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Preserving the Balance of Nature

Mr Paul Freeman
Mining and Industry Projects
NSW Department of Planning and Environment
GPO Box 39 Sydney NSW 2001

8 June 2018

Dear Mr Freeman

RE: ANGUS PLACE MINE MODIFICATION 5 – WATER MANAGEMENT

Whilst the Lithgow Environment Group Inc. commends this Proposal to treat Angus Place mine water by reverse osmosis, we **object** to this Proposal because –

1. **This Proposal makes a mockery of the Planning Process** – because major earthworks and construction already commenced at Angus Place Colliery LDP001 several months ago, and pumping of up to 10 ML/day from LDP001 commenced in early April 2018.
2. **The EA fails to address the impact this Proposal will have on Matters of National Environmental Significance** under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, namely –
 - a. Failure to assess the impact on Temperate Highland Peat Swamps on Sandstone (THPSS) listed as Endangered under the *Environment Protection & Biodiversity Conservation Act 1999* and occurring in the Kangaroo Creek, Lambs Creek, and Long Swamp areas of this Proposal;
 - b. Failure to assess the impact on Threatened Species listed under the *Environment Protection & Biodiversity Conservation Act 1999* and occurring in the Proposal area.
3. **The EA fails to address the impact this Proposal will have** on the EEC of *Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions*, listed as an Endangered Ecological Community in Part 3 of Schedule 1 of the *NSW Threatened Species Conservation Act 1995*.

1. WORK HAS ALREADY COMMENCED

This Proposal makes a mockery of the Planning Process, because major earthworks and construction commenced at Angus Place LDP001 several months ago, and pumping of up to 10 ML/day from LDP001 started in early April 2018. Regardless of how the Department of Planning

dresses this up, the work currently underway is not part of any pre-existing approvals, the Part 3A assessment process was terminated 6 years ago, and undertaking such major works in the guise of an EPA Pollution Reduction Notice is a sham. **What is the point of having a Planning and Assessment process when mining companies routinely do whatever they want, wherever they want, whenever they want - without having proper planning approvals in place?**

2. (a) IMPACT ON EPBC ACT LISTED SWAMP COMMUNITIES

The EA focuses almost entirely on downstream impacts of the mine water discharge, however fails to address the impacts that a protracted lowering of the water-table and subsequent drying out of habitats will have on EPBC listed Temperate Highland Peat Swamps on Sandstone (THPSS) which occur in the Kangaroo Creek, Lambs Creek, and Long Swamp areas of the Proposal area.

The issue of water drawdown by mines was highlighted in major newspapers just this week under the headline *"SUCKING IT DRY: Nearly early one-third of the Hunter's groundwater resources could be affected by mining"* (<https://www.mudgeeguardian.com.au/story/5453540/sucking-it-dry-report-warns-of-minings-water-impacts/?cs=1485>).

LEG is all too familiar with this issue, given the recent loss of Sunnyside East Swamp, Carne West Swamp, Gang Gang East Swamp, and Gang Gang West Swamp to Springvale Colliery Longwall Panels LW418-421. Centennial Coal and the Department of Planning assured the community that these longwalls would have a "negligible impact", yet all four swamps have now been irreparably damaged. Angus Place Mine once again claims in this EA that the Proposal will have a "Negligible impact" – a hollow statement which does nothing to reassure our community group.

The EA attempts to **mislead** the Department of Planning by claiming that Long Swamp is a "Typha orientalis Wetland" (Appendix D, Page 19 & 108), and not a Temperate Highland Peat Swamp on Sandstone (THPSS). They do this by using the literal NSW Geographical Names Board location of Long Swamp shown on the Cullen Bullen 1:25000 Map Sheet (8931-3N).

LEG regards Centennial's remark as facetious, because they know full well the area they describe as a "Typha orientalis Wetland" was once a THPSS, until it was killed by highly saline minewater discharges by Angus Place LDP001 and Invincible Colliery LDP 001 & 002 from the 1970's.

And this is despite the fact LEG members have so far attended three (3) meetings with Centennial staff on this Modification, and three of our members accompanied Centennial staff Mr James Marshall and Peter Corbett on a half day on-site tour of Long Swamp to show them **exactly** where we regard Long Swamp to be. Long Swamp extends for some seven (7km) north (upstream) of Centennial's "Typha orientalis Wetland", and includes several tributaries including the Maiyangu Marragu arm to the north east, the Alois Creek arm and Invincible Colliery Borehole arm to the west. Furthermore LEG raised concerns about Kangaroo Creek and Lambs Creek Swamps as well, however the EA only addresses Centennial's narrow definition of Long Swamp.

So for the record, the official 2005 Commonwealth Listing Advice describes and maps the location of swamps included in the EPBC listed THPSS community, and clearly states them to include:

- Blue Mountains swamps in the upper reaches of Hawkesbury River (such as Grose R and Wentworth Ck) and Nepean R (such as Bedford Ck and upper tributaries of Coxs River);
- Newnes Plateau swamps in the upper reaches of Wolgan River, Wollangambe River, Bungleboori Creek, Nine Mile Creek, Nayook Creek and Coxs River.
- Southern Highlands swamps, including:
 - Butlers Swamp on the upper reaches of Nepean River
 - Gallaghers Swamp and Rock Arch Swamp on the upper reaches of Avon River
 - Paddys River swamps, including Jumping Rock Swamp, Hanging Rock Swamp,
 - Mundego Swamp, Long Swamp and Stingray Swamp
 - North Pole Swamp and Stockyard Swamp on the upper reaches of Dudewaugh Creek
 - Wildes Meadow Swamp on the upper reaches of Shoalhaven River
 - Wingecarribee Swamp on the upper reaches of Wingecarribee River.

The EPBC Act definition of THPSS includes Montane Peatlands & Swamps EEC (in Green) and Newnes Plateau Shrub Swamps EEC (in Blue) on the maps below published as part of that Listing.

