

Adani Mining Pty Ltd Carmichael Coal Project

Later Development Plan

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1. Introduction

Adani Mining Pty Ltd (**Adani**) has submitted Initial Development Plans (IDPs) along with the applications for Mining Leases ML 70441, ML 70505 and ML 70506 for the "Carmichael Coal Project" (**the Mine Project**) and these IDPs were approved. The Mining Leases were granted for a term of 30 years commencing from 1 May 2016 with the 5 year Plan Period expiring on 30 April 2021. As per approved IDP, though mining operations were to commence in year 2016 there has been a delay in commencement due to legal challenges in Queensland and Commonwealth Courts challenging the grant of Mining Leases, Environmental Authority and the registration of the Indigenous Land Use Agreement. On the granting of the Rail, Village and Airport tenures Adani will be in a position to start the construction of the enabling infrastructure to support the mining operations during the year 2018. Since 2016, Adani has also been re-assessing and optimising the mine plans that were included in IDP to bring in efficiencies from a production, cost and operational point of view.

Considering the delay in commencement of project and changes made to the mine plans, Adani wishes to submit a Later Development Plan (LDP).

This LDP consists of proposed mine plan for the balance term of Mining Leases in general, and a detailed mine plan for a Plan Period of five years from 2018-19. This LDP will replace the approved IDPs for Mining Leases ML 70441, ML 70505 and ML 70506.

2. Requirements for an LDP under the *Mineral Resources Act 1989*

Under the *Mineral Resources Act 1989, Chapter 8 Division 4- Approval of proposed Later development plans* sets out the obligations to lodge proposed later development plan, requirements of LDPs and criteria for approving the proposed LDP.

2.1 Section 318EB Obligation to Lodge proposed later development plan

The holder of Mining Lease has the obligation to lodge proposed later development plan -

- Is lodged -
 - at least 40, but no more than 100, business days before the end of the plan period for its current development plan (the current plan period)
 - as soon as practicable after the holder proposes or becomes aware of a significant change to the nature and extent of an authorised activity that is not already dealt with under the current development plan for the lease
- complies with the later development plan requirements under Section 318ED
- with the relevant fee as per Schedule 5 of *Mineral Resource Regulation 2013*

2.2 Section 318ED Later development plan requirements

A proposed Later Development Plan (LDP) must comply with initial development plan requirements as per **Chapter 8 Division 2 section 318DT** which states that an IDP must provide:

- an overview of the activities proposed to be carried out under the proposed mining lease during all of its proposed term;
- for each year of the plan period—
 - the nature and extent of activities proposed to be carried out under the proposed mining lease during the year
 - where the activities are proposed to be carried out
- for each mineral the applicant proposes to mine under the proposed mining lease, each of the following—
 - the location and an estimate of the resources of the mineral in all of the area, or proposed area, of the proposed mining lease
 - the standards and procedures used to make the estimate
 - the rate and amount of the proposed mining
 - approximately when the proposed mining is to start
 - a schedule for the proposed mining during the plan period
- maps depicting the above

- reasons why the plan is considered appropriate.

Apart from meeting the above general requirements the LDP must also

- highlight any significant changes from the current development plan for the mining lease; and
- state whether the current development plan has been complied with; and
- if the current development plan has not been complied with—state the details of, and the reasons for, each noncompliance.

2.3 Section 318EF (Criteria for deciding whether to approve proposed plan (LDP))

Matters that need to be considered in deciding whether to approve a LDP include each of the following-:

- the criteria under section 318EA (see below) for deciding whether to approve a proposed initial development plan
- the extent to which the current development plan for the mining lease has been complied with
- the CSG assessment criteria
- the effect of any approval of the proposed plan on any relinquishment condition for the mining lease
- if the proposed plan provides for a significant change that is a cessation or reduction of mining or other purposes for which the mining lease is granted—
 - whether the cessation or reduction is reasonable
 - whether the mining lease holder has taken all reasonable steps to prevent the cessation or reduction.

2.4 Section 318EA (Deciding whether to approve proposed plan)

The criteria under section 318EA for deciding whether to approve a proposed later development plan are:

- the potential of the area of the proposed mining lease for each of the following (the activities)—
 - mining
 - each other purpose for which the lease is sought
- the nature and extent of the activities
- when and where the activities are proposed to be carried out
- whether the mining of minerals that, under section 234, are sought to be specified in the lease will be optimised in the best interests of the State, having regard to the public interest
- the CSG assessment criteria.

2.5 Section 318DU (Plan period)

Section 318DU requires the proposed plan (LDP) must state its period. In the current case the plan period will be 5 years from 2019.

2.6 Meeting LDP requirements under the Mineral Resources Act 1989

The listed LDP requirements under the Mineral resources Act 1989 are addressed in Table 1.

Table 1– LDP requirements

Requirement #	Section	Requirement	Response
1	Section 318ED	The proposed Later Development Plan must comply with the Initial development requirements (as per section 318DT)	See below points 2 to 6
2	Section 318DT	An overview of the activities proposed to be carried out under the proposed mining lease during all of its proposed term	Section [3] of this LDP
3	Section 318DT	For each year of the plan period— - the nature and extent of activities proposed to be carried out under the proposed mining lease during the year - where the activities are proposed to be carried out	Section [3] of this DP
4	Section 318DT	The location and an estimate of the resources of the mineral in all of the area, or proposed area, of the proposed mining lease	Section [4] of this LDP
		Standards and procedures used to make the estimate	Section [4] of this LDP
		Rate and amount of the proposed mining	Section [5] of this LDP
		Approximately when the proposed mining is to start	Section [5] of this LDP
		Schedule for the proposed mining during the plan period	Section [5] of this LDP
5	Section 318DT	Maps showing each criterion in Requirement 3.	Section [4] and [5] of this LDP
6	Section 318DT	Reasons why the plan is considered appropriate	Section [5] of this LDP
7	Section 318ED	highlight any significant changes from the current development plan for the mining lease	See section [3] of this LDP

Requirement #	Section	Requirement	Response
8	Section 318ED	state whether the current development plan has been complied with; and if the current development plan has not been complied with—state the details of, and the reasons for, each noncompliance	Not applicable
9	Section 318EF	The extent to which the current development plan for the mining lease has been complied with	Not applicable
10	Section 318EF	The effect of any approval of the proposed plan on any relinquishment condition for the mining lease	Not applicable
11	Section 318EF	If the proposed plan provides for a significant change that is a cessation or reduction of mining or other purposes for which the mining lease is granted...	Not applicable, this plan does not propose to change a plan or mining.
12	Section 318EA	The potential of the area of the proposed mining lease for each of the following (the activities)—mining and each other purpose for which the lease is sought	Section [4] of this LDP
13	Section 318EA	The nature and extent of the activities	Section [4] of this LDP
14	Section 318EA	When and where the activities are proposed to be carried out	Section [4] of this LDP
15	Section 318EA	Whether the mining of minerals that, under section 234, are sought to be specified in the lease will be optimised in the best interests of the State, having regard to the public interest	Section [6] of this LDP.
17	Section 318AP	The legitimate business interests of the applicant	Section 7 & 8 of this LDP
18	CSG Assessment Criteria (Section 318AP & Section 318EF)	The effect of the proposed mining lease on the future development of petroleum resources in the land	Not applicable

Requirement #	Section	Requirement	Response
19	Section 318AP	The potential for the parties to make a coordination arrangement about— coal or oil shale mining and any incidental coal seam gas mining under the proposed mining lease	Not applicable
20	Section 318AP	The economic and technical viability of the concurrent or coordinated coal and the development of any petroleum from the land	Not applicable
21	Section 318AP	The extent, nature and value of coal or oil shale mining and the development of any petroleum in the land	Not applicable
22	318AT	The attempts required of the applicant to— - consult with the authority to prospect (petroleum) holder about the applicant's proposed development plan; and - make an appropriate arrangement with the authority to prospect (petroleum) holder about testing for petroleum production carried out, or proposed to be carried out, by the authority to prospect holder (a testing arrangement).	Not applicable
23	Section 318DU	The IDP must state its period.	The plan period for this LDP is for a period of 5 years from 2018-19 and in general for the balance term of Mining Lease which expires on 30 April 2046.

3. Later Development Plan Requirements (318ED)

3.1 Comply with the initial development plan requirements

The later development plan has been developed to meet all the requirements of the IDP under section 318DT of Mineral Resources Act 1989. This section and subsequent sections in this report address all the requirements of IDP mentioned above.

3.2 Significant changes from the current development plan

Adani was granted with the Mining leases ML 70441, ML 70505 and ML 70506 in April 2016. The Initial development plan for the above mining Leases has been approved to start the mining in 2016 for a period of 30 years. Since the grant of Mining leases and Environmental Authority for the project, these approvals have been challenged in both Queensland and Commonwealth courts. All the challenges have been unsuccessful and dismissed by the courts and is now in a position to commence the construction activities in later part of 2018 or early 2019; subject to the granting of the land tenure required for the rail, village and airport. As there has been a delay in start of the project from 2016 till 2018, Adani has developed this later development plan for approval under section 318 ED of *MR Act 1989*.

Since 2016, Adani has reworked and optimised the mine plans that were included in IDP to bring in efficiencies from a production, cost and operational point of view. In the Initial development plan the schedule of operation of opencut pits has been spread across all 6 pits over entire lease area (both North and South of Carmichael River). It is to be noted that in this later development plan, only four opencut pits North of Carmichael River will be opened up to reach the peak ROM production of 55 MTPA, during this plan period. The pits South of the river are accessed after the pits in the North are mined out. This approach maximises the production from four pits. The details of the proposed changes have been explained in the following sections of this report.

3.3 Description of proposed Project (s318DT General Requirements)

Overview of Activities during life of the mining lease (s 318DT(1)(a))

Adani has been granted the following Mining Leases on 3 April 2016.

Sl.No	Mining Lease	Area in (ha)	Details
1.0	ML 70441 (Carmichael)	26016	Holder: Adani Mining Pty Limited Minerals: Coal Term- 30 Years, expiring 30 April 2046 Plan Period – 5 years till 30 April 2021
2.0	ML 70505 (Carmichael East)	13524.90	
3.0	ML 70506 (Carmichael North)	1588	

The Project has a total JORC Resource Estimate of 11.11 billion tonnes of coal. Adani proposes to mine coal at the Mine Project by both open-cut and underground methods.

The overall plan of the Mine Project including boundaries of Mining Leases is shown in *Figure 1*. This plan shows an overview of activities during the life of the operation. For a more detailed overview, refer to *Figures 1-6* in the attached **Appendix A**

It is proposed the following mine services and infrastructure be developed during the life of the Project (see **Appendix A – Figures 1 – 6**)

- Open cut operations
- Mine services and infrastructure
- Potable water treatment plant and storage
- Sewerage treatment plant and storage
- Raw water, mine affected water and sediment water storages
- Process water storage
- Water management infrastructure including levees and creek diversions
- Water truck filling stations
- Coal handling and processing plant
- Power reticulation
- Telecommunications
- Warehouse
- Heavy Workshop areas including
 - Repair bays
 - Tyre changing facility
 - Washdown bays
 - Services areas
 - Fuel and lubrication storage and refuelling facilities
 - Battery and gas storage area
 - Cribrooms and offices
- Light vehicle workshop
- Administration facilities and bathhouses
- Carparking for light, medium and delivery vehicles
- Fire Services
- Rail loop
- Airstrip
- Accommodation village
- Explosive storage

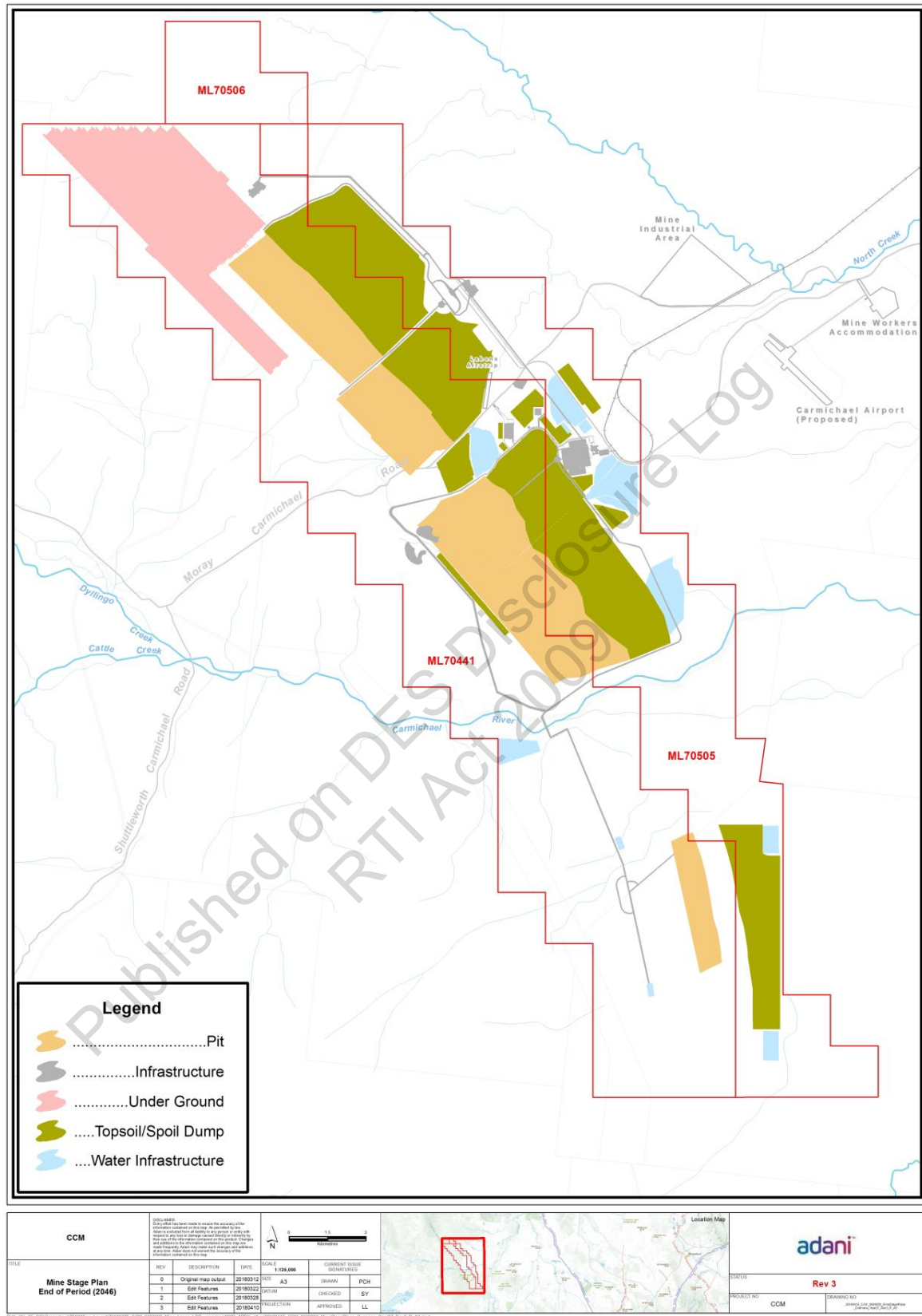


Figure 1 Overall Plan for the Project

3.4 Nature, extent and location of activities during each year of the plan period (s318DT(1)(b)(i) and (ii))

The geological characteristics of the resource define the location of mining operations. These then define the optimal location of mine infrastructure and their interdependencies, including site access, services and infrastructure connecting the mine and third party service providers.

To achieve the maximised use of the resource, then infrastructure must not be developed over coal deposits. The location of the main infrastructure area is located outside the sub-crop line of the identified economic seams.

The out-of-pit dumps have also been positioned outside of the sub-crop line of the identified economic seams on ML 70505 Carmichael East to minimise the sterilisation of the coal resources in the remaining areas of the Carmichael Coal Project, especially in ML 70441.

The nature, extent and location of activities on the area of the Project during the plan period are shown in **Appendix A -Figures 1-6**.

4. Description of resource

A JORC Resource report has been completed for Adani in respect of Coal Resource for the Carmichael Coal Project:

- "Adani Mining Pty Ltd – Updated Resource Report – Carmichael Coal Project MLA 70441, MLA 70505 and 70506"- by ROM Resources

All resource information for this LDP has been sourced from the above report.

4.1 Resource estimate and location of each mineral (s 318DT(1)(c)(i) and (ii))

The technical feasibility of the Project is dependent on the geological and geo-technical characteristics of the area underlying the land. Geological characteristics of the proposed mining lease area include the geology and location of varying qualities, quantities and depths of coal deposits, the hydrology of the site and the location of the coal sub-crop. The location and structure of the known resource dictates the proposed mine layout.

Regional Geology

The Project lies within the Galilee Basin which covers an area estimated at 247,000km² of Central Queensland. Figure 2 shows the extent of the Galilee Basin and its relative position to the other major coal basins in Queensland.

The stratigraphic succession of the Galilee Basin is thought to be partly related to the sedimentary successions of the Cooper and Bowen Basins. Major coal deposition occurred in the Galilee during the Early Permian in the Aramac Coal Measures, and in the late Permian in the Colinslea Sandstone and Bandanna Formation and their correlatives being the Betts Creek Beds in the north of the Galilee Basin. Figure 3 shows the generalised Stratigraphy of the Galilee Basin.

