



Centennial Coal: Environmental Scorecard in the Gardens of Stone

Gardens of Stone Alliance

January 2025



Photo: Henry Gold

**The Gardens of Stone Alliance is comprised of
Blue Mountains Conservation Society, Lithgow Environment Group,
Nature Conservation Council of NSW and Wilderness Australia.**



Preface: Sydney's drinking water at imminent risk from flood of toxic water

Centennial Coal has a major water problem. One of NSW's largest coal mine companies, Centennial Coal operates in the sensitive Gardens of Stone area next to the World Heritage listed Greater Blue Mountains Area.

Underground coal mining has damaged groundwater flows. To stop the resulting influx of groundwater into underground coal mines, Centennial removes more than 20 billion litres of groundwater every year, interrupting groundwater supply and drying out peat swamps.

Much of this dirty water is sent to EnergyAustralia's nearby Mount Piper coal-fired power station for use in the cooling towers with the approval of the NSW Government and Environmental Protection Agency (EPA).

Centennial has not built a treatment plant onsite to cope with the 20 billion litres of groundwater it extracts annually and EnergyAustralia's power station cannot cope with more and more water. Furthermore, when there are outage periods at Mount Piper Power Station for scheduled maintenance (typically every 1-2 years for up to 91 days) less cooling water is needed, resulting in excess leftover water.

To deal with this excess wastewater, Centennial is now seeking permission to dump waste water in waterways that ultimately lead to Warragamba Dam¹.

What happens then? At present, the public has no information on how this increasingly urgent water issue will be resolved. It is very clear that local communities do not want their drinking water supply and environment contaminated by untreated mine water, even if it is blended with treated water. Communities do not want to see the NSW government authorise Centennial to discharge dirty

water directly into a creek at the headwaters of the Sydney drinking water catchment and adjacent to a World Heritage area.

Local communities have faced a similar issue with Centennial before. As part of its extension plans for the proposed Angus Place West coal mine, Centennial previously applied to discharge 10 million litres of dirty water daily directly into Wangcol Creek. It needs to remove the water to extend the mine: coal and water don't mix. The Angus Place West mine proposes to mine 2 million tonnes of coal annually with impacts on climate, water quality, First Nations sites and in a place with 80 rare and threatened species and 16 threatened ecological communities. This proposal at Angus Place West has not yet been approved.

The NSW Government faces a stark choice at Angus Place: to enable one of the most egregious environmental and public health harms by allowing toxic water discharge into Sydney's drinking water catchment, or to force Centennial to clean up its act.

Centennial should be required to treat water to ensure that any discharge fully removes contaminants like heavy metals, salt and brine. Anything less threatens the safety of Sydney's drinking water supply and water dependent ecosystems, including endangered and threatened species.

Communities deserve a considered, thoughtful solution that prioritises a clean environment and human health. In light of this looming water crisis, there are ever-growing fears that communities will be shortchanged in an effort to resolve a flood of toxic mine water in a rushed timeframe.

