



HardRock Coal Mining Pty Ltd
ACN: 150 741 094

PARTIAL SURRENDER REPORT FOR

EXPLORATION LICENCE EL16/2010

Period covered: 8th November 2011 to 7th November 2020

Licensee: Hardrock Investments Pty Ltd
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ABSTRACT

The results of exploration carried out over EL16/2010 by HardRock Coal Mining (HRCM) indicate that as due to Jurassic Dolerite intrusion and deterioration of coal seam horizons, no viable coal mining potential exist in the western parts of the Exploration Licence. As a result, HRCM has surrendered 50 square kilometres from the western parts of the tenement. HRCM retains 128 square kilometres of EL16/2010. The partial surrender (red edging) and retention (blue edging) areas of EL16/2010 are shown in Figure 1, ([EL162010_202102_07_PARTIAL_SURRENDER_MAP.png](#)) in Part 2 of this report. The MGA co-ordinates of the two blocks making up the Partial Surrender area are listed in attached file, [EL162010_202102_08_PARTIAL_SURRENDER_MGA.xlsx](#), while the MGA co-ordinates for the areas retained are listed in [EL162010_202102_09_RETENTION_MGA.xlsx](#).

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1 Resume of Exploration Philosophy

1.1 Licence Area

The licence area is located immediately south east of Fingal township. Previous to this Partial Surrender, EL16/2010 covered an area of 179 km² as from October 2016. The remaining coverage of EL16/2010 is in two blocks with a total area of 128.30 square kilometres as shown in Figure 1 with blue edging.

1.2 Exploration Rationale

The aim of exploration on EL16/2010 is to evaluate the coal resource within the licence area, particularly the resources adjacent to Mining Lease 4M/2012.

1.3 Geological Setting

The coal seams of interest lie within the Triassic Upper Parmeener Super Group. The upper limit is defined by outcrop or the overlying Jurassic Dolerite which forms a discordant upper limit to the coal measures. The base of coal bearing strata is defined by a formation highlighted by the presence of white quartz rich sandstone beds.

Large volumes of Jurassic dolerite have intruded the Parmeener Super-Group stratigraphy, and in the project area dolerite outcrop up to >400metres thickness covers most of the coal measures. Cainozoic tectonic rifting and periglacial landscape development processes through the Fingal Valley have produced the escarpment and benched dolerite talus slope morphology which characterizes the landscape of the project area.

1.4 Coal Measures Geology

The coal seams are hosted within an approximate thickness of 250 metres of fluvial lithic sandstones and minor siltstones, argillic and carbonaceous mudstones, and minor air fall volcanoclastics.

There are 8 coal horizons which are identified simply "A" to "H" Seams in descending order. There are areas where the full series of coal horizons are present, areas where some of the upper coal horizons have eroded by dolerite and areas where all coal horizons have been eroded. At the regional scale the coal measures show a south easterly dip of 1-2°. Seams F and G have significant areas of economic thickness and coal quality in EL16/2010 and the D seam is highly prospective.

The F Seam has been mined at the Valley No1 and No2 Mines and is equivalent to the Duncan Seam worked in Duncan Colliery. The G Seam has been identified as the East Fingal Seam from drilling carried out in the early 1980s and there is a short entry into the seam at the old Valley No2 mine.

1.5 Other Information

The tenement holder and licence owner is HardRock Investments Pty Ltd of P.O. Box 3051, Prahan East, VIC 3181. There is no joint venture structure and there have been no title transfers during the reporting period.