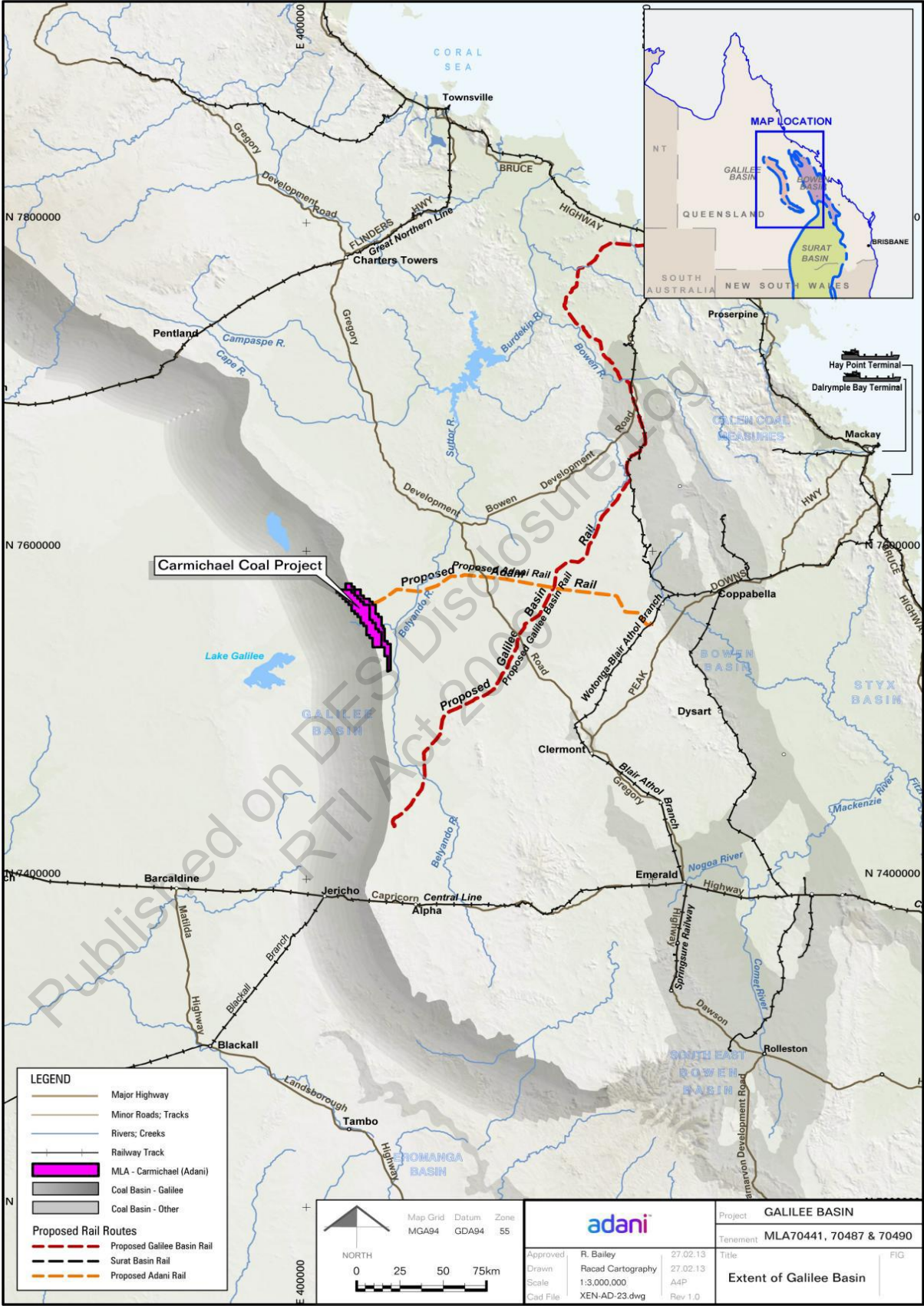


Figure 2 Galilee Basin Extents

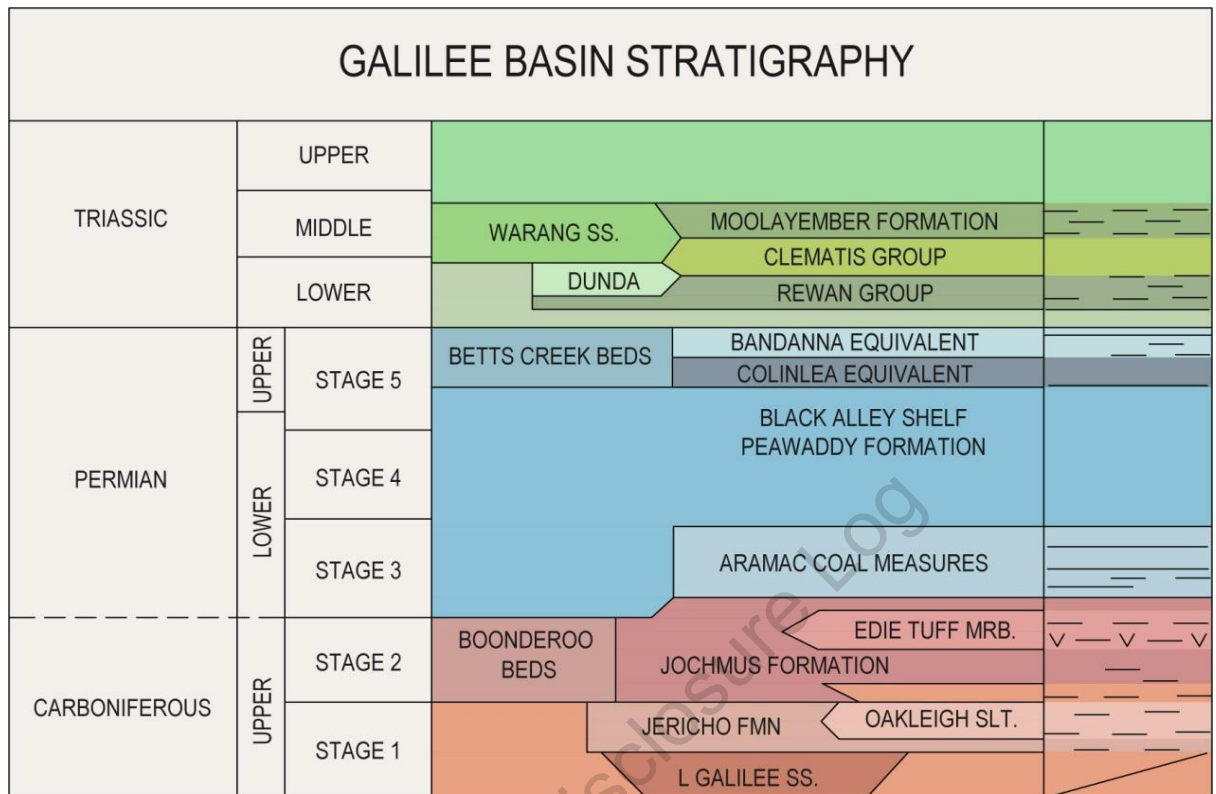


Figure 3 Stratigraphy of Galilee Basin

Deposit Geology

Within the Project, Tertiary age sands, clays and laterites unconformably overlay the distinctive grey-greenish Triassic mudstones and claystones of the Rewan Formation. In the west of the tenement the Triassic age Dunda beds crop out at the surface and are comprised of lithic sandstone, siltstones and mudstones.

The Dunda Beds conformably over lay the Rewan Formation that in turn unconformably overlays the Late Permian siltstones, sandstones and coal seams of the Bandanna Formation and the Colinlea Sandstone. A schematic cross section of the rock units found in the Project is shown in Figure 4.

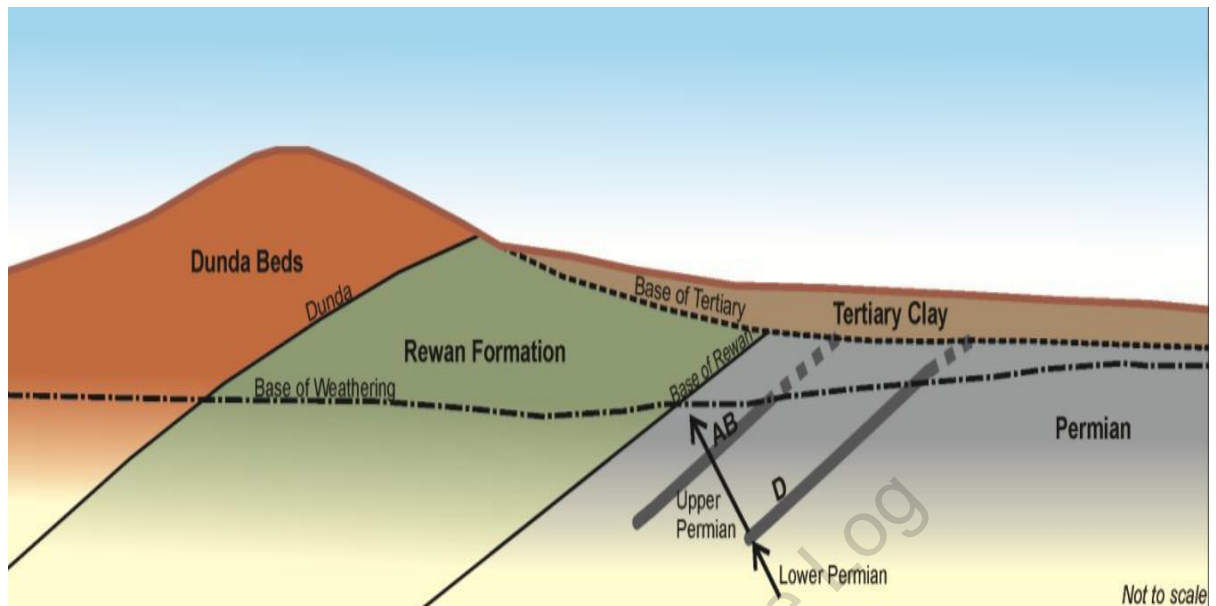


Figure 4 Cross section of the Project

The Tertiary sediments are composed of unconsolidated to semi-consolidated sediments approximately 50 m in thickness in the east of the Project, thinning to zero in the west. The Dundas beds and Rewan formation overlay the Permian coal sequence in the west, with overburden thicknesses of approximately 300 m to 400 m.

In the far east of the Project area, the weathering penetrates the Tertiary and the Upper Permian units. In the west of the area, the base of weathering penetrates the unconsolidated Tertiary cover, into the underlying Rewan Formation.

The thickness of weathering ranges from 50 m in the east to 200 m in the west. An overburden and geotechnical characteristics review concluded the weathering profile is deeper in the Dundas Beds and Rewan formation in the west, than that seen in the Tertiary cover in the east of the Project area.

The Late Permian sequence in the Project is approximately 150 m thick and dominated by sandstones and siltstones, with coal seams and minor mudstone beds. Mudstone beds are generally thin and commonly carbonaceous, ranging in colour from dark grey through grey to fawn and brown.

There are five coal seam groups in the Permian sequence, AB, C, D, E and F. The seam groups range in thickness from 0.15 m to over 20 m, with an approximate maximum cumulative thickness of approximately 50 m, including the C seams and approximately 40 m excluding the C seams. Fawn coloured carbonaceous mudstones are typically associated with coal seams, particularly near the C seam horizon. Figure 5 shows a typical stratigraphy in the Carmichael Coal Project.

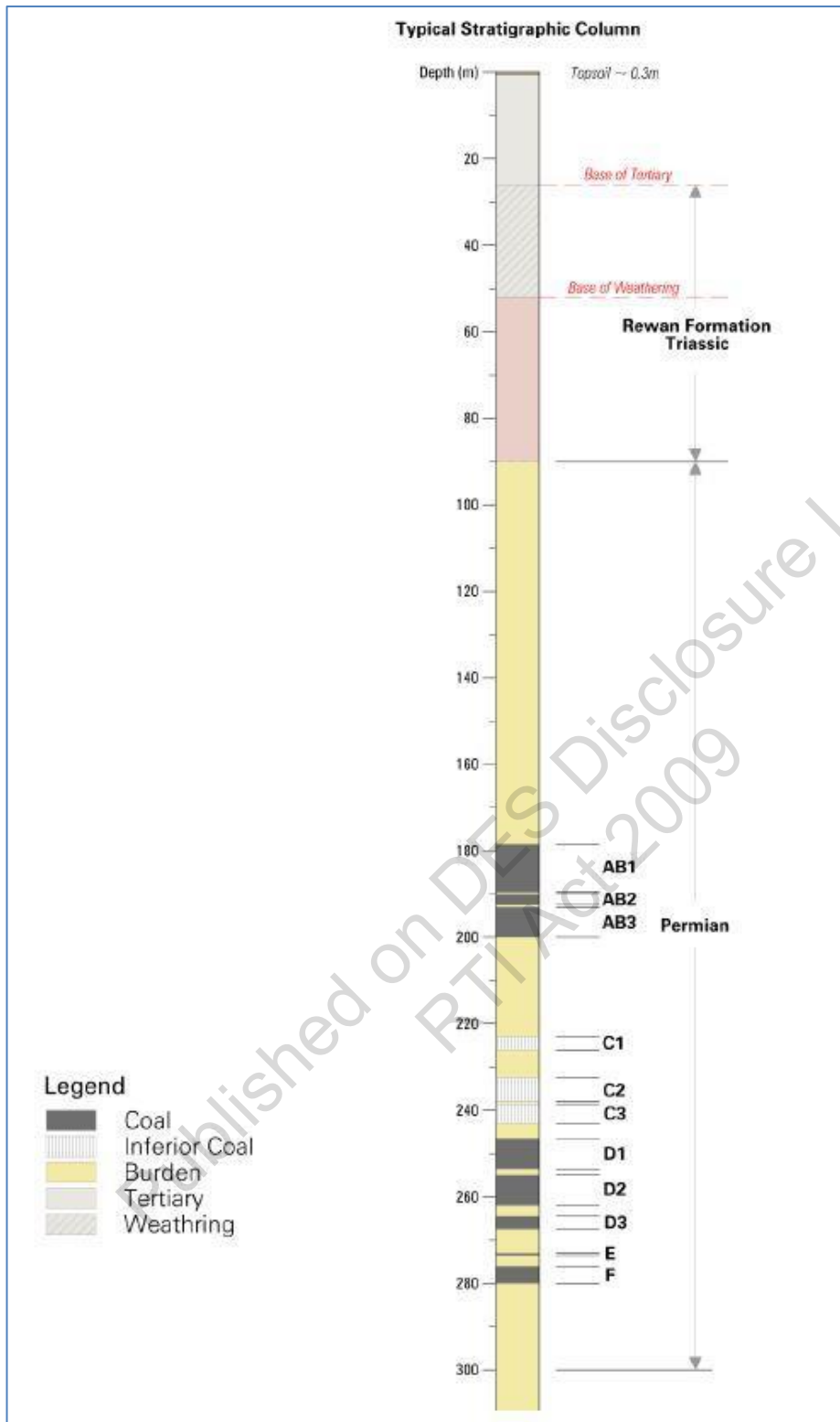


Figure 5 Mine Stratigraphic Column for Carmichael Coal Project

Coal Seam Geology

Coal seams occur in five main seam groups in the Project, AB, C D, E and F, and have been named previously by Carr and Matheson in the 1970s, and are now the accepted nomenclature for the Galilee Basin.

The AB seam and the D seam groups are the thickest seam groups in the project area, attaining an average cumulative coal thickness of approximately 19 m and 12 m, respectively.

The C seams are highly banded with carbonaceous mudstones and are extremely variable in thickness and quality, and they attain a maximum coal thickness of approximately 6 m.

The E and F seams are known to vary in thickness and continuity across the lease with thicknesses ranging from 0.5 m up to 5 m.

The major coal seams have been subdivided to allow the correct modelling of continuous stone bands and partings. Seams were divided into plies when stone bands were of a greater thickness than 0.3 m. Figure 6 shows the coal plies included in the modelling process.

The AB seam has been divided into the following three plies, based on consistent stone bands identified from geophysics and core:

- AB1
- AB2
- AB3

The AB1, AB2 and AB3 seam sequences are often separated by less than 0.5 m of stone band. The AB1 seam has an average thickness of 7.69 m. The AB2 seam has an average thickness of 1.48 m. The AB3 seam is variable in thickness and often splits into several plies. The average total thickness of the combined AB3 plies is 5.68 m.

The C seam exists across the deposit as three plies, namely:

- C1
- C2
- C3
- C4

The C seams vary in thickness, are often dominated by carbonaceous mudstones and are intermittent across the deposit. The average total thickness of the C seam plies across all boreholes is 14.46 m.

The D seam has been divided into the following three plies, based on stone bands identified from geophysics and core:

- D1
- D2
- D3

The D1, D2 and D3 seams are often stratigraphically together and have a cumulative average coal thickness across all boreholes of 14.44 m. D1 and D3 seams have the most consistent thickness of the D seams, with average thickness across all boreholes of 7.02 m and 3.12 m respectively. The D2 has variable thickness and is split in to two or three plies in the centre of the CCP.

The E seam is modelled as a single seam.

The F seam has been divided into two plies, namely:

- F1
- F2

The E and F seams are inconsistent in thickness and are not present in some areas of the deposit. The E and F seams have a cumulative average coal thickness across all boreholes of 14.44 m.

The table showing average thickness of coal seams/ply from all the exploration bore holes is presented in **Table 2**.

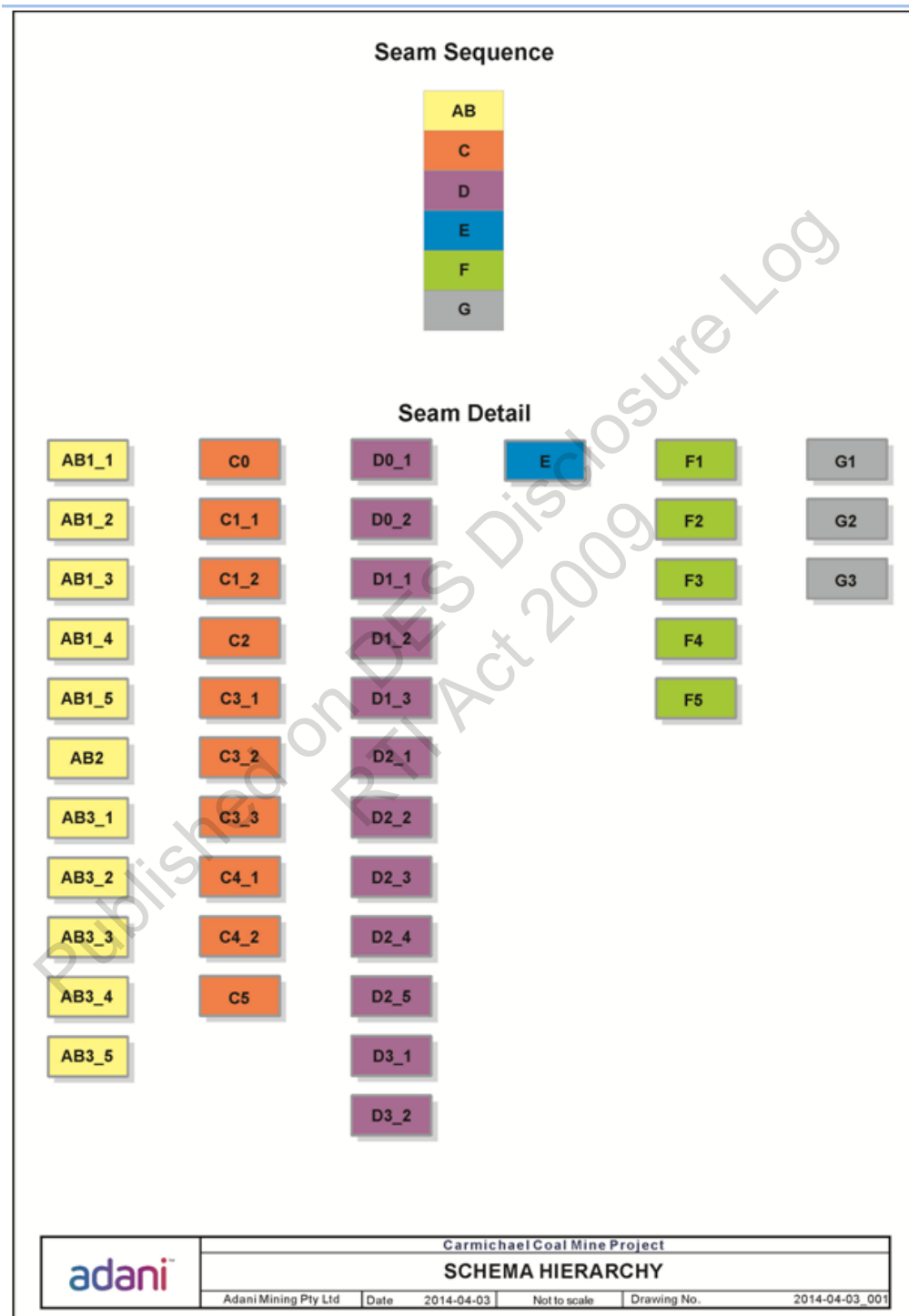


Figure 6 Mine Schema Units

Table 2 Coal Seam /Ply Average Thickness

Seam Name	Ply Name	Average Thickness	Minimum Value	Maximum Value	Total AVG Thickness
AB1	AB1_1	1.84	0.27	5.04	7.69
	AB1_2	2.49	0.92	3.44	
	AB1_3	1.92	1.10	2.72	
	AB1_4	0.89	0.37	2.50	
	AB1_5	0.55	0.30	1.39	
AB2	AB2	1.48	0.10	3.36	1.48
AB3	AB3_1	1.03	0.39	1.55	5.68
	AB3_2	1.27	0.47	1.66	
	AB3_3	1.02	0.32	2.00	
	AB3_4	1.27	0.12	2.40	
	AB3_5	1.09	0.13	2.79	
C0	C0	1.30	0.16	2.22	1.30
C1	C1_1	1.66	0.28	2.79	2.91
	C1_2	1.25	0.15	3.23	
C2	C2	1.52	0.04	5.41	1.52
C3	C3_1	1.46	0.05	4.42	4.73
	C3_2	1.99	0.19	3.89	
	C3_3	1.28	0.09	2.59	
C4	C4_1	1.87	0.21	2.84	3.02
	C4_2	1.15	0.24	3.32	
C5	C5	0.98	0.10	3.01	0.98
D0	D0_1	0.82	0.28	1.44	1.98
	D0_2	1.16	0.38	2.03	
D1	D1_1	2.31	0.46	3.65	7.02
	D1_2	2.63	0.30	5.73	
	D1_3	2.08	0.56	4.24	
D2	D2_1	1.24	0.18	2.91	4.30
	D2_2	1.10	0.05	4.92	
	D2_3	0.40	0.03	1.76	
	D2_4	0.86	0.03	1.53	
	D2_5	0.70	0.09	1.88	
D3	D3_1	1.61	0.26	4.76	3.12
	D3_2	1.51	0.15	2.95	
E	E	0.64	0.02	2.03	0.64
F1	F1	1.51	0.01	4.08	1.51
F2	F2	1.60	0.01	5.30	1.60
F3	F3	1.67	0.25	4.04	1.67
F4	F4	1.37	0.11	3.50	1.37
F5	F5	0.53	0.24	0.85	0.53
G1	G1	0.52	0.11	1.72	0.52
G2	G2	0.50	0.08	1.20	0.50

Seam Name	Ply Name	Average Thickness	Minimum Value	Maximum Value	Total AVG Thickness
G3	G3	0.42	0.31	0.66	0.42
Total Cumulative Average Thickness					54.49

Coal Deposit

The coal deposit in the area of the Project underlies almost 100 percent of ML 70441 and approximately 15percent of the area of ML 70505 and ML 70506.