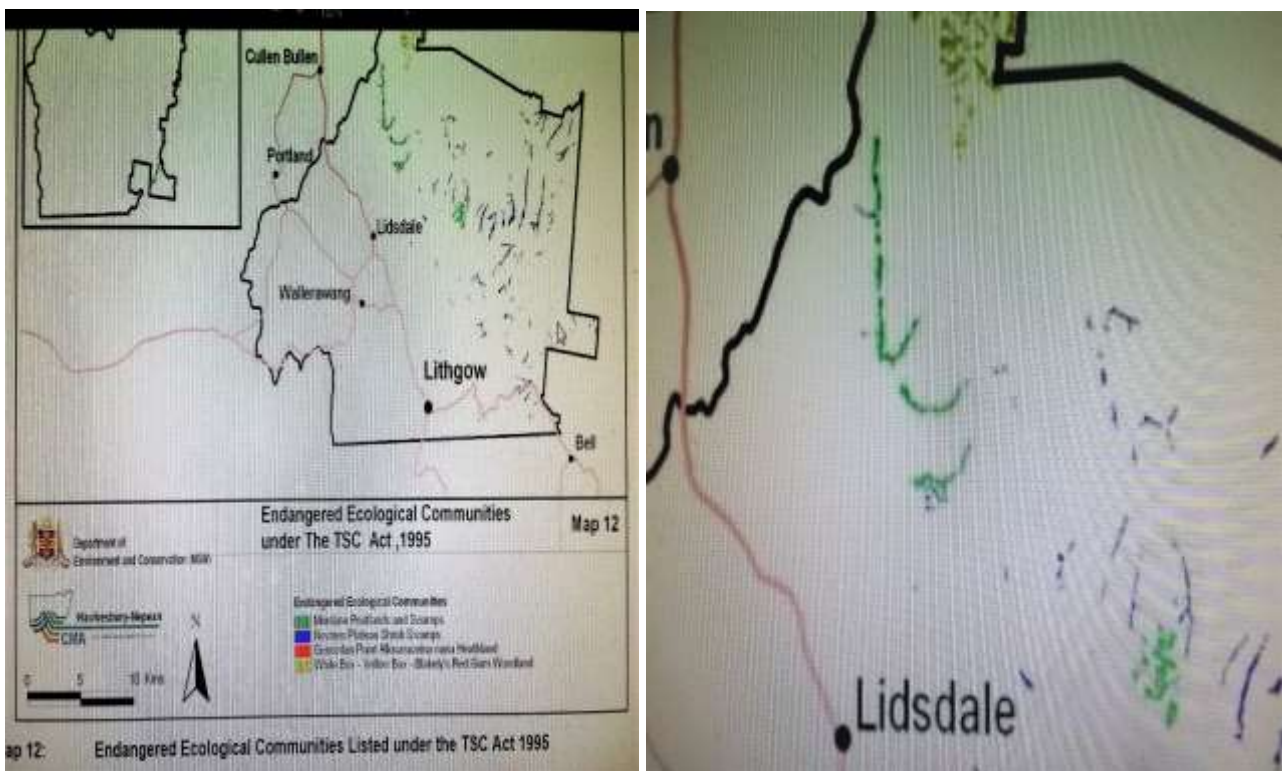


Figure 1: Official Map of EPBC Act Listed THPSS communities in Proposal Area. Long Swamp, Lambs Creek Swamp, and Kangaroo Creek Swamp are clearly marked in Green north of Lidsdale.

Centennial Coal know this, as the 2016 publication *“The spatial distribution and physical characteristics of Temperate Highland Peat Swamps on Sandstone (THPSS)”*

(<https://site.emrprojects.summaries.org/2016/04/20/the-spatial-distribution-and-physical-characteristics-of-temperate-highland-peat-swamps-on-sandstone-thpss/>) was funded by an Enforceable Undertaking (see

Appendix 1) as per section 486A of the *Environment Protection and Biodiversity Conservation Act 1999* between the Minister for the Environment, Springvale Coal Pty Ltd and Centennial Angus Place Pty Ltd.

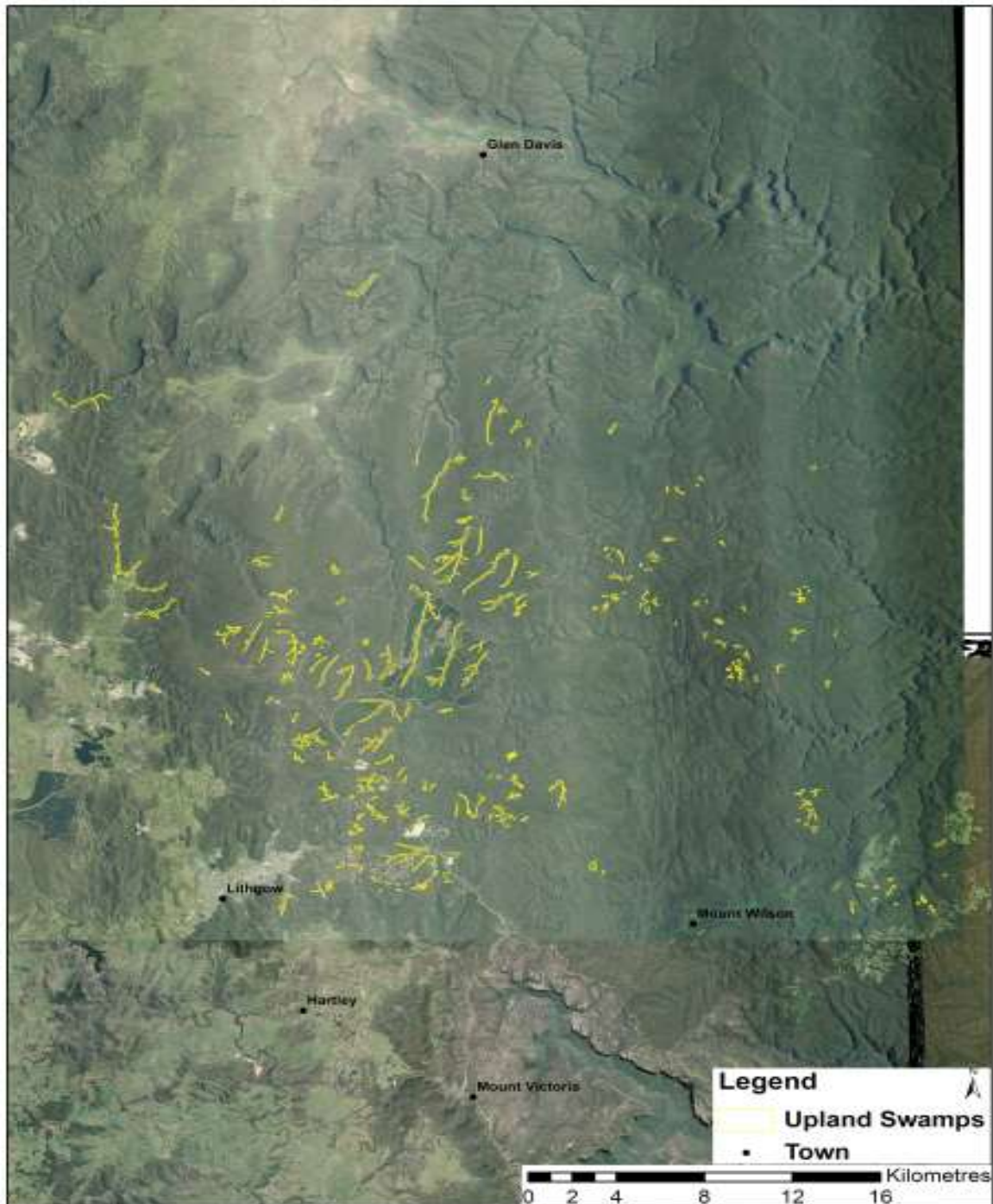


Figure 2: THPSS Newnes region – from a report funded by an Enforceable Undertaking issued to Centennial Coal in October 2011. Kangaroo Creek Swamp, Lambs Creek Swamp, and Long Swamp are clearly mapped.

