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ATTN: Marianne Gibbons  
Peabody Energy Australia  
100 Melbourne Street  
South Brisbane, QLD, 4101

## DESKTOP ASSESSMENT FOR PRESCRIBED ENVIRONMENTAL MATTERS AT COPPABELLA MINE

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### Background

Peabody Australia Pty Ltd (Peabody) has engaged E2M Pty Ltd (E2M) to undertake a desktop assessment for prescribed environmental matters (PEMs) (as defined under Part 3 Item 10 of the Queensland *Environmental Offsets Act 2014*) known to occur or potentially occurring at the site of the Coppabella Coal Mine (the Project), situated 10 kilometres northeast of Coppabella, central Queensland.

The assessment undertaken by E2M focused on the occurrence of PEMs on undisturbed land within Mining Lease areas (MLs) 70161, 70163, 70164, 70236, 70237, and 70384-70387 as well as land surrounding a proposed diversion extending beyond MLs 70164 and 70161, as shown in Figure 1. Collectively, these areas comprise the desktop assessment 'Study Area', as depicted in Figure 1.

The methods and results of the desktop ecological assessment undertaken for this area are detailed in this short memo-style report.

### Methods

#### Desktop review

A comprehensive desktop assessment was undertaken to identify matters of national, state and local significance (MNES, MSES and MLES) that are known or considered likely to be present within the Study Area, as depicted in Figure 1. This assessment included a review of information from the following sources:

- Previous ecological studies undertaken at the Coppabella Mine site, including:
  - Wormington, K. (2015) *Regional Ecosystem Mapping at Coppabella Coal Mine*, KRW Environmental Pty Ltd, Queensland
  - Ison Environmental Planners. (1997). *Flora and Fauna Assessment - Coppabella Mine*
  - WBM Oceanics Australia. (2000). *Flora and fauna habitat assessment for the Peak Downs Highway Diversion at Coppabella*, and
  - McCollum Environmental Management Services. (2011). *Coppabella Underground Project Terrestrial Ecological Baseline Assessment*.

- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (PMST) to assess potential presence of MNES within a 10 km radius of the Study Area
- Department of Environment and Science (DES) WildNet wildlife records for matters listed under the *Nature Conservation Act 1992* (NC Act) and EPBC Act occurring within 20 km of the Study Area
- Atlas of Living Australia (ALA) database records for matters listed under NC Act and EPBC Act within 20 km of the Study Area
- Ground-truthed regional ecosystem (RE) mapping for MLs 70161, 70164, 70236 and 20237 provided by Peabody
- Department of Resources (DoR) Vegetation Management Report, Version 12.0 - Regulated Vegetation Management Map including essential habitat, watercourse and wetland mapping
- DES remnant RE mapping (including pre-clearance mapping) and associated Queensland Herbarium Version 13 Regional Ecosystem Description Database (REDD)
- DES Protected Plants Flora Survey Trigger Map regulated under the Queensland *Nature Conservation (Plants) Regulation 2020*
- DES MSES mapping
- DES Environmentally Sensitive Area (ESA) mapping
- DES mapped wetlands under the Queensland Wetlands Program
- GeoScience Australia 1:100,000 drainage network mapping for Queensland
- DES Biodiversity Planning Assessment State and regional biodiversity corridors
- Available wildlife monitoring databases, including the National Flying Fox Monitoring Viewer
- Detailed Surface Geology Mapping and Geoscience Australia 1:250,000 geology mapping series to confirm DES Land zone definitions
- State wetland mapping accessible via <https://wetlandinfo.des.qld.gov.au/wetlandmaps/>
- Queensland Government Landscape Fragmentation Connectivity Tool
- Environmental overlay and Environmental Management and Conservation zone mapping included in the Isaac Regional Council Planning Scheme 2021
- Bureau of Meteorology (BoM) Groundwater Dependant Ecosystem (GDE) Atlas; and
- latest available aerial photography (Nearmap and Queensland Globe).

### Likelihood of occurrence assessment

A likelihood of occurrence assessment was undertaken to identify MNES, MSES and MLES species/communities known or likely to occur within the Study Area based on:

- the current known distribution of MNES/MSES species/communities
- the known or likely presence/absence of suitable habitat within and/or immediately adjacent the Study Area



- previous contemporary occurrence records from the Study Area and surrounds, including ALA and WildNet records within 20 km of the Study Area (hereafter, the desktop search extent) (see Appendix A)
- the results of previous flora and fauna surveys undertaken within the Study Area (as detailed in Ison Environmental Planners, 1997; McCollum Environmental Management Services, 2011; WBM Oceanics, 2000; and Wormington, 2015)
- proximity and connectivity of the Study Area to known/likely occupied habitat elsewhere within the surrounding landscape
- species' mobility (i.e., a species' capacity for long range movement/dispersal), and
- the scope and severity of threatening processes ('threats') operating within the Study Area and surrounds (e.g., past clearing and fragmentation, livestock grazing, feral predators and invasive weeds)

For the likelihood of occurrence assessment, species/communities were assessed as 'known', 'possibly occurring' or 'unlikely to occur' within the Study Area based on the following criteria:

- **Known to occur:** the species/community has been recorded within the Study Area during previous surveys (as documented in Ison Environmental Planners, 1997; McCollum Environmental Management Services, 2011; WBM Oceanics, 2000; and Wormington, 2015)
- **Possibly occurring:** suitable habitat is present within and/or adjacent the Study Area, and
  - the species/community has previously been recorded within the desktop search extent (i.e., within 20 km of the Study Area), and
  - though not detected during previous surveys, the species/community may still occur within the Study Area, given:
    - limitations of previous surveys (e.g., low detectability of species during surveys and/or limited targeted survey effort), and/or
    - the potential for seasonal/intermittent usage of habitat within the Study Area.
- **Unlikely to occur:** the Study Area lies outside the species or community's current known distribution, and/or
  - the species community has not been recorded within the desktop search extent and/or
  - the Study Area does not contain suitable habitat for the species, and/or
  - habitat within the Study Area has been degraded/isolated to the extent the species/community is no longer likely to occur, and/or
  - the species/community is considered a rare vagrant, and/or
  - previous targeted surveys failed to detect the specie within the Study Area, despite appropriate seasonal timing/survey effort.

### PEM area calculations

To help quantify potential direct impacts on PEMs within the Study Area, area calculations for PEMs known to occur within the Study Area are provided for the 'Indicative Disturbance Footprint', as shown in Figure 1. This area represents the maximum extent of potential clearing associated with future operational works within the Study Area, including the proposed diversion to the west of existing operations at Coppabella Mine. The actual area of PEMs directly impacted by future works will depend on the location and nature of works occurring within the Study Area.



