FINGAL TIER COAL PROJECT

- Mining Lease ML4M/2012
- Exploration Licence EL16/2010
- Exploration Licence EL16/2016

COAL GEOLOGY, QUALITY & RESOURCES

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Table of Contents

Attachments

A. Drill Hole Data Base (Excel Format)

B. D Seam Drill Hole Intersections

C. F Seam Drill Hole Intersections

D. G Seam Drill Hole Intersections

E. Figures

1 PROJECT OVERVIEW

Hard Rock Coal Mining Pty Ltd (HRCM) has been conducting drilling programs designed to evaluate coal deposits under Fingal Tier, NE Tasmania. HRCM holds three tenures over the Fingal Tier project area.

- ML4M/2012 – "Valley Road', 10.14 square kilometres
- EL16/2010 – "Fingal Tier", 178.35 square kilometres
- El16/2016 – "Mount Punter", 105.72 square kilometres

The location and extent of these tenure areas are shown on Figure 170911_01 along with topography, drainage, roads and tracks

Drilling and coal seam modelling to date has focused on:

- ML 4M/2012, where underground mining potential has been proven and mine reserves delineated in the F and G Seams.
- EL16/2010, to upgrade resource classes adjacent to ML4M/2012.
- EL16/2010, to infill between previous drill holes to establish or disprove coal resource potential where uncertainty existed due to geological variations.
- EL16/2010, to investigate the G Seam around to closed Merrywood open cut and underground mine in the south west part of this licence.
- EL16/2016, literature research and compilation of data from previous drilling.

A geological data base has been developed from results of HRCM's drilling along with data from previous drilling, mining operations and mapping within and adjacent to the tenures held by HRCM as well as from adjacent sources. A total of 51178 metres of drilling from 223 drill holes are contained in the database and used in geological modelling. The computer model that was developed from this extensive data set covered all of the area of contiguous titles held by HRCM. This approach enabled a complete understanding of the coal resource potential. The location of mine workings and drill holes are shown on Figure 170911_03

Coal seams with a workable thickness greater than 1.80 metres with raw ash less than 45.0% (air dried basis) have been considered to be minable by underground methods. D, G and H Seams have significant quantities that satisfy these criteria.

Measured plus Indicated resources total 166.1 million tonnes. Inferred resources total 456.4 million tonnes. The extents of resources within the D, F and G seams are shown on Figure 170911_05 and a section showing the inter-seam relationship is presented on Figure 170911_06

Distribution of resources within seams and tenures are summarised in tables 1 and 2 below.

Table 1: Measured plus Indicated Resources (million tonnes)

Measured + Indicated				
Seam	ML4M/2012	EL16/2010	EL16/2016	Total
D	2.0	62.7		64.7
F	29.2	13.3		42.4
G	16.3	42.7		59.0
Total	47.4	118.8		166.1

Table 2: Inferred Resources (million tonnes)

Inferred				
Seam	ML4M/2012	EL16/2010	EL16/2016	Total
D		78.4	180.7	259.0
F		5.3		5.3
G		70.7	121.3	192.0
Total		154.4	302.0	456.4

2 GEOLOGY

Correlation of drill core intersections in the Fingal Tier area by the Department of Mines generated a series of 8 seams within the Triassic Upper Parmeener Super-Group (UPSG), labelled A to H from youngest to oldest, within an approximate thickness of 250 metres of fluvial lithic sandstones, mudstones and minor air fall volcanoclastic. All 8 coal units are recognised across the Fingal Tier project area. Of the 8 coal units three are proven to be of economic potential, D, F and G. Seam sub-crops are shown on Figure 170911_02.

Jurassic Dolerite truncates the upper limit of the UPSG and to the west of Fingal Tier the UPSG is completely replaced by dolerite. The base of the UPSG is marked by strata containing distinctive white quartz sandstone beds. The surface extent of Jurassic Dolerite is shown on Figure 170911_02.

Several significant faults of large displacements occur in the Fingal Tier area.

- Mitchell Fault - located 1 kilometre east of Valley Road, striking north south with 65 metre throw down to the east. Drill hole DM54 intersected the Mitchell Fault at 468.5m below the G Seam
- Merrywood Fault - located in the south west corner of Fingal Tier area, striking north-east south-west with 50 metre throw down to the east. This fault was encountered at the north-west limit of Merrywood Mine workings
- Pratts Hill Fault - located in southern Fingal Tier, striking north-east south-west with 100 metre throw down to the south-east. This large displacement fault has been interpreted from seam levels in drill holes and the Vulcan geological model.

Two other minor displacement faults have been interpreted within the Valley Road area and central Fingal Tier.

Locations of faults are shown on Figure 170911_02. West-East and South-North sections are presented in Figures 170911_09 and 09. The location of these two sections is shown on Figure 179811_07.

3 EXPLORATION

Previous Exploration

Between the early 1960s and the early 1980 several diamond drilling campaigns were conducted on Fingal Tier by the Hydro Electric Commission (HEC) and the Department of Mines (DOM), as part of a State wide assessment of coal resources potentially suitable for thermal electricity generation. In the region a total of 9 holes were drilled by the HEC and 85 by the DOM. Gravity and magnetics surveys were also conducted and used to predict major faults and areas of extra thick dolerite cover.

Between 1979 and 1982 Shell Company drilled extensively in the Fingal Tier - Mount Nickolas area. This drilling has provided excellent information in the eastern part of Fingal Tier and within and adjacent to the Mt. Punter area.

In addition small locally focused drill programs were carried by Cornwall Coal, Merrywood Coal/Avoca Transport and Investigator Coal between 1978 and 1992. While these programs on their own only provided localised coal resource data, when added in with the larger data sets this drilling provided very useful in-fill information and enabled continuity of coal seam correlation and mapping.

In 2008 Pure Energy drill 2 holes for coal seam gas assessment.

HRCM Exploration

HRCM have carried out drilling operations in three programs.

Valley Road 16 holes, 15 cored, total 5,361 metres.

These holes were drilled to allow measured plus Indicated resources and reserves to be estimated in the F and G Seams. Geological logging and coal ply assays for proximate analyses, sulphur, specific energy and relative density was undertaken in holes VR01 to VR09, (2012). Further coal testing including washability was carried out on VR10A, 11, 12A, 13 and VR15, (2015 – 2017). Geophysical logging was carried out on these holes. Holes VR14 penetrated Jurassic Dolerite and as such no coal testing or geophysics were carried out.

Geotechnical logging of joints and fractures, point load testing, uniaxial compressional strength testing and water absorption tests are routinely conducted on core samples. F seam samples have been taken from VR07 and VR10 for potential acid mine drainage environmental analyses, and whole seam samples taken from VR04A (a twin hole to VR04B) for dry beneficiation trials.

Water packer testing has been conducted with the rig on site, in VR03, VR06, VR07 and VR08. VR03 and VR08 have been completed as piezometer water bores. VR10 has been completed with slotted steel casing to enable long term monitoring of any water which may be transmitted through fracture permeability in F seam.

Mount Slaughter 2 holes, cored, 665 metres

Two holes were drilled in 2013 to evaluate coal potential remaining adjacent to Merrywood underground and open cut mines. MS01 encountered Dolerite to total depth, while MS02 intersected a deteriorated G Seam only. No coal testing or geophysical logging was carried out in this program.

Dickies Ridges 3 holes, cored, 1,006 metres

Three holes were drilled from 2014 to 2017. The intent was similar to the Mount Slaughter program, however only dolerite was intersected in these holes. No coal testing or geophysical logging was carried out in this program.

All drill holes are listed on a tenure basis as well as externally located drill holes in tables 3 to 7.

Table 3: Drill Holes in Valley Road area (ML4M/2012)

Name	Company	Type	Year	East (MGA)	North (MGA)	Collar RL (AHD)	Total Depth (m)
ADIT1	HRCM	Channel Sample	2015	587738	5390330	435	10
DM04	Department of Mines	Core Drill Hole	1965	588144	5390182	547	330
DM14	Department of Mines	Core Drill Hole	1972	588497	5389223	662	100
DM15	Department of Mines	Core Drill Hole	1972	588255	5388163	766	75
DM16A	Department of Mines	Core Drill Hole	1975	589769	5387130	837	364
DM16B	Department of Mines	Core Drill Hole	1975	589765	5387117	834	260
DM17	Department of Mines	Core Drill Hole	1973	588197	5388068	777	505
DM20	Department of Mines	Core Drill Hole	1975	588996	5388860	811	466
DM23	Department of Mines	Core Drill Hole	1977	588687	5387518	805	554
DM24	Department of Mines	Core Drill Hole	1976	589425	5387943	831	523
DM25	Department of Mines	Core Drill Hole	1977	588206	5388718	783	526
DM31	Department of Mines	Core Drill Hole	1978	589663	5388918	828	576
DM35	Department of Mines	Core Drill Hole	1979	588591	5389684	631	95
DM37	Department of Mines	Core Drill Hole	1979	588209	5389845	596	312
DM41	Department of Mines	Core Drill Hole	1979	589073	5386811	813	585
DM42	Department of Mines	Core Drill Hole	1979	588628	5386100	813	577
DM45	Department of Mines	Core Drill Hole	1980	589862	5385272	708	471
DM47	Department of Mines	Core Drill Hole	1979	589239	5390132	587	44
DM63B	Department of Mines	Core Drill Hole	1979	589905	5386086	746	17
HEC1	Hydro-Electric Com	Core Drill Hole	1964	589513	5389714	648	266
HEC3	Hydro-Electric Com	Core Drill Hole	1965	588163	5390564	455	163
HEC4	Hydro-Electric Com	Core Drill Hole	1965	587398	5390478	405	121
HEC5	Hydro-Electric Com	Core Drill Hole	1966	587273	5390784	401	101
VR01	HRCM	Core Drill Hole	2012	589432	5388423	828	576
VR02	HRCM	Core Drill Hole	2012	588329	5390042	581	224
VR03	HRCM	Core Drill Hole	2012	588745	5390342	556	217

VR04B	HRCM	Core Drill Hole	2012	587819	5390337	455	91
VR05	HRCM	Core Drill Hole	2012	587808	5390437	436	54
VR06	HRCM	Core Drill Hole	2012	589144	5390232	573	232
VR07	HRCM	Core Drill Hole	2012	588444	5389239	661	333
VR08	HRCM	Core Drill Hole	2012	588179	5389581	624	259
VR09	HRCM	Core Drill Hole	2012	588835	5388380	787	435
VR10	HRCM	Open Drill Hole	2012	588198	5390246	539	181
VR10A	HRCM	Core Drill Hole	2015	588188	5390237	543	168
Total		**34 Drill Holes**					**9809**

Table 4: Drill Holes in Fingal Tier area (EL16/2010)

Name	Company	Type	Year	East (MGA)	North (MGA)	Collar RL (AHD)	Total Depth (m)
78RG4	Investigator Coal	Core Drill Hole	1978	579913	5375644	552	113
AT1	Avoca Transport	Core Drill Hole	1986	579982	5375113	480	30
AT10	Avoca Transport	Open Drill Hole	1987	581313	5374384	327	24
AT11	Avoca Transport	Core Drill Hole	1987	581213	5374484	345	21
AT2	Avoca Transport	Core Drill Hole	1986	579982	5375283	505	30
AT3	Avoca Transport	Core Drill Hole	1986	579712	5375233	500	26
AT5	Avoca Transport	Core Drill Hole	1986	580012	5375133	505	28
AT6	Avoca Transport	Core Drill Hole	1986	579712	5375533	530	42
AT7	Avoca Transport	Core Drill Hole	1986	579712	5374933	470	23
AT8	Avoca Transport	Open Drill Hole	1986	577112	5375823	565	37
AT9	Avoca Transport	Open Drill Hole	1986	577512	5375133	485	18
DM18	Department of Mines	Core Drill Hole	1974	579324	5376774	665	425
DM28	Department of Mines	Core Drill Hole	1978	582377	5387039	442	160
DM29	Department of Mines	Core Drill Hole	1978	582116	5385293	686	431
DM46B	Department of Mines	Core Drill Hole	1980	590142	5387077	773	547
DM48	Department of Mines	Core Drill Hole	1979	590177	5390202	611	46
DM49	Department of Mines	Core Drill Hole	1979	591119	5390187	599	414
DM50	Department of Mines	Core Drill Hole	1981	592052	5390087	563	368
DM51	Department of Mines	Core Drill Hole	1981	592850	5390009	534	261
DM52	Department of Mines	Core Drill Hole	1980	590437	5389222	796	557
DM53	Department of Mines	Core Drill Hole	1980	588188	5384867	795	468
DM54	Department of Mines	Core Drill Hole	1980	591134	5388296	712	530
DM55	Department of Mines	Core Drill Hole	1980	591239	5387253	626	471
DM56	Department of Mines	Core Drill Hole	1980	592999	5386992	701	405
DM57	Department of Mines	Core Drill Hole	1980	588025	5383917	802	574
DM58	Department of Mines	Core Drill Hole	1980	586868	5384152	638	399
DM59	Department of Mines	Core Drill Hole	1980	587494	5382058	802	573
DM60	Department of Mines	Core Drill Hole	1980	586151	5381820	725	474

DM62	Department of Mines	Core Drill Hole	1980	584480	5383673	705	453
DM63A	Department of Mines	Core Drill Hole	1979	589932	5386188	751	24
DM64	Department of Mines	Core Drill Hole	1979	585227	5380216	626	397
DM66	Department of Mines	Core Drill Hole	1980	592092	5389221	778	586
DM67	Department of Mines	Core Drill Hole	1980	584249	5382159	742	489
DM68	Department of Mines	Core Drill Hole	1980	592177	5388096	779	621
DM69	Department of Mines	Core Drill Hole	1980	593130	5387938	715	545
DM70	Department of Mines	Core Drill Hole	1980	591356	5386069	604	416
DM71	Department of Mines	Core Drill Hole	1980	593018	5386232	654	489
DM72	Department of Mines	Core Drill Hole	1980	591167	5385376	581	391
DM73	Department of Mines	Core Drill Hole	1980	591998	5387027	707	497
DM74	Department of Mines	Core Drill Hole	1980	592328	5385906	643	481
DM75	Department of Mines	Core Drill Hole	1980	584534	5384691	585	374
DM76	Department of Mines	Core Drill Hole	1981	586440	5379716	746	550
DM77B	Department of Mines	Core Drill Hole	1981	588004	5381208	732	445
DM78	Department of Mines	Core Drill Hole	1981	586414	5383257	647	149
DM79	Department of Mines	Core Drill Hole	1981	594327	5384982	676	502
DM80	Department of Mines	Core Drill Hole	1981	593413	5382091	592	439
DM81	Department of Mines	Core Drill Hole	1981	593166	5385190	648	439
DM82	Department of Mines	Core Drill Hole	1981	594091	5383834	589	428
DM83	Department of Mines	Core Drill Hole	1981	594597	5386016	676	296
DM84	Department of Mines	Core Drill Hole	1981	594456	5382586	639	260
DM85	Department of Mines	Core Drill Hole	1981	591331	5390650	534	271
DR01	HRCM	Core Drill Hole	2014	581220	5376236	638	266
DR02	HRCM	Core Drill Hole	2015	582090	5376230	662	400
DR03	HRCM	Core Drill Hole	2017	579025	5375990	749	340
GY009	Shell Company	Core Drill Hole	1978	595763	5383334	530	426
GY069	Shell Company	Core Drill Hole	1981	592857	5391948	304	42
HEC2	Hydro-Electric Com	Core Drill Hole	1965	589553	5390644	518	250
HEC6	Hydro-Electric Com	Core Drill Hole	1966	588263	5390844	394	104
HEC7	Hydro-Electric Com	Core Drill Hole	1966	588713	5390874	401	118
HEC8	Hydro-Electric Com	Core Drill Hole	1966	586873	5391084	450	159
HEC9	Hydro-Electric Com	Core Drill Hole	1966	589171	5390994	393	117
INV1	Investigator Coal	Channel Sample	1978	579492	5374883	477	4
INV2	Investigator Coal	Channel Sample	1978	579837	5374993	471	2
INV3	Investigator Coal	Channel Sample	1978	577672	5376573	698	1
INV4	Investigator Coal	Channel Sample	1978	588992	5378773	429	2
INV5	Investigator Coal	Channel Sample	1978	588932	5378573	391	1
INV6	Investigator Coal	Channel Sample	1978	589092	5377783	331	1
KILR9	Cornwall Coal	Open Drill Hole	1995	590033	5391984	370	37
MS02	HRCM	Core Drill Hole	2013	577888	5376740	720	310
PE59B	Pure Energy	Core Drill Hole	2008	587607	5382242	811	530
PE82B	Pure Energy	Core Drill Hole	2008	594091	5383834	589	398
PH1	Merrywood Coal	Open Drill Hole	1992	579373	5374534	380	51
PH2	Merrywood Coal	Open Drill Hole	1992	579183	5374604	400	22
PH3	Merrywood Coal	Open Drill Hole	1992	580653	5374004	371	30

PH5	Merrywood Coal	Open Drill Hole	1992	581303	5374374	328	40
PH6	Merrywood Coal	Open Drill Hole	1992	581493	5374334	310	50
RGR5	Cornwall Coal	Open Drill Hole	1994	587613	5377234	260	28
SP17	Cornwall Coal	Core Drill Hole	1984	588573	5378884	445	102
SPR1	Cornwall Coal	Core Drill Hole	1984	587013	5378584	430	250
SPR2	Cornwall Coal	Core Drill Hole	1984	591113	5382340	530	259
VR11	HRCM	Core Drill Hole	2015	589997	5386386	759	514
VR12A	HRCM	Core Drill Hole	2015	590233	5389104	833	510
VR13	HRCM	Core Drill Hole	2017	590007	5383106	741	525
VR14	HRCM	Core Drill Hole	2017	591250	5383700	614	525
VR15	HRCM	Core Drill Hole	2017	594670	5386016	680	516
Total		**85 Drill Holes**					**23965**

Table 5: Drill Holes in Mt Punter area (EL16/2016)

Name	Company	Type	Year	East (MGA)	North (MGA)	Collar RL (AHD)	Total Depth (m)
DM22	Department of Mines	Core Drill Hole	1977	586407	5373598	407	229
GY007	Shell Company	Core Drill Hole	1978	593513	5375984	590	418
GY011	Shell Company	Core Drill Hole	1978	596163	5385084	590	473
GY013	Shell Company	Core Drill Hole	1979	596213	5386984	691	458
GY015	Shell Company	Core Drill Hole	1979	598013	5387284	570	446
MP1	Merrywood Coal	Core Drill Hole	1994	590817	5376728	361	26
MP2	Merrywood Coal	Core Drill Hole	1994	590674	5376628	376	45
MP3	Merrywood Coal	Core Drill Hole	1994	590316	5376510	364	33
RGR2	Cornwall Coal	Open Drill Hole	1994	588863	5375384	400	37
RGR3	Cornwall Coal	Open Drill Hole	1994	588363	5375184	385	20
RGR6	Cornwall Coal	Open Drill Hole	1995	584463	5373534	255	28
SP16	Cornwall Coal	Core Drill Hole	1984	587263	5374734	290	32
SPR3	Cornwall Coal	Core Drill Hole	1984	589750	5375000	470	279
Total		**13 Drill Holes**					**2523**

Table 6: Drill Holes in Duncan Mine area (1653PM)

Name	Company	Type	Year	East (MGA)	North (MGA)	Collar RL (AHD)	Total Depth (m)
D1	Cornwall Coal	Channel Sample	1983	585503	5387414	43	3
DM01	Department of Mines	Core Drill Hole	1961	584566	5388174	526	218
DM02	Department of Mines	Core Drill Hole	1961	585457	5388276	609	184
DM03	Department of Mines	Core Drill Hole	1962	585642	5388690	642	217
DM05	Department of Mines	Core Drill Hole	1964	587148	5389558	576	270

DM06	Department of Mines	Core Drill Hole	1965	586300	5388763	740	458
DM07A	Department of Mines	Core Drill Hole	1969	586208	5388099	620	52
DM07B	Department of Mines	Core Drill Hole	1969	586208	5388099	620	352
DM19	Department of Mines	Core Drill Hole	1974	587346	5388479	847	455
DM21	Department of Mines	Core Drill Hole	1975	587492	5387549	759	502
DM26	Department of Mines	Core Drill Hole	1977	585715	5386857	734	459
DM27	Department of Mines	Core Drill Hole	1977	586777	5387152	746	488
DM30	Department of Mines	Core Drill Hole	1978	585066	5387744	519	255
DM32	Department of Mines	Core Drill Hole	1978	584762	5388051	533	275
DM34A	Department of Mines	Core Drill Hole	1978	584423	5389403	478	65
DM34B	Department of Mines	Core Drill Hole	1979	584341	5389538	466	47
DM38	Department of Mines	Core Drill Hole	1979	588072	5387090	810	559
DM39	Department of Mines	Core Drill Hole	1979	587337	5386724	779	522
DM40	Department of Mines	Core Drill Hole	1979	586841	5385970	724	466
DM43	Department of Mines	Core Drill Hole	1979	587983	5385848	785	506
DM44	Department of Mines	Core Drill Hole	1979	586020	5386194	669	407
DM61	Department of Mines	Core Drill Hole	1980	586872	5385194	638	402
DM65	Department of Mines	Core Drill Hole	1980	585714	5385299	573	301
Total		**23 Drill Holes**					**7462**

Table 7: Drill Holes Adjacent to HRCM

Name	Company	Type	Year	East (MGA)	North (MGA)	Collar RL (AHD)	Total Depth (m)
78RG1	Investigator Coal	Core Drill Hole	1978	573163	5363964	590	200
78RG2	Investigator Coal	Core Drill Hole	1978	578813	5366064	510	203
78RG3	Investigator Coal	Core Drill Hole	1978	575933	5375704	640	185
GY004	Shell Company	Core Drill Hole	1978	598213	5383084	530	452
GY005	Shell Company	Core Drill Hole	1978	592363	5370984	474	455
GY014	Shell Company	Core Drill Hole	1979	597813	5385384	535	410
GY017	Shell Company	Core Drill Hole	1980	598113	5381484	680	604
GY018	Shell Company	Core Drill Hole	1980	599113	5389184	490	271
GY019	Shell Company	Core Drill Hole	1980	598113	5379184	625	478
GY027	Shell Company	Core Drill Hole	1980	598313	5373284	450	389
GY032	Shell Company	Core Drill Hole	1980	599013	5389984	400	277
GY048	Shell Company	Core Drill Hole	1981	598520	5390139	341	161
GY049	Shell Company	Core Drill Hole	1981	599083	5392235	262	57
GY050	Shell Company	Core Drill Hole	1981	598241	5391902	269	48
GY056	Shell Company	Core Drill Hole	1981	597346	5391561	277	60
GY058	Shell Company	Core Drill Hole	1981	597012	5392535	271	31
GY062	Shell Company	Core Drill Hole	1981	596158	5392159	277	37
GY064	Shell Company	Core Drill Hole	1981	596558	5391436	284	48
GY065	Shell Company	Core Drill Hole	1981	595189	5391967	300	42
GY066	Shell Company	Core Drill Hole	1981	594048	5392150	295	49
GY067	Shell Company	Core Drill Hole	1981	595096	5392560	268	24

GY073	Shell Company	Core Drill Hole	1981	592668	5392448	279	18
GY082	Shell Company	Core Drill Hole	1981	598414	5392504	261	24
GY084	Shell Company	Core Drill Hole	1981	597661	5392154	270	25
GY086	Shell Company	Core Drill Hole	1981	597128	5391941	275	22
GY088	Shell Company	Core Drill Hole	1981	597730	5391851	273	27
GY089	Shell Company	Core Drill Hole	1981	599372	5392308	262	12
GY090	Shell Company	Core Drill Hole	1981	597600	5392556	268	30
GY091	Shell Company	Core Drill Hole	1981	599152	5391795	270	24
GY094	Shell Company	Core Drill Hole	1981	598389	5390909	291	24
GY095	Shell Company	Core Drill Hole	1981	597499	5390804	288	30
GY096	Shell Company	Core Drill Hole	1981	596642	5390617	300	30
GY097	Shell Company	Core Drill Hole	1981	597955	5391467	278	42
GY098	Shell Company	Core Drill Hole	1981	598670	5392072	266	42
GY100	Shell Company	Core Drill Hole	1981	599082	5392239	262	8
GY103	Shell Company	Core Drill Hole	1982	598940	5375403	288	238
GY104	Shell Company	Core Drill Hole	1982	599355	5374902	251	173
GY105	Shell Company	Core Drill Hole	1982	598989	5373811	466	347
GY114	Shell Company	Core Drill Hole	1982	598593	5392541	260	48
GY126	Shell Company	Core Drill Hole	1982	598223	5392389	264	46
GY134	Shell Company	Core Drill Hole	1982	597853	5392238	267	37
GY139	Shell Company	Core Drill Hole	1982	597332	5392457	265	22
GY140	Shell Company	Core Drill Hole	1982	597483	5392087	273	40
GY144	Shell Company	Core Drill Hole	1982	597113	5391935	276	37
GY153	Shell Company	Core Drill Hole	1982	596962	5392305	271	25
GY154	Shell Company	Core Drill Hole	1982	596754	5391815	278	31
GY156	Shell Company	Core Drill Hole	1982	596592	5392154	277	25
GY158	Shell Company	Core Drill Hole	1982	596221	5392002	280	19
GY159	Shell Company	Core Drill Hole	1982	595410	5391481	290	37
GY160	Shell Company	Core Drill Hole	1982	596373	5391633	286	28
GY161	Shell Company	Core Drill Hole	1982	595852	5391851	281	25
GY162	Shell Company	Core Drill Hole	1982	595700	5392221	275	16
GY163	Shell Company	Core Drill Hole	1982	595481	5391700	288	25
GY165	Shell Company	Core Drill Hole	1982	595663	5391354	286	25
GY169	Shell Company	Core Drill Hole	1982	595334	5392070	286	34
GY170	Shell Company	Core Drill Hole	1982	595733	5390944	286	40
GY171	Shell Company	Core Drill Hole	1982	594774	5392272	279	31
GY172	Shell Company	Core Drill Hole	1982	594287	5392507	274	37
KILR8	Cornwall Coal	Open Drill Hole	1995	589613	5392034	310	25
MF01	Cornwall Coal	Core Drill Hole	1984	579112	5379183	725	255
MFR1	Cornwall Coal	Open Drill Hole	1984	573492	5381494	645	123
MFR2	Cornwall Coal	Open Drill Hole	1984	576597	5381372	522	86
MFR3	Cornwall Coal	Open Drill Hole	1984	572769	5380164	660	88
MS01	HRCM	Core Drill Hole	2013	575906	5376708	785	355
PH4	Merrywood Coal	Open Drill Hole	1992	580443	5373894	340	16
RGR1	Cornwall Coal	Open Drill Hole	1994	584913	5370884	290	37
RGR4	Cornwall Coal	Open Drill Hole	1994	584213	5370684	245	37
SPR9	Cornwall Coal	Core Drill Hole	1984	586513	5370184	340	174
Total		**68 Drill Holes**					**7420**

4 INTERPRETATION and MODELLING

Data Base

A consolidated data base of all available drill whole intersections has been developed. This data base, based on 223 drill holes (Points of Information – POI), contains detailed geological descriptions and coal quality test results. Coal quality parameters consist of apparent relative density, ash, moisture, volatile matter, total sulfur and specific energy, (all air dried basis) as well as washability and clean coal composite results.

On advice from MRT geologists a review of the collar levels and depths of the F seam was carried out. Collar levels were audited and if different to the values on the diamond drill core records adjustments were made.

Coal Density

A regression analysis of the results of HRCM Valley Road drilling (holes VR001 – VR009), where ARD was measured, was carried out. A set of 116 data points were available. A linear relationship between ARD and Ash% (air dried basis) was developed with a most satisfactory R squared value (R2). This good level of fit is typical for all sub-bituminous and bituminous coals.

$$ARD = 0.0137 * ASH + 1.1578, R2 = 0.9742$$

This formula was applied to calculate density of sub-sections within the F Seam where ash was available but ARD was not. In addition working sections where all units were not analysed, e.g. stone bands or material at the top or base of the seam, ash values were allocated according to the nature of the rock type (coal-30%, carbonaceous-60%, claystone-75%, mudstone, sandstone, etc.-80%). These values were averaged where the unit was comprised of mixed lithology. The above formula was used to calculate an appropriate density for such units and a weighted composite was established.

Modelling Procedures

Seam intersection data lists (termed Mapfiles for Vulcan modelling) were generated from the geological data base. Geological models were developed for all seams (A to H), topography, talus, Jurassic dolerite and the quartzose sandstone at the base of the coal bearing sequence. The parameters modelled for these units include thickness and roof and floor structure. In addition depth of cover, density, ash and total sulfur, moisture, clean coal yield at 22% ash were modelled for the D, F and G Seams.

5 D SEAM

Apart from 2 adits in the St. Paul River area of EL16/2016 there are no known mining operations to have taken place in D Seam. Potential resources in D Seam extend from within Valley Road (ML4m/2012), across Fingal Tier (EL16/2010 and down to the southern boundary of Mt. Punter (EL16/2016). D Seam is the uppermost coal unit with mining potential. D Seam lies 40 to 70 metres above F Seam, where F seam is economic. The average interval above G Seam is 80 metres. The stratigraphic relationships of D Seam with other seams within the UPSG are shown by sections in Figures 170911_06, 08, and 09.

The continuity of the underground working section as well as the 9 correlated plies that comprise D Seam are shown on Figures 170911_D10 and D11.

Within the area of resources, i.e., where the seam is greater than 1.80 metres thick and the raw ash is less than 45.0% (air dried basis) the D Seam thickness and quality statistics are:

Quality	Average	Minimum	Maximum
Thickness (m)	2.39	1.78	3.67
Raw Ash % (adb)	38.2	27.1	48.2
Total Sulfur % (adb)	0.34	0.27	0.42
Moisture % (adb)	4.2	3.1	6.8
Yield % at 22.0% Ash (adb)	68.2	53.2	89.8

Maps and sections of D Seam parameters are presented on Figures as listed here under.

Geology, Drill Holes and Section Lines	170911_D01
Depth of Cover	170911_D02
Thickness below Jurassic Dolerite	170911_D02A
UG Working Section Thickness	170911_D03
Roof Structure Contours	170911_D04
Raw Ash % (air dried basis)	170911_D05
Total Sulfur % Raw (air dried basis)	170911_D06
Moisture (air dried basis)	170911_D07
Yield at 22.0% Ash (air dried basis)	170911_D08

Resource Distribution	170911_D09
Seam Section 1	170911_D10
Seam Section 2	170911_D11

Mining access to D Seam is offered by drivage from F Seam either taking advantage of similar level through the Mitchell Fault or by cross measures drivage. D Seam is also directly accessible from outcrop in the Mt Punter area.

In the Mt Punter area along the St. Pauls River valley there is potential for open cut resources to exist. No quantitative evaluation of this potential has been carried out to date. However it should be further investigated, making a prospective target for a shallow drilling program.