The coal seams in the Project show a gradual dip of between 2 degrees and 6 degrees to the west, with the seams sub-cropping along the eastern project boundary.

The overburden thickness to first coal is approximately 50 m in the east of the tenement and over 400 m in the west. The overburden material in the east of the Project consists of weathered Tertiary material and weathered Upper Permian sandstones. In the west the Tertiary cover thins and the overburden is primarily made up of weathered Triassic Dunda beds and Rewan formation. *Figure 7* shows the thickness of overburden to the first coal seam intersected; *Figure 8* shows a cross section across the Project and *Figure 9* shows the depth of base of weathering.

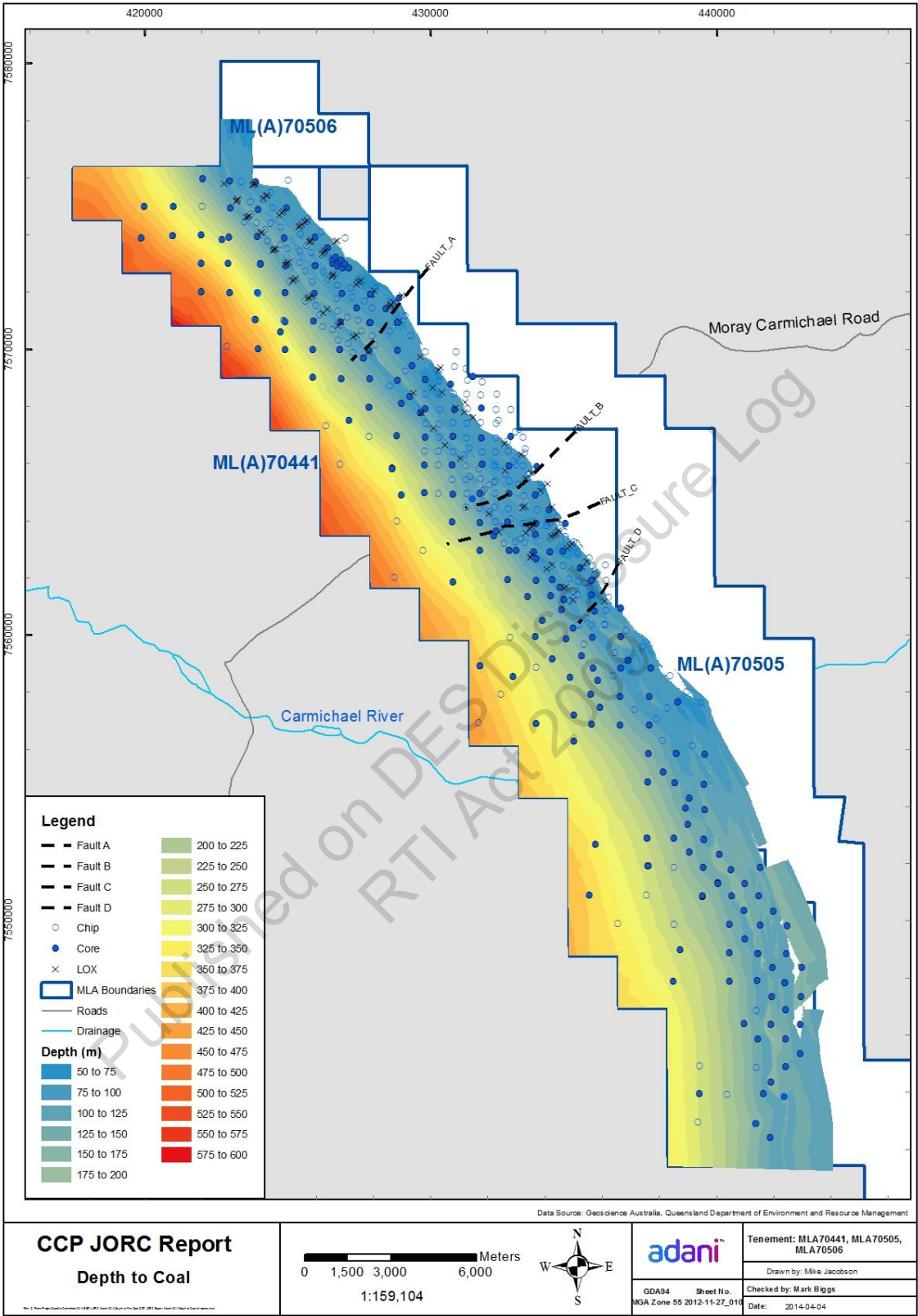


Figure 7 Depth of Overburden to Top Coal Seam

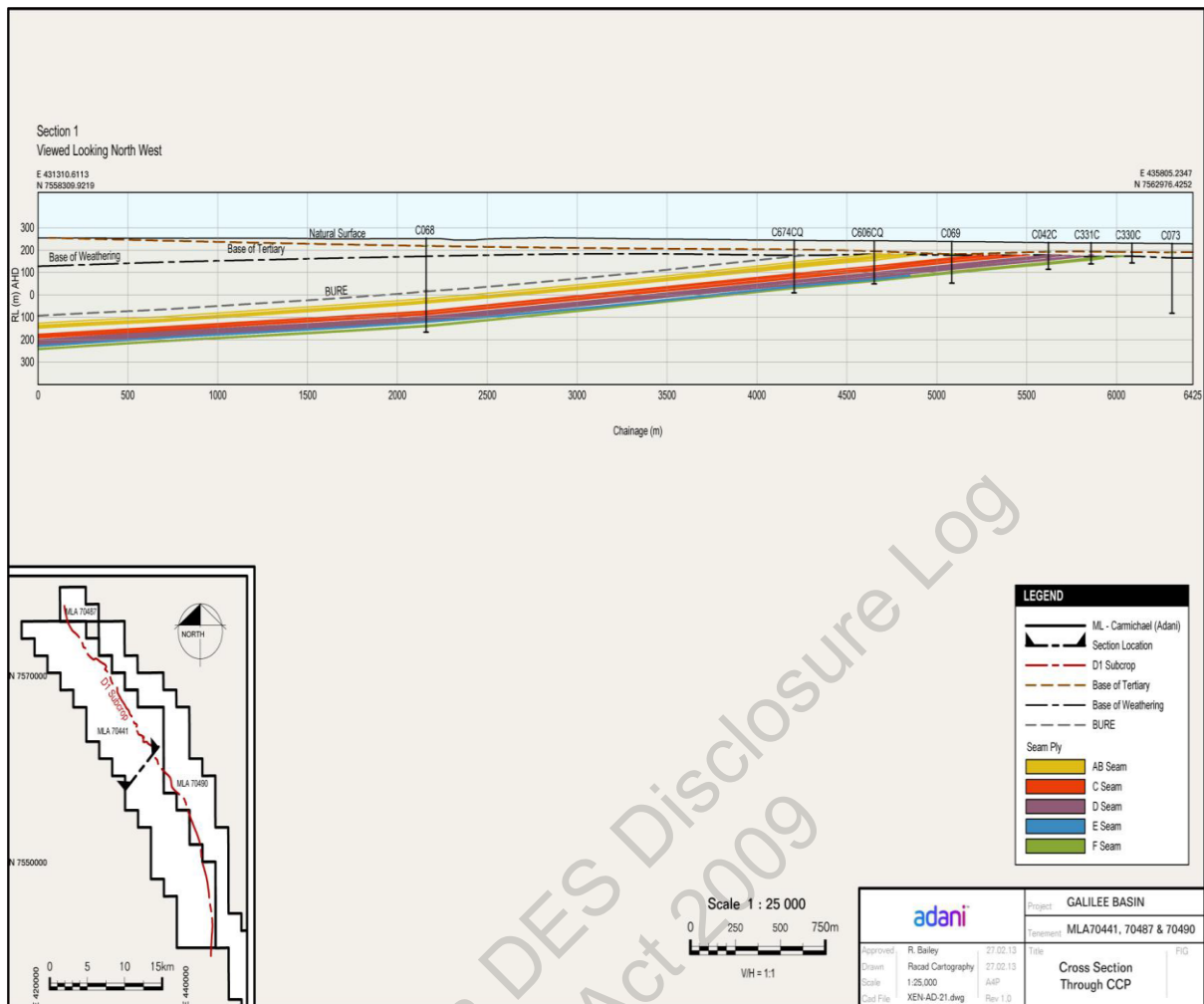


Figure 8 Cross Section Showing Coal Seams and Overburden

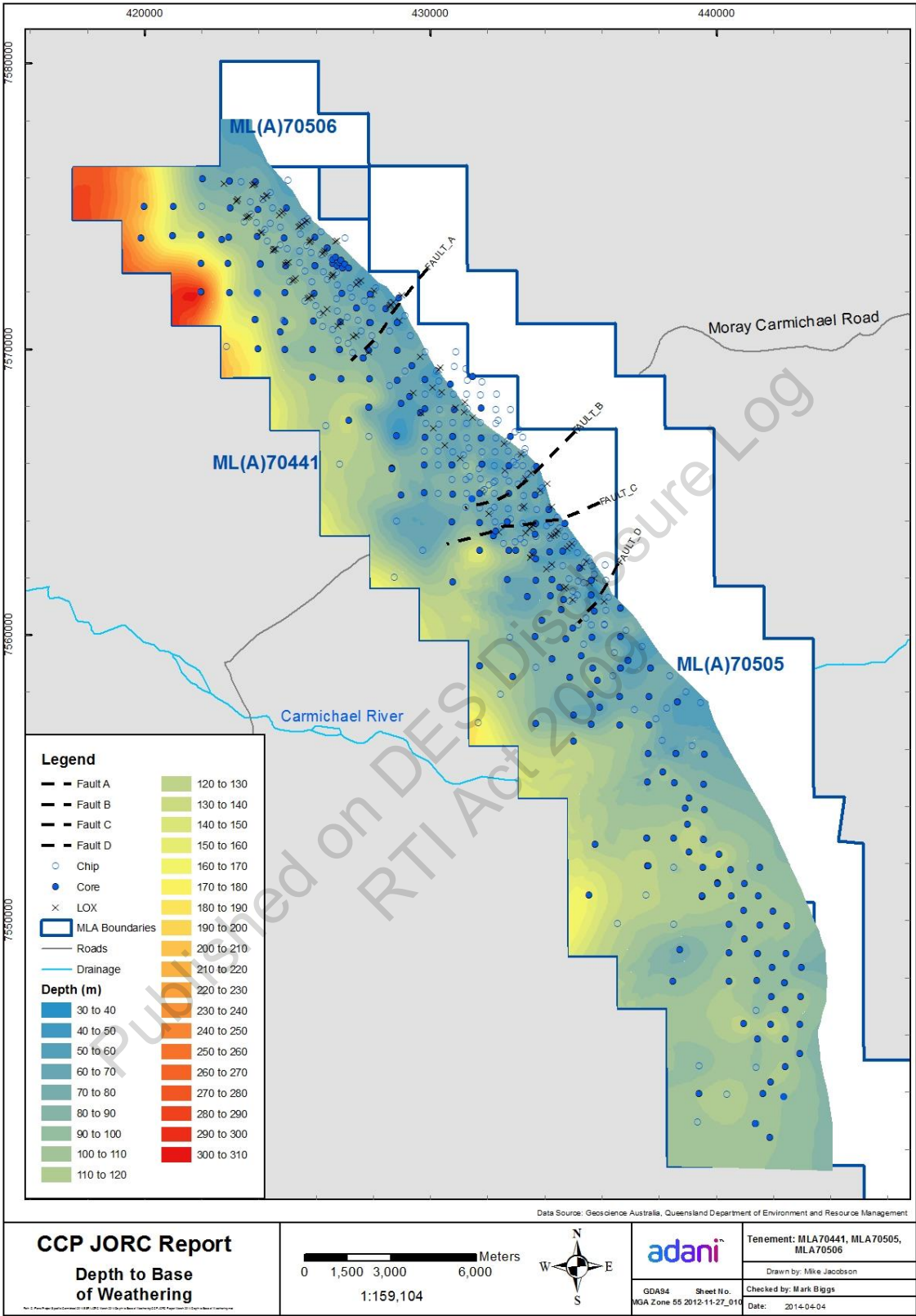


Figure 9 Depth to Base of Weathering

The estimated Resource potential of the Project is shown in **Table 3**.

Figure 10 demonstrates the cumulative coal thickness and structure while Figure 11 to Figure 20 demonstrates the coal thickness and structure of each seam.

Table 3 Coal Resource by Seam TOTAL for the Project

Resource Classification (Bt)				
Seam	Inferred Tonnage	Indicated Tonnage	Measured Tonnage	Total
	(Bt)	(Bt)	(Bt)	(Bt)
AB1	0.48	0.53	0.60	1.61
AB2	0.06	0.14	0.15	0.35
AB3	0.25	0.51	0.49	1.24
C0	0.02	0.04	0.04	0.11
C1	0.26	0.20	0.14	0.60
C2	0.11	0.08	0.02	0.21
C3	0.29	0.08	0.09	0.46
C4	0.26	0.20	0.20	0.66
C5	0.08	0.00	0.00	0.08
D0	0.05	0.01	0.02	0.08
D1	0.65	0.47	0.78	1.90
D2	0.72	0.39	0.64	1.75
D3	0.37	0.33	0.40	1.10
E	0.16	0.10	0.06	0.32
F	0.09	0.22	0.35	0.66
G	0.00	0.00	0.00	0.00
TOTAL	3.82	3.30	4.00	11.11