## Limitations

The desktop assessment detailed in this report is subject to the following limitations:

- PEMs considered in this desktop assessment are matters prescribed under current applicable legislation and reflect the status/listing of matters of environmental significance under State and/or Commonwealth law at the time of writing.
- Area calculations for PEMs are based on existing mapping sourced from the desktop review. Habitat for threatened species within the Study Area has not been mapped and, for this reason, area calculations are not provided for these species.
- Area calculations for remnant status vegetation (REs) within MLs 20384-20387 and portions of the indicative disturbance footprint for the proposed diversion are based on unverified DoR mapping (see Figure 2).
- Mapping and area calculation of MSES not considered PEMs under *the Environmental Offsets Act 2014* have not been provided.

## Results

The desktop assessment identified a number of MNES and MSES as known or likely to occur within the Study Area, as detailed below.

### MNES

The Protected Matters Search Tool identified the following MNES as known to occur or potentially occurring within and/or adjacent the Study Area:

- 4 listed threatened ecological communities (TECs),
- 24 listed threatened species, and
- 9 listed migratory species.

Of these matters, one TEC and three listed threatened species are known to occur within the Study Area, with another 4 threatened species possibly occurring. MNES known or likely to occur within the Study Area, include the following matters prescribed under the *Environmental Offsets Act 2014*:

- Patches of remnant RE 11.5.16 and remnant and regrowth RE 11.4.9 >0.5 ha meeting or likely to meet the diagnostic criteria for the Endangered Brigalow (*Acacia harpophylla* dominant and co-dominant) - ecological community (hereafter the Brigalow TEC), including 29.36 ha of confirmed Brigalow TEC on MLs 20384-387 and ML70164 (as documented in McCollum Environmental Management Services, 2011).
- Habitat for MNES threatened fauna species known to occur within the Study Area including:
  - suitable foraging, shelter and dispersal habitat for the Endangered koala (*Phascolarctos cinereus*), comprising areas of remnant, regrowth and non-remnant vegetation containing food and/or shelter trees
  - suitable foraging, shelter and dispersal habitat for the Vulnerable ornamental snake (*Denisonia maculata*) comprising remnant REs 11.4.9, 11.5.16, 11.3.4, 11.3.25, 11.5.2 and 11.5.3, and
  - suitable foraging, breeding and dispersal habitat for the Vulnerable squatter pigeon (southern) (*Geophaps scripta scripta*) comprising remnant RE 11.3.4, 11.3.25, 11.5.2, 11.5.3, 11.5.8, and 11.7.2 and nearby areas of regrowth and/or non-remnant habitat with low sparse ground cover suitable for foraging.



In addition to the abovementioned species/communities, the desktop assessment identified another 5 MNES species as possibly occurring within the Study Area, including:

- one threatened flora species - *Samadera bidwillii*
- three threatened fauna species:
  - the greater glider (southern and central) (*Petauroides volans/armillatus*)
  - Australian painted snipe (*Rostratula australis*), and
  - white-throated needletail (*Hirundapus caudacutus*)
- one listed migratory species - Latham's snipe (*Gallinago hardwickii*)

As well as to the abovementioned MNES species/communities, the desktop assessment identified the likely presence of water resources considered MNES in relation to actions involving large coal mining developments (pursuant to the *Environment Protection and Biodiversity Conservation Amendment Act 2013*), including:

- minor riverine system drainage lines containing ephemeral water (see Figure 8)
- a lacustrine wetland (impoundment area) associated with the proposed creek diversion (in the north-west of the Study Area) (see Figure 8), and
- groundwater associated with high and moderate potential groundwater-dependent aquatic and terrestrial ecosystems (see Figure 10).

## MSES

MSES known to occur within the Study Area include the aforementioned threatened MNES flora and species as well as a number of MSES not considered MNES. These additional MSES include the following matters prescribed under the *Environmental Offsets Act 2014*:

- Regulated vegetation, including:
  - Prescribed (Category B) regional ecosystems that are an Endangered RE, including: 27.22 ha of remnant RE 11.4.9 (*Acacia harpophylla* shrubby woodland with *Terminalia oblongata* on Cainozoic clay plains); and 55.92 ha of remnant RE 11.5.16 (*Acacia harpophylla* and/or *Casuarina cristata* open forest in depressions on Cainozoic sand plains and remnant surfaces) (see Figure 3)
  - Prescribed (Category B) REs that are an Of Concern, including: 33.55 ha of remnant RE 11.3.25 (*Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines) (see Figure 4)
  - 1.36 ha of prescribed vegetation intersecting a wetland on the state vegetation management wetlands map, in the north-west of Indicative Disturbance Footprint (as shown in Figure 7)
  - 1229.04 ha of mapped Essential Habitat for Endangered and Vulnerable wildlife, including: the koala (*Phascolarctos cinereus*), greater glider (central) (*Petauroides armillatus*), squatter pigeon (southern) (*Geophaps scripta scripta*), and ornamental snake (*Denisonia maculata*) (see Figure 4), and
  - 81.66 h of prescribed (Category B) vegetation within a defined distance of a water course (as shown in Figure 9).
- Prescribed (Category B) REs comprising connectivity areas, including 1173.04 ha of core remnant ecosystem, the loss of which would result in a significant impact on landscape connectivity (based on results of the Landscape Connectivity Assessment Tool).



- Protected Wildlife Habitat for Endangered, Vulnerable and non-migratory Special Least Concern animals known to occur on site, including: koala, squatter pigeon (southern), ornamental snake, and the short-beaked echidna (*Tachyglossus aculeatus*) (with the latter listed as Special Least Concern under the NC Act).
- Queensland waterways for waterway barrier works, including low, moderate, and high value waterways, as depicted in Figure 5.

In addition to the abovementioned matters, the desktop assessment also identified MSES within the Study Area not prescribed under the *Environmental Offsets Regulation 2014*. These MSES include:

- Environmentally Sensitive Areas comprising Endangered REs (Biodiversity Status) consisting of remnant and regrowth brigalow woodland (RE 11.5.6 and 11.4.9)) on MLs 70164 and 70384-70387, and
- Category R vegetation comprising Great Barrier Reef riverine habitat.

### MLES

No additional MLES considered PEMs under the *Environmental Offsets Act 2014* were identified in the Isaac Regional Council Planning Scheme 2021.