Table 8: D Seam Drill Hole Intersections

DH	East	North	Collar	Cover	Thick.	Mid-Burden	ARD	Ash%	Moist%	Sulfur%
78RG1	573163.00	5363964.00	590.0	29.2	2.02		1.54	27.7	6.9	0.20
78RG2	578813.00	5366064.00	510.0	74.2	1.32		2.08	70.6	4.4	
DM03	585642.00	5388690.00	641.9	142.2	1.40					
DM04	588144.34	5390181.96	546.7	72.7	1.30		1.42	18.4	4.9	0.53
DM05	587148.00	5389558.00	575.8	99.7	1.22		1.52	25.0	4.9	0.41
DM06	586300.00	5388763.00	739.8	248.6	1.01					
DM07B	586208.00	5388099.00	619.7	130.4	1.17					
DM17	588197.30	5388067.94	777.5	323.5	2.18					
DM19	587346.00	5388479.00	847.2	387.9	0.90					
DM20	588996.31	5388859.93	811.0	364.7	1.13		1.44	19.3	6.6	
DM21	587492.00	5387549.00	758.5	295.9	0.93					
DM22	586407.00	5373598.00	407.4	79.3	0.55		1.47	22.6	3.6	
DM23	588687.36	5387517.96	804.6	374.9	0.95		1.56	28.8	2.7	
DM24	589425.33	5387942.94	830.8	401.4	1.05		1.55	27.9	3.1	
DM25	588206.32	5388717.95	783.4	326.3	0.96					
DM30	585066.00	5387744.00	519.4	51.8	1.43					
DM31	589663.32	5388917.95	828.1	389.1	0.98					
DM37	588209.33	5389844.96	596.2	131.4	0.85		1.51	24.9	4.5	
DM38	588072.12	5387090.36	809.7	376.8	0.39					
DM39	587337.00	5386724.00	778.7	329.9	0.73					
DM40	586841.00	5385970.00	724.3	267.8	0.69					
DM41	589073.43	5386811.00	812.7	361.9	1.79		1.75	41.0	5.1	
DM42	588628.34	5386099.95	813.2	385.4	1.43		1.76	42.0	4.8	
DM43	587982.84	5385847.60	785.1	346.0	0.31					
DM44	586020.00	5386194.00	668.5	211.2	0.81					
DM45	589862.00	5385272.00	707.8	260.6	1.63		1.58	24.6		
DM46B	590142.00	5387077.00	773.0	320.8	2.13		1.73	39.4		

DM49	591119.00	5390187.00	598.5	237.4	0.35					
DM50	592052.00	5390087.00	563.2	186.8	0.58					
DM51	592850.00	5390009.00	534.3	168.4	1.02		1.63	34.8	6.7	
DM53	588188.33	5384866.94	794.7	353.1	0.33					
DM55	591239.00	5387253.00	626.4	250.0	2.15		1.69	35.4		
DM56	592999.00	5386992.00	701.0	367.4	2.43		1.08	27.4	3.1	
DM57	588025.31	5383916.94	801.9	375.3	1.10					
DM58	586868.00	5384152.00	637.9	185.0	0.43		1.85	50.3		
DM59	587494.00	5382058.00	802.3	384.5	1.48					
DM60	586151.00	5381820.00	725.2	293.8	1.12					
DM61	586872.33	5385193.93	638.0	189.0	0.67					
DM64	585227.00	5380216.00	626.0	199.6	0.88					
DM71	593018.00	5386232.00	653.9	328.7	2.90		1.79	41.9		
DM73	591998.00	5387027.00	706.8	350.2	1.76		1.59	29.7	6.2	
DM74	592328.00	5385906.00	643.0	304.6	2.17		1.59	30.8	3.6	
DM76	586440.00	5379716.00	745.8	356.8	0.91					
DM79	594327.00	5384982.00	675.7	334.4	3.69		1.55	34.6	0.1	
DM80	593413.00	5382091.00	592.2	244.4	2.16					
DM81	593166.00	5385190.00	647.5	311.5	2.45		1.64	39.7	6.0	
DM82	594091.00	5383834.00	588.6	246.4	3.06		1.68	34.1	2.8	
DM85	591331.00	5390650.00	533.8	147.8	0.49					
GY004	598213.00	5383084.00	530.0	245.6	1.36					
GY005	592363.00	5370984.00	474.0	263.8	2.24		1.53	28.8		
GY007	593513.00	5375984.00	590.0	253.5	1.10		1.67	41.3		
GY009	595763.00	5383334.00	530.0	245.4	1.92					
GY011	596163.00	5385084.00	590.0	262.4	2.20		1.62	32.8		
GY014	597813.00	5385384.00	535.0	208.7	0.68					
GY017	598113.00	5381484.00	680.0	409.9	3.15					
GY018	599113.00	5389184.00	490.0	143.7	0.94					
GY027	598313.00	5373284.00	450.0	255.8	1.13					
GY032	599013.00	5389984.00	400.0	97.0	0.30					
GY103	598940.00	5375403.00	287.6	134.5	1.49					
GY104	599355.00	5374902.00	251.1	65.1	1.04					
GY105	598989.00	5373811.00	466.1	253.4	0.69					
HEC1	589513.00	5389714.00	648.0	190.3	1.30					
HEC2	589553.00	5390644.00	518.2	66.5	0.74					
MP1	590817.00	5376728.00	361.1	20.1	3.24		1.75	43.8	4.2	0.29
MP2	590674.00	5376628.00	376.5	39.2	2.59		1.78	45.2	4.6	0.29
MP3	590316.00	5376510.00	364.5	19.7	1.85		1.81	48.3	3.5	0.22
SP17	588573.00	5378884.00	445.0	87.4	1.06		1.55	31.8	4.4	0.39
SPR1	587013.00	5378584.00	430.0	84.1	0.36		1.51	29.0	3.1	
SPR2	591113.00	5382340.00	530.0	174.4	1.87		1.71	46.7	4.5	
SPR3	589750.00	5375000.00	470.0	135.7	1.77		1.82	48.2		
SPR9	586513.00	5370184.00	340.0	55.7	0.68					
VR01	589431.77	5388423.42	828.1	403.7	1.01		1.54	27.7	5.1	0.40
VR02	588328.64	5390042.42	581.4	117.3	1.25		1.57	33.4	5.8	0.43

VR03	588745.38	5390342.18	556.5	104.5	1.39		1.55	31.4	5.9	0.44
VR06	589143.52	5390231.88	573.4	128.8	1.04					
VR07	588443.79	5389239.06	661.3	210.1	1.13					
VR08	588179.34	5389580.50	623.6	159.2	1.14					
VR09	588834.91	5388379.80	786.9	331.4	1.25					
VR10	588198.00	5390246.00	539.0	71.0	1.00					
VR11	589996.57	5386385.77	758.5	299.7	1.98		1.52	35.6	4.1	0.28
VR12A	590233.00	5389104.00	832.9	404.7	1.00		1.50	30.0	7.3	0.45
VR13	590007.28	5383106.24	740.7	344.3	1.14		1.97	65.1	6.2	
VR15	594670.00	5386016.00	680.0	316.7	4.03		1.57	36.5	6.8	0.38

Coal Resources

JORC 2012 classifications of Measured, Indicated and Inferred were assigned to areas of the D Seam Vulcan Model.

The basis was-

- Spacing of points of information (POIs)
- Type and reliability of POIs
- Geological impediments to access and mine development
- Statistical variability of geological and coal quality variables

As demonstrated in seam profiles shown in Figures 170911_D10 and D11 the D Seam plies have been reliably mapped and show strong continuity. Therefore the D Seam working section continuity is of very high level of confidence.

The writer did not classify any of D Seam resources in the Measured class due to lack of washability test data in previous drilling.

The distribution of D Seam resources across HRCM's tenures is shown in Figure 170911_D09.

On a tenure basis resources in D Seam are shown on Table 9 below.

Table 9: D Seam Resources

TENURE	EL16/2010		ML4M/2012	EL16/2016	Total D Seam
ZONE	DF01-21	DF01-31	DM01-21	DP01-31	
Class	**Indicated**	**Inferred**	**Indicated**	**Inferred**	
Area km2	15.55	20.07	0.62	44.93	81.16
Ave. Thickness	2.55	2.30	1.90	2.39	**2.39**
Min.Thickness	1.80	1.80	1.80	1.78	**1.78**
Max.Thickness	3.67	2.96	2.05	3.21	**3.67**
Million m3	39.63	46.05	1.17	107.35	194.22
Million tonnes	64.98	78.38	1.97	180.66	325.99
Ave RD	1.64	1.70	1.68	1.68	**1.68**
Ave.Cover	328	244	365	279	**281**
Min.Cover	169	7	263	8	**7**
Max.Cover	453	427	399	486	**486**
Ave.Ash%	35.2	39.8	38.1	38.5	**38.2**
Min.Ash%	27.1	32.7	30.5	28.8	**27.1**
Max.Ash%	41.8	46.5	40.8	48.2	**48.2**
Ave.Sul%	0.36	0.36	0.30	0.32	**0.34**
Min.Sul%	0.28	0.32	0.28	0.22	**0.27**
Max.Sul%	0.42	0.40	0.33	0.39	**0.42**
Ave.Moist%	5.0	4.1	4.3	3.9	**4.2**
Min.Moist%	2.8	2.9	3.6	3.1	**3.1**
Max.Moist%	6.8	6.4	5.0	6.2	**6.8**
Ave.Yld%	73.9	65.0	68.4	67.6	**68.2**
Min.Yld%	61.2	52.0	63.1	48.7	**56.2**
Max.Yld%	89.8	78.8	83.1	86.3	**89.8**

Mitigating Factors

Coal resources in the D seam have been limited to a working thickness greater than 1.8 metres and raw ash less than 45% (air dried basis).

All points of observation (POI) used in the resource estimation are cored and analysed drill hole intersections of the d Seam. The spacing of the POIs for the type of seam intersections available justifies the JORC classification of Measured (up to 500m from a POI) and Indicated (500 to 1000 metres from a POI).

Besides the Mitchell Fault of up to 60 metre displacement, no geological impediments likely to severely impact on underground mining have been identified in the area where D Seam meets the criteria stated above. No cindered or intruded coal was intersected in this same area.

6 F SEAM

F Seam was worked in the adjacent Duncan Mine and in two small mines Valley West and Valley East located in the north-western part of ML4M/2012. Resources in F Seam are confined to ML4M/2012 and the in EL16/2010 adjacent to ML4m/2012 and Duncan Mine lease

F Seam lies 40 to 70 metres below D Seam, where F seam is economic. The average interval above G Seam is 40 metres. The stratigraphic relationships of F Seam with other seams within the UPSG are shown by sections in Figures 170911_06, 08, and 09.

The continuity of the underground working section as well as the 6 correlated plies that comprise F Seam are shown on Figures 170911_F10 and F11.

Within the area of resources, i.e., where the seam is greater than 1.80 metres thick and the raw ash is less than 45.0% (air dried basis) the F Seam thickness and quality statistics are:

Quality	Average	Minimum	Maximum
Thickness (m)	2.20	1.80	2.82
Raw Ash % (adb)	32.2	24.8	45.9
Total Sulfur % (adb)	0.30	0.23	0.40
Moisture % (adb)	3.7	2.1	5.6
Yield % at 22.0% Ash (adb)	79.8	53.2	94.3

Maps and sections of D Seam parameters are presented on Figures as listed here under.

Geology, Drill Holes and Section Lines	170911_F01
Depth of Cover	170911_F02
Interval below D Seam	170911_F02A
UG Working Section Thickness	170911_F03
Roof Structure Contours	170911_F04
Raw Ash % (air dried basis)	170911_F05
Total Sulfur % Raw (air dried basis)	170911_F06
Moisture (air dried basis)	170911_F07
Yield at 22.0% Ash (air dried basis)	170911_F08
Resource Distribution	170911_F09

Seam Section 1	170911_F10
Seam Section 2	170911_F11

F Seam is also directly accessible from outcrop via existing portals of the disused Valley East and West mines on the sub-crop of the seam. This access is located in the north of ML4M/2012.

Table 10: F Seam Drill Hole Intersections

DH	East	North	Collar	Cover	Thickness	Mid-Burd	ARD	Ash%	Moist%	Sulfur%
78RG1	573163.00	5363964.00	590.0	74.3	0.50	30.0				
78RG2	578813.00	5366064.00	510.0	100.6	1.32	8.7	1.70	49.5	4.6	
78RG3	575933.00	5375704.00	640.0	66.8	1.08		1.41	24.2	4.9	
78RG4	579913.00	5375644.00	552.0	23.8	0.35					
ADIT1	587738.00	5390330.00	435.0	7.6	2.40		1.50	24.9		
AT2	579982.00	5375283.00	505.0	8.5	0.90					
AT5	580012.00	5375133.00	505.0	4.3	1.15					
DM01	584566.00	5388174.00	525.5	70.6	0.92	17.1				
DM02	585457.00	5388276.00	608.7	176.6	2.38	20.7	1.53	25.4	4.9	0.28
DM03	585642.00	5388690.00	641.9	210.2	2.36	22.0	1.61	32.2	3.9	0.48
DM04	588144.34	5390181.96	546.7	122.7	1.78	21.0	1.76	43.4	1.5	
DM05	587148.00	5389558.00	575.8	147.1	1.81	24.1	1.58	29.4	4.3	0.26
DM06	586300.00	5388763.00	739.8	304.8	3.05	22.7	1.56	28.7	3.2	
DM07B	586208.00	5388099.00	619.7	183.5	2.23	20.0	1.56	28.2	4.4	
DM17	588197.30	5388067.94	777.5	379.3	2.16	29.0	1.63	32.9	4.1	
DM19	587346.00	5388479.00	847.2	428.1	1.70	22.6	1.51	24.7	5.3	
DM20	588996.31	5388859.93	811.0	412.8	2.32	22.4	1.58	30.1	5.4	
DM21	587492.00	5387549.00	758.5	348.0	2.07	21.5	1.52	25.4	4.8	
DM22	586407.00	5373598.00	407.4	132.3	0.10	19.6				
DM23	588687.36	5387517.96	804.6	412.3	2.83	18.6	1.53	26.5	2.3	
DM24	589425.33	5387942.94	830.8	441.5	2.18	18.2	1.56	28.9	2.1	
DM25	588206.32	5388717.95	783.4	376.1	1.82	24.7	1.67	36.4	3.2	
DM26	585715.00	5386857.00	733.8	310.4	2.60	21.0	1.61	31.5	4.3	
DM27	586777.00	5387152.00	745.7	334.1	2.59	20.1	1.56	28.5	2.7	
DM30	585066.00	5387744.00	519.4	71.5	2.32	16.2	1.63	33.4	3.9	
DM31	589663.32	5388917.95	828.1	437.0	1.95	21.7				
DM32	584762.00	5388051.00	533.3	82.2	1.63	16.9	1.70	37.7	5.0	
DM37	588209.33	5389844.96	596.2	180.3	2.07	19.3	1.75	42.2	3.0	
DM38	588072.12	5387090.36	809.7	414.7	2.49	20.3	1.52	26.1		
DM39	587337.00	5386724.00	778.7	368.2	2.83	19.4	1.58	31.1		
DM40	586841.00	5385970.00	724.3	307.8	2.04	20.5	1.67	37.1		
DM41	589073.43	5386811.00	812.7	404.3	2.71	21.7	1.58	29.4	4.5	
DM42	588628.34	5386099.95	813.2	424.0	2.82	19.3	1.57	29.0	3.5	
DM43	587982.84	5385847.60	785.1	386.3	2.57	19.7	1.55	27.5	2.6	

DM44	586020.00	5386194.00	668.5	250.2	2.73	20.3	1.66	36.2		
DM45	589862.00	5385272.00	707.8	309.6	1.35	30.2	1.78	43.8	3.8	
DM46B	590142.00	5387077.00	773.0	371.3	1.58	28.7	1.59	31.6		
DM49	591119.00	5390187.00	598.5	304.2	0.20	50.3				
DM50	592052.00	5390087.00	563.2	252.8	0.20	45.0				
DM51	592850.00	5390009.00	534.3	230.8	0.30	41.0				
DM53	588188.33	5384866.94	794.7	396.7	2.36	22.2	1.55	27.6	2.3	
DM54	591134.00	5388296.00	711.8	422.6	2.20	30.4				
DM55	591239.00	5387253.00	626.4	297.6	1.59	26.3	1.90	54.1		
DM57	588025.31	5383916.94	801.9	416.1	2.63	21.1	1.60	31.5	2.8	
DM58	586868.00	5384152.00	637.9	229.6	1.17	25.5	1.38	32.8	2.4	
DM59	587494.00	5382058.00	802.3	429.4	0.75	27.0				
DM60	586151.00	5381820.00	725.2	324.8	0.73	3.5				
DM61	586872.33	5385193.93	638.0	228.5	2.69	24.1	1.58	29.8	4.1	
DM64	585227.00	5380216.00	626.0	260.7	1.22	38.8				
DM66	592092.00	5389221.00	778.2	491.5	1.07	47.6				
DM68	592177.00	5388096.00	779.1	481.7	1.98	28.2	1.96	56.4		
DM71	593018.00	5386232.00	653.9	378.1	1.25	30.5	1.94	54.8	4.4	
DM73	591998.00	5387027.00	706.8	397.0	1.36	30.0	1.93	54.5	3.4	
DM74	592328.00	5385906.00	643.0	354.6	1.26	30.1	1.93	56.0		
DM76	586440.00	5379716.00	745.8	396.8	0.10	21.5				
DM79	594327.00	5384982.00	675.7	384.5	0.84	33.0	1.31	21.1	2.3	
DM80	593413.00	5382091.00	592.2	293.4	0.02	29.8				
DM81	593166.00	5385190.00	647.5	363.1	1.06	32.3	1.30	36.5	2.8	
DM82	594091.00	5383834.00	588.6	295.0	0.88	29.8				
DM85	591331.00	5390650.00	533.8	218.5	0.02	46.5				
GY004	598213.00	5383084.00	530.0	301.9	2.07	36.3	1.43	25.2	3.8	0.29
GY005	592363.00	5370984.00	474.0	310.5	0.18	22.8				
GY007	593513.00	5375984.00	590.0	280.7	1.03	18.7	1.60	37.4		
GY009	595763.00	5383334.00	530.0	308.3	0.50	38.7				
GY011	596163.00	5385084.00	590.0	288.9	1.38	11.7				
GY014	597813.00	5385384.00	535.0	237.8	0.16	17.0				
GY017	598113.00	5381484.00	680.0	466.8	1.52	35.7	1.54	29.1	3.8	0.33
GY018	599113.00	5389184.00	490.0	190.6	1.04	34.6				
GY027	598313.00	5373284.00	450.0	322.5	0.60	48.7				
GY032	599013.00	5389984.00	400.0	157.3	0.10					
GY103	598940.00	5375403.00	287.6	191.8	0.97	27.5				
GY104	599355.00	5374902.00	251.1	126.7	0.98	35.2				
HEC1	589513.00	5389714.00	648.0	239.1	1.91	22.1				
HEC2	589553.00	5390644.00	518.2	115.8	0.23	31.7				
HEC3	588163.00	5390564.00	455.4	28.7	2.08					
MS02	577888.00	5376740.00	720.0	181.0	0.95	38.0				
PE59B	587607.00	5382242.00	811.0	431.7	0.72	26.6				
RGR1	584913.00	5370884.00	290.0	28.0	0.10	19.9				
SPR1	587013.00	5378584.00	430.0	135.1	0.79	31.2				
SPR2	591113.00	5382340.00	530.0	202.7	1.05	8.4				

SPR3	589750.00	5375000.00	470.0	162.4	0.47	14.7				
SPR9	586513.00	5370184.00	340.0	116.5	0.10	30.4				
VR01	589431.77	5388423.42	828.1	442.4	2.05	16.6	1.68	40.3	4.5	0.23
VR02	588328.64	5390042.42	581.4	167.1	1.95	20.8	1.79	46.5	4.6	0.34
VR03	588745.38	5390342.18	556.5	161.9	0.65	31.4	1.56	34.2	5.7	0.44
VR04B	587819.06	5390337.41	455.0	24.9	2.78		1.65	35.0	4.2	0.30
VR06	589143.52	5390231.88	573.4	183.4	0.52	29.7				
VR07	588443.79	5389239.06	661.3	260.5	2.02	25.3	1.70	38.7	3.9	0.36
VR08	588179.34	5389580.50	623.6	208.3	1.93	24.8	1.76	41.8	4.4	0.27
VR09	588834.91	5388379.80	786.9	379.9	2.18	19.6	1.68	37.9	4.1	0.31
VR10A	588188.00	5390237.00	543.3	117.7	2.43	23.5	1.47			
VR11	589996.57	5386385.77	758.5	352.5	1.25	32.4	1.57	42.7	5.2	0.31
VR12A	590233.00	5389104.00	832.9	450.4	1.92	23.3	1.71	43.4	5.2	0.25
VR13	590007.28	5383106.24	740.7	394.7	0.35	31.9	1.58	38.7	6.1	0.32
VR15	594670.00	5386016.00	680.0	374.2	1.27	39.5	1.53	34.0	5.4	0.36
D1	585503.00	5387414.00	43.0	0.7	2.26		1.70	41.4	6.0	0.22

Coal Resources

JORC 2012 classifications of Measured, Indicated and Inferred were assigned to areas of the F Seam Vulcan Model. The basis was-

- Spacing of points of information (POIs)
- Type and reliability of POIs
- Geological impediments to access and mine development
- Statistical variability of geological and coal quality variables

As demonstrated in seam profiles shown in Figures 170911_F10 and F11 the F Seam plies have been reliably mapped and show strong continuity. The most closely spaced drilling in the Fingal Tier project is to the F Seam in the area of Measured resource.

The distribution of F Seam resources across HRCM's tenures is shown in Figure 170911_F09.

On a tenure basis resources in F Seam are shown on Table 10 below.

Table11: F Seam Resources

TENURE	EL16/2010						ML4M/2012			Total F Seam
ZONE	FF01-11	FF01-12	FF01-21	FF01-22	FF01-23	FF01-31	FM01-11	FM01-21	FM01-22	
Class	**Measured**		**Indicated**			**Inferred**	**Measured**	**Indicated**		
Area km2	0.29	1.09	0.81	1.09	0.59	1.63	7.05	0.97	0.03	13.55
Ave. Thick	1.94	2.26	2.04	2.05	2.14	2.03	2.30	2.00	2.03	**2.20**
Min. Thick	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.92	**1.80**
Max. Thick	2.06	2.61	2.18	2.47	2.66	2.45	2.82	2.28	2.17	**2.82**
M m3	0.57	2.45	1.64	2.23	1.27	3.31	16.19	1.94	0.05	29.66
M tonnes	0.98	3.88	2.78	3.64	2.00	5.34	25.92	3.14	0.08	47.78
Ave RD	1.73	1.58	1.69	1.63	1.58	1.61	1.61	1.62	1.55	**1.60**
Ave. Cover	448	417	413	417	300	221	385	432	24	**355**
Min. Cover	373	390	298	384	206	151	5	391	11	**5**
Max. Cover	477	443	489	464	435	295	489	489	42	**489**
Ave. Ash%	41.9	31.0	39.2	34.6	30.6	33.2	32.5	33.9	28.5	**32.2**
Min. Ash%	37.1	27.6	31.2	31.7	28.9	31.7	26.2	29.6	26.9	**24.8**
Max. Ash%	45.0	33.2	45.0	39.2	34.0	34.6	45.9	39.1	29.8	**45.9**
Ave. Sul%	0.26	0.31	0.27	0.31	0.31	0.31	0.30	0.29	0.28	**0.30**
Min. Sul%	0.24	0.30	0.25	0.31	0.30	0.30	0.23	0.25	0.27	**0.23**
Max. Sul%	0.29	0.32	0.29	0.32	0.31	0.32	0.40	0.31	0.28	**0.40**
Ave. Moist%	4.9	2.7	3.4	3.3	3.2	2.9	3.8	3.6	4.2	**3.7**
Min.Moist%	3.7	2.3	2.4	2.8	2.4	2.5	2.1	2.3	4.2	**2.1**
Max.Moist%	5.3	3.0	5.0	4.0	4.0	3.4	5.6	4.9	4.3	**5.6**
Ave. Yld%	61.0	82.1	66.3	75.2	82.9	78.0	79.2	76.5	86.9	**79.8**
Min. Yld%	54.9	77.9	54.9	66.3	76.4	75.2	53.2	66.4	84.4	**53.2**
Max. Yld%	70.3	88.8	81.8	80.7	86.2	80.8	91.5	84.9	90.2	**94.3**

Mitigating Factors

Coal resources in the F seam have been limited to a working thickness greater than 1.8 metres and raw ash less than 45% (air dried basis).

All points of observation (POI) used in the resource estimation are cored and analysed drill hole intersections except for ADIT1 which is a measured section and cannel sample at the portal of Valley West disused workings. The spacing of the POIs for the type of seam intersections available justifies the JORC classification of Measured (up to 500m from a POI) and Indicated (500 to 1000 metres from a POI).

Beside a fault of up to 6 metre displacement, no geological impediments likely to severely impact on underground mining have been identified. No cindered or intruded coal was intersected.

JORC compliance is restricted to estimation of in-situ coal resources, based on detailed seam logging of drill core and proximate analyses of seam plies. Beneficiation yields incorporated in these resources are on an air dried basis. No consideration of dilution or preparation plant efficiency has been made.

7 G SEAM

G Seam was worked in the Merrywood underground and open cut mines in the south-west EL16/2010 and Cullenswood No.1 open cut. There is also an adit into the G Seam 160 metres north of the Valley mine in the northern part of ML4M/2012.

Resources in G Seam occur in 3 zones, refer to Figure 170911_G09

- Northern zone within ML4/2012 and in adjacent EL16/2010
- Central EL16/2010 south of Duncan mine lease
- Eastern EL16/2010 extending southwards through EL16/2016.

G Seam lies 90 metres below D Seam. The average interval up to F Seam is 40 metres. The stratigraphic relationships of G Seam with other seams within the UPSG are shown by sections in Figures 170911_06, 08, and 09.

The continuity of the underground working section as well as the 6 correlated plies that comprise F Seam are shown on Figures 170911_G10, G11 and G11.

Within the area of resources, i.e., where the seam is greater than 1.80 metres thick and the raw ash is less than 45.0% (air dried basis) the G Seam thickness and quality statistics are:

Quality	Average	Minimum	Maximum
Thickness (m)	2.20	1.80	2.82
Raw Ash % (adb)	32.2	24.8	45.9
Total Sulfur % (adb)	0.30	0.23	0.40
Moisture % (adb)	3.7	2.1	5.6
Yield % at 22.0% Ash (adb)	79.8	53.2	94.3

Maps and sections of D Seam parameters are presented on Figures as listed here under.

Geology, Drill Holes and Section Lines	170911_G01
Depth of Cover	170911_G02
Interval below D Seam	170911_G02A
Interval below F Seam	170911_G02B
UG Working Section Thickness	170911_G03
Roof Structure Contours	170911_G04

Raw Ash % (air dried basis)	170911_G05
Total Sulfur % Raw (air dried basis)	170911_G06
Moisture (air dried basis)	170911_G07
Yield at 22.0% Ash (air dried basis)	170911_G08
Resource Distribution	170911_G09
Seam Section 1	170911_G10
Seam Section 2	170911_G11
Seam Section 3	170911_G12

G Seam is directly accessible from outcrop in the north of ML4M/2012 or from drivage down from F Seam in the northern and central resource zones. The Eastern resources may be accessed at a shallow depth in the St Pauls River valley in EL16/2016

Table 12: G Seam Drill Hole Intersections

DH	East	North	Collar	Cover	Thickness	Mid-Burd	ARD	Ash%	Moist%	Sulfur%
78RG1	573163.00	5363964.00	590.0	95.8	0.71	21.0	1.67	37.6	5.4	
78RG2	578813.00	5366064.00	510.0	123.0	1.55	21.0	1.57	29.5	4.3	
78RG3	575933.00	5375704.00	640.0	112.6	1.24	44.8	2.26	77.6	3.9	
78RG4	579913.00	5375644.00	552.0	36.9	2.24	12.8	1.47	26.0	6.8	0.10
AT1	579982.00	5375113.00	479.8	4.3	2.80					
AT11	581213.00	5374484.00	345.0	7.0	2.00					
AT2	579982.00	5375283.00	505.0	24.8	2.41	15.4				
AT3	579712.00	5375233.00	500.0	22.3	2.75					
AT5	580012.00	5375133.00	505.0	18.7	3.01	13.2	1.51	25.7	3.4	0.36
AT6	579712.00	5375533.00	530.0	35.5	2.31		1.54	27.9	3.3	0.37
AT7	579712.00	5374933.00	470.0	18.0	3.30					
DM01	584566.00	5388174.00	525.5	116.0	0.59	44.5	1.61	31.2	6.3	0.28
DM04	588144.34	5390181.96	546.7	164.7	1.47	40.1	0.87	18.6	1.5	0.33
DM05	587148.00	5389558.00	575.8	180.3	2.74	31.3	1.65	34.7	3.2	
DM06	586300.00	5388763.00	739.8	343.2	1.53	35.4	1.70	39.4		
DM07B	586208.00	5388099.00	619.7	228.4	1.98	42.6				
DM17	588197.30	5388067.94	777.5	423.0	2.05	41.6	1.52	25.4	3.6	
DM20	588996.31	5388859.93	811.0	458.3	1.94	43.2	1.57	28.7	5.0	
DM21	587492.00	5387549.00	758.5	395.8	1.70	45.6	1.53	25.7	4.1	
DM22	586407.00	5373598.00	407.4	155.2	1.62	22.8	1.44	20.5	2.4	
DM23	588687.36	5387517.96	804.6	460.9	1.28	45.8	1.82	47.4	3.8	
DM24	589425.33	5387942.94	830.8	496.2	1.56	52.5	1.66	35.7	2.7	
DM25	588206.32	5388717.95	783.4	421.0	1.97	43.1	1.52	26.5	3.3	

DM26	585715.00	5386857.00	733.8	354.6	2.15	41.7	1.74	40.9	3.1	
DM27	586777.00	5387152.00	745.7	377.2	1.58	40.5	1.67	36.4	3.2	
DM30	585066.00	5387744.00	519.4	118.7	2.08	44.9	1.73	40.2	3.5	
DM31	589663.32	5388917.95	828.1	483.6	1.82	44.7	1.61	32.8		
DM32	584762.00	5388051.00	533.3	133.9	0.43	50.0				
DM34A	584423.00	5389403.00	478.0	40.6	3.14		1.73	40.1	3.6	
DM34B	584341.00	5389538.00	466.4	29.2	3.00		1.55	35.0		
DM37	588209.33	5389844.96	596.2	222.2	1.43	39.9	1.52	25.4	3.7	
DM38	588072.12	5387090.36	809.7	462.2	1.98	45.1				
DM39	587337.00	5386724.00	778.7	417.9	1.48	46.9	1.82	48.7		
DM40	586841.00	5385970.00	724.3	363.1	0.81	53.3	1.63	34.7		
DM41	589073.43	5386811.00	812.7	452.6	1.74	45.6	1.96	53.5	7.2	
DM42	588628.34	5386099.95	813.2	468.8	1.30	42.1	1.80	45.4	3.6	
DM43	587982.84	5385847.60	785.1	432.6	1.79	43.7	1.70	38.9	2.5	
DM44	586020.00	5386194.00	668.5	294.7	2.62	41.8	1.88	52.3		
DM45	589862.00	5385272.00	707.8	370.2	1.07	59.3	1.82	45.2	5.9	
DM46B	590142.00	5387077.00	773.0	430.7	1.77	57.8	1.70	39.4		
DM49	591119.00	5390187.00	598.5	329.7	2.98	25.4	1.75	43.5		
DM50	592052.00	5390087.00	563.2	283.3	1.46	30.3	1.91	55.0	4.8	
DM52	590437.00	5389222.00	795.8	437.8	2.09		1.89	51.3	4.0	
DM53	588188.33	5384866.94	794.7	446.9	1.84	47.8	1.73	43.4	2.4	
DM54	591134.00	5388296.00	711.8	465.4	2.12	40.6	1.70	39.3		
DM55	591239.00	5387253.00	626.4	346.1	2.13	46.9	1.69	38.9		
DM57	588025.31	5383916.94	801.9	463.5	1.63	44.8	1.76	42.3	4.2	
DM58	586868.00	5384152.00	637.9	272.8	2.18	42.0	1.64	34.8	1.7	
DM59	587494.00	5382058.00	802.3	471.3	2.12	41.1	1.68	36.6	3.6	
DM60	586151.00	5381820.00	725.2	369.4	1.73	43.8	1.66	35.2	3.4	
DM61	586872.33	5385193.93	638.0	273.9	2.08	42.7	1.64	33.6	4.4	
DM64	585227.00	5380216.00	626.0	295.3	2.00	33.5				
DM65	585714.00	5385299.00	572.7	203.3	1.37					
DM66	592092.00	5389221.00	778.2	517.7	2.07	25.2	1.80	44.7	4.4	
DM68	592177.00	5388096.00	779.1	524.2	2.25	40.5	1.70	38.4	1.7	
DM69	593130.00	5387938.00	715.1	444.1	1.58		1.84	48.4	3.3	
DM71	593018.00	5386232.00	653.9	417.0	1.55	37.6	1.66	34.7	4.6	
DM73	591998.00	5387027.00	706.8	443.6	1.83	45.2	1.71	39.3	2.7	
DM74	592328.00	5385906.00	643.0	400.0	1.80	44.1	1.65	35.2	4.8	
DM75	584534.00	5384691.00	585.2	213.5	1.13					
DM76	586440.00	5379716.00	745.8	426.1	1.73	29.1				
DM79	594327.00	5384982.00	675.7	420.7	1.84	35.4	1.59	31.4	4.8	
DM80	593413.00	5382091.00	592.2	338.1	1.09	44.7	1.98	55.8	6.9	
DM81	593166.00	5385190.00	647.5	409.3	1.46	45.2	1.81	50.1	4.1	
DM82	594091.00	5383834.00	588.6	335.8	1.99	39.9	1.63	32.9	4.1	
DM85	591331.00	5390650.00	533.8	240.3	1.30	21.7				
GY004	598213.00	5383084.00	530.0	317.0	1.52	13.1	1.54	30.9	5.0	0.28
GY005	592363.00	5370984.00	474.0	367.4	1.10	56.8	1.66	35.7	2.2	0.34
GY007	593513.00	5375984.00	590.0	313.8	2.60	32.1	1.61	36.6		

GY009	595763.00	5383334.00	530.0	336.0	1.72	27.1	1.52	26.6		
GY011	596163.00	5385084.00	590.0	324.6	2.76	34.4	1.69	26.7	4.9	0.34
GY014	597813.00	5385384.00	535.0	278.7	2.59	40.8	1.63	37.0	3.9	0.21
GY017	598113.00	5381484.00	680.0	481.5	1.95	13.3	1.52	24.5	4.0	0.35
GY018	599113.00	5389184.00	490.0	221.3	1.64	29.7	1.48	24.9	5.0	0.29
GY027	598313.00	5373284.00	450.0	347.2	4.00	24.1	1.52	27.1	4.7	
GY032	599013.00	5389984.00	400.0	199.6	2.13	42.2	1.76	43.9	5.3	
GY048	598520.00	5390139.00	340.7	117.7	2.84					
GY050	598241.00	5391902.00	268.9	16.7	2.80					
GY064	596558.00	5391436.00	284.1	16.0	2.00					
GY065	595189.00	5391967.00	299.5	20.8	1.80					
GY069	592857.00	5391948.00	303.6	3.5	1.50					
GY082	598414.00	5392504.00	261.5	20.5	1.86		1.73	45.8		
GY084	597661.00	5392154.00	270.3	18.5	1.51		1.78	50.9		
GY086	597128.00	5391941.00	275.1	17.4	1.77		1.82	50.3		
GY090	597600.00	5392556.00	267.9	8.2	1.70		1.80	51.9		
GY103	598940.00	5375403.00	287.6	224.0	1.89	31.2	1.59	33.3		
GY104	599355.00	5374902.00	251.1	158.3	1.78	30.6	1.52	34.0		
GY105	598989.00	5373811.00	466.1	334.0	3.46		1.71	38.6	2.4	
GY114	598593.00	5392541.00	259.9	23.6	1.89		1.83	45.1	1.6	
GY126	598223.00	5392389.00	263.9	23.7	1.90		1.76	41.5	1.3	
GY134	597853.00	5392238.00	266.5	16.4	1.79		1.80	43.1	3.1	
GY140	597483.00	5392087.00	272.7	19.1	1.60		1.93	53.7	2.1	
GY144	597113.00	5391935.00	275.5	17.7	1.78		1.80	45.7	1.2	
GY154	596754.00	5391815.00	277.5	11.5	2.02		1.72	38.9	2.0	
GY156	596592.00	5392154.00	277.1	11.5	1.18					
GY158	596221.00	5392002.00	280.0	6.8	1.11		1.52	17.9	5.3	
GY160	596373.00	5391633.00	285.9	9.7	1.63		1.74	38.7	2.2	
GY170	595733.00	5390944.00	286.0	19.0	0.99		1.68	34.6	2.3	
HEC2	589553.00	5390644.00	518.2	159.1	3.48	43.1				
HEC3	588163.00	5390564.00	455.4	69.8	2.44	39.1				
HEC7	588713.00	5390874.00	401.4	21.9	1.79					
INV1	579492.00	5374883.00	477.0	0.5	3.38					
MS02	577888.00	5376740.00	720.0	210.5	1.12	28.6				
PE59B	587607.00	5382242.00	811.0	474.0	2.35	41.6				
SP16	587263.00	5374734.00	290.0	28.8	0.89		1.56	31.7	2.7	0.39
SPR1	587013.00	5378584.00	430.0	155.8	0.89	19.9				
SPR2	591113.00	5382340.00	530.0	257.5	1.07	53.7				
SPR3	589750.00	5375000.00	470.0	191.9	1.52	29.1				
SPR9	586513.00	5370184.00	340.0	137.0	1.31	20.4	1.61	27.0	2.6	
VR01	589431.77	5388423.42	828.1	490.4	1.70	45.9	1.71	42.0	6.8	0.23
VR02	588328.64	5390042.42	581.4	209.5	1.63	40.4	1.61	32.5	3.4	0.35
VR03	588745.38	5390342.18	556.5	190.8	1.69	28.2	1.55	28.7	4.6	0.36
VR04B	587819.06	5390337.41	455.0	67.6	1.14	39.9	1.63	33.1	4.1	0.31
VR05	587808.03	5390437.21	436.2	47.7	1.42		1.60	30.6	5.0	0.38
VR06	589143.52	5390231.88	573.4	222.4	3.33	38.5	1.78	42.2	3.6	0.32

VR07	588443.79	5389239.06	661.3	302.6	1.99	40.1	1.60	33.0	3.1	0.30
VR08	588179.34	5389580.50	623.6	250.0	1.95	39.8				
VR09	588834.91	5388379.80	786.9	431.2	1.83	49.1	1.67	38.9	3.8	0.32
VR10A	588188.00	5390237.00	543.3	159.9	1.37	39.8	1.48	26.6	4.8	0.39
VR11	589996.57	5386385.77	758.5	411.3	1.73	57.5	1.51	34.7	4.9	0.30
VR12A	590233.00	5389104.00	832.9	495.0	2.07	42.6	1.57	32.3	4.9	0.30
VR13	590007.28	5383106.24	740.7	449.7	1.59	54.7	1.60	36.0	6.0	0.32
VR15	594670.00	5386016.00	680.0	409.3	1.19	33.8	1.49	27.9	5.3	0.40

Coal Resources

JORC 2012 classifications of Measured, Indicated and Inferred were assigned to areas of the F Seam Vulcan Model. The basis was-

- Spacing of points of information (POIs)
- Type and reliability of POIs
- Geological impediments to access and mine development
- Statistical variability of geological and coal quality variables

As demonstrated in seam profiles shown in Figures 170911_G10 and G11 the G Seam plies have been reliably mapped and show strong continuity. The G Seam working section continuity within the resource zones is of high confidence level.

