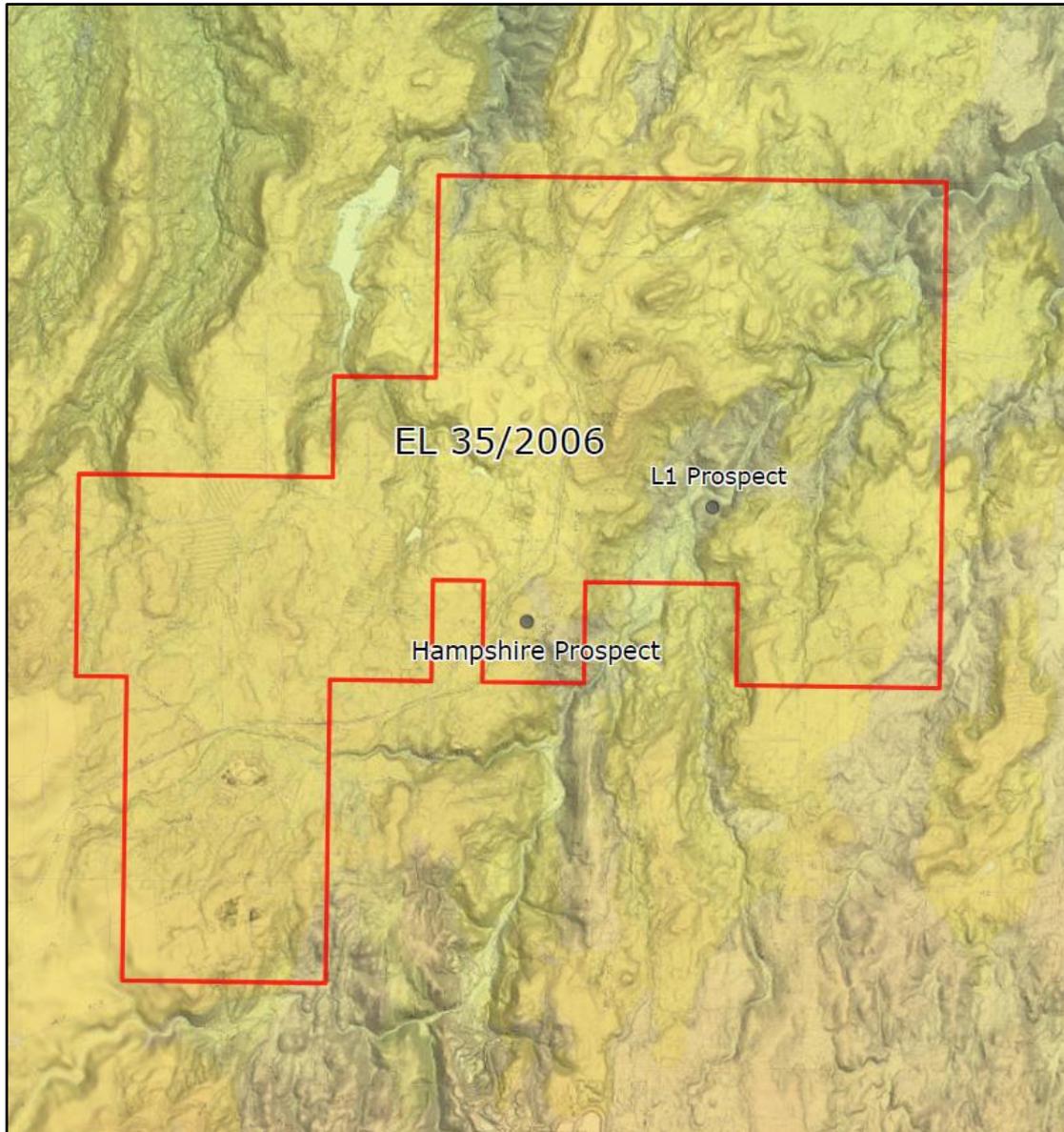


**Exploration Annual Report  
EL35/2006 – “Hampshire 1”  
February 2020 to February 2021**



by Stuart Dawes

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## **Abstract**

Little work has been carried out on the Hampshire 1 exploration tenement EL35/2006 during the reporting period, partly due to restrictions imposed by the Covid-19 pandemic, and to corporate/staffing changes. Work that was done for the reporting period was carried out early 2021.