### Summary and conclusions

The current desktop assessment identified a number of MNES and MSES known to occur within and/or adjacent the Study Area that could be impacted by future operational works associated with the Coppabella Mine. This includes PEMs which, if significantly impacted, may require offsetting, including:

- Habitat for Commonwealth-listed threatened (Endangered and Vulnerable) species known or likely to occur within the Study Area
- A Commonwealth-listed TEC known to occur within the Study Area (the Brigalow TEC)
- Water resources considered MNES in relation to actions involving large coal mining developments (pursuant to the *Environment Protection and Biodiversity Conservation Amendment Act 2013*)
- MSES regulated vegetation including:
  - Endangered and Of Concern REs,
  - remnant vegetation within a prescribed distance of a watercourse,
  - prescribed vegetation intersecting a mapped wetland, and
  - mapped Essential Habitat for state-listed Endangered and Vulnerable wildlife
- MSES connectivity areas
- MSES protected wildlife habitat for state-listed Endangered, Vulnerable and Special Least Concern animal species, and
- Queensland waterways for waterway barrier works.

In addition to aforementioned matters, the current assessment identified a number of PEMs as possibly occurring within the Study Area, including four MNES/MSES threatened flora and fauna species and one MNES migratory species. Further field surveys are required to determine if these matters are present within the Study Area and to what extent future operations might impact on these species/communities.



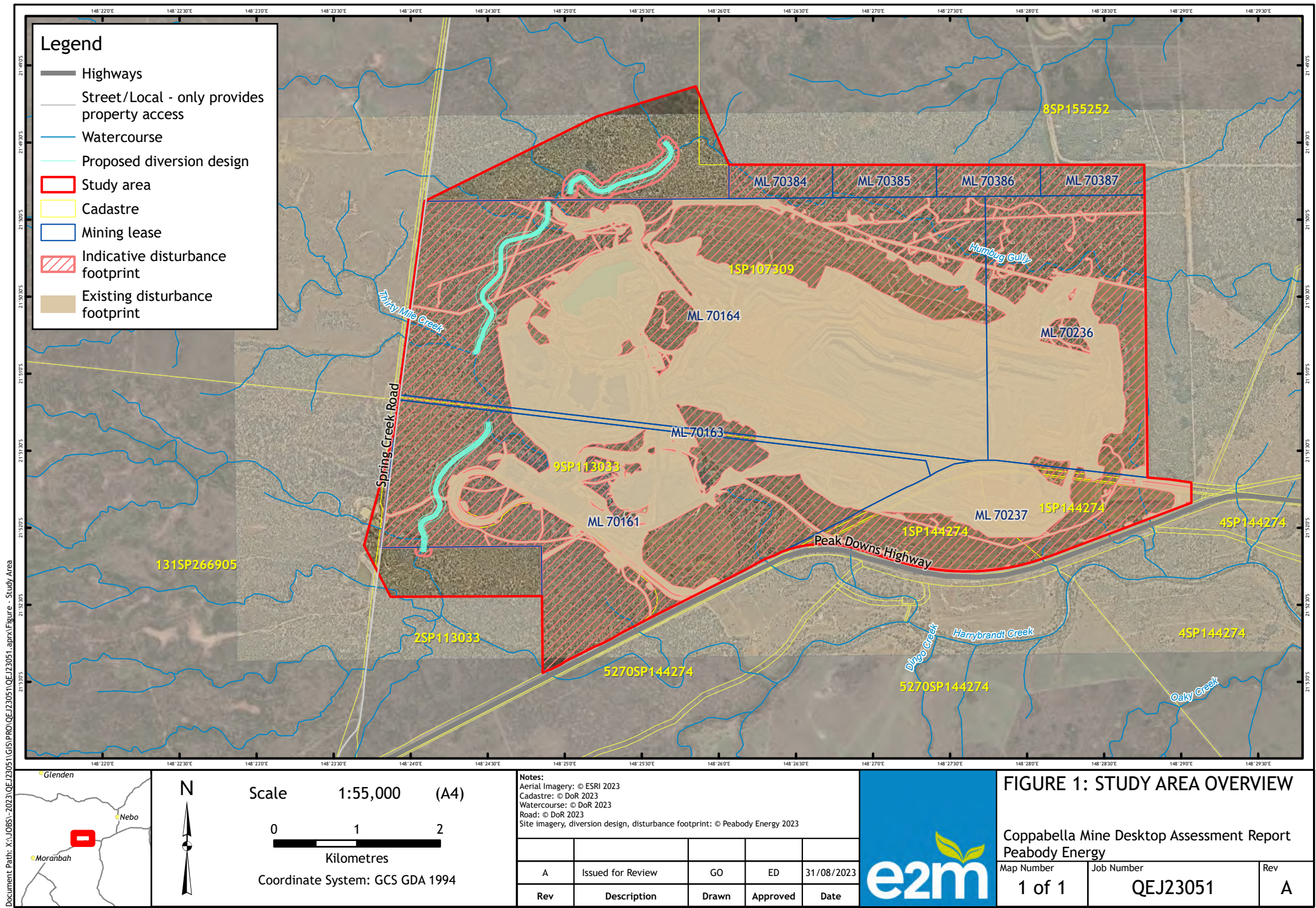
Kind Regards,

A handwritten signature in blue ink, appearing to read 'Ed Meyer'.