2 Map of Partial Surrender and Retained Areas

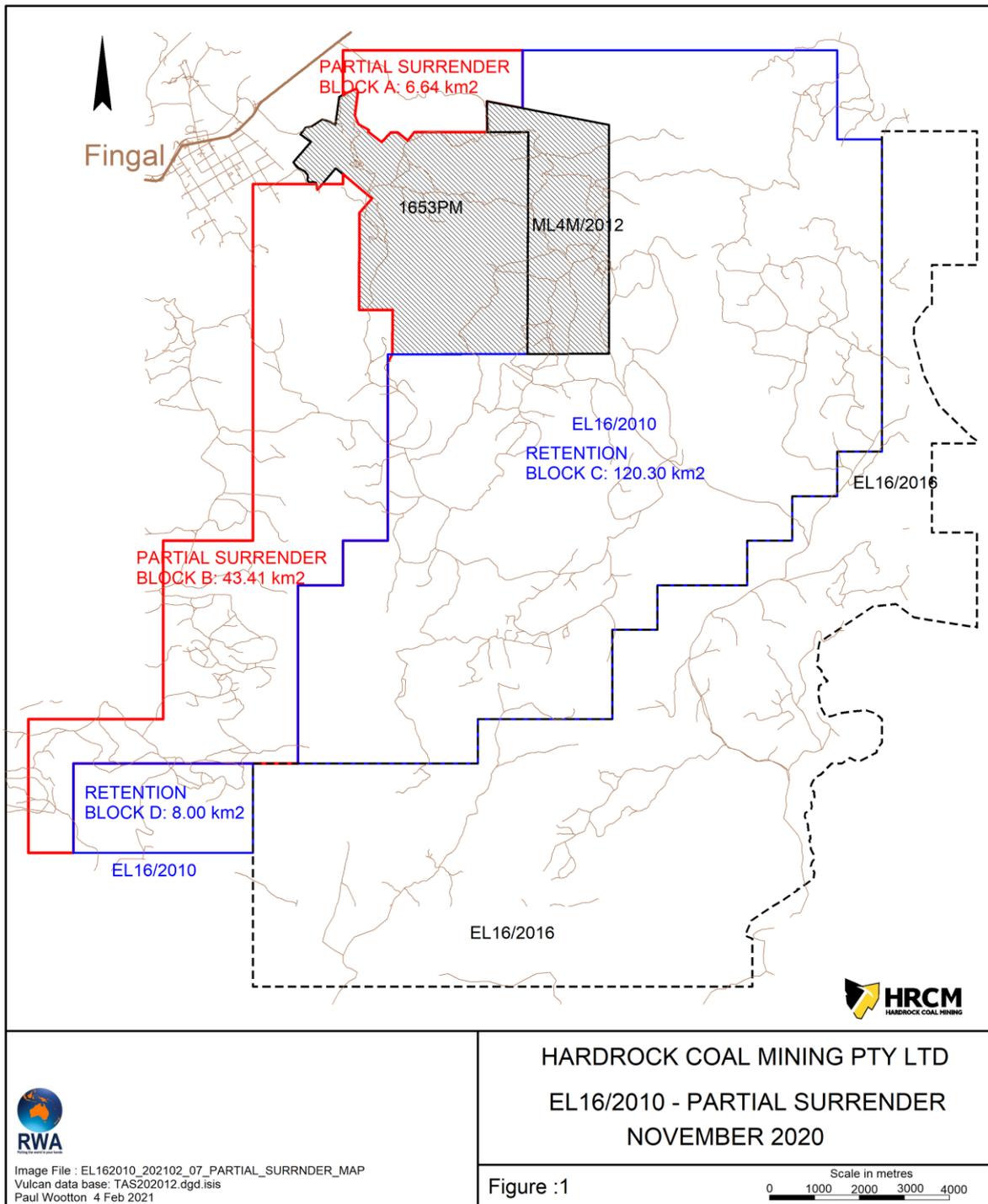


Figure 1 - Map of Partial Surrender and retained Areas of EL16/2010

3 Summary of All Exploration within Partial Surrender Areas

3.1 Desktop Studies

Pre-existing drill hole and adjacent closed mine information was gathered from previous explorers and mine operators. These data were captured into geological data bases. These data sets were combined with the results of drilling and mapping carried out by HRCM. Geological and coal quality parameters were modelled using VULCAN software. No coal seams greater than 1.5 metre thickness were intersected by drilling or were indicated by the Vulcan model.

The extent of replacement of D, F and G Seams by Jurassic Dolerite and the deterioration of these seams in the western parts of EL16/2010 was assessed. The partial surrender of EL16/2010 is based on this assessment.

The extents of intrusion into each seam are shown in Figures 3, 4 and 5 below.

