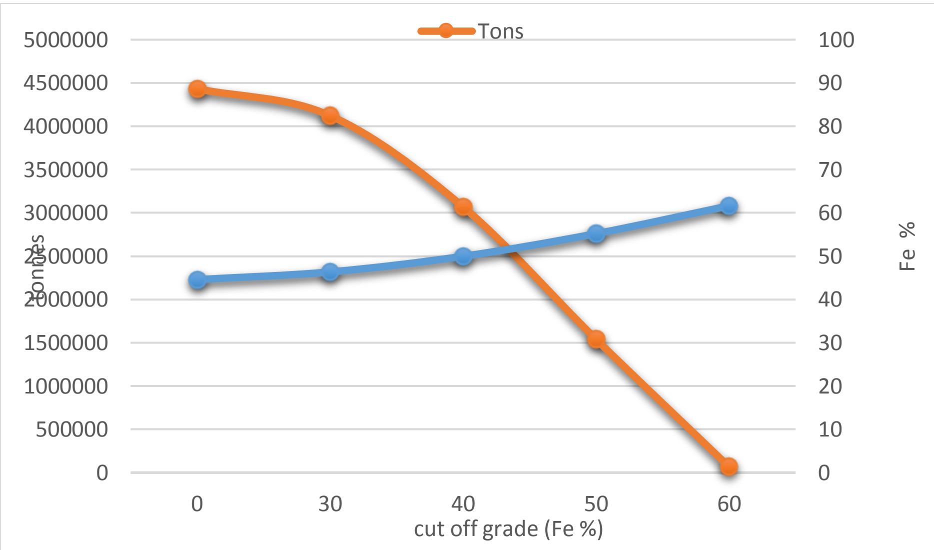
Due to recognised deficiencies in the data set estimation was by Inverse Distance Squared. A 100m search ellipse was utilised with major/semi-major axis ratio of 2:1, major/minor axis ratio of 1:1, minimum 3 samples and maximum 15.

Specific gravity used was 4.1t/m^3 as determined by Lottah Mining from 17 measurements in the orebody.

Discrete higher grade zones are recognisable in drill hole intersections and may be selectable in the mining process. Due to insufficient data and positional inaccuracies hard sub-domaining of these high grade zones was not attempted.

At various cut-off grades the block model reports the following tons and grades.

Cut Off Grade Fe %	Tons	Fe %	SiO2 %
0	4,432,741	44.58	33.02
30	4,122,390	46.36	31.17
40	3,069,907	49.97	26.0
50	1,539,966	55.19	19.86
60	67,362	61.62	9.98



Potential for Extensions and Additions to Resource

The Northern Quarries (788) deposit lies towards the northern end of the Cuprona – Natone Iron trend with further hematite deposits known from both sides of the Blythe River (River Zone) and further southwest at Natone. Much of the trend remains obscured by a veneer of Tertiary aged basalt and so the trend has only been explored in a few places.

Limited historic sampling (Boyd *et. al.* 1919) in the River Zone has shown the hematite body to be up to 16.7m wide and assaying up to (all intervals true widths)

- 9.1m @ 54.3% Fe (Cut K),
- 7.6m @ 50.2% Fe (Cut J), and
- 16.7m @ 45.8% Fe (Cut N Yellow Crag).

The Purple Crag deposit has historically (Boyd *et. al.* 1919) assayed (all intervals true widths)

- 9.45m @ 64.4% Fe (Cut N) and
- 6.1m @ 67.1% Fe (Cut M).

At the Rutherfords (or Kiwis) deposit at Natone limited drilling in an area of 200m x 200m has intersected grades up to (all intervals down hole lengths)

- 29m @ 66.1% Fe (Natone 2),
- 20m @ 55.5% Fe (KWRC005), and
- 13m @ 58.5% Fe (R001).

There is excellent potential to add to the current hematite iron resource base in EL 6/2005.

Further, the recognition that the hematite bodies are likely to be of primary sedimentary origin, as opposed to some form of structural control, is highly encouraging as it expands greatly the area of potential

Recommendations

Northern Quarries (788) Resource - upgrade to Indicated status

- Detailed survey drill hole collars, outcrops, trenches.
- Field duplication of early trench sampling with extra trenching where possible.
- Re-log drill core and re-map outcrop to generate modern geological map.
- Sample missing intervals.
- Infill and step out drilling on 50m x 25m pattern with all holes oriented to the southwest.

Northern Quarries (788) extend resource (to north east)

- Step-out trenching and drilling to northeast particularly where iron scree mapped in historic mapping.

River Zone

- Detailed survey drill hole collars, outcrops, trenches and detailed geological mapping
- Further sampling with trenching and channel sampling where possible, drilling where required.
- Step out drilling to south west along strike from Yellow Crag, Purple Crag and Eastern Crag.

Basalt cover

- Determine thickness of basalt and model.
- Drill broad spaced fences of holes across favourable stratigraphic host.

Rutherfords (Natone) define resource

- Detailed survey drill hole collars, outcrops, trenches.
- Surface trenching on 25m sections (where possible) and infill drilling on 50m spaced sections as fences across the two parallel zones (with some fences also crossing the central zone).
- Geological remapping/relogging/reinterpretation of all drill holes to generate new geological map.

Rutherfords (Natone) define resource

- Step-out drilling to northeast and southwest along both parallel zones following stratigraphic host unit. Particularly southwest from drill hole Natone 2's intersection of 29.5m @ 66.1% Fe (down hole length) and R003's 13m @ 58.5% Fe (down hole length).
- Consider existing geophysical (gravity) and soil geochemical data (Cu, Sn and W) for ground to northeast and southwest and target relevant anomalies

Regionally

- Target the stratigraphic unit which hosts the hematite bodies, i.e. Cambrian siltstone beneath the Duncan Conglomerate, regionally.

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Appendices

1.0 Introduction

This report, on behalf of Lottah Mining Pty Ltd, details

1. The estimation of a JORC 2012 compliant Inferred Resource for the Northern Quarries (788) zone of the Blythe Iron Deposits at Cuprona in Tasmania's northwest;
2. Discusses the potential for further JORC compliant resources at Cuprona and the work required to generate these resources; and
3. Considers the geological setting of the iron deposits and the potential of the Cuprona-Natone trend for further high grade hematite deposits as well as the potential for associated copper+gold mineralisation.

The Blythe River Iron deposits occur as a number of discrete hematite+silica bodies on either side of the Blythe River near Cuprona, 8km's inland from Burnie on Tasmania's northwest coast (see figure 1.1).

The deposits define a 2km long north-west striking linear trend of such hematite+silica bodies. The trend is obscured over a ~½ km in the middle by Tertiary basalt. The Northern Quarries (788) deposit is the northernmost of these bodies and has seen the most sampling and drilling (see figures 1.1 and 3.1).

South of the basalt the outcropping mineralised zone is called the River Zone which includes the River and Middle Tunnels on the northern slopes and the Yellow, Purple and Eastern Crags on the southern banks of the Blythe River (see figures 1.1 and 3.2).

The hematite mineralised trend continues to the southwest beneath basalt cover before emerging with the Rutherfords iron deposits at Natone. The hematite mineralised trend is known as the Cuprona-Natone iron trend (see figure 1.1).

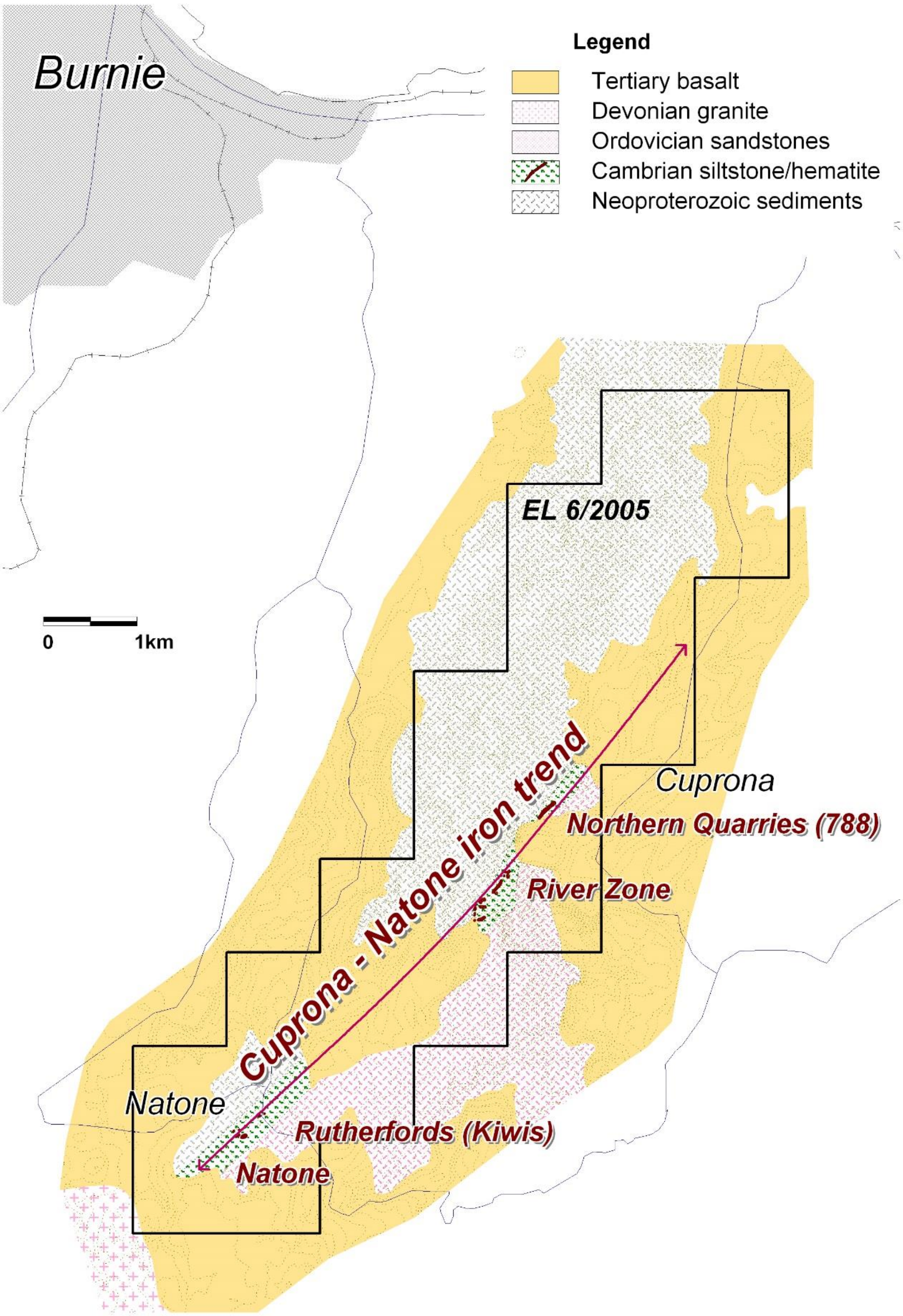


Figure 1.1: Cuprona-Natone iron trend, EL 6/2005, Northwest Tasmania.

2.0 Project background

2.1 Prospecting, Mining, Exploration History –

Outcropping hematite and limonite on the slopes of the Blythe River at Cuprona were apparently discovered sometime just prior to 1891 as the first mineral leases, in the names of R. Quiggan and W. Jones.

Government geologist A. Montgomery made a superficial examination of the deposit during his visit on 16th January, noting that at the time the deposit was "in no way opened up by cuttings or mining works of any sort" thus impeding his ability to fully appraise the deposit (Montgomery, 1894) but was impressed by the high quality (citing an assay by the government analyst Mr W.F. Ward at 66.5% Fe with 4.8% Si and only a trace of phosphoric acid), large volume (he estimated ~30 million tons) and potential vertical and lateral persistence.

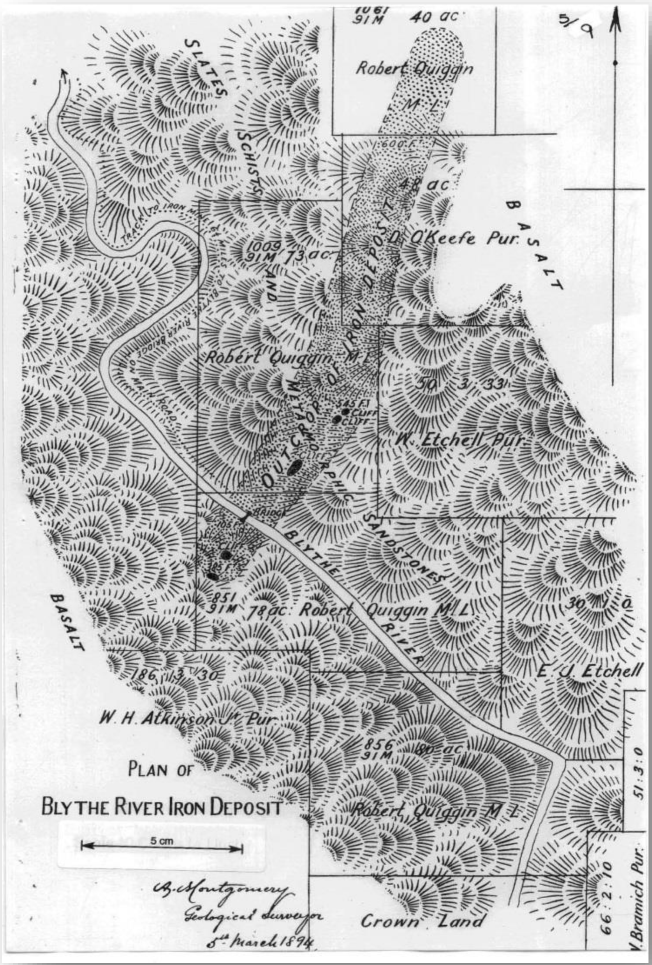


Figure 2.1 First geological map of the deposit, Montgomery (1894).

In the first few years of its existence this company carried out prospecting works in the form of an adit (Central adit) and trenches in an effort to prove the value of the deposits, and also reportedly quarried 1,000 tons of ore from the most northerly outcrop for testing (Blake, 1957). Other works consisted of the survey of a railway route, over a distance of six and a half miles, connecting the deposits with the Government railway line at the mouth of the Blythe River. A limited amount of grading construction was later commenced but the line was not completed.

Quiggins and Jones (and O'Keefe) sold their tenements to a newly formed mainland(?) company Blythe River Iron Mines Limited in 1900 who despatched Mr J.H. Darby who briefly described works at the time as consisting of the driving of two tunnels (Upper i.e. northern, and Lower i.e. southern) to cross-cut the orebody (Darby, 1900). Darby detailed the results of samples he collected with average Fe of 66.5%. Darby reported his rough estimate of total ore as 24.5 million tons using an s.g. of 3.0 tons per cubic yard and after removing 50% of the total volume of the deposit as internal waste.

Government geologist Twelvetrees (1901) visited the prospect in 15th June, 1900 and 9th and 10th January, 1901 at the point of near completion of the Upper and Lower (or River) Tunnels described by Darby (1900). Twelvetrees (1901) gives the first detailed description and interpretation of the deposit, produced a detailed geological map, and sampled Darby's Upper and Lower Tunnels and selected outcrops with an average assay of 63.9% in the Lower Tunnel and 64.1% in the Upper Tunnel and Quarry.

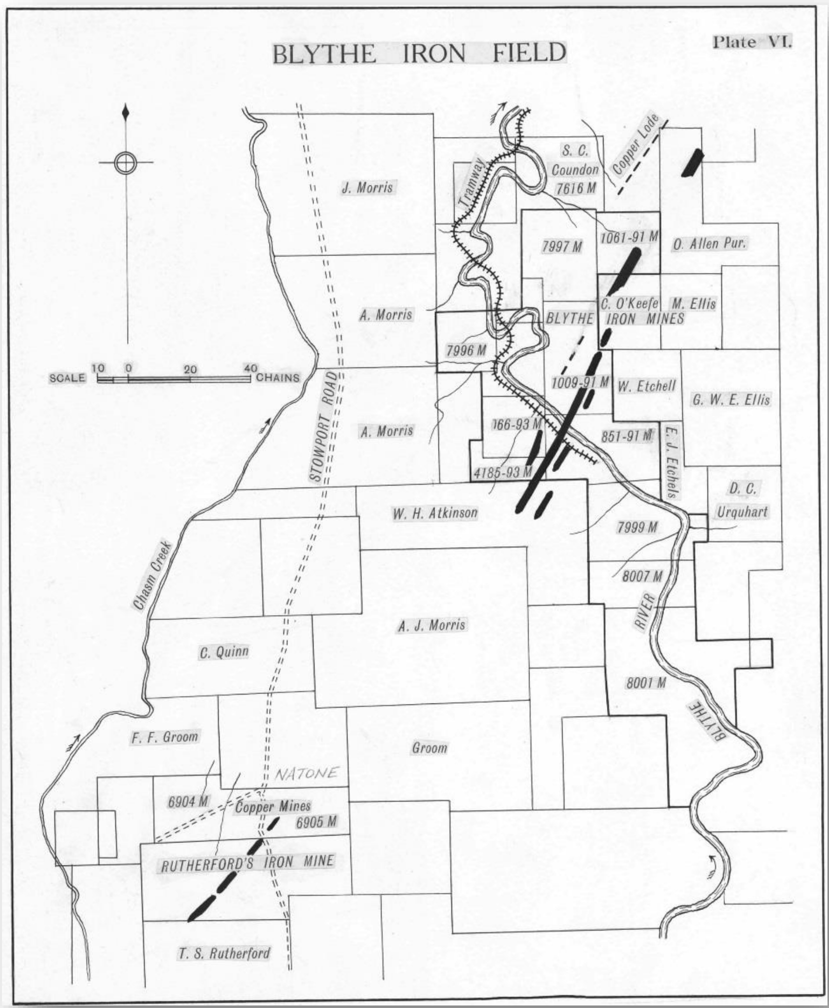


Figure 2.2: Twelvetrees (1919) plan.

Twelvetrees (1901) described the deposit as 'a huge outcrop of hematite iron ore, which runs N. 27° E., and S. 27° W. for an observed distance of over a mile … conformable, both in strike and dip, with sedimentary rocks of the Cambro-Silurian system. Its strike is slightly sinuous, following the direction of the edges of the enclosing beds.' He too was impressed with the quality, size and potential persistence of the deposit estimating a resource of 2,791,000 tons, using an s.g. of 4.75 and assuming 50% internal waste (by volume).

It appears that little more was achieved and in 1919 Blythe River Irons Mines Limited offered the rights of purchase of the property to the Commonwealth Government who appointed Boyd, Gibson and Young to make an investigation of the deposit.

Boyd *et. al.* carried out a programme of systematically sampling essentially all exposed rock faces including the three tunnels. They also carried out detailed surveying of the workings and outcrops and sample locations generating a scaled long section and plan. Boyd *et. al.* concluded that 'the bulk of the deposit is far too siliceous to be considered as an iron ore at the present day, and that the quantity of good ore is too small to be considered of any economic importance'. Boyd *et. al.* estimated that the deposit contained only 9,000,000 tons of iron bearing material and recommended that the Commonwealth Government not purchase the leases.

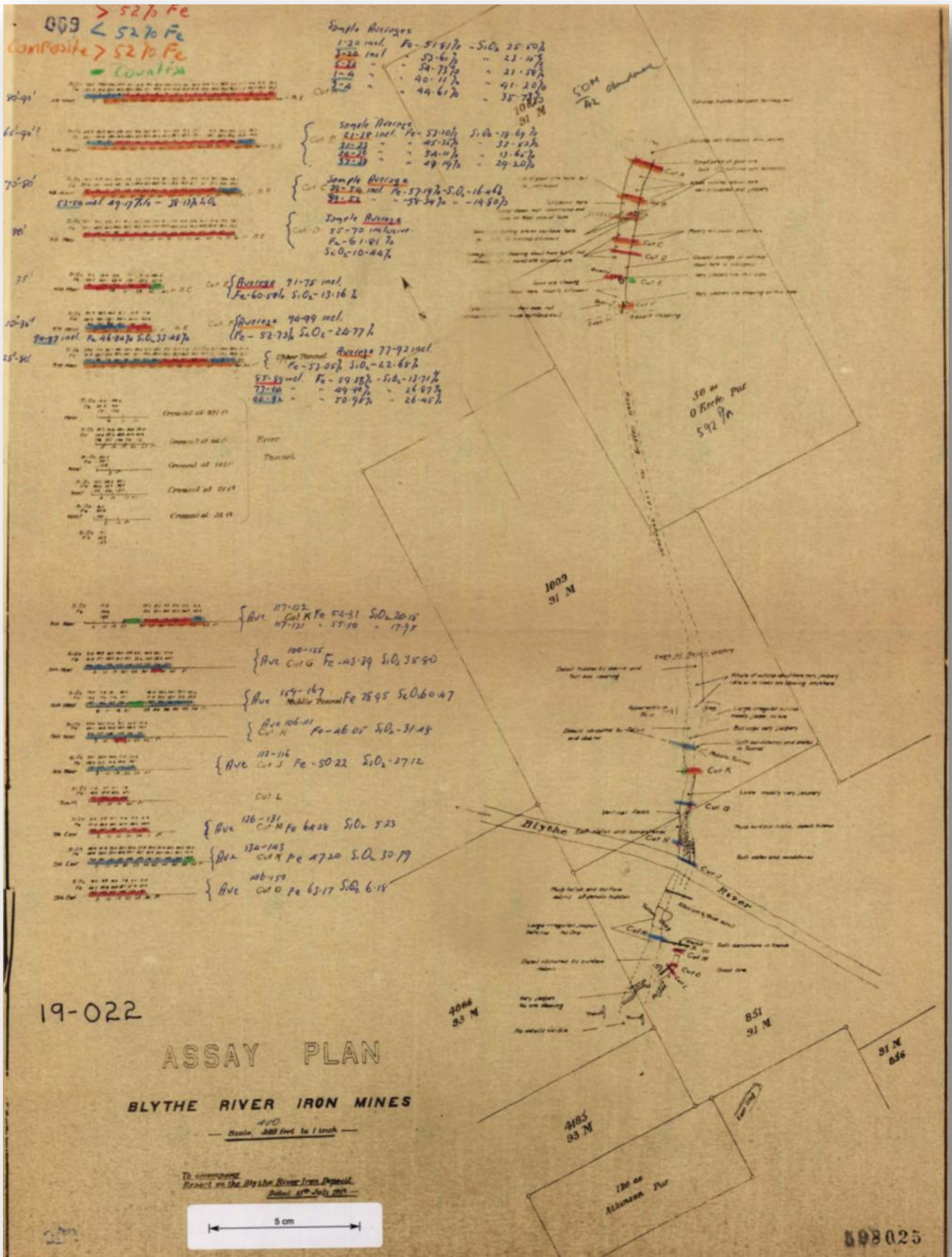


Figure 2.3: Boyd et. al. (1919) sampling plan with hand drawn notation.

J. D. Patterson purchased the leases in 1936.

In 1937 government geologist Mr P.B. Nye investigated the discrepancy between the descriptions of the quality and quantity of ore made by Montgomery (1894), Darby (1900) and Twelvetrees (1901, and those made by Boyd *et. al.* (1919) concluding that the former descriptions considered the total resource of the deposit whilst Boyd *et. al.* considered the probable mineable reserve of the deposit, a much harsher assessment. Nye comes up with 7 million tons using Boyd *et. al.*'s work but querying their conclusions in some areas.

In 1940 the Australian Commonwealth Carbide Co. Ltd. acquired Lease No. 322P 1M of 50 acres at the northern end of the deposits in the vicinity of Cuprona and in the early 1940's quarried and despatched 3.408 tons of iron ore for the production of ferrosilicon at its Electrona works at Snug (Thomas and Henderson, 1943). Whilst not detailed in any reporting it would appear that work had petered out by war's end.

In the 1950's renewed interest in iron ore exploration led to airborne magnetic surveys and ground follow-up. The Blythe River iron deposit was included in this ground follow-up work in 1957 with a grid established and magnetic survey conducted. Government geologist F. Blake mapped the grid and generated a plan and series of interpretative sections (Blake, 1958).

Atkinson (1958) also mapped the deposits in his investigation of the iron deposits in the Burnie-Penguin area.

Further Tasmanian government mapping was carried out by Gee in the early 1960's as part of his regional mapping of the Burnie quadrangle (Gee, 1967; Gee, 1977).