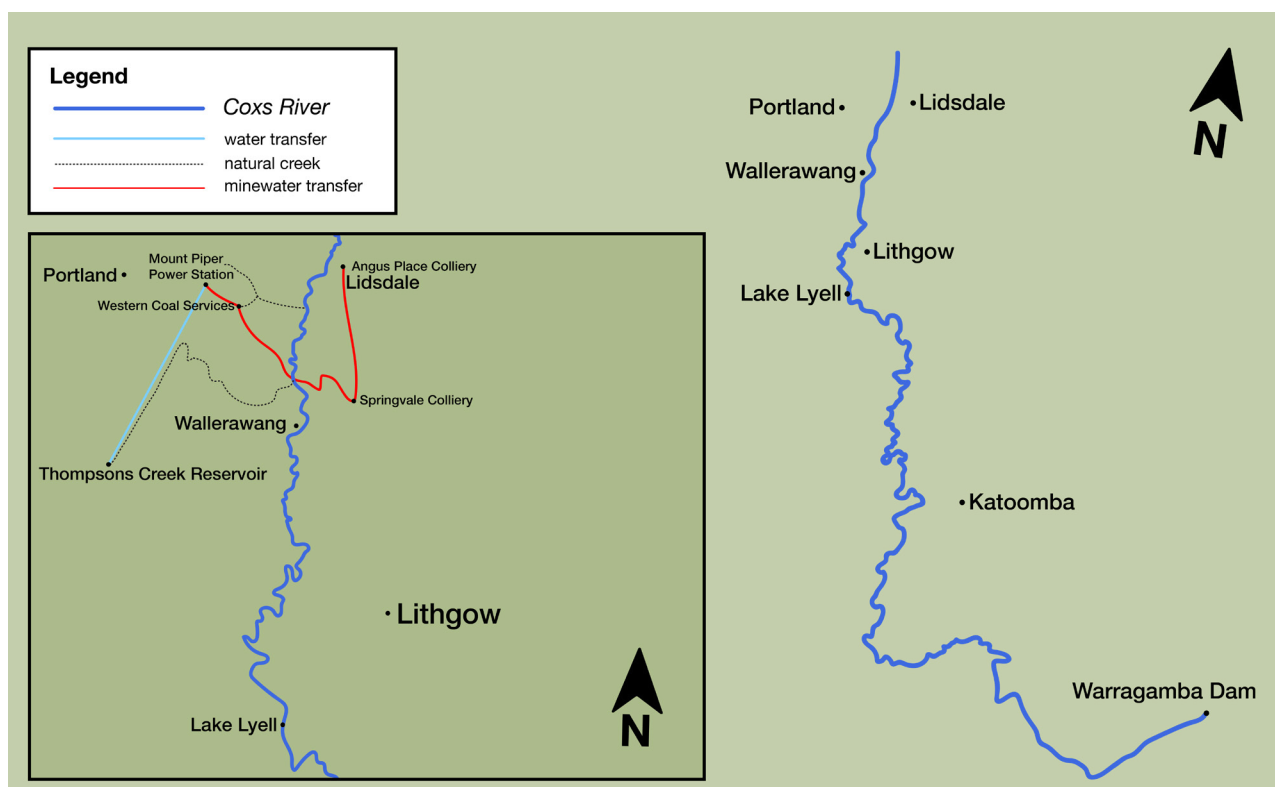
¹<https://www.planningportal.nsw.gov.au/major-projects/projects/mod-11-water-management-during-mpps-outages>

Centennial: A track record of environmental harm

“We have now recorded about 27.8 hectares of damaged swamps or hanging swamps, 10.5 km of dry desiccated creeklines, 3 cliff falls, 2 subsidence cracks, and 3 examples of mine water pollution above Centennial’s Clarence Colliery alone” (Chris Jonkers, Julie Favell, Lithgow Environment Group, 2024).

Centennial operations in the Greater Blue Mountains Area are within the Gardens of Stone State Conservation Area (SCA), 150km west of Sydney, near Lithgow. The SCA is nestled between the world-heritage listed Wollemi National Park to the north and Blue Mountains National Park to the south, and adjacent to the Gardens of Stone National Park. It comprises 28,322ha of stunning sandstone cliffs, ancient rock pagodas and canyons, significant Aboriginal cultural landscapes and sites, at least 16 threatened ecological communities including woodlands and hanging swamps, more than 80 rare and threatened species including the regent honeyeater, Blue Mountains water skink and the giant dragonfly, and the headwaters of the Coxs River, which forms part of the Sydney Drinking Water Catchment.

This report outlines how Centennial coal mining operations impact environmental and cultural values of the area and compromise the safety of Sydney’s drinking water supply.