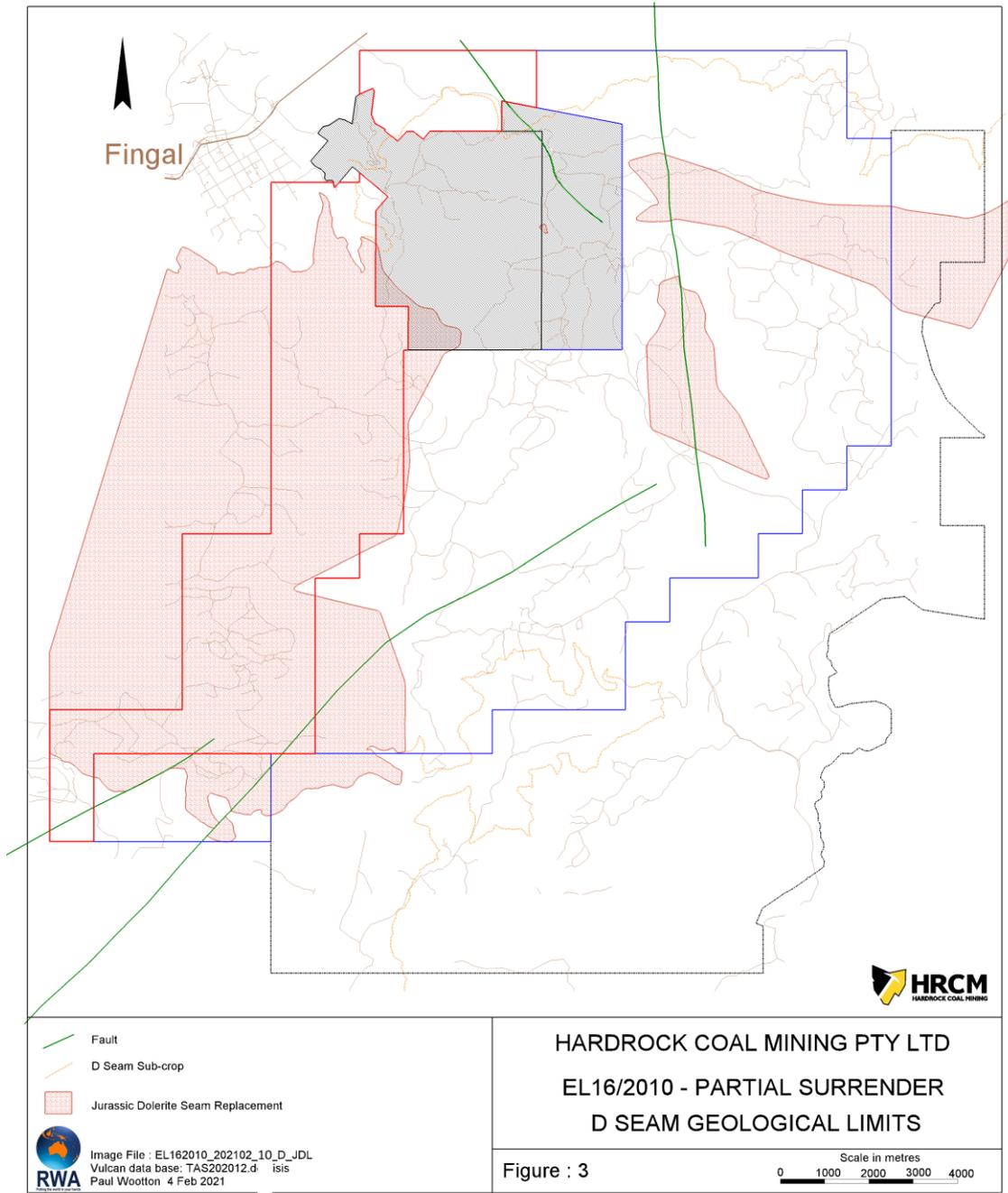


Figure 3: EL162010_202102_10_D_JDL.png

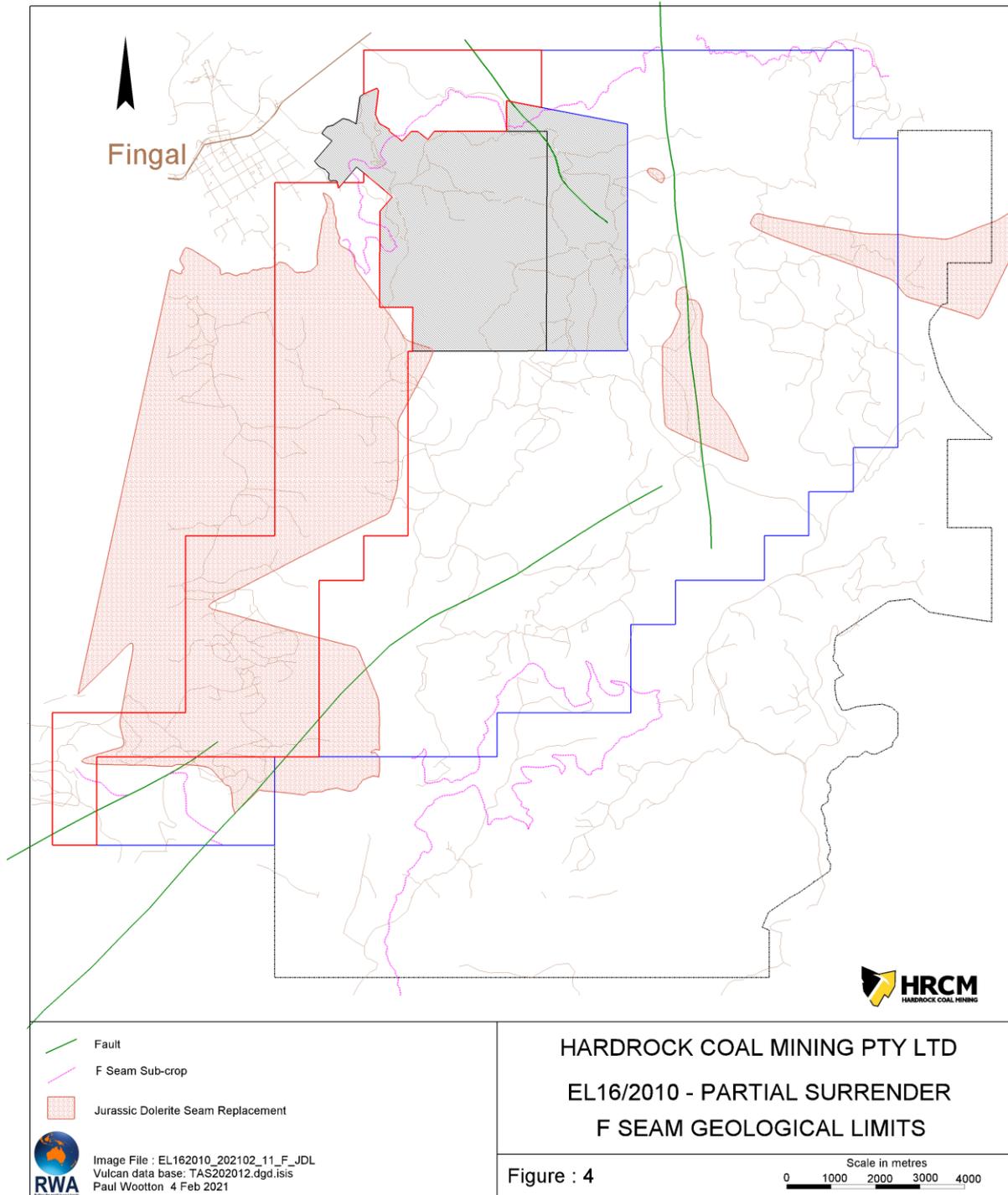


Figure 4: EL162010_202102_11_F_JDL.png

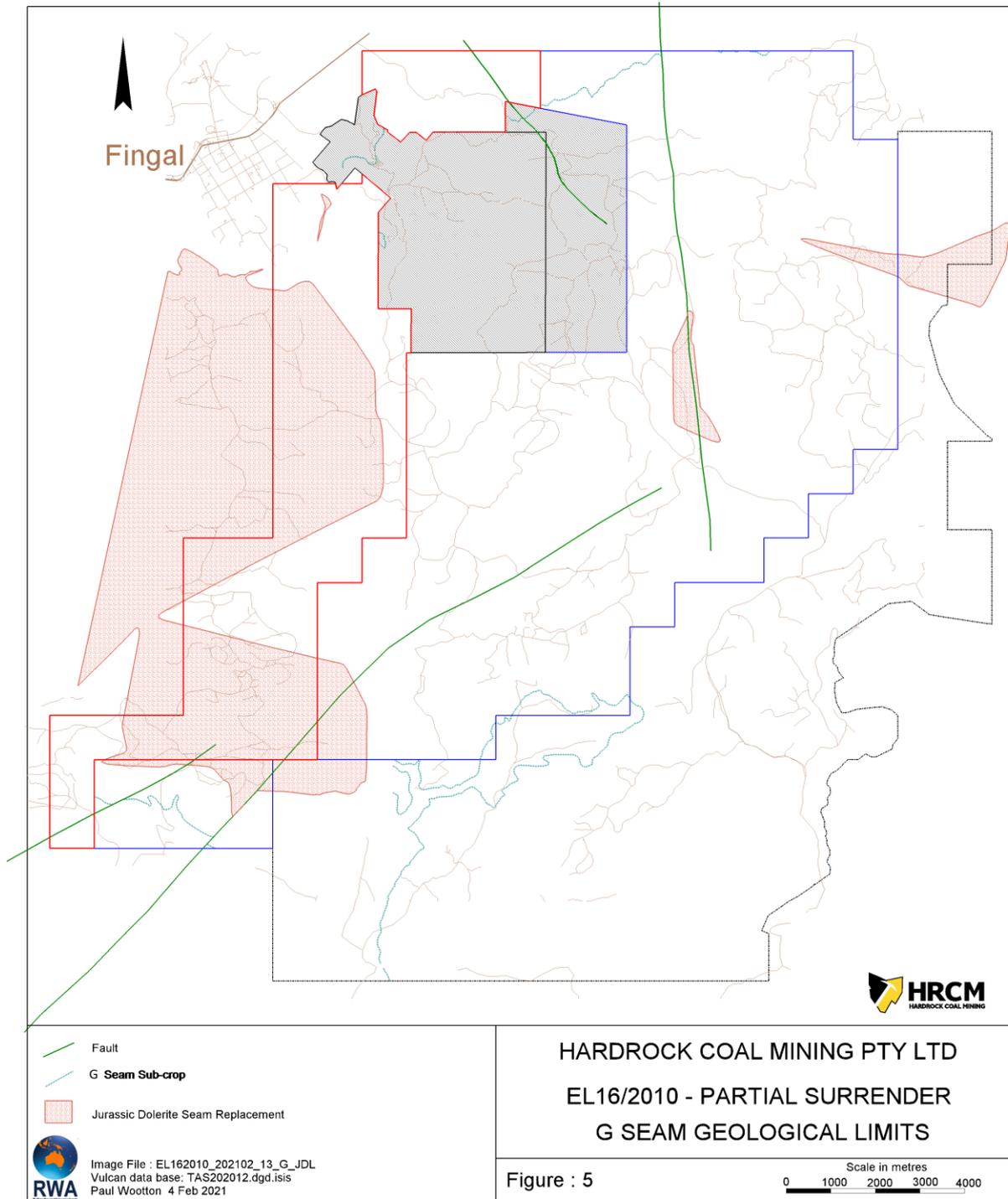


Figure 5: EL162010_202102_13_G_JDL.png

3.2 Regional Exploration Activities

Regional exploration comprised air photo interpretation, review of previous exploration reports and survey mapping from surrounding mine operations.

3.3 Prospect-based Exploration Activities

3.3.1 Drilling

HRCM drilled 3 holes within the surrendered part of EL16/2010. In addition, the Tasmanian Government drilled 6 holes and Merrywood Coal Company drilled 2 holes. These holes are summarised in Table 1 ([EL162010 202102 13 PARTIAL SURRENDER DH.xlsx](#)), below. The location of drill holes is shown in Figure 2 ([EL162010 202102 14 PARTIAL SURRENDER DH.png](#)).

Formatted digital files and lithological code library are provided with this report.