Therefore Kangaroo Creek Swamp, Lambs Creek Swamp, and Long Swamp in the headwaters of the Coxs River ARE Temperate Highland Peat Swamps on Sandstone (THPSS) as defined under the EPBC Act, and are listed as ENDANGERED.

Furthermore the swamp communities in Kangaroo Creek Swamp, Lambs Creek Swamp, and Long Swamp in the headwaters of the Coxs River are also listed as ENDANGERED under the NSW TSC Act, described as *Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions*.

The EA then goes on to make the misleading claim that *“Given that Long Swamp and the Upper Coxs River lie downstream of Kangaroo Creek, analysis also indicates no predicted change to the geomorphological state of Long Swamp and the Upper Coxs River due to Project.”*

Once again LEG reiterates the EPBC Act definition of Long Swamp as the upper tributaries of the Coxs River, which are upstream of Kangaroo Creek and Centennial’s “Typha orientalis wetland”.

All coal seams in the local area slope downhill in a north-easterly direction. The 800 Panel Area is 200+ metres below the surface to the east, is lower than the Coxs River headwaters and upper tributaries, and undeniably does have a broad water-table drawdown affect. Lowering the watertable in the 800 Panel Area could drain aquifers that currently feed the Coxs River.

LEG cites as an example the THPSS Damage which occurred along Wolgan Road in 2004. The water level in this swamp suddenly dropped dramatically, and the swamp died (Yellow area Map below). This swamp is located just 300 metres west of Angus Place Colliery Long Wall Panels 4 – 10, which were mined between 31 August 1979 and 27 August 1986.



Figure 3: THPSS Damage in 2004 near Angus Place LWs 4 - 10

There were no other operating mines anywhere near Long Swamp at that time. Pine Dale Mine (old Wallerawang Colliery) had not been approved yet, Invincible Colliery wasn't operational, and

Baal Bone Colliery LW 29-31 south of the Great Dividing Range had not been approved yet. The only operating mine anywhere near Long Swamp was Angus Place Colliery.

LEGs concern at the time was that Centennial Coal may have been pumping minewater from old Angus Place Colliery mine workings, had lowered the water-table, and the end result was a dead swamp. LEG contacted Centennial's Manager Mr. Bob Miller, who denied that it had anything to do with Angus Place Colliery. LEG contacted the Department of Mineral Resources and got nowhere. Lee Rhiannon MP visited the site and raised questions in the NSW Parliament. Soon after the water table in the swamp began to rise, despite no significant rainfall, and that swamp is now slowly recovering. LEG does not want to witness a repeat of that incident!

The removal of groundwater from underground workings in the 800W area 200+ metres lower than Kangaroo Creek Swamp, Lambs Creek Swamp, and Long Swamp could see water drain from these areas into the mine goaf, resulting in drying-out of Endangered EPBC listed swamps in those areas. Piezometers must be installed in those swamps, and adaptive management consent conditions must be enforced in the event those swamps show any signs of deterioration.

2. (b) IMPACT ON EPBC ACT LISTED THREATENED SPECIES

Two threatened species occurring in the Angus Place Mine area were not identified in any EISs, and no EPBC Assessment or Review of Environmental Factors (REF) has ever been done. They are:

- ***Pultenaea glabra*** (Vulnerable – EPBC & TSC Act) - recorded Kangaroo Creek area in 2010 (<https://auth.ala.org.au>). Not identified in 2015 Angus Place Extension. No EPBC Referral has ever been done. The Commonwealth Threatened Species Advice for *Pultenaea glabra* (<http://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10712>) specifically lists as a **Threat: “Significant, protracted drying of this species’ habitat and reduction in groundwater”**. Clearly this Proposal to pump out Angus Place mine workings for a protracted period during a drought will drain underground aquifers in the Kangaroo Creek area and may cause the loss of this species. These plants may be the last of a once much more widespread community, before Angus Place Colliery longwall mined much of Lambs and Kangaroo Creek catchments, and Maiyingu Marrugu Reserve (Angus Place Colliery LWs 1 – 26, 1980 – 2002). LEG recently found two more colonies of what we are *Pultenaea glabra*, and are waiting for them to flower so samples can be sent to the Herbarium. The failure to identify *Pultenaea glabra* in an EIS 35 years ago was a tragedy. To ignore this threatened species again in this 2018 EA would be unconscionable! **An EPBC Act Referral for *Pultenaea glabra* must be undertaken!**
- ***Kunzea cambagei*** (Vulnerable EPBC Act & TSC Act) - recorded in Kangaroo Creek area in 2010 (<https://auth.ala.org.au>). Not identified in the 2015 EA for Angus Place Extension. No EPBC Referral has ever been done. This is the most northerly record for this species, the only other occurrences are further south near Mount Werong and Medway. Any action that may harm this plant (such as lowering the water-table by xxx metres for a protracted period during a drought) must be assessed under the EPBC Act. These remnant *Kunzea cambagei* may be part of a once much more widespread community, before Angus Place

Colliery longwall mined most of the Kangaroo Creek/Lambs Creek catchment between 1980 – 2002. This particular site was not directly undermined (though Angus Place LW16 did come within the angle-of-draw), which may be why they have survived. The failure to identify this species in an EIS 35 years ago was a tragedy. To ignore it in this 2018 EA would be unconscionable! **An EPBC Act Referral for *Kunzea cambagei* must be undertaken!**

- ***Eucalyptus aggregata*** (Vulnerable EPBC Act & TSC Act) occurs throughout the area that will be drained for a protracted period during a drought by this Proposal. The EPBC listing advice for this species identifies *Eucalyptus aggregata* as occurring in frost hollows along drainage lines, which indicates that it may be a moisture-dependent species. Clearly any proposal to lower the water table may cause harm. **An EPBC Referral must be required.**
- ***Eucalyptus cannonii*** (Vulnerable EPBC Act & TSC Act) occurs throughout Proposal area, may be moisture-dependent, and may be affected by protracted lowering of the water table during a drought, and drying out of its habitat.
- ***Petalura gigantea*** (Giant Dragonfly) – obligate swamp dweller, moisture dependent;
- ***Eulamprus leuraensis*** (Blue Mountains Water Skink) - moisture dependent;