The Burnie quadrangle was geologically mapped in the years leading up to the publication of the map in 1967 (Gee, 1967) and explanatory notes in 1977 (Gee, 1977).

Detailed work at Cuprona due to the perceived potential regional significance of the deposits resulted in a three hole diamond drilling program at the Northern Quarries (788) deposit (Noldart, 1966) in 1965/66.

Intersections were made by the three drillholes. Drillhole BR1 intersected a (geologically determined) true width of mineralisation of approximately 24m assaying 45.3% Fe and 36.6% SiO_2 (from a depth of 38m); BR2 intersected a 20m true width of mineralisation (from a depth of 24m) but poor core recoveries meant it was not assayed; and BR3 intersected 27m of mineralisation at 26.6% Fe and 57.6% SiO_2 from 17m. Noldart concluded that the orebody in the northern part does not improve with depth and no further work was recommended there with work to be concentrated to the south of BR1 up to and below the Tertiary basalt cover.

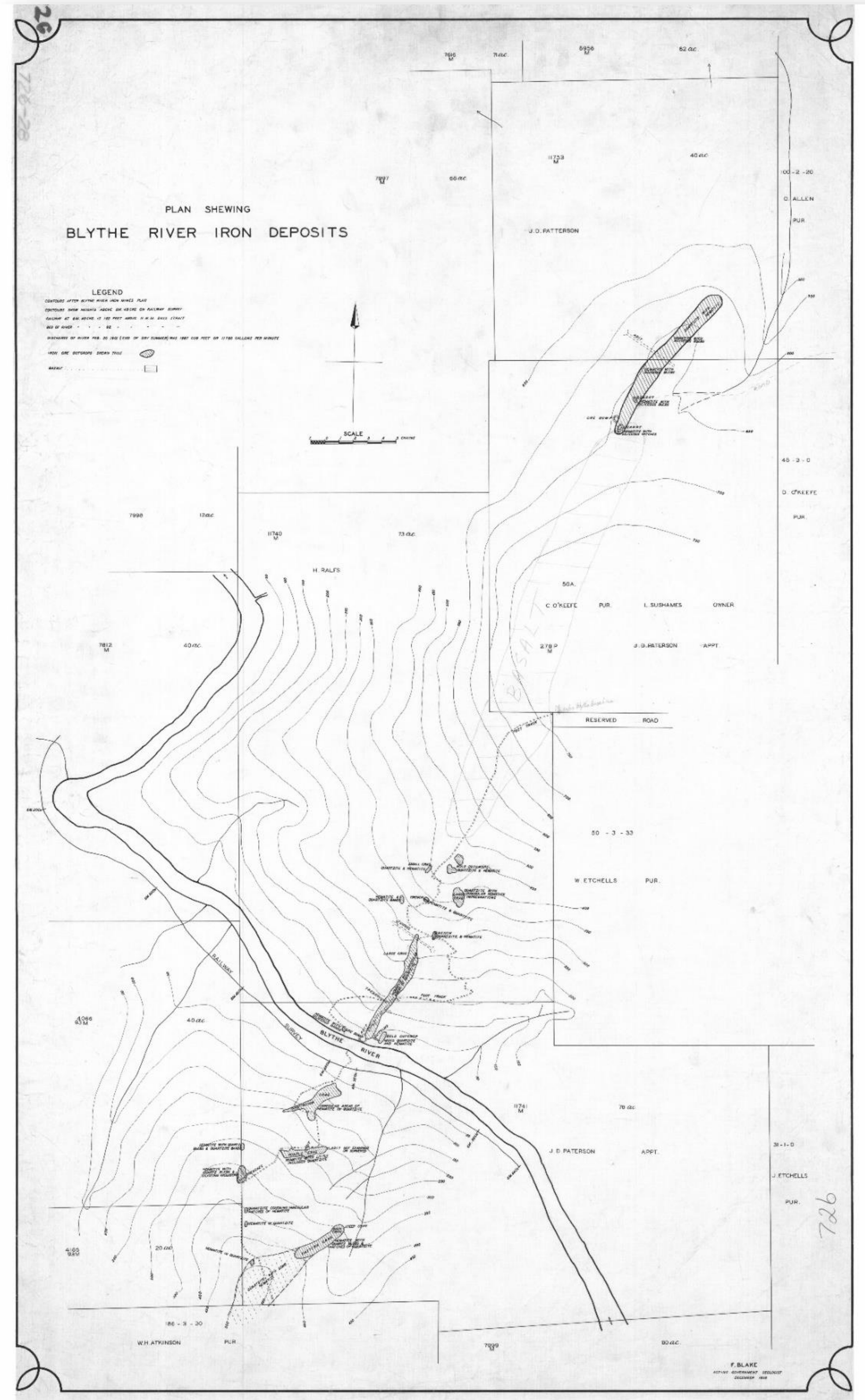


Figure 2.4: Geology from Blake (1958). Hematite outcrop shapes in other figures have been taken from this plan, moved to fit the LIDAR topographic shapes.

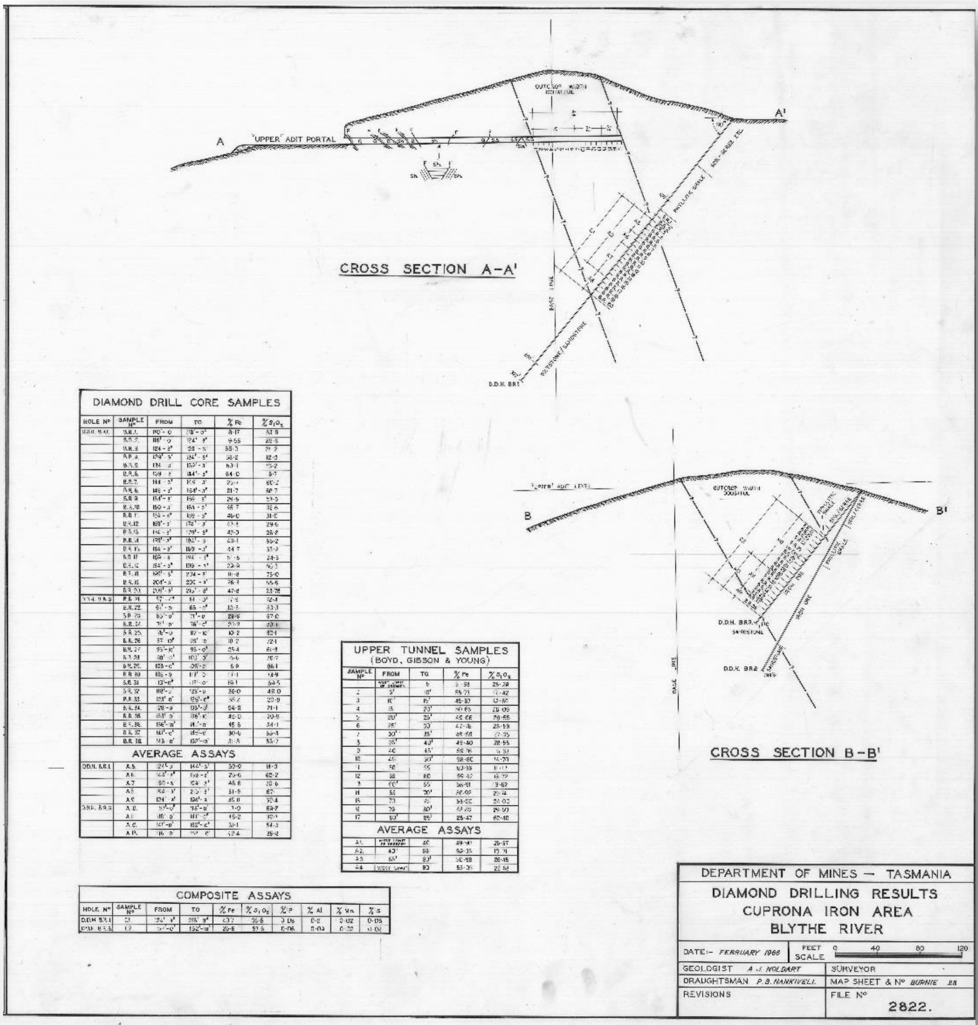


Figure 2.5: Drill section BR1/Upper Tunnel (section A-A') and BR2 and 3 (section B-B') at the Northern Quarries (788) deposit (after Noldart, 1966).

During the late 1960's through to the mid 1990's most exploration in the area switched from iron ore to base metal skarns that may have formed in favourable lithologies within the Oonah Formation from fluids derived from the Housetop Granite.

From 1968 to 1972 the deposits were held by Minops under their EL's 13/68 and/or 14/68 in the Blythe River but their work focussed on the Natone area.

From 1969 to 1974 a Tasminex/ANZECO joint venture held the deposits under EL 1/69 but their work focussed on the Natone ironstone and Rutherford's copper prospect.

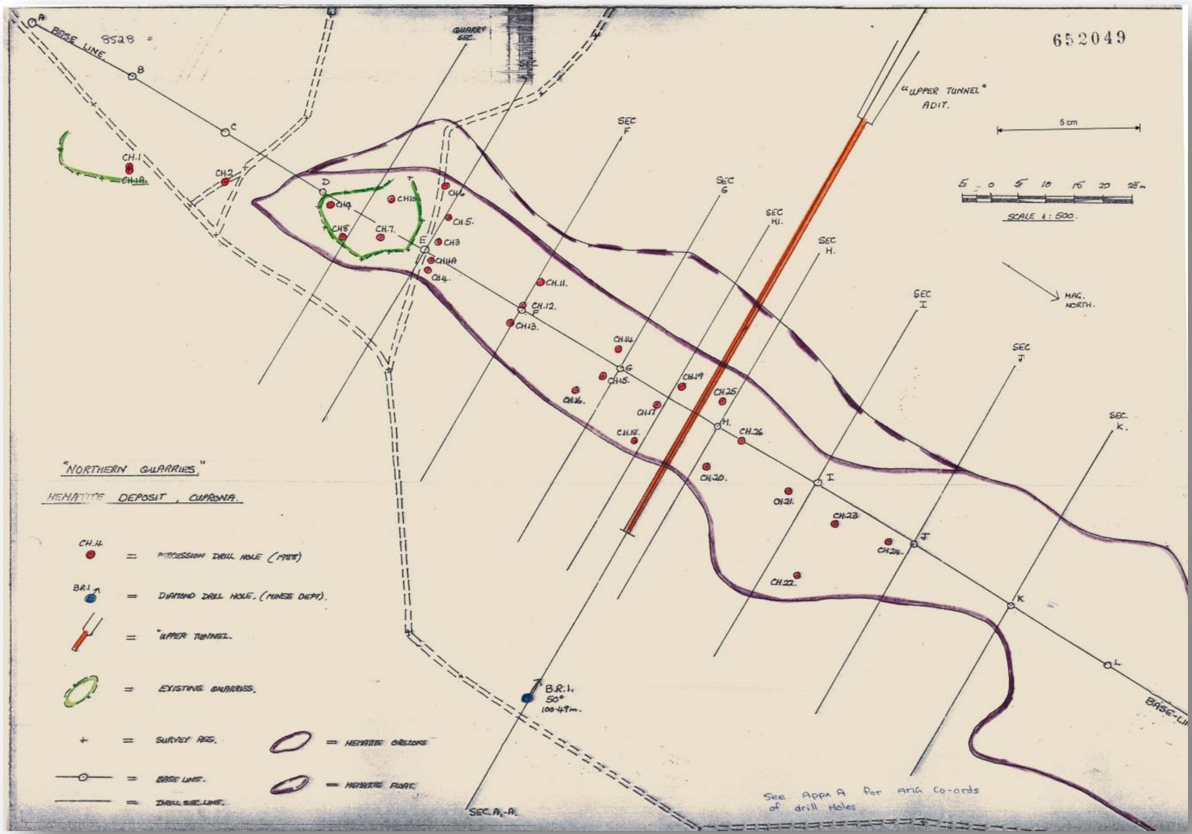
From 1977-1985 the deposits were held under EL 8/77 by a regionally focussed Comalco/Shell/CRA joint venture who carried out quite extensive regional work as well as focussed work looking for tin-tungsten deposits.

In 1982 Shell followed up aeromagnetics anomaly 4414/1 (Banwell, 1981; Ruxton, 1982). Due to analogies with ironstones at Natone the anomaly at Cuprona was originally thought due to the ironstone bodies and a grid established accordingly, however, after final aeromagnetic data was received it was found that the anomaly was not centred on the ironstones, but on two hills slightly to the south (Banwell, 1981).

The grid was soil sampling with 119 samples analysed for Cu, Pb, Zn, Ni, Fe, Mn, Sn and W, and a ground magnetics survey undertaken. Low order anomalous Sn, W and Cu in soils coincide with the ironstone outcrop (Banwell, 1981). The ground magnetic survey showed a poor response over the ironstones.

A single vertical percussion hole centred at approximately 2050mN 1675mE was drilled for 200m into the main magnetic anomaly (Banwell, 1981; Ruxton, 1982). The hole intersected Tertiary basalt from 0m to 132m, Tertiary alluvium from 132m to 146m and shales (Burnie Formation?) from 146m to end of hole at 200m.

In 1986 C.W. Davis pegged the deposits under EL 30/86. In 1988/89, the second year of the licence, a significant body of work was completed on the Northern Quarries (788) deposit at Cuprona with the drilling of 28 airtrack (i.e. "open" hole percussion) drill holes from 6m to 20m in depth to a total of 252m n a series of sections over a strike length of 180m.



Figue 2.6: C.W. Davis airtrack drill locations – Northern Quarries (788) deposit (Whitehead, 1989). North (incorrectly oriented) as to the lower left.

'Measured Mineable Reserves' (as per the usage of Whitehead, 1989) of 74,989 tonnes at an average grade of 78.92% Fe203 (to a mining depth of 20 metres) were calculated (using a polygonal sectional method) over a 180m strike length, with additional 'Indicated Geologic Reserves' of 172.645 tonnes (to an approximate mining depth of 30 metres) and additionall 'Potential Geological Reserves' (down to a drilled depth of 65m) of 1,170,000 tonnes (Whitehead, 1989).

Unable to attract investment capital they relinquished the ground.

From 1993 to 1995 the deposits were included in EL 9/92 by Pasminco who reviewed the regional geological setting, flew airborne magnetics/radiometrics, and collected and analysed rock chip samples from a large number of prospects.

In 2005 the deposits were pegged under EL 6/2005 by RedRiver Resources Limited under their Blythe Project (Karajas, 2006) with a principal aim to evaluate the mining potential of hematite/quartz bodies in the Blythe River valley at Cuprona with a similar potential inferred for hematite/limonite near Natone and for copper mineralisation within the permit area.

Work identified additional potential for magnetite iron ore as well as for IOCG (iron oxide-copper-gold) style mineralisation associated with aeromagnetic highs and attention shifted elsewhere (Karajas, 2007; Foster, 2007; and Mortimer, 2007, with Iron Mountain Mining Limited joint venturing into the project and managing it on 2nd November 2007 (anon. 2008; Kusnandar *et. al.* 2009; anon, 2010; and Kusnandar *et. al.* 2010).

In 2012 Forward Mining Limited purchased the Blythe Project from the RedRiver Resources Limited/Iron Mountain Mining Limited joint venture.

In 2015 Forward Mining drilled 11 RC (for 1421m) and 5 diamond holes (for 454.8m) into the Northern Quarries (788), Eastern Crag and Purple Crag deposits as well as testing the trend between the Northern Quarries (788) deposit and the Central Tunnel Deposit.

2.2 Previous resource estimates

Essentially every geologist who has visited the deposit has attempted a rough calculation of the total resource. Early estimates (up until Whitehead, 1989) have considered both the Northern Quarries (788) and River Zone on both sides of the river. Whitehead (1989) estimates only the Northern Quarries (788) deposit.

Montgomery in 1894 reported the result of an early government sample of 95.2% Iron Peroxide (itself constituting 66.4% Fe i.e. 63.2% Fe, with 4.8% Si and a trace of phosphoric acid. He roughly estimated a total tonnage of 30 million tons using a density of 3.0 tons/cubic yard and using the following justification

> The data for calculating its size are very insufficient, but, taking them such as they are, a rough calculation may be made which will serve to give some idea of it. On the south side of the river the ore is seen for a horizontal distance of about 8½ chains, and rises to a height of 280 feet above the stream: on the north side it rises to 500 feet above the river, in about 50 chains horizontal distance, and then falls a little, say, to 400 feet, for another 16 chains. Taking the width of the ore-body at 66 yards, these measurements give the cubic contents of the deposit under the visible outcrop down to the level of the Blythe River as slightly over 10,000,000 cubic yards, or, at 3 tons to the cubic yard, 30,000,000 tons. It is not to be supposed that the ore terminates where the outcrop disappears under the superficial basalt, or that it only goes down to the level of the Blythe River, while the width also is probably underestimated, so that the deposit is clearly of enormous extent.

(Montgomery, 1894)

In 1900 Mr J.H. Darby assessed the deposit between 12th and 28th September 1900 for a mainland company named Blythe River Iron Mines Limited and roughly estimated 24.5 million tons using a specific gravity of 3.0 tons per cubic yard, after removing 50% of the total volume of the deposit as internal waste.

Twelvetrees (1901) makes his calculation down to river level and over a strike length of 5940' and assuming 50% internal waste calculates 17,291,000 tons of marketable ore (no grade cited) but then qualifies this estimation by saying a 33% internal waste might be applied resulting in 23,000,000 tons.

Boyd *et. al.* (1919), acting as agents on behalf of the Commonwealth Government who were considering buying the deposit, made a more studied assessment determining a 8,834,000 tons at a cut off grade of 12% SiO_2 and using a specific gravity of 12 cubic feet per long ton for low grade ore and 10 cubic feet for high grade ore.

They calculated 12,000 tons for the Purple Crag outcrop using 200’ long x 30’ wide x 20’ thick i.e. as a float.

Nye (1937) did no new work during his brief visit and calculated 7 million tons essentially using Boyd *et. al.*’s work but querying their conclusions in some areas.

Atkinson (1958) remapped the area and commented that the “observations made by the author appear to substantiate the low estimate of Boyd, Gibson and Young.”

MacDonald (1965) appraised the project for Kathleen Investments and cites two earlier references Dickenson, 1961 and Ridgway, 1964) with the latter estimating 1.9 million tons at 52% Fe. MacDonald (1965) bases his preliminary feasibility costings on a resource of 1,250,000 tons of 52% Fe material and uses a body of dimensions of 700’ long, 88’ wide and to a (nominal) depth of 200’. He notes that the success of the operation would depend on proving this resource with mapping, surface sampling and diamond drilling.

In 1989, following completion of the airtrack drilling programme for C.W. Davis, Whitehead (1989) made a pre-JORC 2012 polygonal estimate of the Northern Quarries (788) deposit as follows;

‘Measured Mineable Reserves’ (as per the usage of Whitehead, 1989) of 74,989 tonnes at an average grade of 78.92% Fe203 (to a mining depth of 20 metres); and

‘Indicated Geologic Reserves’ of 172.645 tonnes (to an approximate mining depth of 30 metres); and

‘Potential Geological Reserves’ (down to a drilled depth of 65m) of 1,170,000 tonnes (Whitehead, 1989).

As discussed later the data set of grades from the airtrack drilling are substantially positively skewed with respect to the other data sets and this resource estimate is also positively skewed and unreliable.

3.0 Geology

3.1 Regional Geology

Considerable geological work has been done over the last 125 years both by government and industry with a number of geological fact and interpretative maps, interpretative cross and long sections, drill hole geological logs and interpretative geological descriptions in reports produced during this time. In spite of this the geology and genesis of the hematite+silica bodies remains somewhat unclear though Gee's regional mapping of the Burnie quadrangle (Gee, 1968 and Gee, 1977) has provided the greatest insight.

Regionally the Blythe River Iron Deposits at Cuprona lie at the northeastern end of a +6km long hematite+silica mineralised trend which extends from Cuprona to Natone at the southwestern end.

The bodies range from 5m or less up to 30m in thickness, up to 430m long and apparently open at depth (except perhaps the Purple Crag outcrop).

The hematite+silica bodies are apparently stratiform within a ~100m thick unit of siliceous siltstone of Cambrian age and correlated with the Dundas Group. The siltstones form the basal unit of a regionally conformable Cambro-Ordovican sequence though locally unconformable contacts are noted (Gee, 1977), and are immediately overlain to the southeast by a quartz pebble conglomerate, the Duncan Conglomerate, containing siliceous and hematitic clasts.

Unconformably underlying the siltstones to the immediate northwest are polydeformed metasediments of the Proterozoic Burnie Formation.

Structurally the Cambro-Ordovician sequence at Cuprona and Natone lies on the western limb of a broad syncline with the sequence striking north easterly and dipping steeply to the southeast.

Similar hematite mineralisation is hosted in the same rocks at Penguin on the eastern limb of the syncline (Atkinson, 1958; Gee, 1977).

Hematite mineralisation occurs as massive earthy red hematite associated with silica in a massive to jointed and splintery rock. Silica occurs as splashes and blebs and appears to closely post-date the hematite.

Noldart (1966) describes the mineralisation intersected in Department of Mines drill holes BR1, BR2 and BR3 as follows. "The hematite generally is hard, compact, dark grey to reddish in colour with small vugs partly filled with crystalline hematite with occasional schistose and limonitic zones. Movement planes within the ore are faced with specular hematite. The silica is mainly dense and very fine grained, usually grading into iron giving a coarse mottled effect to the ore in the poorer sections, or occurring as smaller blebs and apparent vug fillings in the higher grade zones, giving a finely mottled appearance.

Brecciation zones are common in all intersections with the brecciation present in both higher and lower grade zones but more prominent in the siliceous sections of the ore body. Brecciation generally appears to have occurred after deposition of the iron but some post brecciation specular iron is present."

Within the individual ore lenses there does appear to be sme internal zonation with high grade zones in the order of 3-8m thick, and commonly on the margins of the lense.

Whilst there are some structures described in the ore hematite mineralisation does not appear to be fault controlled. It is unclear as to whether this stratabound form reflects a primary sedimentary origin or a later preferential replacement of a favourable bed.

Gee (1977) discusses the genesis of the deposits remarking on the presence of clasts of hematite and limonite within the immediately overlying conglomerate.

Regionally the 1100m thick Duncan Conglomerate which overlies the siltstone is conformable with it. Gee (1977) notes that "In the Blythe River gorge at Cuprona, the base of the conglomerate is a poorly sorted breccia about 20 m thick, consisting of angular fragments of Proterozoic quartzite, siliceous siltstone, limonite and hematite, and rounded fragments of rare chert. Pebble size averages 3 cm, but ranges up to 15 cm. The matrix is a siliceous grit, and is replaced in part by limonite. Veins of specular hematite are present."

"The hematite … (lenses) … are probably replacement bodies in tectonic breccia zones within the Cambrian siltstone. Some of these bodies *(e.g.* Purple Crag) lie very close to the top of the siliceous siltstone and pass upward into a sedimentary breccia and conglomerate containing abundant clasts of hematite, limonite and Burnie Formation quartzite. This ferruginous rudite is the base of the Ordovician Conglomerate. The iron ore bodies were thus exposed prior to deposition of the Ordovician rocks, and the mixture of limonite and hematite, both *in situ* and as c lasts , suggests a period of fossil gossanisation." (Gee, 1977)

This interpretation is highly significant as it suggests that the hematite "body" is much more regionally extensive than it might be if it was of more recent genesis.

The spatial relationship between hematite mineralisation and the parallel line of copper deposits offset just to the west is mentioned by a number of authors as suggesting a co-genesis, however, the copper lode at the Copper King mine is transgressing the strata making it post-sedimentary. It is more likely that that iron rich oxidised fluids, buffered by the nearby hematite bearing rocks, met and mixed with ascending reduced copper bearing fluids, precipitating copper iron sulphides, thus explaining the spatial association.