Current exploration focus for the tenement is to develop the magnetite deposits at the Hampshire South and at L1 prospects. The Hampshire South deposit has a current JORC resource of 886,571 t @ 44.12% Fe. The resource is classified as Inferred, based on deficiencies with the data set used, however given the bulk nature of the mineralisation, and the similarity of the deposit with the nearby Kara Mine, the tonnes and grade figures are likely to be reasonably correct (MacDonald, 2020). Magnetics data indicates the Hampshire deposit extends to the south through to the L4 prospect on the adjacent EL 18/2007 tenement. Re-processing of recent drill core is required to address deficiencies in the data used for modelling and further drilling is required to extend/define the southern extension.

Work undertaken in the previous reporting period also included geological interpretation and wireframe modelling of the recently discovered L1 magnetite deposit. The L1 deposit wireframe model has a calculated volume of 309,187 m<sup>3</sup> and at a nominal bulk density of 4t/m<sup>3</sup>, a tonnage of approximately 1.2 million tonnes. The deposit outcrops along its northeastern margin and is interpreted to be bound to the west and south by faulting. The northwestern margin remains open down to the Emu River although magnetic data suggests that magnetite mineralisation tapers off here. Further drilling is required to define the western and southern bounds of the deposit and allow a JORC compliant resource to be estimated.

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## **1.0 Introduction**

### **1.1 Exploration Rationale**

The primary objective of Lottah Mining Pty Ltd (as operator of Blythe River Iron Pty Ltd.'s tenements) is to add to their magnetite/hematite iron resource inventory.

Lottah Mining Pty Ltd has a JORC compliant magnetite iron resource at its Rogetta North project on ML 1996/M approximately 6km southeast of EL 35/2006, a JORC compliant hematite iron resource deposit on EL 6/2005, approximately 20km to the nor-northeast at Cuprona, the JORC compliant Hampshire magnetite resource and the preliminary inferred resource model of the L1 magnetite deposit within the subject tenement of this report.

Lottah Mining Pty Ltd is also targeting any commodities of commercial interest including but not limited to  $WO_3$ , Sn, Bi, Mo, Pb, Zn, Au, Ag, Li, Ni, REE, Wollastonite and facing stone.

### **1.2 Location and Access**

EL 35/2006 "Hampshire 1" covers an area of 37 km<sup>2</sup> in Tasmania's northwest with its center located approximately 24 km to the sou-southwest of Burnie (see Figure 1.2.1 below).

Access to the license area is good with Ridgley Highway running through the tenement from the north to the southwest and Upper Natone Road from Ridgley Highway through the south-eastern corner of the licence area. Access within the licence area is via numerous sealed and unseal back roads.