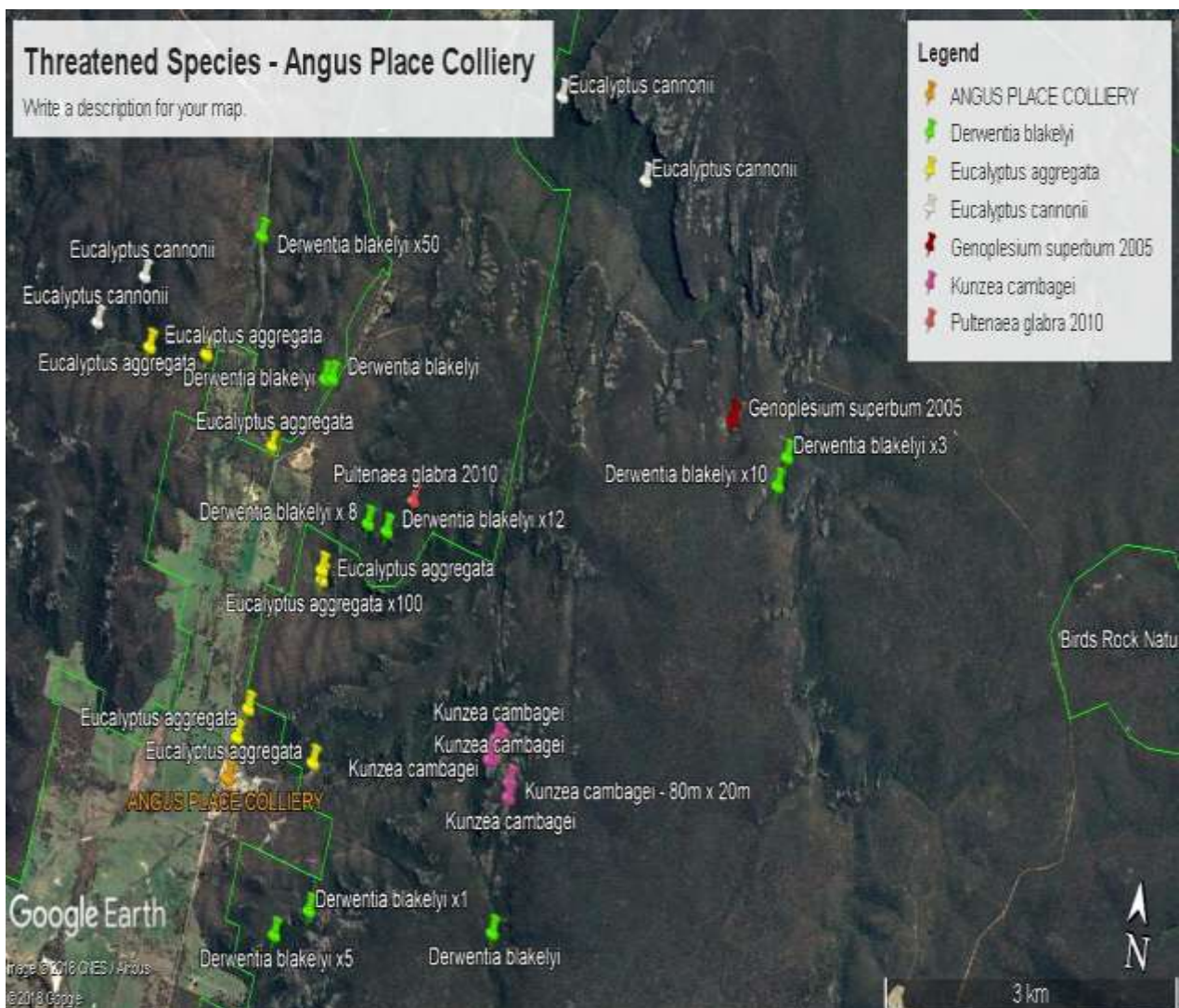


Figure 4: Some Threatened Species near Angus Place Mine (adapted from <https://auth.ala.org.au>).

2(c). IMPACT ON TSC ACT LISTED THREATENED SPECIES

- ***Genoplesium superba*** (Endangered TSC Act) – occurs in wet heathland on shallow soils, and recorded in open woodland interspersed with heath near the area proposed to be undermined by the 2015 Angus Place Extension.
- ***Veronica blakelyi*** (Vulnerable TSC Act) - occurs along swamp edges in Lambs Creek, Kangaroo Creek, and Long Swamp. Likely to be moisture-dependent, likely to be impacted by a protracted lowering of the water table during a drought.

3. IMPACT ON TSC ACT LISTED ENDANGERED ECOLOGICAL COMMUNITY

The EA fails to address the impact of this Proposal on the EEC of *Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions*, listed as an Endangered Ecological Community in Part 3 of Schedule 1 of the *NSW Threatened Species Conservation Act 1995*.

The Final Determination for this EEC states it is characterised by the following species assemblage:

Acacia dealbata

Acaena echinata

Acaena ovina

Asperula conferta

Austrodanthonia duttoniana

Austrodanthonia pencillata

Austrostipa bigeniculata

Austrostipa densiflora

Bothriochloa macra

Carex inversa

Convolvulus angustissimus

Dichelachne crinita

Dichondra repens

Epilobium billardierianum

Eucalyptus dalrympleana* subsp. *dalrympleana

Eucalyptus ovata

Eucalyptus radiata

Eucalyptus stellulata

Geranium solanderi

Haloragis heterophylla

Hymenantha dentata

Juncus australis

Juncus subsecundus

Leptospermum myrtifolium

Melichrus urceolatus

Plantago varia

Poa meionectes

Schoenus apogon

Solenogyne gunnii

Acacia melanoxylon

Acaena novae-zelandiae

Aristida ramosa

Asperula scoparia

Austrodanthonia laevis

Austrodanthonia pilosa

Austrostipa blackii

Austrostipa scabra var. *falcata*

Carex appressa

Chrysocephalum apiculatum

Desmodium varians

Dichelachne micrantha

Elymus scaber

Eucalyptus aggregata

Eucalyptus dives

Eucalyptus pauciflora

Eucalyptus rubida

Eucalyptus viminalis

Gonocarpus tetragynus

Hydrocotyle laxiflora

Hypericum gramineum

Juncus filicaulis

Leptorhynchos squamatus

Lomandra filiformis* subsp. *filiformis

Microlaena stipoides

Poa labillardieri

Poa sieberiana

Scleranthus biflorus

Themeda australis

<http://www.environment.nsw.gov.au/determinations/tablelandssnowgumFD.htm>

50% of the above (in bold) occur in Long, Kangaroo and Lambs Creek Swamps. It tends to occur in frost hollows along streams, so may be moisture dependent. It may be affected by this Proposal.