The distribution of G Seam resources across HRCM's tenures is shown in Figure 170911_G09.

On a tenure basis resources in G Seam are shown on Table 10 below.

Table12: G Seam Resources

TENURE	EL16/2010						
ZONE	GF01-11	GF01-12	GF01-21	GF01-31	GF01-32	GF01-33	GF01-34
Class	**Measured**		**Indicated**	**Inferred**			
Area km2	0.85	0.30	5.89	1.97	12.89	4.26	1.88
Ave. Thick	2.91	2.08	2.00	2.39	1.98	1.99	2.47
Min.Thick	1.87	1.86	1.80	1.80	1.80	1.80	1.96
Max.Thick	3.47	2.42	2.25	3.04	2.34	2.66	3.10
M m3	2.48	0.63	11.79	4.69	25.46	8.47	4.65
M tonnes	4.22	1.04	19.95	8.12	41.91	13.30	7.35
Ave RD	1.70	1.65	1.69	1.73	1.65	1.57	1.58
Ave.Cover	111	484	434	115	372	415	146
Min.Cover	7	444	267	18	223	316	5
Max.Cover	230	506	544	215	488	476	340
Ave.Ash%	39.9	35.8	39.0	41.7	35.7	30.2	31.3
Min.Ash%	29.3	32.2	34.4	40.9	30.4	26.6	25.2
Max.Ash%	42.5	44.3	44.5	42.7	43.9	47.6	45.4
Ave.Sul%	0.32	0.30	0.32	0.31	0.33	0.33	0.36
Min.Sul%	0.31	0.27	0.27	0.30	0.30	0.30	0.36
Max.Sul%	0.37	0.31	0.35	0.32	0.36	0.38	0.37
Ave.Moist%	3.8	4.6	3.0	3.8	3.5	4.6	4.5
Min.Moist%	3.6	3.9	1.8	3.7	1.7	3.9	3.3
Max.Moist%	4.8	5.3	4.7	4.2	5.3	5.2	6.9
Ave.Yld%	64.7	72.8	66.6	61.3	73.0	83.6	81.5
Min.Yld%	59.8	56.2	55.9	59.5	57.0	49.9	54.2
Max.Yld%	85.4	79.9	75.5	62.8	83.3	90.8	93.5

TENURE	ML4M/2012					EL16/2016	Total G Seam
ZONE	GM01-11	GM01-21	GM01-22	GM01-23	GM01-24	GP01-31	
Class	**Measured**	**Indicated**				**Inferred**	
Area km2	3.32	0.84	0.02	0.02	0.07	33.27	75.79
Ave. Thick	2.07	2.65	1.82	1.92	1.82	2.20	**2.16**
Min.Thick	1.80	2.21	1.80	1.81	1.80	1.80	**1.80**
Max.Thick	3.40	3.21	1.86	1.98	1.92	2.87	**3.47**
M m3	6.87	2.23	0.04	0.03	0.13	73.01	140.48
M tonnes	11.11	3.71	0.07	0.05	0.21	121.32	269.96
Ave RD	1.61	1.66	1.71	1.74	1.59	1.66	**1.65**
Ave.Cover	312	310	517	411	45	394	**361**
Min.Cover	10	232	507	403	16	121	**5**
Max.Cover	514	470	521	422	74	568	**568**
Ave.Ash%	33.8	37.3	40.4	42.6	31.5	36.9	**36.3**
Min.Ash%	19.5	32.1	39.2	38.3	31.2	26.7	**19.5**
Max.Ash%	44.8	44.9	40.9	45.0	31.9	46.7	**47.6**

Ave.Sul%	0.31	0.31	0.27	0.30	0.36	0.30	**0.31**
Min.Sul%	0.24	0.30	0.26	0.30	0.34	0.26	**0.24**
Max.Sul%	0.39	0.32	0.28	0.30	0.37	0.35	**0.39**
Ave.Moist%	4.1	4.1	3.7	3.9	4.7	4.6	**4.1**
Min.Moist%	3.1	3.3	3.3	3.9	4.5	3.0	**1.7**
Max.Moist%	6.3	4.7	4.3	3.9	4.8	6.4	**6.9**
Ave.Yld%	76.8	69.9	63.8	59.5	81.1	70.6	**71.9**
Min.Yld%	55.2	55.2	62.9	54.9	80.4	51.5	**49.9**
Max.Yld%	104.6	80.1	66.1	68.0	81.7	90.4	**104.6**

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9 COMPETENT PERSON'S STATEMENT

All resources comply with the JORC Code 2012 and are based on information compiled by Paul Wootton, employed by Timbert Pty Ltd (ABN 40 073 871 146), trading as R W Associates. Paul Wootton is a Fellow of the Australasian Institute of Mining and Metallurgy.

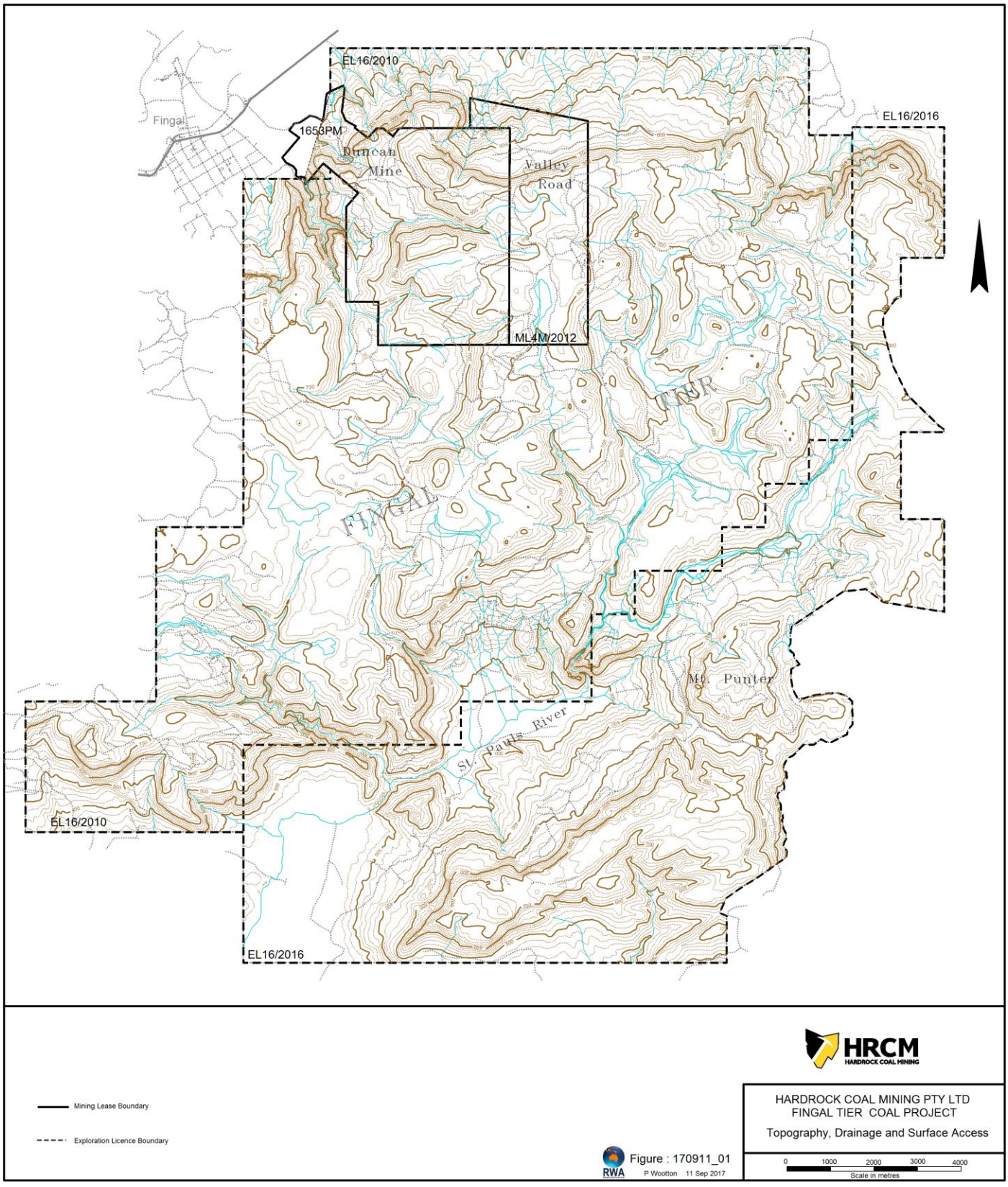
Mr Wootton has sufficient experience which is relevant to the style and mineralisation, and type of deposit under consideration, and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code of Reporting of Mineral Resources and Ore Reserves.

Mr Wootton consents to the inclusion in this Statement of the matters based on his information in the form and context in which it appears.

Paul Wootton, BSc, F AusIMM

1st November 2017

10 FIGURES


EL16/2010
Fingal
1653PM
Duncan
Mine
Valley
Road
EL16/2016
ML4M/2012
TIER
FINGAL
Mt. Punter
St. Pauls River
EL16/2010
EL16/2016
Mining Lease Boundary
Exploration Licence Boundary
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Topography, Drainage and Surface Access
Figure : 170911_01
RWA
P Wootton 11 Sep 2017
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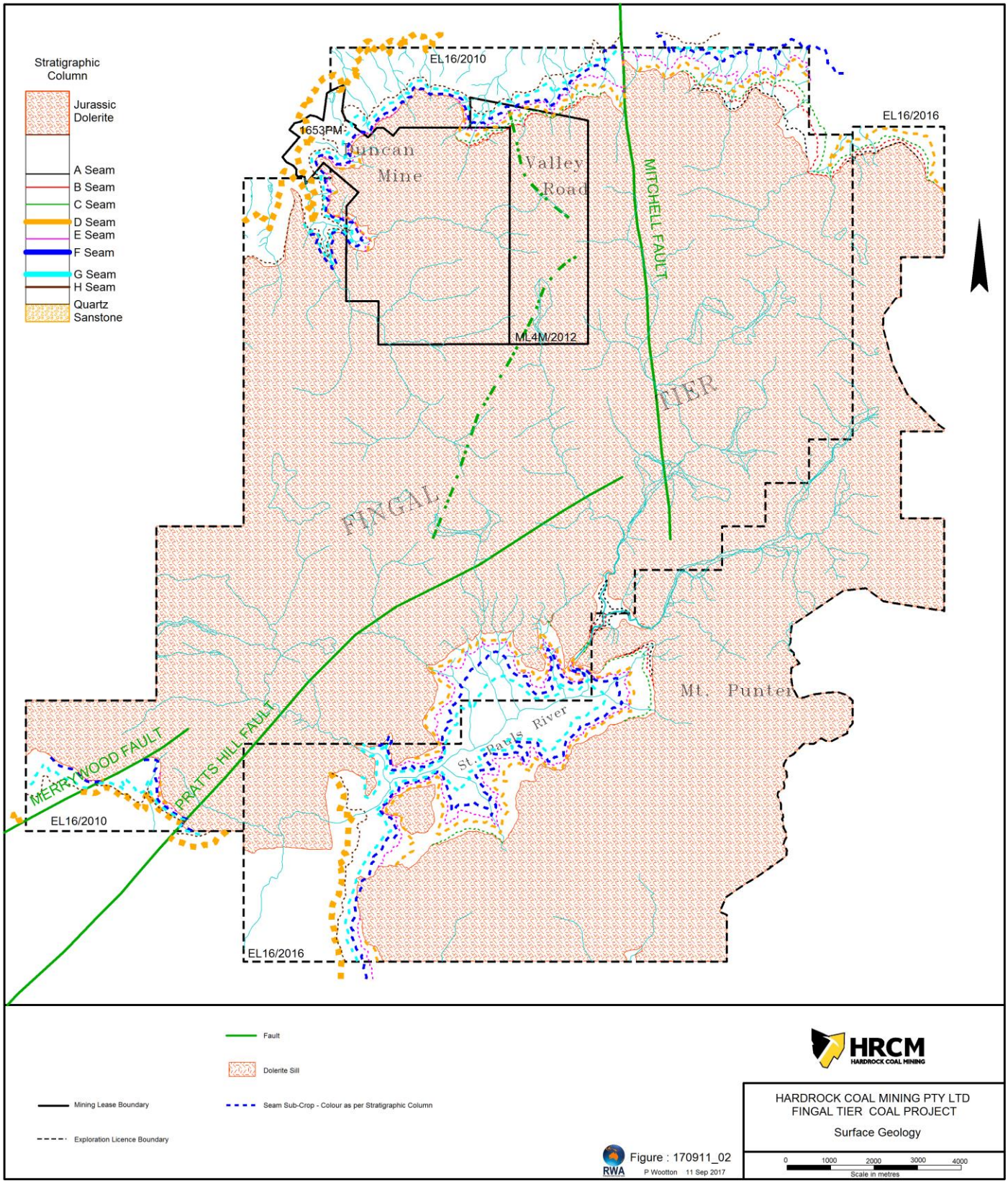
Scale in metres


Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
Duncan Mine
Valley Road
ML4M/2012
MITCHELL FAULT
FINGAL
TIER
Mt. Punter
St. Pauls River
MERRYWOOD FAULT
PRATTS HILL FAULT
EL16/2010
EL16/2016
Fault
Dolerite Sill
Mining Lease Boundary
Seam Sub-Crop - Colour as per Stratigraphic Column
Exploration Licence Boundary
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Surface Geology
Figure : 170911_02
RWA
P Wootton 11 Sep 2017
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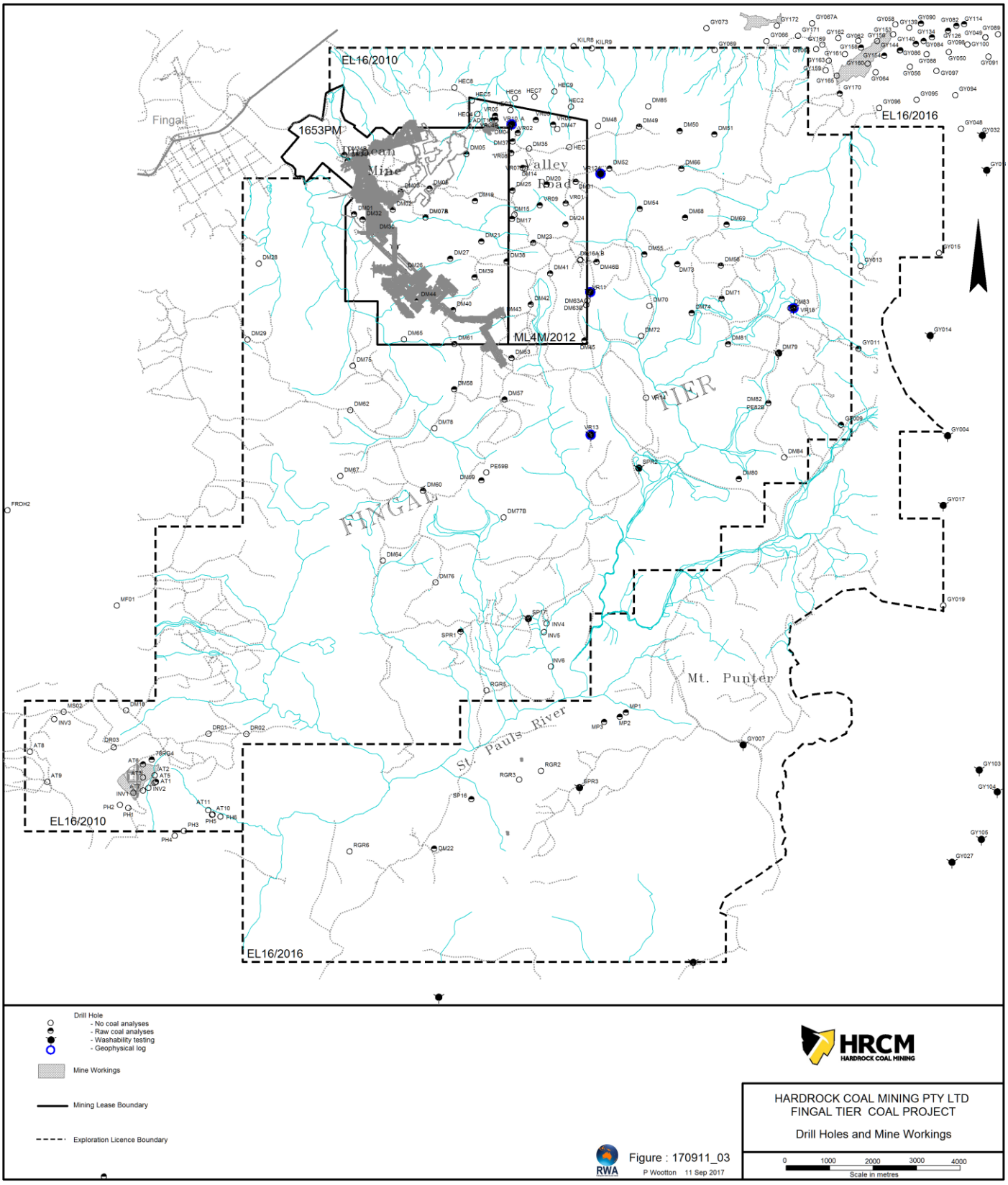
Scale in metres


EL16/2010
1653PM
Fingal
Mine
Valley
Road
ML4M/2012
EL16/2016
FINGAL
TIER
Mt. Punter
St. Pauls River
EL16/2010
EL16/2016
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Drill Holes and Mine Workings
Figure : 170911_03
P Wootton 11 Sep 2017
RWA
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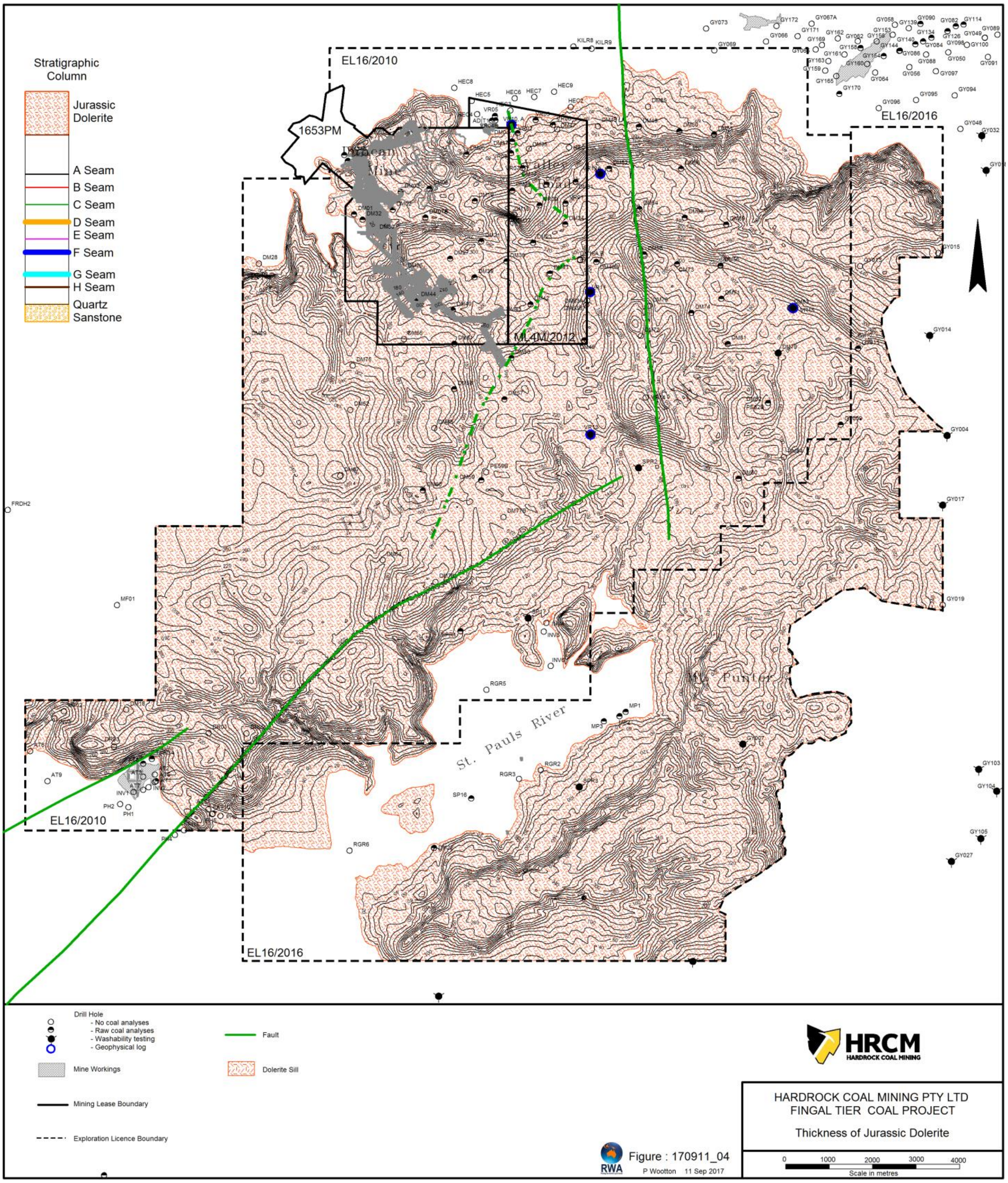
Scale in metres


Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
St. Pauls River
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Fault
Mine Workings
Dolerite Sill
Mining Lease Boundary
Exploration Licence Boundary
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Thickness of Jurassic Dolerite
Figure : 170911_04
P Wootton 11 Sep 2017
RWA
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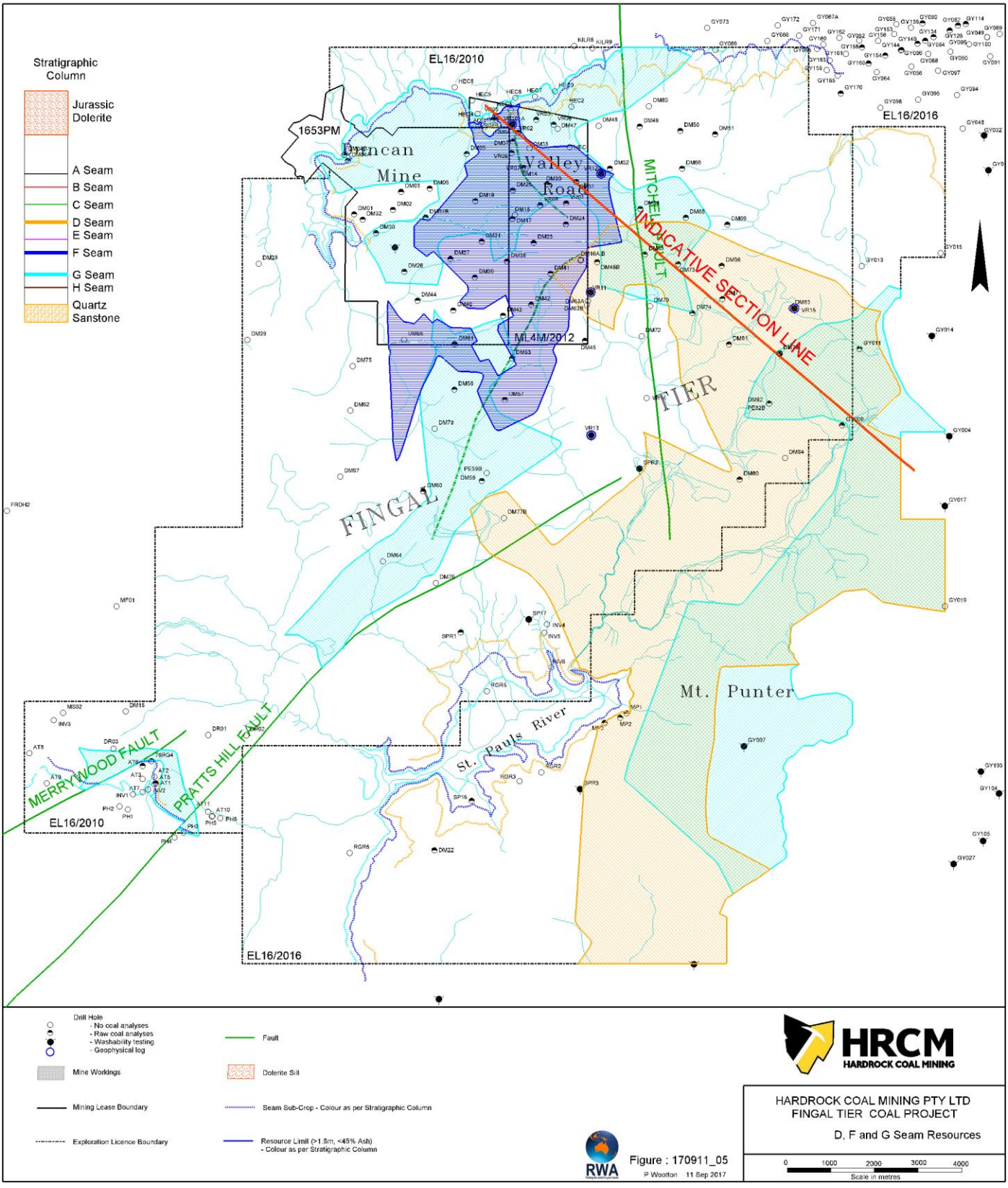
Scale in metres


Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
Duncan Mine
Valley Road
ML4M/2012
MITCHELL FAULT
INDICATIVE SECTION LINE
TIER
FINGAL
Mt. Punter
St. Pauls River
MERRYWOOD FAULT
PRATTS HILL FAULT
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop - Colour as per Stratigraphic Column
Resource Limit (>1.8m, <45% Ash)
- Colour as per Stratigraphic Column
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D, F and G Seam Resources
RWA
Figure : 170911_05
P Wootton 11 Sep 2017
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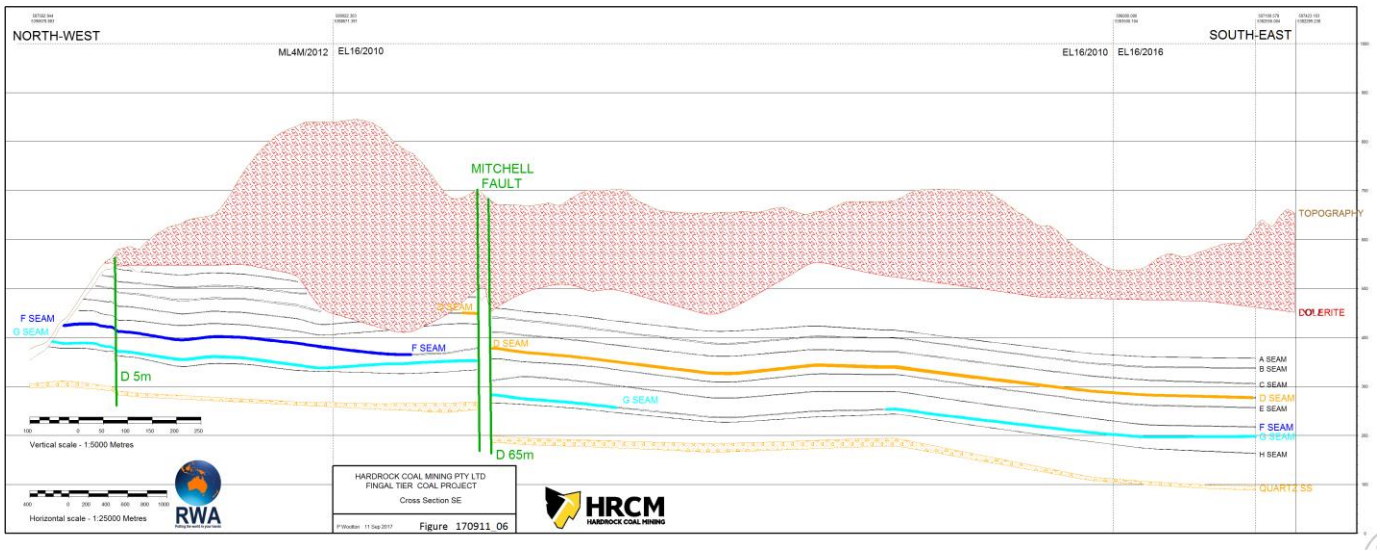
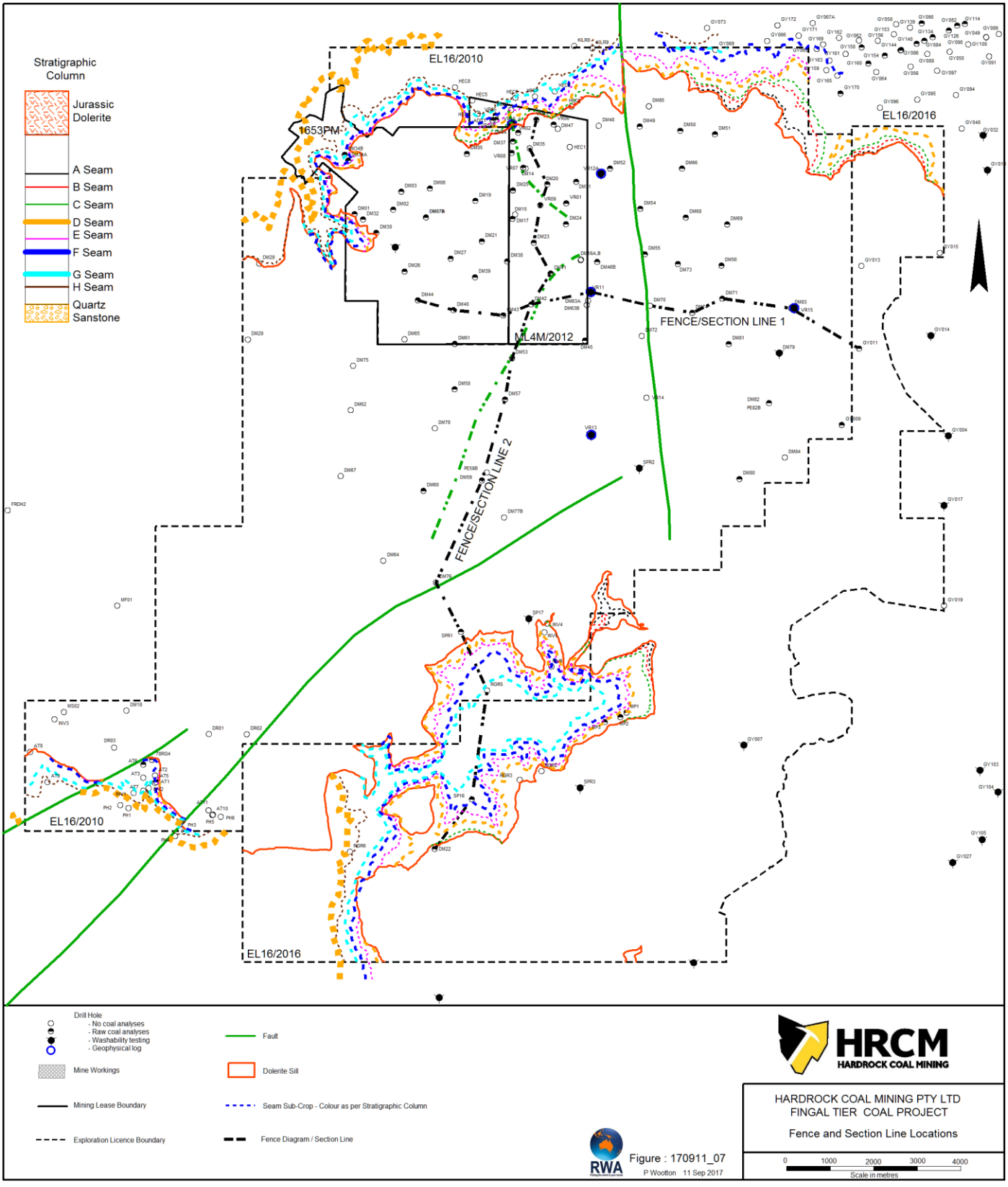
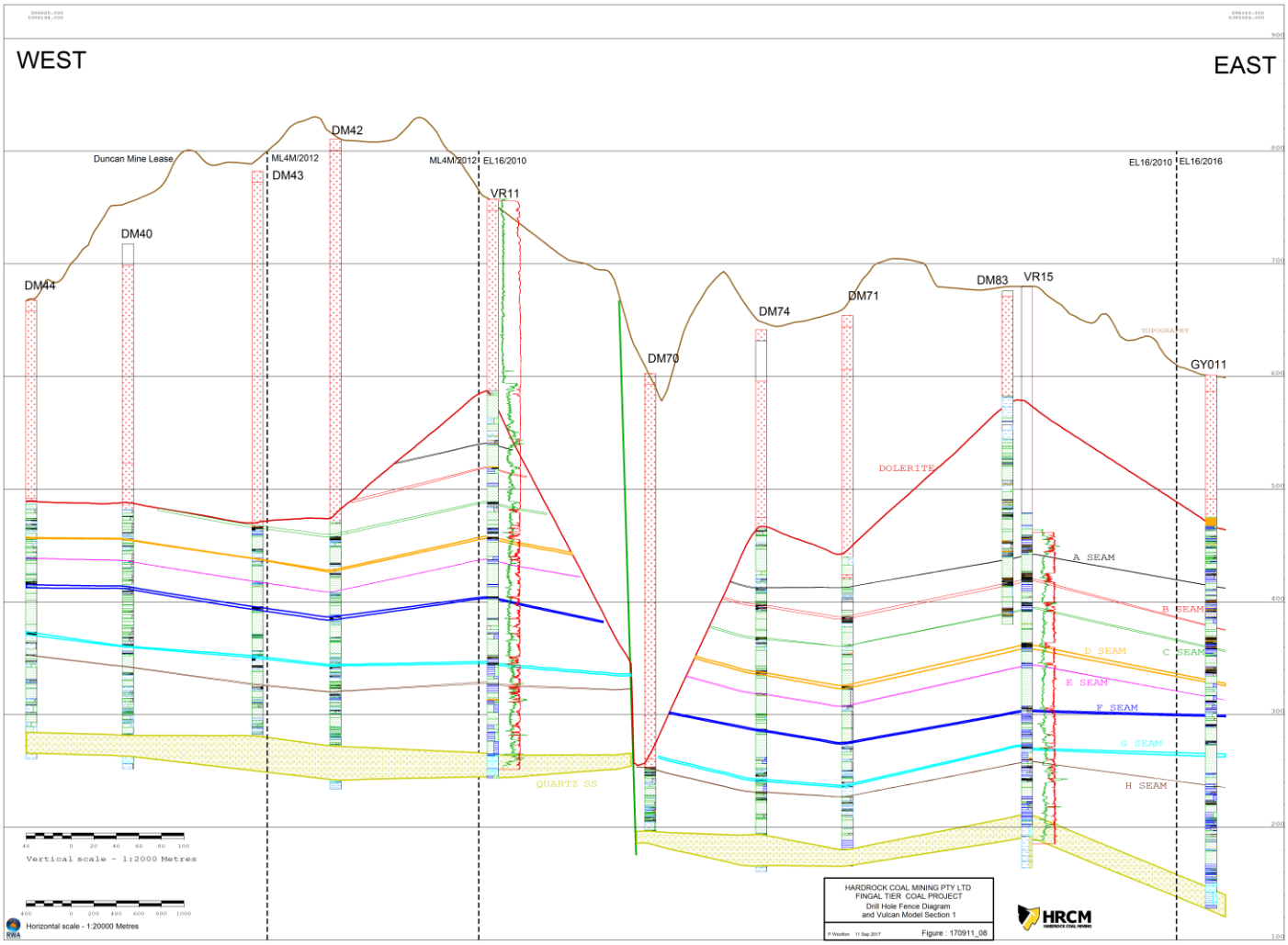
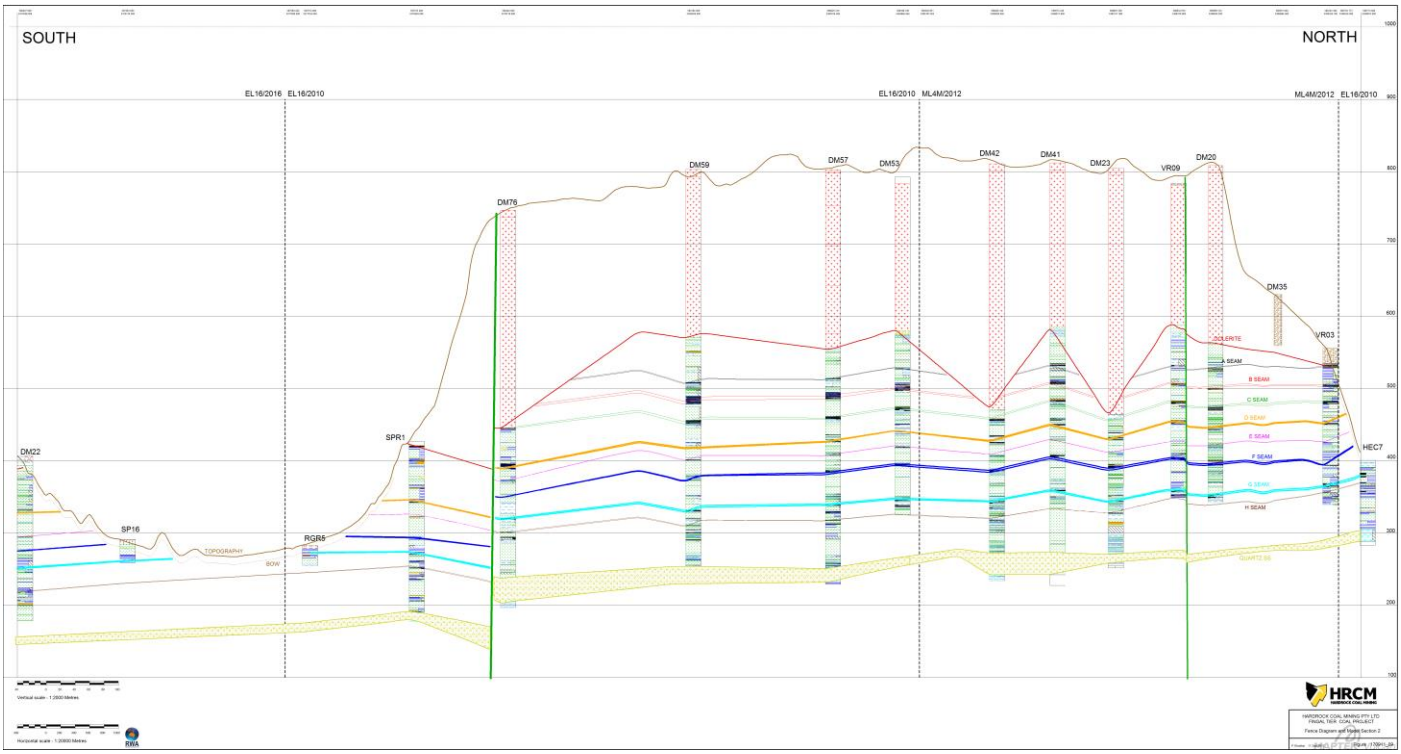
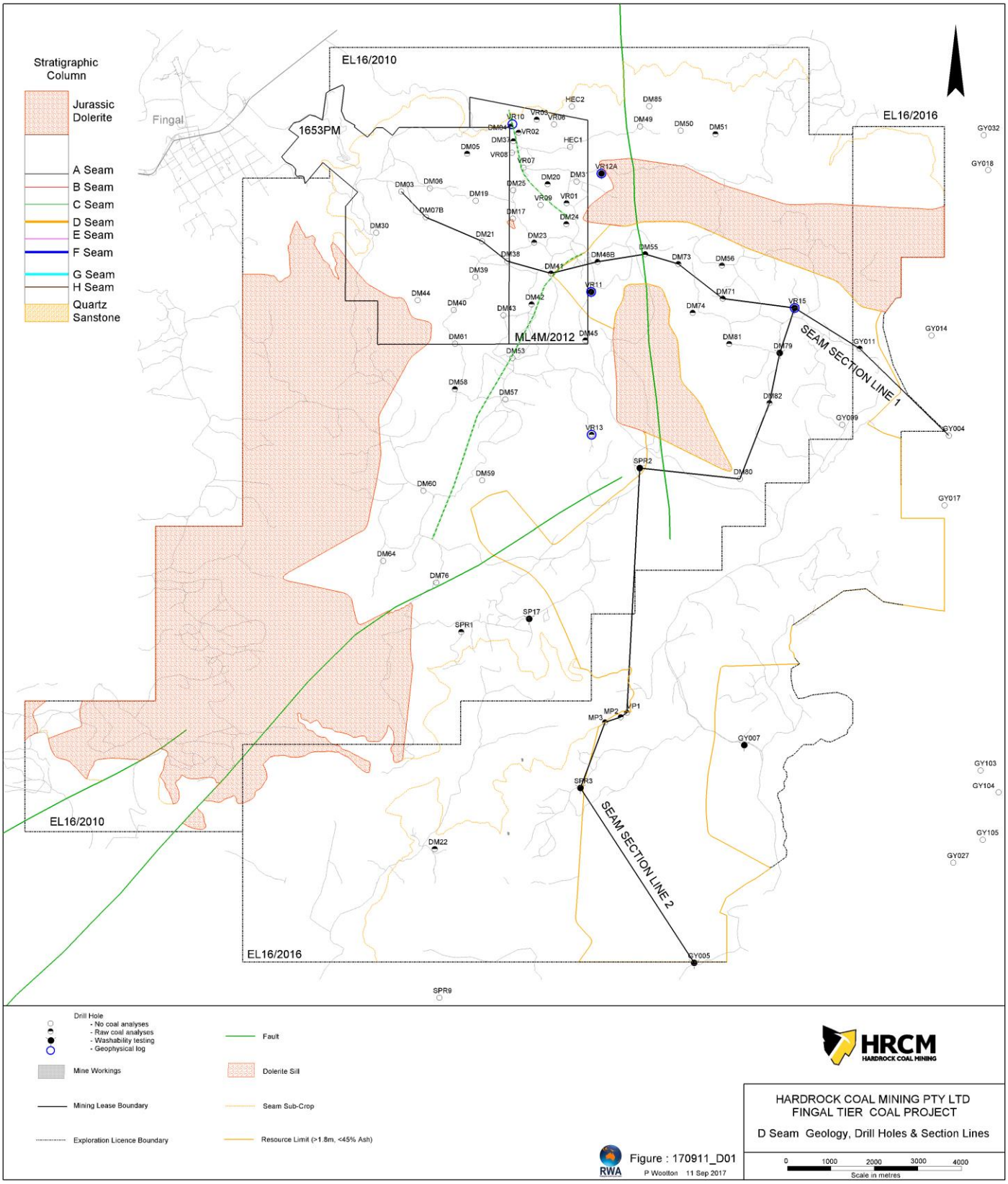
Scale in metres

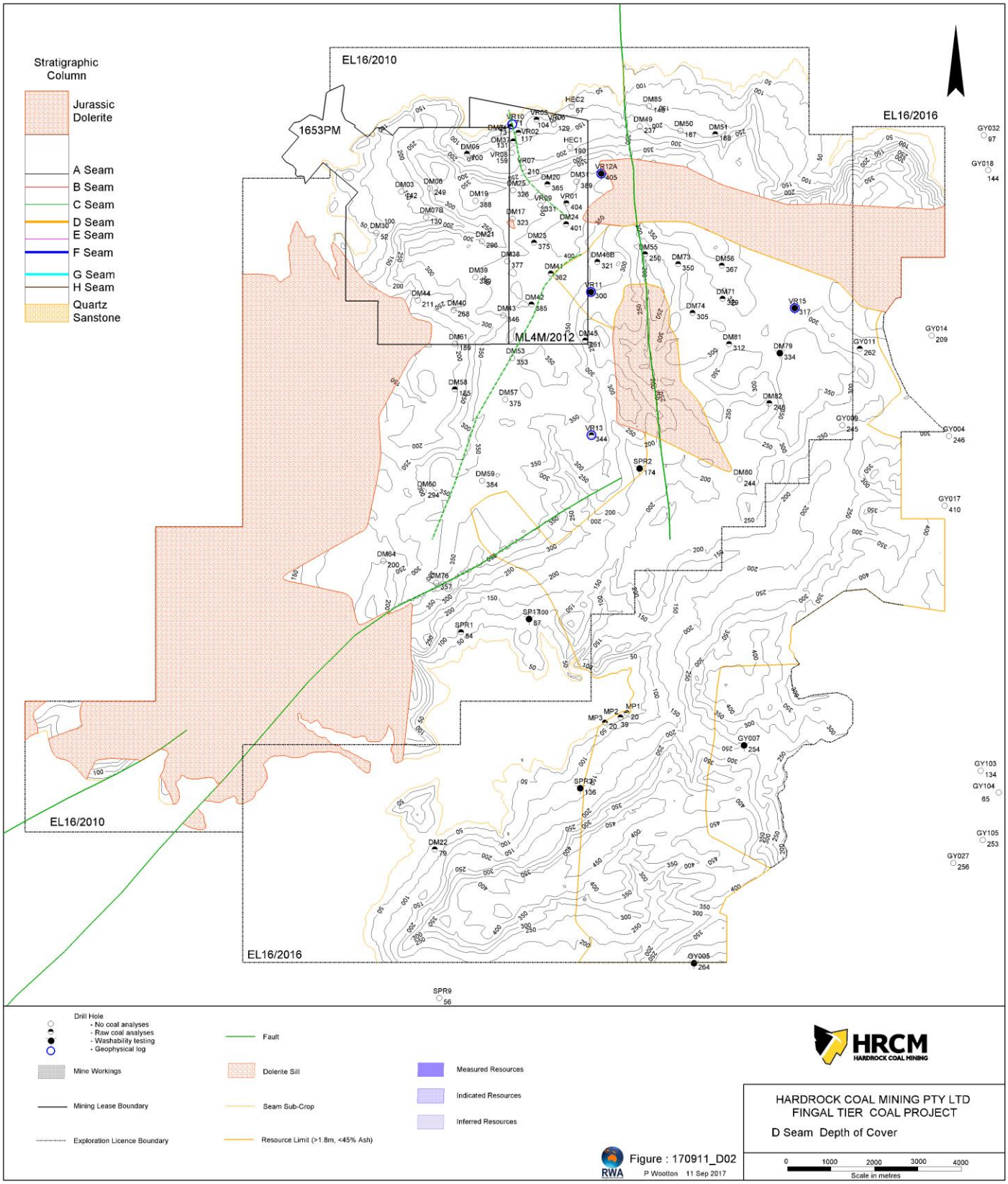

NORTH-WEST
SOUTH-EAST
ML4M/2012
EL16/2010
EL16/2010
EL16/2016
MITCHELL
FAULT
TOPOGRAPHY
DOLERITE
F SEAM
G SEAM
D 5m
F SEAM
D SEAM
G SEAM
D 65m
A SEAM
B SEAM
C SEAM
D SEAM
E SEAM
F SEAM
G SEAM
H SEAM
QUARTZ SS
Vertical scale - 1:5000 Metres
Horizontal scale - 1:25000 Metres
RWA
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Cross Section SE
Figure 170911_06
HRCM
HARDROCK COAL MINING

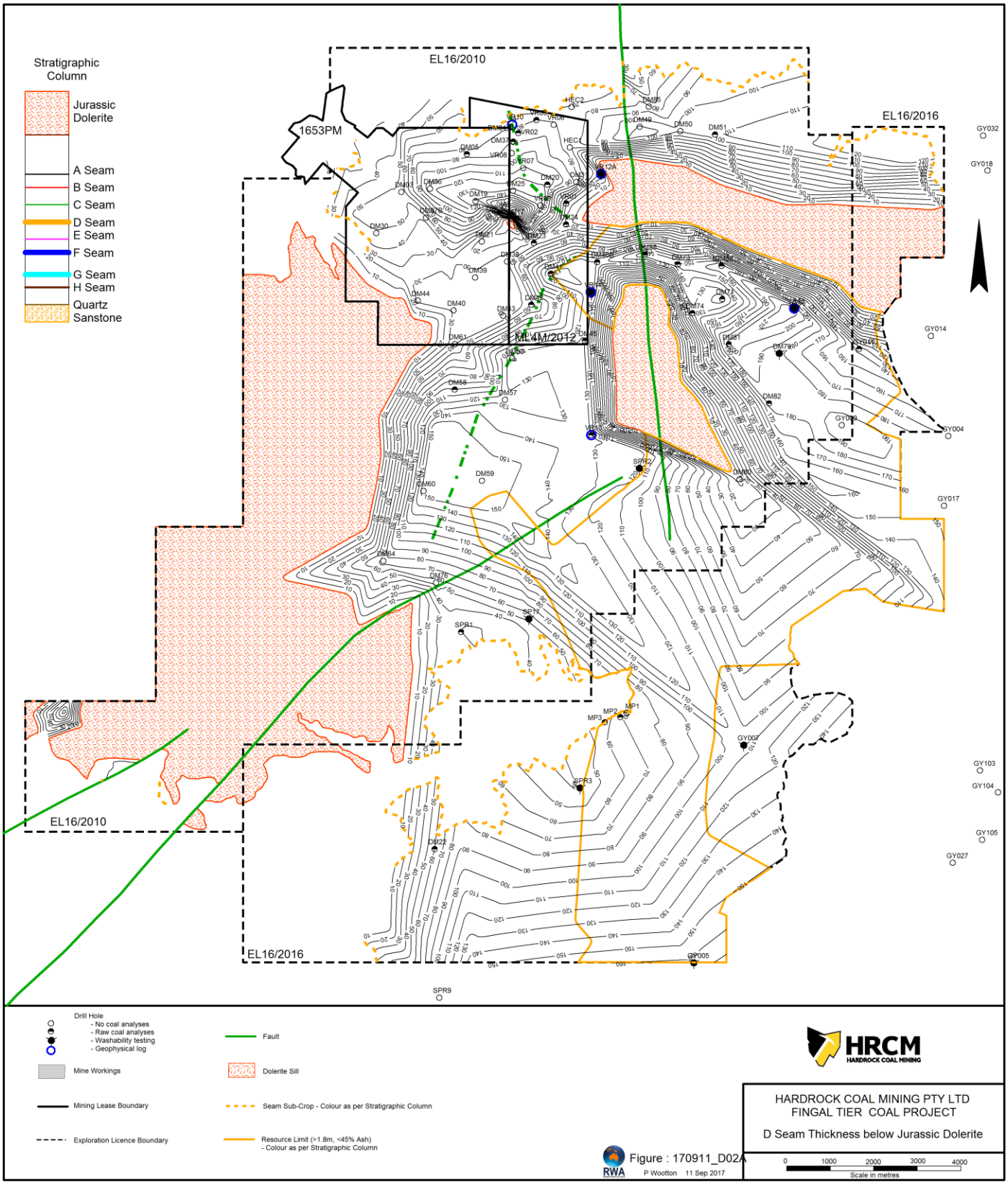

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
FENCE/SECTION LINE 1
FENCE/SECTION LINE 2
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop - Colour as per Stratigraphic Column
Fence Diagram / Section Line
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Fence and Section Line Locations
RWA
Figure : 170911_07
P Woolton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

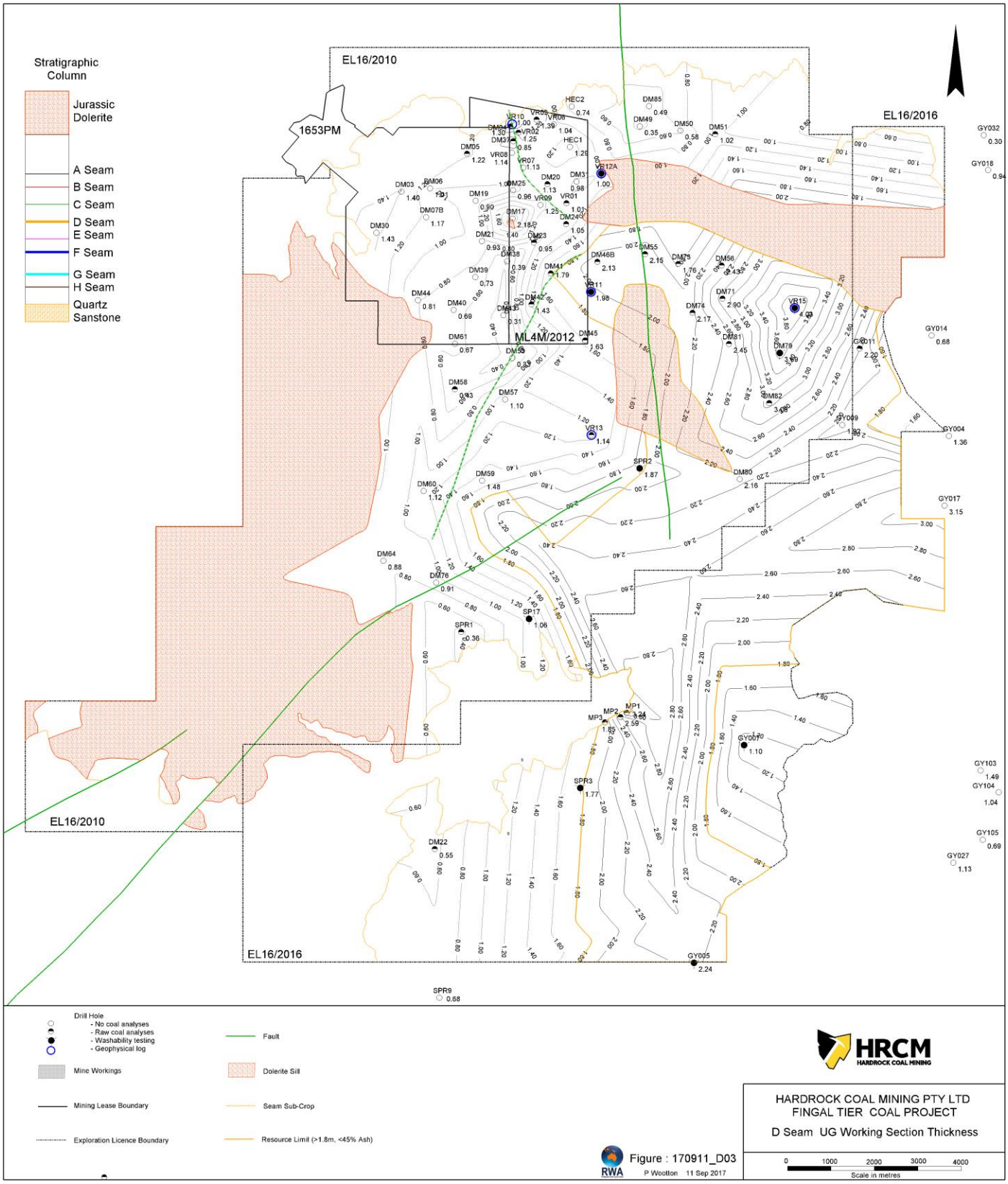

WEST
EAST
Duncan Mine Lease
ML4M/2012
ML4M/2012 EL16/2010
EL16/2010 EL16/2016
DM42
DM43
VR11
DM40
DM44
DM74
DM71
DM83
VR15
DM70
GY011
TOPOGRAPHY
DOLERITE
A SEAM
B SEAM
C SEAM
D SEAM
E SEAM
F SEAM
G SEAM
H SEAM
QUARTZ SS
Vertical scale - 1:2000 Metres
Horizontal scale - 1:20000 Metres
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
Drill Hole Fence Diagram
and Vulcan Model Section 1
Figure : 170911_08
HRCM

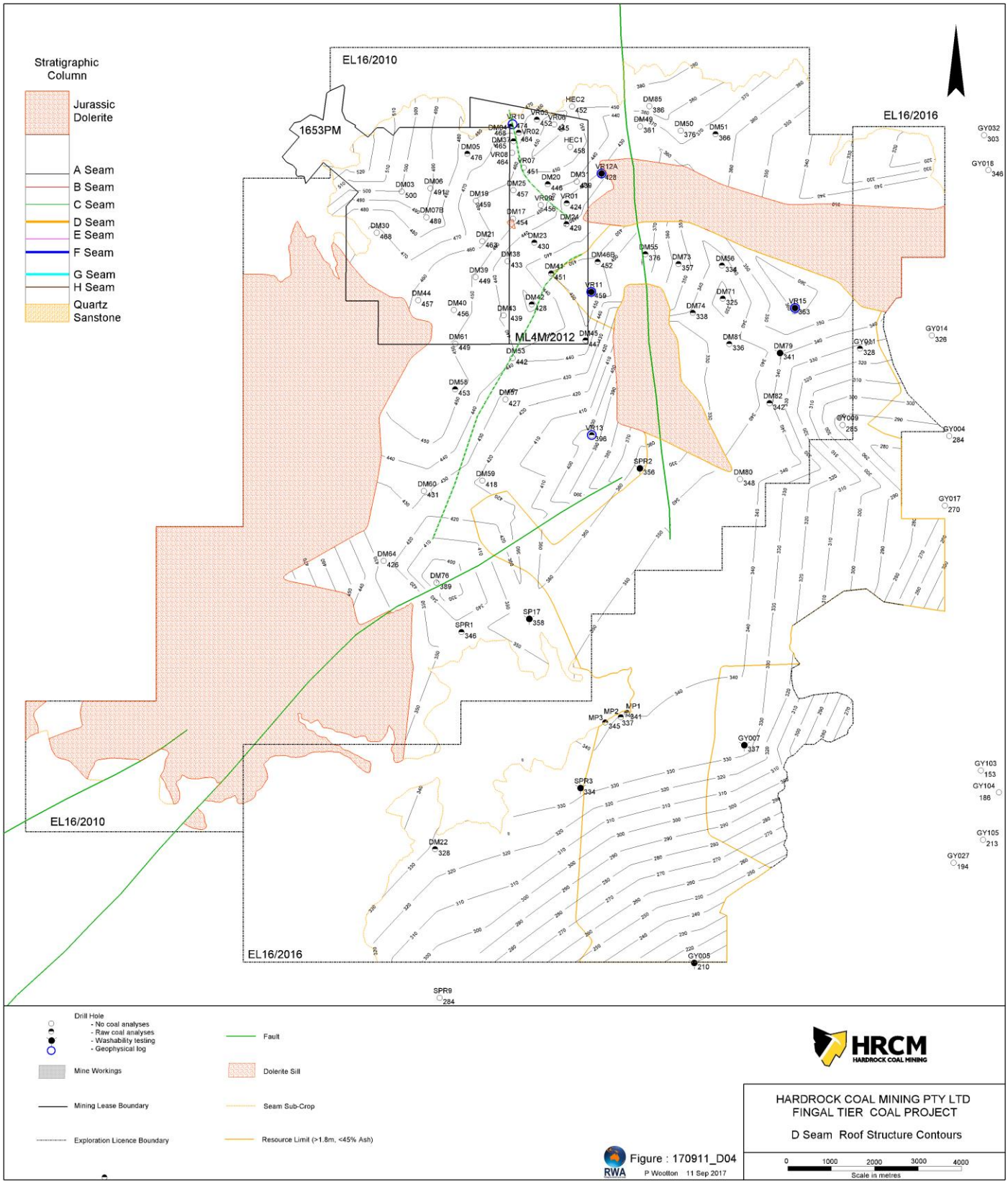

SOUTH
NORTH
EL16/2016 EL16/2010
EL16/2010 ML4M/2012
ML4M/2012 EL16/2010
DM59
DM57
DM53
DM42
DM41
DM23
VR09
DM20
DM76
DM35
VR03
HEC7
SPR1
DM22
SP16
RGR5
TOPOGRAPHY
BOW
DOLERITE
A SEAM
B SEAM
C SEAM
D SEAM
E SEAM
F SEAM
G SEAM
H SEAM
QUARTZ SS
HRCM