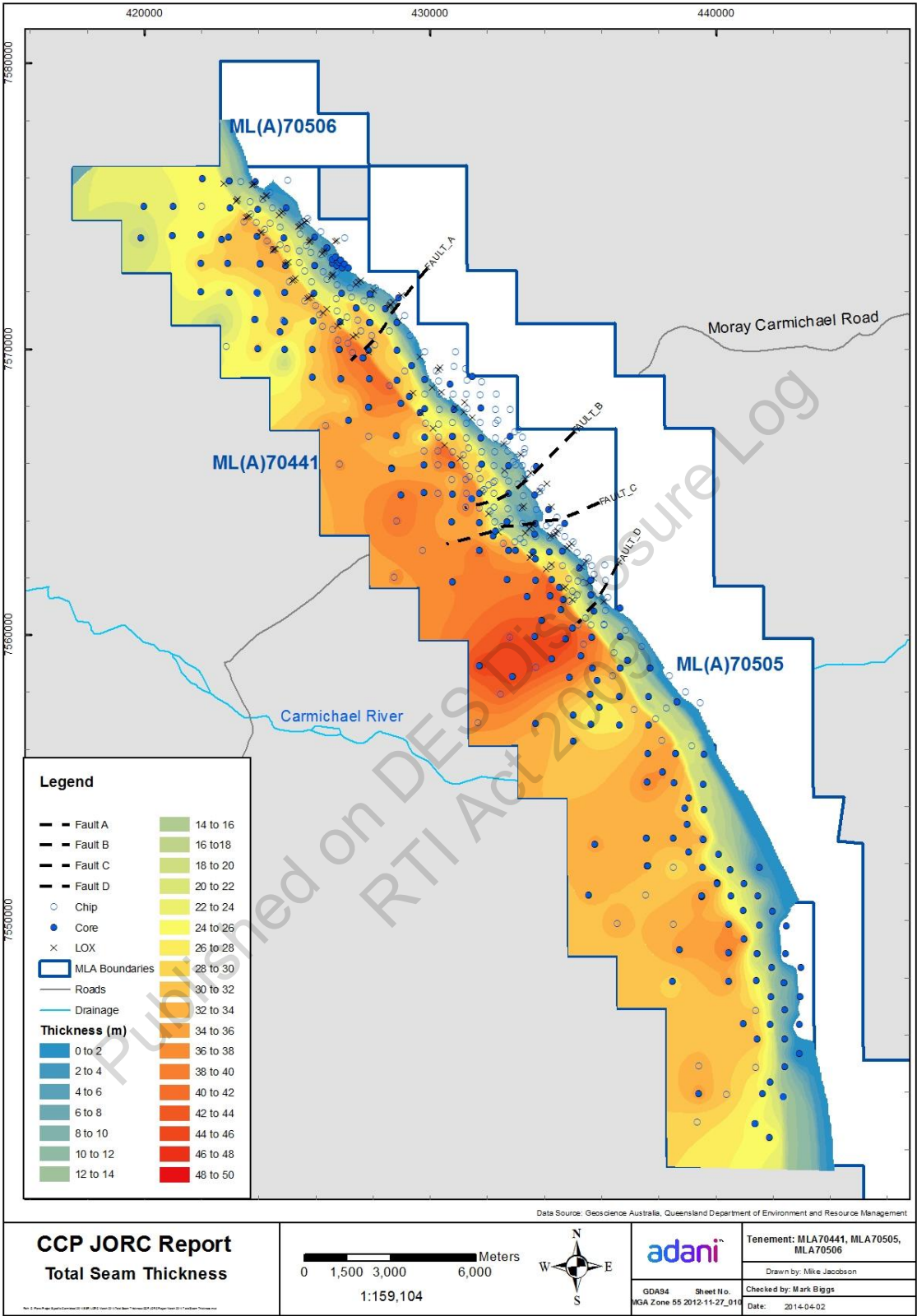


Figure 10 Cumulative Coal Thickness Carmichael Coal Project

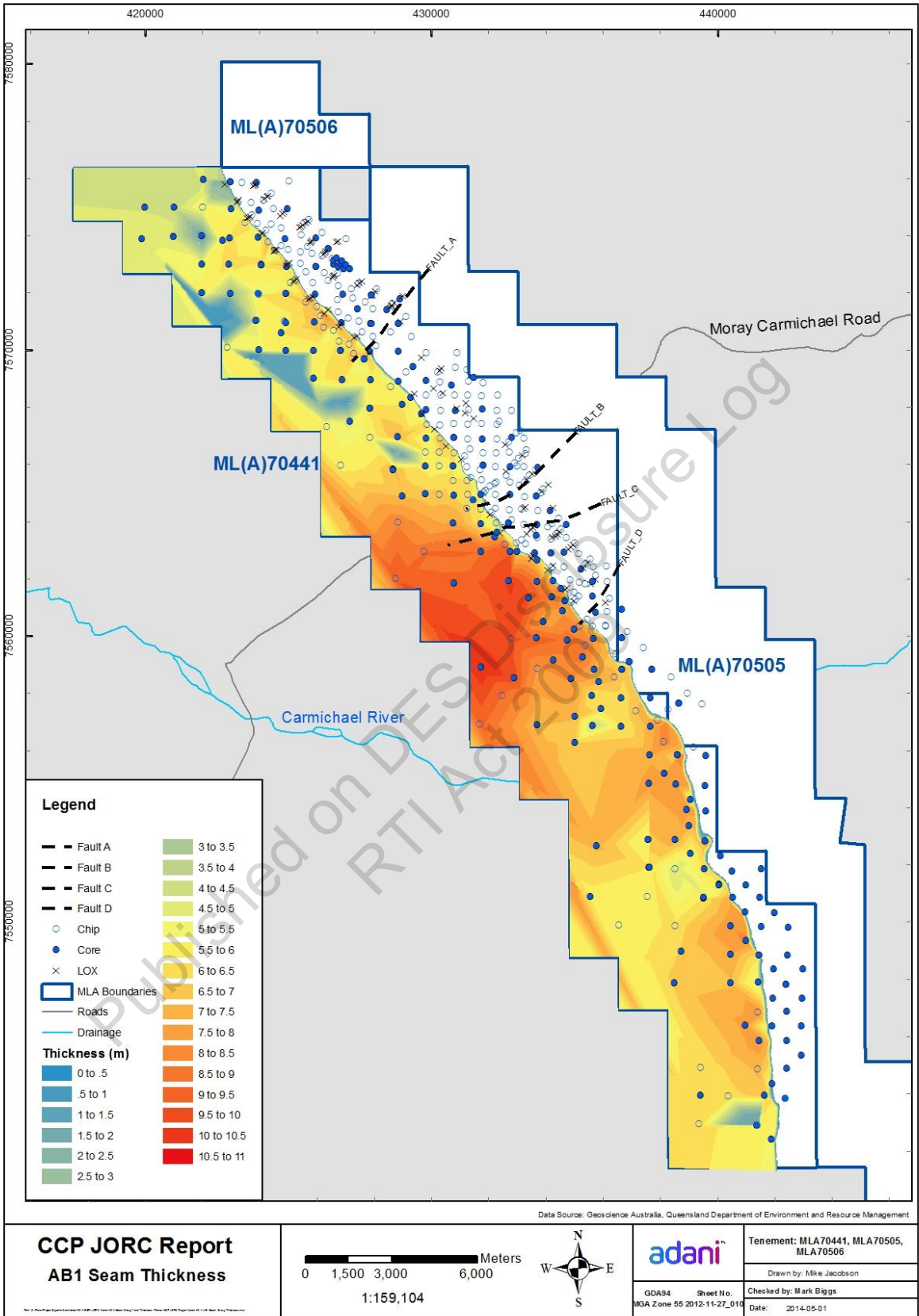


Figure 11 Estimated AB1 Seam Thickness Carmichael Coal Project

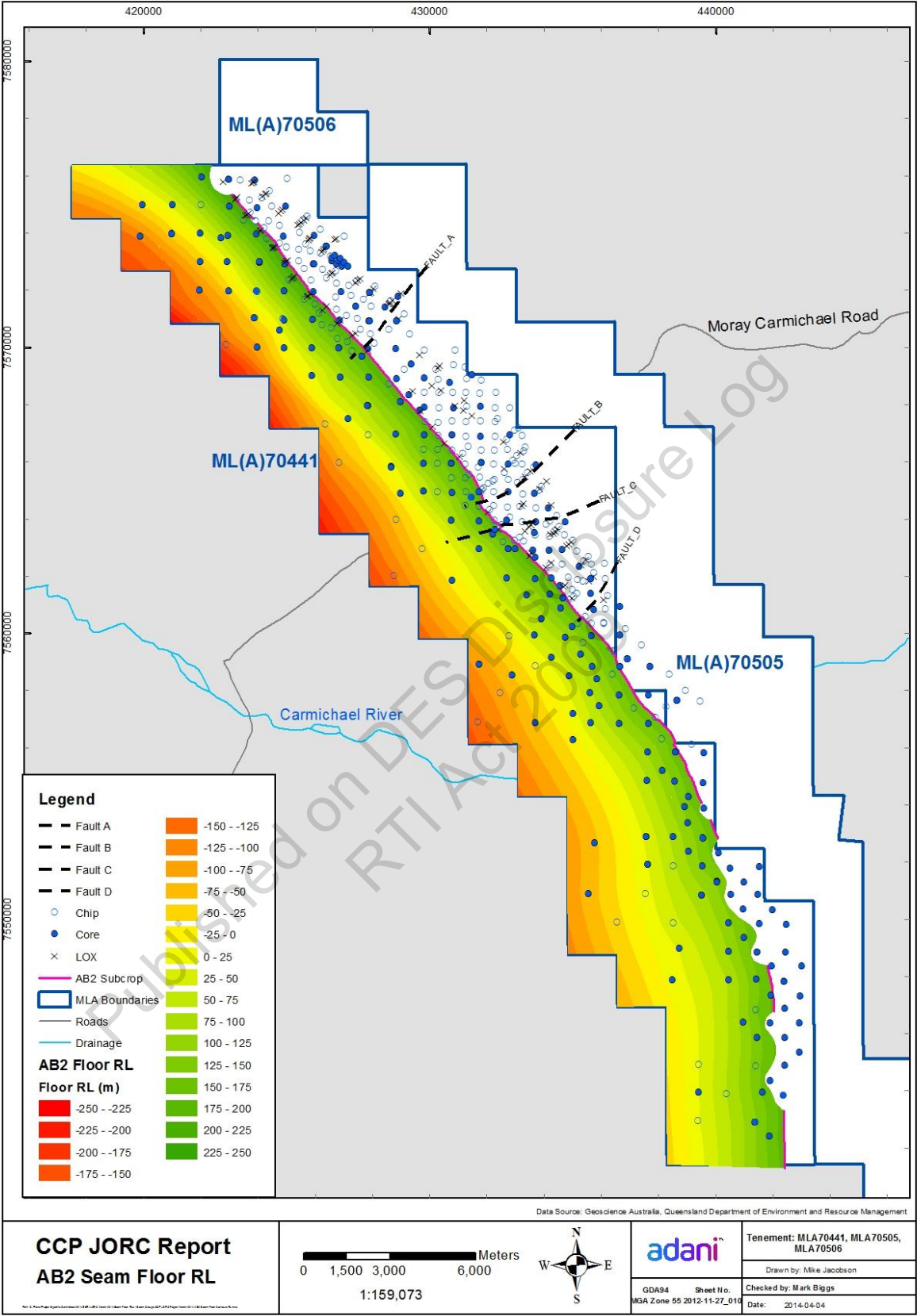


Figure 12 Estimated AB2 Seam Thickness Carmichael Coal Project

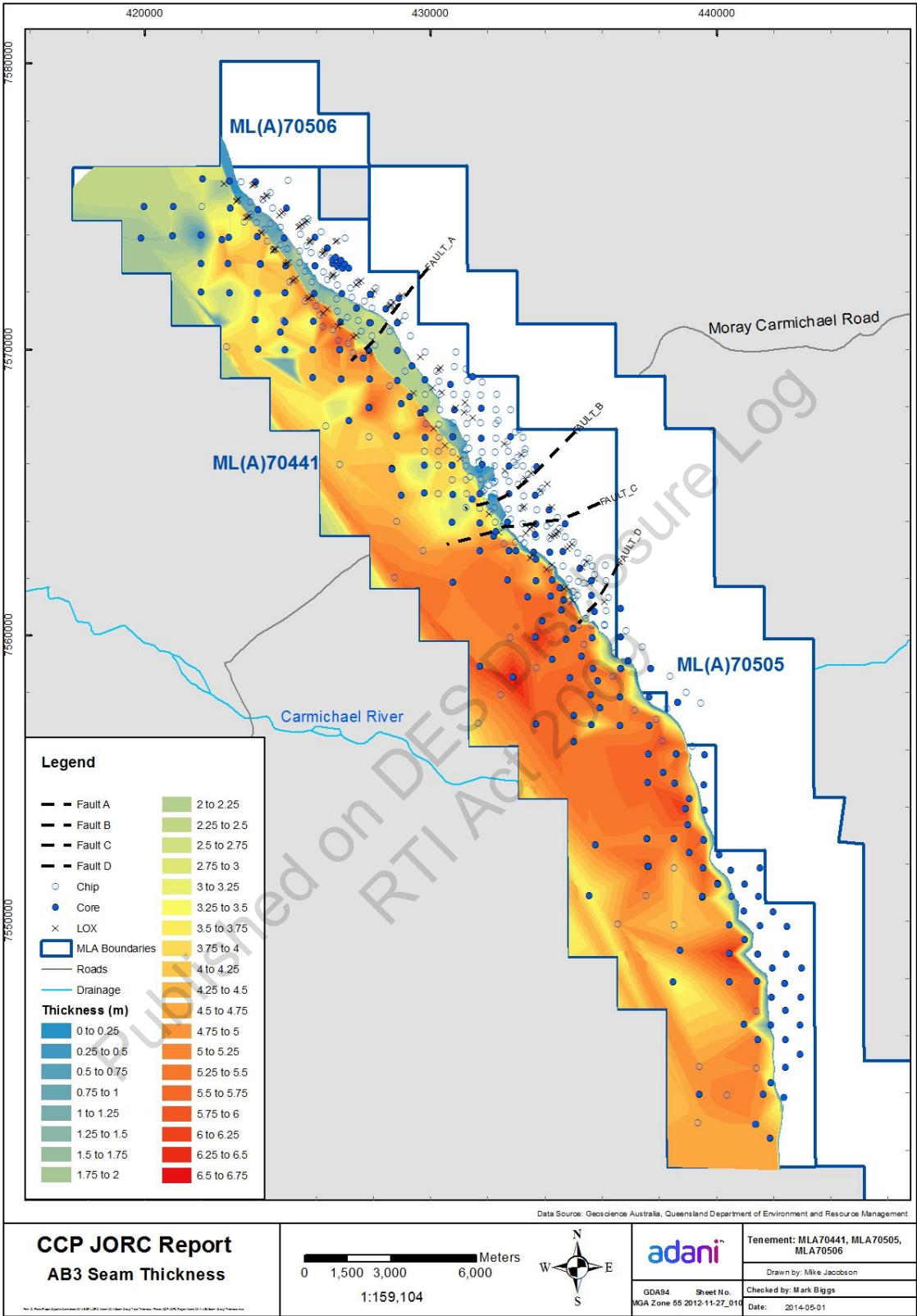


Figure 13 Estimated AB3 Seam Thickness Carmichael Coal Project

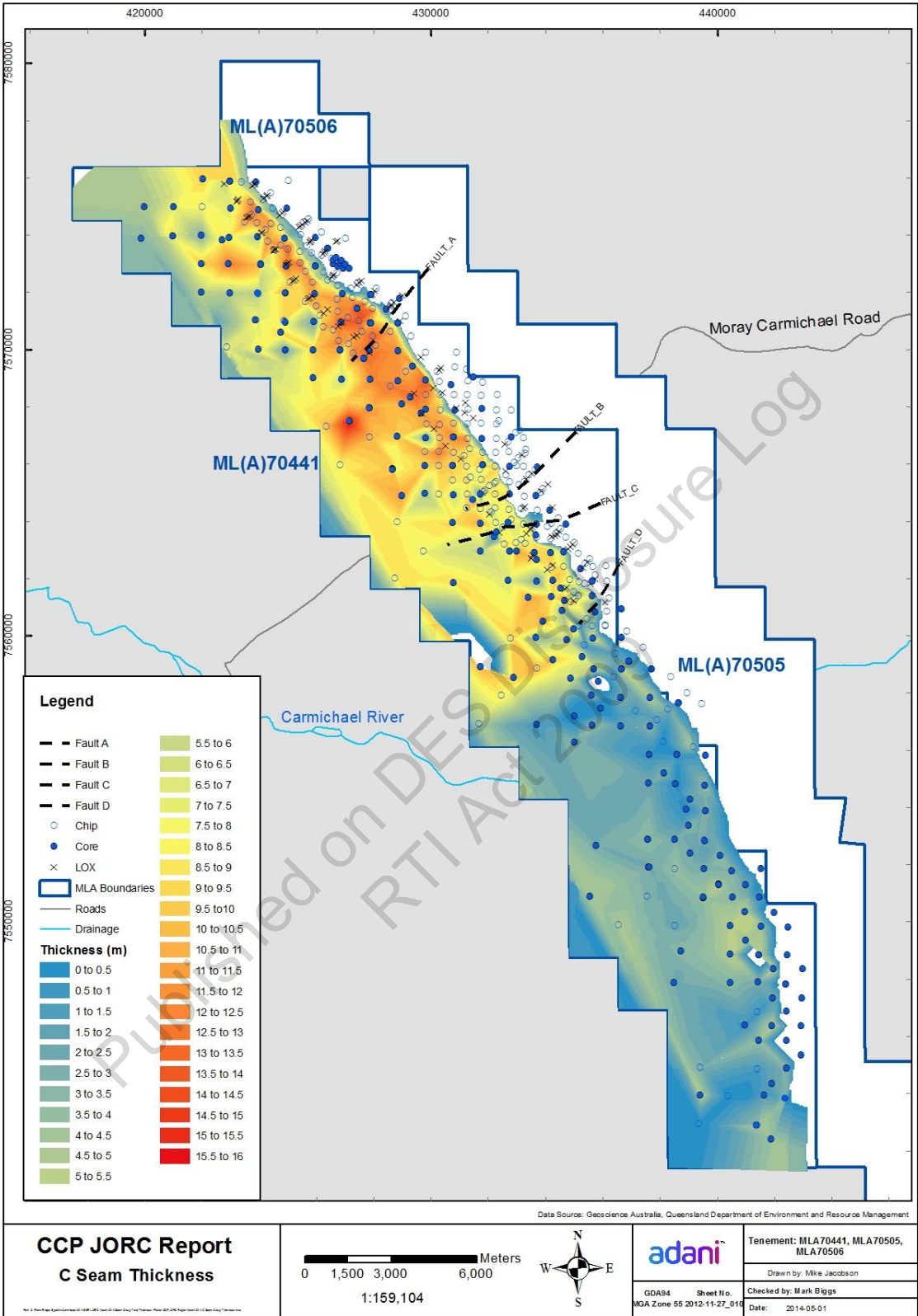


Figure 14 Estimated C Seam Thickness Carmichael Coal Project

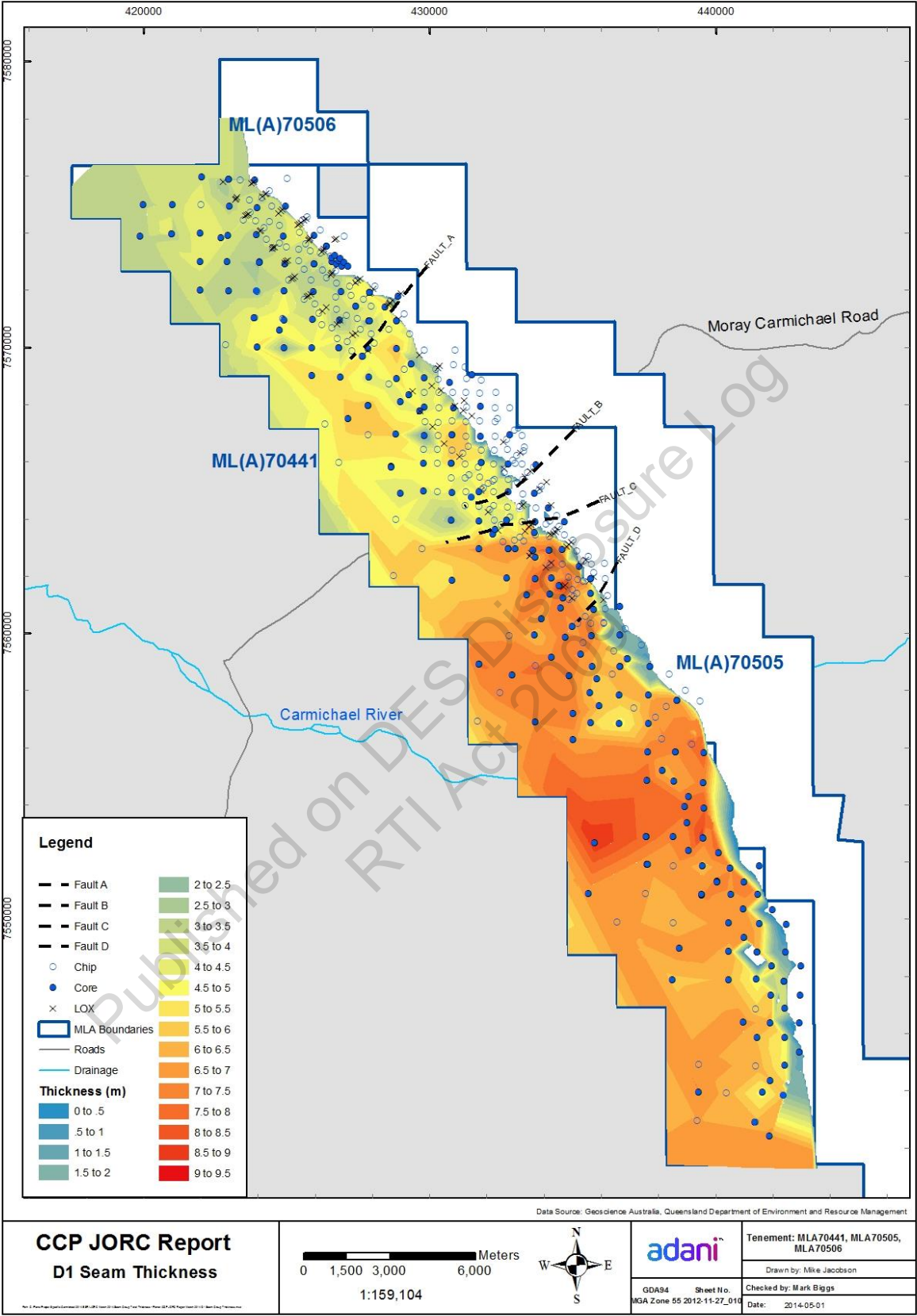


Figure 15 Estimated D1 Seam Thickness Carmichael Coal Project

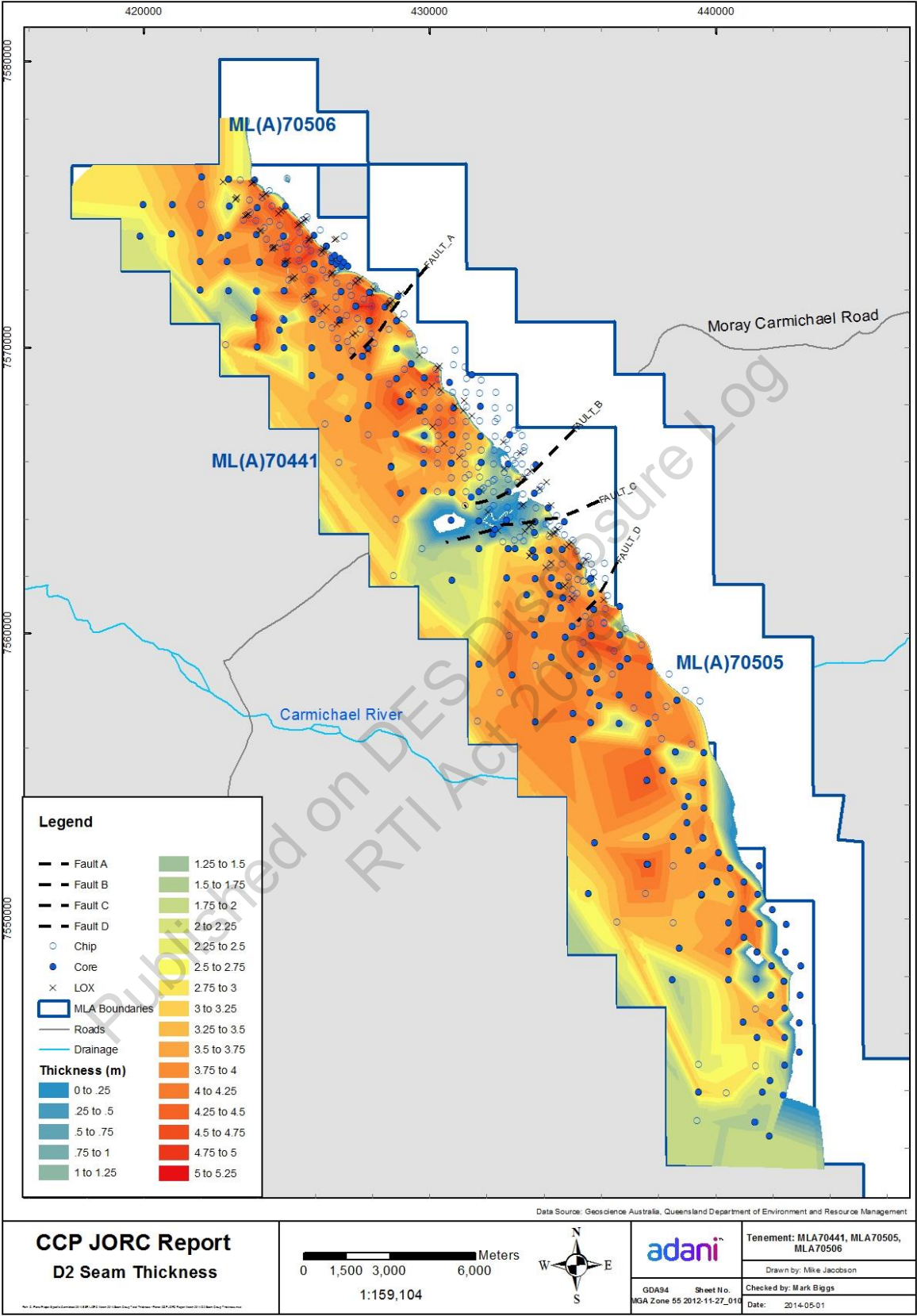


Figure 16 Estimated D2 Seam Thickness Carmichael Coal Project

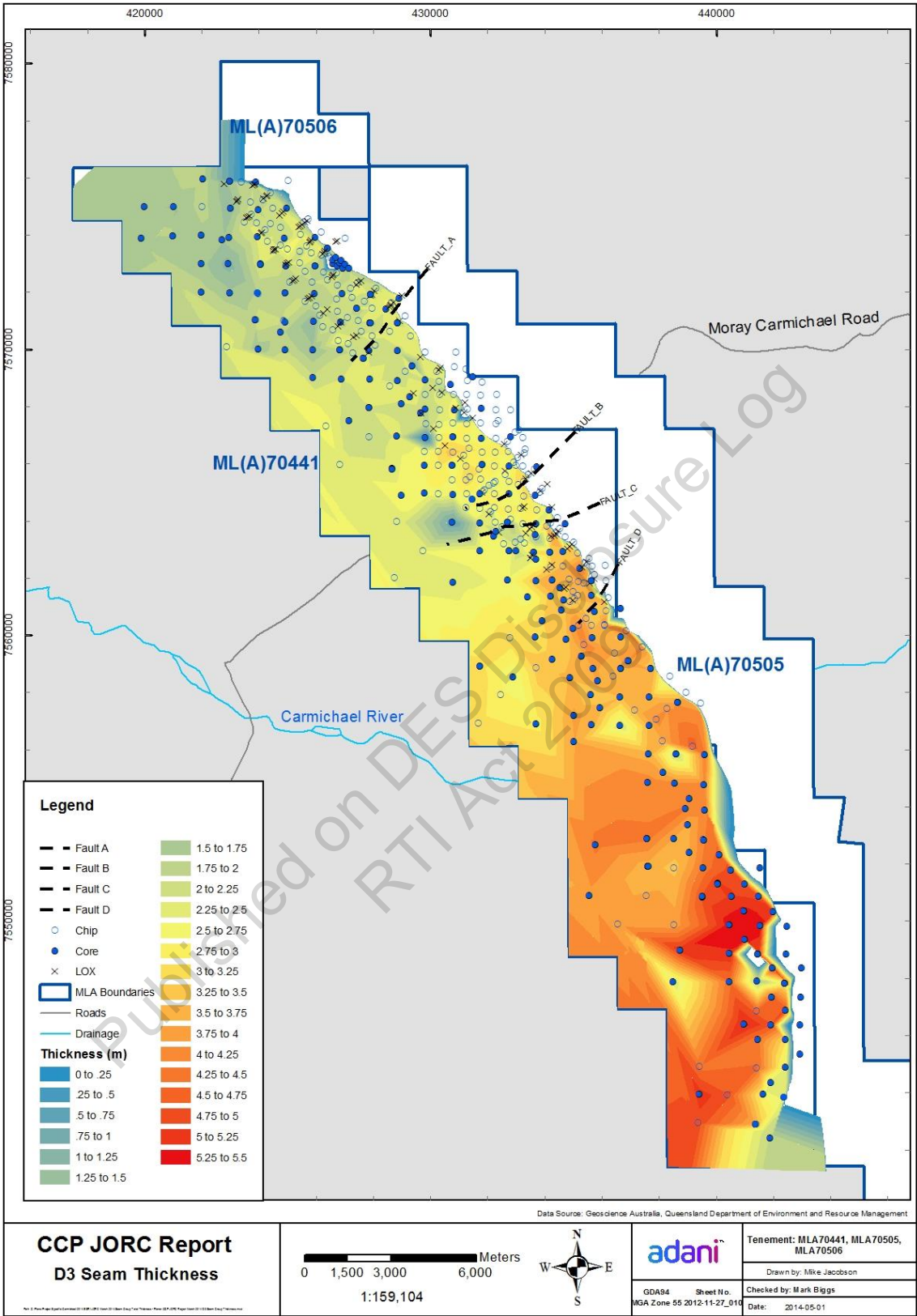


Figure 17 Estimated D3 Seam Thickness Carmichael Coal Project

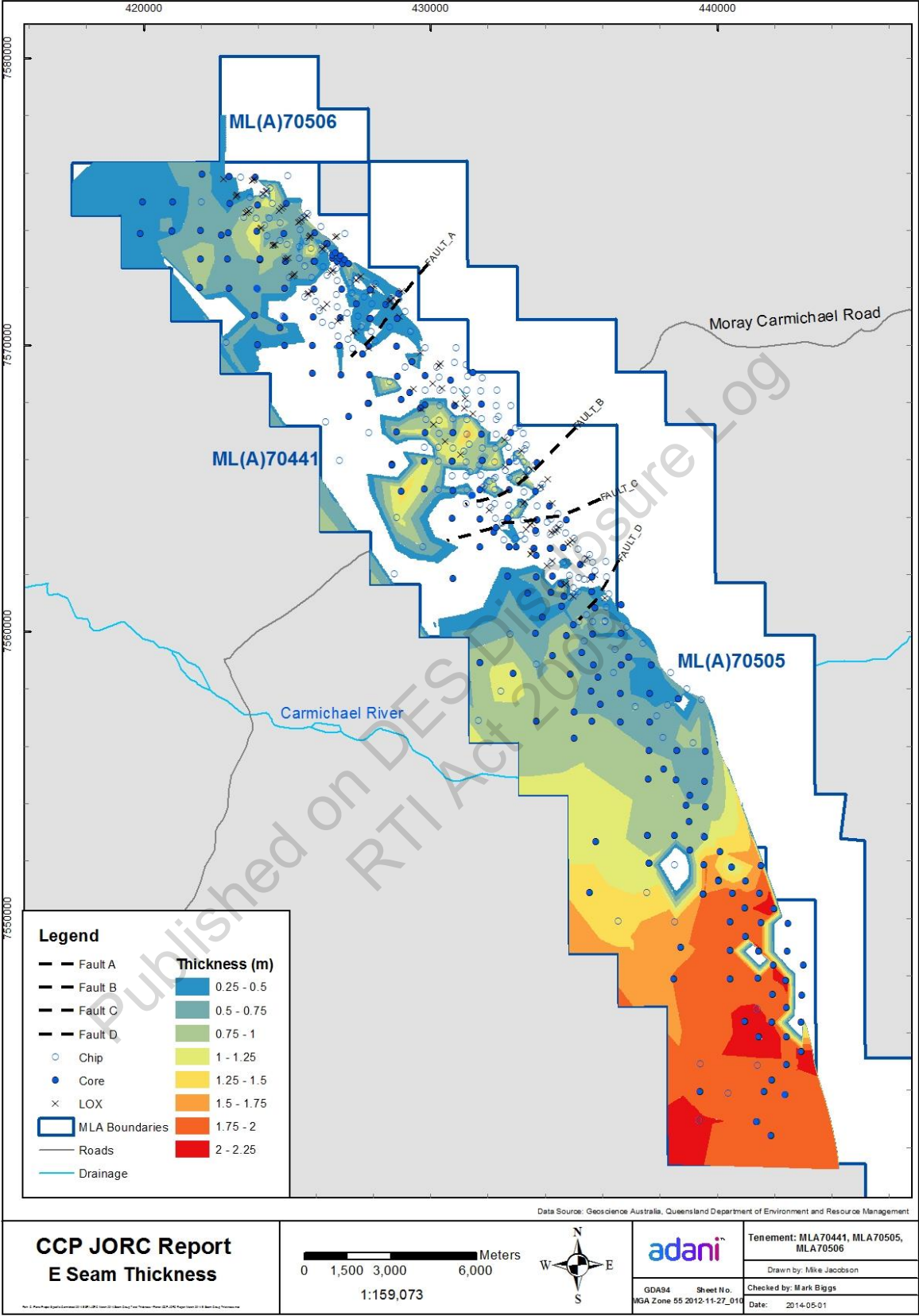


Figure 18 Estimated E Seam Thickness Carmichael Coal Project

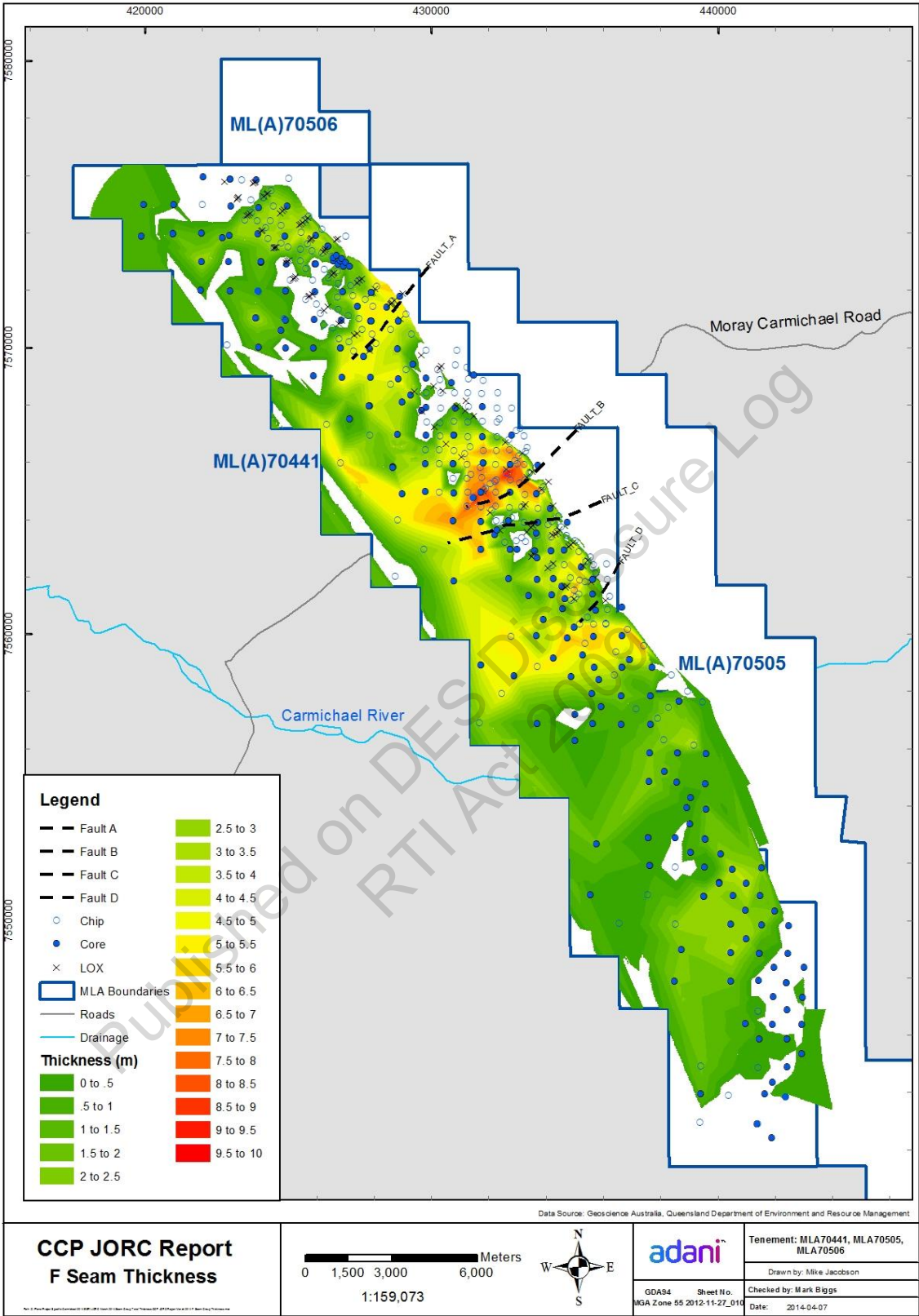


Figure 19 Estimated F Seam Thickness Carmichael Coal Project

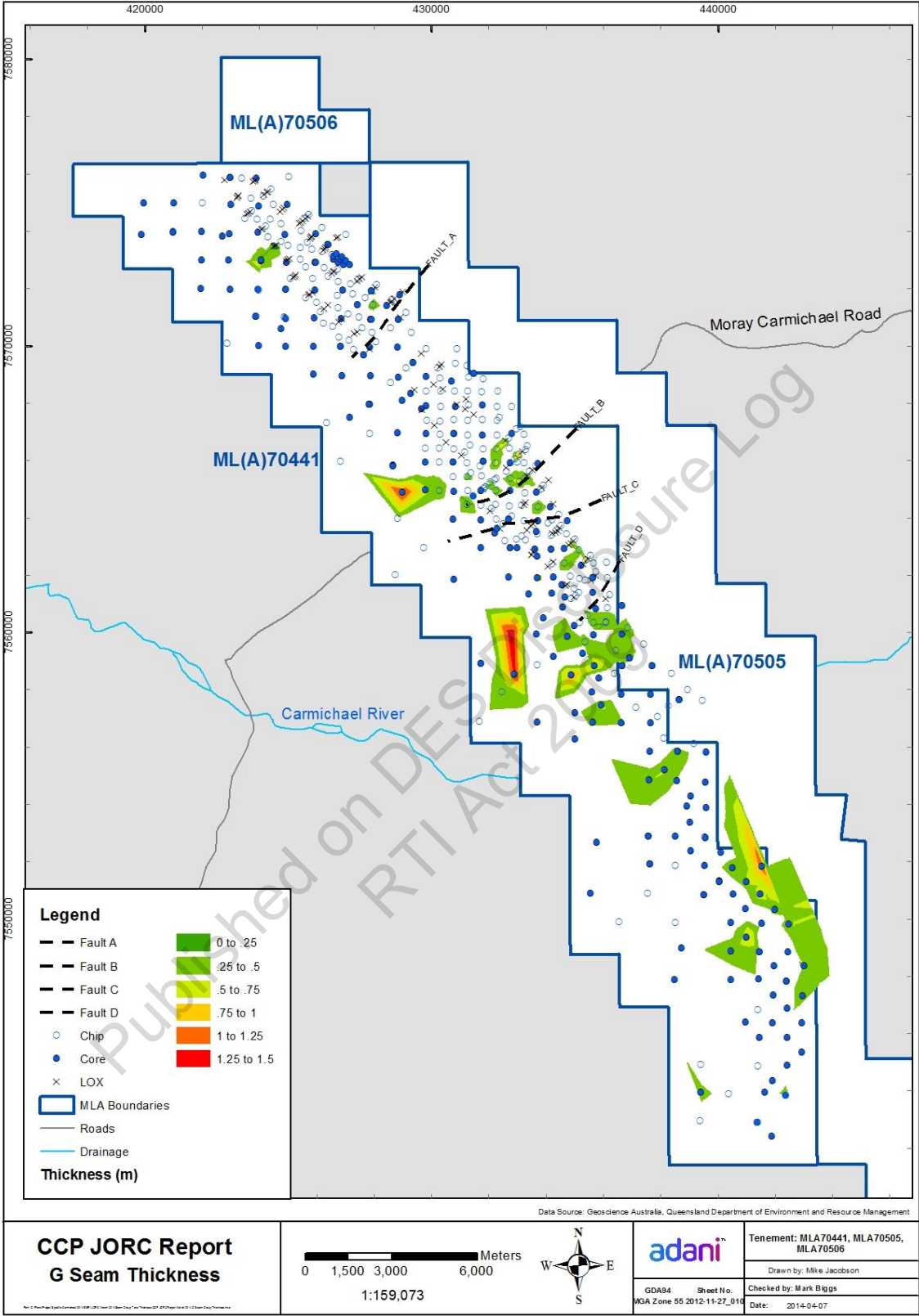


Figure 20 Estimated G Seam Thickness Carmichael Coal Project

5. Mine Schedule and Sequencing

5.1 Mine Schedule (Rate, amount, schedule and approximate start date of mining s318DT(1)(c)(iii), (iv) and (v))

The mining tenure for the operation consists of ML70505, ML70441 and ML70506. The mining strategy is to establish a large scale, efficient operation using proven and highly productive technology to establish a low cost robust and reliable mining process.

Mining will commence in the Pit DE as an open cut operation with production ramping up to 30 Mtpa ROM over 3 years. The annual ROM coal production from the Pit DE will be 30 Mtpa, from year 3 onwards.

A mine plan and schedule has been developed for the Project. The mine schedule is broken into yearly for the first five years from 2019 and an indicative plan at the end of life of this plan (approximately 2046) as detailed below in .

Table 4.

Table 4 Mine production sequence

	Period	2018-19 (Period 1)	2019-20 (Period 2)	2020-21 (Period 3)	2021-22 (Period 4)	2022-23 (Period 5)	2046 (30 years)
Clearing (ha)	ha	163	977	1077	1290	1478	
Total Overburden	M bcm	0	64.78	106.17	100.69	100.81	201
Total ROM Coal	Mt	0	0.4	18.37	29.89	30	75
Total Product Coal	Mt	0	0.0	16.42	27.07	27.52	60

5.2 Mine Sequencing - Opencut

The construction/establishment phase includes 10 months of pre-mining activities which will include the establishment of temporary and permanent site offices and workshops, construction of site access roads, and commencement of CHPP construction.

From the commencement of mining operations, the first 14 months will be prestrip development operations of Pit DE prior to accessing coal. This will result in clear grub and topsoil removal, opening of the box cut, establishing initial coal inventory, installation of infrastructure facilities and CHPP.