4. INCONSISTENT APPROACH TO POLLUTION REDUCTION NOTICES

LEG remains perplexed as to why Centennial Coal are in such a hurry to undertake this Proposal and Desalinate LDP001 minewater, to the point of commencing works prior approval?

Centennial claim that the works currently underway at Angus Place LDP001 are being undertaken to comply with an EPA Pollution Reduction Notice. Yet that Notice Number 1109300 was issued over 8 years ago - on 17 February 2010. Salinity hasn't changed significantly at LDP001 since LEG began monitoring in Kangaroo Creek in 2006 – consistently remaining around 1000 -1100 $\mu\text{S}/\text{cm}$.

Yet Centennial were also issued Pollution Reduction Notice 1114246 for Springvale LDP006 around the same time - on 10 September 2010, yet have failed to comply with that Notice? Salinity at LDP006 has increased 8-fold since 2006 from 800 $\mu\text{S}/\text{cm}$ to a staggering **6,680 $\mu\text{S}/\text{cm}$** in Sept 2017. If Salinity increases another 8-fold in the next 10 years it will be saltier than the seawater off Bondi Beach!

Meanwhile Springvale LDP009 has a Licence Discharge Limit for Salinity of 1200 $\mu\text{S}/\text{cm}$ (which is regularly being exceeded), yet no Licence Discharge Limit for Salinity at LDP006 at 6,680 $\mu\text{S}/\text{cm}$?

Why isn't the EPA being consistent in applying licence limits for Salinity in mine discharges in the Cocks River catchment? Coalmines in the Hunter Valley must keep discharges below 600 $\mu\text{S}/\text{cm}$ in the upper catchment and 900 $\mu\text{S}/\text{cm}$ in the lower catchment of the Hunter River. Yet Springvale LDP006 can discharge water 8 – 10 times higher at 6,600 $\mu\text{S}/\text{cm}$?

And why is desalination of LDP001 being prioritised instead of the 6,600 $\mu\text{S}/\text{cm}$ LDP006 discharge?

The time to address such inconsistencies is at the Planning & Approval stage. The DP&E should establish a licence limit for Salinity at LDP001 as a Condition of Consent.

5. PREVIOUS SWAMP DAMAGE

LEG has raised Swamp Damage in Long Swamp, Kangaroo Creek Swamp, and Lambs Creek Swamp in previous submissions to the DP&E, for example in the 2015 Angus Place Extension. LEG has included some of this below as we believe it is relevant - further damage like this must be avoided.

Lamb's Creek Swamp and Kangaroo Creek Swamp

Douglas Benson (1978)⁶⁵ described the vegetation of the whole of Newnes Plateau. He then went on to map the vegetation of the Wallerawang 1:100 000 Map Sheet with David Keith in 1990²⁶.

In August 1982 Benson and McRae undertook a Flora Survey for the then Extension of Angus Place Colliery⁶⁵, concentrating on the vegetation types occurring at that time on lower valleys of Lambs and Kangaroo Creeks. Site Vegetation Structure 6b was described as: *Closed Heath in poorly drained valley floors comprising Baeckea linifolia, Grevillea acanthifolia, Hakea propinqua, Epacris paludosa, Olearia quercifolia, and Restio australis*. These species are indicators of the EPBC listed THPSS, or TSC listed Montane Peatlands & Swamps EEC, or Newnes Plateau Shrub Swamp EEC.



Photo 3 & 4: Benson & McRae⁶⁵ Site 6-7 in Lambs Creek Swamp - described as 6b: Closed Heath comprising *Baeckea linifolia*, *Grevillea acanthifolia*, etc. Can you see any closed heath? The clumps on the right are dried up fern stumps.

Vegetation Structure 6b was mapped at Sites 6, 7, 8 & 14, with Map coordinates provided. LEG has surveyed all four Sites and found none of the above species. Two patches of 6b mapped on Lambs Creek have dried up after being undermined by LWs 4 -8. Two patches mapped due east of Angus Place Coliery Pit Top are now highly disturbed areas infested with Blackberry, exotic grasses and other weeds. Site 14 in upper Kangaroo Creek was more recently disturbed by Angus LW 910 & 920.



Photo 5 & 6: Benson & McRae⁶⁵ Site 14 - upper Kangaroo Creek Swamp has since been undermined by LW 920 & 940 *Coral Fern* (*Gleichenia dicarpa*) was the first species to die. It cannot tolerate disturbance and is water-dependent.⁶⁹

Despite the above, Centennial claim that “Vegetation monitoring at Kangaroo Creek Swamp has not demonstrated changes to the flora community within the swamp.”

On page 13 Benson & McRae state that:

“Subsidence will have two surface manifestations, alteration of hydrology and initiation of rockfalls. Alteration to hydrology can involve either lowering of the watertable, due to drainage of water down cracks in the bedrock, or an increase in the catchment area and raising of the watertable, due to cracks upslope channelling water. The swamp in the lower portion of Kangaroo Creek has been undermined. Here the absence of dried-out swampland and the presence of dead trees around the swamp margins suggest that the latter effect may have occurred. Recent rockfalls are common in the area, and are mostly associated with the coal mining activities. There is much evidence of incipient cliff collapse.”

LEG finds it interesting that a Flora Consultant predicted 32 years ago the very same impacts that Centennial Coal are once again asserting will not occur with this proposal!

The lower valleys of Lambs and Kangaroo Creeks have now dried up, bar one small iron-stained seepage area on Lamb’s Creek. LEG has recorded 13 major cliff falls in the Lambs Creek area. Pells (1991)⁶⁷ reported of Angus Place Colliery that:

“About sixteen rock falls occurred during mining of the first eight longwall panels. Ten rock falls were observed in the vicinity of longwall 9. These ranged in volume from 20 to 5500 cubic metres. Photograph 2 shows one of the larger falls.”



Photograph 2
Rock fall at Angus Place

Photo: Cliff Fall from Pells, PJN (1991)⁶⁷



Photo 8: Cliff fall near Lambs Creek taken in 2010

Kingston and Allen (1982)⁶⁸ from the Australian Museum prepared the Fauna Study for the same Angus Place extension proposal. They described the vegetation type Swampy Heath (6b) as –

“Dominated by a wide variety of shrub species including Grevillea acanthifolia, Epacris paludosa and Leptospermum species. (once again indicator species of EEC listed Swamps)

Two major areas of Swampy heath occur within the Lease areas, one lying along Kangaroo Creek above the escarpment, and the second associated with the same creek but below the escarpment. The former is a narrow strip immediately alongside the creek [Site 14], while the latter is much wider forming the most extensive area of swampy heath in the region."