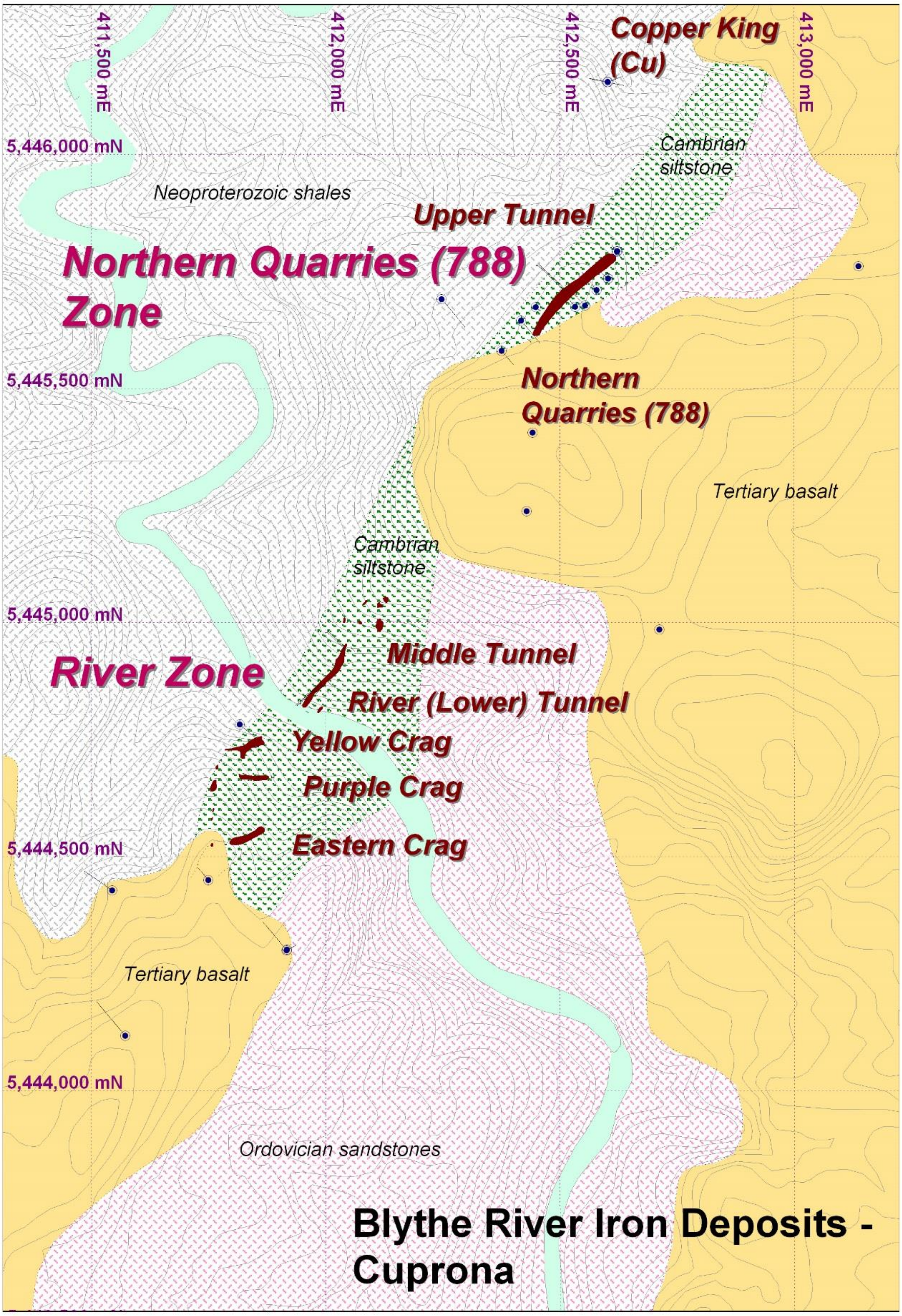


Figure 3.1: Blythe River Iron Deposits, Cuprona, summary geology and location plan. Maroon shapes are outcrops of hematite, black spots are drill hole collars and thin black lines drill traces.

3.2 Northern Quarries (788) Resource Geology

3.2.1 Introduction

There are a number of aspects of the geology of the Cuprona Iron Deposit which have significance in determining an accurate assessment of the total resource and the potential to extend and add to the resource base.

These aspects are:

- Structure of the deposit
- Nature of the bounds to the deposit i.e. what controls the width, strike and down dip extents.
- Distribution of deleterious elements Si and P
- Controls on the genesis or formation of the deposit

3.2.2 Geometry

The Northern Quarries (788) hematite body is mapped as an elongate, steeply dipping.

The deposits lateral extents, i.e. width, are defined by a sharp reduction in iron content recognisably visually and through Fe and Si assays.

The width of the orebody is defined by complete lode intersections in Department of Mines drill holes BR1, 2 and 3 and Lottah Mining Pty Ltd's drill holes 15CUN007RC, 15CUN008DD and 15CUN010DD, and the trench sampling of Boyd *et. al.* (1919).

Boyd's sampling was carried out on the surface as well as the Upper Tunnel. Cuts A, B, C, D and F and the Upper Tunnel sampling are all described as being across the lode and perpendicular to strike. Cut E is taken across the full width of the lode but diagonally and the angle not given.

Widths are summarised in Table 3.1.

Table 3.1: Lode Width

Channel Sample ID	Width as Described (ft or m) either across lode or down hole	Horizontal Width assuming consistent 70° (m) lode dip
CUN00**8**DD/CUN010DD	CUN00**8**DD 15m & CUN010DD 51m	~14m
Cut A	100'	30.41m
BR2/3	BR3 27.9m	~26.5m
15CUN004RC	35m	~28.5m
Cut B	85'	25.85m
Upper Tunnel	85'	25.85m
BR1	28.1m	~26.5m
15CUN007RC	33m	~26.5m
Cut C	80'	24.33m
Cut D	80'	24.33m
15CUN009RC	93m	~13.0
Cut F	35'	10.64m
15CUN005DD*	16.5m	~5.0m

Nb* minimum width

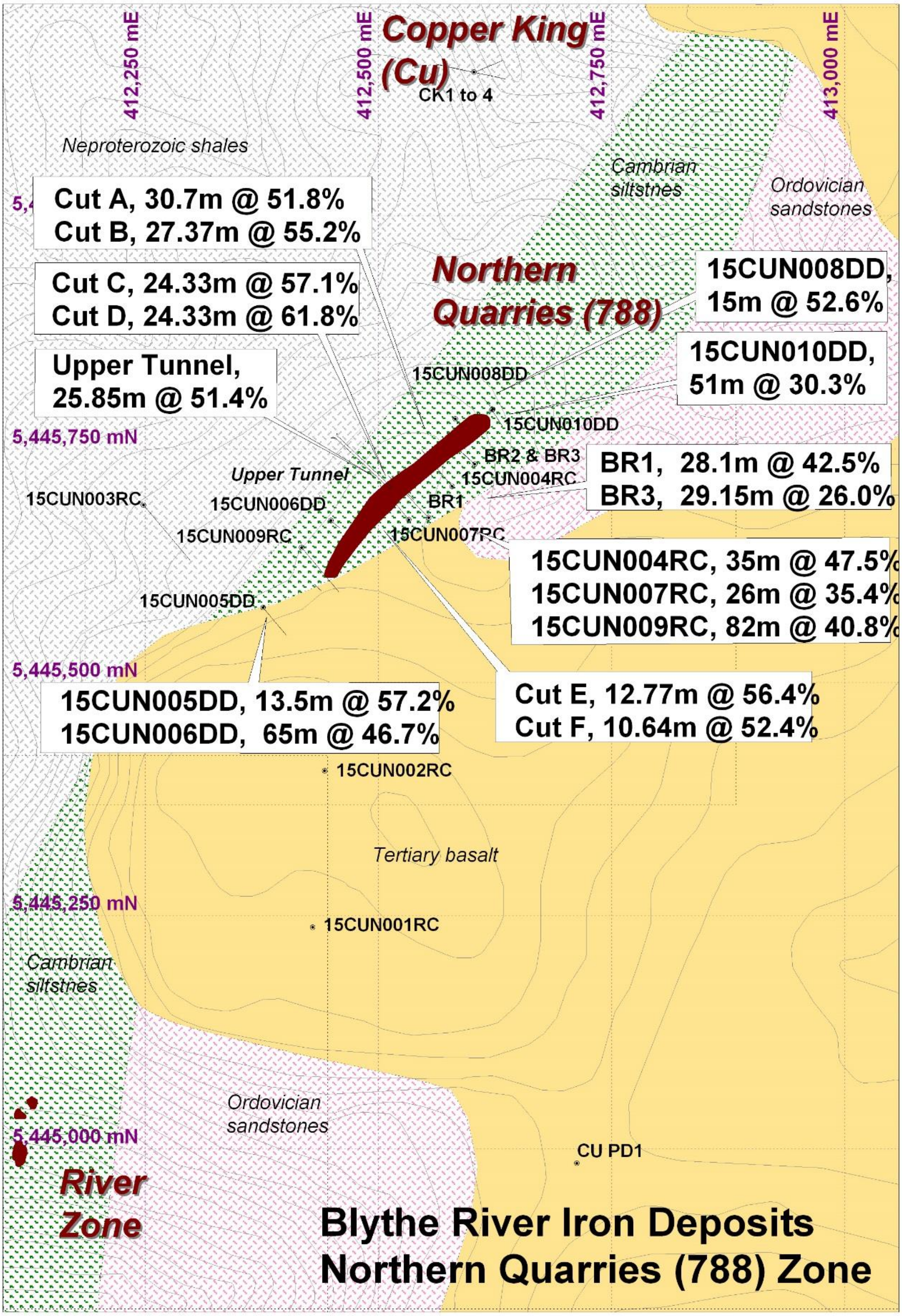


Figure 3.2: Northern Quarries (788) Zone samples used in estimation.

The extent of the deposit along strike to the northeast is only constrained by the lack of hematite outcrop and extent of drilling.

At the deposit's north eastern end drill holes 15CUN008DD and 15CUN010DD have both intersected massive hematite mineralisation. These are the northernmost sampling. The orebody has been modelled to 50m beyond this northing.

Approximately 500m northeast of this Twelvetrees (1905) map (figure 10.2) of the Blythe River mineral field shows an area of outcropping hematite mineralisation.

To the southwest the outcropping hematite disappears beneath basalt cover. Drill holes 15CUN001RC and 15CUN002RC both penetrated a thick body of basalt before passing in the Cambrian siltstones. Drill hole 15CUN002RC intersected 2m at 44.0% Fe.

Triangulation of the two intersections and the outcrop margin suggests the base of the basalt has a dip of 30° to the east. The basalt will truncate the orebody just south of Cut F.

Also at the Northern Quarries (788) deposits southwestern end drill hole 15CUN005DD has intersected a zone of massive hematite near the base of the hole. Assuming a -70° dip to the southeast this gives a horizontal width of ~5.0m. South-westernmost Cut F also intersected a narrower lode width and it is quite probable that the hematite mineralisation is thinning to the southwest. Alternatively the lode may be splitting with 15CUN009RC intersecting higher grade zones on the margins of the intersection with the core low grade.

Resolution of this uncertainty requires collar surveying, geological re-logging and completing the sampling of 15CUN005DD.

The depth extent of the deposit is constrained by drilling. Geologically there is no compelling evidence for the lode to not continue at depth following the regional synclinal fold Deepest intersections were made by drill hole 15CUN005DD.

The dip of the deposit is defined best by intersections in BR1 and the Upper Tunnel and surface outcrop. This dip is 70° to the south east. South of the river the intersection in 15CUS009DD and surface outcrop in the Yellow Crag indicates a dip more close to 80° to the southeast.

4.0 Data

4.1 Introduction

The data used in this resource estimation consists of

(1) the geological and topographical data used in the initial geological interpretation and ultimate 3D SURPAC orebody wireframing.

(2) the sample assay and sample location data used in the estimation of the resource within the 3D orebody model.

Lottah Mining Pty Ltd have carried out an RC and diamond drilling programme in 2015 and requested the estimation of a resource from that data. The generation of a JORC compliant resource requires a thorough appraisal of all existing data and previous resource estimations and so time was spent compiling government and company reporting.

All relevant data pre-2011 is open file and available from Mineral Resources Tasmania's website database. Post 2011 data has been sourced from the client's own data files.

Data dating back as far as the initial mentioning of the deposit in 1891 has been considered with all relevant reports listed in the references.

Early reports provide information regarding early geological mapping, especially Blake (1958) as well as significant early sampling of now inaccessible workings, especially Boyd *et. al.* (1919) and Twelvetrees (1901). The drill hole results from the Department of Mines drilling in the mid-1960's (Noldart, 1966) and the shallow airtrack drilling of C.W. Davis in 1988/89 (Whitehead, 1989) are important potential sources of sample assays though the latter data set was ultimately rejected.

4.2 Geopositioning

The best geological mapping of the deposit are the fact maps of Blake (1958) and Atkinson (1958). Other geological maps are more schematic though illustrative.

Blake (1958) shows the positions and shapes outcropping geology, old tunnels, the river, surveyed railway line and cadastral boundaries. Geopositioning Blake (1958) also allows georeferencing of Boyd *et. al* (1919). The sample assay data of Boyd *et. al.* (1919) is highly significant because the old adits sampled in this work are now collapsed and inaccessible.

Initially these plans were georeferenced using a creek junction on the south bank of the Blythe River, just upstream from the iron trend, as the datum (see figure 4.1).

The Upper Tunnel adit portal was used as the datum for georeferencing Boyd *et. al.* (1919) and the drill sections in Noldart (1966).

Subsequently high resolution LIDAR topographic data was modelled in 3D. Surface outcrops and salient features such as adit portals as mapped by Blake (1958) and Atkinson (1958) are recognisable and indicate some positional inaccuracies in both Blake (1958) and Atkinson (1958). Outcrop shapes and the location of salient features were digitised and then moved (generally only small distances) in order to fit more accurate positions as indicated by LIDAR.

The Upper Tunnel adit portal was clearly recognisable in the LIDAR generated DTM and used as a reference point for Boyd *et.al.* (1919) and Noldart (1966). Whilst this work was done to the best standard possible, inherent inaccuracies mean positioning drill hole collars, outcrops and samples in this way will have significant errors.

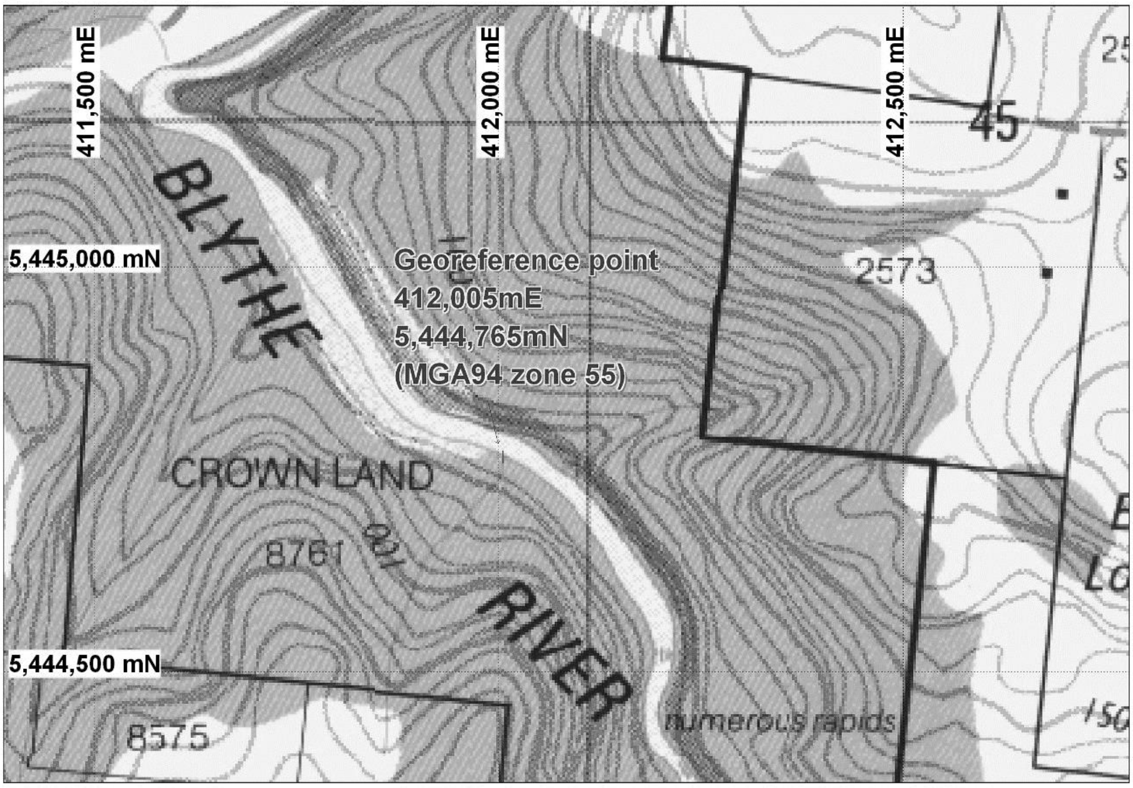


Figure 4,1: Location of point used in georeferencing Blake (1958) and Boyd et.al. (1919).

4.3 Sample Assays

4.3.1 Introduction

Samples have been collected and assayed from the earliest mentioning of the deposit in Montgomery (1894) who reported a single assay of 66.5% Fe with 4.8% Si and only a trace of phosphoric acid. This sample has not been included in the resource estimate due to lack of knowledge of its collection location.

Twelvetrees (1901) sampled the Central and Lower Tunnels, the Quarry and selected outcrops. Whilst these samples serve as field duplicates for subsequent sampling by Boyd *et. al.* (1919) their locations are a little too vague for serious consideration.

These samples, as was that of Montgomery (1894), were assayed by the government analytical laboratories.

	Iron.	Silica.	Phosphorus.	Copper.	Sulphur.
From Mr. Darby's low tunnel—	°/o	°/o	°/o		
Crosscut at 66 feet ...	46·0	34·2	...	Nil	...
" 77 feet ...	65·0	7·0	...	Nil	...
" 142 feet ...	67·2	3·8	...	Nil	...
" 167 feet ...	68·1	2·4	...	Nil	...
" 199 feet ...	68·5	2·0	...	Nil	...
" 225 feet ...	68·7	1·6	0·04	Nil	Traces
From Mr. Darby's upper tunnel	59·8	14·4	...	...	...
Upper quarry	68·4	2·2	0·04	...	Traces
Central tunnel...............	56·7	18·8	...	...	...
Lower South Crag	61·5	12·0	...	...	...
Purple Cliff...................	68·6	1·8	0·09	...	Traces

Figure 4.2: Twelvetrees (1901) assay data.

4.3.2 Commonwealth Government assessment (Boyd *et. al.,* 1919)

Boyd *et. al.* (1919) sampled all three tunnels, a series of cuts or trenches and relevant outcrop in a highly systematic manner.

A total of 192 samples were collected as contiguous channel samples commonly 5 feet in length but ranging from 2 feet to 7 feet.

All three adits were made re-accessed and sampled. A series of surface cuts or trenches were made across the deposits where possible and sampled with contiguous channel samples. Outcrops were sampled with similar contiguous channel samples.

In all 6 contiguous channels were sampled across the Northern Quarries (788) deposit, 3 on the north side of the river across the Middle and River Tunnel deposits, and 4 contiguous outcrop channel samples on the south side of the river across the Eastern Crag (1 channel) and Purple Crag (3 channels) deposits. Cuts were named alphabetically or after the tunnel or face.

192 samples were collected in all with 176 primary samples with 177 to 192 field duplicates were taken at 2 feet intervals across Cuts E and F.

Samples were collected in a very thorough and systematic manner detailed by Boyd *et. al.* (1919).

No mention is made of the sampling laboratory or assaying though it is almost certainly a government laboratory and likely the commonwealth given whom they were working for.

Samples were analysed for Fe and SiO2. In addition a further 8 samples were also analysed for phosphoric acid and a further composite sample (of 23 samples) analysed for organic matter, moisture, hydration, Ferrous oxide, Ferric oxide, Magnetite, Phosphorous pentoxide, Sulphur trioxide, Lime, Silica, Alumina, Manganous oxide, Magnesia, Cupric acid, Chromic acid and Titanic acid.

These samples have been included in the database. They have been assigned the Cut name as *hole_id* in the database and distances converted to metres.

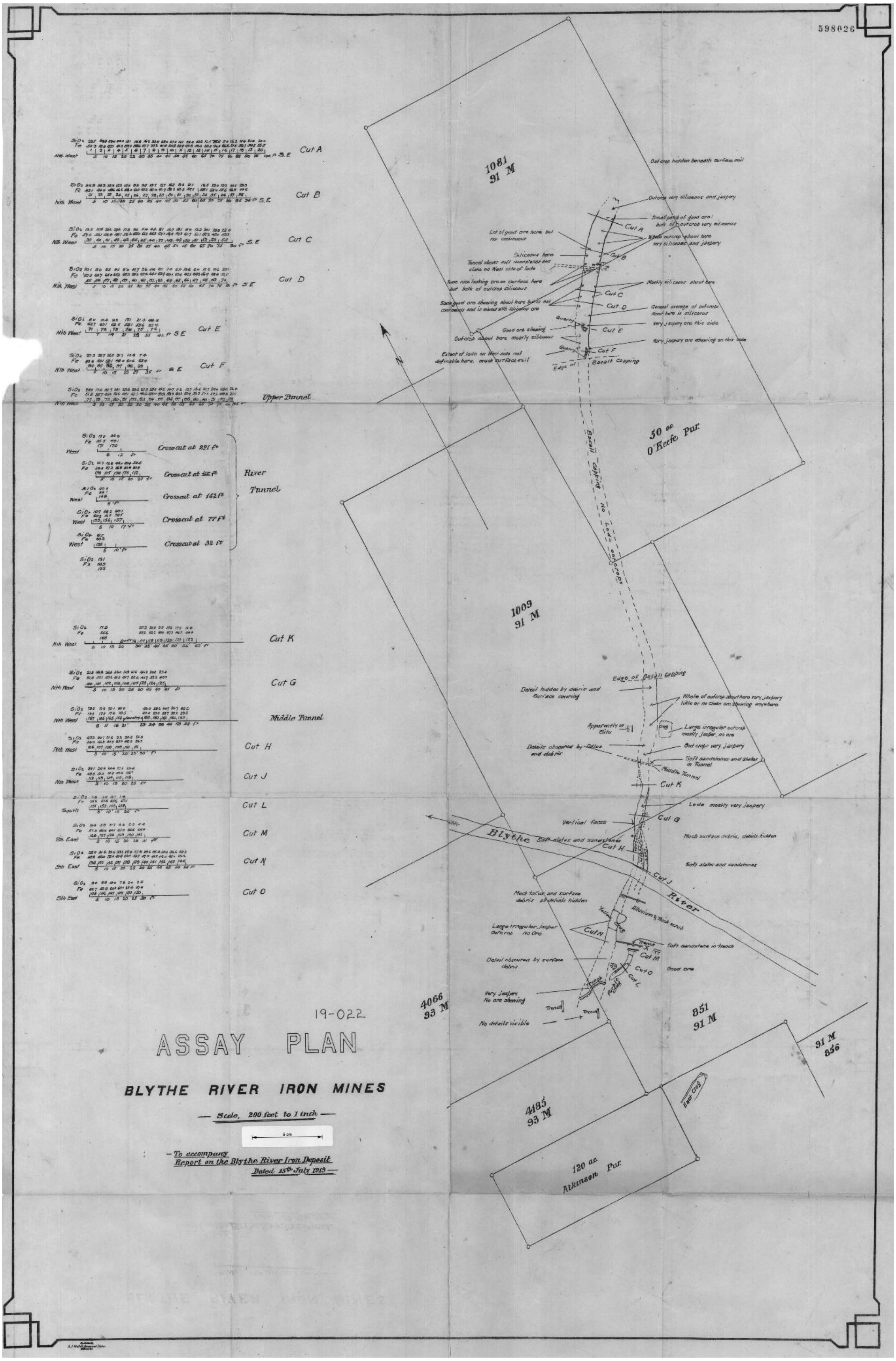


Figure 4.3: Boyd et. al. (1919) sample location and assay result plan, drafted version of figure 3.3.

4.3.3 DDH's BR1, (2) and 3, Department of Mines (Noldart (1966)

In 1965/66 the Department of Mines drilled three holes into the Northern Quarries (788) deposit (Noldart, 1966).

Drill hole BR1 was drilled in a north westerly direction under the Upper Tunnel. Holes BR2 and BR3 were drilled in a similar orientation 75m along strike to the northwest

Excessive core loss in hole 2 meant that it wasn't sampled and was essentially redrilled by BR3.