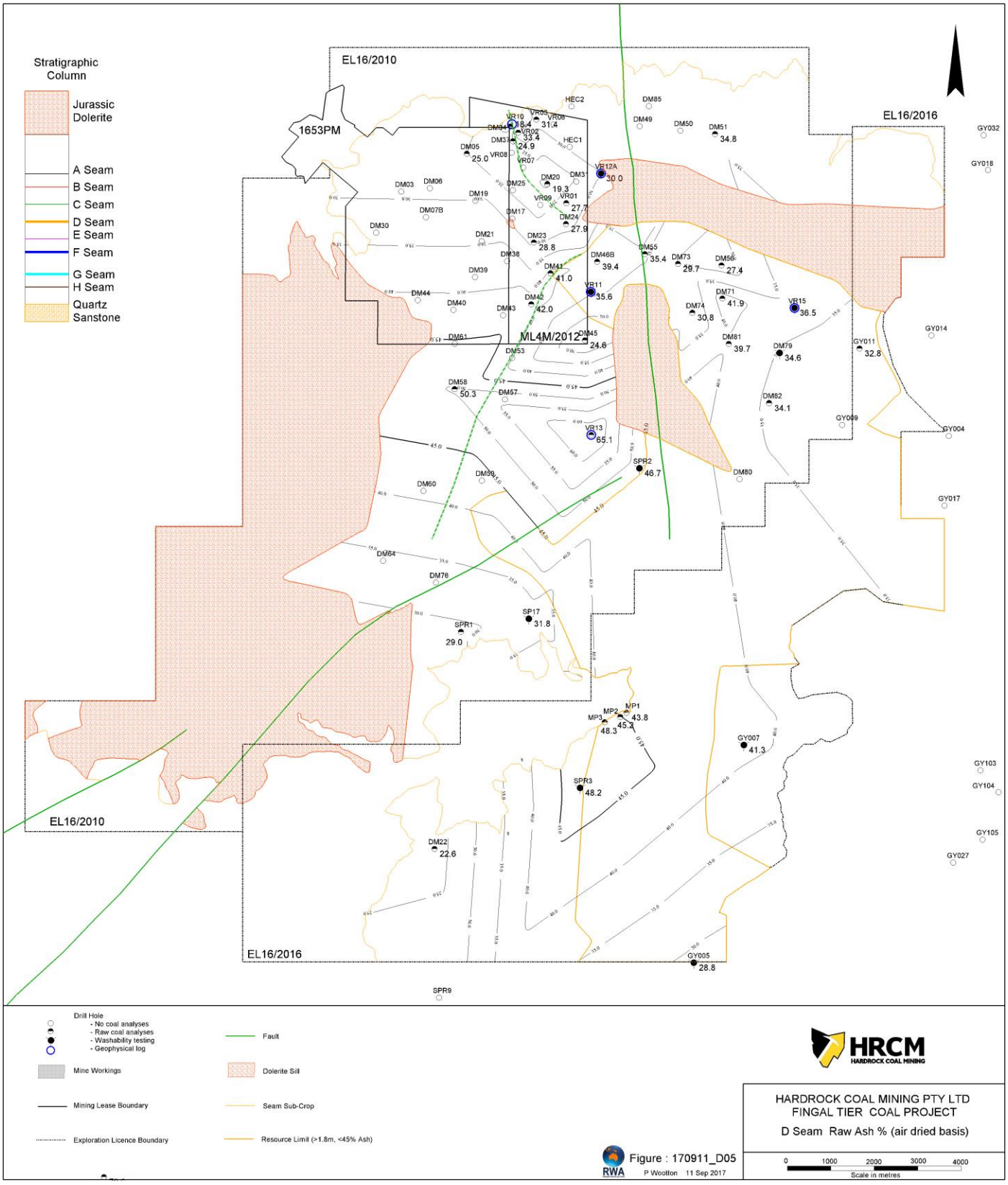

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
Fingal
EL16/2010
1653PM
EL16/2016
ML4M/2012
SEAM SECTION LINE 1
SEAM SECTION LINE 2
EL16/2010
EL16/2016
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Geology, Drill Holes & Section Lines
RWA
Figure : 170911_D01
P Woolton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

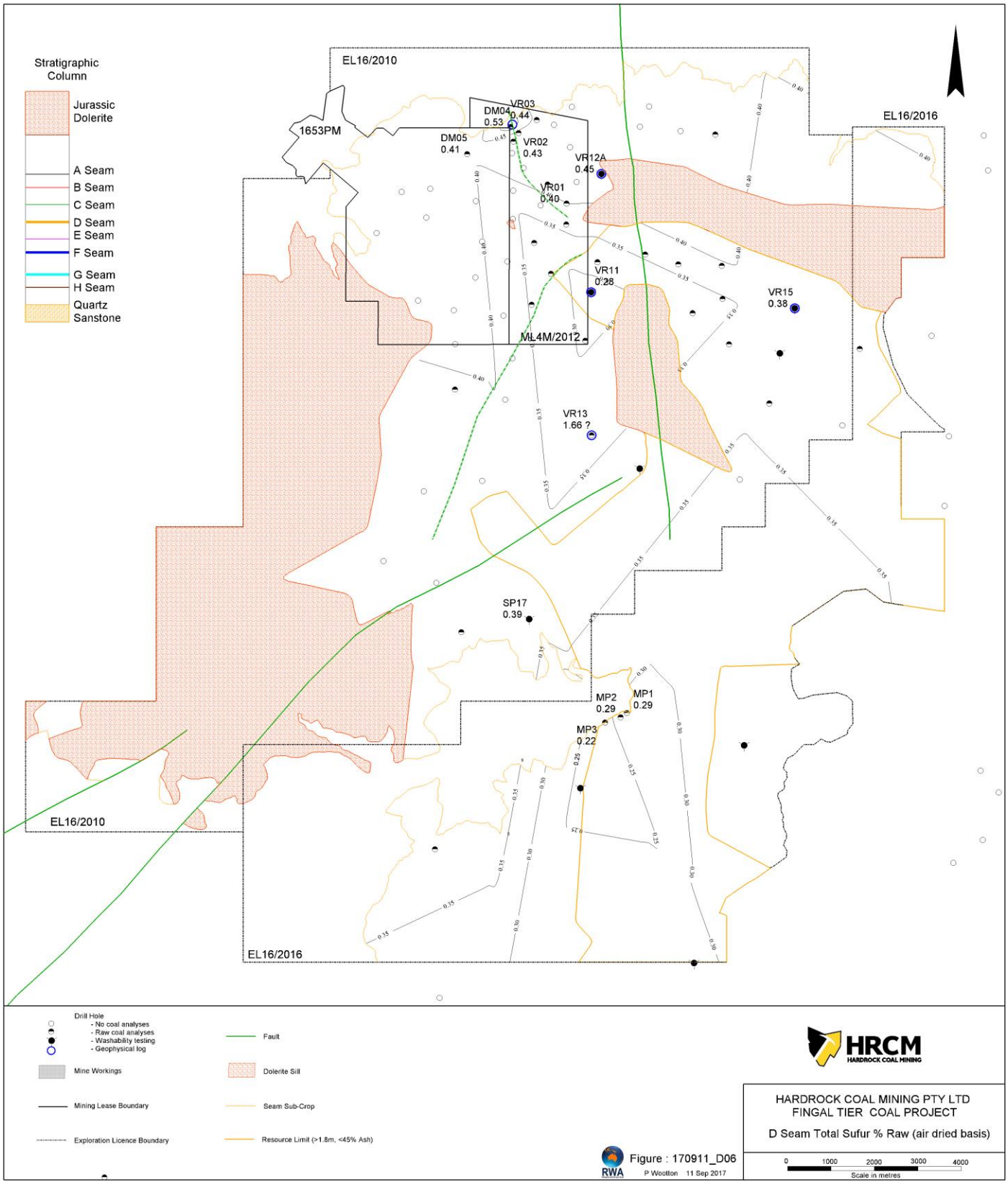

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Measured Resources
Indicated Resources
Inferred Resources
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Depth of Cover
Figure : 170911_D02
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

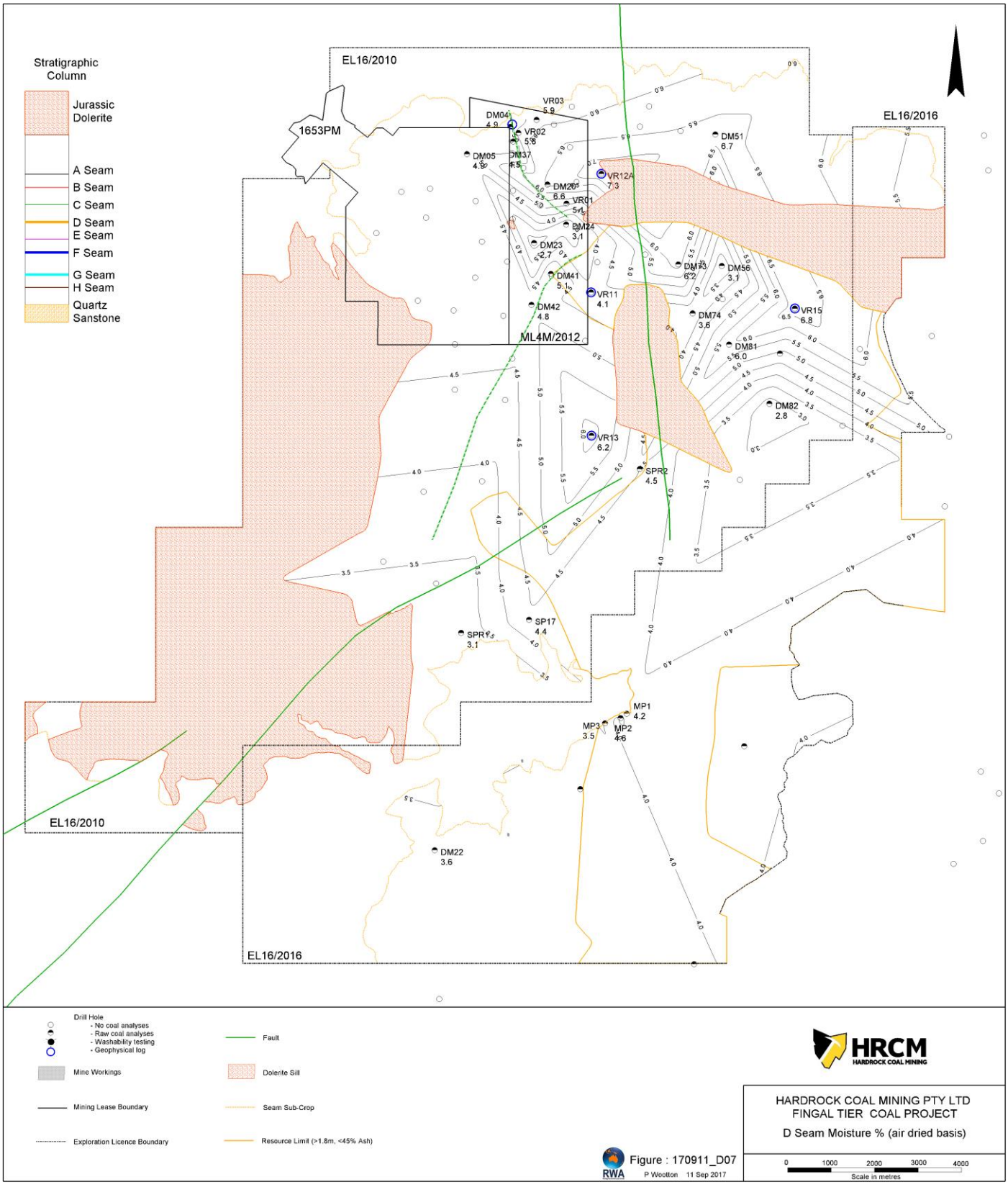

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
EL16/2010
EL16/2016
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop - Colour as per Stratigraphic Column
Resource Limit (>1.8m, <45% Ash)
- Colour as per Stratigraphic Column
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Thickness below Jurassic Dolerite
Figure : 170911_D02A
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

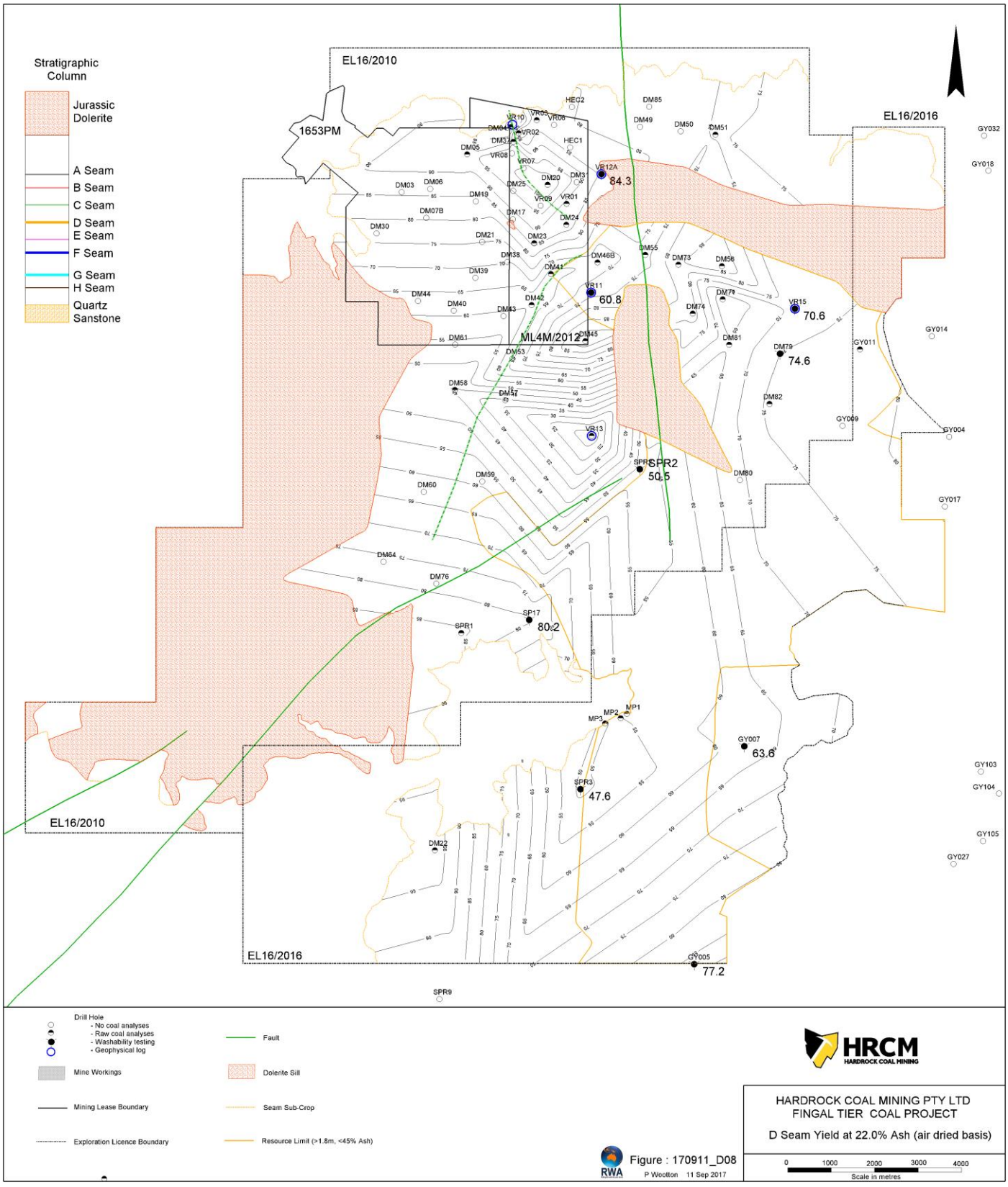

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam UG Working Section Thickness
Figure : 170911_D03
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

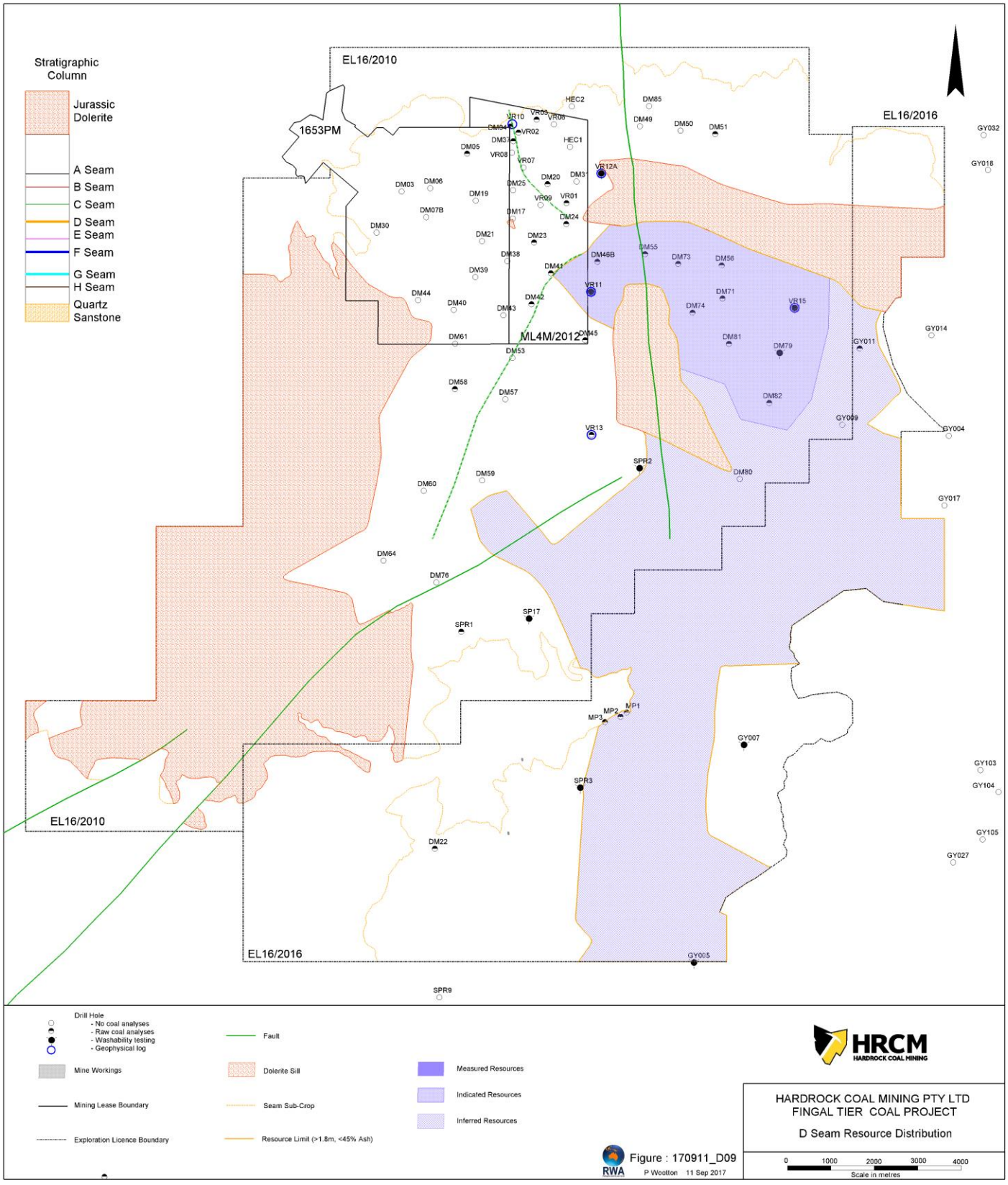

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Roof Structure Contours
Figure : 170911_D04
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

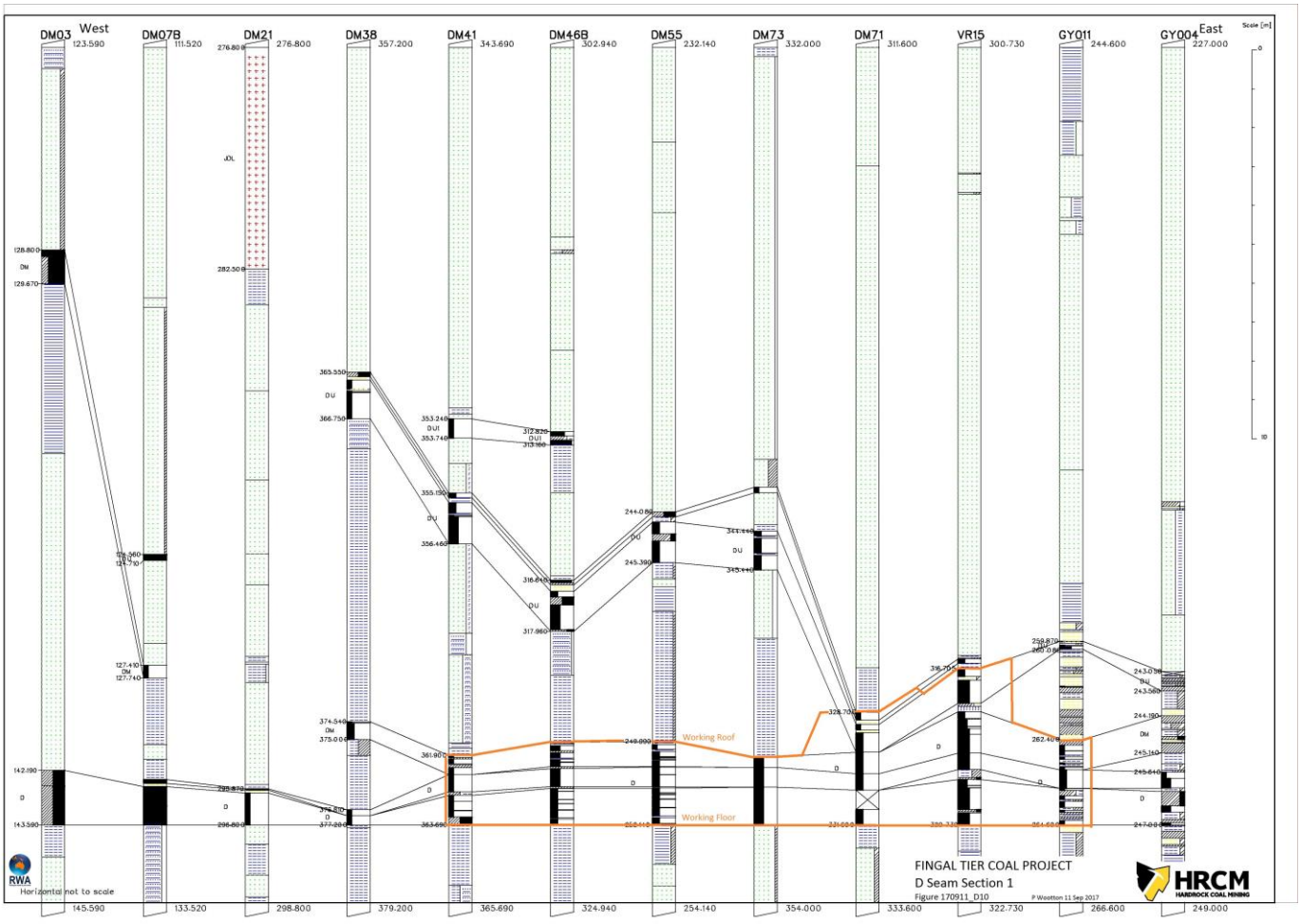

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
HEC1
HEC2
VR01
VR02
VR03
VR04
VR05
VR06
VR07
VR08
VR09
VR10
VR11
VR12A
VR13
VR15
DM03
DM05
DM06
DM07B
DM17
DM19
DM20
DM21
DM22
DM23
DM24
DM25
DM30
DM31
DM34
DM37
DM38
DM39
DM40
DM41
DM42
DM43
DM44
DM45
DM46B
DM49
DM50
DM51
DM53
DM55
DM56
DM57
DM58
DM60
DM61
DM64
DM71
DM73
DM74
DM76
DM79
DM80
DM81
DM82
DM85
SP17
SPR1
SPR2
SPR3
SPR9
MP1
MP2
MP3
GY004
GY005
GY007
GY011
GY014
GY017
GY018
GY027
GY032
GY069
GY103
GY104
GY105
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Raw Ash % (air dried basis)
Figure : 170911_D05
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

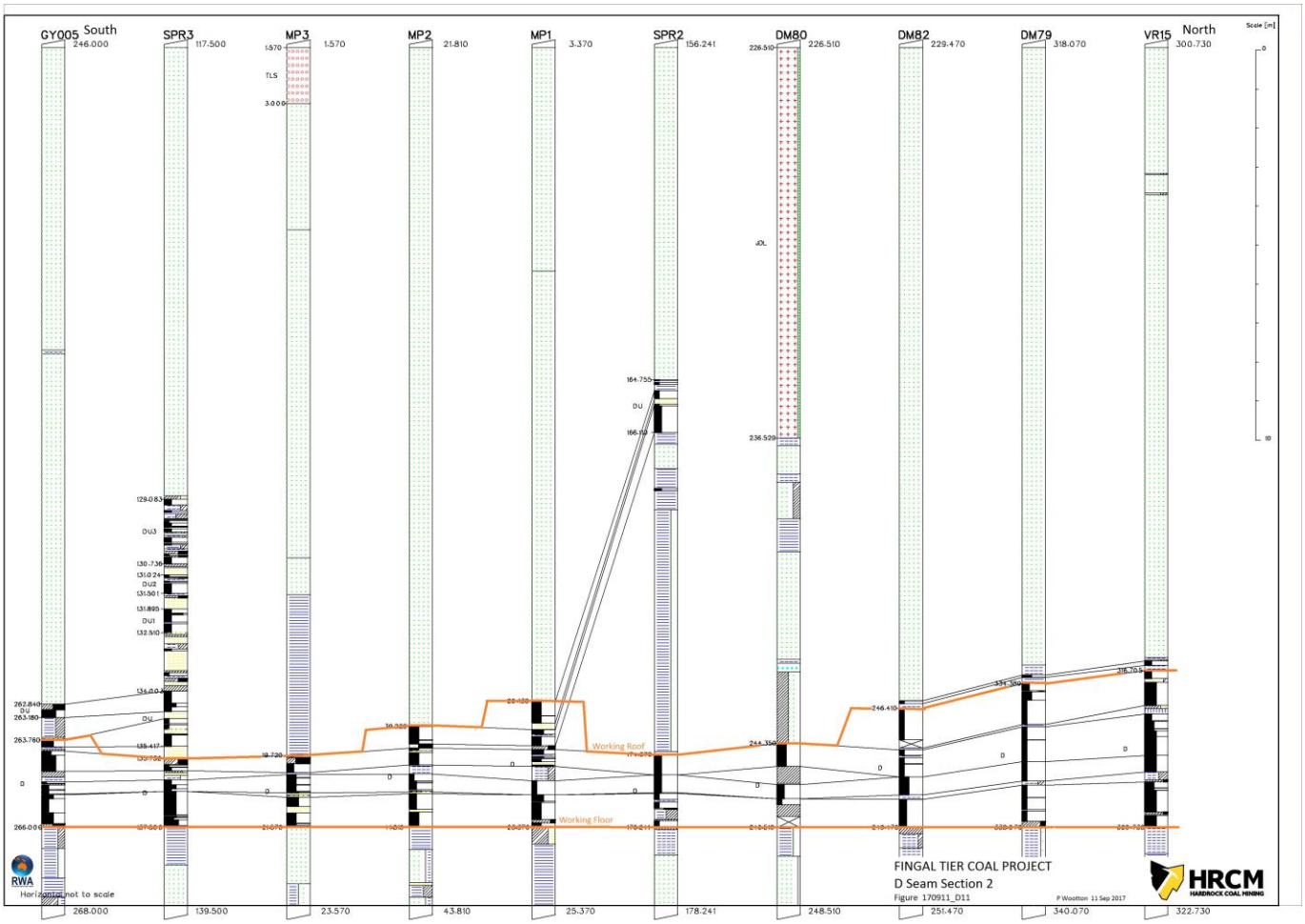

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
DM04 0.53
VR03 0.44
DM05 0.41
VR02 0.43
VR12A 0.45
VR01 0.40
VR11 0.28
VR15 0.38
VR13 1.66 ?
SP17 0.39
MP2 0.29
MP1 0.29
MP3 0.22
EL16/2010
EL16/2016
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Total Sufur % Raw (air dried basis)
RWA
Figure : 170911_D06
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

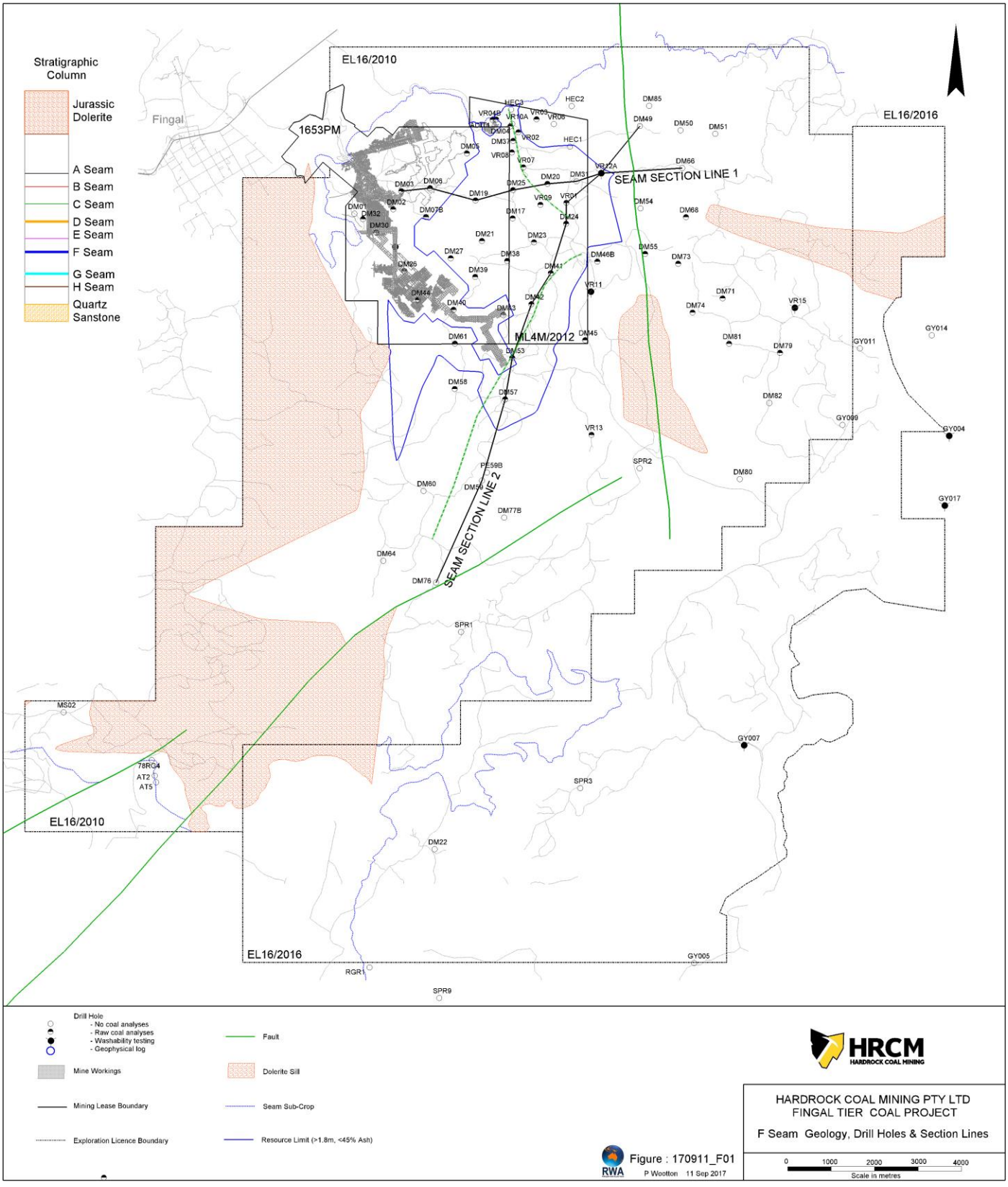

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
VR03 5.9
DM04 4.9
VR02 5.8
DM05 4.9
DM37 6.5
VR12A 7.3
DM20 6.6
VR01 5.1
DM24 3.1
DM23 2.7
DM41 5.1
VR11 4.1
DM42 4.8
DM51 6.7
DM73 6.2
DM56 3.1
DM74 3.6
VR15 6.8
DM81 6.0
DM82 2.8
VR13 6.2
SPR2 4.5
SP17 4.4
SPR1 3.1
MP1 4.2
MP3 3.5
MP2 4.6
DM22 3.6
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Moisture % (air dried basis)
Figure : 170911_D07
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

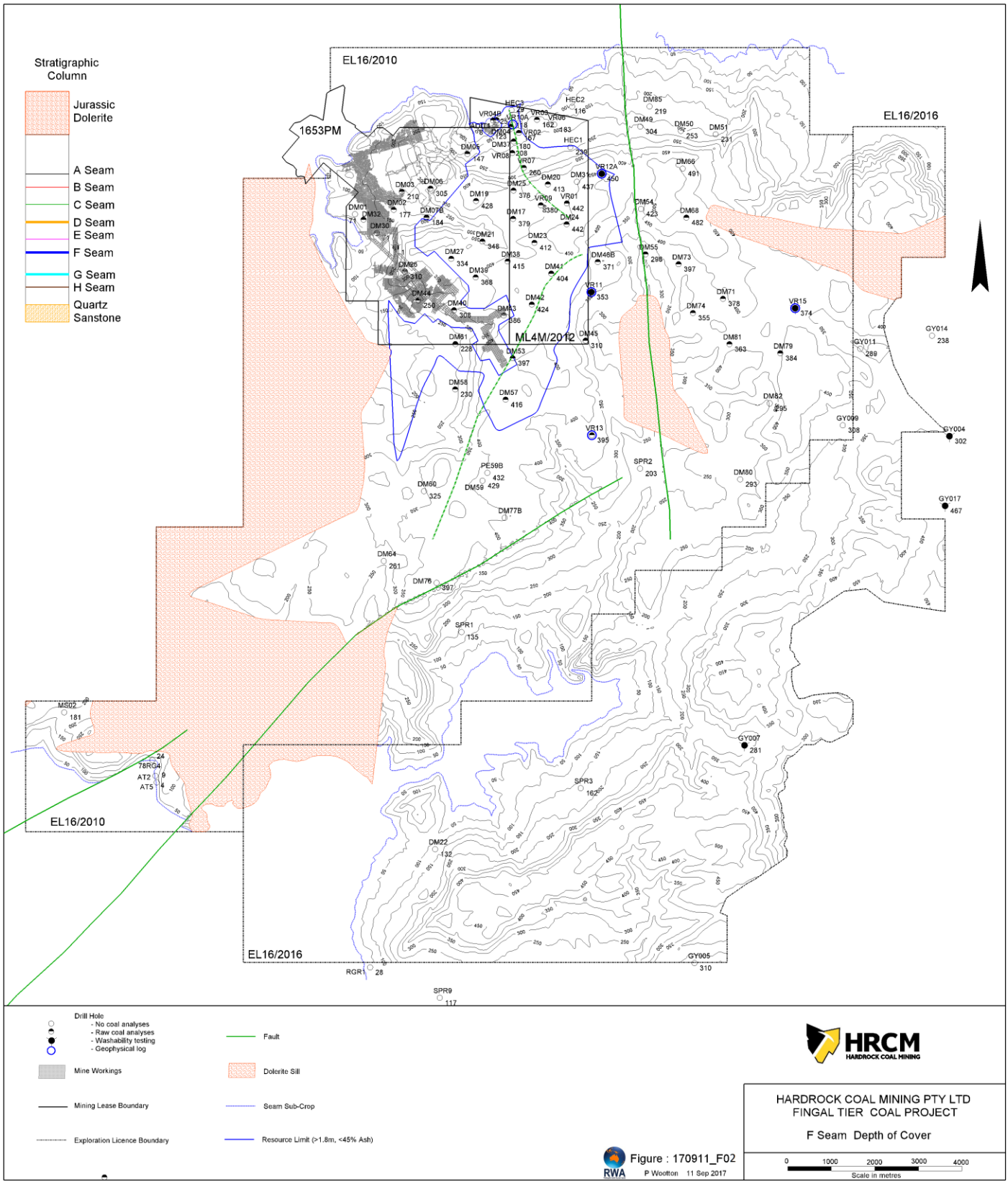

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
1653PM
EL16/2016
ML4M/2012
84.3
60.8
70.6
74.6
50.5
80.2
63.6
47.6
77.2
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Yield at 22.0% Ash (air dried basis)
RWA
Figure : 170911_D08
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