Open cut mining starts with opening up of Pit DE. The seams mined within Pit DE are AB, C, D, E and F seams, with a combined thickness of 40 m resulting in a strip ratio of 4.4:1 over the 30 year Pit life. Early mining delivers strip ratios in the order of 3.5:1.

It is proposed to commence overburden removal operations in Period 2 (2019 – 2020) with first coal mining in 2020. Over a period of two years operations will

ramp up from an initial ROM coal production rate of 18 Mtpa to 30 Mtpa. At full production, the mine will require the excavation of approximately 130 Mbcm of overburden annually, at a favourable long term strip ratio of 4. 4: 1 bcm overburden/t ROM coal. *Table 5* details the open cut mine sequence for Pit DE.

Overburden removal will commence in Pit DE box cut using conventional hydraulic excavators and rear dump trucks. The box cuts will commence in the area of the D1 seam sub crop at an estimated depth to top-of-coal 50m. The average depth of the finalised open cut Pits is 300m. The mining technique will be a large-scale truck excavator operation. Coal, Overburden and interburden removal will require the combination of large and ultra-class mining excavators. During the early stages of mining, overburden will be transported to out-of-pit dumps. Once enough room has been created in pit the overburden will be placed back in pit.

All ROM coal will be transported by truck to centralised ROM stockpiles and fed to the bypass feeder breakers, or high ash wash feeder breakers. The low ash ROM coal will bypass the Coal Processing Plant (CPP) to be later blended with the high ash ROM coal which has been washed at a nominal 1.8 cut point producing a single product. The product coal will be stockpiled separately on a linear stockpile, prior to blending and loading on to trains for transportation to the port.

Table 5 Opencut Mine Sequencing

Opencut Production sequence							
		2018-19 (Period 1)	2019-20 (Period 2)	2020-21 (Period 3)	2021-22 (Period 4)	2022-23 (Period 5)	2046 (30 years)
Pit DE ROM	Mt	0	0.4	18.37	29.89	30	30
Pit BCROM	Mt	0	0	0	0	0	25

5.3 Mine Sequencing – Underground

Underground mining will be in the AB1 and D1 Seams.

Underground mining will involve the use of continuous miners to complete development and long wall equipment will be used for extraction of the developed coal block.

Underground operations will commence in the Northern area of Carmichael in Mine 1, with development commencing from a box cut up to sub crop areas of AB1 Coal seam at a depth of cover of around 70m.

Underground mining will start after 10 years from the start of this plan, by way of driving mains and gate roads for longwall panels using continuous miners.

Longwall mining will commence from year 12 of this plan, with a production capacity of reaching to peak of 20MTPA by 2040.

5.4 Mine Staging

Below table explains the activities that will be carried out during the first five years of this plan.