Ed Meyer  
Principal Ecologist





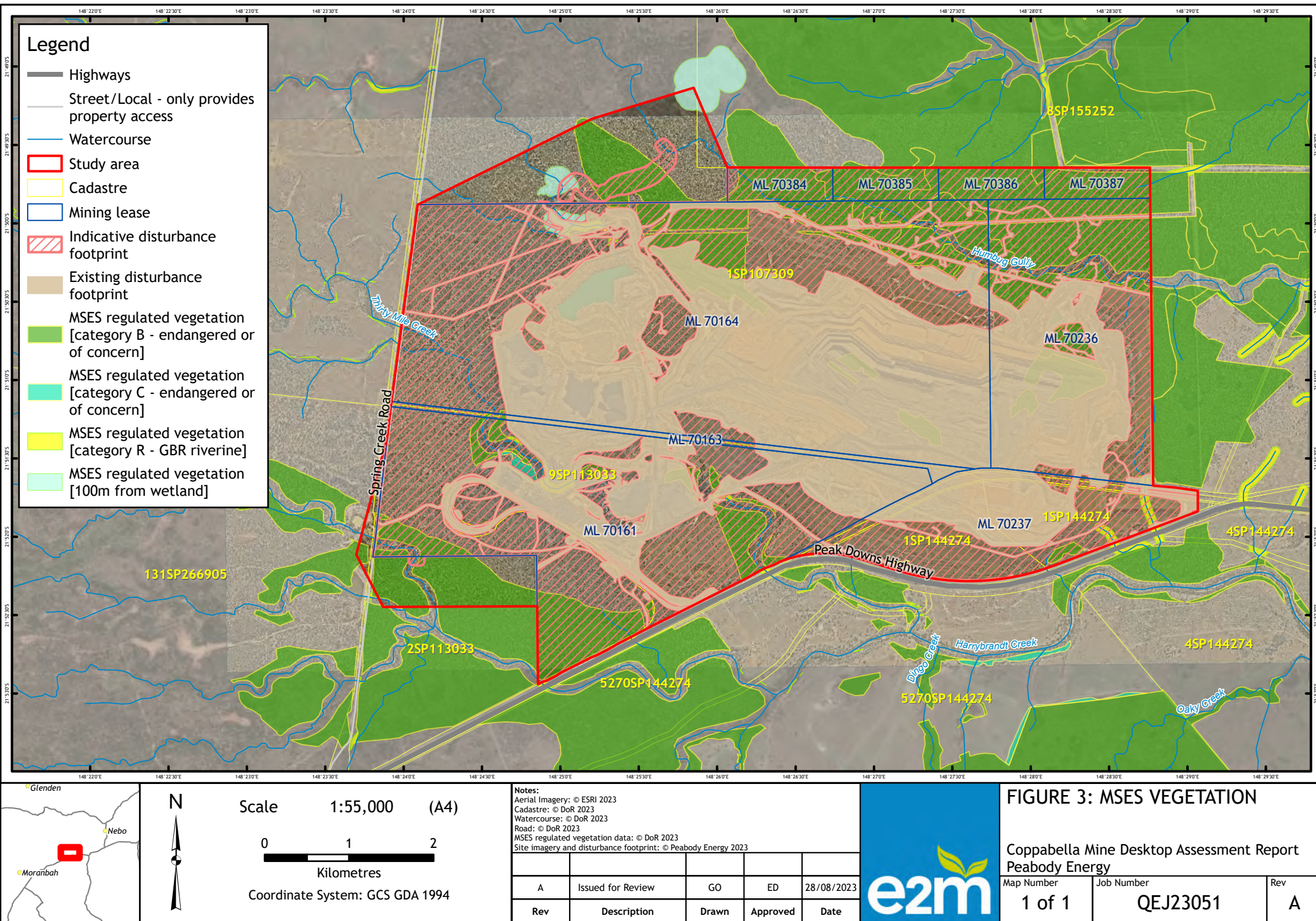


Document Path: X:\JOBS\2023\QEJ23051\GIS\PRO\QEJ23051.aprx Figure - Study Area



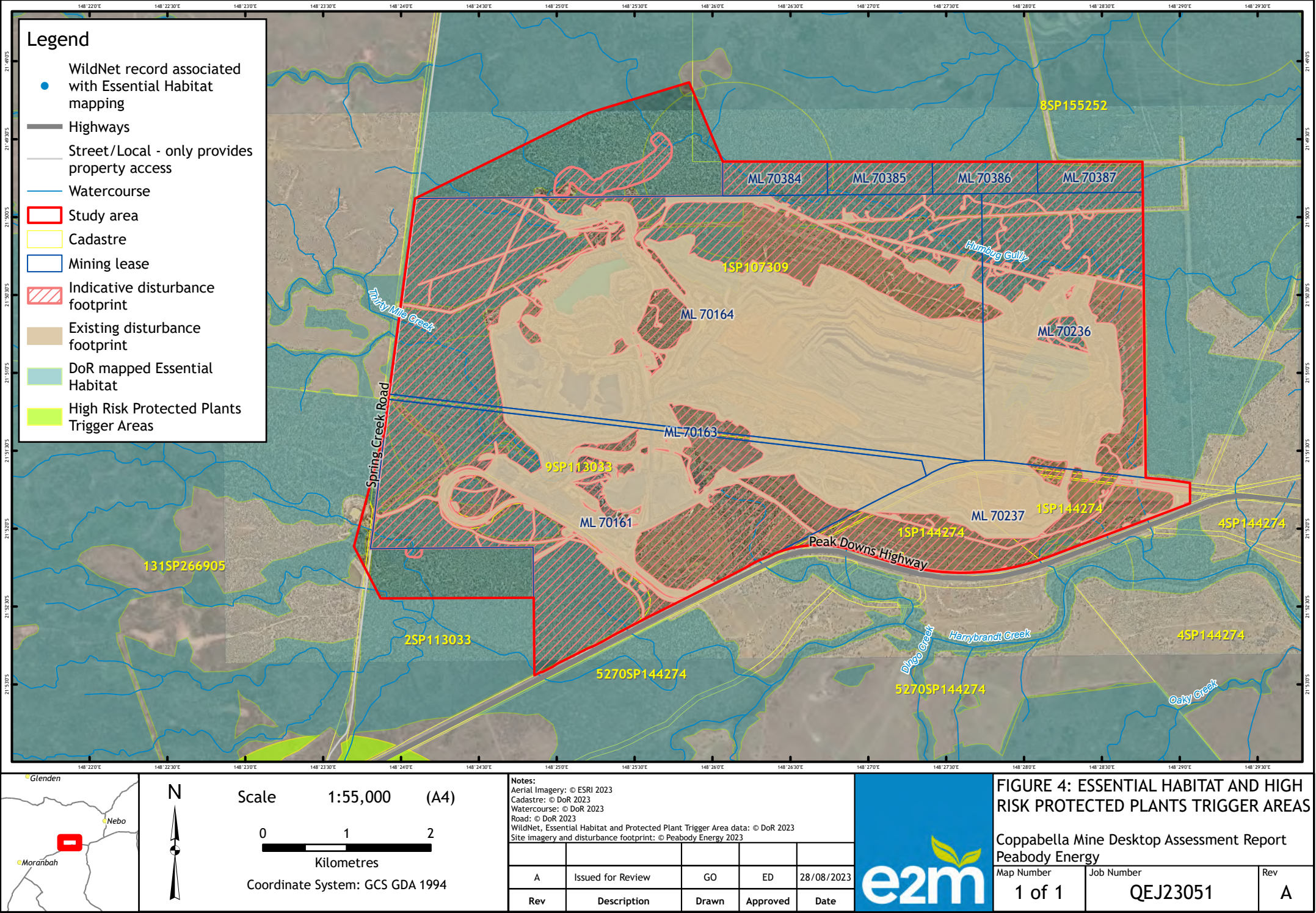