[EL162010 202102 02 SL 1.xls](#)

[EL162010 202102 03 DL 1.xls](#)

[EL162010 202102 lithologycodes.xls](#)

DH No.	Type	Drilled by	East MGA	North MGA	Collar RL (AHD)	Total Depth
AT8	Open Hole	Merrywood Coal Co	577,112	5,375,823	565.0	37.0
AT9	Open Hole	Merrywood Coal Co	577,512	5,375,133	485.0	17.5
DM18	Core	Tas Government	579,324	5,376,774	664.5	424.8
DM28	Core	Tas Government	582,377	5,387,039	442.0	160.4
DM29	Core	Tas Government	582,116	5,385,293	686.4	431.4
DM62	Core	Tas Government	584,480	5,383,673	704.5	452.8
DM67	Core	Tas Government	584,249	5,382,159	742.0	488.8
DM75	Core	Tas Government	584,534	5,384,691	585.2	374.1
DR01	Core	HRCM	581,220	5,376,236	638.0	265.5
DR02	Core	HRCM	582,090	5,376,230	662.0	399.6
MS02	Core	HRCM	577,888	5,376,740	720.0	309.9

Table 1 Drillhole List - Partial Surrender Area of EL16/2010

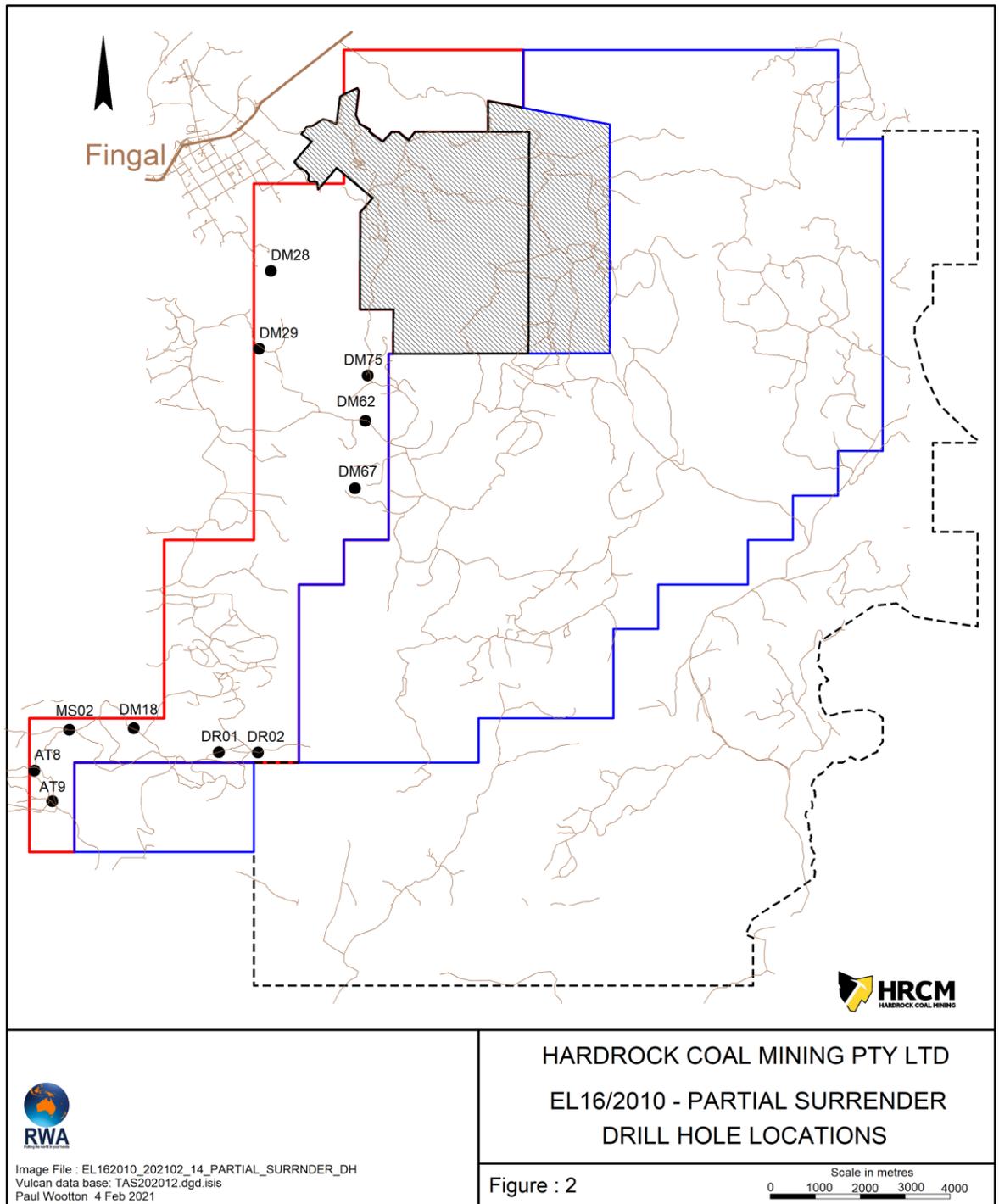


Figure 2: EL162010 202102 14 PARTIAL SURRENDER DH.png

3.3.2 Geophysical Logging

No drill holes have geophysical logs. No drill holes encountered significant coal measure strata.