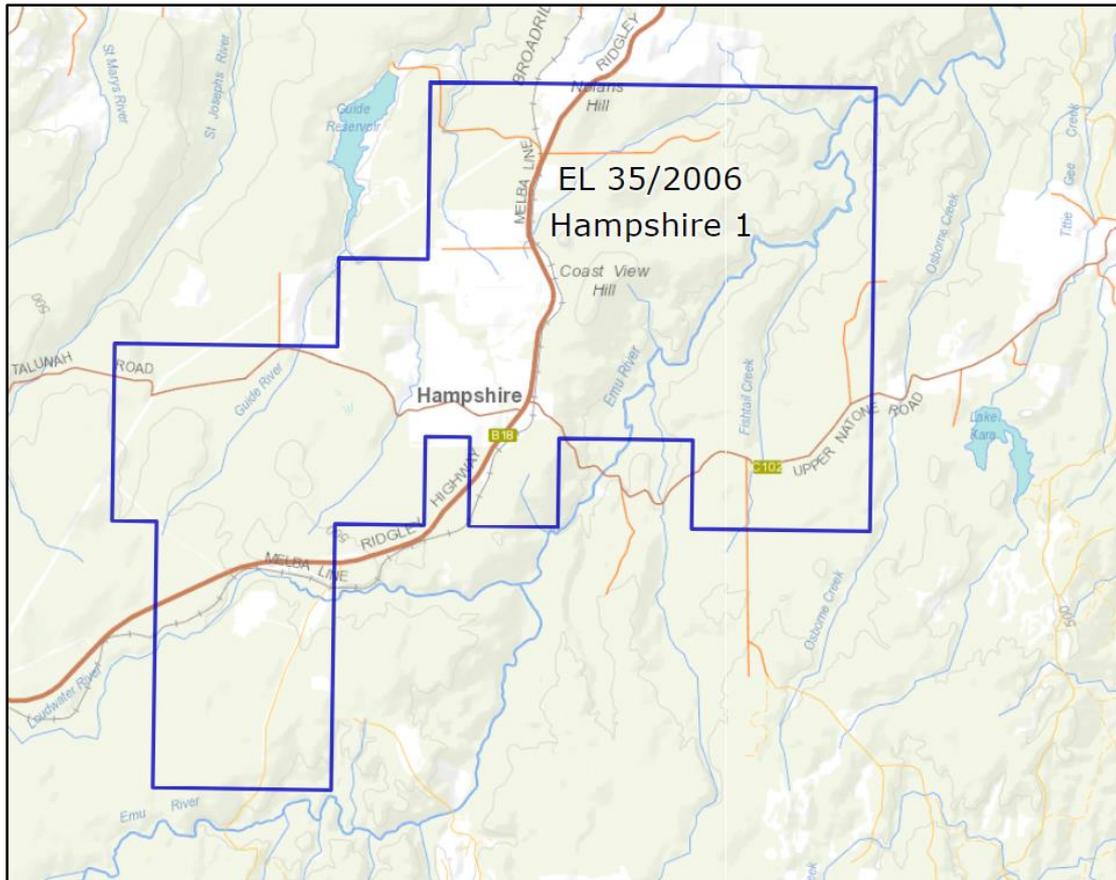


Figure 1.1 EL 35/2006 “Hampshire 1” location map.

### 1.3 Land Status and Usage

Land status within most of the tenement area is currently listed as Private Freehold making up most of the tenement area and is used predominantly for forestry operations, with around a fifth of the tenement used for agricultural and farming purposes, and small portions designated as Permanent Timber Production Zone Land and Tas Water reservoirs (see Figure 1.3.1 below).

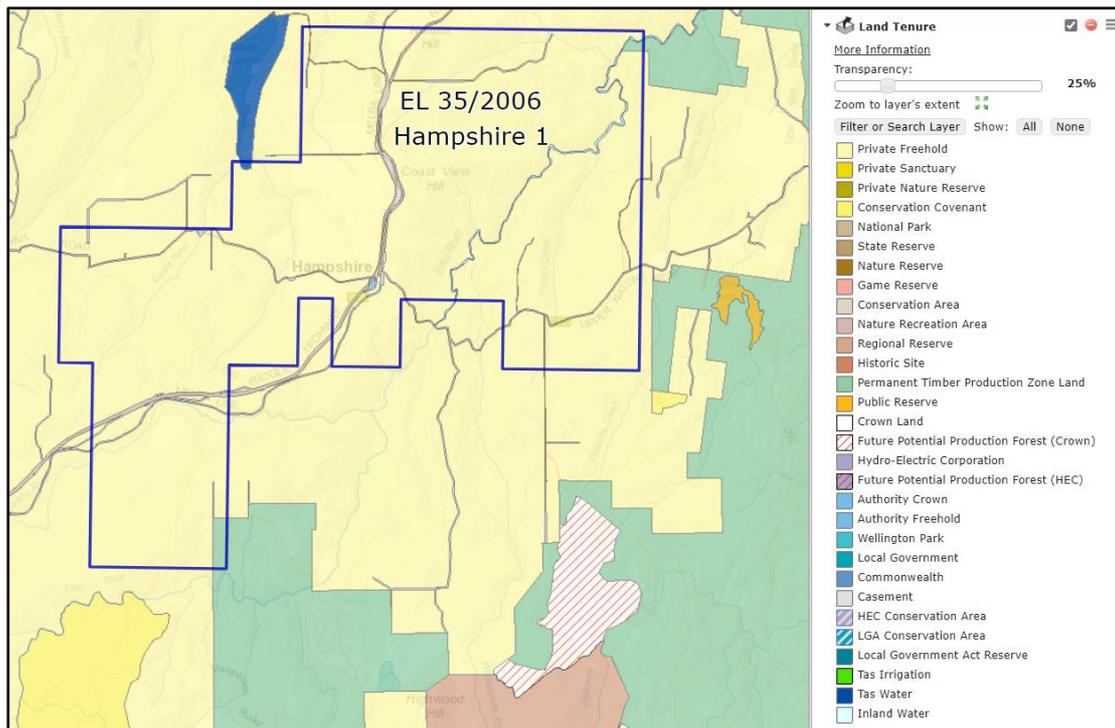


Figure 1.2 EL 35/2006 “Hampshire 1” land usage map.