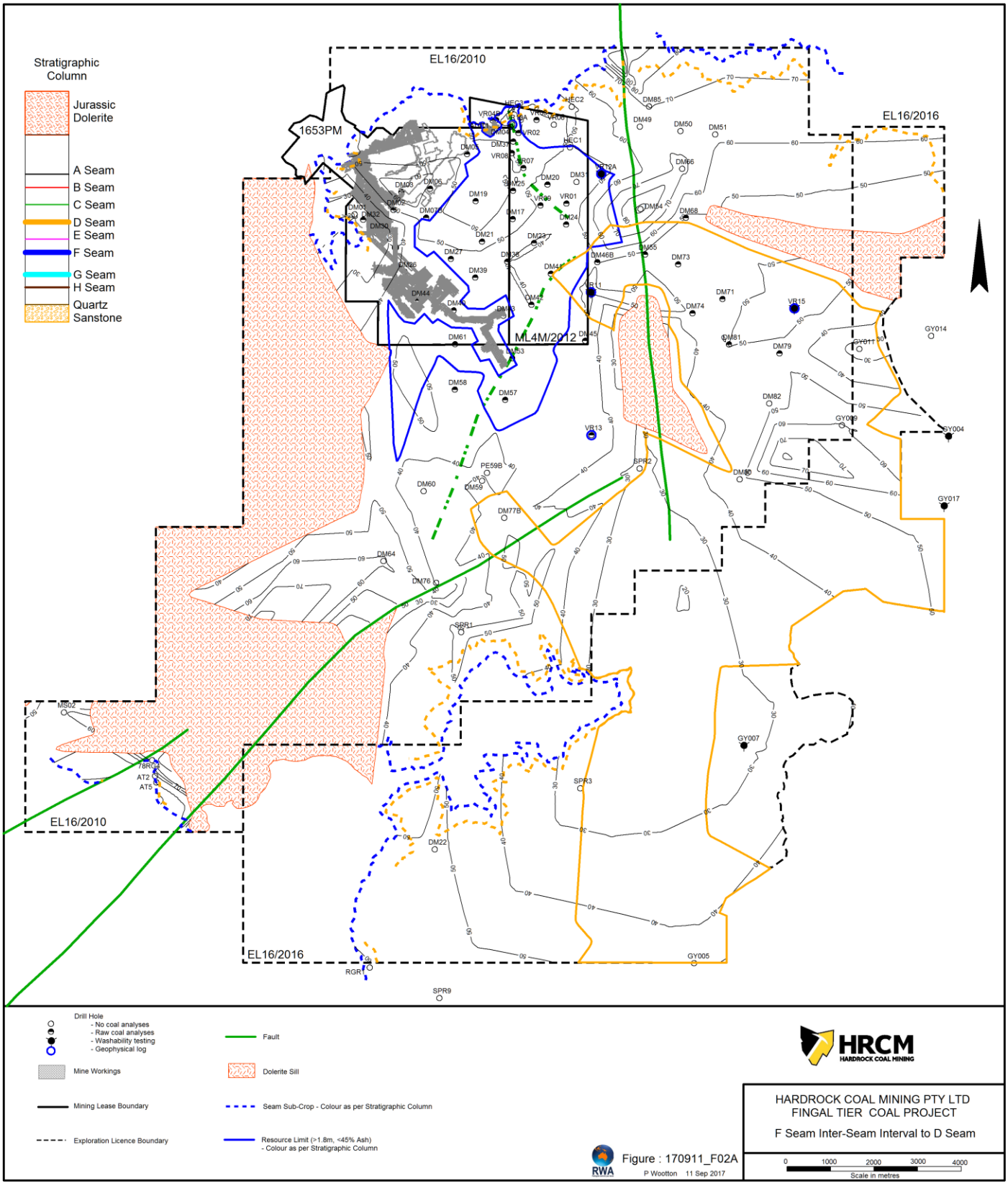

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
1653PM
EL16/2016
ML4M/2012
EL16/2010
EL16/2016
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
Measured Resources
Indicated Resources
Inferred Resources
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
D Seam Resource Distribution
Figure : 170911_D09
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

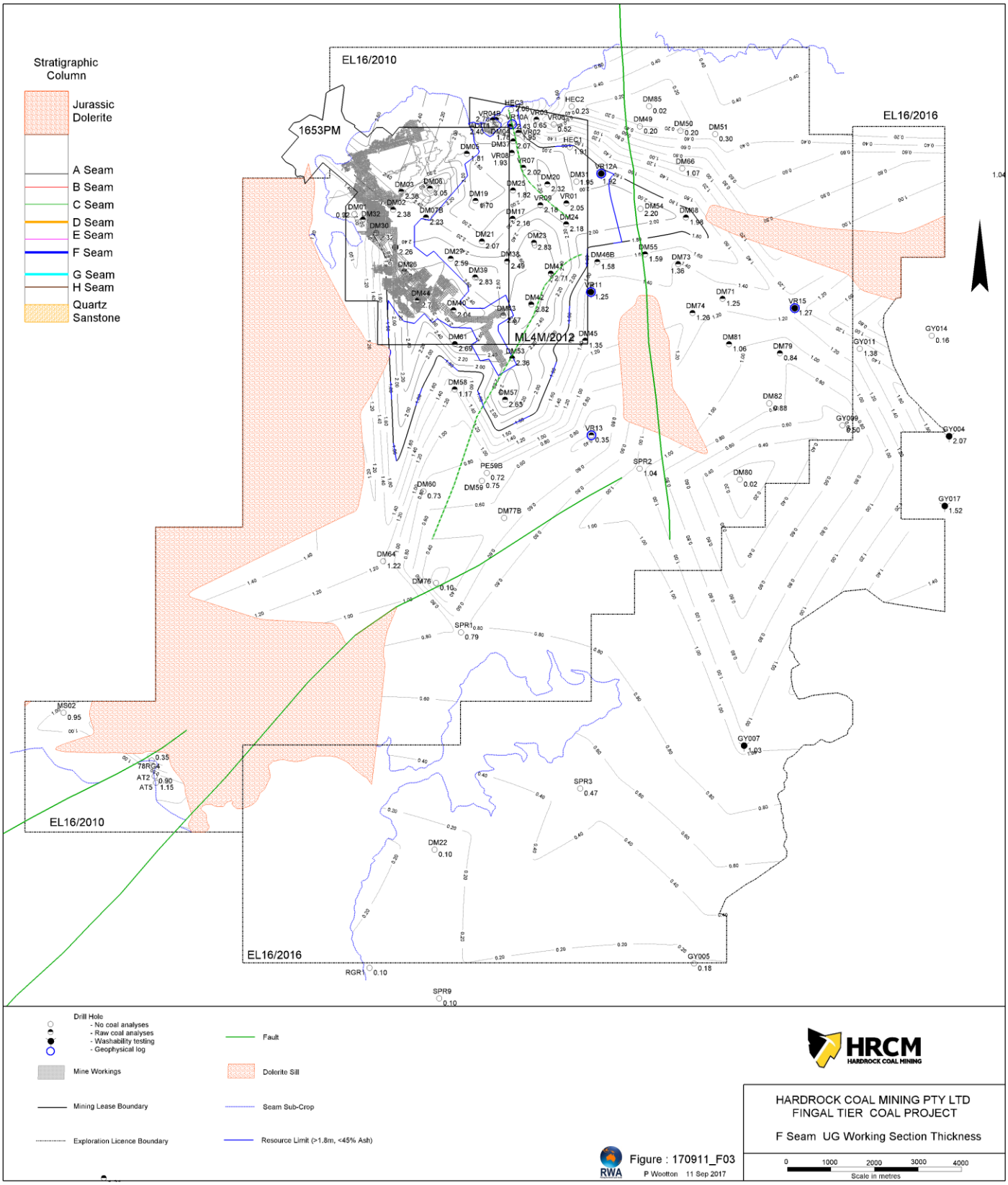

West
East
DM03
DM07B
DM21
DM38
DM41
DM46B
DM55
DM73
DM71
VR15
GY011
GY004
Working Roof
Working Floor
Horizontal not to scale
FINGAL TIER COAL PROJECT
D Seam Section 1
Figure 170911_D10
P Wootton 11 Sep 2017
RWA
HRCM
HARDROCK COAL MINING

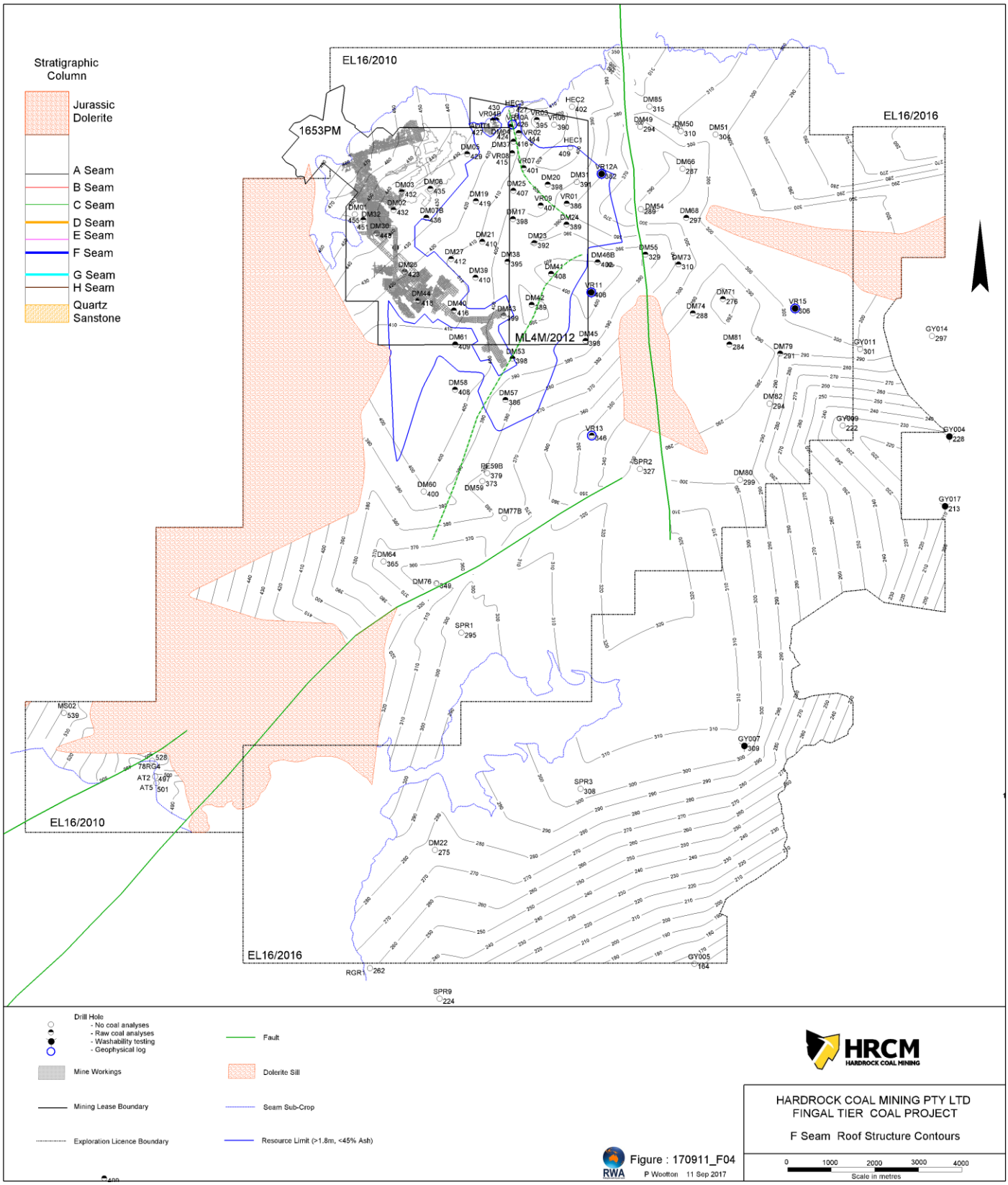

GY005 South
SPR3
MP3
MP2
MP1
SPR2
DM80
DM82
DM79
VR15 North
Working Roof
Working Floor
RWA
Horizontal not to scale
FINGAL TIER COAL PROJECT
D Seam Section 2
Figure 170911_D11
P Wootton 11 Sep 2017
HRCM
HARDROCK COAL MINING

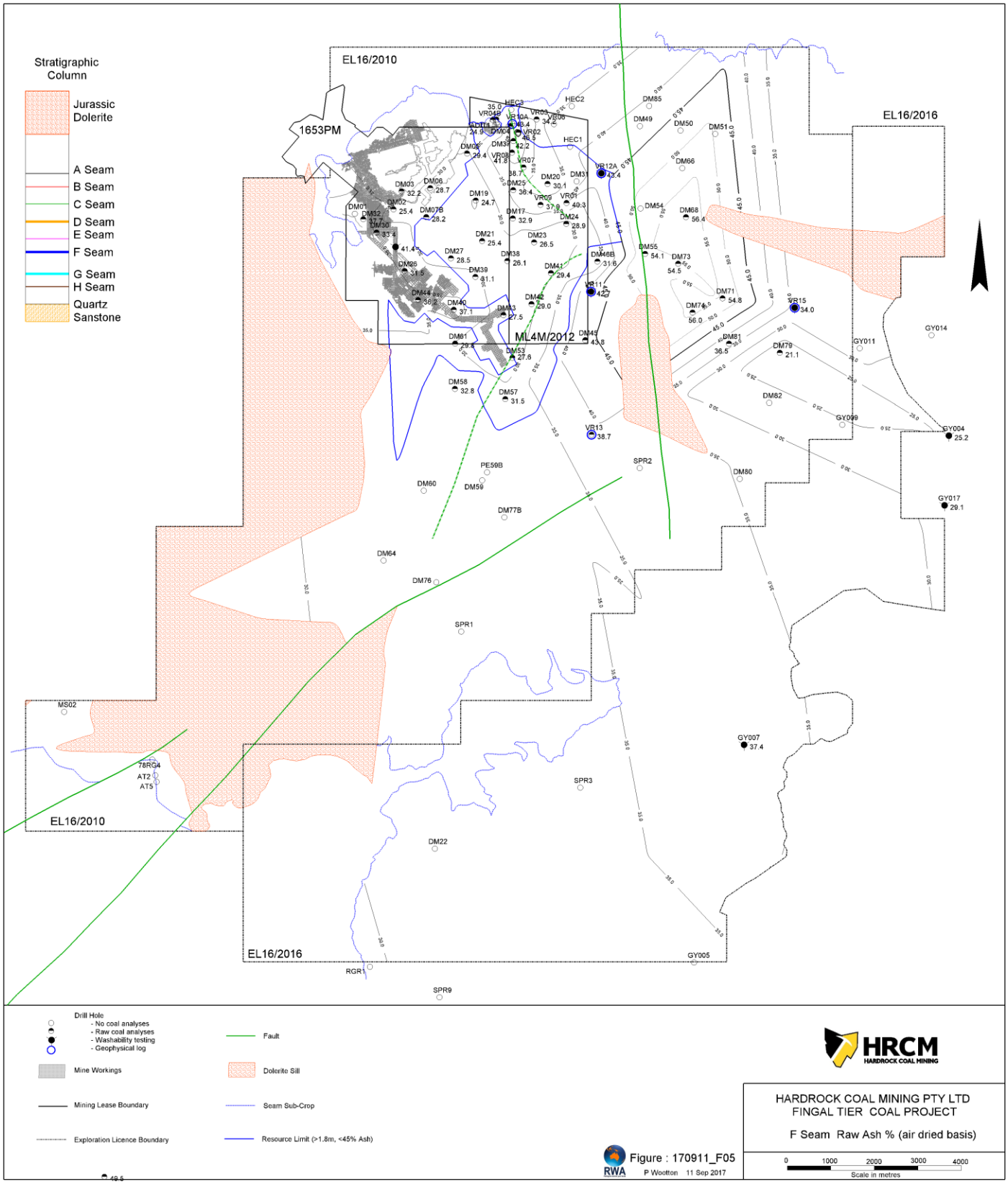

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
SEAM SECTION LINE 1
SEAM SECTION LINE 2
Fingal
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Geology, Drill Holes & Section Lines
Figure : 170911_F01
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

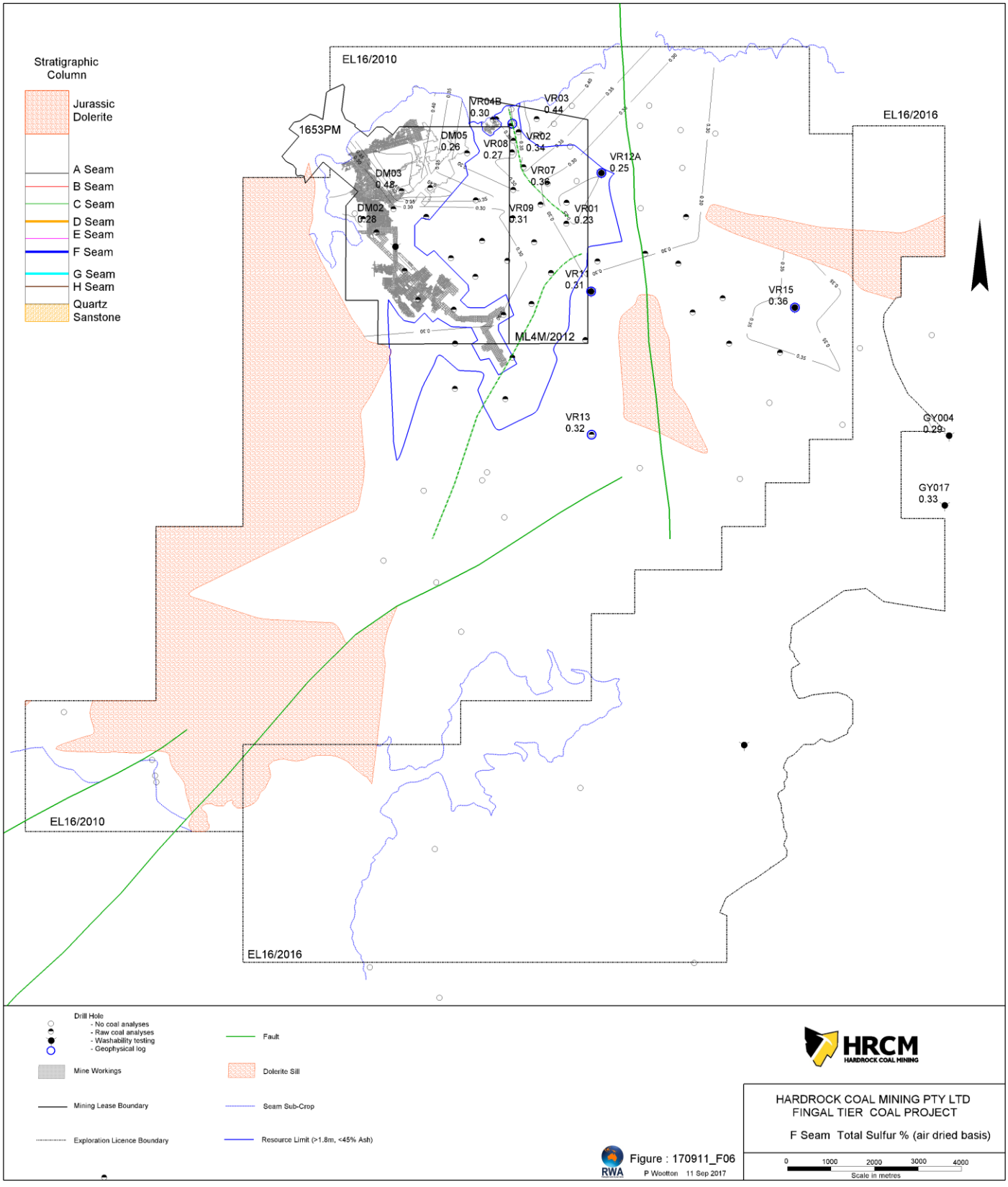

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Depth of Cover
Figure : 170911_F02
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

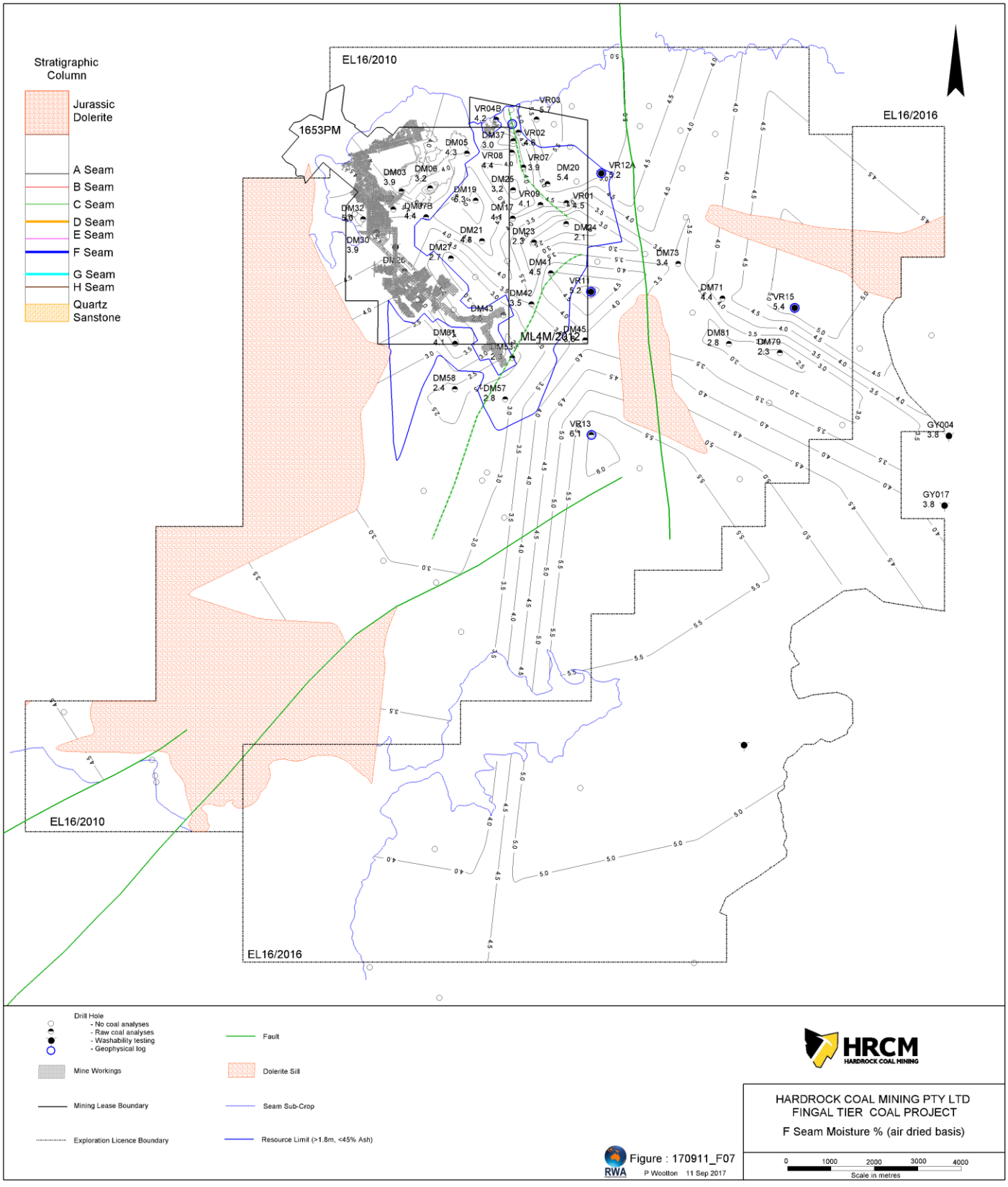

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop - Colour as per Stratigraphic Column
Resource Limit (>1.8m, <45% Ash)
- Colour as per Stratigraphic Column
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Inter-Seam Interval to D Seam
RWA
Figure : 170911_F02A
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

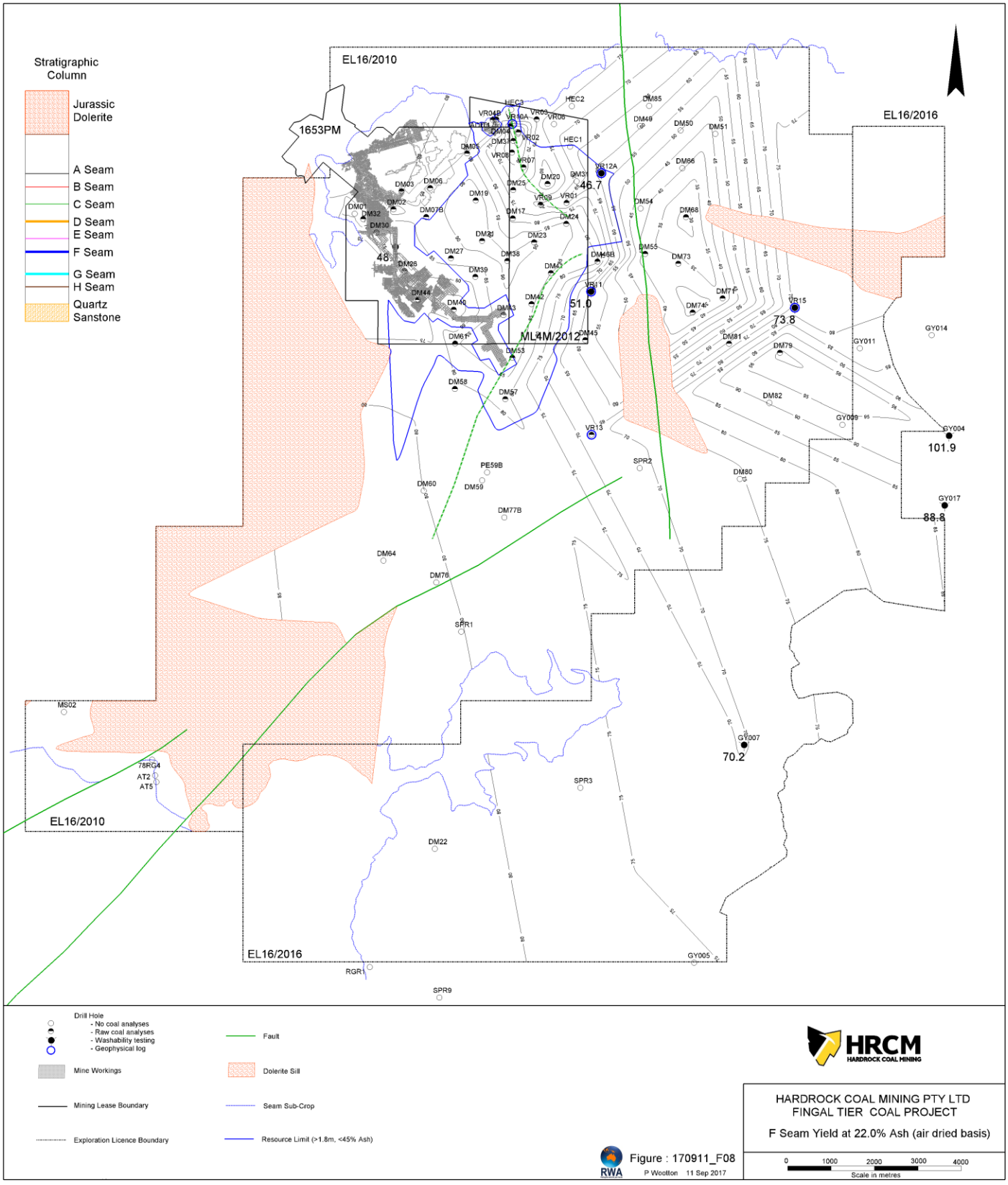

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam UG Working Section Thickness
Figure : 170911_F03
P Wootton 11 Sep 2017
Scale in metres

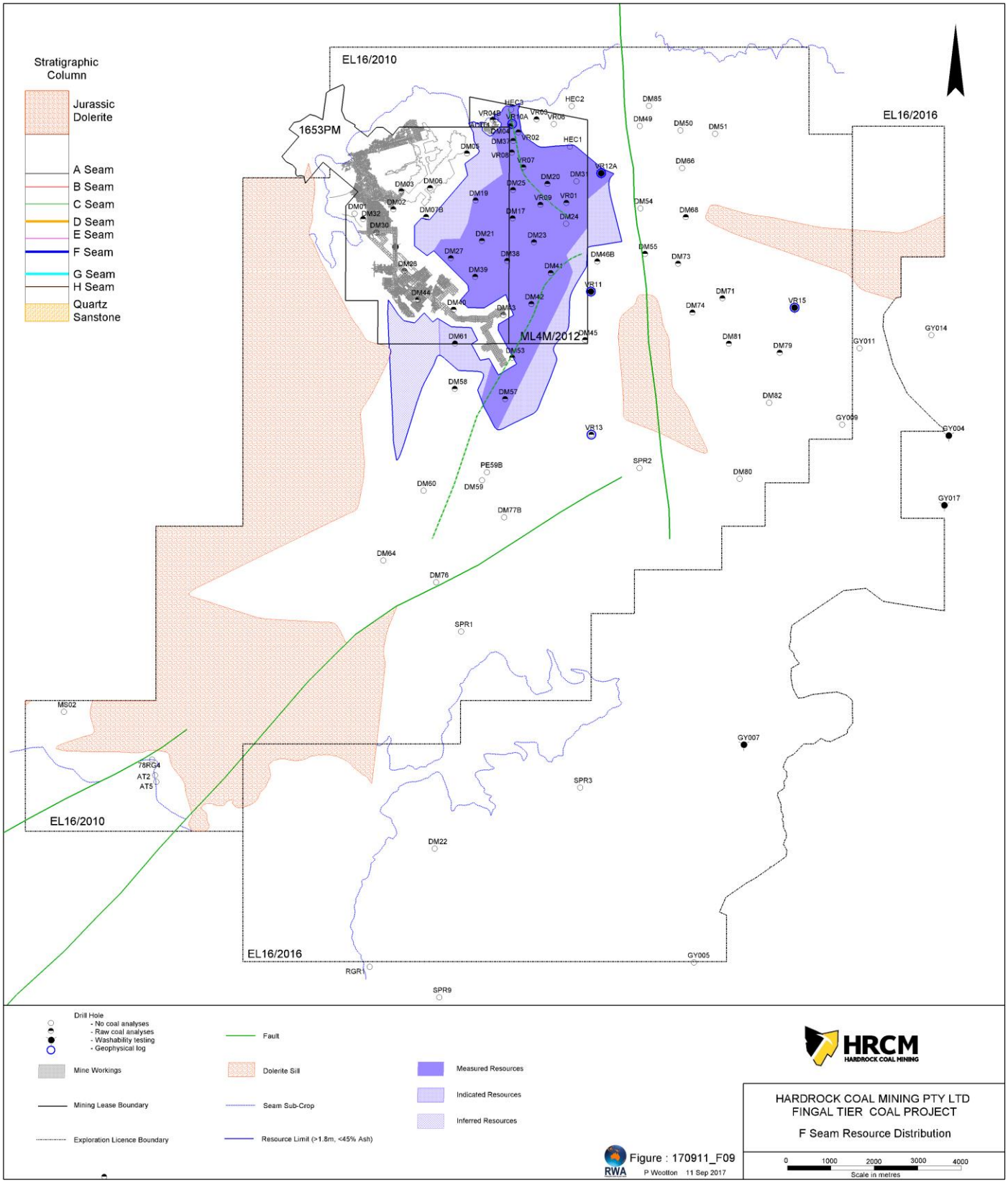

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Roof Structure Contours
Figure : 170911_F04
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