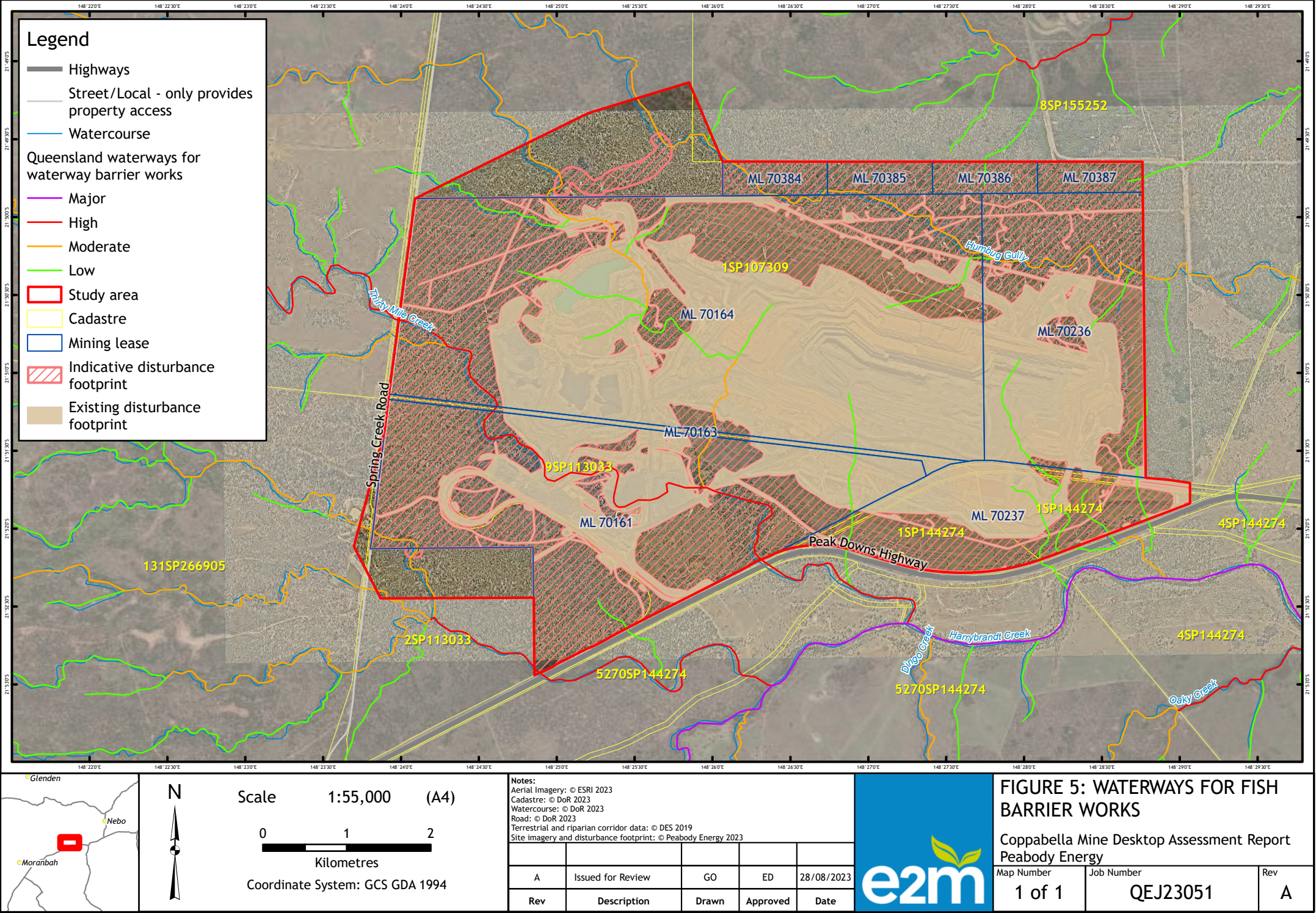


Document Path: X:\JOBS\2023\OE\22051\GIS\PRO\OE\22051.aprx Figure - DoR Essential Habitat and High Risk Protected plant trigger areas