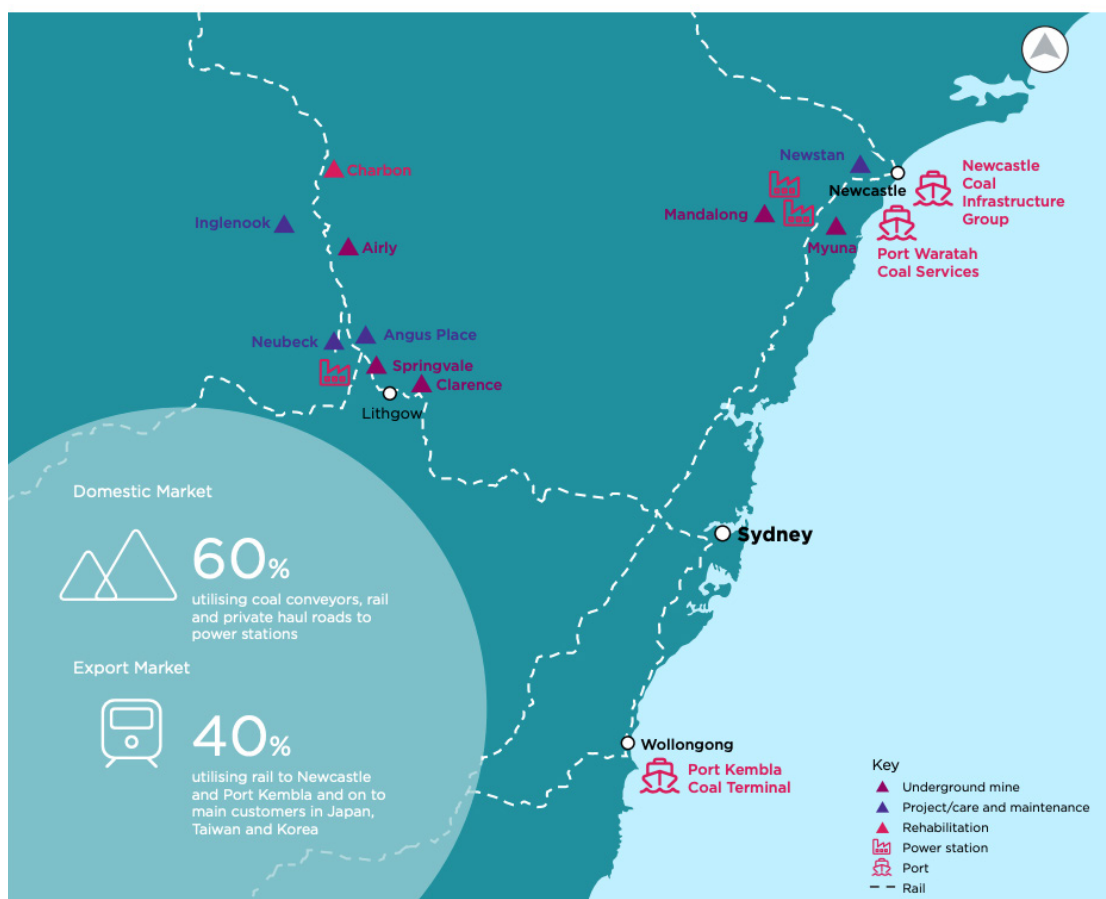


Above: Map of operations in region showing watercourses leading to Warragamba Dam.

Background on Centennial

Centennial is an ASX-listed company extracting coal for domestic use and export. Its vision is to be the Australian energy company at the heart of innovation, technology and sustainability. With operations in the Greater Blue Mountains and Central Coast areas of NSW, it claims to supply around 30% of NSW's coal fired power. Wholly owned by Thai diversified energy business, Banpu, it received a significant injection of capital from Banpu to address spiralling debt in 2020².

Centennial describes climate change as the most significant issue facing the mining industry and it aims to “navigate this reality” of its climate impacts³. It seeks to decarbonise and diversify its operations in line with its parent company approach.



Above: Centennial's operations. Image: Centennial Sustainability Report 2022, p.5

²[Banpu pumps another \\$150m into Australian coal](#)

³[Centennial Sustainability Report 2022](#)

Centennial Environmental Scorecard in the Greater Blue Mountains region

Over a 23-year period, Centennial has been found to have breached its environmental licence more than 1400 times across 7 coal mine sites in the Greater Blue Mountains region⁴.