Hole collars were surveyed with respect to the Upper Tunnel portal by tape and compass. BH1 was surveyed down hole at 150' and 300'. BR3 was not surveyed down hole.

Drill core in BR1 is NX from collar to 128' with BX to end of hole. Drill core in BR3 is BX from collar to 136'10" with AXT to end of hole.

Recoveries were good to average in BR1. BR2 was not sampled due to excessive core loss and was redrilled as BR3.

Samples were taken at intervals nominally 5' down hole with core split and half sampled.

It is not stated as to where and how the samples were assayed though this would have been at the government laboratories. Assays are reported for Fe and SiO2 only.

4.3.4 CH1 to CH26 Open Hole Hammer holes, Northern Quarries (788) deposit (Whitehead, 1989)

The open hole hammer holes of C.W. Davis (Whitehead, 1989) into the Northern Quarries (788) deposit potentially provided further detail on grade distribution near surface and were considered for inclusion in the resource database.

The nature of the drilling being open hole hammer lends itself to much more cross-sample contamination, particularly deeper samples and consideration needs to be given to sample precision and accuracy.

Comparison of the assay result population with the other assay data sets indicates that the data of CW Davis is significantly skewed to the positive and is unable to be used.

4.3.5 Lottah Mining Pty Ltd

In 2015 Lottah Mining Pty Ltd drilled 11 RC holes and 5 diamond drill holes in and around the more accessible deposits at the northern and southern ends of the trend.

Diamond drill holes 15CUN005DD, 15CUN006DD, 15CUN008DD and 15CUN010DD, and RC holes, 15CUN004 RC, 15CUN007 RC and 15CUN009RC were drilled into the Northern Quarries (788) deposit.

RC holes (15CUN00RC1 and 15CUN00RC2) targeted a magnetic anomaly just east of the hematite mineralised trend.

RC hole 15CUN00300RC was drilled just west of the main body testing for parallel mineralisation.

South of the river diamond drill hole 15CUS009DD tested the Purple Crag deposit, RC hole 15CUS003RC tested the Eastern Crag deposit and RC holes 15CUS001RC and 15CUS002RC tested south along the main trend with 15CUS004RC and 15CUS005RC off to the east of this main trend.

Diamond drillcore was HQ3 throughout. Recoveries were generally good. Samples were split with a diamond saw and assayed by the NATA accredited A.L.S. laboratory in Burnie.

Table 4.1: Drill holes and channels in database

Hole or channel ID	Easting (MGA94)	Northing (MGA94)	RL (m.a.s.l.)	Length (m)	Azimuth (true)	Dip	Sample type	Company
15CUN001RC	412429.692	5445236.894	264.717	205	360	-90	RC	Lottah Mining Pty Ltd
15CUN002RC	412442.553	5445404.769	274.014	192	360	-90	RC	Lottah Mining Pty Ltd
15CUN003RC	412248.577	5445689.84	198.388	156	140	-60	RC	Lottah Mining Pty Ltd
15CUN004RC	412579.391	5445709.783	224.314	103	320	-60	diamond	Lottah Mining Pty Ltd
15CUN005DD	412376.7	5445579.715	232.671	170.1	140	-55	diamond	Lottah Mining Pty Ltd
15CUN006DD	412449.618	5445672.958	227.011	143.7	130	-85	diamond	Lottah Mining Pty Ltd
15CUN007RC	412533.154	5445674.023	230.45	100	320	-60	RC	Lottah Mining Pty Ltd
15CUN008DD	412622.968	5445792.373	212.175	32.8	320	-55	diamond	Lottah Mining Pty Ltd
15CUN009RC	412418	5445644	230.026	124	140	-60	RC	Lottah Mining Pty Ltd
15CUN010DD	412622.164	5445791.534	212.175	59.8	147	-70	diamond	Lottah Mining Pty Ltd
15CUS001RC	411572.711	5444116.412	226.992	171	320	-55	RC	Lottah Mining Pty Ltd
15CUS002RC	411545.21	5444427.4	164.541	129	305	-55	RC	Lottah Mining Pty Ltd
15CUS003RC	411749.947	5444449.042	184.813	61	320	-55	RC	Lottah Mining Pty Ltd
15CUS004RC	411917.882	5444300.366	195.218	40	60	-55	RC	Lottah Mining Pty Ltd
15CUS005RC	411917.345	5444299.24	194.961	140	320	-55	RC	Lottah Mining Pty Ltd
15CUS009DD	411817.625	5444781.464	59.3	150.5	130	-55	diamond	Lottah Mining Pty Ltd
BR1	412530.021	5445686.317	230.2	98.2	316	-50	diamond	Dept of Mines (Noldart, 1966)
BR2	412579.051	5445743.886	226.6	59.6	312	-60	diamond	Dept of Mines (Noldart, 1966)
BR3	412579.051	5445743.886	226.6	49	312	-50	diamond	Dept of Mines (Noldart, 1966)
Cut A	412557.299	5445785.477	224.13	30.714	144.68	0	Channel	Boyd et al (1919)
Cut B	412512.029	5445750.094	232	27.37	138.89	0	Channel	Boyd et al (1919)
Upper Tunnel	412494.292	5445726.379	217	25.85	134.42	0	Channel	Boyd et al (1919)
Cut C	412466.034	5445697.005	231.2	24.33	133.97	0	Channel	Boyd et al (1919)
Cut D	412453.055	5445682.158	228.8	24.33	134.42	0	Channel	Boyd et al (1919)
Cut E	412424.095	5445650.545	230	12.772	134.89	0	Channel	Boyd et al (1919)
Cut F	412398.756	5445619.791	229.7	10.644	132.93	0	Channel	Boyd et al (1919)
Middle Tunnel	412031.588	5444951.881	114	13.685	133.79	0	Channel	Boyd et al (1919)
Cut K	412014.736	5444913.91	113.4	9.123	124.38	0	Channel	Boyd et al (1919)
Cut G	411980.126	5444875.961	76.4	13.685	134.60	0	Channel	Boyd et al (1919)
Cut H	411939.203	5444822.635	37	9.123	123.08	0	Channel	Boyd et al (1919)
Cut J	411930.661	5444811.925	31.8	7.602	122.74	0	Channel	Boyd et al (1919)
River Tunnel 32EftxcutNE	411945.819	5444829.677	37	1.52	136.98	0	Channel	Boyd et al (1919)
River Tunnel 32EftxcutSW	411944.448	5444828.362	37	1.52	136.98	0	Channel	Boyd et al (1919)
River Tunnel 77Eftxcut	411956.343	5444838.794	37	5.17	136.98	0	Channel	Boyd et al (1919)
River Tunnel 142Eftxcut	411970.957	5444851.102	37	1.52	136.98	0	Channel	Boyd et al (1919)
River Tunnel 166Eftxcut	411981.508	5444850.029	37	6.99	317.81	0	Channel	Boyd et al (1919)
River Tunnel 221Eftxcut	411996.27	5444863.906	37	3.65	303.80	0	Channel	Boyd et al (1919)

Cut L Purple Crag	411849.789	5444672.524	105.35	6.082	179.145	0	Channel	Boyd et al (1919)
Cut M	411884.867	5444664.985	91.4	9.43	353.015	0	Channel	Boyd et al (1919)
Cut N	411828.347	5444742.691	79.8	16.73	136.276	0	Channel	Boyd et al (1919)
Cut O Purple Crag	411858.224	5444672.417	100.1	9.123	177.93	0	Channel	Boyd et al (1919)

Table 4.2: Intersections Used In Modelling

Hole/Cut ID	**From (m) to (m)**	**Length**	**Fe%**
Cut A	**0m to 30.7m**	**30.7**	**51.8**
Cut B	**0m to 27.37m**	**27.37**	**55.2**
Upper Tunnel	**0m to 25.85m**	**25.85**	**51.4**
Cut C	**0m to 24.33m**	**24.33**	**57.1**
Cut D	**0m to 24.33m**	**24.33**	**61.8**
Cut E	**0m to 12.77m**	**12.77**	**56.4**
Cut F	**0m to 10.64m**	**10.64**	**52.4**
15CUN006DD	**0m to 65.0m**	**65**	**46.7**
15CUN010DD	**0m to 51.0m**	**51**	**30.3**
15CUN004RC	**25.0m to 60.0m**	**35**	**47.5**
15CUN007RC	**34.0m to 67.0m**	**26**	**35.4**
15CUN009RC	**5.0m to 98.0m**	**82**	**40.8**
15CUN008DD	**0m to 15.0m**	**15**	**52.6**
15CUN005DD	**136.5m to 153.0m**	**13.5**	**57.2**
BR1	**37.78m to 65.89m**	**28.1**	**42.5**
BR3	**18.55m to 46.48m**	**29.15**	**26**

5.0 Data Quality and Verification

5.1 Introduction

Assay data from the four main assay data sources is of variable quality and must be considered before use in any estimation. The precision, accuracy and bias of each data set must be considered on its own and in comparison with the other data sets. In addition the positional accuracy needs to be considered in determining whether data is used in the estimation.

5.2 Assessment of Sample Data Assay Quality

5.2.1 Comparison of Data Sets

All assay data from the four assay data sets is plotted as histograms in figures 5.1 to 5.4.

The Lottah and Department of Mines drilling data sets include both weathered and fresh samples. The CW Davis airtrack drilling is probably all in weathered material. Boyd *et. al.*'s sampling is probably mostly in weathered material with some fresh rocks in the adits. No effort has been made to distinguish weathered and fresh material as data is of insufficient quality.

The Lottah drilling data set includes external waste rock as well as ore and internal waste. The Department of Mines drilling, Boyd *et. al.* and CW Davis airtrack drilling data sets only include ore and internal waste.

Histograms of sample assay frequency show two populations in the Department of Mines and Lottah drilling data with both showing a background waste rock population and a discrete ore population (figures 5.1 and 5.2).

In the Department of Mines drilling the ore population (visually) ranges between 40% and 65% with a mean around 50-55%. The two populations are less well defined in the Lottah drilling data but visually the ore population ranges from 40% to 65% with a mean around 55%.

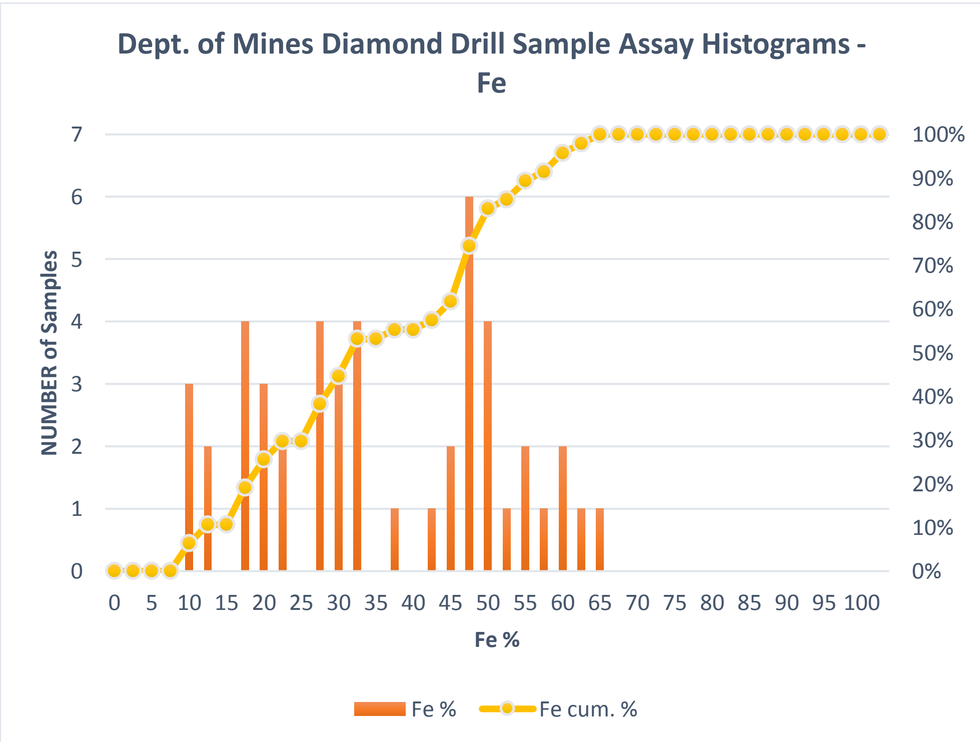


Figure 5.1: Department of Mines drillholes BR1, BR2 and BR3 (Noldart, 1919) diamond drill hole sample Fe assay histogram.

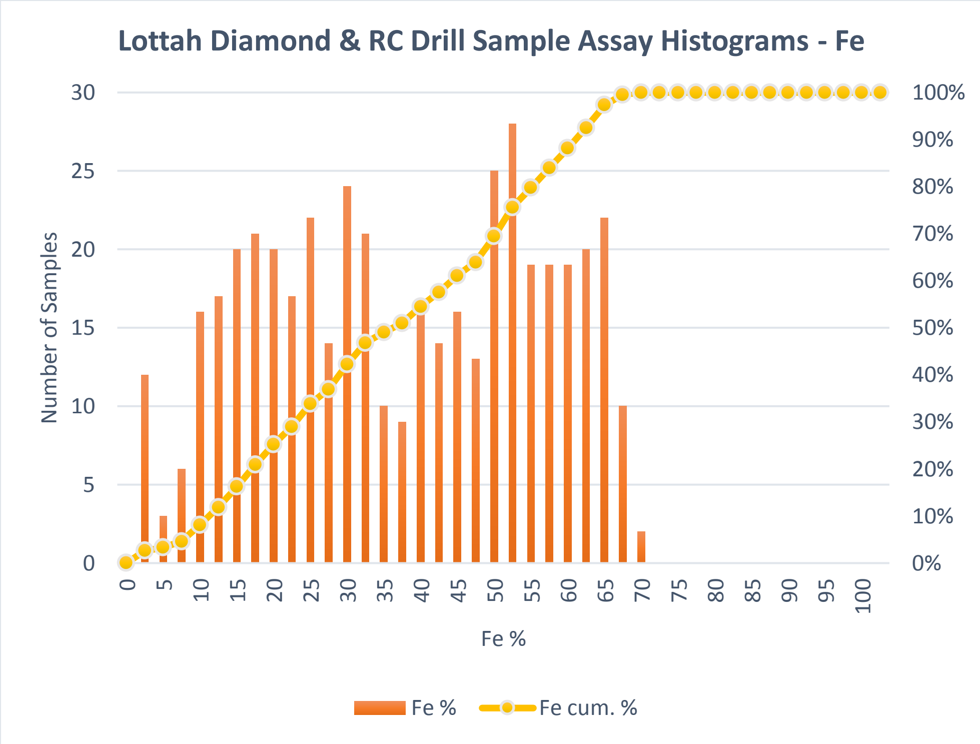


Figure 5.2: *Lottah Mining Pty Ltd diamond and RC drill hole sample Fe assay histogram.*

The Boyd channel data is all from within the orebody. It ranges from 35% to 70% with a mean around 55-60% (figure 5.3). Its distribution is similar but slightly positively skewed to that of the Department of Mines drilling and the Lottah drilling data. This may be reflecting a primary surface enrichment or an enrichment in the sampling process.

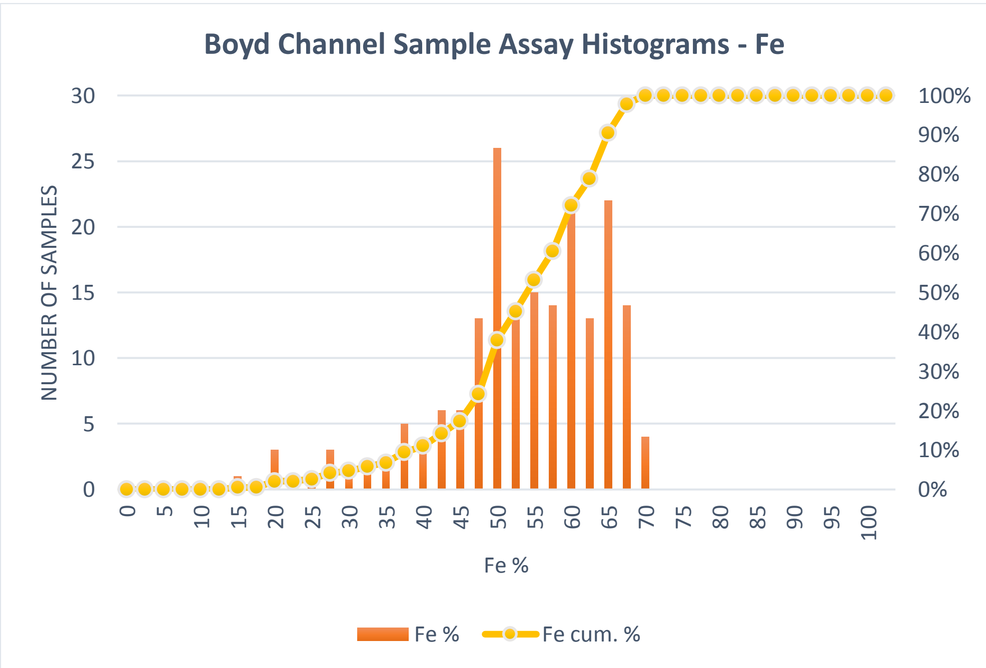


Figure 5.3: *Boyd et. al. (1919) channel sample Fe assay histogram.*

The C.W. Davis data was also taken from within the orebody. Grade here are highly positively biased with respect to the three other data sets with a range between 65% and 95% (figure 5.4). These samples were collected by open hole hammer drill from the surface. The bias may reflect biasing in the drilling and sampling stage or alternatively some near surface grade enhancement. The assay data is considered too biased to be of sufficient quality for use in this estimation.

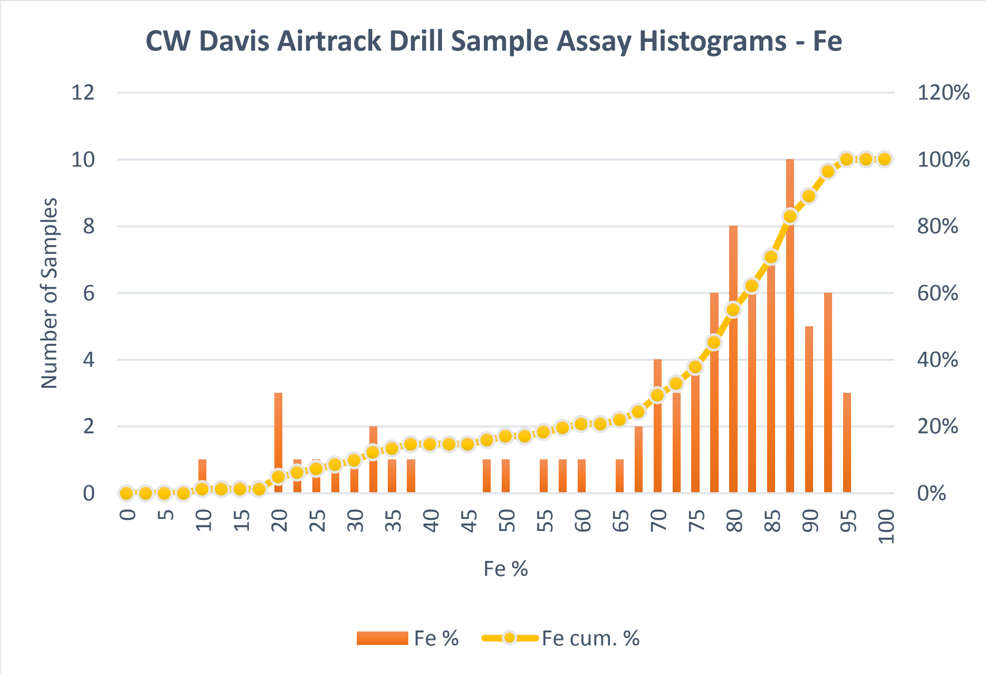


Figure 5.4: *CW Davis (Whitehead, 1989) airtrack drill sample Fe assay histogram.*

5.2.2 QA/QC

Boyd *et. al.* (1919) report no in-laboratory QA/QC procedures. They did carry out field duplicate sampling with 2' samples collected across parts of Cuts E and F. Sample intervals do not correspond and the only way to compare these samples is by composite.

2' samples 177 to 186 across part of Cut E composited as 62.07% Fe (10.08% SiO2) compared with 63.12% Fe (9.12% SiO2) from the original sampling.

2' samples 187 to 192 across part of Cut F composited as 47.5% Fe (31.2% SiO2) compared with 49.6% Fe (29.6% SiO2).

Similarly Noldart (1966) reports no in-laboratory QA/QC procedures. It is apparent that a split of the sample, presumably at the pulp stage, was composited over the whole of each drill holes intersection of the ore zone and assayed for other deleterious elements.

The composite assay from BR1 assayed 40.7% Fe (36.6% SiO2) compared with a weighted average of the original samples of 38.2% Fe (42.7% SiO2). BR3's composite assayed 26.6% Fe (57.6% SiO2) compared with a weighted average of the composite samples of 26.0% Fe (46.5% SiO2).

Lottah Mining carry out industry standard QA/QC with blanks and standards generally every 20 samples. They have also undertaken systematic resampling i.e. field duplicates. These field duplicates generally show good repeatability as expected though figure 5.5 shows 1 outlier.

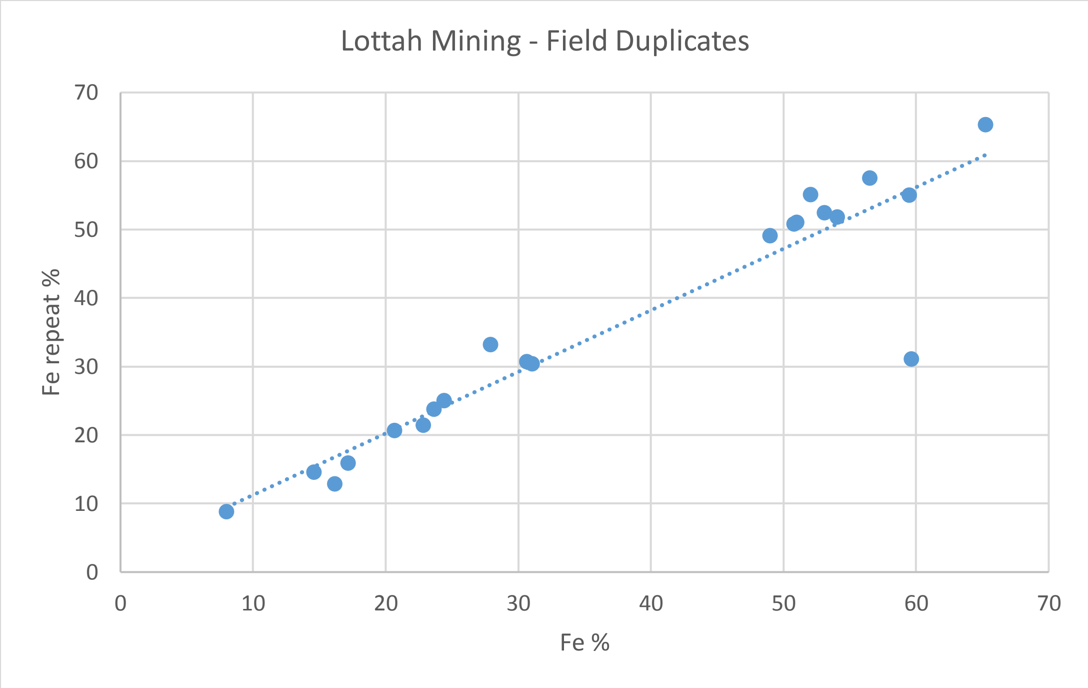


Figure 5.5: Lottah Mining Pty Ltd field duplicate assay comparison.

The assay data of Boyd *et. al.* (1919) and Noldart (1965) is of variable and arguably questionable quality but has been included with the caution that further field duplicate sampling be carried out to confirm the reliability or otherwise of this data.

5.3 Assessment of Data Positional Accuracym

The positional accuracy of all three sample data sets is poor and may be +/- 10m. Early trenching and the drill collars to BR1 and BR3 were positioned from geo-referencing old plans.

Collars to Lottah Mining Pty Ltd drill holes have been surveyed by hand held GPS with positional accuracy of +/-5m.