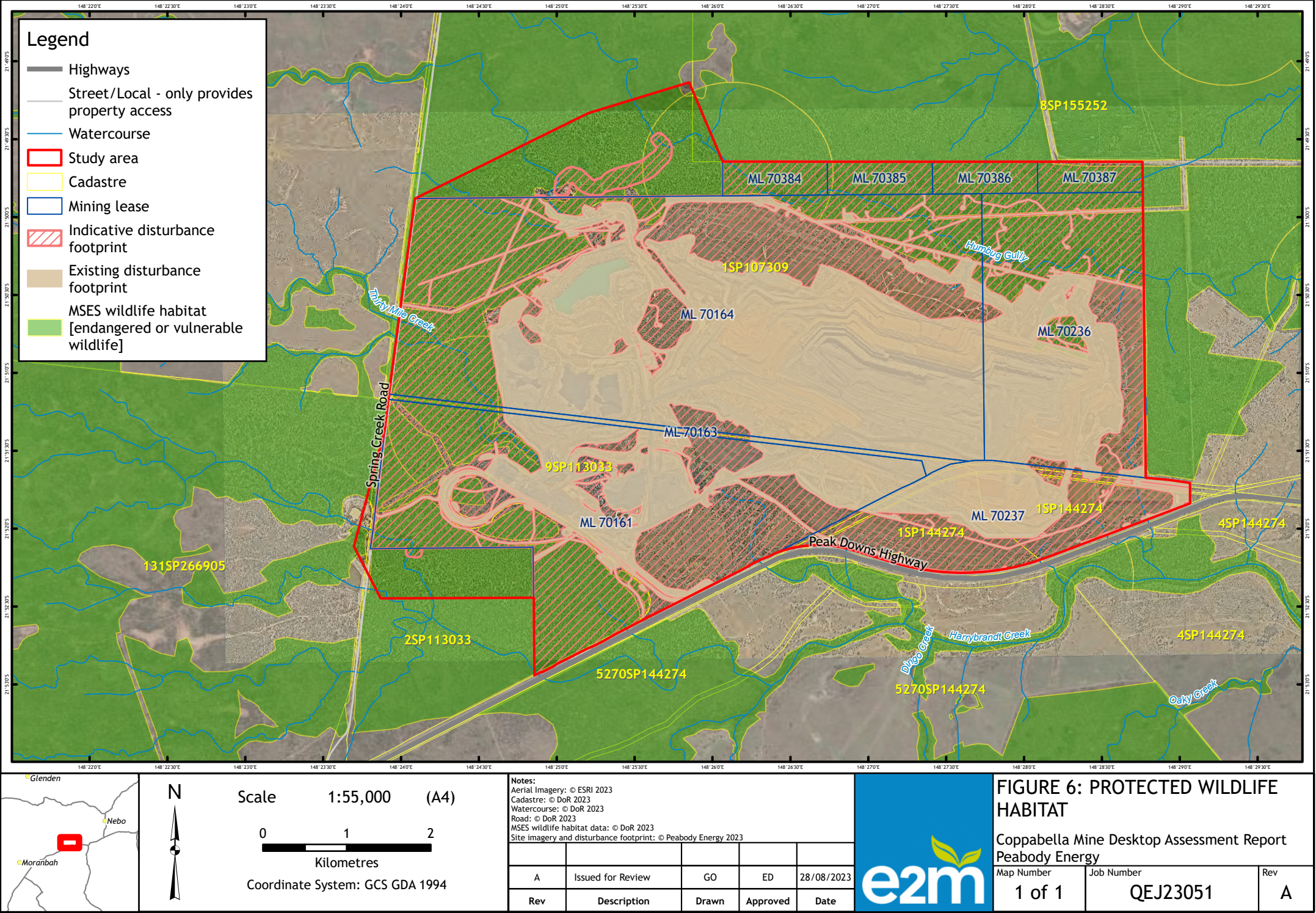


Document Path: X:\JOBS\2023\QEJ23051\GIS\PRO\QEJ23051.aprx Figure - Waterways for fish barrier works