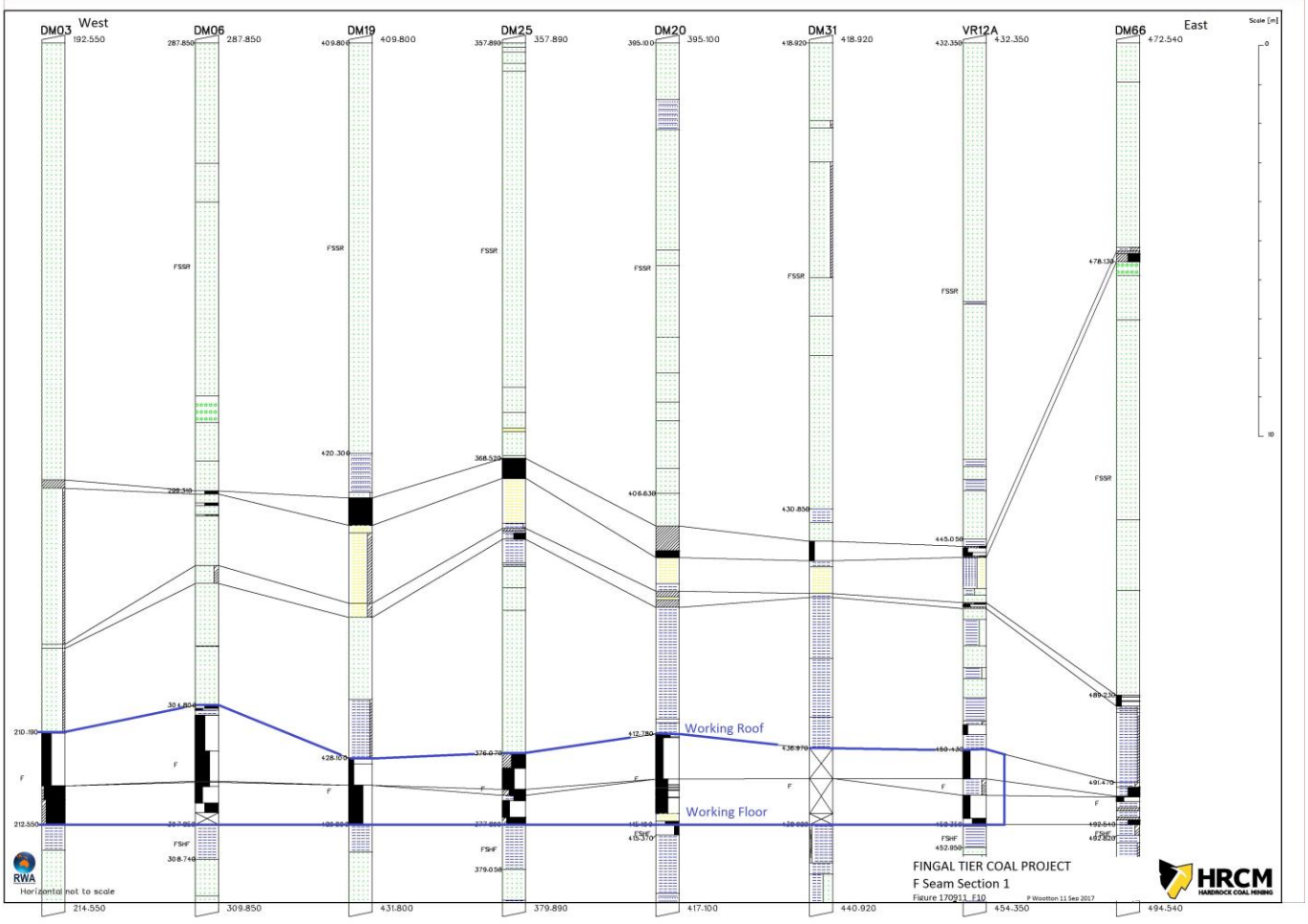

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Raw Ash % (air dried basis)
Figure : 170911_F05
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

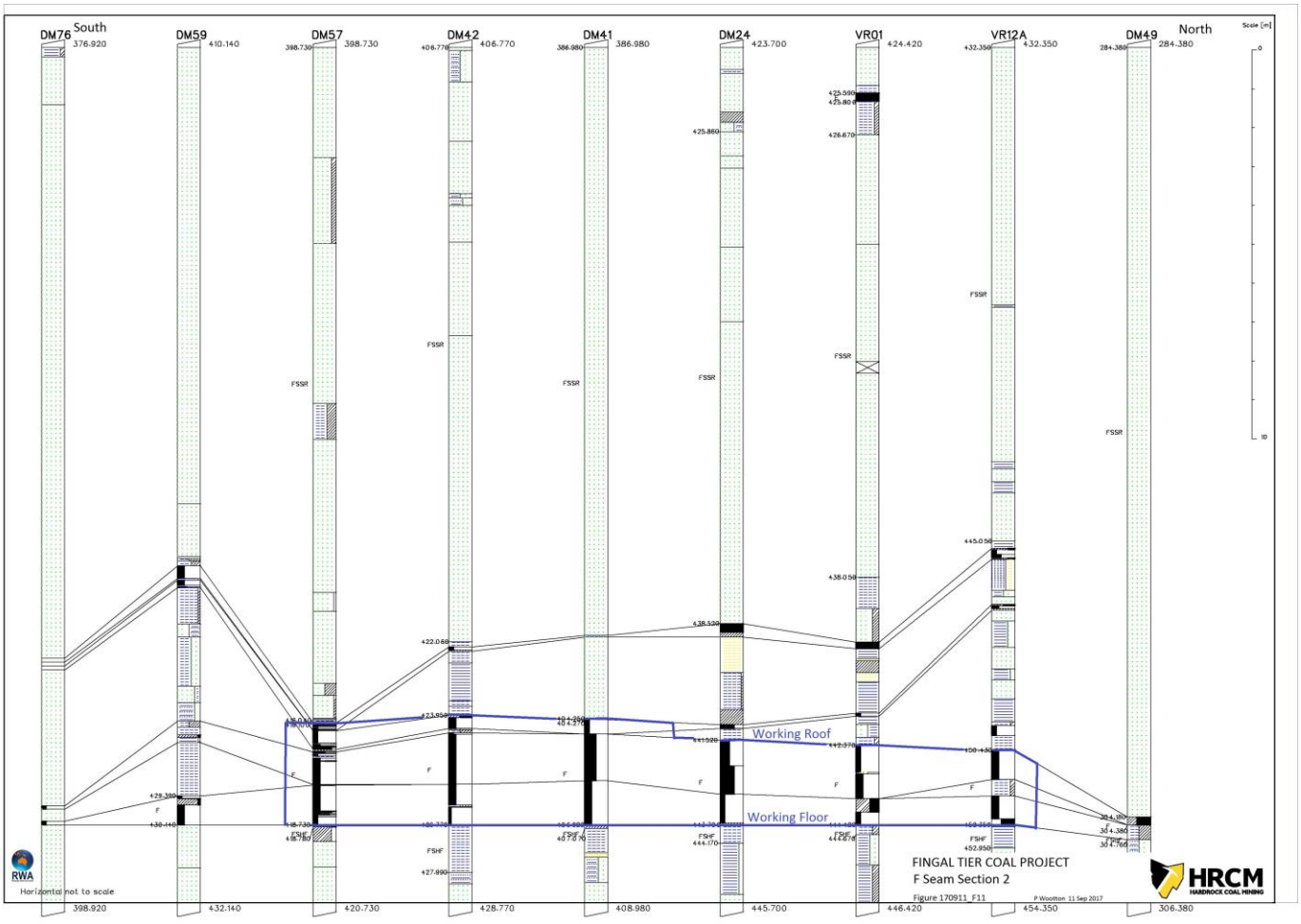

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
VR04B 0.30
VR03 0.44
VR02 0.34
VR08 0.27
DM05 0.26
DM03 0.48
DM02 0.28
VR07 0.36
VR12A 0.25
VR09 0.31
VR01 0.23
VR11 0.31
VR15 0.36
VR13 0.32
GY004 0.29
GY017 0.33
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Total Sulfur % (air dried basis)
RWA
Figure : 170911_F06
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

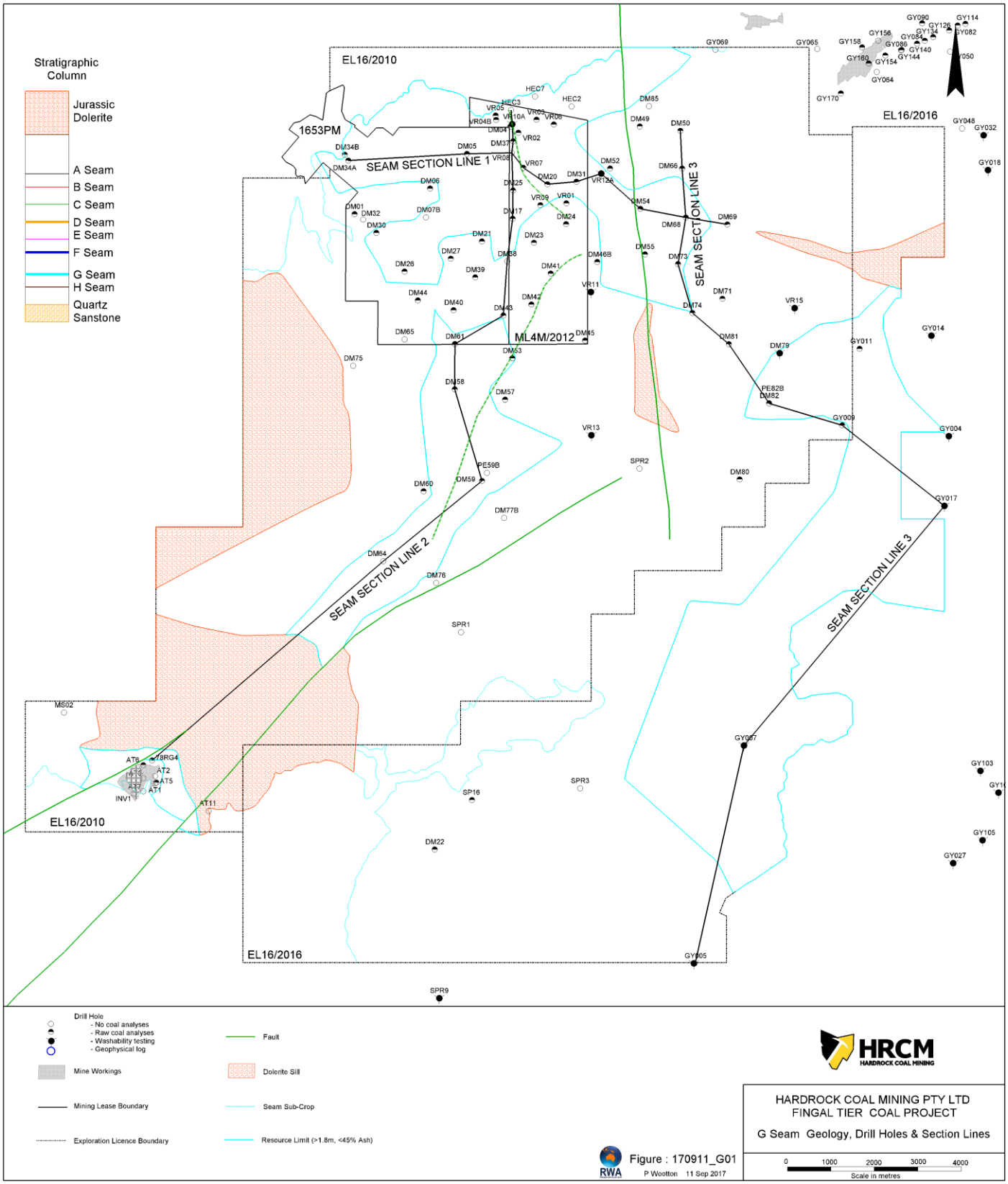

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
VR03 5.7
VR04B 4.2
VR02 4.6
VR08 4.4
VR07 3.9
VR12A 5.2
VR09 4.1
VR01 4.5
VR1 5.2
VR15 5.4
VR13 6.1
DM37 3.0
DM05 4.3
DM03 3.9
DM08 3.2
DM20 5.4
DM25 3.2
DM19 5.3
DM32 5.0
DM07B 4.4
DM17 4.1
DM30 3.9
DM21 4.8
DM23 2.3
DM24 2.1
DM27 2.7
DM26
DM41 4.5
DM73 3.4
DM71 4.4
DM42 3.5
DM43 2.5
DM45
DM81 4.1
DM81 2.8
DM79 2.3
DM58 2.4
DM57 2.8
GY004 3.8
GY017 3.8
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Moisture % (air dried basis)
Figure : 170911_F07
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

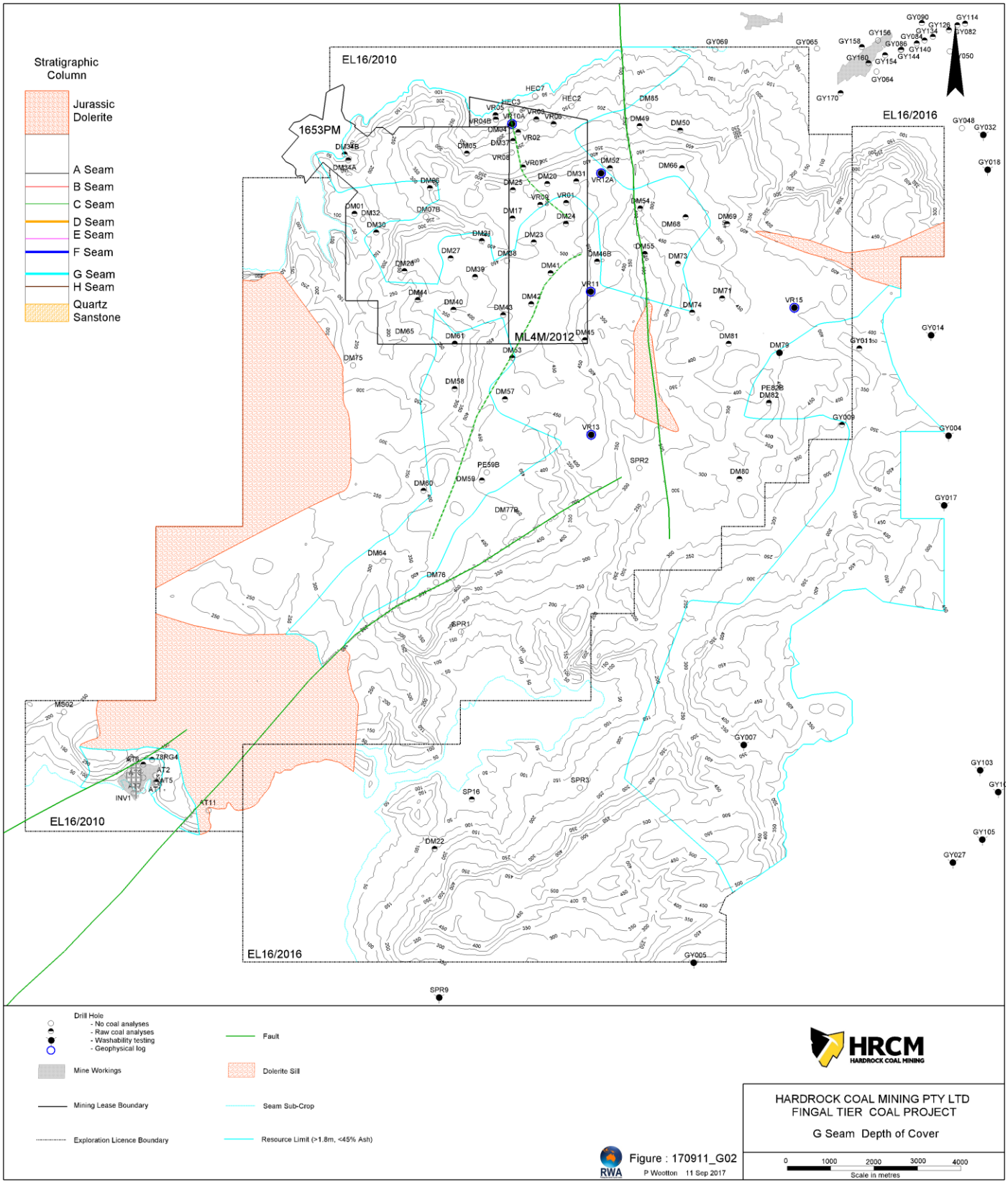

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
46.7
51.0
73.8
101.9
88.8
70.2
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Yield at 22.0% Ash (air dried basis)
Figure : 170911_F08
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

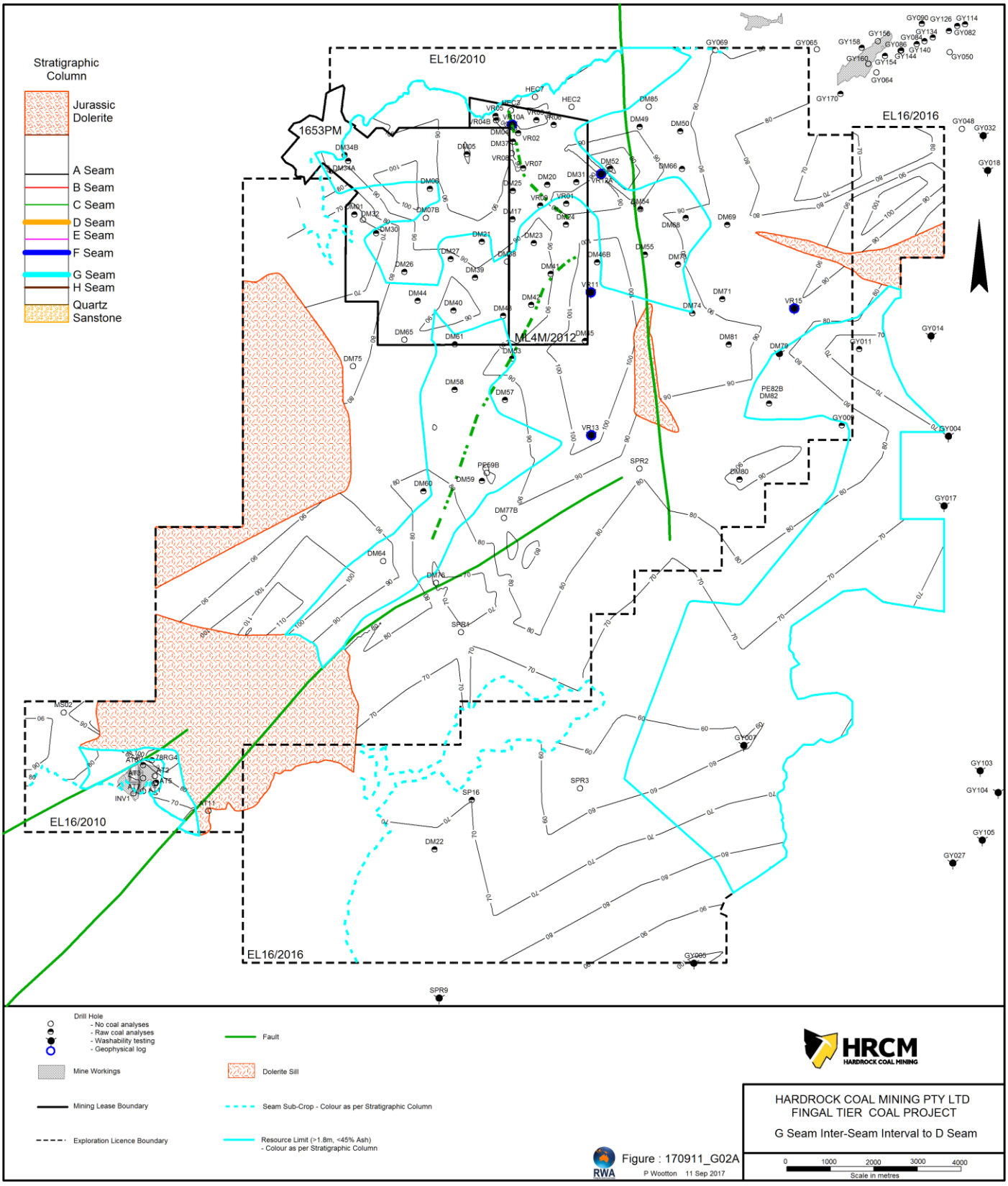

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
Measured Resources
Indicated Resources
Inferred Resources
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
F Seam Resource Distribution
Figure : 170911_F09
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

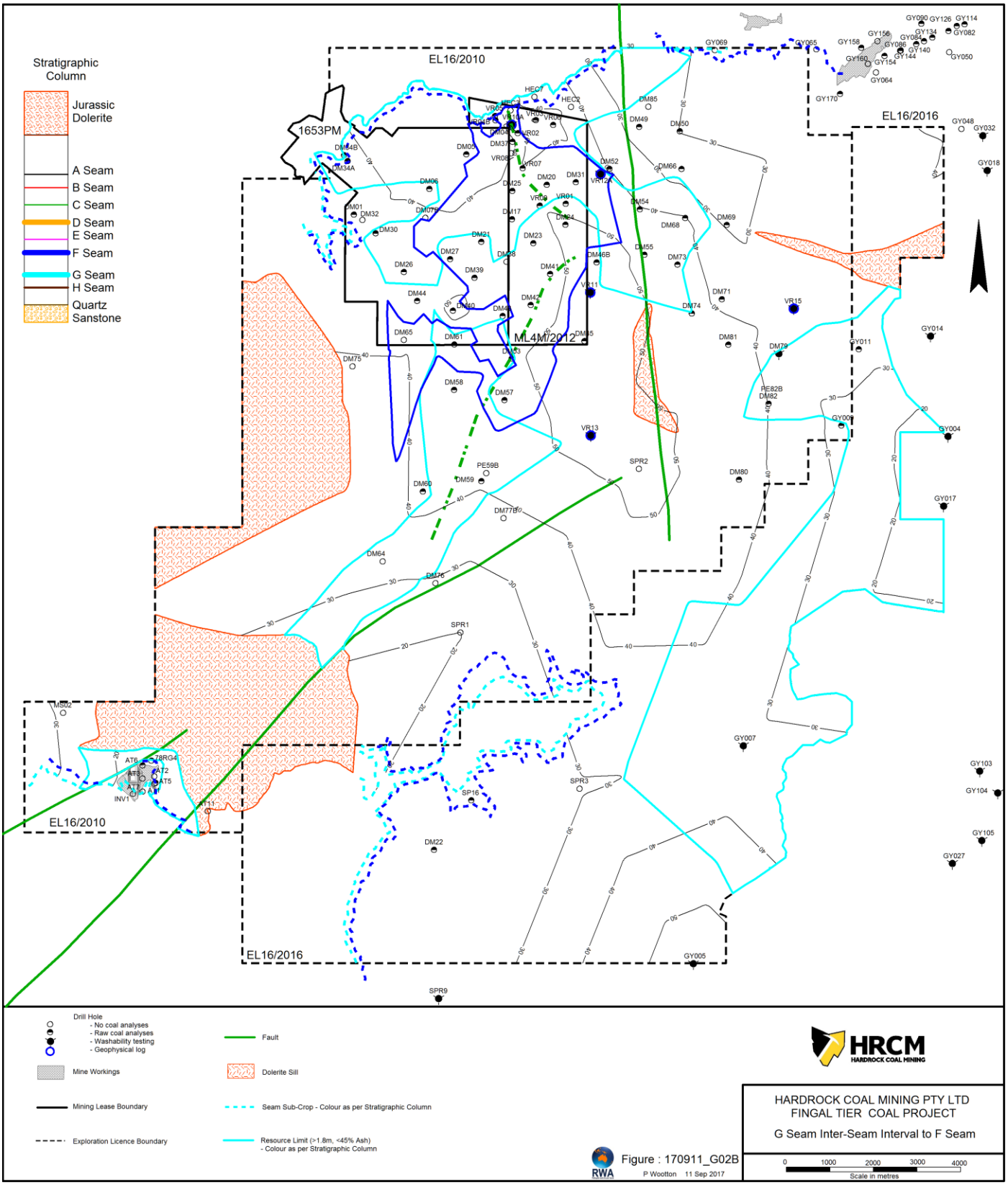

West
East
DM03
DM06
DM19
DM25
DM20
DM31
VR12A
DM66
192.550
287.850
409.800
357.890
395.100
418.920
432.350
472.540
FSSR
Working Roof
Working Floor
RWA
Horizontal not to scale
214.550
309.850
431.800
379.890
417.100
440.920
454.350
494.540
FINGAL TIER COAL PROJECT
F Seam Section 1
Figure 170911_F10
HRCM
HARDROCK COAL MINING

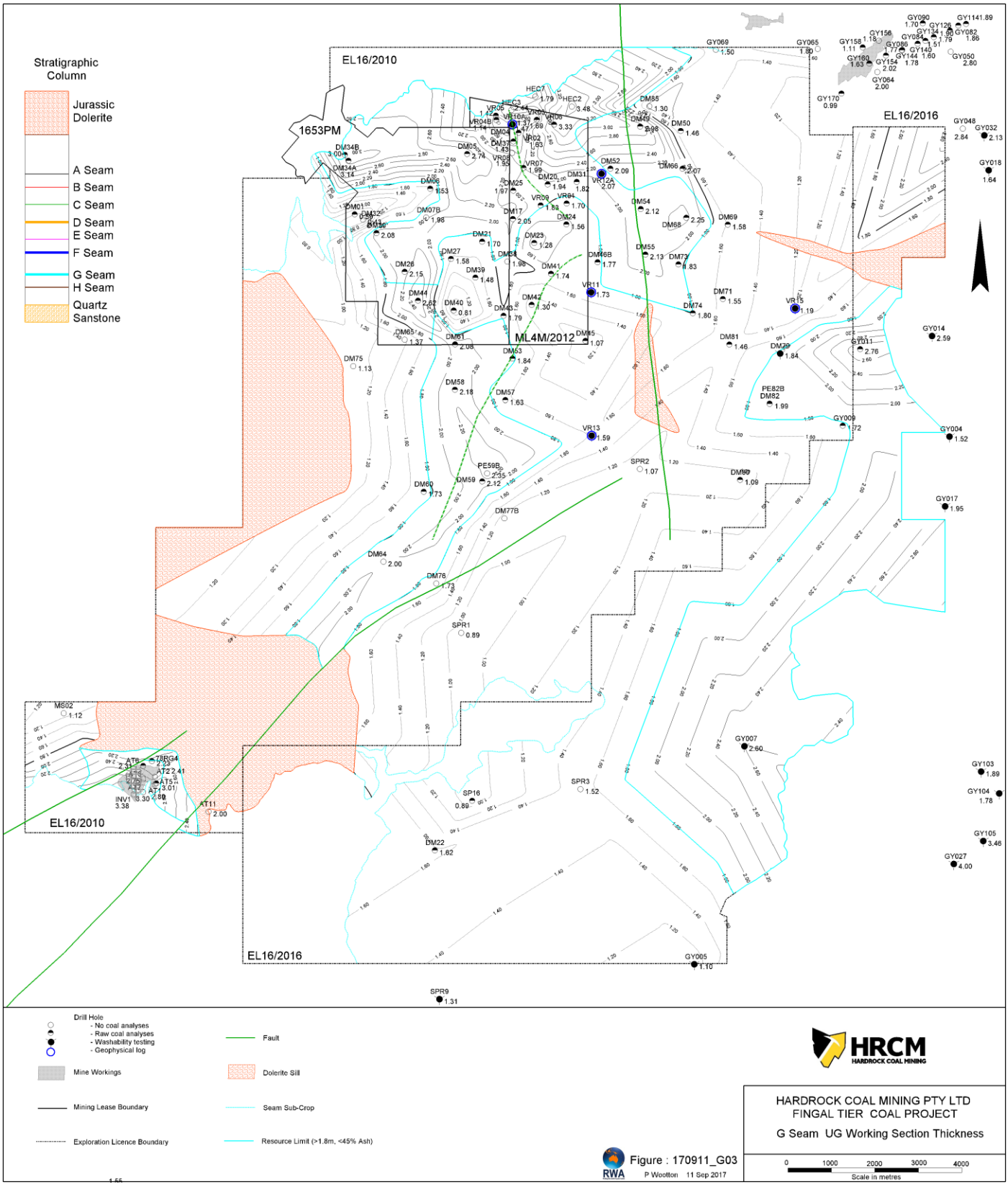

South
North
DM76
DM59
DM57
DM42
DM41
DM24
VR01
VR12A
DM49
Working Roof
Working Floor
FSSR
FSHF
F
RWA
Horizontal not to scale
FINGAL TIER COAL PROJECT
F Seam Section 2
Figure 170911_F11
P.Wootton 11 Sep 2017
HRCM
HARDROCK COAL MINING

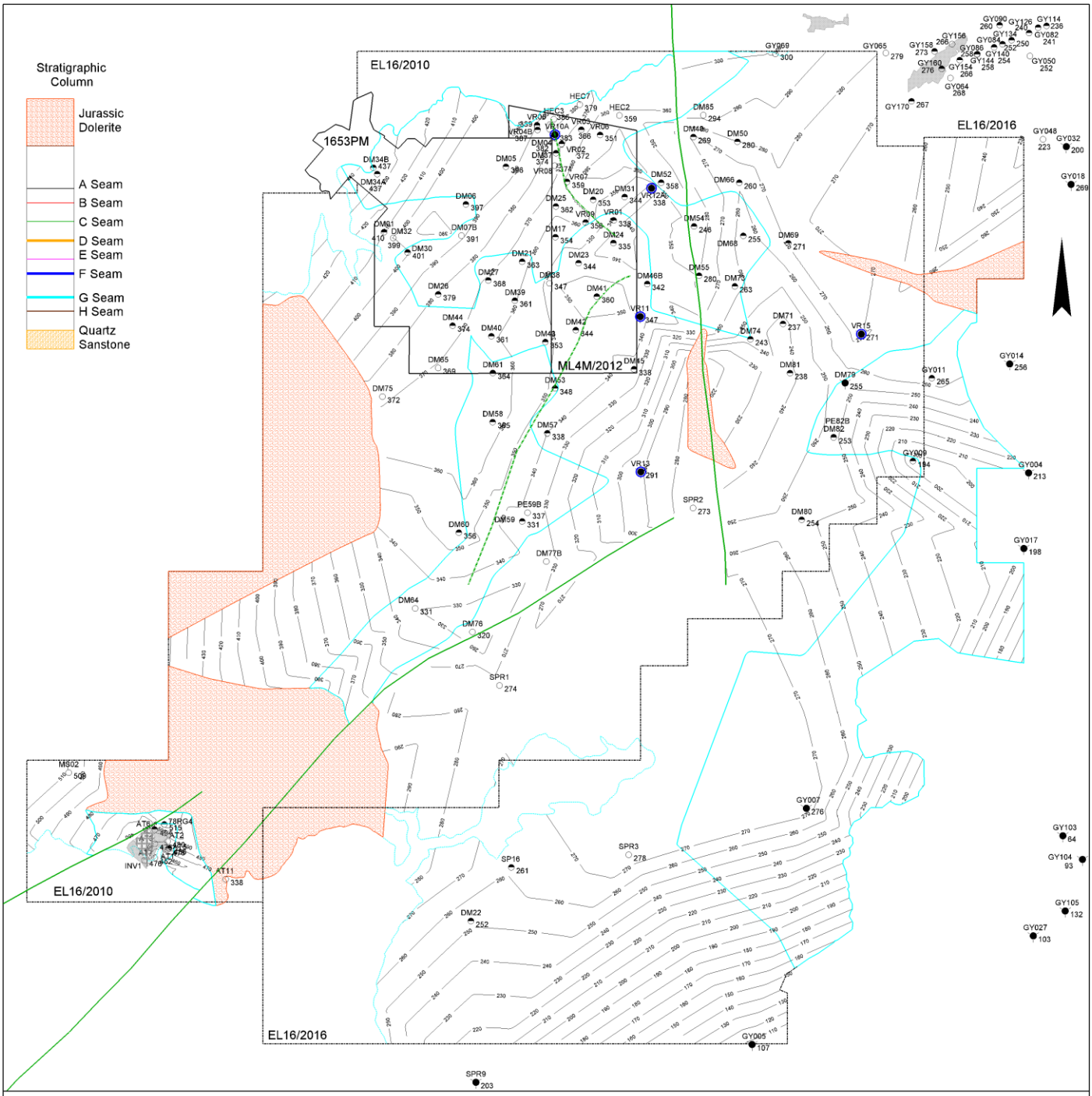

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
SEAM SECTION LINE 1
SEAM SECTION LINE 2
SEAM SECTION LINE 3
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Geology, Drill Holes & Section Lines
Figure : 170911_G01
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