3.3.3 Assay of Samples

No coal testing was carried out as no significant coal horizons were intersection.

3.4 Resource Modelling

Drilling and modelling have identified that there are coal resources adjacent to the eastern and southern boundaries of ML4M/2012, in the D, F G Seams. The JORC statement, [EL162010 202101 11 FINGAL TIER Sep 2017.pdf](#). However due to seam thinning and replacement of coal measure strata by Jurassic Dolerite no resources were identified in the areas of Partial Surrender. This JORC statement was supplied with the 2017 Annual Exploration Report to Mineral Resources Tasmania. Due to current tenure and ongoing exploration interest in the retained part of EL16/2010, HRCM, M:4M/2012 and EL16/2016 requests that this report remains classified as confidential.

4 Work Undertaken During Final Reporting Period

4.1 Desktop Studies

The extent of replacement of D, F and G Seams by Jurassic Dolerite and the deterioration of these seams in the western parts of EL16/2010 was assessed. This study is presented in Section 3.1 above.

4.2 Regional Exploration Activities

No regional exploration was conducted during the reporting period.

4.3 Prospect-based Exploration Activities

4.3.1 Drilling

No drilling took place during the period of this report.

4.3.2 Geophysical Logging

No geophysical logging took place during the period of this report.

4.3.3 Assay of Samples

No coal samples were taken during the period of this report.

5 Conclusions

Due to intrusion of Jurassic Dolerite replacing vast thicknesses of coal measure strata there is no coal resource potential in the area subject to Partial Surrender from EL16/2010.

6 Bibliography of reports

- Bacon C.A. 1991. The Coal Resources of Tasmania. *Bull. Geol. Surv. Tasm.* 64.
- Gregory R., Thornton, S., Wootton P. 2014. EL162010_201412_01_ANNUAL_REPORT_2013-14
- Gregory R., Thornton, S., Wootton P. 2015. EL162010_201511_01_ANNUAL_REPORT_14-15
- Gregory R., Thornton, S., Wootton P. 2016. EL162010_201611_01_ANNUAL_REPORT_15-16
- Thornton, S., Wootton P. 2017. EL162010_201711_01_ANNUAL_REPORT_16-17
- Thornton, S., Wootton P. 2018. EL162010_202011_01_ANNUAL_REPORT

7 Environmental Activities

All drill holes and their associated sumps have been rehabilitated.

8 List of Digital Datasets During Life of Partial Surrender Area

Exploration Work Type	Filename	File format
Report	EL162010_202102_01_PARTIAL_SURRENDER_REPORT.pdf	pdf
Drilling	EL162010_202102_02_SL_1.xls	xls
	EL162010_202102_03_DL_1.xls	xls
	EL162010_202102_06_lithologycodes.xls	xls
Partial Surrender Map	EL162010_202102_07_PARTIAL_SURRENDER_MAP.png	png
Partial_Surrender_MGA_Co-ords	EL162010_202102_08_PARTIAL_SURRENDER_MGA.xlsx	xlsx
Retention_MGA_Co-ords	EL162010_202102_09_RETENTION_MGA.xlsx	xlsx
D Seam Dolerite Map	EL162010_202102_10_D_JDL.png	png
F Seam Dolerite Map	EL162010_202102_11_F_JDL.png	png
G Seam Dolerite Map	EL162010_202102_12_G_JDL.png	png
Drill Hole List	EL162010_202102_13_PARTIAL_SURRENDER_DH.xlsx	xlsx
Drill Hole Map	EL162010_202102_14_PARTIAL_SURRENDER_DH.png	png
Surface sampling		
File Verification Listing (this file)	EL162010_202102_05_FILELIST.xls	xls

END OF REPORT