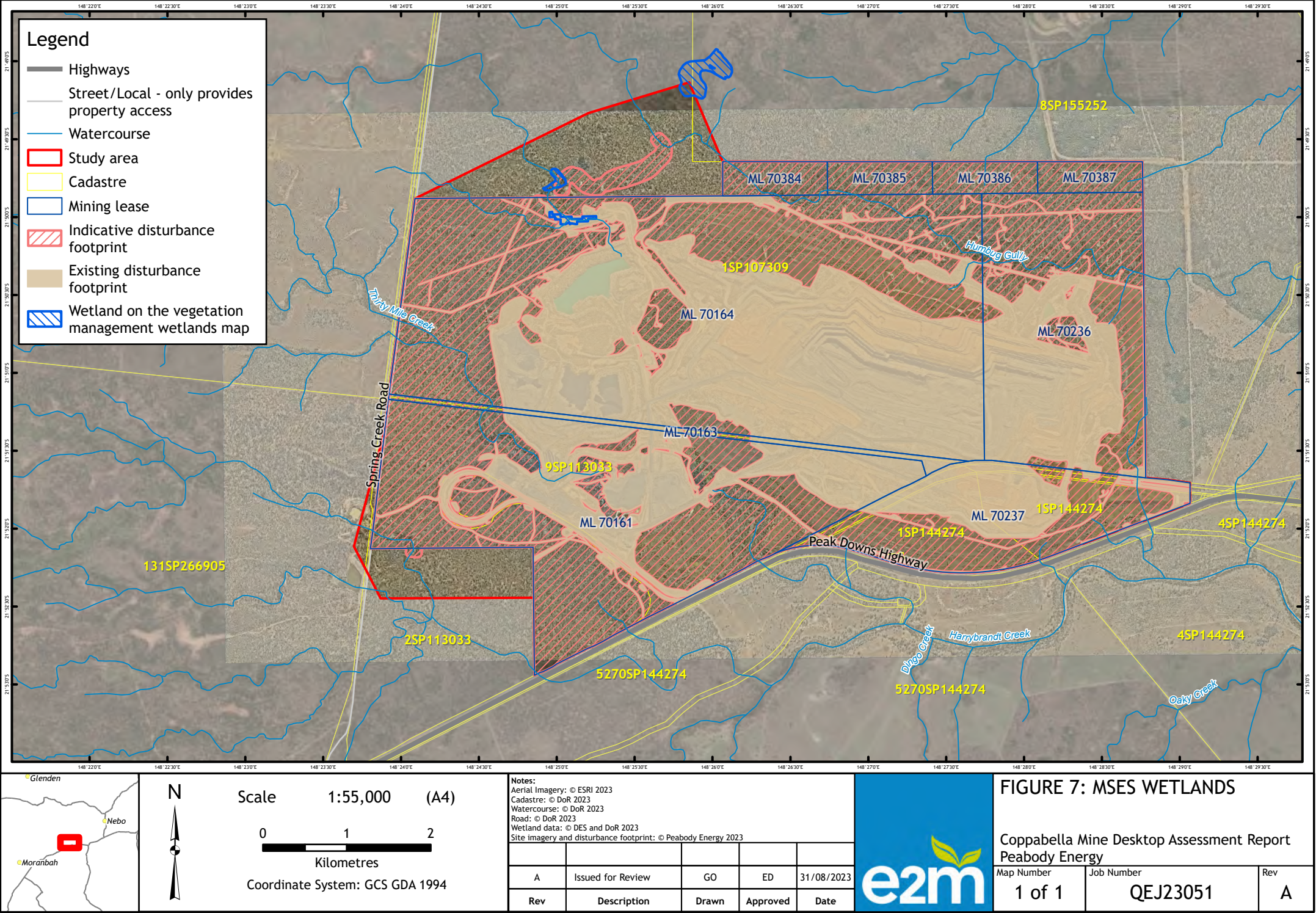


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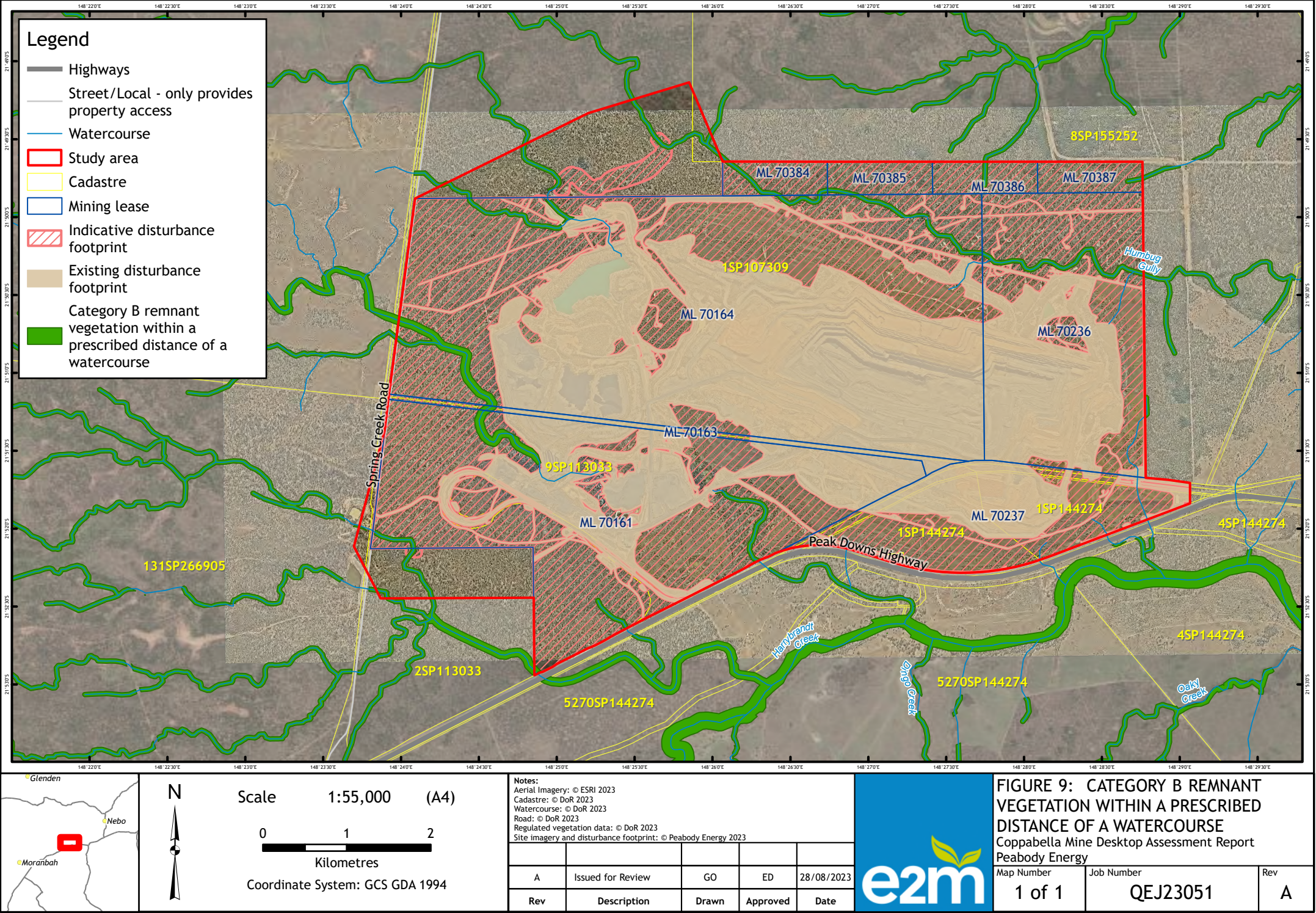




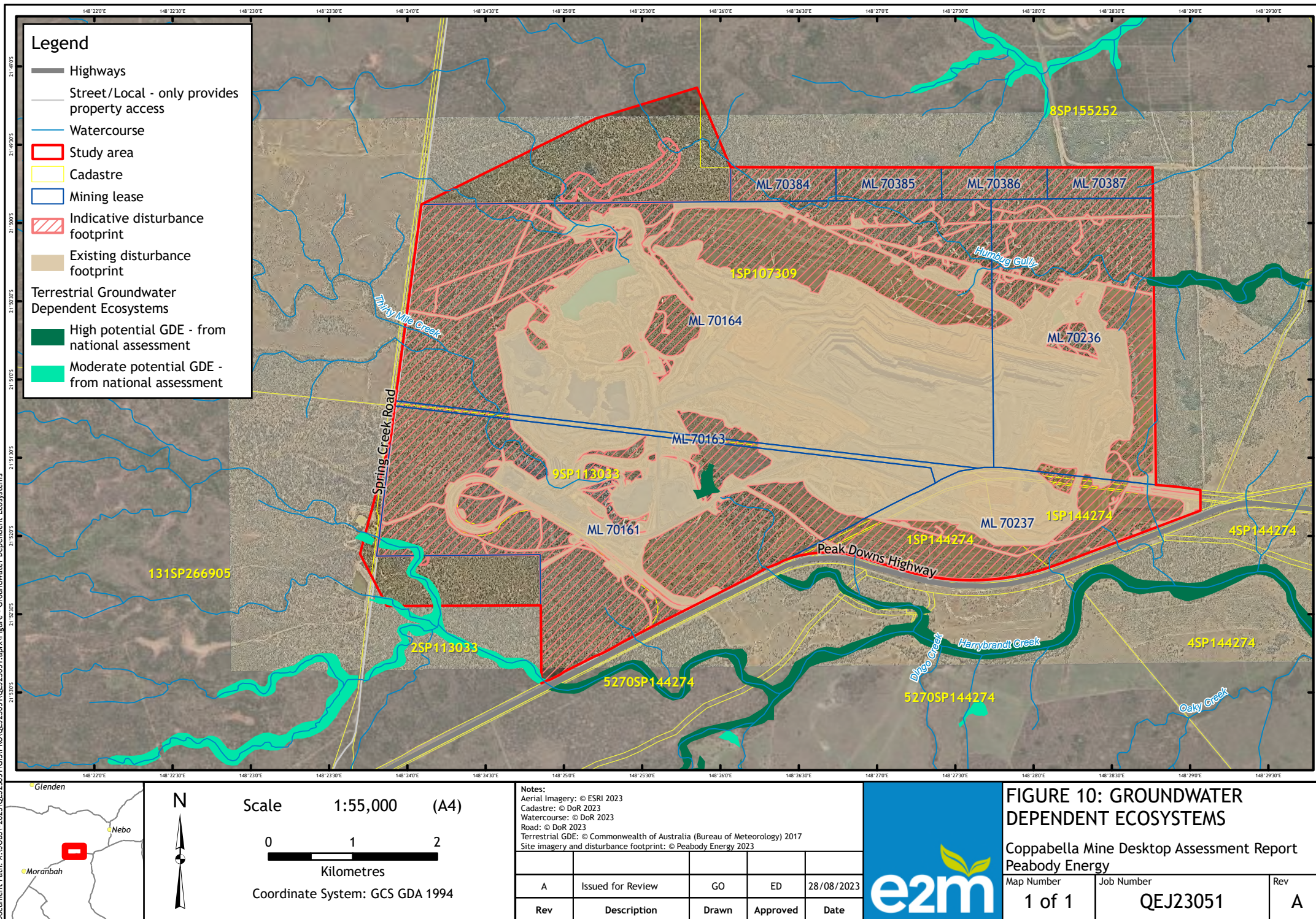




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## Appendix A: MNES/MSES species occurrence within the desktop search extent and Study Area