However, this may be just the tip of the iceberg, as some non-compliances appear to have gone unreported by the company but have been discovered by third parties and later verified by the EPA.

Lithgow Environment Group has conducted water monitoring in the Upper Cocks river catchment since 2006 including at Centennial licensed water discharge points and publishes their findings online⁵. Where non-compliances have been identified, Lithgow Environment Group has reported these to the NSW EPA and the EPA has responded in some cases, including by acting to impose fines or prevention notices. This area is part of the Sydney drinking water catchment.

Issue	Pass/Fail	Source	Location	Impact
Salinity: salt in water discharge	X	Lithgow Environment Group	In 2016 salt was sighted flowing from Centennial Western Coal Services site into Wangcol Creek.	Higher salinity means lower oxygen, which reduces food for Platypus. Electroreceptors on their bill locate prey, however salinity disrupts these, they can't find food, and starve to death.
Sediment in water (turbidity)	X	Fine from environmental regulator Clean up notice from environmental regulator	Centennial Springvale coal mine, 2015 Centennial Clarence coal mine, 2023	Sediment is a major environmental stressor in waterways. It blocks gills of aquatic biota and a covering of fine sediment alters photosynthesis in waterways (ANZECC, 2001. Macroinvertebrate diversity and abundance is reduced.

⁴<https://apps.epa.nsw.gov.au/prpoeoapp/>

⁵ [LEG/LRS STREAMWATCH MONITORING RESULTS 2006/2010](#)

Issue	Pass/Fail	Source	Location	Impact
Hydraulic fluids polluting the water	X	Lithgow Environment Group	In June 2018, a solcenic oil spill at Angus Place Colliery filled Sediment Control Dam No.2. In 2008, solcenic oils was sighted discharging from Centennial Angus Place & Springvale Colliery LDP4/5 into the Wolgan River.	Formaldehyde, a breakdown product of hydraulic fluids, is highly toxic to aquatic life.
PCBs used as coolants dumped in underground mines	X	Whistleblower former coal mine worker	Reported in 2010 by a former coal mine electrician at Western Main Colliery in the 1970s/80s, now Centennial Western Coal Services site.	Co-workers developed cancers. PCBs can leach into groundwater.
Warm water discharge	X	Lithgow Environment Group found discharged water measuring 22 degrees Celsius in a creek with ambient water measuring just 8 degrees Celsius Lithgow Environment Group Belmer et al⁶	Centennial Springvale & Angus Place coal mines, 2024 Centennial Invincible coal mine, 2007 Centennial Clarence coal mine	Affects health and breeding of fish, frogs and skinks due to lower oxygen levels in water, higher salinity, higher incidence of algal blooms and disease spread.

⁶[Belmer et al, 2014, Impact of a coal mine waste discharge water quality and aquatic ecosystems in the Blue Mountains World Heritage Area](#)

Issue	Pass/Fail	Source	Location	Impact
Manganese	X	Fines from environmental regulator	Centennial Clarence coal mine, 2004, 2012	Manganese and iron causes slippery black biofilm that clings to downstream rocks. Contaminates drinking water.
Arsenic	X	Lithgow Environment Group	Centennial Springvale coal mine, 2013, 2014, 2015, 2016	Water contaminated with arsenic can be toxic and long-term exposure can cause cancer.
Nickel	X	Centennial documents ⁷ NSW Office of Environment and Heritage ⁸	Clarence coal mine regularly exceeds nickel limits, 2024 Clarence coal mine discharge point 2 adds annually, an average of 380kg of nickel to the Wollangambe River, 2015	Nickel impacts aquatic life. Drinking water contaminated with nickel can cause dermatitis, eczema and rashes.
Toxic coal sludge or coal fines discharge	X	Lithgow Environment Group reported a coal fines spill and the environmental regulator issued Centennial a prevention notice Fines following prosecution by the environmental regulator for collapse in wall of dump Fine following discharge from storage ponds into wetlands	Centennial Clarence coal mine, 2023 Centennial Clarence coal mine, 2015, 2017 Centennial Springvale coal mine, 2015	

