

ASSESSMENT REPORT

Springvale Mine Extension Project

Deferral of Salinity Reductions Modification (SSD 5594 MOD 2)

1 BACKGROUND

The Springvale Mine is an underground coal mine located in the western coalfield of New South Wales approximately 15 kilometres (km) north-west of Lithgow (see **Figure 1**). The mine is jointly owned by Centennial Springvale and Springvale SK Kores, and is operated by Springvale Coal.

Mining at Springvale commenced in 1995 under a development consent granted in 1992. In September 2015, a new development consent for the Springvale Mine Extension Project was approved by the Planning Assessment Commission (PAC).

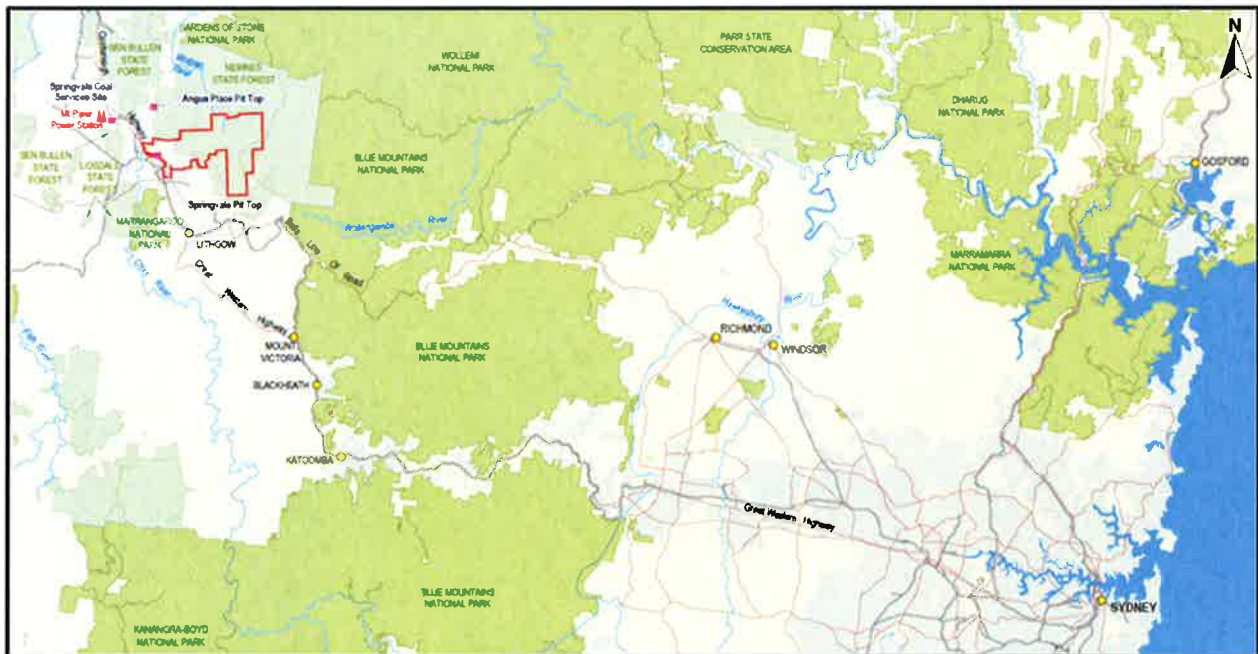


Figure 1: Springvale Mine location

The development consent allows mining operations to continue until 31 December 2028, and permits:

- extraction of up to 5.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal by longwall mining methods (see **Figure 2**);
- transportation of coal:
 - by overland conveyor to the Western Coal Services Site and to Mount Piper Power Station;
 - by road to local customers; and
- operation of supporting infrastructure, including ventilation shafts, a coal stockpile, mine services bores and offices (see **Figure 3**).

Coal processing occurs at the Western Coal Services Site, which is regulated under a separate development consent (SSD 5579).

The Springvale Mine Extension Project consent was granted following comprehensive assessments by the Department and the PAC, which undertook two separate merit reviews.

The PAC determination imposed a stringent set of conditions, including:

- the establishment of an Independent Monitoring Panel (IMP) to provide advice on the subsidence related impacts of mining on swamps; and
- a set of time limits for the reduction of salinity and toxicity in mine water discharges.