A decision to proceed with the modelling and estimation was made with the understanding that the resource modelled would be of Inferred Status with the reader cautioned regarding the positional accuracy of the data.

6.0 Geological interpretation and modelling

The geology of the deposit has been discussed earlier. Outcrop suggests a simple tabular geometry, however, it became apparent early in the modelling process that the ore/waste contacts were not lining up as expected with irregular offsets between contacts along strike.

The reason was clearly the inaccuracies in both the absolute and relative positioning of historical trench samples, historical drill holes, and the recent drill holes. Resolution of this problem would require detailed surveying of collars and outcrop.

It was decided to readjust collar and trench positions manually to override this staggering. **The reader is cautioned that the wireframe created from this is based on this manual adjustment.**

6.1 Methodology

Modelling was undertaken using SURPAC's 3D modelling software. Drill hole and trench sample data was stored in an ACCESS database. Wireframing was done on the fly with the sides modelled with a 70° dip to the southeast.

6.2 Lithological boundaries and surface DTM

The presence of visible hematite and/or Fe assay was used to define the bounds to the orebody as there is a quite sharp drop in grade into the wallrocks.

The surface DTM used was generated from the LIDAR data with no field checking.

6.3 Mineralisation domain modelling

Mineralisation was modelled as a single domain.

As noted earlier in most drill hole intersections there is a recognisable zonation to mineralisation within the overall orebody with enriched hangingwall and footwall higher grade zones separated by a lower grade zone. e.g. BR1 on section 12300mN, 15CUN004RC on section 12350mN and 15CUN008DD and 15CUN010DD on section 12400mN. This zonation is particularly well expressed in 15CUN009DD on section 12150mN.

A similar zonation is suggested in hole 15CUN005DD on section 12100mN but incomplete sampling of the possible footwall zone has made the picture unclear. The orebody was thus necessarily modelled as narrowing at this south western end when this might not be the case.

Future work should have as one of its aims the resolution and domaining of these high grade zones.

6.4 Validation of geological interpretation and wireframe models

The wireframe models have been validated visually in 3D in SURPAC.

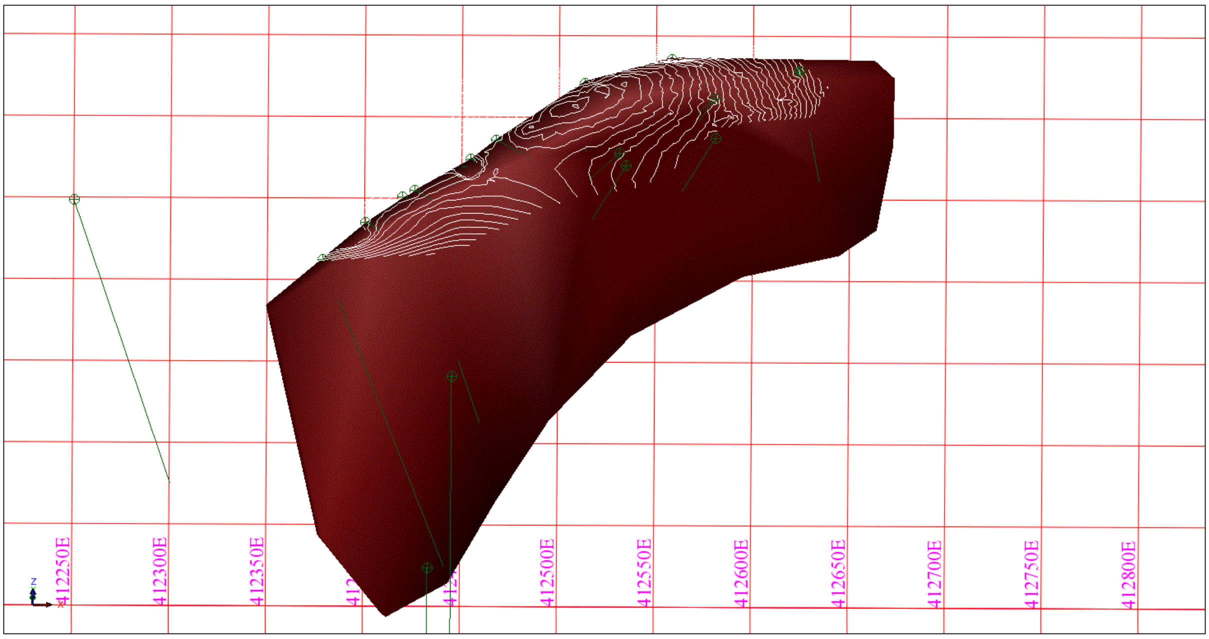


Figure 6.1: 3DM of Northern Quarries (788) orebody.

7.0 Statistical analysis

7.1 Introduction

Limited statistical analysis was performed on the data as there are clear deficiencies in the data set (collar positions, assaying QA/QC) which would make any results inconclusive.

Ore intersections are coded as *ore* in the ore table in *the Cuprona2016* database.

Around half of samples used in the estimation are from Lottah Mining's drilling which are 1m down hole samples. Sample lengths in both, drill holes BR1 and BR3, and the sampling by Boyd *et. al.* (1919), were predominantly at 5' (1.52m) intervals.

1m composites were chosen as the length for compositing.

Composite data is summarised in Table 7.1.

Table 7.1 Composite Statistics

Data Set	Number of Samples	Mean	Standard Deviation
Lottah	294	41.78	17.16
Boyd	159	55.07	7.82
Noldart	56	34.38	16.00
TOTAL	509	45.12	16.34

Histograms of 1m composite data are also shown in figures 7.1 to 7.3.

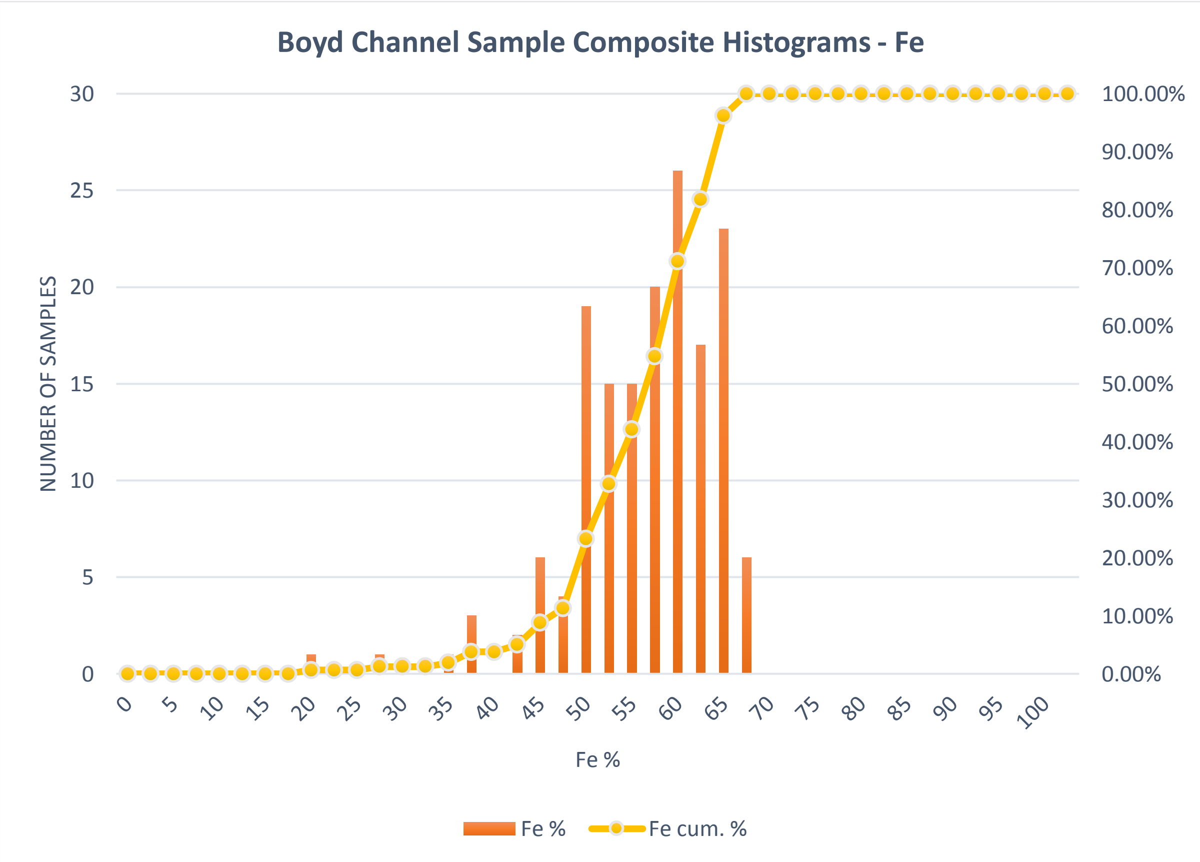


Figure 7.1: Boyd et. al. (1919) channel sample data composite histograms, Fe %.

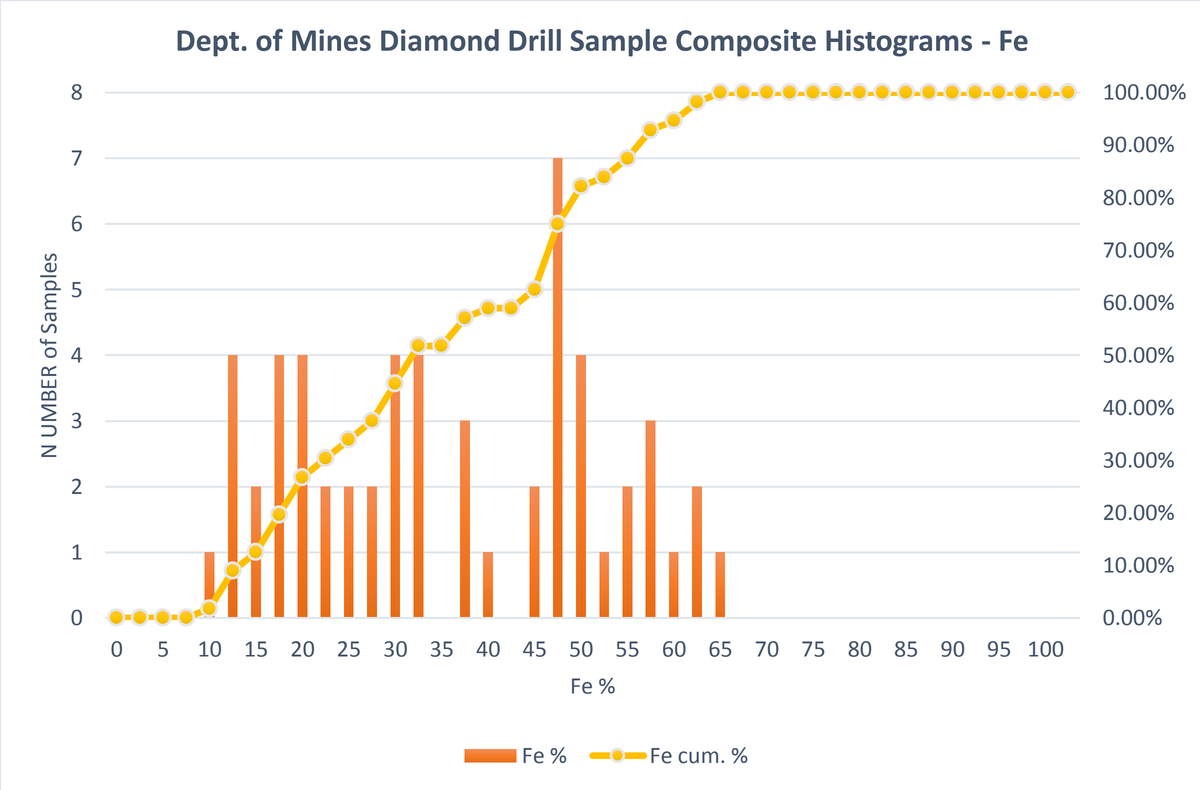


Figure 7.2: Department of Mines drill holes BR1 and BR3 sample data composite histograms, Fe %.

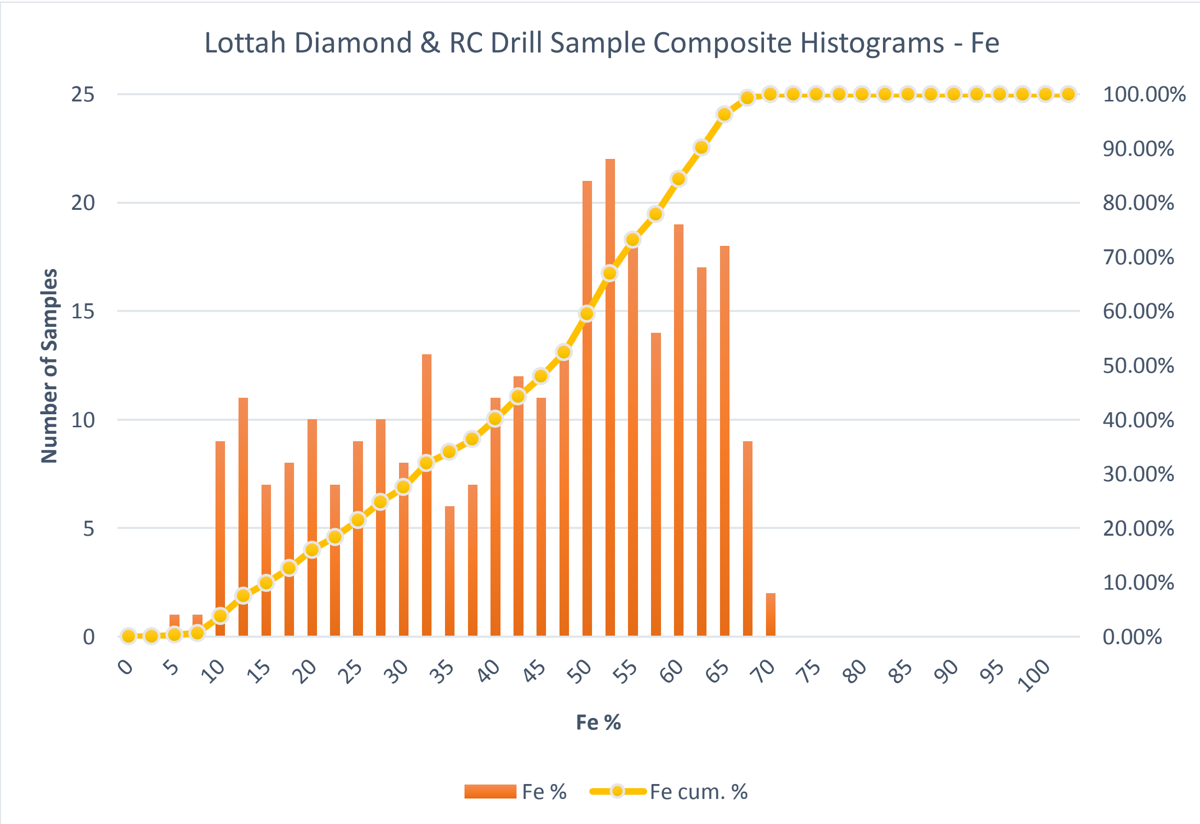


Figure 7.3: Lottah Mining drill hole sample data composite histograms, Fe %.

The histograms of both Lottah Mining's and the BR1 and BR3 data appears to show two populations, with the data of Boyd *et. al.* (1919) only showing the higher grade population. This may

- Accord with the selective sampling of Boyd *et. al.*
- Reflect higher surface grades due to some form of enrichment, or
- Indicate a serious skewness in the data.

The Boyd *et. al.* (1919) data has been included in the estimation with a caution that it may be biasing the resource. Further field duplicate sampling of these surfaces is imperative for the inclusion of the Boyd *et. al.* (1919) data or alternatively for the addition of a new replacement surface data set of similar size i.e. a 6 trench trenching programme at a minimum.

7.2 Bulk Density

The only bulk density data available for this estimation came from recent diamond drilling by Lottah Mining.

Bulk density measurement were made on two of the Northern Quarries (788) diamond drillholes, and the River Zone diamond drillhole. In all 71 measurements were made using the water immersion method.

Of these 71 only 17 are from the Northern Quarries (788) ore zone with 13 from 15CUN006DD and 4 from 15CUN005DD.

The mean of these 17 samples is 4.1g/cm3 with a standard deviation of 0.9 and they range from 2.65 to 5.13. Variation with depth is a strong possibility. Both holes sampled are quite steep and depth downhole acts as a proxy for depth below surface.

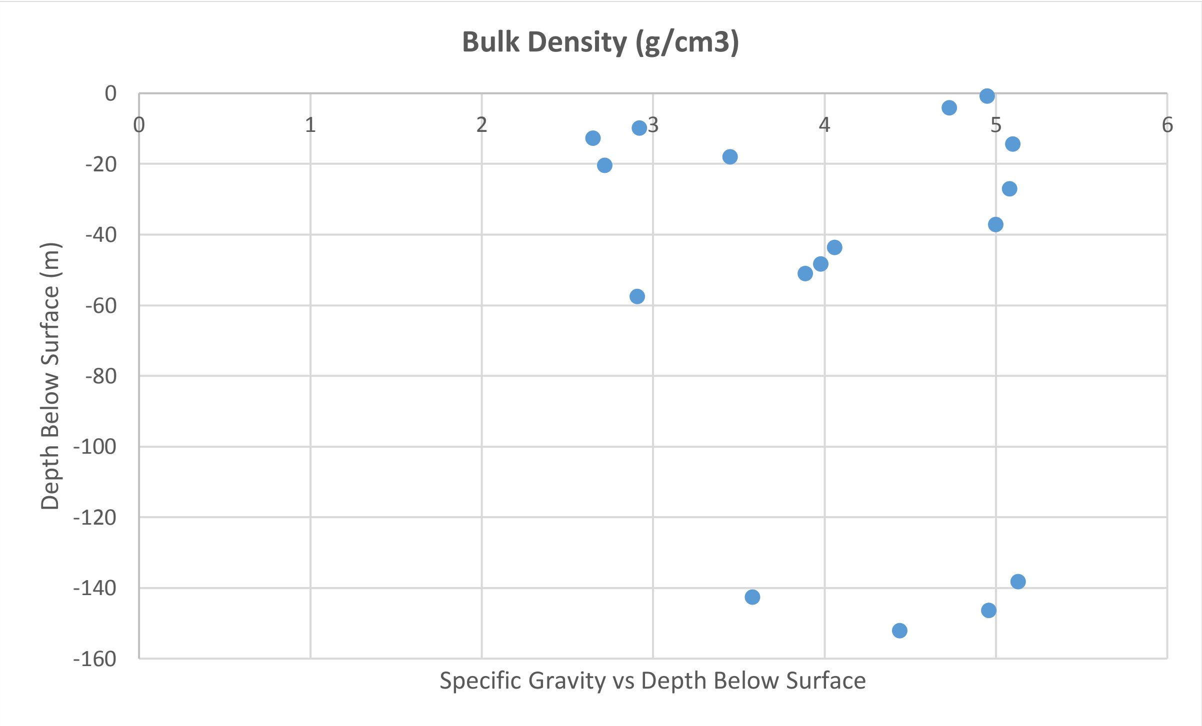


Figure 7.4: Comparison of bulk density with depth below surface. Mean used in estimation is 4.1g/cm3.

There is an apparent increase in bulk density with depth with the four deeper samples averaging 4.5. A bulk density of 4.1g/cm3 has been used in the estimation.

8.0 Block modelling

Block modelling was done using SURPAC's block modelling function.

The block model's name is *nthnq10.mdl*

Blocks were designed as 10mY x 5mX x 10mZ with Y oriented at 045° true north. Blocks were sub-blocked to 2.5m x 1.25m x 2.5m.

Attributes assigned are:

- Rock_type
- Fe_2O_3
- SiO_2

9.0 Grade estimation

9.1 Introduction

For data quality reasons estimation using a simple Inverse Distance Squared method is considered sufficient at this point until questions regarding positional accuracy and the inclusion of surface sampling can be addressed. .

9.2 Inverse Distance Squared .

A large search ellipse was used with a maximum search distance of 100m for the major axis and 50m for the semi-major and minor axis.

The ellipse was rotated such that the major axis strikes 045° and the semi-major axis dips at -70° to the southeast.

The minimum number of informing samples was 3 with maximum number of informing samples used 15. Six discretisation points were used per block.

The estimation method was Inverse Distance to the power of 2.

9.3 Block model files

The resultant grade estimates are held in the model file *nthnq10.mdl.*

9.4 Validation

The block model has been validated visually in 3D in SURPAC and also through the generation of sections (see figures 9.1 to 9.9).

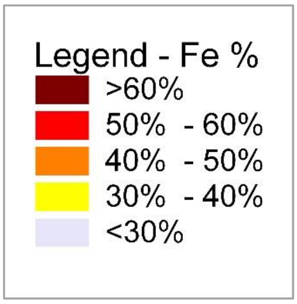


Figure 9.1: Legend Fe % for all sections and plans

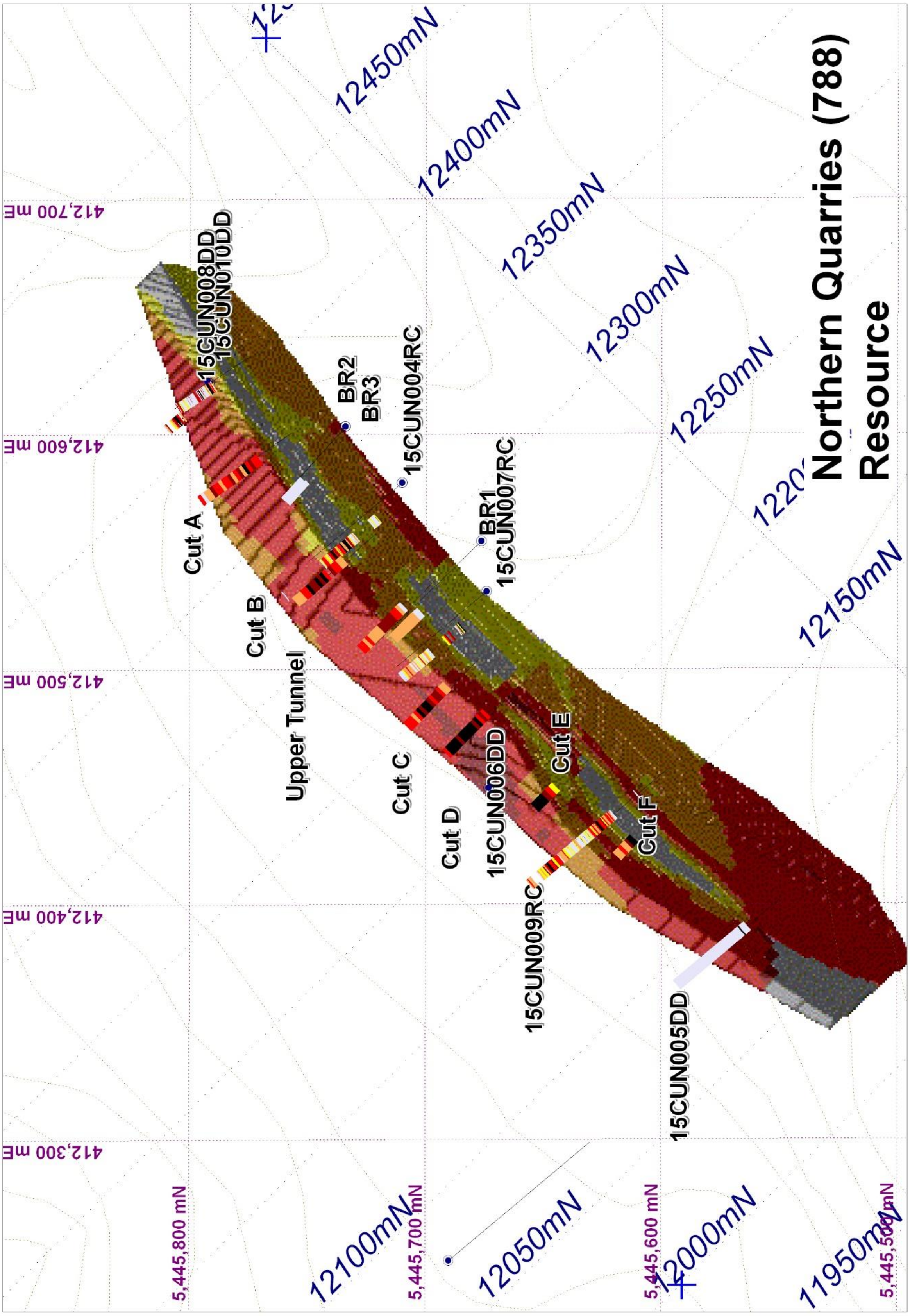


Figure 9.2: Northern Quarries (788) resource showing Fe % (legend in figure 9.1).