Year(s)	Activities
Period 1 (Year 2018-19)	Construction of offsite infrastructure like workers accommodation village and Air strip
	Construction of onsite water Infrastructure
	Construction of onsite facilities and Infrastructure.
	Refer Figure 1 of Appendix A
Period 2 (Year 2019-20)	Commence Pit DE pre strip
	Complete onsite facilities and Infrastructure
	Construction of Coal Handling and Processing Plant
	Refer Figure 2 of Appendix A
Period 3 (Year 2020 - 2021)	Open cut Operations from Pit DE
	Complete Coal Handling and Processing Plant
	Refer Figure 3 of Appendix A
Period 4 (Year 2021-2022)	Construction of Infrastructure for Pit BC
	Production from pit DE to Increase to 30 MTPA (ROM)
	Refer Figure 4 of Appendix A
Period 5 (Year 2022-2023)	Production from pit DE at 30 MTPA
	Commence Pit BC pre strip
	Refer Figure 5 of Appendix A
Plan end (Year 2046)	Production from Pit DE, Pit BC and UG mine up to 75 MTPA (ROM)
	Infrastructure from South of Carmichael River and commencement of Pre-strip Operations. Refer Figure 6 of Appendix A

5.5 Additional Mining Information (Other information relevant to s318EF)

a. The potential of the area of the proposed mining lease for each of the following:

i. mining;

Mining will take place on approximately 90% of area in ML 70441, 15% of area in ML 70505 and 5% of area in ML 70506. Adani will

exploit all of the ML 70441, ML 70505 and ML 70506 areas coal resource to their maximum economic potential.

ii. each other purpose for which the lease is sought

In the areas where mining is not taking place on MLs 70441, 70505 and 70506 other related mining infrastructure will occupy them. The mining infrastructure includes but is not limited to

- MIA (Mining Infrastructure Area)
 - Office Area – Opencut and Underground
 - Cribrooms
 - Training Rooms
 - Office facilities
 - Security
 - First Aid, Medical and Mines Rescue facilities
 - Workshops – Opencut and Underground
 - Warehouse
 - Assembly area
 - Water and Sewerage Treatment Plants
- Dams and Drains
 - Raw Water
 - Mine Affected Water
 - Settlement ponds
 - Drains
 - Levees
- Roads
 - Haul
 - Light Vehicle
- Coal Handling and Raw Coal Stockpile Areas
 - Coal Handling System from the ROM (Run of Mine) Areas
 - Coal Handling and Preparation Plant
 - RAW and Product Stockpile Areas
 - Train Loadout
- Opencut Pits
 - Out of Pit Dumps
 - ROM (Run of Mine) Area
- Fly camp
- Temporary Airport

b. the nature and extent of the activities

Refer to **Appendix A** of this Development Plan as to the nature and extent of activities to be carried out under this Development Plan on the Mining Leases.

c. when and where the activities are proposed to be carried out;

Refer to **Appendix A** of this Development Plan as to the timing and location of activities proposed to be carried out under this Development Plan on the Mining Leases.

- d. whether the mining of minerals that under section 234 are sought to be specified in the lease will be optimised in the best interests of the State having regard to the public interest;*

Not applicable for this Later Development plan

5.6 Mining Plan Justification (Appropriateness of the plan s318DT(1)(f))

Deposit Economics

The optimum open cut pit shell and underground mine limits were defined through a cost ranking analysis. Cost ranking is a process that analyses the comparative mining costs of each potential mining block in the deposit to identify economic trends and the potential magnitude of the reserves tonnage that lie within a pre-determined cost cut off. The method defines the likely economic limits of the open cut mine layout and assists in the development of the most cost-effective scheduling sequence.

Cost ranking undertaken as part of the mine planning works was a key determinant in the size and shape of the current Mine layout and provided a basic analysis of the possible sequencing of mining in advance of the preparation of the detailed Mine Plan. The extraction of the target quantity of product to meet demand was considered.

The current mine plan maximise all the resources of 70441, 70505 and 70506 mining leases.

The mine plan also takes into account the maximisation of the available surface area available by including the MIA and other infrastructure on the available area of the Mining Leases therefore maximising the coal recovery.

Mining Methods Rationale

A combination of both open cut and underground mining methods are proposed to extract the coal. The direct influences in the selection of an open cut mining method and the associated open cut Mine Plan has been the:

- Targeted scale of production
- Cost ranking to define the economic limits of the open cut mine
- Strike of the coal seams
- Geometry of the deposit
- Stability of the overburden materials for deployment of heavy earth moving equipment and other mobile equipment
- Ability to provide flexible scheduling and access
- Ability to develop long, consistent strips for the efficient use of large scale open cut equipment as quickly as possible
- Haulage distances for overburden once steady-state operations are reached

The direct influences in the selection of a longwall underground mining method and the associated underground Mine Plan has been:

- A cost ranking exercise to determine an economic transition boundary between open cut and underground mining areas
- The need for a production output of approximately 20 Mtpa ROM to augment open cut operation to meet target production
- The safety, production rates and recovery rates of the single pass longwall mining method
- The depth ranges of 60 to 500 m of the resource, and productivity levels required to ensure economic extraction
- Benchmarking production levels based on comparative productive Australian longwall operations

The management of the Carmichael River, which bisects the Mine east west, has been a consideration in the Mine design. The Carmichael River is an ephemeral tributary of the Belyando River that flows west to east across the lease and bisects the deposit. A corridor, at a minimum of 500 m will be retained either side of the centre line of the Carmichael River to protect it and the riparian zone from mining operations.

Placement of On-site Infrastructure and Out-of-pit Dumps

The geological characteristics of the Mine define the location of open cut and underground mining operations. This in turn drives the optimal location of mine infrastructure and interdependencies such as site access, services and infrastructure connecting the Mine with offsite infrastructure and third party service providers. If infrastructure is developed over economic coal deposits, those deposits will be difficult or unfeasible to extract. The layout of the infrastructure is therefore designed to avoid this. In particular, the main infrastructure area is located outside the sub-crop line of the identified economic seams.

Location of out-of pit dumps is driven by minimising handling of material and also avoiding sterilisation of coal resources. Area under Mining Leases ML 70505 will now be used for the majority of out-of-pit overburden dumps.

Equipment and Plant Selection

The planned scale of production requires large-scale mining equipment, which will vary in fleet numbers depending on the stage of Mine operations. Equipment selection will depend on required production rates, reliability of equipment and suitability to the operating conditions, particularly high summer temperatures.

For the open cut component, truck-and-shovel equipment will be used for the pre-strip of overburden and excavators of 800 t, 600 t and 400 t class and trucks of 320 t capacity for overburden with a coal capacity of 290 t will be used for final overburden removal and coal extraction.

The underground mining method will include continuous miners and longwall equipment consisting of hydraulic shields to provide roof support during

extraction, shearers to cut the coal from the seam and conveyors to transfer the coal to the surface.

A combination of haul trucks and conveyors will be used to move coal from the extraction location to ROM stockpiles. .

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6. Additional Information

6.1 Plan period (s318DU(1))

The plan period for this Later Development Plan will be 5 years from the year 2018. (Five years start from July 2018-June 2019 (Year 1) and ends in July 2022- June 2023 (Year5)).

6.2 Interests of relevant overlapping and adjacent petroleum tenure holder (s318DV)

Not applicable for this Later Development plan.

6.3 Optimisation of use of incidental coal seam gas (s318DW)

Not applicable for this Later Development plan.

6.4 Consistency with petroleum lease development plan and coordination arrangement (s318DX)

Not applicable for this Later Development plan

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RTI Act 2009

7. CSG Assessment Criteria

7.1 Assessment of the likely effect of proposed coal mining on the future development of petroleum production from the land (s318AP(1)(a)(i))

Not applicable for this Later Development plan

7.2 The technical and commercial feasibility of coordinated petroleum production and coal or oil shale mining from the land (s318AP(1)(a)(ii))

Not applicable for this Later Development plan.

7.3 The legitimate business interests of the applicant and the authority to prospect holder (the parties) (s318AP(2)(b))

Adani is the holder of Mining Leases ML 70441, ML 70505 and ML 70506. Adani has made significant investment in Australia to date with a view to developing the coal resources underlying the MLs, and in particular ML 70441. Part of this investment includes Adani's acquisition of a 99 year lease over the Abbot Point Coal Terminal for \$1.82 billion and Adani's acquisition of the EPC underlying ML 70441 from Linc Energy. Adani is also the proponent for a proposed rail line to connect the Galilee Basin with Abbot Point Coal terminal, which will require Adani to invest a significant amount of capital in the project in the amount of approximately \$4 billion.

To date Adani has spent \$ 1.0 Billion on the Carmichael Coal Mine Project and it is estimated that a total capital investment of \$ 16.5 Billion will be required for the life of the Project.

Adani submits that the above represent that Adani has a significant business interest in respect of the development of the MLs.

7.4 The effect of the proposed mining lease on the future development of petroleum resources in the land, including for example, each of the following:

a) The proposed timing and rate of coal or oil shale mining and the development of petroleum from the land; (s318AP(2)(c)(i))

Not applicable for this Later Development plan.

b) The potential for the parties to make a coordination arrangement about (A) coal or oil shale mining and any incidental coal seam gas mining under the proposed mining lease; and (B) petroleum production under any future petroleum lease over the land; (s318AP(2)(c)(ii))

Not applicable for this Later Development plan.

c) The economic and technical viability of the concurrent or coordinated coal or oil shale mining and the development of any petroleum from the land; (s318AP(2)(c)(iv))

Not applicable for this Later Development plan.

d) The extent, nature and value of coal or oil shale mining and the development of any petroleum in the land. (s318AP(2)(c)(v))

Not applicable for this Later Development plan

7.5 The public interest in coal or oil shale mining and petroleum production from the land, having regard to the public interest (s318AP(2)(d))

a) Government policy

Adani considers that the development of the MLs is consistent with Queensland Government policy which supports the development of coal mines and the optimisation of the use and development of the coal resources in the State.

b) Value of commodity production

Table 6 provides estimated commodity value at a thermal Coal Price of \$70.40 per tonne

Table 6 Value of commodity Production

Value of Commodity							
	Period	2018-19 (Year 1)	2019-20 (Year 2)	2020-21 (Year 3)	2021-22 (Year 4)	2022-23 (Year5)	2046 (30 years)
Total Product Coal	Mt	0	0	16.42	27.07	27.52	60
Mining Revenue	\$M	0	0	1156	1905	1937	4224

c) Employment creation

Adani has estimated the following (see **Table 7**) employment opportunities associated with the construction and operation of Carmichael Coal Mine Project during this plan period. During the same period about 2300 construction workforce is required for the construction of rail line.

Table 7 Work Force

Workforce requirement for the Project (Plan Period)					
	2018-19 (Year 1)	2019-20 (Year 2)	2020-21 (Year 3)	2021-22 (Year 4)	2022-23 (Year5)
Construction	459	1089	813	255	320
Operation and Maintenance	0	734	1117	1250	1350
Total	459	1773	1930	1505	1670

d) Total return to the State and Australia

Total return to the State and Australia resulting from the MLs is significant.
The estimated benefits to the State Government of Queensland:

- Royalty payments in excess of \$20 Billion generated
- Rail payments
- Port payments

The estimated benefits to the Commonwealth Government of Australia:

- Income tax
- Any additional taxes such as Mineral Resources Rent Tax etc.

e) Social impacts

Adani expects that the social impacts relating to the proposed mining operations of the Carmichael Coal Project will be positive due to the benefits that will flow from the matters set out in paragraphs (a) - (d) above.

f) Overall economic benefit to the State

Adani believes that the public interest considerations set out in paragraphs (a) - (e) above indicate that overall there will be a significant positive benefit to the State from the grant of the MLAs.

8. Financial Position

8.1 Adani Group

The Adani Group (www.adanigroup.com) is a US\$ 11.0 Billion turnover organisation based in India, with interests in resources, port and logistic and energy sector. The Adani group is majority owned by the Adani family, with several entities under its fold and four listed companies namely Adani Enterprises Ltd. (the Group flagship company), Adani Ports and SEZ Ltd., Adani Power and Adani Transmission Ltd. has a combined market capitalisation of US\$ 21 Billion. Among other activities, Adani is-

- Largest commercial port developer & operator with 10 ports / terminals along Indian coastline. Operates the largest port in India;
- Largest integrated coal management operator in India with trading coal and operate coal mines in India and Indonesia;
- India's one of the largest trader of thermal coal handling 60 MTPA seaborne imports;
- Own and operate a coal mine in Indonesia, which produces around 5 MTPA;
- Operating 15 MTPA coal mine in India under "Mine Developer and Operator" concept along with associated rail infrastructure;
- One of the largest Renewable power generation portfolio (around 2,148 MW) and a solar photovoltaic manufacturing capacity of 1.2 GW capacity;
- Largest private sector power producer in India with an installed capacity of 10,480 MW and;
- One of the largest private sector transmission companies in India with 8969 ckt KM under operational and 2369 ckt KM under acquisition

More information, including financial and investor information is available on the Adani Group website.

8.2 Adani Mining Australia

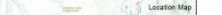
Adani Mining has to date shown that it has significant business interests in Australia.

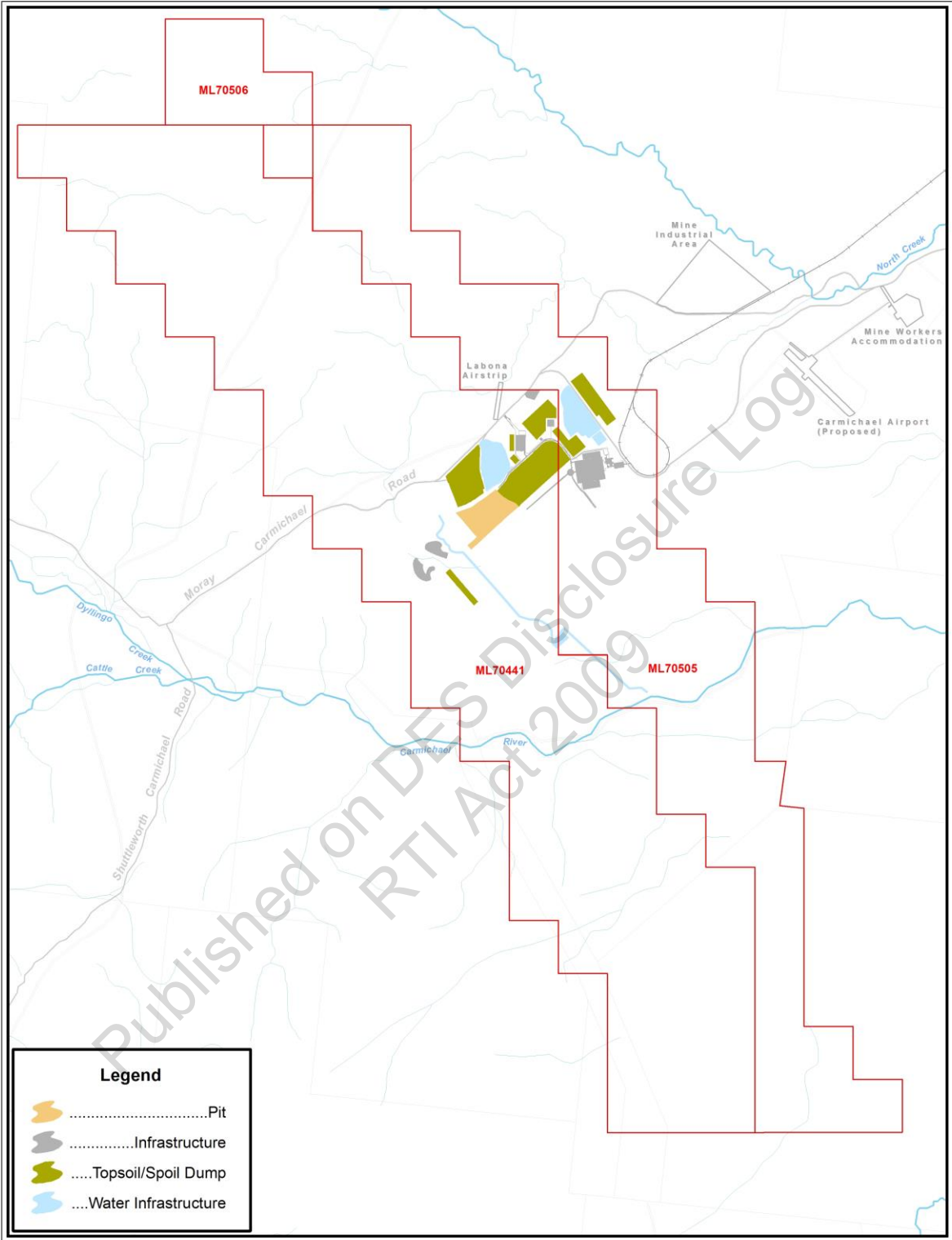
Adani Mining has been granted with ML70441 ML 70505 and ML 70506 and the Environmental Authority for the Project.

Adani Mining has made significant investment in Australia to date with a view to developing the coal resources underlying the MLs, and in particular ML 70441 and has spent an amount of A\$ 1.4 Billion mine and rail project till now. In addition to this, it has spent an amount of A\$ 1.8 Billion on its acquisition of a 99 year lease over the Abbot Point Coal Terminal. Adani is also the proponent for a proposed rail line to connect the Galilee Basin to Abbot Point port through North Galilee Rail Line which will require Adani to invest a significant amount of capital in the project in the amount of approximately A\$ 2.5 Billion.

APPENDIX A STAGE PLANS

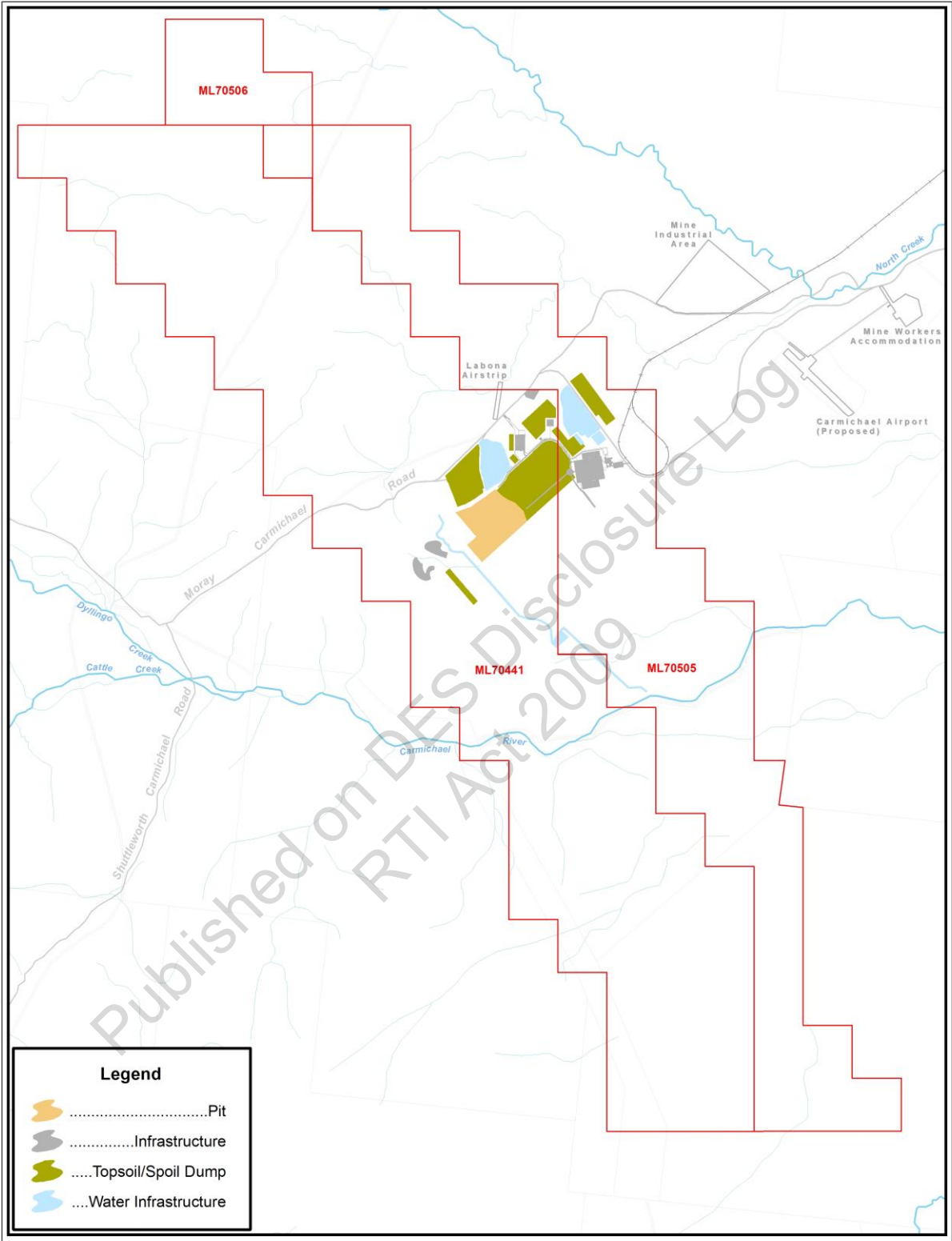
Figures 1-6

CCM		NOTE: This map is to be used to show the location of the mine and its relationship to the surrounding area. It is not to be used for any other purpose. The map is to be used to show the location of the mine and its relationship to the surrounding area. It is not to be used for any other purpose. 							
TITLE	REV	DESCRIPTION	DATE	SCALE	CURRENT ISSUE	DATE	BY	CHKD	APPROVED
Mine Stage Plan Period 1 (2018/19)	0	Original map output	20180312	1:125,000	DATE		DATE		
	1	Exit Features	20180322		CHECKED		SY		
	2	Exit Features	20180322		APPROVED		SY		
	3	Exit Features	20180410		APPROVED		SY		
Rev 3		Rev 3							