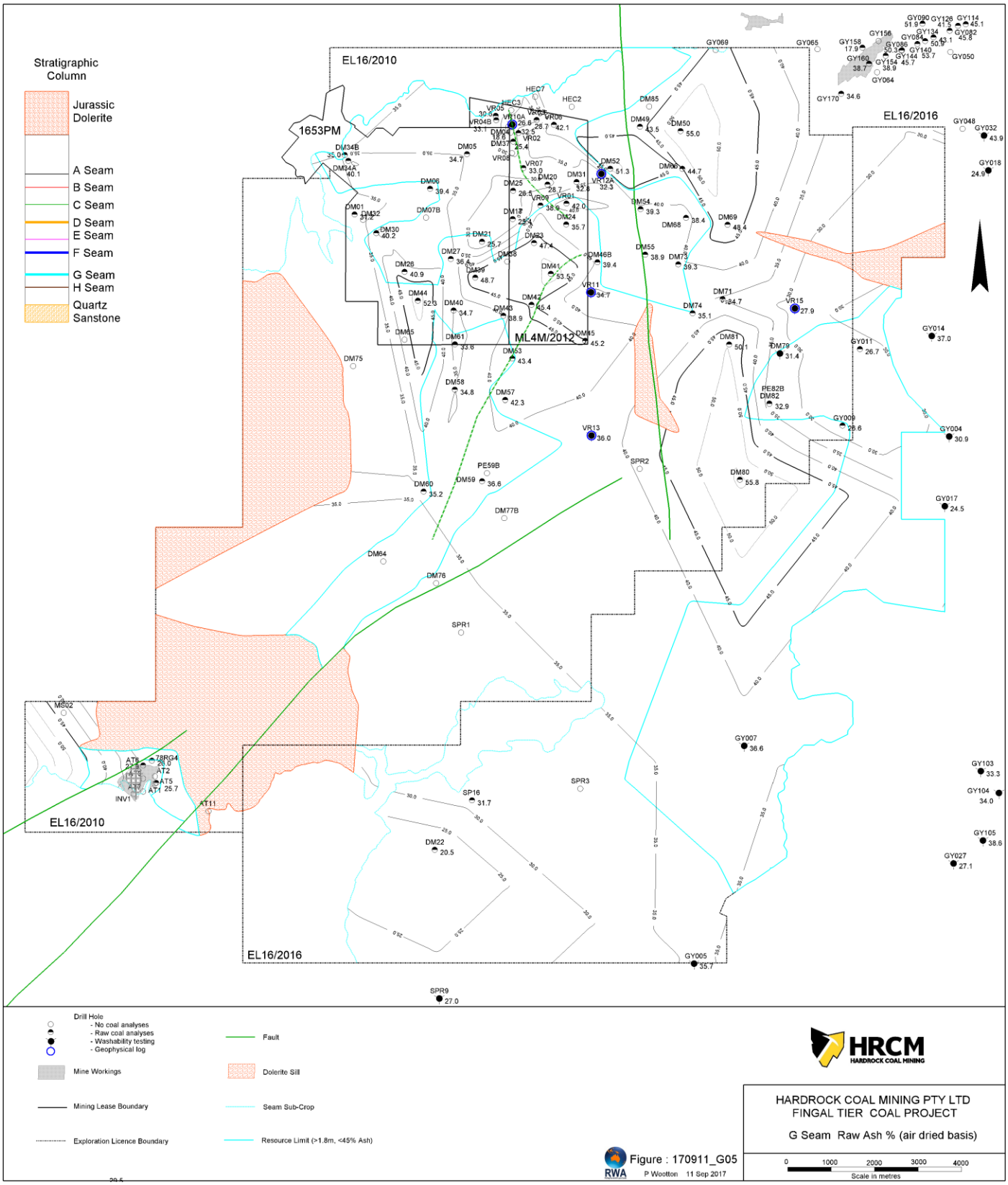

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Depth of Cover
Figure : 170911_G02
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

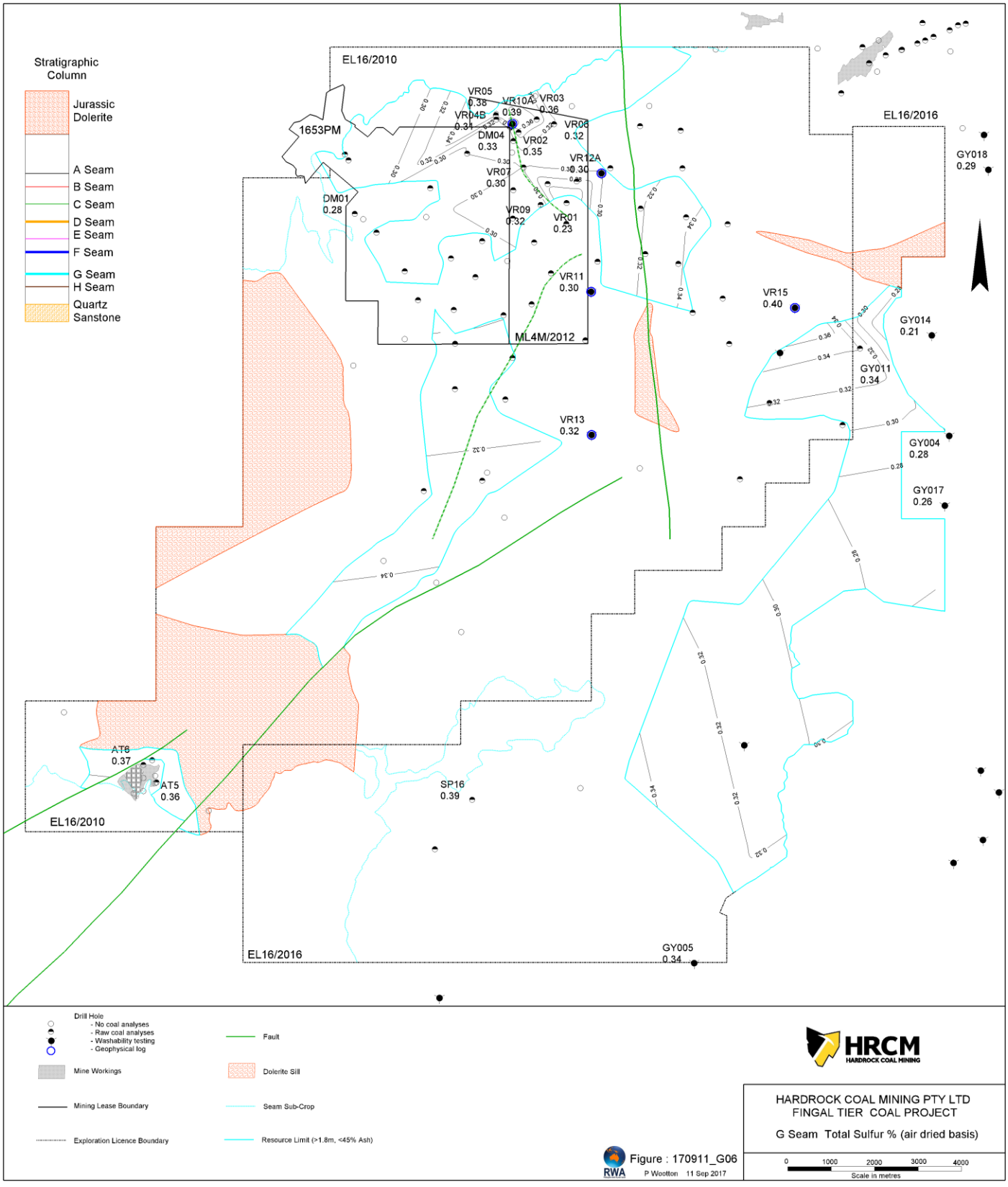

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop - Colour as per Stratigraphic Column
Resource Limit (>1.8m, <45% Ash)
- Colour as per Stratigraphic Column
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Inter-Seam Interval to D Seam
Figure : 170911_G02A
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

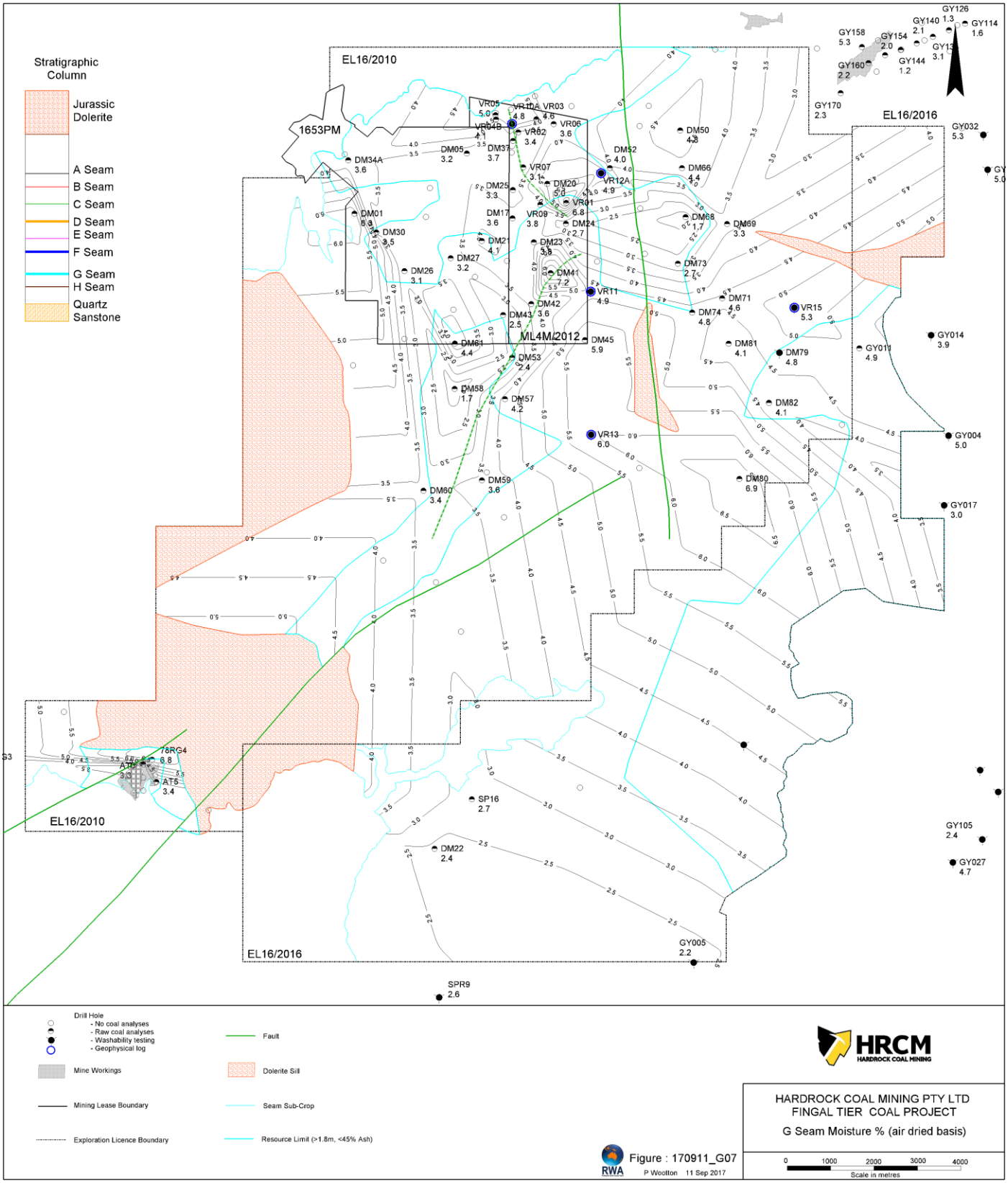

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop - Colour as per Stratigraphic Column
Resource Limit (>1.8m, <45% Ash)
- Colour as per Stratigraphic Column
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Inter-Seam Interval to F Seam
RWA
Figure : 170911_G02B
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

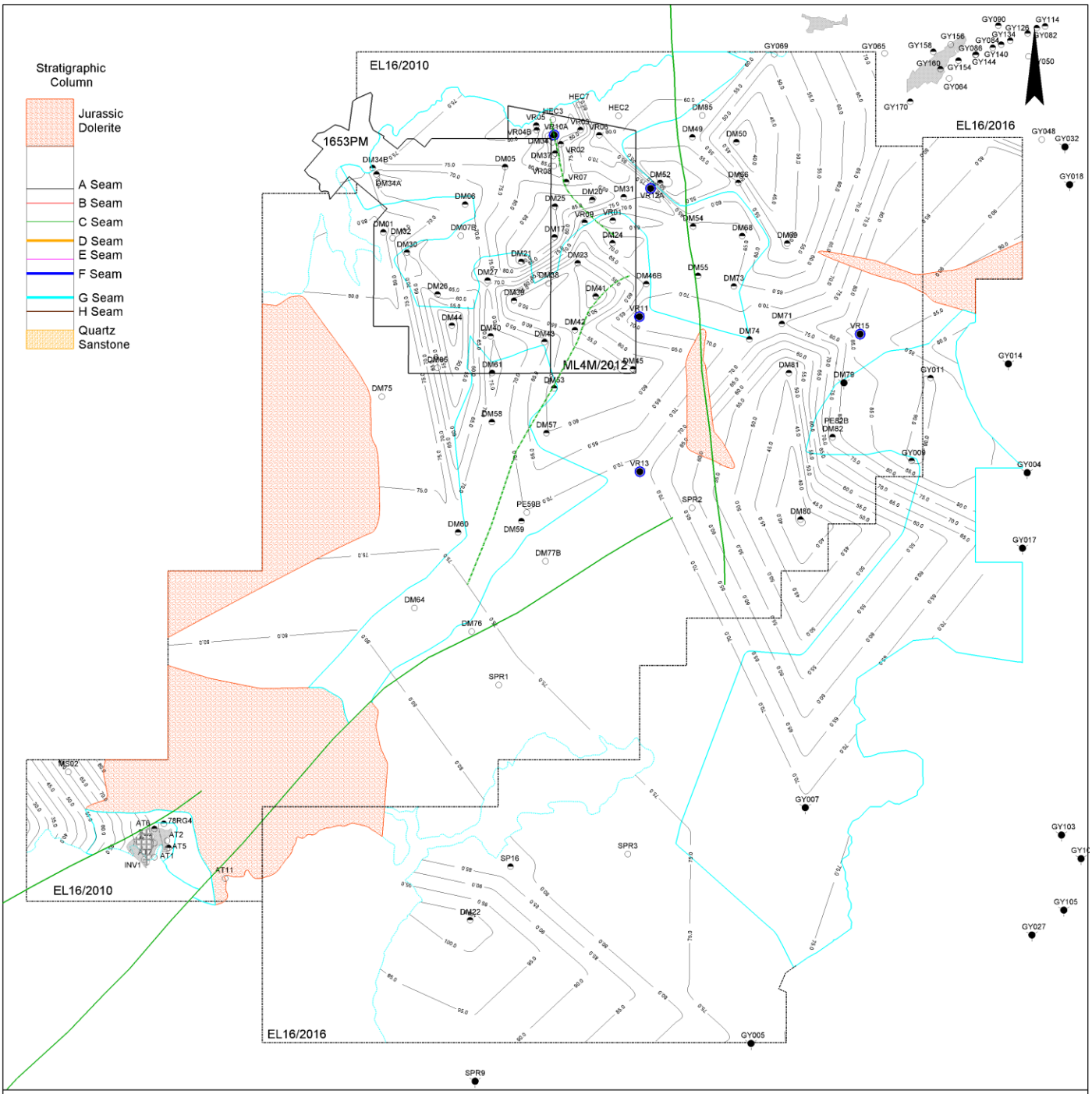

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam UG Working Section Thickness
Figure : 170911_G03
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

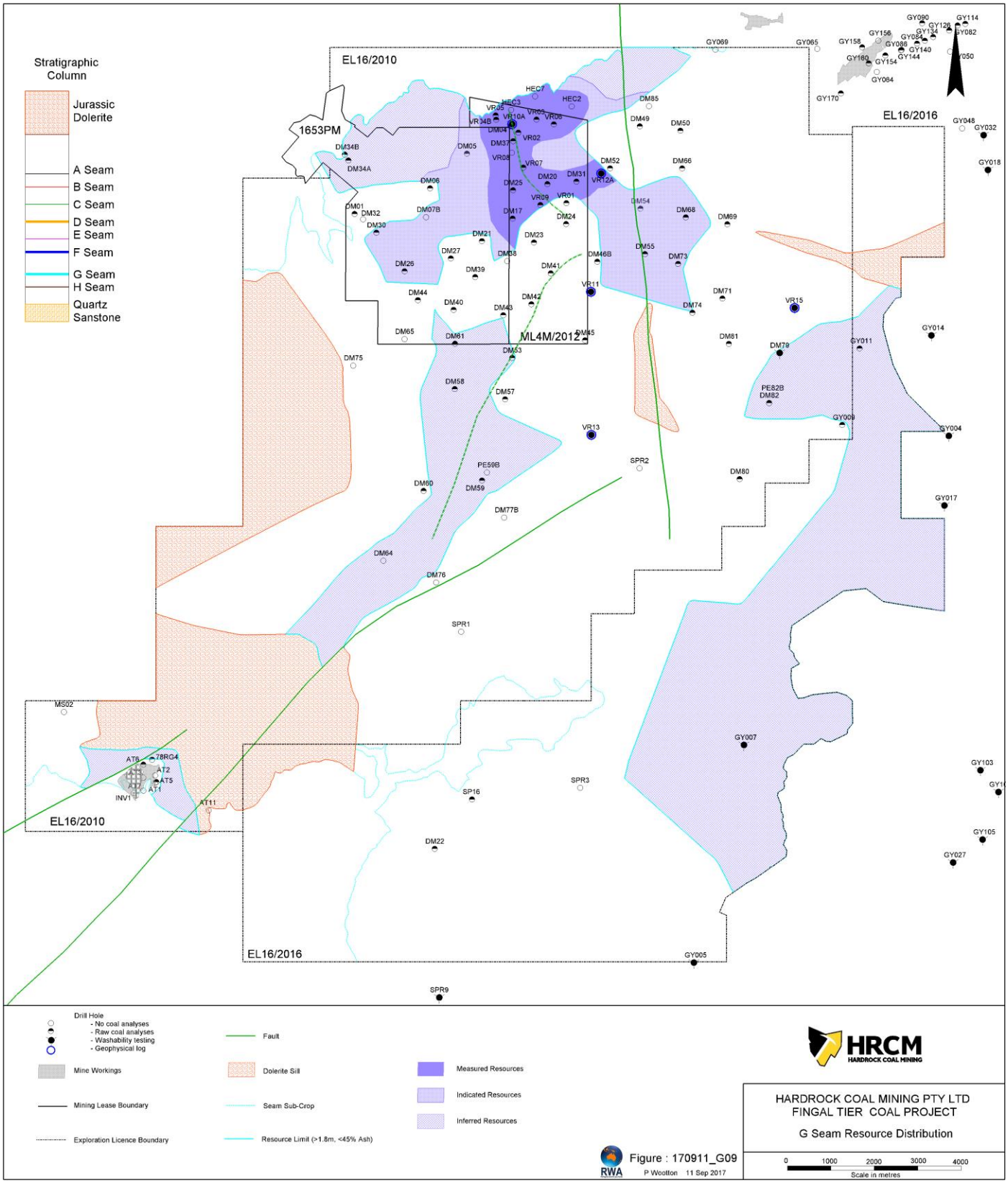

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Roof Structure Contours
Figure : 170911_G04
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres

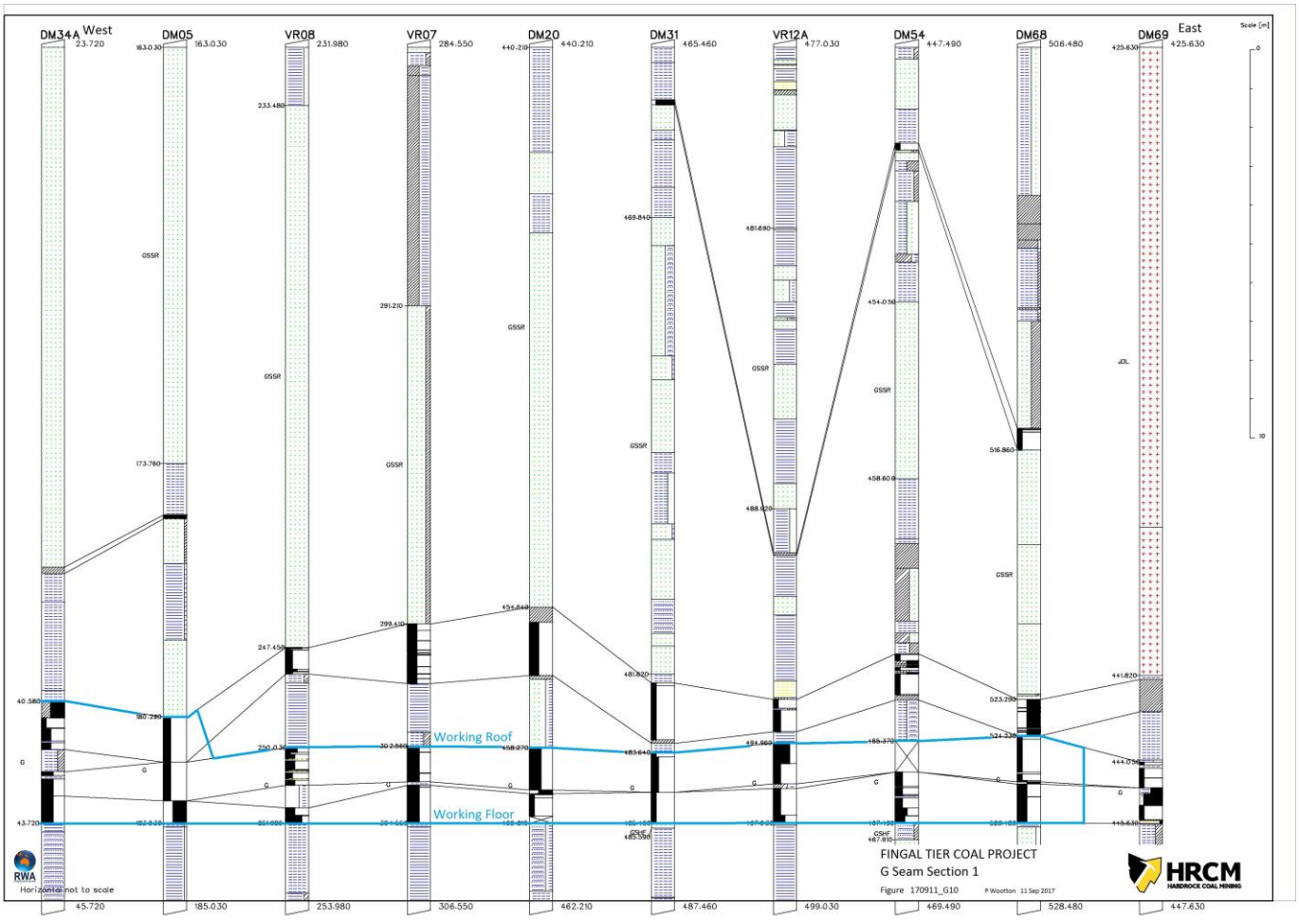

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Raw Ash % (air dried basis)
Figure : 170911_G05
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

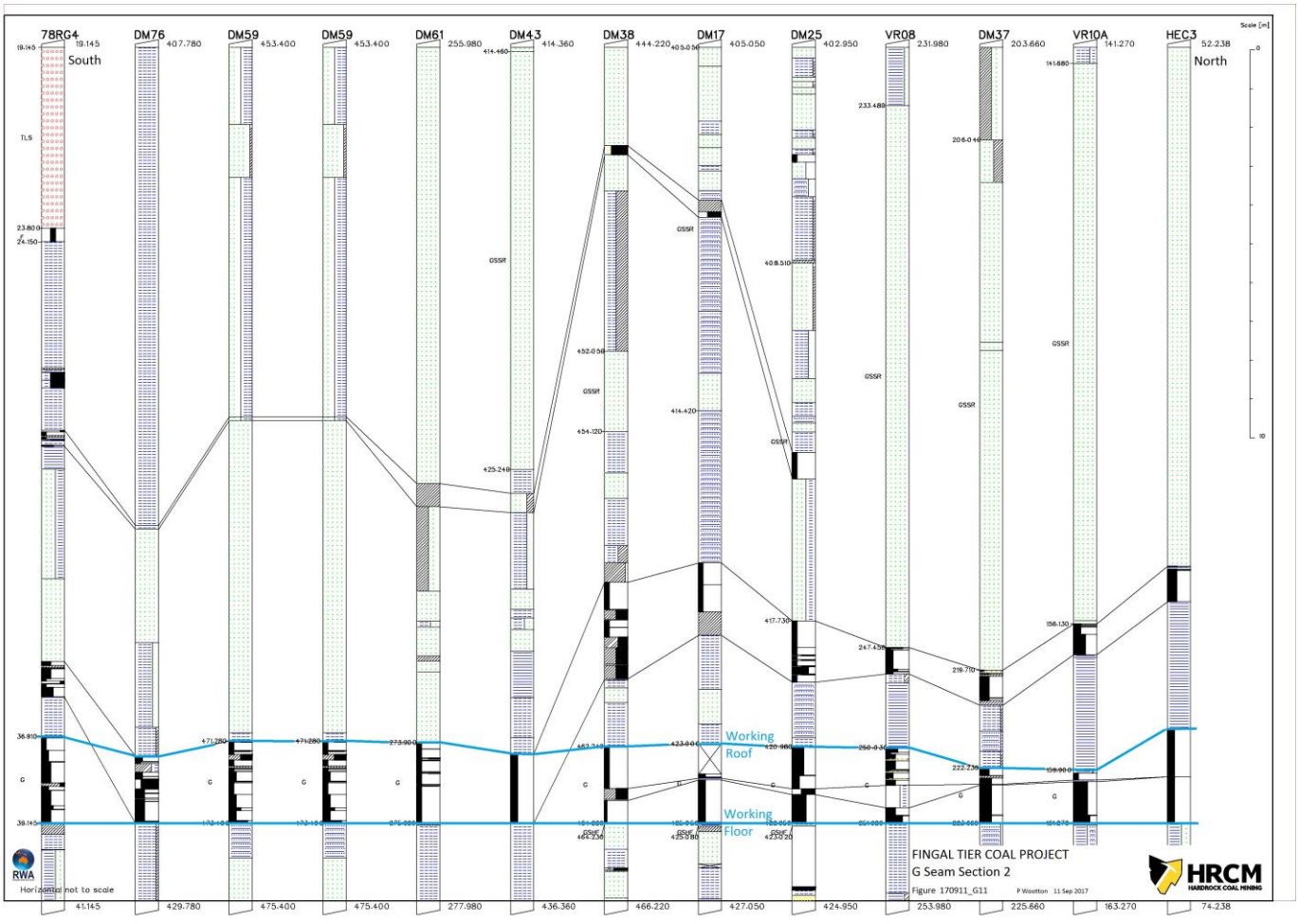

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
VR05 0.38
VR10A 0.39
VR03 0.36
VR04B 0.31
VR08 0.32
DM04 0.33
VR02 0.35
VR12A 0.30
VR07 0.30
DM01 0.28
VR09 0.32
VR01 0.23
VR11 0.30
VR15 0.40
GY018 0.29
GY014 0.21
GY011 0.34
VR13 0.32
GY004 0.28
GY017 0.26
AT6 0.37
AT5 0.36
SP16 0.39
GY005 0.34
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Total Sulfur % (air dried basis)
Figure : 170911_G06
RWA P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres

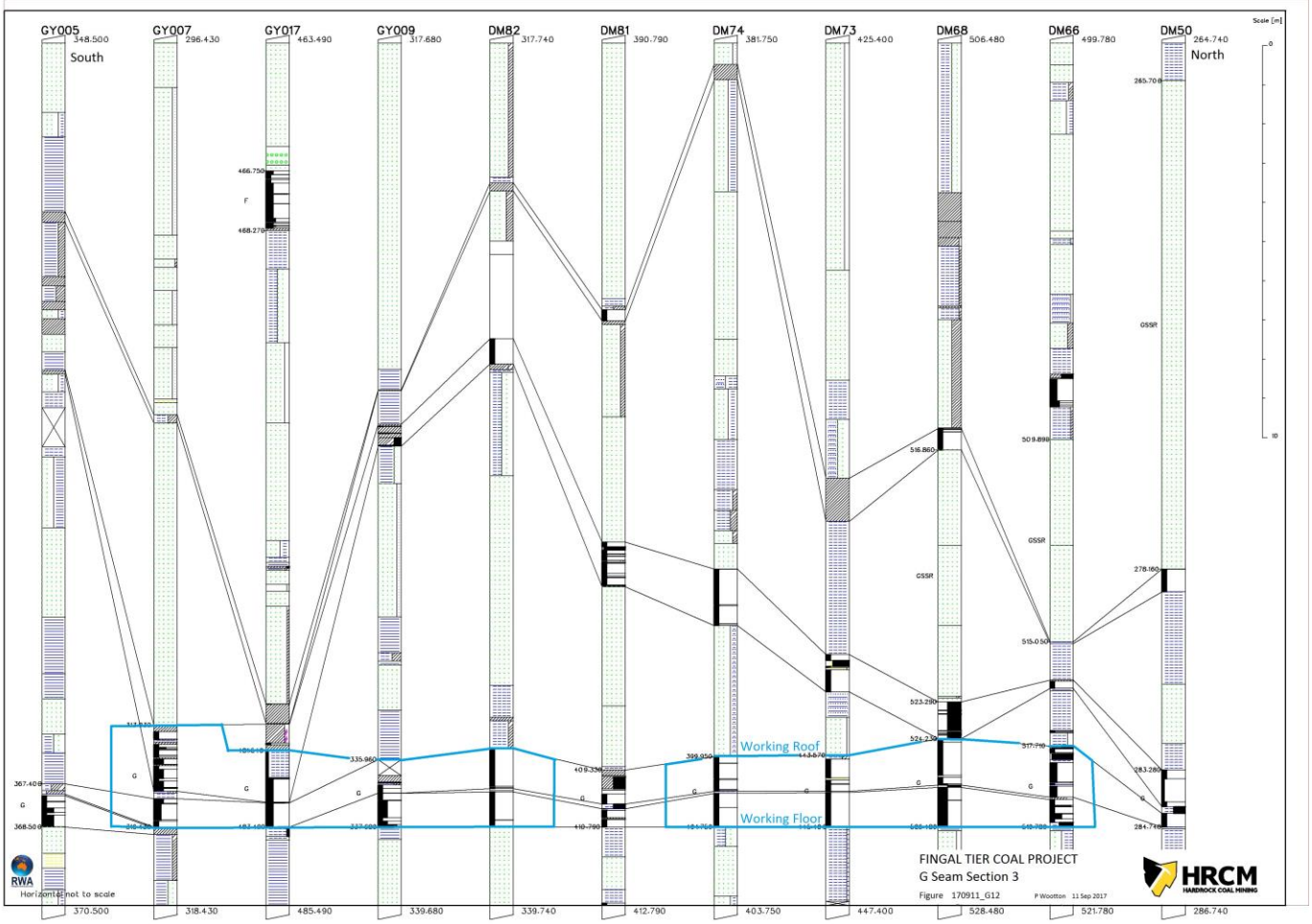

Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Moisture % (air dried basis)
RWA
Figure : 170911_G07
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres


Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Yield at 22.0% Ash (air dried basis)
Figure : 170911_G08
RWA
P Wootton 11 Sep 2017
0 1000 2000 3000 4000
Scale in metres


Stratigraphic Column
Jurassic Dolerite
A Seam
B Seam
C Seam
D Seam
E Seam
F Seam
G Seam
H Seam
Quartz Sanstone
EL16/2010
EL16/2016
1653PM
ML4M/2012
Drill Hole
- No coal analyses
- Raw coal analyses
- Washability testing
- Geophysical log
Mine Workings
Mining Lease Boundary
Exploration Licence Boundary
Fault
Dolerite Sill
Seam Sub-Crop
Resource Limit (>1.8m, <45% Ash)
Measured Resources
Indicated Resources
Inferred Resources
HRCM
HARDROCK COAL MINING
HARDROCK COAL MINING PTY LTD
FINGAL TIER COAL PROJECT
G Seam Resource Distribution
Figure : 170911_G09
P Wootton 11 Sep 2017
RWA
0 1000 2000 3000 4000
Scale in metres


DM34A West
DM05
VR08
VR07
DM20
DM31
VR12A
DM54
DM68
DM69 East
Working Roof
Working Floor
RWA
Horizontal not to scale
FINGAL TIER COAL PROJECT
G Seam Section 1
Figure 170911_G10
P Wootton 11 Sep 2017
HRCM
HARDROCK COAL MINING


78RG4
DM76
DM59
DM59
DM61
DM43
DM38
DM17
DM25
VR08
DM37
VR10A
HEC3
South
North
Working Roof
Working Floor
FINGAL TIER COAL PROJECT
G Seam Section 2
Figure 170911_G11
P Wootton 11 Sep 2017
Horizontal not to scale
HRCM
HARDROCK COAL MINING
RWA


GY005
348.500
South
GY007
296.430
GY017
463.490
GY009
317.680
DM82
317.740
DM81
390.790
DM74
381.750
DM73
425.400
DM68
506.480
DM66
499.780
DM50
264.740
North
Scale [m]
0
10
Working Roof
Working Floor
FINGAL TIER COAL PROJECT
G Seam Section 3
Figure 170911_G12
P Wootton 11 Sep 2017
RWA
Horizontal not to scale
HRCM
HARDROCK COAL MINING
370.500
318.430
485.490
339.680
339.740
412.790
403.750
447.400
528.480
521.780
286.740