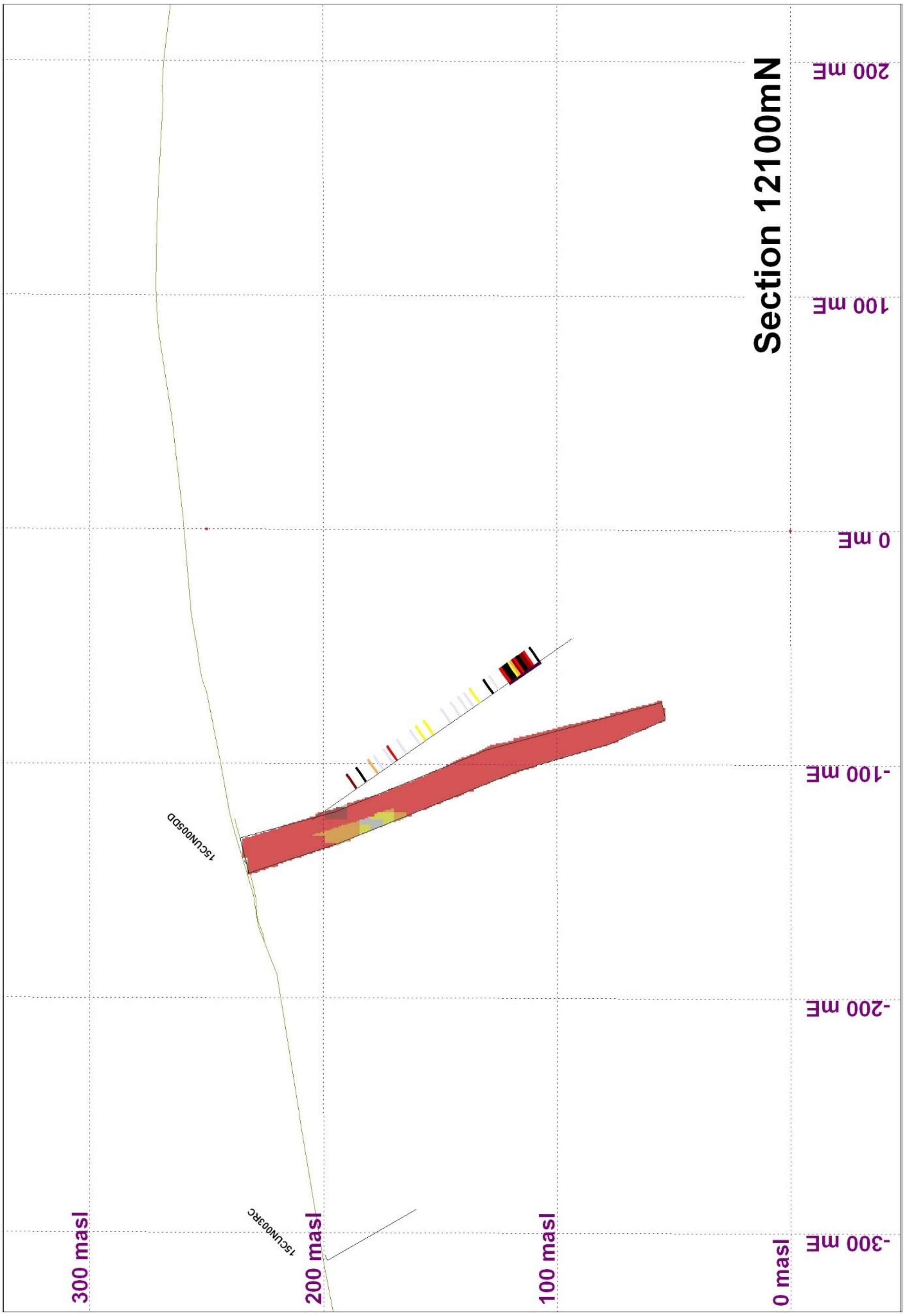


Figure 9.3: Section 12100mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %.

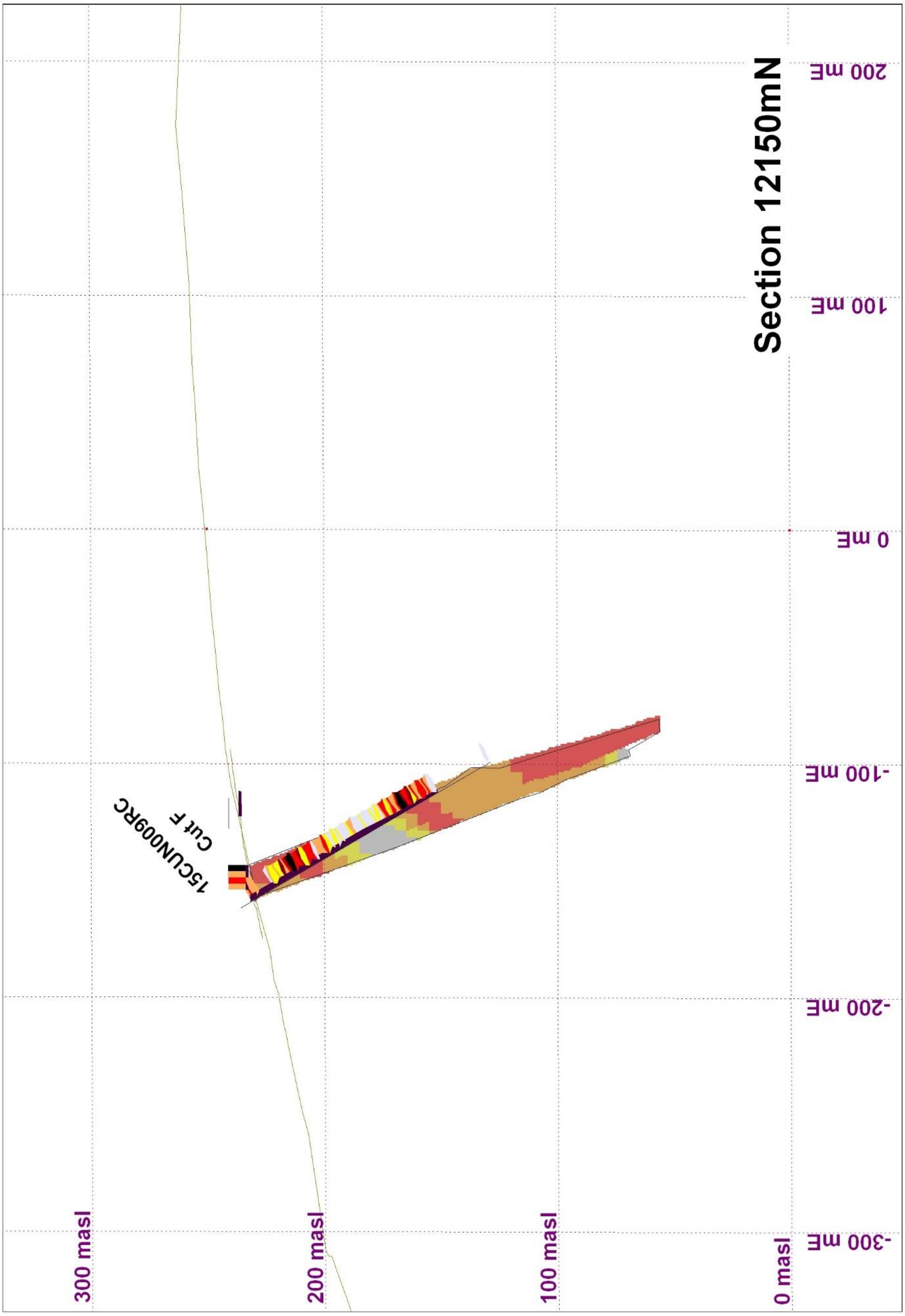


Figure 9.4: Section 12150mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %.

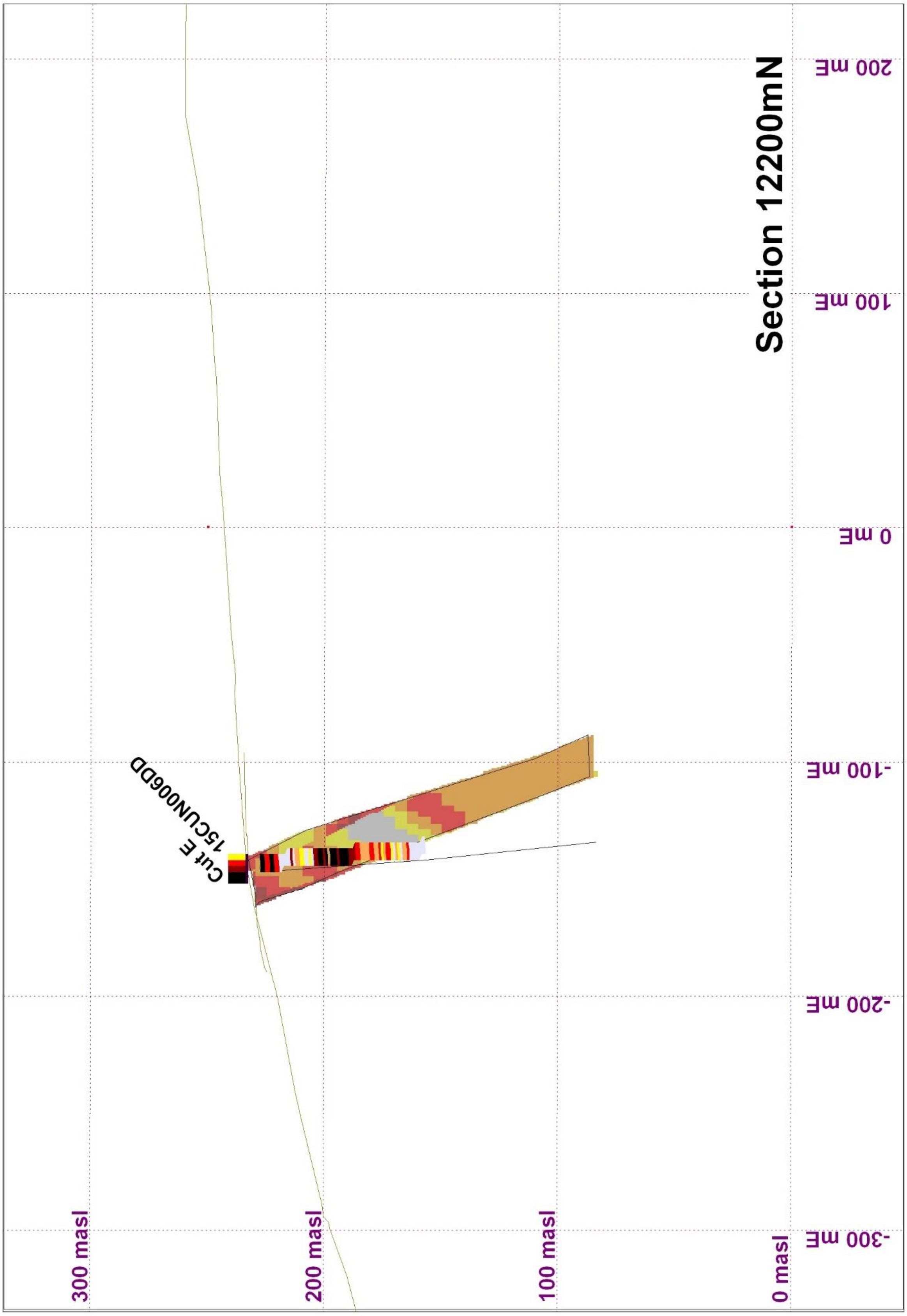


Figure 9.5: Section 12200mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %.

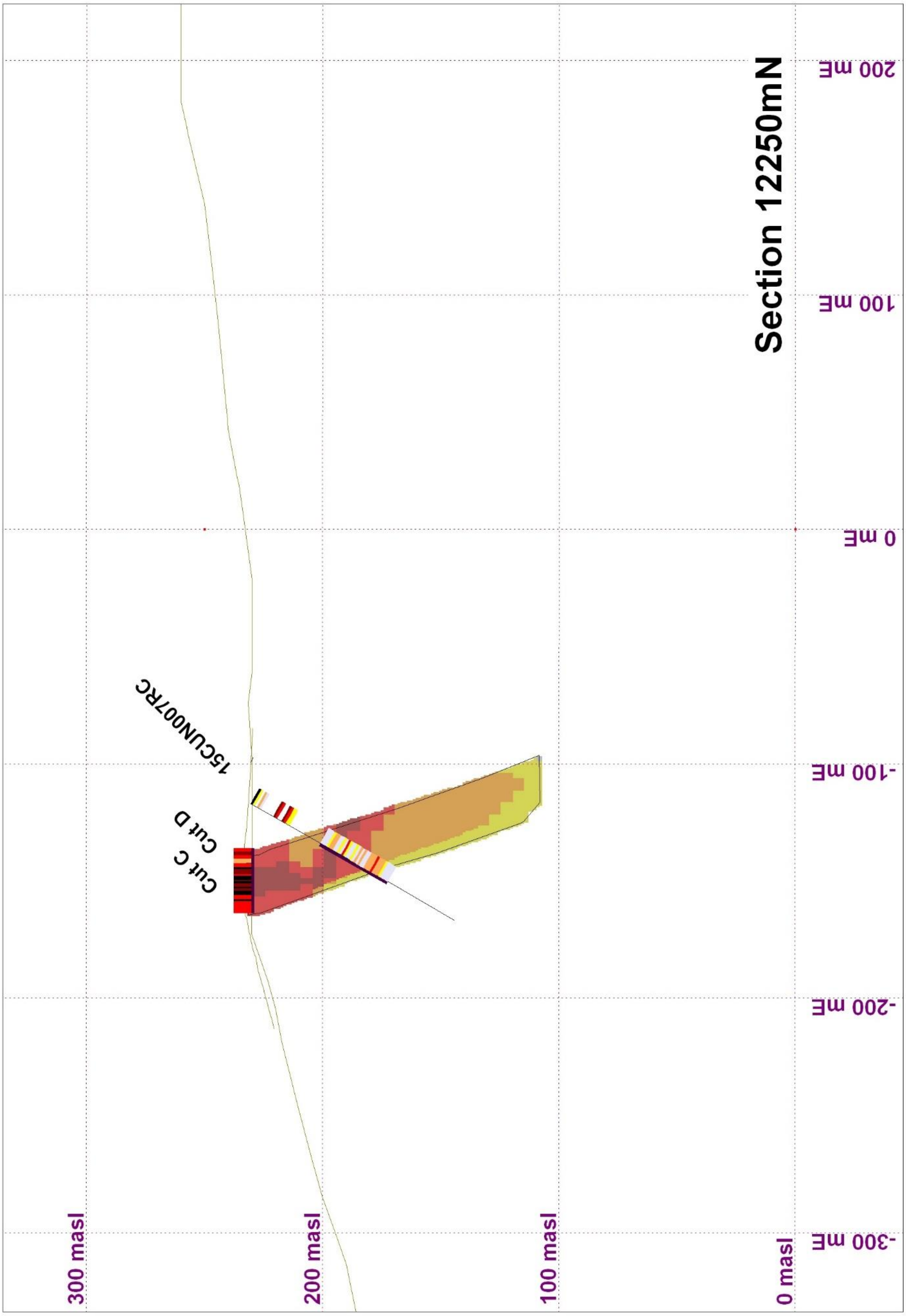


Figure 9.6: Section 12250mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %.

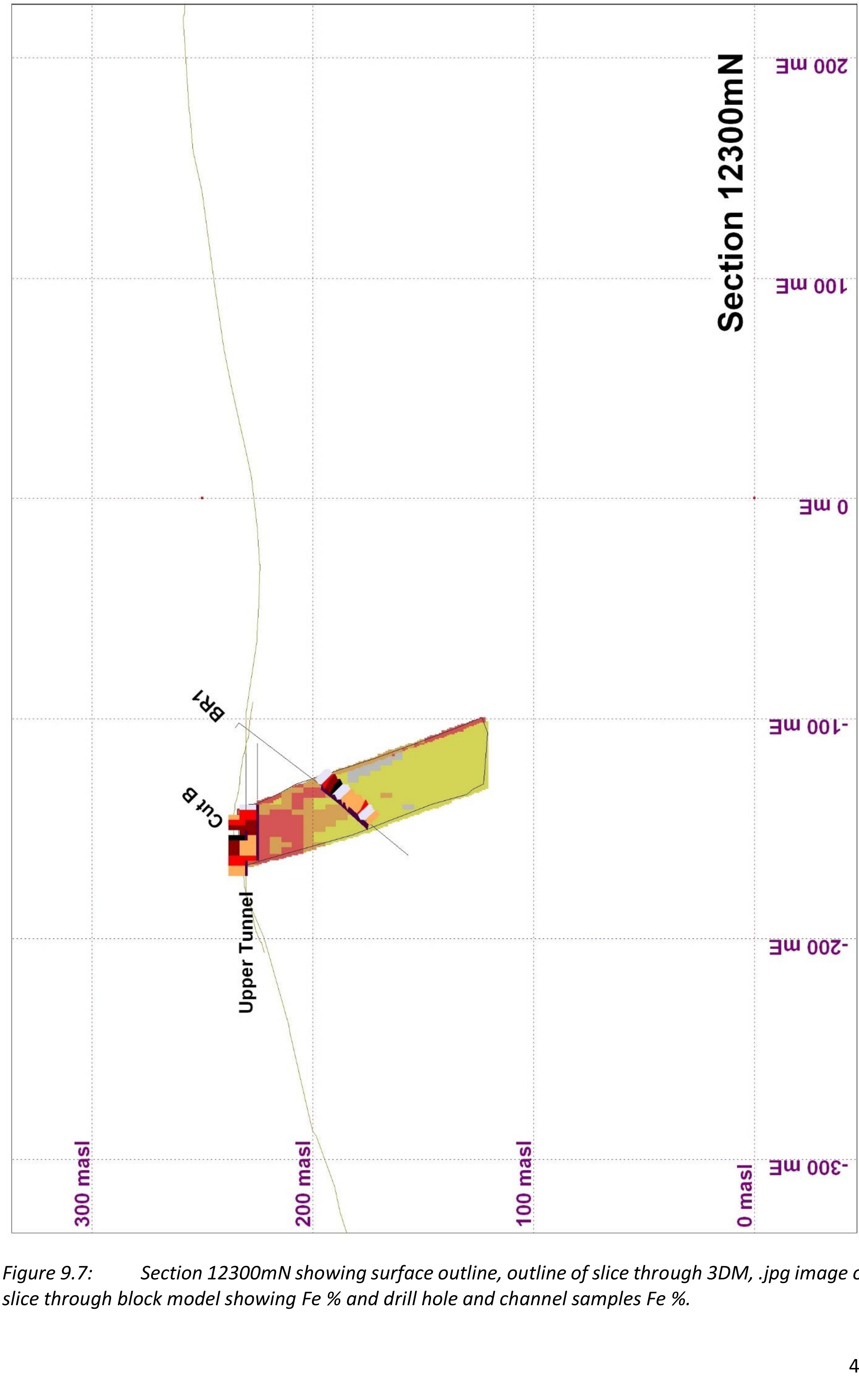


Figure 9.7: Section 12300mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %.

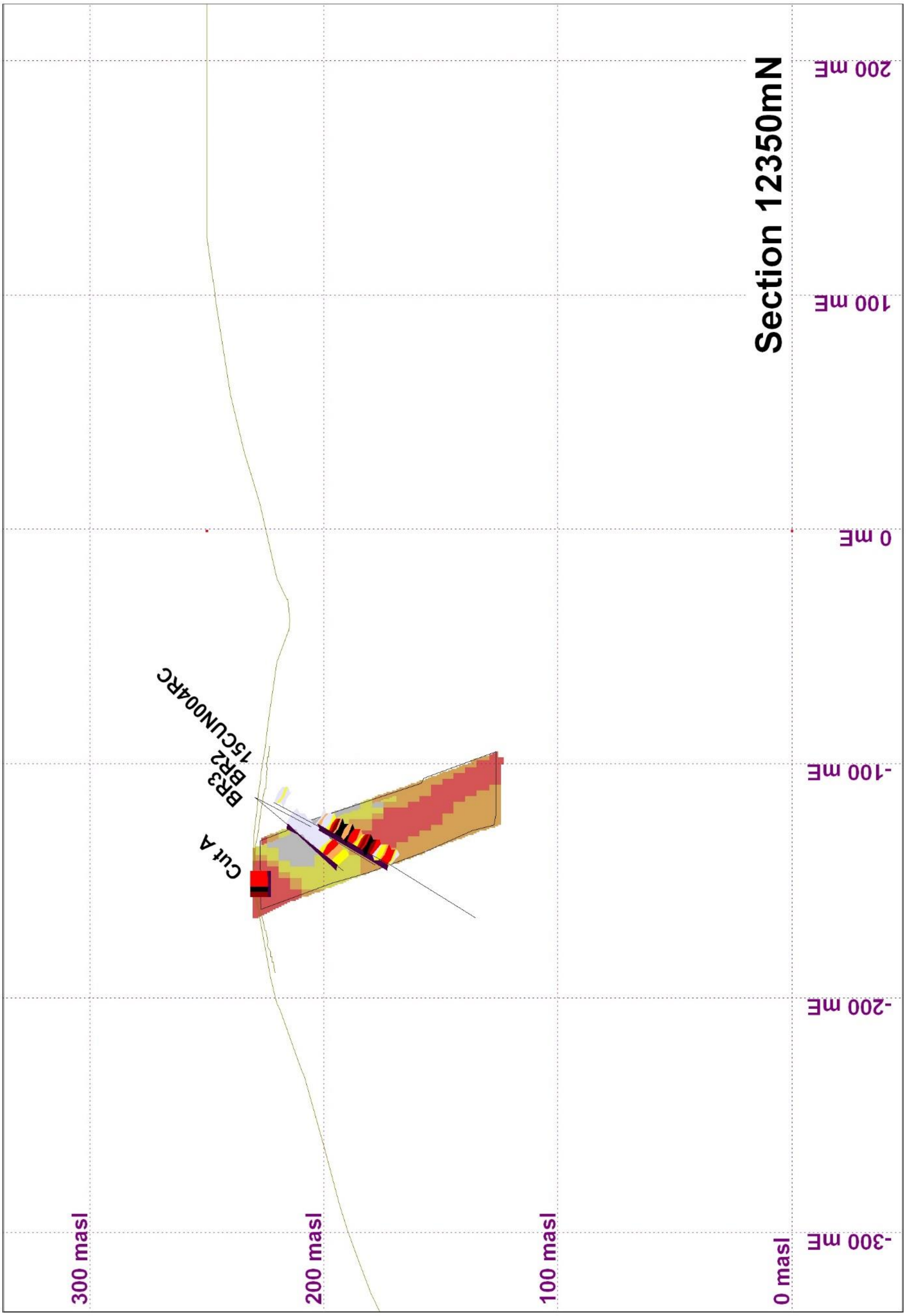


Figure 9.8: Section 12350mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %

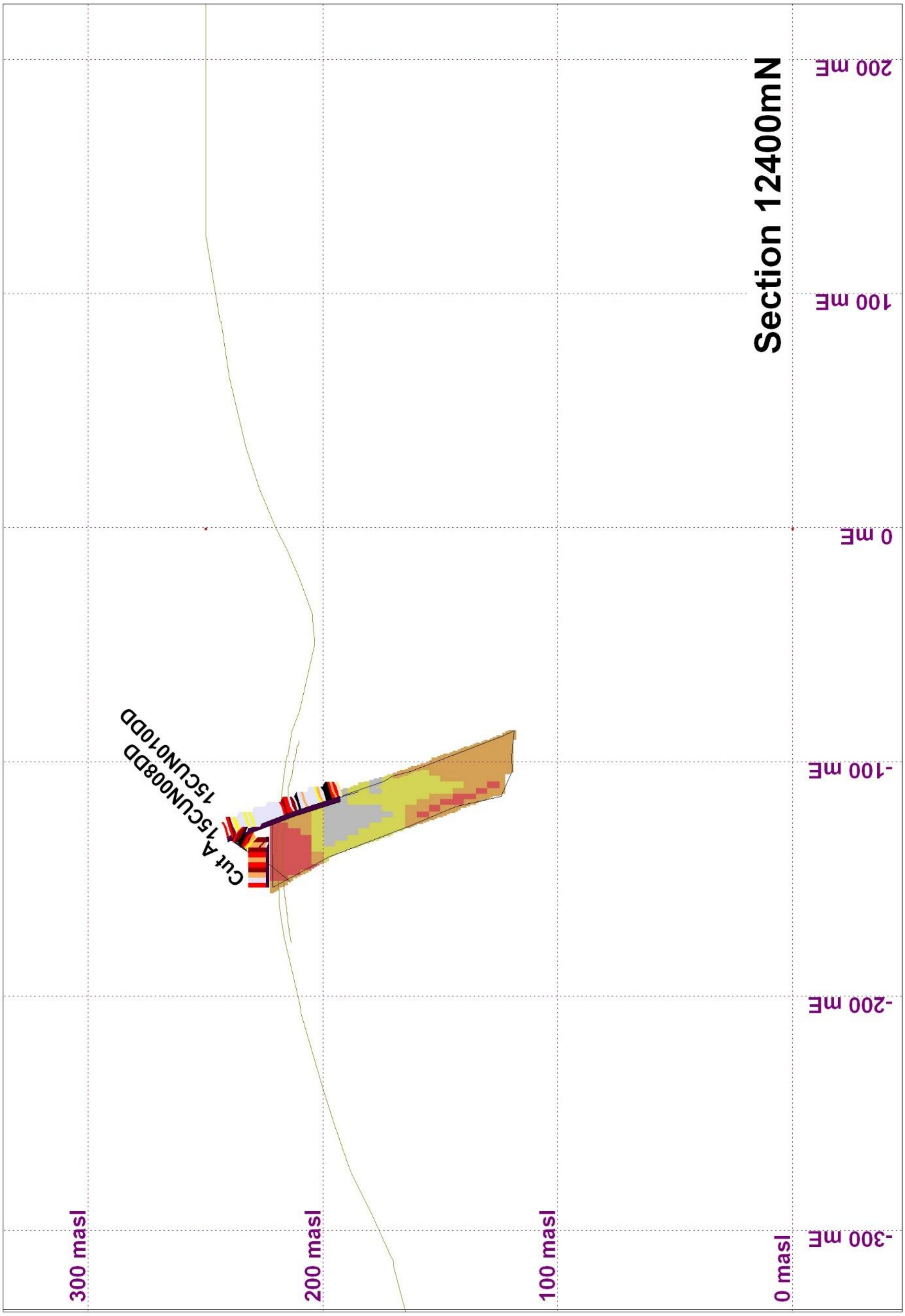


Figure 9.9: *Section 12400mN showing surface outline, outline of slice through 3DM, .jpg image of slice through block model showing Fe % and drill hole and channel samples Fe %.*