Common name	Scientific name	EPBC Act status <sup>1</sup>	NC Act status <sup>2</sup>	PMST occurrence within desktop search extent	WildNet records within desktop search extent	ALA records within desktop search extent	Previous survey records from Study Area (Y/N)
<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	E	E	Species or species habitat likely to occur within area	22	19	Y
<i>Tachyglossus aculeatus</i>	Short-beaked echidna	NA	SLC	NA	-	16	Y
<i>Denisonia maculata</i>	Ornamental Snake	V	V	Species or species habitat known to occur within area	4	2	Y
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern)	V	V	Species or species habitat known to occur within area	8	7	Y
<i>Petauroides volans</i>	Greater Glider (southern and central)	E	E	Species or species habitat known to occur within area	38	-	N
<i>Dichanthium queenslandicum</i>	King Blue-grass	E	LC	Species or species habitat likely to occur within area	1	1	N
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	M	SLC	Species or species habitat may occur within area	-	-	N



Common name	Scientific name	EPBC Act status <sup>1</sup>	NC Act status <sup>2</sup>	PMST occurrence within desktop search extent	WildNet records within desktop search extent	ALA records within desktop search extent	Previous survey records from Study Area (Y/N)
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	M	SLC	Species or species habitat may occur within area	-	-	N
<i>Capparis humistrata</i>		NA	E	NA	1	1	N
<i>Beryta pedicellata</i>		NA	NT	NA	3	5	N
<i>Apus pacificus</i>	Fork-tailed Swift	M; Marine	SLC	Species or species habitat likely to occur within area	-	-	N
<i>Samadera bidwillii</i>	Quassia	V	V	Species or species habitat likely to occur within area	-	-	N
<i>Elseya albagula</i>	Southern Snapping Turtle, White-throated Snapping Turtle	Critically E	Critically E	Species or species habitat may occur within area	-	-	N
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically E; M	Critically E	Species or species habitat may occur within area	-	-	N
<i>Motacilla flava</i>	Yellow Wagtail	M	SLC	Species or species habitat may occur within area	-	-	N
<i>Hirundapus caudacutus</i>	White-throated needletail	V: M	V	NA	-	1	N
<i>Monarcha (Monarcha) melanopsis</i>	Black-faced monarch	M	SLC	NA	-	1	N



Common name	Scientific name	EPBC Act status <sup>1</sup>	NC Act status <sup>2</sup>	PMST occurrence within desktop search extent	WildNet records within desktop search extent	ALA records within desktop search extent	Previous survey records from Study Area (Y/N)
<i>Hemiaspis damelii</i>	Grey Snake	E	E	Species or species habitat may occur within area	-	-	N
<i>Actitis hypoleucos</i>	Common Sandpiper	M	SLC	Species or species habitat may occur within area	-	-	N
<i>Taphozous australis</i>	Coastal sheath-tail bat	NA	NT	NA	1	-	N
<i>Egernia rugosa</i>	Yakka Skink	V	V	Species or species habitat may occur within area	-	-	N
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat, South-eastern Long-eared Bat	V	V	Species or species habitat may occur within area	-	-	N
<i>Macroderma gigas</i>	Ghost Bat	V	E	Species or species habitat likely to occur within area	-	-	N
<i>Dichanthium setosum</i>	Bluegrass	V	V	Species or species habitat likely to occur within area	-	-	N
<i>Furina dunmalli</i>	Dunmall's Snake	V	V	Species or species habitat may occur within area	-	-	N
<i>Falco hypoleucos</i>	Grey Falcon	V	V	Species or species habitat may occur within area	-	-	N





Common name	Scientific name	EPBC Act status <sup>1</sup>	NC Act status <sup>2</sup>	PMST occurrence within desktop search extent	WildNet records within desktop search extent	ALA records within desktop search extent	Previous survey records from Study Area (Y/N)
<i>Dasyurus hallucatus</i>	Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu]	E	LC	Species or species habitat likely to occur within area	-	-	N
<i>Poephila cincta cincta</i>	Southern Black-throated Finch	E	E	Species or species habitat may occur within area	-	-	N
<i>Erythrotriorchis radiatus</i>	Red Goshawk	E	E	Species or species habitat may occur within area	-	-	N
<i>Neochmia ruficauda ruficauda</i>	Star Finch (eastern), Star Finch (southern)	E	E	Species or species habitat likely to occur within area	-	-	N
<i>Calidris melanotos</i>	Pectoral Sandpiper	M	SLC	Species or species habitat may occur within area	-	-	N
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	M	SLC	Species or species habitat may occur within area	-	-	N
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically E; M	Critically E	Species or species habitat may occur within area	-	-	N



Common name	Scientific name	EPBC Act status <sup>1</sup>	NC Act status <sup>2</sup>	PMST occurrence within desktop search extent	WildNet records within desktop search extent	ALA records within desktop search extent	Previous survey records from Study Area (Y/N)
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	M	SLC	Species or species habitat may occur within area	-	-	N
<i>Rheodytes leukops</i>	Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver	V	V	Species or species habitat may occur within area	-	-	N
<i>Stagonopleura guttata</i>	Diamond Firetail	V	V	Species or species habitat may occur within area	-	-	N
<i>Lerista allanae</i>	Allan's Lerista, Retro Slider	E	E	Species or species habitat may occur within area	-	-	N
<i>Eucalyptus raveretiana</i>	Black Ironbox	V	LC	Species or species habitat known to occur within area	-	2	N
<i>Rostratula australis</i>	Australian Painted Snipe	E	E	Species or species habitat likely to occur within area	-	3	N

<sup>1</sup> E = Endangered; V = Vulnerable; M = Migratory; NA = not applicable (as not listed under the EPBC Act)

<sup>2</sup> E = Endangered; V = Vulnerable; SLC = Special Least Concern; LC = Least Concern