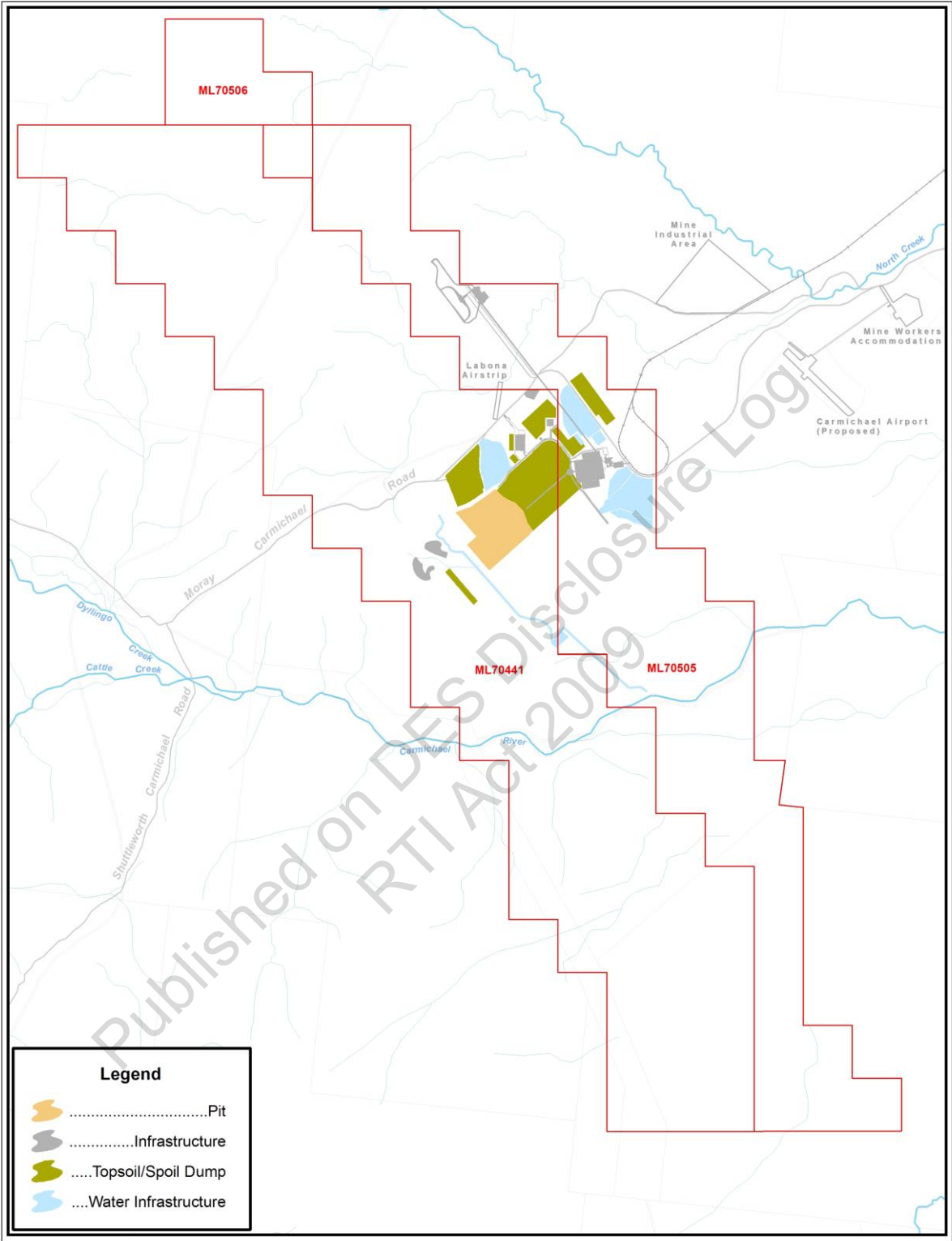
CCM		DISCLAIMER This plan has been made to serve the purpose of the project and is not intended to be used for any other purpose. It is not a guarantee of accuracy and is not intended to be used for any other purpose. It is not a guarantee of accuracy and is not intended to be used for any other purpose.		Scale: 1:125,000		Location Map		adani™	
TITLE Mine Stage Plan Period 2 (2019/20)		REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE	Rev 3	
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		3	Edit Features	20180619					

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CCM		DES 4485 DES 4485 has been made to align the interests of the stakeholders involved in the mine, to provide a clear and concise summary of the mine's development and to provide a clear and concise summary of the mine's development and to provide a clear and concise summary of the mine's development.		1:125,000		AS		DRWN		CHECKED		APPROVED		LL		DESIGNER NO		CCM		DESIGNER NO		DESIGNER NO	
Mine Stage Plan Period 3 (2020/21)		REV		DESCRIPTION		DATE		SCALE		CURRENT ISSUE		STATUS		Rev 3		PROJECT NO		CCM		DESIGNER NO		DESIGNER NO	
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		1		Edit Features		20180322		AS		DRWN		CHECKED		APPROVED		LL		DESIGNER NO		DESIGNER NO		DESIGNER NO	
		2		Edit Features		20180328		AS		DRWN		CHECKED		APPROVED		LL		DESIGNER NO		DESIGNER NO		DESIGNER NO	
		3		Edit Features		20180410		AS		DRWN		CHECKED		APPROVED		LL		DESIGNER NO		DESIGNER NO		DESIGNER NO	

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CCM		DISCUSSION 1:125,000 1:250,000 1:500,000 1:1,000,000 1:2,000,000 1:4,000,000 1:8,000,000 1:16,000,000 1:32,000,000 1:64,000,000 1:128,000,000 1:256,000,000 1:512,000,000 1:1,024,000,000 1:2,048,000,000 1:4,096,000,000 1:8,192,000,000 1:16,384,000,000 1:32,768,000,000 1:65,536,000,000 1:131,072,000,000 1:262,144,000,000 1:524,288,000,000 1:1,048,576,000,000 1:2,097,152,000,000 1:4,194,304,000,000 1:8,388,608,000,000 1:16,777,216,000,000 1:33,554,432,000,000 1:67,108,864,000,000 1:134,217,728,000,000 1:268,435,456,000,000 1:536,870,912,000,000 1:1,073,741,824,000,000 1:2,147,483,648,000,000 1:4,294,967,296,000,000 1:8,589,934,592,000,000 1:17,179,869,184,000,000 1:34,359,738,368,000,000 1:68,719,476,736,000,000 1:137,438,953,472,000,000 1:274,877,906,944,000,000 1:549,755,813,888,000,000 1:1,099,511,627,776,000,000 1:2,199,023,255,552,000,000 1:4,398,046,511,104,000,000 1:8,796,093,022,208,000,000 1:17,592,186,044,416,000,000 1:35,184,372,088,832,000,000 1:70,368,744,177,664,000,000 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CCM	DISCLAIMER This AEM has been made to ensure the accuracy of the information provided. It is not intended to be used as a basis for any decision-making. The user of this AEM is advised to consult the relevant authorities and to seek professional advice before using the information provided. The user of this AEM is advised to consult the relevant authorities and to seek professional advice before using the information provided.			
Rev 3	Rev 3	Rev 3	Rev 3	Rev 3
Rev 3	Rev 3	Rev 3	Rev 3	Rev 3
Rev 3	Rev 3	Rev 3	Rev 3	Rev 3
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Rev 3	Rev 3	Rev 3	Rev 3	Rev 3
Rev 3	Rev 3	Rev 3	Rev 3	Rev 3
Rev 3	Rev 3	Rev 3	Rev 3	Rev 3

21 August 2018



To,
Debbie-Jo MacDonald
Principal mining registrar Assessment
Coal Assessment Hub
Department of Natural Resources and Mines
PO Box 3679
Red Hill QLD 4701
E mail: coalhub@dnrme.qld.gov.au

Dear Debbie-Jo,

Re: Request for Information to proposed Later development Plan for Mining Leases (ML) 70441, 70505 and 70506-Letter received from DNRM dated 25 July 2018 vide Reference #: 240460-reg

Adani submitted a Later Development Plan (LDP) on 3 May 2018 for Mining Leases ML 70441, ML 70505 and ML 70506 related to Carmichael Coal Project (Project) considering the delay in commencement of project and changes made to the mine plans. Further Adani has received communication mentioned vide reference stated above requesting for additional information with respect to the LDPs.

Please find herewith attached annexures consisting of required information which are summarised in below table –

RFI #	Details of RFI	Response
1.0	Revised production schedule and life-of-mine maps that are clear and high-resolution, with clear and complete labelling. A single 2D map for each of the proposed development plans term and the life of mine plan showing the lease boundary with different years of coal extraction shown as different colours is preferred. The following must be addressed: • Open-cut pits and underground mines referred to throughout the proposed development plan are not labelled on the maps. • Infrastructure is either not included or generically shaded out with no details. • No access to underground mines are shown. • No individual panels shown for the underground mining area. • Open-cut areas are shaded as one generic block per pit, with no	The maps are updated with further details as requested and are enclosed as Annexure -A.

	defined faces or pit. Maps did not clarify whether the topsoil/spoil dump was covering over the start of the pit.	
2.0	An explanation of the apparent significant change to resource utilisation. An apparent reduction in the overall life of permit total production tonnage mined due to reduction of areas. This is not directly noted within the proposed development plan, but is evident through comparison of the 2013 initial development plan and the 2018 proposed development plan. In the 2018 proposed development plan, resource areas of underground mines 2 to 5, and open-cut pit F are no longer planned to be mined within the 30-year term of these leases. This accounts for a substantial decrease in production. Please provide the rationale for these changes in scheduling, and clarify whether these areas are to be mined.	A note explaining the changes incorporated in the LDP vis a vis details provided in the Initial Development Plan are enclosed as Annexure -B.

It is requested to consider the information provided as above and to approve the proposed Later Development Plan.

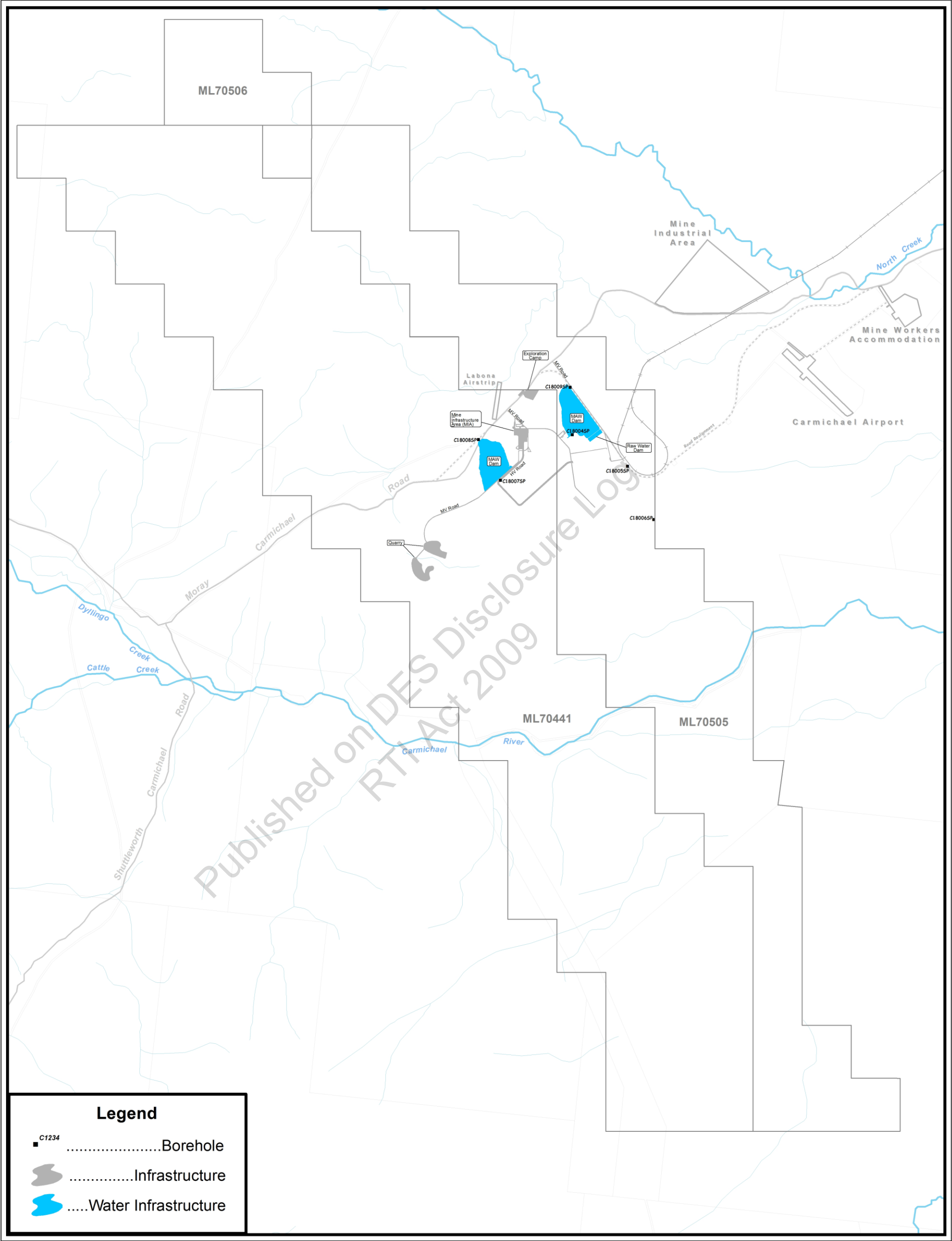
If you have any further questions, please do not hesitate to contact us.

Kind regards

sch4p4(6) Personal Information

Compliance Superintendent
Adani Mining Pty Limited

Annexure -A: Plans



Legend

C1234

.....Borehole

.....Infrastructure

.....Water Infrastructure

CCM

DISCLAIMER

Every effort has been made to ensure the accuracy of the information contained on this map. As permitted by law, Adani is excluded from all liability to any person or entity with respect to any loss or damage caused directly or indirectly by their use of the information contained on this map. Changes and additions to the information contained on this map are made frequently. Adani may make such changes and additions at any time. Adani does not warrant the accuracy of the information contained on this map.

Scale Bar:

0

1.5

3

Kilometres

North Arrow

N

Location Map

adani

STATUS

Rev 4

PROJECT NO

CCM

DRAWING NO

01180008_CCM_000000_MineStagePlans_Overview_Year1_Rev4_P_A3

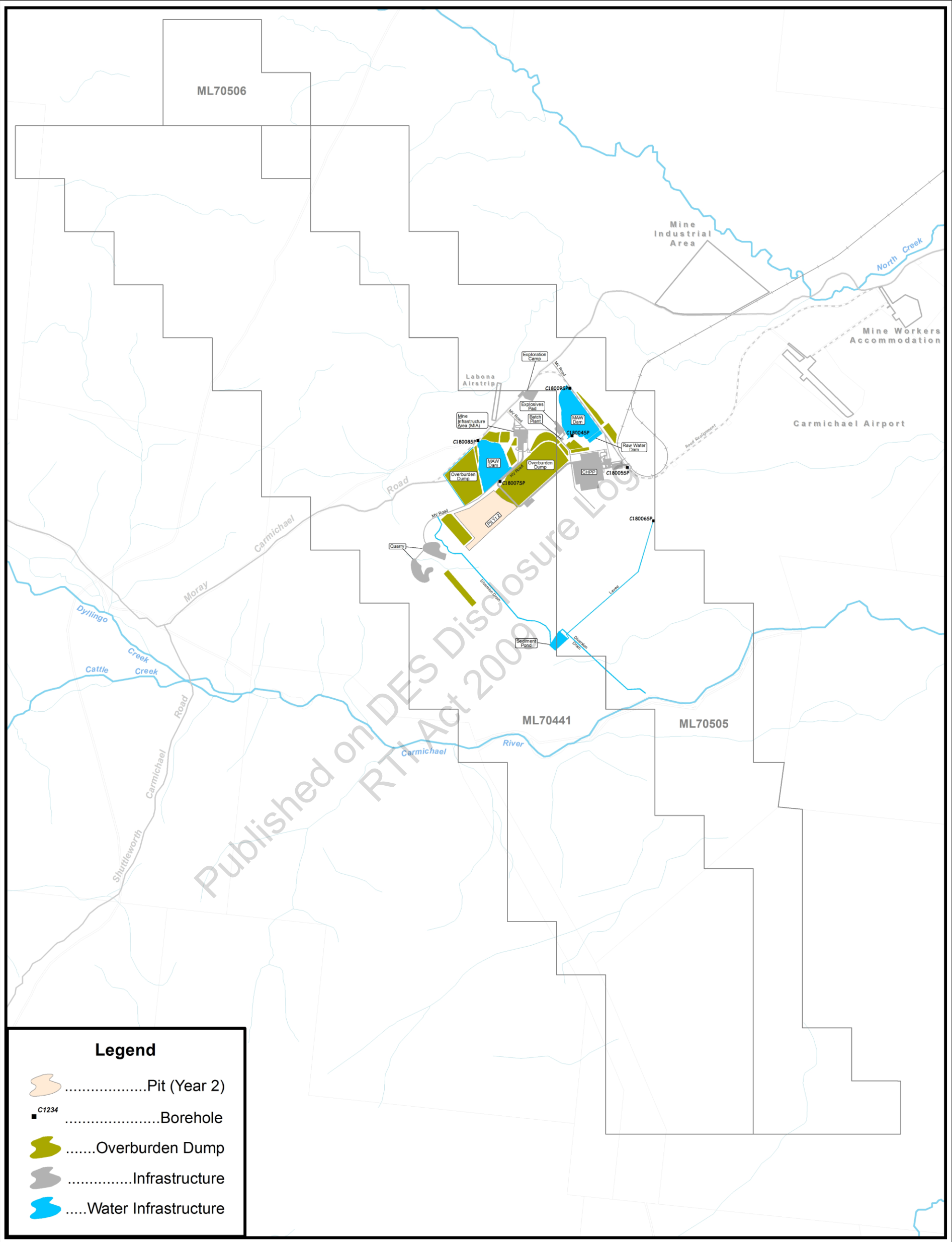
TITLE

Mine Stage Plan
Period 1 (2019/20)

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2	Edit Features	20180328
3	Edit Features	20180410
4	Add Disturbance Footprint	20180808

SCALE	CURRENT ISSUE
1:125,000	SIGNATURES
A3	DRAWN
DATUM	CHECKED
PROJECTION	APPROVED
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.....Pit (Year 2)