⁷[Centennial Coal Web Documents](#)

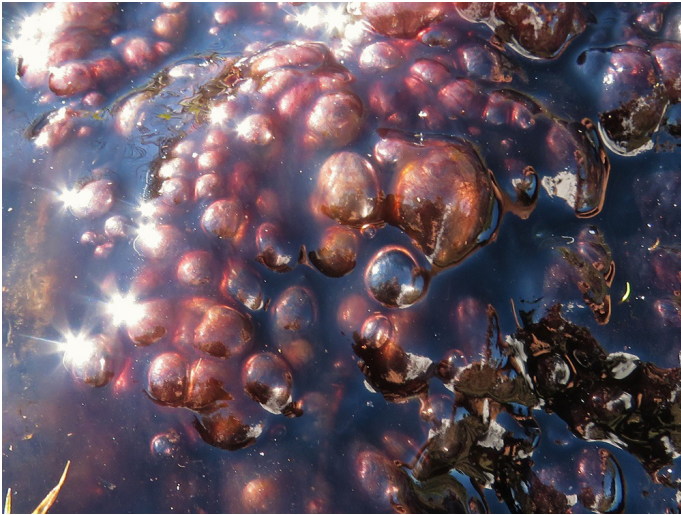
⁸[Clarence Colliery Discharge Investigation | NSW Environment, Energy and Science](#)

Issue	Pass/Fail	Source	Location	Impact
Damage to peat swamps	X	Fine from department of planning Payment to federal environment department for breach	Centennial Springvale coal mine, 2018 Centennial Angus Place & Springvale coal mines, 2011	Longwall mining can cause peat swamps to lose water into mine shafts, permanently damaging the peat swamps and species reliant on them. Sediment is then washed downstream.
Subsidence	X	Payment to the environment department for breach	Centennial Airly coal mine, 2011	Habitat damage from subsidence due to longwall mining is a key threatening process under federal environmental law.
Failure to record presence of threatened species during development proposals	X	Lithgow Environment Group made a report to the NSW planning department	Springvale Colliery 2015 Angus Place Colliery 2018 Clarence Colliery 2024	Failure to record threatened species means impacts of mining activities on them are not considered in planning decisions.
Damage to sandstone pagoda formations	X	Payment to the environment department for breach	Centennial Airly mine, 2022	Pagodas are unique geological formations. Longwall mining can undermine them, causing damage.

In addition, Centennial was fined for damage to an Indigenous cultural site at its Charbon coal mine in 2016.



Right: A solcenic oil spill from Centennial Angus Place & Springvale Colliery LDP5 into the Wolgan River in 2008. Photo: Julie Favell



Clockwise from top left:

1. Salt near Western Coal Services LDP1, Castlereagh Hwy Blackmans Flat - 9 April 2016. *Photo:* Julie Favell

2. Cliff collapse & crack - Angus Place Colliery 300 Area. *Photo:* Julie Favell

3. East Wolgan Swamp damage near Springvale LW411- 16 May 2014. *Photo:* Julie Favell

4. Rainbow Trout fish kill in the Cocks River, Lidsdale - 3 January 2020. *Photo:* Julie Favell

5. Acid Mine Drainage near Western Coal Services LDP1. *Photo:* Julie Favell

Weak Regulation

Western Coal Services is a processing hub in Lithgow, which also receives mine water from Centennial mines in the area and discharges it into the local water system through licenced discharge points. Australia's leading scientist on water pollution from coal mines, Dr Ian Wright, has described the Western Coal Services licensed discharge point 1:

"In the whole of the Warragamba drinking catchment that is the worst point source of waste I have ever measured."