## 1.4 Tenure

EL 35/2006 “Hampshire 1” at Hampshire in NW Tasmania was granted to Blythe River Iron Pty Ltd in 2006. Blythe River Iron Pty Ltd was bought out by Forward Mining Ltd whose parent company is Lottah Mining Pty Ltd. The licence remains in the name of Blythe River Iron Pty Ltd and is managed by Lottah Mining Pty Ltd. The current extension of licence was granted in 2020 for a period of 2 years, the anniversary date of the licence being the 25<sup>th</sup> of February and the licence expiring on that date in 2022. The licence covers an area of 37km<sup>2</sup>.

## 1.5 Geology

### 1.5.1 Regional Geology

The regional geology of the Hampshire area is dominated by Tertiary basalt with inliers of outcropping older basement rocks. The basement geology consists of a basal Proterozoic metasediment of the Oonah/Burnie Formation that includes carbonates and minor mafic volcanics, unconformably overlain by a sequence of Cambro-Ordovician volcanics and sediments, all intruded by the Devonian Husetop Granite.

The basal unit of the Cambro-Ordovician sequence are Tyndall Group correlates of the Mt Read Volcanics, overlain by Owen Group sediments. The basal unit of Owen Group is a quartz pebble conglomerate with minor localized volcanoclastic derived sediments. These are overlain by siliciclastics of the Moina Sandstone which becomes more calcareous towards the contact with the overlying Gordon Group Limestone. The calcareous units of the Moina Sandstone and the Gordon Group limestones and dolomites are host to most of the skarn mineralisation of the region,

though minor skarn mineralisation also occurs in the older Proterozoic carbonates in adjacent EL's.

The Tabberaberran Orogeny of the Middle Devonian deformed the basement rocks resulting in the development of north to northeast trending F2 folds, superimposed on broader east-west striking F1 folding. Later passive emplacement of the I-type Housetop Granite, which underlies most of the region, introduced fluids into the calcareous rocks resulting in skarn mineralisation and rarer vein style mineralisation.

During the Tertiary, sediments eroded from the basement geology were deposited in topographic lows, followed by thick basalt flows that over-spilled onto the more elevated land areas as a thin veneer, with later Quaternary and Recent sedimentation.

## **1.5.2 Local Geology**

The geology of EL35/2006 is dominated by Tertiary basalt flows which covers around 95% of the tenement. In the southeastern half of the tenement, windows of outcropping granite and adjacent skarn mineralisation occurs i.e., the L1 deposit, along with the underlying Moina Sandstone including the Hampshire magnetite skarn deposit, typical of the metasomatic magnetite rich skarns associated with the Housetop Granite. Minor outcropping of the Burnie Formation occurs in the upper northwest corner of the tenement, the Tyndall Group in the southwest, and Gordon Group carbonates in the east of the tenement near Fishtail Creek.

### **1.5.2.1 Hampshire Prospect**

The Hampshire magnetite deposit is a 4m to 12m true thickness band of massive magnetite skarn hosted within a sequence of skarned sediments of the upper Moina Sandstone. The body strikes north-south and dips to the west, shallow in the east steepening with depth to the west, in an open antiform shape with the body on the western limb near to the crest. The eastern margin outcrops and is eroded, whilst the northern edge appears to pinch out against the shallowing granite contact. The body remains open to the south and at depth to the west. The band of magnetite skarn is separated from the granite contact by up to ~50m for much of the deposit becoming closer at depth and in the northern part where it approaches the contact, is pinched out against the granite. The skarn body appears to maintain its structure regardless of the location of the granite contact and it is considered most likely that the Hampshire magnetite skarn is preferentially replacing a particular unit in the upper Moina Sandstone rather than as an alteration facies controlled by its position with respect to the granite. The orebody as modelled is 300m long, 175m wide, and extends from surface at 490masl to a depth of 385masl though it does appear that the magnetite body will meet the granite at an obtuse angle and be terminated not far below this. There is considerable potential to the south along strike where magnetics indicate that magnetic rocks continue through to the L4 prospect on the adjacent EL. There may be a further 1.5-2.0 million tons in this zone within EL 35/2006. At depth, the body appears to be being truncated by the granite though this needs confirmation. There is also a small area of further potential on the north-eastern corner (MacDonald 2020).