.....Borehole

.....Overburden Dump

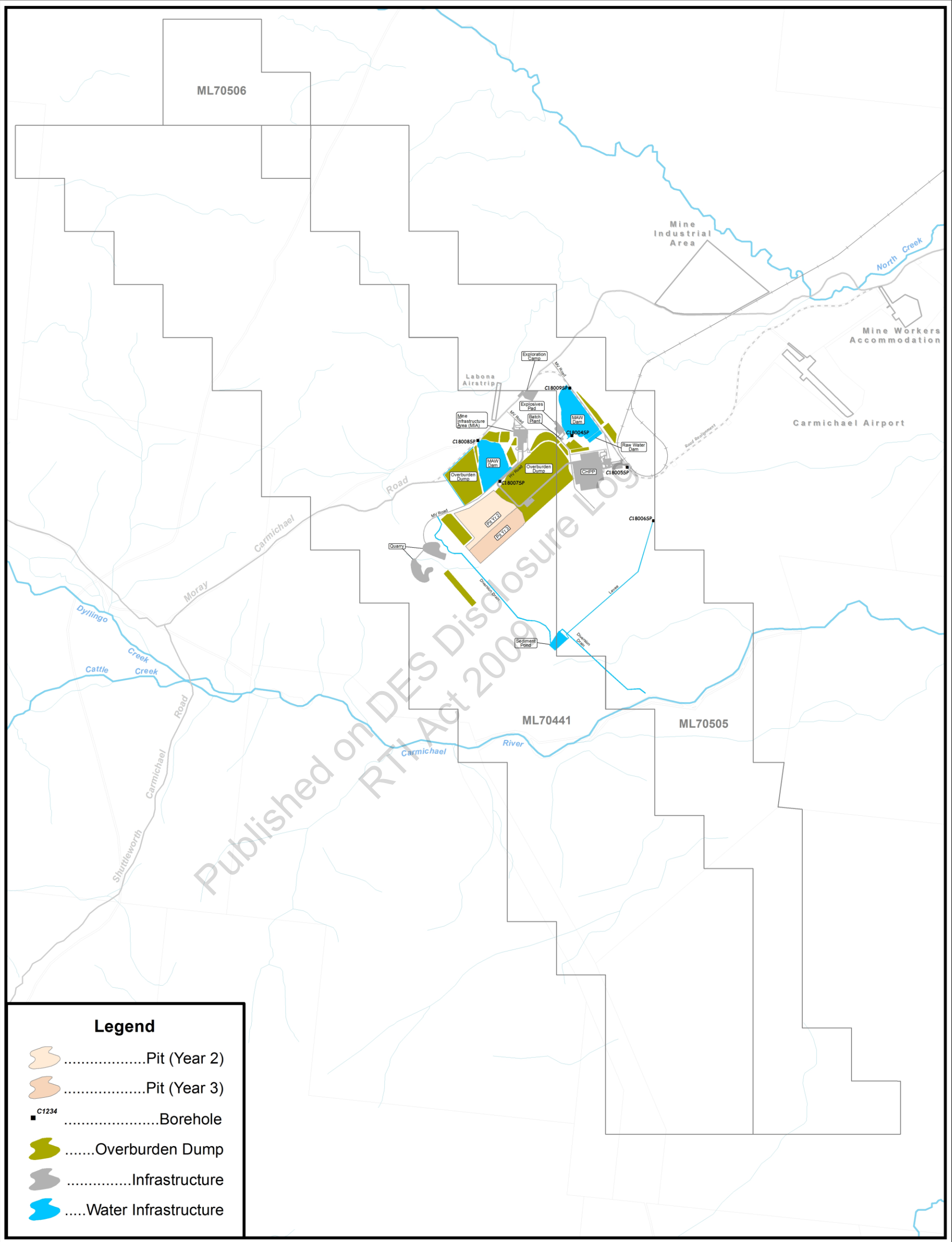
.....Infrastructure

.....Water Infrastructure

Legend

CCM		DISCLAIMER: Every effort has been made to ensure the accuracy of the information contained on this map. As permitted by law, Adani is excluded from all liability to any person or entity with respect to any loss or damage caused directly or indirectly by their use of the information contained on this product. Changes and additions to the information contained on this map are made frequently. Adani may make such changes and additions at any time. Adani does not warrant the accuracy of the information contained on this map.		N 0 1.5 3 Kilometres		Location Map		adani	
TITLE		REV	DESCRIPTION	DATE	SCALE	CURRENT ISSUE SIGNATURES		STATUS	
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		2	Edit Features	20180328	DATUM	CHECKED	SY	PROJECT NO CCM	
		3	Edit Features	20180410	PROJECTION	APPROVED	LL		
		4	Add Disturbance Footprint	20180808					

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Legend

.....Pit (Year 2)

.....Pit (Year 3)

.....Borehole

.....Overburden Dump

.....Infrastructure

.....Water Infrastructure

CCM

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Scale Bar

0 1.5 3

Kilometres

Location Map

adani

Rev 4

PROJECT NO

CCM

DRAWING NO

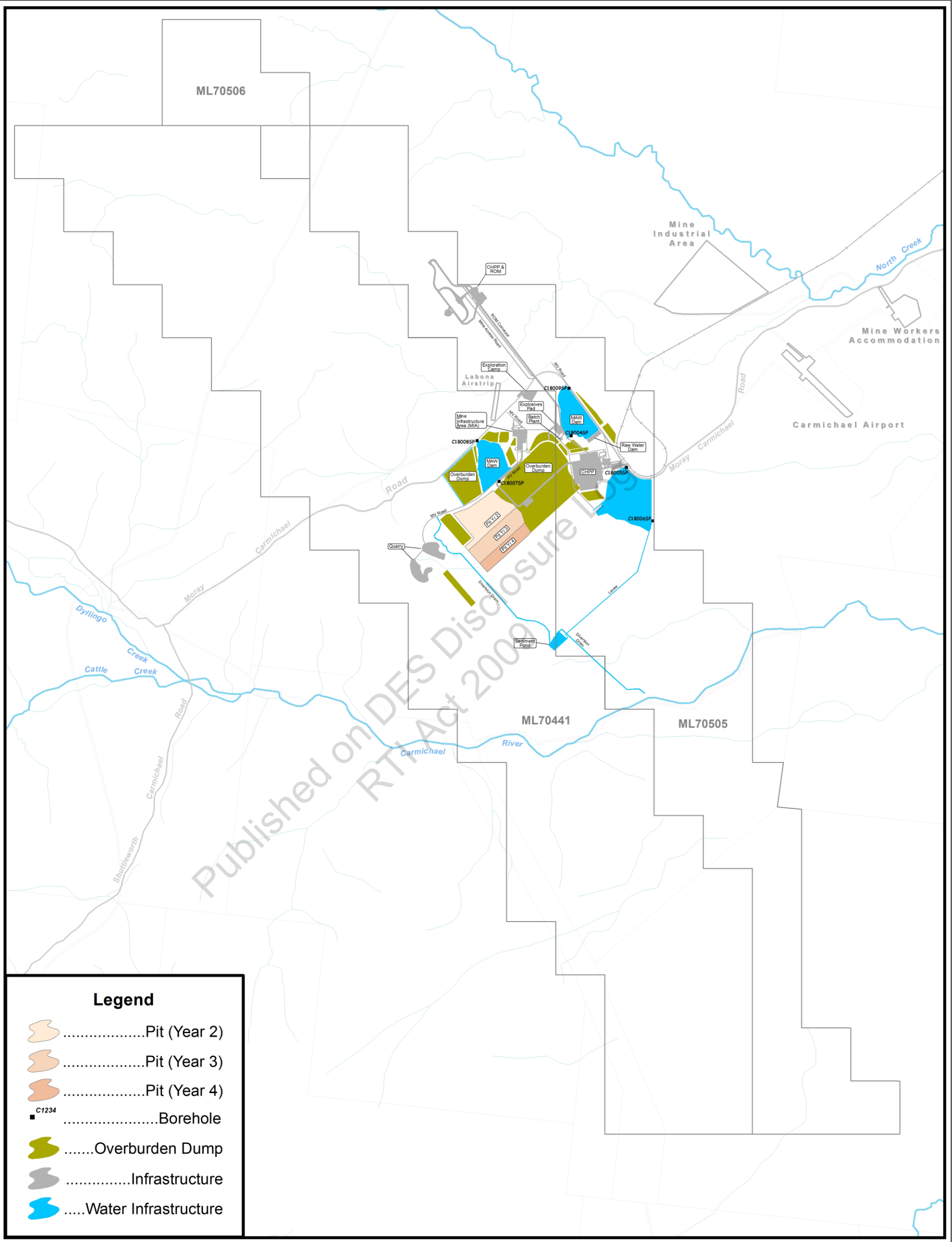
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TITLE

Mine Stage Plan
Period 3 (2020/21)

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Legend

.....Pit (Year 2)

.....Pit (Year 3)

.....Pit (Year 4)

.....Borehole

.....Overburden Dump

.....Infrastructure

.....Water Infrastructure

CCM

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Scale Bar:

0

1.5

3

Kilometres

Location Map

adani

STATUS

Rev 4

PROJECT NO

CCM

DRAWING NO

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TITLE

Mine Stage Plan
Period 4 (2021/22)

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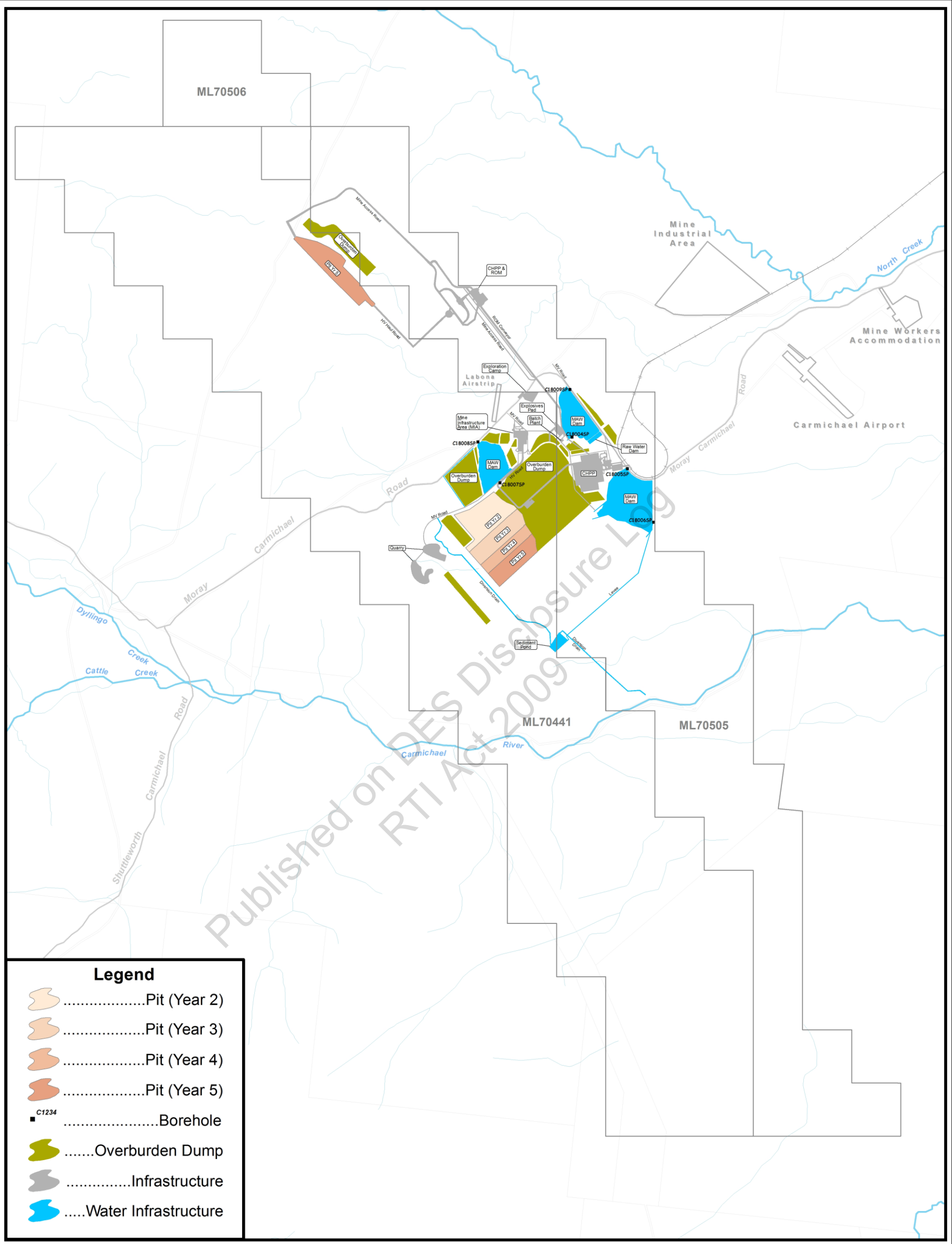
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File A

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Legend

.....Pit (Year 2)

.....Pit (Year 3)

.....Pit (Year 4)

.....Pit (Year 5)

.....Borehole

.....Overburden Dump

.....Infrastructure

.....Water Infrastructure

CCM

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Scale Bar:

0

1.5

3

Kilometres

Location Map

adani

Rev 4

Rev 4

Rev 4

Rev 4

Rev 4

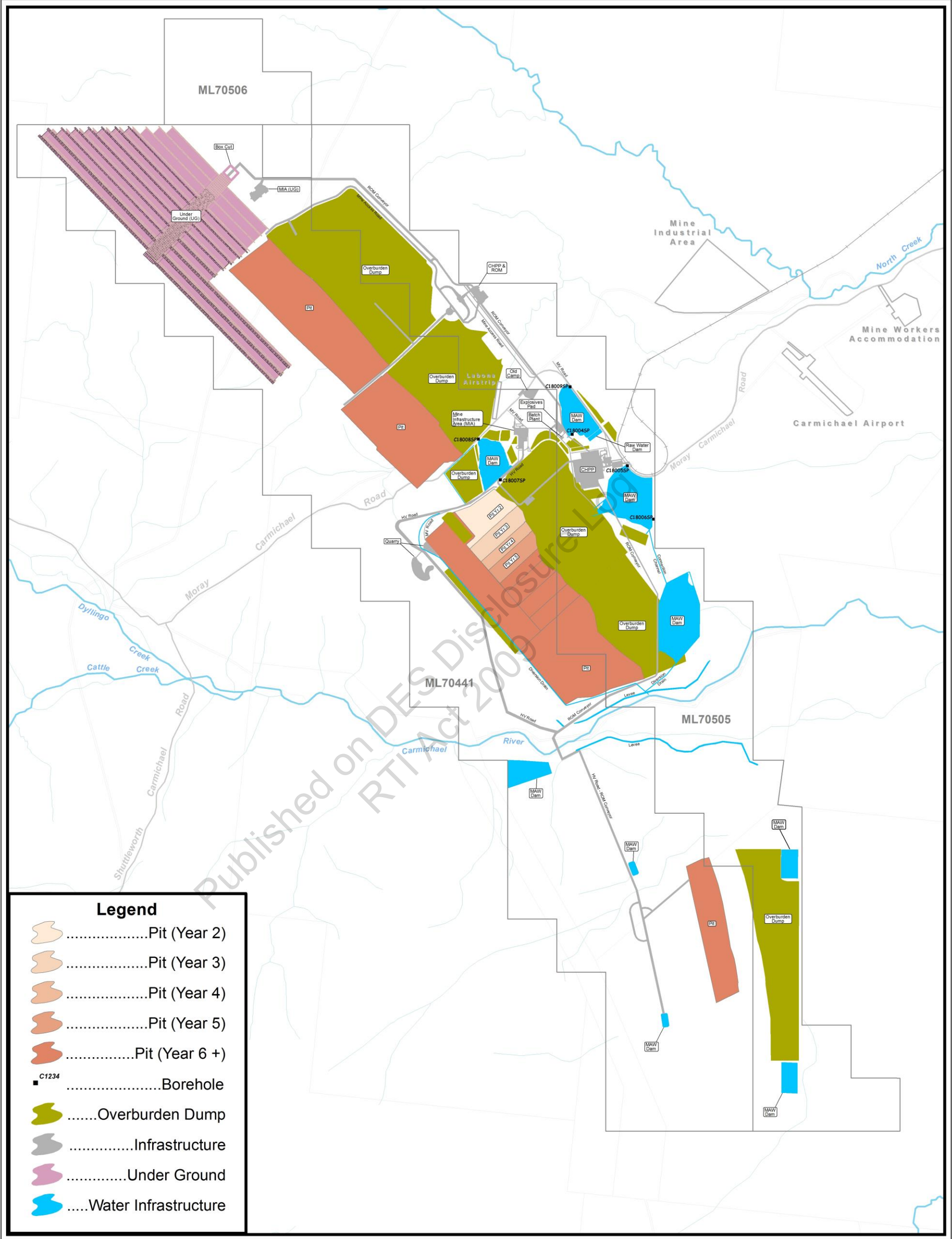
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File A

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Legend

.....Pit (Year 2)

.....Pit (Year 3)

.....Pit (Year 4)

.....Pit (Year 5)

.....Pit (Year 6 +)

.....Borehole

.....Overburden Dump

.....Infrastructure

.....Under Ground

.....Water Infrastructure

CCM

0

1

2

3

4

Original map output

Edit Features

Edit Features

Edit Features

Add Disturbance Footprint

20180312

20180322

20180328

20180410

20180806

1:125,000

A3

DATUM

PROJECTION

Scale Bar

0 1.5 3

Kilometres

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Location Map

adani

Rev 4

STATUS

PROJECT NO

CCM

DRAWING NO

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File A

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Annexure –B

Description of RFI:

An explanation of the apparent significant change to resource utilisation. An apparent reduction in the overall life of permit total production tonnage mined due to reduction of areas. This is not directly noted within the proposed development plan, but is evident through comparison of the 2013 initial development plan and the 2018 proposed development plan. In the 2018 proposed development plan, resource areas of underground mines 2 to 5, and open-cut pit F are no longer planned to be mined within the 30-year term of these leases. This accounts for a substantial decrease in production. Please provide the rationale for these changes in scheduling, and clarify whether these areas are to be mined.

Adani response:

There is not a change in the resource utilization, rather a change in the period covered by the plan and a change in the sequencing of the pits being mined.

The Initial Development Plan (IDP) covers entire 44 years of life of the project {from Year 0 (2015) till Year 44 (2059)} while the Later Development Plan (LDP) covers only a period of 27 years from 2018 till 2046 (balance period of the granted term period) of Mining Leases ML 70441, 70505 and 70506.

The IDP considered opening of all six Opencut pits (Pits B to G) simultaneously from year 1 to year 11 to achieve combined ROM production of 40Mtpa. The LDP considered opening of only Opencut Pits BC and DE between years 1 to year 6 to achieve a combined ROM production of 40 Mtpa. The strategy adapted in LDP allows extracting the coal resources within each of Opencut Pits BC and DE at a quicker rate when compared to IDP and allows phasing out opening of remaining Opencut Pits (Pits F and G) to later years of Project life.

The IDP considered opening of three Underground Mines (Mine 1, 4 and 5) between year 4 and 10 for the initial 30 years of the IDP period. The LDP considered opening of only one Underground mine (Mine 1) during year 10. The strategy adapted in LDP allows extracting the coal resources from Underground Mine (Mine 1) at a faster rate when compared to IDP and allows phasing out opening of remaining Underground Mines (Mines 2, 3, 4 and 5) to later years of Project life.

Essentially the mining strategy and intensity has been changed when comparing the two plans; at the end of the life of the project the resource utilization will remain the same.

A table comparing the details of resource utilisation for IDP and LDP is furnished below. It is to be noted that in the LDP opencut pits and underground mines North of Carmichael River will be opened up to reach the peak ROM production. The opencut pits and underground mines South of the Carmichael River are accessed after the pits in the North are mined out. The LDP also aims at complete utilisation of the resource in each of the Opencut pits and Underground mines and there is no net reduction either in production tonnage or areas to be mined.

Comparison of IDP to LDP		
	Initial Development Plan	Later Development Plan
Period covered	45 years	28 years
Details of periods	The mine schedule is broken into 13 time periods with a mine life of 45 years. Periods 1- 5 are on a yearly basis and periods 6 – 13 are based on 5 years cumulative.	The mine schedule covers a mine life of 28 years, which is the balance period of the Mining Lease. Periods 1- 5 are on a yearly basis.
Comparative years	In IDP year 30 will be reached in period 13 (5 year period)	In LDP Year 28 is considered as a single year which is the end of ML grant period
Comparative ROM production	Total up to year 30 is 1.31 bn T	Total up to year 28 is 1.26 bn T
Life of Mine Production	ROM 2.3bn T will be mined in 45 years of mine life	ROM 1.26 bn T will be mined up to year 28 and balance ROM of 1.04 bn T will be mined in later years with renewal of Mining Lease, a total of 2.3bn T.
Areas of production	Opencut Pits B, C, D , E, F and G, and Underground Mines 1,2,3,4, and 5	Opencut Pits BC and DE and Underground Mine 1