Springvale Coal Mine has strategic value in terms of power generation in NSW, as it is currently the only supplier of coal to Mount Piper Power Station, which supplies 15% of NSW's electricity.

2 PROPOSED MODIFICATION

Springvale Coal proposes to modify its development consent for the Springvale Mine Extension Project.

The development consent for the Springvale Mine Extension Project has set the following performance measures that require water quality improvements in mine water discharges:

1. salinity levels of 700 $\mu\text{S/cm}$ (50th percentile), 900 $\mu\text{S/cm}$ (90th percentile) and 1,000 $\mu\text{S/cm}$ (100th percentile) by 30 June 2017;
2. elimination of acute and chronic toxicity to aquatic species by 30 June 2017; and
3. a salinity level of 500 $\mu\text{S/cm}$ (90th percentile) by 30 June 2019.

Springvale Coal intends to meet these performance criteria by developing the Springvale Water Treatment Project, which would remove the need for Springvale Coal to discharge any of its mine water into the Cops River. However, the Springvale Water Treatment Project has encountered numerous delays, and would not be built and operational until 2019.

Consequently, Springvale Coal would not be able to meet the 2017 salinity or toxicity performance measures in the consent, which may force the closure of the mine.

The proposed modification seeks to remove the interim salinity reduction target (listed as 1 above) and defer the elimination of mine water toxicity (listed as 2) by two years. The long-term salinity reduction target (listed as 3 above) would remain the same.

The proposed modification relates only to these two water performance measures. It does not seek to change the mine layout, the operating functions of the mine, or its coal handling and transportation systems.

The proposal is described in full in the Statement of Environmental Effects which was lodged with the modification application (see **Appendix A**).

3 RELATED APPLICATIONS

Springvale Coal has lodged a separate development application for the Springvale Water Treatment Project. It involves the transfer of mine water to the Mt Piper Power Station for treatment and reuse.

The concept of transferring mine water to the power station was recommended by the PAC and would achieve the long-term salinity reductions required under the mine's development consent. The Springvale Water Treatment Project is widely supported by both government and the community as it would significantly reduce discharge into the catchment and allow beneficial water reuse at the power station.

Springvale Coal has also lodged a modification application for the Western Coal Services Project. This application (Western Coal Services Mod 1) seeks to allow the Western Coal Services Site to receive a small amount of residual waste from the treatment of mine water at the Springvale Water Treatment Project.

The Department considers that the current modification application to the Springvale Mine Extension Project (Springvale Mod 2), the Springvale Water Treatment Project, and Western Coal Services Mod 1 are fundamentally inter-related, and have therefore been submitted to the Commission for determination as one package at the same time.

Each of these three applications has a separate assessment report, however the reports are appropriately cross referenced throughout.

4 STATUTORY CONTEXT

The Springvale Mine Extension Project was originally granted under Part 4, Division 4.1 of the EP&A Act. Section 96 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) allows for a development consent to be modified by the authority that granted the original consent.

The proposed modification does not seek to significantly alter the nature or scale of the development and would not increase the level of mine water discharge that already occurs at the mine. The discharges would also continue to be regulated by the Environmental Protection Authority under an Environmental Protection Licence, and would meet the relevant limits of the licence.

The original approval for the project was based on a staged “*plan of action*” that would ultimately result in a permanent improvement in the water quality of the mine water discharges at LDP009. Importantly, while the interim improvements in water quality would not be achieved, the long-term target for improving water quality in the catchment would be achieved and exceeded (see further discussion in **section 6.5**).

Consequently, the Department is satisfied that the proposed modification can be characterised as a modification to the existing consent under section 96(2) of the EP&A Act as it would result in substantially the same development as the development for which consent was originally granted.

The Springvale Mine Extension Project is State significant development under the EP&A Act, and the Minister for Planning is the consent authority for the development. However, the modification application falls within the terms of the Minister’s delegation to the PAC, as more than 25 public objections were received in response to the exhibition of the Statement of Environmental Effects.

5 CONSULTATION

The Department publicly exhibited the Statement of Environmental Effects from 24 January 2017 until 28 February 2017. During the exhibition period, the Department received 348 submissions comprising:

- 7 from public authorities;
- 5 from special interest groups; and
- 328 from the general public.

Of the 328 objections from the general public, 309 were submitted using a form letter (see **Appendix B**).