### **1.5.2.2 L1 Prospect**

The L1 magnetite lens has been intersected in 8 out of 9 shallow diamond drill holes as well as outcropping over an area of approximately 350m<sup>2</sup>. The magnetite outcrops along its north-eastern margin. Its western margin is defined by the Western Margin Fault, a north-northwest striking structure interpreted (from aeromagnetics, geology and a linear along the Emu River). Outcropping granite to its west indicates west block up. Magnetics also suggests a faulted southern margin. The narrow north-western margin remains open down to the Emu River though the magnetics suggests a lack of magnetite here.

Banding in the skarn is consistent with the orientation of the overall body such that the magnetite body is interpreted to be stratabound and thus reflect primary bedding relationships. The average downhole thickness is 12 m (17m in L1DD9) thus a true thickness of ~11.5m.

The body as intersected and modelled is 215m x 215m at its extremities, ~30,000m<sup>2</sup> in area dips between 15 and 30 degrees to the west (apparently steepening towards the west) and strikes slightly east of due north.

The 3DM wireframed contains a volume of 309,187m<sup>3</sup> which at a bulk density of 4t/m<sup>3</sup> is 1.237 million tons.

### **1.5.2.3 Molybdenite Mineralisation**

Molybdenite mineralisation was noted in all holes drilled in the L1 deposit. It occurs as fine veinlets and occasional disseminations either in actinolite veinlets or associated with actinolite alteration in the calc-silicate skarn underlying the magnetite skarn and extending to a lesser degree into underlying quartzite. Similar molybdenite mineralisation was noted in drilling at the L13 prospect on the adjacent tenement EL 18/2007 Hampshire 2 to the south and while the style of mineralisation was the same, i.e., fine veinlets and disseminations associated with actinolite, the occurrence differs. At the L13 deposit, molybdenite is almost always associated with relatively thin (up to 20cm) discrete zones/bands of cross-cutting, dark green actinolite endoskarn and veins. These zones or bands of actinolite skarn are always within the altered granite margin, which is zoned from pinkish red, strongly K-feldspar altered at the margin of the granite, becoming weaker and paler in colour due to albite alteration of k-feldspars deeper within the granite body.

Drillholes L13DDH1, 2 and 3, drilled further south, are also logged as having bands of actinolite skarn but there is no mention of any associated molybdenite mineralisation.

## 2.0 Summary of Previous Work

### 2.1 Prior to Current Tenement

Complete examinations and summaries of historic work carried out on the tenement area have been outlined in previous reports.

### 2.2 During Current Tenement

- In 2005 Red River Resources pegged EL 35/2006 forming a joint venture with Iron Mountain Mining Ltd in 2007. EL 35/2006 was an early focus for the JV with ground magnetics and drilling at the Sea Slug, Nolans Hill and Hampshire prospects in 2008/09.
- In the 2011/12 period, limited reconnaissance geology work, data compilation and a report on proposed exploration of the Blythe River Iron Project, now called the Rogetta Project.
- In the 2012/13 period, field mapping, target generation and sampling of the Hampshire Magnetite Skarn was completed.
- In the 2013/14 period, one diamond drill hole was drilled intersecting deeply weathered calc-silicate skarn with only minor magnetite nodules and veining.
- In the 2014/15 period, further geological research of previous work and field reconnaissance to gain better understanding of the deposit/s.
- In the 2015/16 period, GHD was commissioned to undertake a feasibility study on all iron deposits in the area under the active tenements at the time. A ground magnetics survey was trialled but failed due to terrain unsuitability. A gravity survey was commenced but failed when the gravity machine was corrupted.
- In the 2016/17 period, further research and compilation of previous data, reconnaissance of the southern end of the Hampshire deposit and track maintenance.
- In the 2017/18 period, further compilation of previous exploration data including existing airborne and ground magnetics surveys and drilling data, further field reconnaissance of historical prospects within the tenement, successful completion of a drone magnetics survey over the L1 prospect, and preliminary resource modelling and estimation of that part of the Hampshire deposit that has been drilled. The work for the period downgraded the prospectivity of the western parts of the tenement exhibiting wormlike magnetic anomalies which were attributed to basalt filled paleo-valleys, defined a strong circular magnetic anomaly at L1, and resource modelling and estimation resulted in an Inferred Resource of 886,571t @ 44.12% Fe (at 0% cut-off)
- In the 2018/19 period, surface mapping was undertaken on the Hampshire and L1 deposits, a further 4 diamond drill holes were drilled on the southern extension of the Hampshire deposit for a total of 170.6m and initial drilling of the L1 deposit with 9 drill holes for a total of 323.3m, resulted in a moderate extension of the Hampshire deposit, and discovery of a new magnetite resource with significant(?) molybdenite mineralisation.
- In the 2019/20 period, solid modelling of the extended Hampshire resource and an initial solid model produced for the L1 deposit. The Hampshire deposit has an estimated tonnage of ~218,000 tonnes and the L1 deposit ~ 1.2 million tonnes of magnetite using a nominal bulk density of 4.0t/m<sup>3</sup>.