That 'most extensive area of swampy heath in the region' is now dessicated and dead. The 'narrow strip immediately alongside the creek' has been terminally damaged by LW 910 & 920 (Photo 4 & 5)

Kingston and Allen⁶⁸ go on to say that -

"Subsidence of strata resulting from underground mining could have impact on faunal habitat via two pathways:

Rock Falls: *The Origma [Rockwarbler or O. solitaria] nest under rock ledges and so some nests are likely to be disturbed.*

Alteration of surface drainage pattern: *This is a likely result of subsidence below creeks and swamps. An increase in water depth in the swamps would cause drowning of the swampy heath vegetation. The decrease in cover could lead to a reduction of breeding by swamp inhabiting birds including the two species mentioned above [Tawny Grassbird and Beautiful Firetail are described in the report as being uncommon in NSW, restricted in distribution, and worthy of special consideration]"*

Kingston and Allen⁶⁸ made only two Recommendations - both relating to swamp vegetation -

- 1) *Preservation of swamp vegetation, and hence the protection of the swamp-associated fauna should be attempted by minimising the degree of subsidence below these formations.*
- 2) *A small amount of supplementary survey of the fauna of the lower swamp should be carried out during late spring / early summer to investigate amphibians, reptiles, and birds breeding in this habitat.*

Once again a Consultant identified over 30 years ago the very same impacts Centennial still claim won't occur, to swamps that have in the intervening years been listed as Nationally Endangered!!!



Photograph 2.16 from EIS¹: Waterhole Kangaroo Creek

Photo 10: Same waterhole on 16 May 2014 – it is bone dry!!!

LEG considers Photograph 2.16 on page 91 of the EIS Main Report_ Part 1 to be misleading. This waterhole is now bone dry and has been for several of years due to subsidence from LW 940.

Despite the denials, on 16 April 2007 stream flow monitoring on Kangaroo Creek downstream of the SMP showed a loss of flow (Angus Place SMP, 28 August 2007)⁵⁷. The groundwater monitoring site on Kangaroo Creek Swamp then indicated a sharp fall in groundwater levels on 17 June 2008 with the passage of longwall 940 under the swamp. That fall was attributed to subsidence cracking and the creek stopped flowing at that point. Creek flows above Longwall 940 were reported to occur “through fractures in the underlying rock” (Angus Place SMP, August 2008). Subsequent monitoring has revealed continued low water flows in the creek (Angus Place SMP, Dec. 2009).

The flow of Kangaroo Creek has been much reduced since May 1996 when longwall operations commenced under a swamp in its headwaters. Very low flows from the headwaters of Kangaroo Creek have continued ever since. Kangaroo Creek dam downstream of the mined area has never been full since 1997. Aerial photography from the 1980s shows the dam full.



Photo 11: Kangaroo Ck Dam has been dry for over 10years



Photo 12: Kangaroo Ck Flow Guage - 25 March 2009

The Flow Gauage in the bed of Kanagroo Creek has since been removed, no doubt because there was no flow to record! The western ends of Angus Place longwalls 930 to 980 passed under the creek with a 260m depth of cover, cracked the creekbed, and drained the swamps that feed it.



Photo 13: A healthy *Olearia quercifolia* (ROTAP: 3RC)



Photo 14: A dying *Olearia* amongst dead Coral Fern

Olearia quercifolia (ROTAP: 3RC-) is restricted to Blue Mountains swamps. Benson & McRae⁶⁵ recorded it in the upper Kangaroo Ck in 1982. It is moisture dependent - longwall mining is a killer!

Long Swamp, Ben Bullen State Forest

Long Swamp and feeder tributaries of the Coxs River have suffered subsidence damage from Bord & Pillar and Long-wall mining for many decades. This EEC swamp has also been damaged by saline minewater discharges from 2 Invincible Colliery Licenced Discharge Points approved in 1983 & 1991

Most recently Baal Bone Colliery LW's 28 – 3 caused 'anomolous groundwater behaviour', in other words the swamp dried up. It recovered after heavy rain but was dry again earlier this year. LEG belives that the aquifers have been seriously compromised and the swamp is now too porous.



Another area of EEC swamp on the north-east arm of Long Swamp mysteriously collapsed and died in 2004. Some recovery has occurred, though it is too early to say if it will survive long-term. Its proximity to the northwest ends of Angus Place LWs 7 – 9 suggests these may be implicated.



Clearly the damage to Kangaroo Creek Swamp, Lambs Creek Swamp, Junction Swamp, Narrow Swamp, East Wolgan Swamp, Farmers Ck Swamp, Baal Bone Creek Swamp, Long Swamp and others have not been a 'benign impact' nor an isolated event. Why have the regulatory agencies not questioned the above assertions of mining companies given the 100's of cliff falls and 1000's of surface cracks that have occurred on Newnes Plateau caused by Angus Place Colliery?

LEG therefore believes that the Swamp Plan is based on incorrect geological, geomorphological and hydrological assumptions, and is flawed. Similarly a monitoring strategy that could not detect and/or report damage to Junction, Kangaroo, East Wolgan, or Narrow Swamps in a timely fashion.

This disastrous history of deficiencies most definitely does not bode well for the future of 70+ other NPPSS and hanging swamps that will be undermined by the Angus/Springvale Extensions over the proposed 25 years, and demonstrates that the coal industry cannot be trusted to protect significant environmental values such as the nationally endangered swamps found in the Gardens of Stone. Effective mine Subsidence Protection Zones are needed for these "protected" swamps.

6. RECOMMENDATIONS

The proposed Angus Place mine Modification should not be granted development consent unless:

- EPBC Referrals have been lodged and approved for the EPBC-listed EECs mentioned above;
- EPBC Referrals have been lodged and approved for EPBC Act listed Threatened Species including *Pultenaea glabra*, *Kunzea cabbagei*, *Eucalyptus aggregata*, *Eucalyptus cannonii*, *Petalura gigantea* (Giant Dragonfly), and *Eulamprus leuraensis* (Leura Skink)
- Development consent is not granted beyond the projected commencement date of the Springvale Transfer in 2019;
- Piezometers must be installed in Long Swamp, Kangaroo Creek Swamp and Lambs Creek Swamp to monitor groundwater levels;
- Adaptive management Consent Conditions must be enforceable to ensure that in the event THPSS show signs of deterioration, that the water table is allowed to recover;
- All proposed discharges of up to 10ML/day of mine effluent from Angus Place LDP001 be desalinated prior to release into the Coxs River, or sent via the Springvale-Delta Water Transfer Scheme (SDWTS) to Mount Piper Power Station as soon as complete;
- Any malfunction of the RO Plant or LDP001 infrastructure must not result in emergency discharges into the Coxs River;
- Representative sites for piezometers must be chosen by a third party agency;
- Monitoring guidelines must clearly specify how the condition of groundwater dependent indicator plant species will be performed;

- Monitoring of groundwater must create a comprehensive picture of previous and interconnected old mine workings which penetrate into the Coxs River sub-catchments including Wallerawang Colliery, Invincible Colliery, Ivanhoe Colliery, Renown Mine, Baal Bone Colliery, Newcom Colliery, and Angus Place Colliery.