And claimed that the licence is *"one of the most ineffective pollution licences I have ever seen"*⁹.

At Clarence coal mine, which is also owned by Centennial, Centennial is licensed by the EPA to discharge wastewater that adds, on average each year: 1140 tonnes of Salt, 195 tonnes of Sulfur, 3 tonnes of Iron, 1.8 tonnes of Manganese, 440 kg of Zinc and 380 kg of Nickel to the Wollangambe River.

We acknowledge that the EPA revised the Western Coal Services environmental protection licence in November 2024 to tighten some pollutant limits. However, we think that too often the EPA does not impose air and water pollution limits that align with the needs of human health and the environment. We are also concerned about the inconsistent limits imposed across NSW coal mines. The EPA must appropriately discharge its statutory functions and centre sustainable development at the heart of its decisions.

Centennial water management issue undermining exit from coal

Water management at EnergyAustralia's Mount Piper coal fired power station is a complex process. Centennial sends wastewater from its mines to Mount Piper power station for use in the cooling towers. This requires EnergyAustralia to treat the dirty water to remove brine. Brine is then stored on site alongside ash produced as a byproduct of burning coal.

The very large volumes of wastewater continually generated from Centennial coal operations require Mount Piper power station to burn coal to produce ash to store brine even if energy demand reduces.

We have concerns that Centennial's water issue is preventing the operation of Mount Piper power station to be more flexible as more renewable energy enters the system. We have concerns that more emissions and toxic pollution are being generated unnecessarily as a result.

⁹[Centennial Coal plan to release more water into Sydney catchment will make pollution worse, expert says](#)

Recommendations

The NSW Government must:

- Prevent Centennial discharging wastewater into the natural environment unless it can demonstrate that it meets the neutral or beneficial test to the receiving environment.¹⁰
- Commission a public inquiry into mine wastewater produced by Centennial's underground coal mines in the Gardens of Stone region with terms of reference that will identify the steps necessary to eliminate harm caused to the aquatic environment, the community, the Greater Blue Mountains World Heritage Area and Sydney's drinking water supplies.
- Require Centennial to significantly reduce the mining intensity at its underground coal mines to protect the natural environment and to reduce the volume of wastewater sent to Mount Piper power station.
- Require Centennial to conduct feasibility studies that determine the most effective means to significantly reduce the volume of mine wastewater produced from previously worked areas of these underground mines
- Investigate whether volumes of coal anticipated from the proposed Angus Place West mine are needed to service the Mount Piper coal fired power station under flexible operation and reject the development application if demand can be met from existing sources.
- Require Centennial to set out a plan for decommissioning and rehabilitation of Angus Place coal mine now whilst it remains inactive, rather than allowing care and maintenance to continue to 2042.
- Consider Centennial's compliance record and community-monitored pollution when assessing mine extension and new mine proposals, as well as likely greenhouse gas emissions over the project life cycle in the context of the legislated NSW government emissions reductions targets.
- Refer the Angus Place West project to the Independent Advisory Panel on Underground Mining to consider full impacts on ecological and cultural values of the Gardens of Stone region.
- Adopt air and water pollution standards better or equal to the World Health Organisation's benchmarks when setting pollution licence limits across mining sites and introduce Pollution Reduction Programs.
- Conduct in the field investigations to monitor compliance as well as considering the 'fit and proper person' test in reviews of mining environmental protection licences.
- Require Centennial and all coal operators to pay load based fees for water pollution including salt, nickel, zinc, arsenic, copper, lead, mercury, oil and grease, suspended solids, boron, cobalt and selenium.
- Require Centennial and all coal mine operators to publicly and in real-time share information on community concerns, such as air pollution, water contamination, and incidents.
- Commit to no new coal or gas projects or expansions across NSW.
- Provide investor and community confidence in the renewable energy transition by setting out public staging of the closure of NSW's remaining coal-fired power stations anticipating new renewable energy capacity entering the system.

¹⁰ [NorBE-User-Guide-for-Consultants-2022.pdf](#)