### **3.0 Exploration Completed During Reporting Period**

Little work was completed during the reporting period due to the restrictions and logistics caused by the Covid-19 pandemic, and due to corporate restructuring and staff changes.

Work completed in the reporting period consisted of compilation of previous reports and data, preliminary planning for definition and infill drilling on the L1 deposit, an initial investigation of molybdenite mineralisation encountered in drilling of the L1 deposit and the L13 deposit on the adjacent tenement EL 18/2007 Hampshire 2 to the south, and preliminary planning for further extensional drilling on the Hampshire deposit.

### **4.0 Discussion of Results**

Molybdenite mineralisation was noted in all holes drilled in the L1 deposit. It occurs as fine veinlets and occasional disseminations either in actinolite veinlets or associated with actinolite alteration in the calc-silicate skarn underlying the magnetite skarn and extending to a lesser degree into underlying quartzite. Similar molybdenite mineralisation was noted in drilling at the L13 prospect on the adjacent tenement EL 18/2007 Hampshire 2 to the south and while the style of mineralisation was the same, i.e., fine veinlets and disseminations associated with actinolite, the occurrence differs. At the L13 deposit, molybdenite is almost always associated with relatively thin (up to 20cm) discrete zones/bands of cross-cutting, dark green actinolite endoskarn and veins. These zones or bands of actinolite skarn are always within the altered granite margin, which is zoned from pinkish red, strongly K-feldspar altered at the margin of the granite, becoming weaker and paler in colour due to albite alteration of k-feldspars deeper within the granite body.

Drillholes L13DDH1, 2 and 3, drilled further south, are also logged as having bands of actinolite skarn but there is no mention of any associated molybdenite mineralisation.

Further investigation into molybdenite mineralisation is required.

### **5.0 Conclusions**

The L1 deposit appears to be a discrete body, outcropping to the north-east, diminishing to the north-west and bound to the west and south by structures and is unlikely to extend any considerable distance than suggested by magnetic data. Planned and future drilling is required to augment current drilling data to produce an Indicated resource for the purpose of mining feasibility work.

The Hampshire resource is open to the south requiring further definition and infill drilling. While the eastern margin is defined by outcropping, magnetics data suggests the north-eastern corner of the deposit may extend a few tens of metres and further drilling is required here to define the extents. The northern lobe of the magnetic anomaly is sparsely drilled and further infill and definition drill in required here also.

## 6.0 Future Exploration

Future exploration activities will include extensional and infill drilling of both the L1 and the Hampshire deposits.

Several magnetic high anomalies of similar magnitude to the L1 and Hampshire deposits are evident in the Brick Road – Parsons Road area to the west of the L1 deposit, the Kingsclere Road – Porcupine Creek area to the north of the L1 deposit. Regional magnetics data suggest a magnetic anomaly in the vicinity of Fishtail Creek near Upper Natone Road to the south-east of the L1 deposit. These areas will be targeted for UAV Drone magnetics surveys.

## 7.0 Environmental Management

There are no outstanding environmental issues.

## 8.0 Expenditure

Exploration expenditure for EL 35/2006 for the period February 2020 to February 2021 was \$3447 (Table 8.1). Previous expenditure for the tenement was \$553,840. Current total expenditure for exploration licence is \$557,287.

<b>Expenditure Category</b>	<b>Cost (\$)</b>
Geology	3000
Geochemistry	0
Geophysics	147
Remote Sensing	0
Drilling	0
Gridding	0
Land Access	0
Rehabilitation	0
Feasibility Studies	0
Other	0
Administration	300
<b>TOTAL</b>	<b>3447</b>

**Table 8.1:** Expenditure breakdown for EL 35/2006 for the period February 2020 to February 2012.

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