CONCLUSION

We thank you for the opportunity to comment on this Proposal, and trust that the above submission meets with your favourable consideration.

Yours sincerely,

Chris Jonkers
Vice President
Lithgow Environment Group Inc.

APPENDIX 1:

A reminder that Angus Place Colliery was subject to a \$1,450,000 Enforceable Undertaking in 2011 for causing damage to Temperate Highland Peat Swamps on Sandstone (THPSS).

ENFORCEABLE UNDERTAKING

Environment Protection and Biodiversity Conservation Act 1999

Section 486DA

Undertaking to the Minister for Sustainability, Environment, Water, Population and Communities given for the purposes of section 486DA

by

Springvale Coal Pty Limited (ACN 052 096 769)

and

Centennial Angus Place Pty Limited (ACN 101 508 945)

1. Person giving undertaking

The persons giving the undertaking are Springvale Coal Pty Limited (***Springvale Coal***) and Centennial Angus Place Pty Limited (***Centennial Angus Place***).

Springvale Coal is giving the undertaking in its capacity as the Manager of the Springvale colliery. Springvale Coal manages the Springvale colliery pursuant to the Springvale Joint Venture Agreement for and on behalf of the owners of the Springvale colliery, Centennial Springvale Pty Limited and Springvale SK Kores Pty Limited. Springvale Coal has registered offices at: Level 18, 1 Market Street, Sydney NSW 2000.

Centennial Angus Place is giving the undertaking in its capacity as the Manager of the Angus Place colliery. Angus Place manages the Angus Place colliery pursuant to the Springvale Joint Venture Agreement for and on behalf of the owners of the Angus Place colliery, Centennial Springvale Pty Limited and Springvale SK Kores Pty Limited. Centennial Angus Place has registered offices at: Level 18, 1 Market Street, Sydney NSW 2000.

2. Preamble

The Springvale and Angus Place collieries are underground coal mines located near Lithgow in NSW. These collieries are adjacent to one another, as depicted in **Figure 1**.

Coal mining at the Angus Place colliery has been undertaken by long wall mining methods since circa 1979, and since circa 1995 at the Springvale colliery.

Combined groundwater from these collieries, can be discharged through Springvale colliery's licensed discharge points 4 and 5 in an emergency under Environment Protection Licence 3607.

Groundwater from the Angus Place colliery only can be discharged through Angus Place colliery's licensed discharge point 6 in an emergency under Environment Protection Licence 467.

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) commenced operation on 16 July 2000. When the EPBC Act came into operation, Springvale Coal and Centennial Angus Place held all requisite "specific environmental authorisations" (as defined in section 43A(2) of the EPBC Act) to lawfully operate the Springvale and Angus Place collieries.

The Springvale and Angus Place collieries contain stratum which are contiguous to the Temperate Highland Peat Swamps on Sandstone threatened ecological community. The Temperate Highland Peat Swamps on Sandstone ecological community was listed as "endangered" under the EPBC Act on 12 May 2005.

Since the listing of the Temperate Highland Peat Swamps on Sandstone ecological community, Springvale Coal and Centennial Angus Place have varied and obtained "environmental authorisations" (as defined in section 43A(2) of the EPBC Act), relevantly, including the following.

- (a) Springvale colliery was issued with Environment Protection Licence 3607 on 8 June 2000 under the *Protection of the Environment Operations Act 1997* (NSW). Environment Protection Licence 3607 was varied on 3 October 2006 for the addition of two emergency groundwater discharge points (being licensed discharge points 4 and 5) to be used in the event that there was a failure in the overland mine discharge water pipeline running from the Springvale colliery to the Wallerawang Power Station.
- (b) Centennial Angus Place was granted a Part 3A Project Approval on 13 September 2006 pursuant to section 75J of the *Environmental Planning and Assessment Act 1979* (NSW) for the "Angus Place Coal Project" (Project Application Number 06_0021).

Consequently, the Minister for Sustainability, Environment, Water, Population and Communities considers that section 43A of the EPBC Act no longer applies to the Springvale and Angus Place collieries.

3. Breach of the EPBC Act

The Minister considers that Springvale Coal and Centennial Angus Place have contravened the EPBC Act in that, contrary to section 18(6) of the EPBC Act, Springvale Coal and Centennial Angus Place have undertaken an action (being coal mining, and/or related mine groundwater discharge, at the Springvale and Angus Place collieries) without approval. The Minister considers that this action has had a significant impact on Temperate Highland Peat Swamps on Sandstone, specifically:

- (a) Narrow Swamp;

- (b) East Wolgan Swamp; and
- (c) Junction Swamp

These swamps are part of the threatened ecological community Temperate Highland Peat Swamps on Sandstone listed as "endangered" under the EPBC Act, and are also depicted in **Figure 1**.

4. The Undertaking

Without conceding that it has breached the EPBC Act or any other Act, but acknowledging that the Minister considers that the action has had a significant impact on Temperate Highland Peat Swamps on Sandstone, Springvale Coal and Centennial Angus Place hereby undertake, for the purposes of section 486DA of the EPBC Act, to pay the total sum of \$1,450,000 to the Fenner School of Environment and Society, Australian National University, for the purpose of undertaking a Research Program, the terms of which are set out in **Attachment A**.

Payment of the total lump sum for the Research Program will be made within 30 days of execution of this undertaking.

Oversight of the Research Program will be provided by a Research Program Steering Committee which will be established in accordance with the Terms of Reference at Schedule 2 of **Attachment A**.

The Minister acknowledges and agrees that, on the basis that Springvale Coal and Centennial Angus Place will fulfill the requirements of this undertaking, the Minister will not pursue further action against Springvale Coal or Centennial Angus Place in relation to the activities, works and impacts affecting Narrow Swamp, East Wolgan Swamp and Junction Swamp referred to in this undertaking.