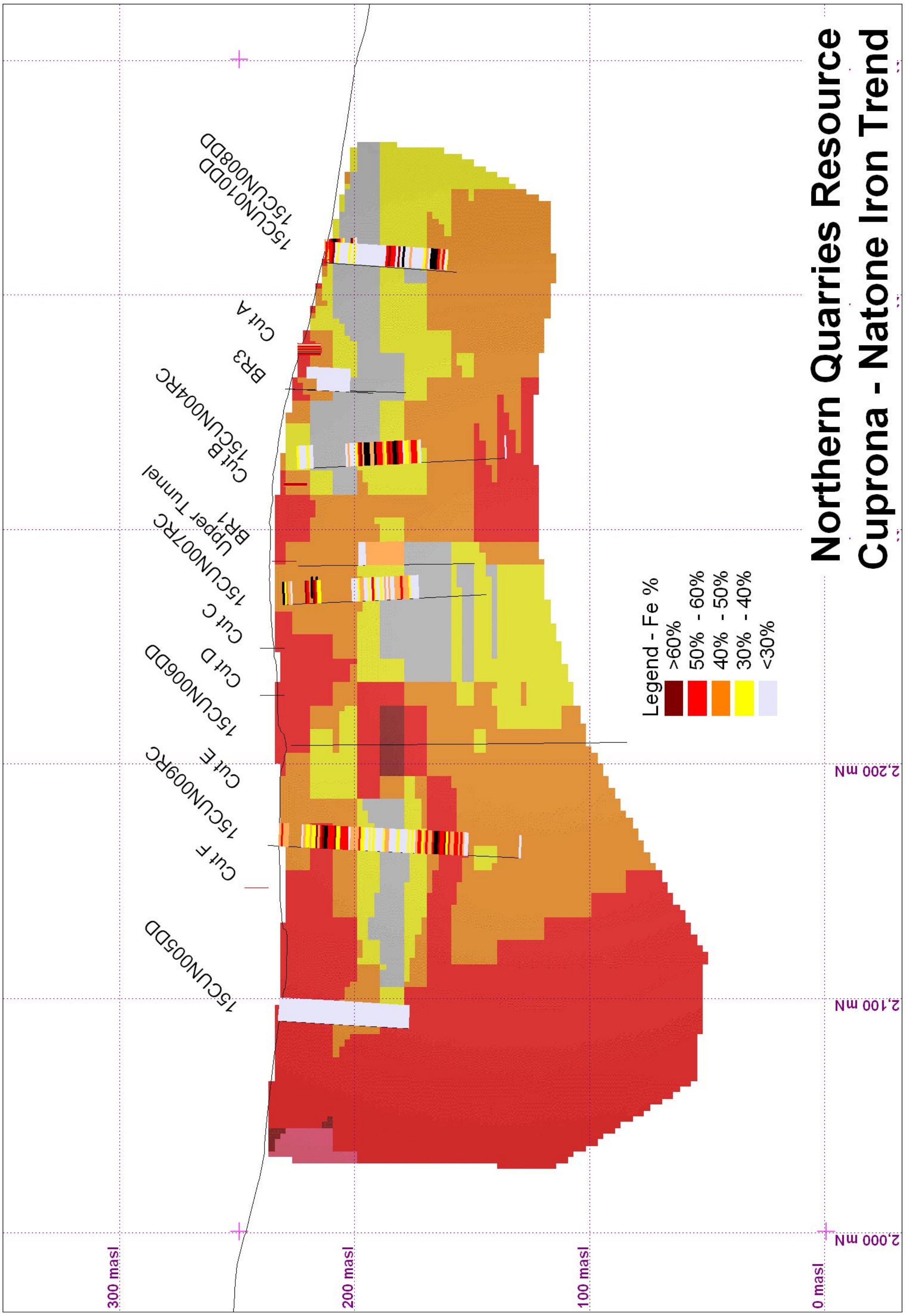


Figure 9.10: Long section looking northwest showing .jpg image of slice through block model showing Fe %, and drill hole and channel samples Fe %.

9.5 Resource reporting

Table 9.1 Total Resource Tons and Grade

Cut Off Grade Fe2O3 %	Tons	Fe2O3 %	SiO2 %
0	4,432,741	44.58	33.02
30	4,122,390	46.36	31.17
40	3,069,907	49.97	26.0
50	1,539,966	55.19	19.86
60	67,362	61.62	9.98

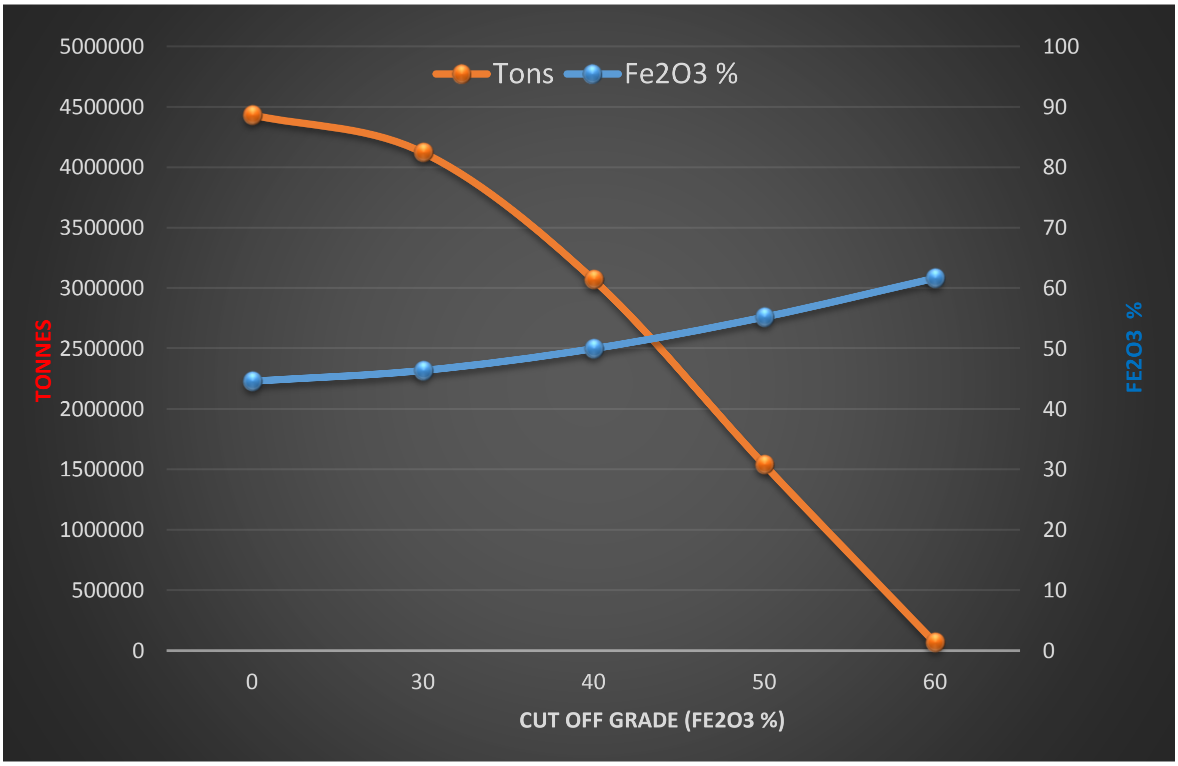


Figure 9.11: Tons and grade curve for total resource.

Figure 9.12 below shows a pit design for extracting the total resource showing that the resource could be mined.

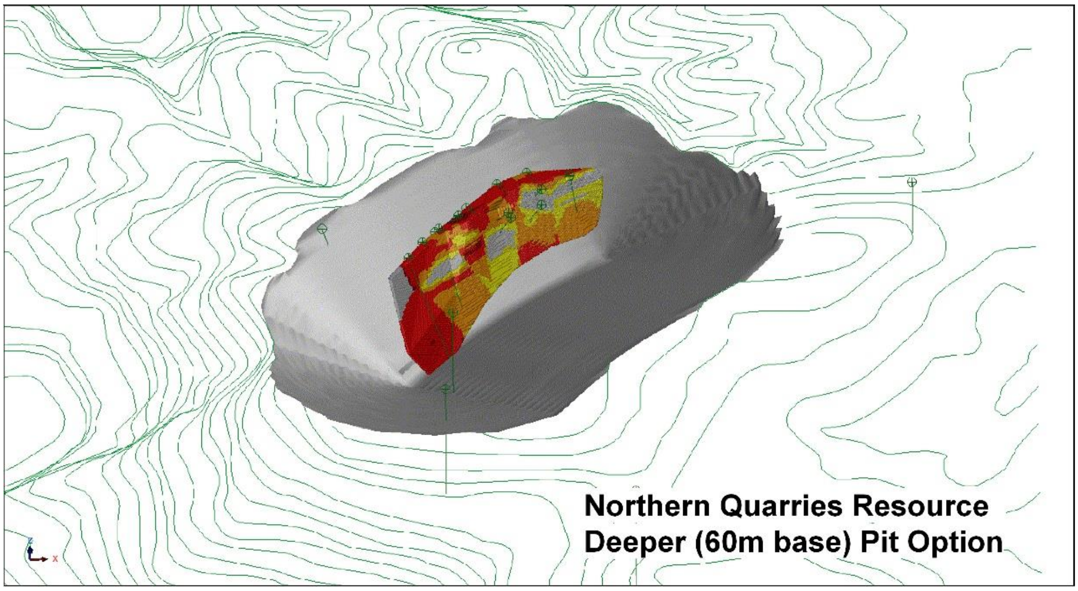


Figure 9.12: Pit design for extraction of total resource. Pit base at 60m.a.s.l.

The bulk of the resource as currently defined lies above 120m.a.s.l. There is certainly scope to extend the resource to depth but it is worth considering the shallower pit option with pit base at 120m.a.s.l.

Table 9.2 Total Resource above 120m.a.s.l. - Tons and Grade

Cut Off Grade Fe2O3 %	Tons	Fe2O3 %	SiO2 %
0	4,094,086	44.01	33.1
30	3,664,302	46.10	31.5
40	2,710,656	49.74	26.8
50	1,314,847	55.25	19.7

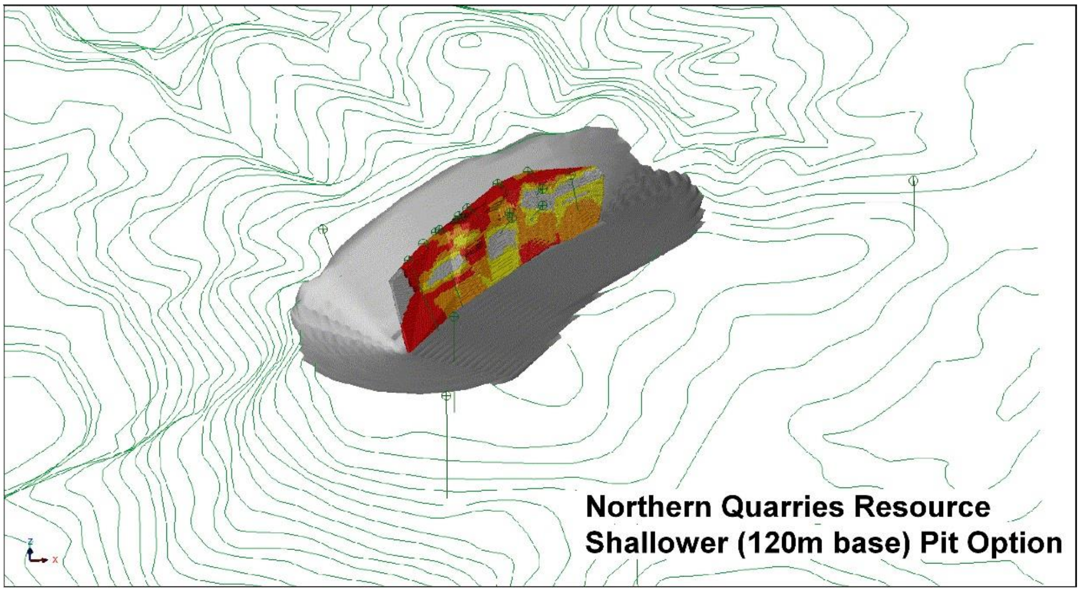


Figure 9.13: Pit design for extraction of resource above 120m.a.s.l.

10.0 Potential to Extend or Add to Resource Base

10.1 Introduction

There is considerable potential to extend the hematite iron resource to the southwest and southeast from the Northern Quarries (788) deposit along the Cuprona-Natone Iron Trend with systematic drilling, trenching and sampling.

10.2 Northeast

There is 500m of strike of the trend to the north east of the Northern Quarries (788) deposit before the trend disappears beneath basalt cover. Early mapping by Twelvetrees (1905) (figure 10.2) suggests the possibility of further hematite mineralisation just beneath the basalt about 500m northeast.

Work here should initially consist of shallow excavator trenching and step-out drilling initially on 100m sections.

10.3 River Zone

10.3.1 Introduction

Immediately to the southwest of the Northern Quarries (788) body on Sushames Hill the mineralised zone is truncated by what drilling has shown to be a relatively thick basalt cover.

The hematite mineralized trend reappears from beneath this cover with massive hematite outcrops on the ridge down to the Blythe River and up the slopes on the south side of the river before (see figures 2.4, 10.3 and 10.4).

This part of the Cuprona – Natone trend is called herein the River Zone and has been mapped and described by Noldart (1958) and sampled and geologically described by Boyd *et. al.* (1919).

10.3.2 Mining and Exploration History

Boyd *et. al.* (1919) sampled the lode in the two tunnels, the River or Lower Tunnel (sampling 5 cross-cuts into the ore), and the Middle Tunnel. On the ridge between the two tunnels trenches were dug and Cuts G and K sampled. Contiguous channel samples were also cut across the lode at the mouth of the River Tunnel (Cut H) and across the lode on the north bank of the river (Cut J)

In the Middle Tunnel the lode as sampled is 12.7m (45’) wide, described as “very hard, jointed and jaspery with no clean ore” and assayed 13.7m @ 25.95% Fe, however, Boyd *et. al.* state that the ore only constitutes 5’ of the drive.

In Cut K, 35m south-southwest of the Middle Tunnel the sampling did not quite extend the full width of the lode with 9.73m (32’) sampled and a further 1.22m (4”) not sampled i.e. a total width of 11.0m (36’) assaying approximately (assuming last 4’ assays similarly to the previous sample) 9.1m @ 53.3% Fe. The rock here is described as hard dense and siliceous ore with some samples also described as being foliated. This cut is reportedly the best mineralised in the River Quarries zone.

Cut G was taken 50m further away again and sits above the 221’ cross-cut in the River Tunnel. Cut G did not extend quite to the east wall of the lode (unstated amount) but 13.7m (45’) was sampled with the rock described as reddish ore in the western part and more jaspery in the eastern. Cut G assayed 13.7m @ 13.7m @ 43.4% Fe.

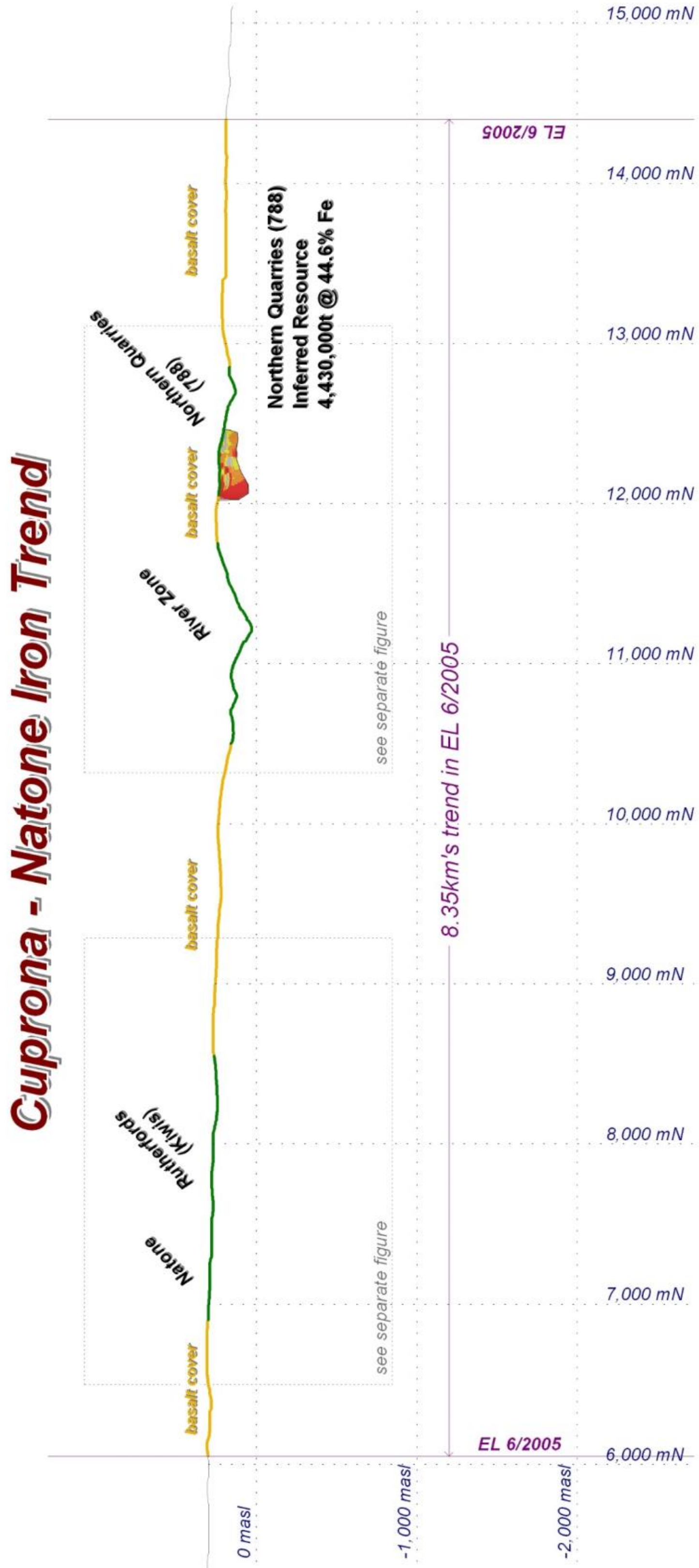


Figure 10.1: Cuprona-Natone Iron Trend long section looking towards 315° i.e. north west. Green and brown line is surface along the iron trend with brown basalt cover and green exposed Cambrian silststones, host to the hematite bodies.

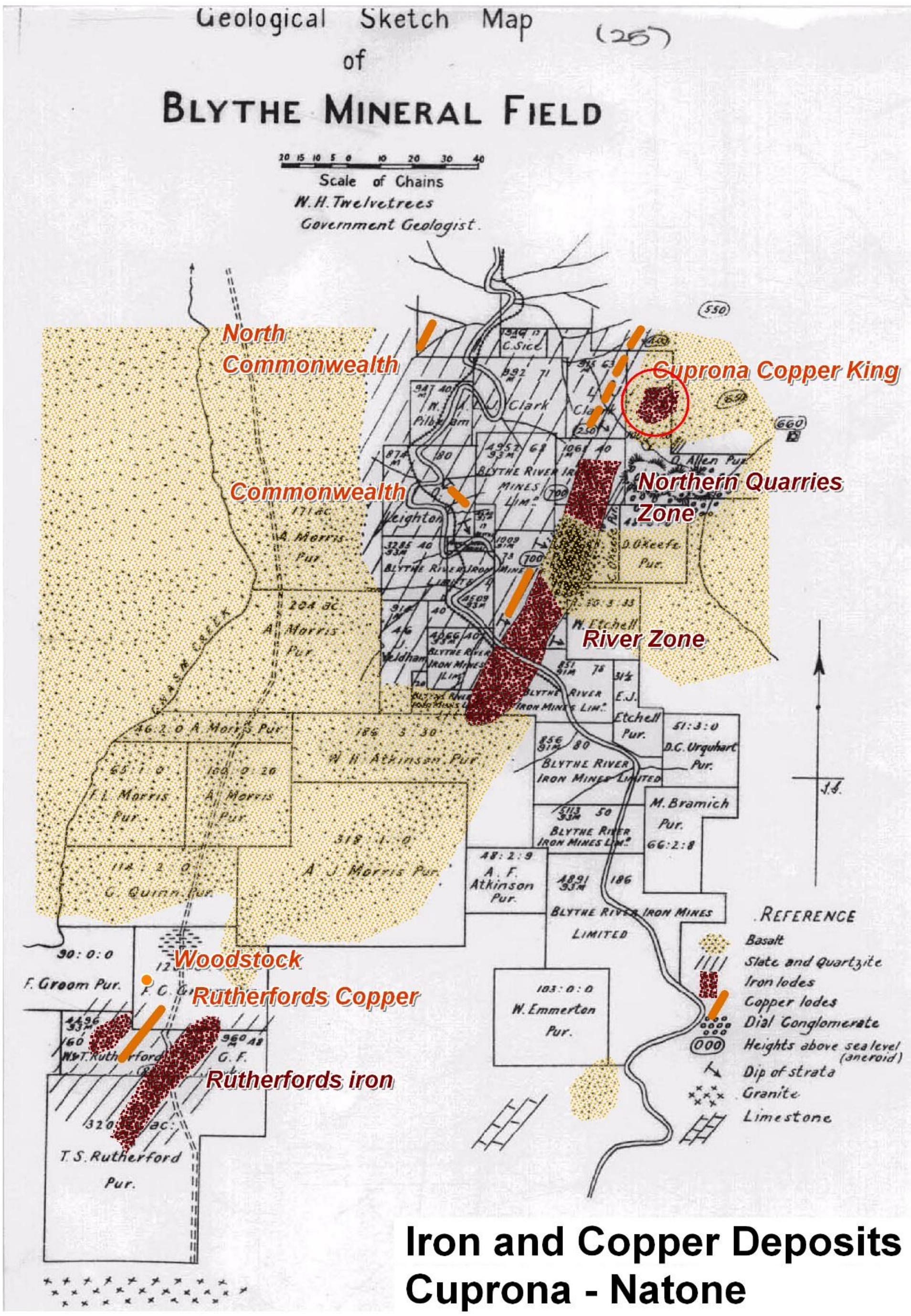


Figure 10.2: Location of iron mapped by Twelvetrees (1905) in area of red circle.