5. Reporting

Springvale Coal and Centennial Angus Place will report the whole or any part of payment described in clause 4 to the Department of Sustainability, Environment, Water, Population and Communities by sending a letter to the Assistant Secretary of the Compliance and Enforcement Branch, Department of Sustainability, Environment, Water, Population and Communities, GPO Box 787, Canberra, ACT, 2601.

Other reporting will be in accordance with the Research Program Agreement, refer **Attachment A**.


6. Acknowledgement

Springvale Coal and Centennial Angus Place acknowledge that:

- (a) the Minister will make this undertaking available for public inspection including on a public register;

(b) the Minister and/or the Commonwealth may from time to time publicly refer to this undertaking through, but not limited to, media releases.

Signed by Springvale Coal Pty Limited by:



Signature of Director

STEVE BRACKEN

Name of Director (print)



Signature of Director/Secretary

Tony Macko

Name of Director/Secretary (print)

Signed by Centennial Angus Place Pty Limited by:



Signature of Director

STEVE BRACKEN

Name of Director (print)



Signature of Director/Secretary

Tony Macko

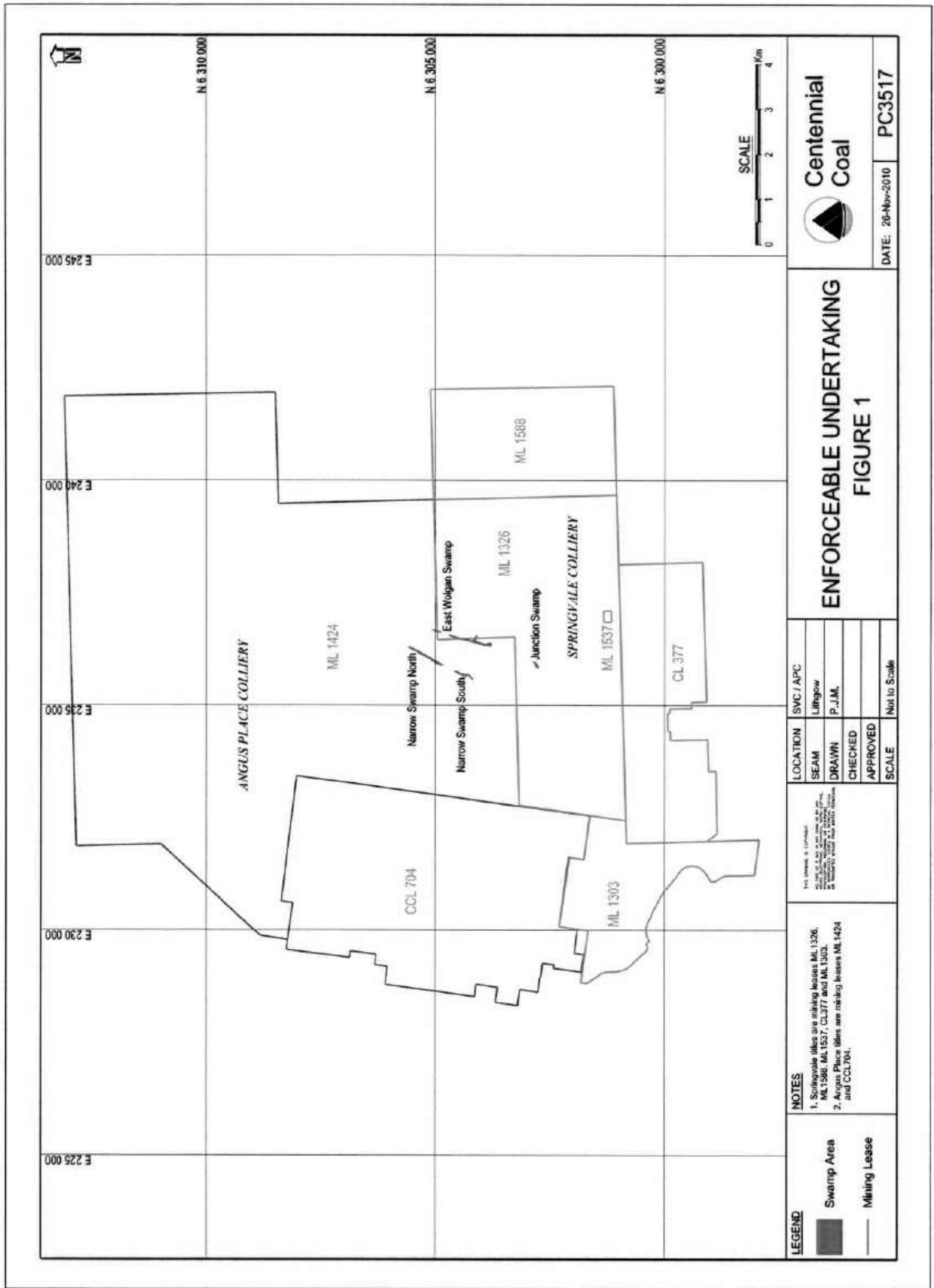
Name of Director/Secretary (print)

Accepted by the Minister for Sustainability, Environment, Water, Population and Communities under section 486DA of the Environment Protection and Biodiversity Conservation Act 1999 on this 12 day of

October 2011.



Signature of TONY BURKE



MEDIA RELEASE

21 October 2011

Mining company to pay for environmental damage

A New South Wales mining company has committed to pay \$1.45 million after causing damage to a nationally threatened ecological community.

An investigation by the federal environment department found that the long wall coal mining operations of Centennial Coal on the Newnes Plateau, near Lithgow, New South Wales, had caused a significant impact on the endangered *Temperate highland peat swamps on sandstone* ecological community.

The mining activities caused a loss of ecosystem function shown by loss of peat, erosion, vegetation dieback and weed invasion in three swamps. They also caused the formation of a large slump hole, several metres wide and more than one metre deep, at the East Wolgan swamp.

These changes mean the swamps can no longer serve their important hydrological role of acting as water filters and releasing water slowly to downstream watercourses.

Centennial Coal will pay \$1.45 million towards a research program to be administered by the Fenner School of Environment and Society at the Australian National University.

This research program will be of great conservation benefit for these protected swamps and inform better understanding of the impacts of land use change.

The program will map the distribution and extent of the swamps, explore their functions, water dynamics, ecology and history, and look at human impacts on the swamps. It will provide valuable knowledge to protect *Temperate highland peat swamps on sandstone* and to promote land management practices that minimise impacts on these swamps.

The payment will be made as an 'enforceable undertaking' under national environment law—the *Environment Protection and Biodiversity Conservation Act 1999*.

This is an effective way to hold companies accountable for environmental damage without going through lengthy and costly legal proceedings.

This outcome shows the Australian Government takes environmental protection seriously, and will not tolerate companies causing needless damage to the environment.

Media contact: 6275 9880

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