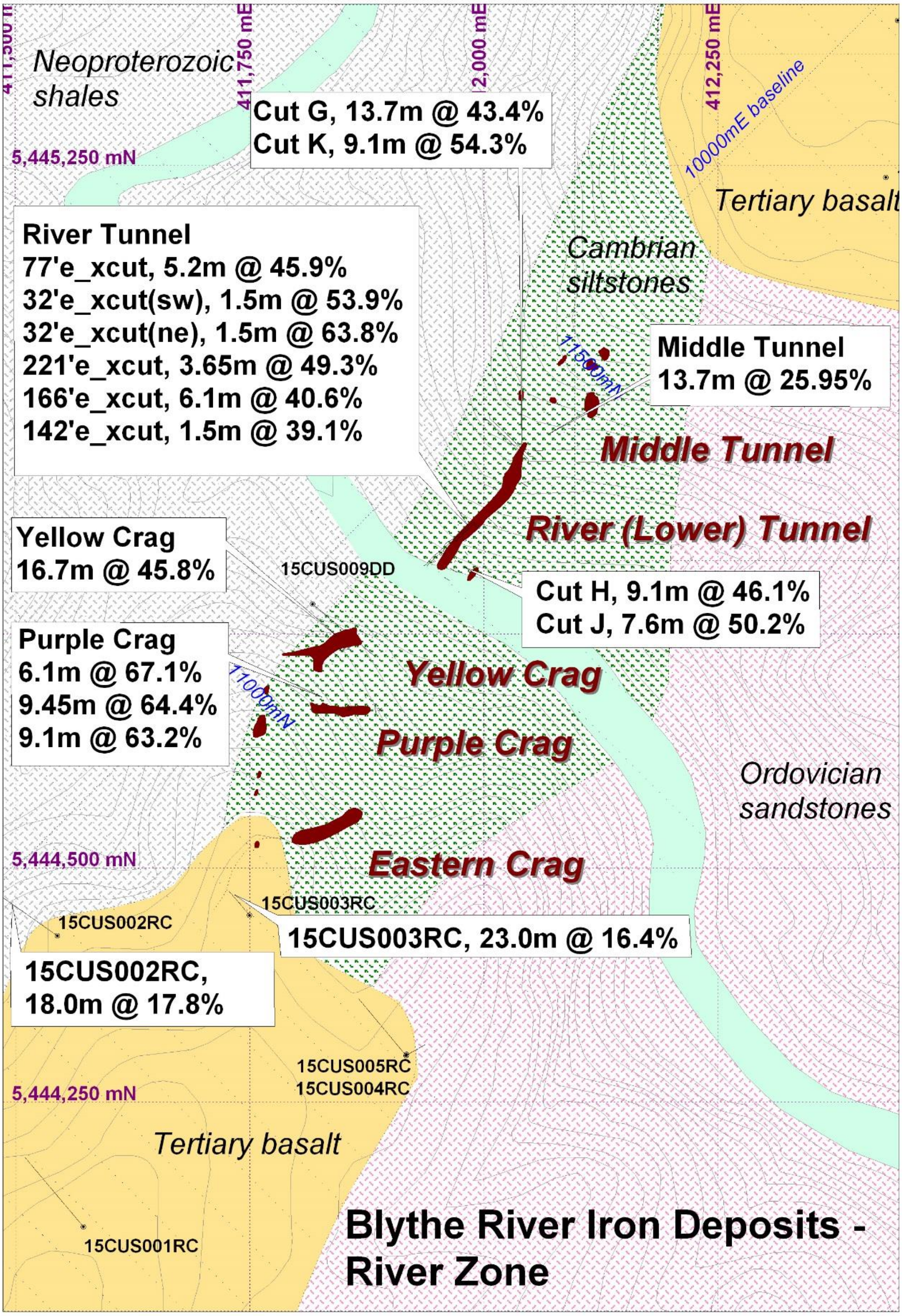


Figure 10.3: Blythe River Iron Deposits River Zone geology and sample results. Maroon shapes are hematite outcrops. Sample results all from Boyd et. al (1919).

The River Tunnel was sampled with a series of channel samples across 5 of the cross-cuts (32', 77', 142', 166' and 221'). Boyd's map shows the River Tunnel cutting across the lode diagonally starting from its western footwall at the mouth but with the deepest cross-cut (221') at the eastern margin of the lode. Samples in these cross-cuts give no indication of lode widths but the ore is generally described a siliceous, jaspery and jointed with good ore in narrow patches. Grades here range from 39.1% Fe to 63.8% Fe.

Cut H sampled the outcrop to the immediate east of the tunnel mouth with a sampled width of (30') but lode width of 10.04m (33'). Cut H assayed 9.1m @ 46.1% Fe.

Cut J was taken across the outcrop of the lode in the north bank of the river giving a full width of 7.6m (25'). The rock here is described as hard and dense with blebs of silica. Outcrop just upslope and across the river as described as being more jaspery. Cut J assayed 7.1m @ 50.2% Fe.

The hematite trend continues on the southern slopes of the Blythe River outcropping as a series of crags. The Yellow Crag lies directly on the trend as defined on the north side of the river. The other two crags, the Purple Crag, and Eastern Crag, are offset to the east from this trend.

Cut N across the Yellow Crag is described as "siliceous and jaspery throughout" with an outcrop width of 16.73m (55") sampled and a further 3.04m (10') width beyond sample #144 of jasper similar to that in #144 i.e. a total outcrop width of 19.77m (65'), i.e. 16.73m @ 45.8% Fe.

This outcrop was tested at depth by drill hole 15CUS005DD which intersected 27.0m at 30.0% Fe and along strike by 15CUS002RC which intersected 18.0m @ 17.8% Fe. including 1m @ 42.6% Fe.

The Purple Crag is described as fragmental or agglomeratic ore and has been considered to be potentially a large float with a more recent history suggested. It has been sampled across its outcrop width in Cuts L 6.08m (20'), M 9.12m (30'), and O 9.12m (30'). These assayed 6.1m @ 67.1% Fe, 9.45m @ 64.4% Fe and 9.1m @ 63.2 % Fe.

The geological relationship between these three outcrops needs resolution. In particular the Eastern Crag's position is problematic. It may represent a parallel trend.

The Eastern Crag was not sampled by Boyd *et. al.* (1919) but has been drill tested at its southwestern end by drill hole 15CUS003RC which intersected 23.0m @ 16.4% Fe.z

Lottah Mining have also drilled holes 15CUS001RC, 15CUS004RC and 15CUS005RC to look for the continuation of the main mineralised trend with no significant intersections.

10.3.3 Mineralisation and Potential

The surface and underground sampling to date has shown mineralisation to be of a lower tenor than the Northern Quarries (788) area, however, higher grades have been intersected in parts.

Cut K assayed 9.1m @ 54.3% Fe. There is a 300m section between it and the edge of the basalt with no trenching or drilling. Whilst Blake (1958) did not map hematite in this area (figure 2.4), Atkinson (1958) does (figure 10.4). This section should be more thoroughly assessed given its proximity to the operation on the other side of the hill.

On the south side of the river the geological picture is unclear with the suggestion of three parallel zones. The Purple Crag may be a red herring as adits into barren rock immediately beneath it suggest that it is a large float and has been considered so by most visitors.

As to which of these two (or three) trends is the likely one to continue to the south opinions amongst geologists differ with Blake (1958) favouring the Eastern Crag (figure 10.2), Atkinson (1958) favouring the Purple Crag (in spite of my comments above) and Boyd *et.al.* (1919) favouring the Yellow Crag

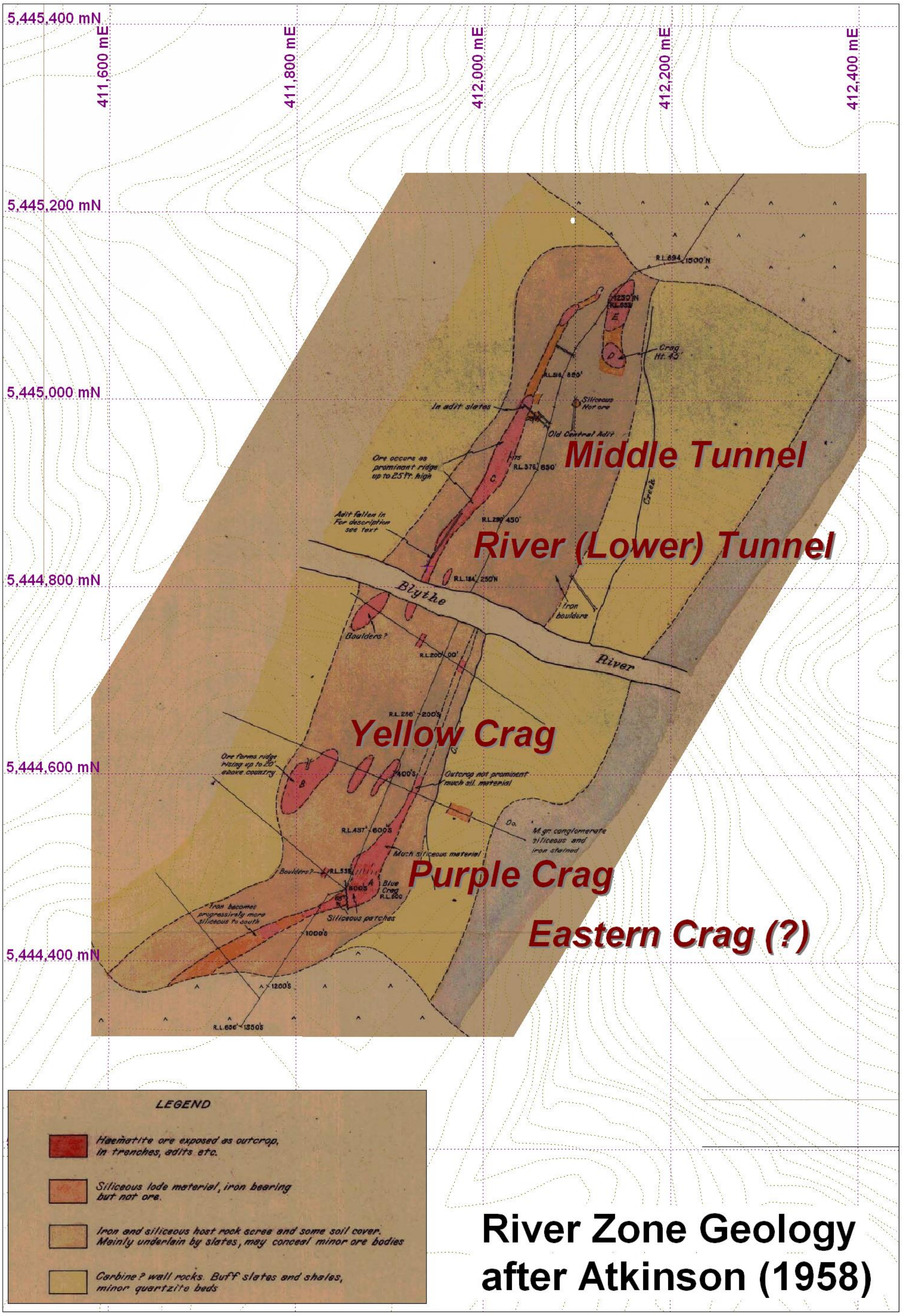


Figure10.4: Blythe River Iron Deposits River Zone geology after Atkinson (1958).

trend. All show the rock becoming more siliceous towards the basalt margin under which the zone disappears.

The result in 15CUS002RC of 18m (down hole) at 17.8% Fe is significant as this lies on the margin of the basalt cover making mineralisation in this area more readily exploitable.

10.4 Natone/Rutherfords area

10.4.1 Introduction

Further southwest long strike the hematite trend reappears at Natone with outcropping hematite at Rutherfords (Kiwis).

10.4.2 Mining and Exploration History

The ironstone at Natone was first mined by the owner of the property Mr T Rutherford on or about 1919. Workings consisted of two shallow shafts.

In 1938, J. Linell Cook (Holdings Pty. Ltd.) reportedly further prospected the area by shaft sinking and trenching and contracted the Department of Mines to drill two diamond drill holes.

Thomas and Henderson (1943) describe extensive work recently completed and ongoing by a company Ferrico Proprietary Limited who had sunk 4 shallow shafts (3 with cross-cut drives at their base) and cut numerous trenches. Intriguingly their mining work stopped when ore was reached as they unable to successfully break the very hard siliceous hematitic ore.

Minops investigated the Natone area from 1968 to 1972 following on from the BMR regional magnetics survey. Their work included magnetics, IP, auger drilling and the drilling of 3 diamond drill holes (Natone 1, 2 and 3) by the Department of Mines drill rig totalling 506m.

Hole 1 targeted the main magnetic anomaly to the west as did hole 3 intersecting weathered sediments grading into quartzite hornfels with minor tremolite/actinolite rock and calc-silicate skarn with pyrrhotite likely responsible for the magnetic anomaly.

Hole 2 (Natone 2) targeted the easterly weaker magnetic anomaly and intersected a 125’ (horizontal width assuming vertical dip) zone of 53% Fe in massive hematite (Jack, 1969).

During 1969-1974, within EL 1/69, the Tasminex/ANZECO J/V investigated the Natone ironstone and Rutherford’s copper prospect, to the north, with soil and rock geochemistry, mapping, magnetics and costeaning and the drilling of 5 shallow percussion totalling 106m at Rutherfords copper prospect.

During 1977-1985, EL 8/77 was investigated by the Comalco-Shell-CRA J/V. Extensive exploration focussed towards the discovery of tin-tungsten deposits included mapping, stream, rock and soil geochemistry: aeromagnetic and INPUT EM surveys, SP, IP max-min EM, SIROTEM, gravity and the drilling of three diamond drill holes NT1, NT2 and NT3. Drill hole NT3 encountered significant magnetite mineralisation.

The Natone-Rutherfords area was also held under EL 6/2005 by RedRiver Resources Limited under their Blythe Project (Karajas, 2006). RedRiver Resources drilled 5 holes (RRN1 to RRN5) for 721.7m. Their first hole RRN1 attempted to twin Shell hole NT3’s magnetite intersection. The other 4 holes targeted soil (copper mainly but also gold, silver, palladium) +/- gravity anomalies. Holes were assayed for Cu, Pb, Zn, Ag, Au and Sn but not Fe. Hole RRN5 intersected bands of hematite in clay from 0 to 48.2m. The other holes intersected sediments with some calc-silicate skarn development.

Upon joint venturing into the project Iron Mountain Mining Limited drilled 5 RC holes (KWRC1 to KWRC5) for 254m (anon. 2008) into Rutherfords workings. These holes all intersected varying quantities of hematite mineralisation with better results 8m @ 57.6% Fe and 3m @ 55.5% Fe.

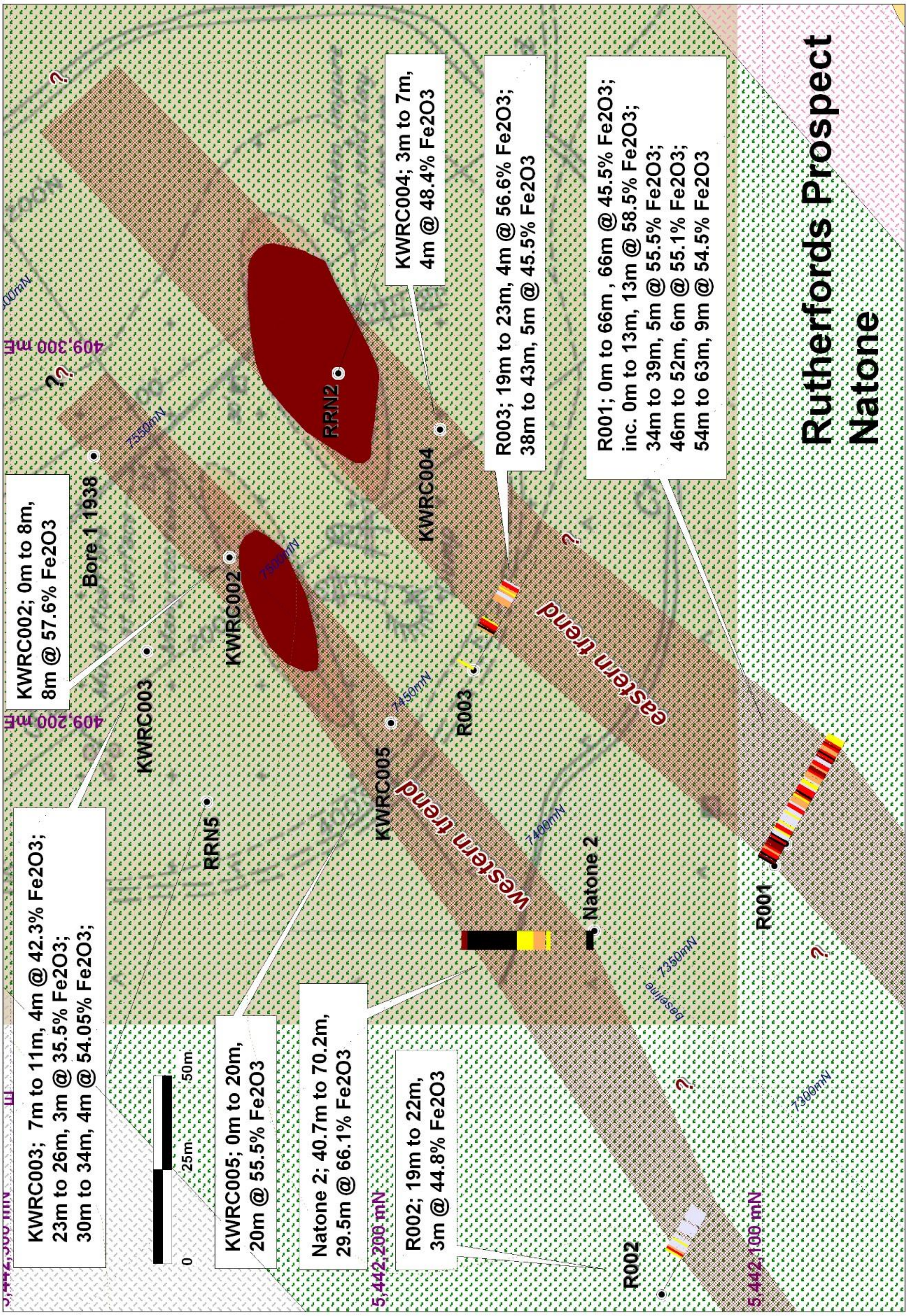


Figure 10.5: *Rutherfords (Kiwis) prospect, Natone.*

In 2003 Tasmania Mines Ltd drilled three diamond drill holes R001, R002 and R003 into the Rutherfords prospect. All holes were angled to the southwest and all intersected hematite mineralisation with R001 intersecting 66m @ 45.5% Fe including 13m @ 58.5%.

10.4.3 Mineralisation and Potential

Hematite mineralisation at Rutherfords (Kiwis) appears to occur in two parallel zones, striking ~045°, which outcrop on a small hill.

The larger eastern zone's outcrop was described by Atkinson (1958) as being 90' (27.5m) wide and exposed along strike for 210' (64m). The eastern zone has been drilled to its south over a strike length of 150m in four holes;

- RRN2, not assayed for Fe
- KWRC004, 4m @ 48.4% Fe
- R003, 4m @ 56.6% Fe and 5m @ 45.5% Fe
- R001, 66m @ 45.5% Fe including 13m @ 58.5% Fe

The smaller eastern zone's outcrop was described as having exposed dimensions of 60' (18.3m) wide and 130' (39.7m) long. The western zone has been drilled over a strike length of 200m with four holes;

- KWRC002, 8m @ 57.6% Fe
- KWRC005, 20m @ 55.5% Fe
- Natone 2, 29.5m @ 66.1% Fe
- R002, 3m @ 44.8% Fe

The two parallel zones are separated by about 30m of low grade material exposed in trenches on the hill though there are suggestions from Thomas and Henderson (1943) of thin high grade zones within this.

Internal zonation within the orebodies is apparent in drillholes e.g. R001 with three high grade zones, and R003 with two high grade zones.

Whilst these drill results are encouraging there is currently insufficient data to generate a resource with further drilling and surface trenching required.

In particular in order to facilitate modelling and estimating a resource, drill holes and surface trenches should be designed to complete continuous fences across each of the two zones on 50m spaced sections (with some fences extending across the low grade centre). This will allow definition of orebody bounds and provide sufficient assay data for the generation of an Inferred resource at least.

Both mineralised zones remain open to the south west and north east. Extending the resource will require similar fences of drilling and trenching on 100m spaced sections initially closing in to 50m sections. The intersection in R001 argues for prioritisation of step out drilling to the south west on this the eastern zone.

Prioritisation of sections for drilling might also utilise soil sampling data with Sn, Cu and W weakly anomalous in the hematite orebodies.

11.0 Conclusions and Recommendations

The massive hematite+/-silica body at the Northern Quarries (788), Cuprona has been modelled and a resource estimated.

Poor sample positional accuracies combined with low sample density and have led to the resource being classified as an Inferred Resource.

All future drill hole collars and other surface sampling should be DGPS or conventionally surveyed. All holes should be down hole surveyed. All holes should be collared to the northeast of the orebody and drilled to the southwest to provide accurate assessment of orebody shape.

The resource is reported at a range of cut-off grades. These higher grades will only be achievable with successful delineation of higher grade zones. Such delineation will require closer spaced drilling in the first instance and grade control pit mapping and sampling.

Work required to elevate the resource status from Inferred to Indicated will necessarily consist of

- Detailed survey drill hole collars, outcrops, trenches.
- Field duplication of early trench sampling with extra trenching where possible.
- Re-log drill core and re-map outcrop to generate modern geological map.
- Sample missing intervals.
- Infill and step out drilling on 50m x 25m pattern with all holes oriented to the southwest.

In order to extend the resource it is preferable to follow it along strike to the northeast and southwest than target at depth.

Northern Quarries (788) extend resource (to north east)

- Step-out trenching and drilling to northeast particularly where iron scree mapped in historic mapping.

To add to the resource base work should focus on:

River Zone

- Detailed survey drill hole collars, outcrops, trenches and detailed geological mapping
- Further sampling with trenching and channel sampling where possible, drilling where required particularly between Cut K and the basalt margin.
- Step out drilling to south west along strike from Yellow Crag, Purple Crag and Eastern Crag.

beneath basalt cover

- Determine thickness of basalt and model.
- Drill broad spaced fences of holes across favourable stratigraphic host.

Rutherfords (Natone) define resource

- Detailed survey drill hole collars, outcrops, trenches.
- Surface trenching on 25m sections (where possible) and infill drilling on 50m spaced sections as fences across the two parallel zones (with some fences also crossing the central zone).
- Geological remapping/relogging/reinterpretation of all drill holes to generate new geological map.

Rutherfords (Natone) define resource

- Step-out drilling to northeast and southwest along both parallel zones following stratigraphic host unit. Particularly southwest from drill hole Natone 2's intersection of 29.5m @ 66.1% Fe (down hole length) and R003's 13m @ 58.5% Fe (down hole length).
- Consider existing geophysical (gravity) and soil geochemical data (Cu, Sn and W) for ground to northeast and southwest and target relevant anomalies

Regionally

- Target the stratigraphic unit which hosts the hematite bodies, i.e. Cambrian siltstone beneath the Duncan Conglomerate, regionally.

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