Springvale Coal provided a Response to Submissions to address concerns raised in these submissions (see **Appendix C**). It also provided responses to requests for information from the Department in its assessment of the application (see **Appendix D**).

Government Agency Submissions

WaterNSW has expressed its disappointment with the delay in meeting the interim salinity reduction limit, and recommended that Springvale Coal treat its discharges in the interim period or undertake compensatory catchment improvement works. While the Department does not believe there is any strict requirement for such an approach under government policy, these options have been closely considered and are discussed in **sections 6.4** and **6.6**.

WaterNSW requested for this application to be assessed jointly with the Springvale Water Treatment Project and Western Coal Services Mod 1. The Department agrees and has implemented this approach. It also asked for the chronic toxicity criteria to be met at the time that the project becomes operational. The Department agrees and required this in the recommended conditions of consent.

The **Environmental Protection Authority (EPA)** acknowledged that the Springvale Water Treatment Project would result in greater long-term benefits for the catchment, but raised concerns about the construction timeframe for the project. The Department has carefully considered the reasons and justification for the delay of the Springvale Project in **section 6.3**.

The EPA and the **Department of Primary Industries** also recommended consideration of interim options to improve the water quality of discharges while the treatment project is being developed (see **section 6.5**).

The **Office of Environment and Heritage** (OEH) did not object to the proposed modification and provided no comments.

The **Division of Resources and Geosciences**, formerly the Division of Resources and Energy within the Department of Industry, noted that the proposed modification would not change Springvale Coal's rehabilitation obligations of the project.

Lithgow City Council supports the proposed modification.

Blue Mountains City Council raised general concerns about the effects of mine water discharges on the Blue Mountains water catchments. This is discussed in **section 6.4**.

Community and Special Interest Group Submissions

The **Colong Foundation for Wilderness**, **Blue Mountains Conservation Society Inc**, **Lithgow Environment Group** and **Lock the Gate Alliance** objected to the proposed modification. The primary concern for all of these groups is that any delay to the development of the Springvale Water Treatment Project would result in the continuation of mine water discharges to the catchment.

The Blue Mountain Conservation Society Inc and Colong Foundation for the Wilderness also recommended that interim solutions, including water treatment measures should be implemented while the Springvale Water Treatment Project is developed.

The Department agrees that the key issue for this proposal is the potential for water impacts (see **section 6.5**). The Department has also considered whether any alternative interim measures are available (see **section 6.4**) or whether other compensatory works should be implemented (see **section 6.6**).

The **Environment Defenders Office** made a submission on behalf of **4Nature**. It considered that the proposed modification could not be considered to be "*substantially the same*" developed as was approved, due to the delays in meeting the required salinity and toxicity targets.

As discussed above, the Department does not consider that proposed modification would significantly alter the nature or scale of the development and can be characterised as a modification. The issue of whether the delay in reaching the water quality improvement targets means the development is not substantially the same is discussed in further detail in **section 6.5**.

The key issues raised in other submissions from the general public mainly related to the impacts of mine water discharges on the water quality in the Cocks River Catchment. Many of these submitters also asked for interim discharge treatment options to be considered.

6 ASSESSMENT

In assessing the merits of the proposal, the Department has considered the:

- modification application and SEE;
- government agency and community submissions;
- the RTS and additional information provided by Springvale Coal;
- existing conditions of consent;
- relevant environmental planning instruments, policies and guidelines; and
- relevant requirements of the EP&A Act.

The Department considers the key issue for consideration is the potential for impacts to water due to the proposed delay in meeting the water quality performance measures.

6.1 Background

The removal of groundwater is an essential aspect of underground mining, whether it is 'dewatering' in advance of mining operations or the ongoing removal of inflows that occur during mining.

Since the closure of the Wallerawang Power Station in 2014, it has been necessary for Springvale Coal to discharge its mine water from the Springvale Mine and Angus Colliery into the Cocks River via LDP009 under an EPL issued by the EPA. The EPL allows up to 30 ML/day of mine water discharges with a salinity level of up to 1,200 $\mu\text{S}/\text{cm}$ and was intended to be an 'interim measure'.

As the Angus Place Mine is currently under care-and-maintenance and will not be mined until after Springvale Mine ceases to operate, the EPL limits are not likely to ever be exceeded. However, in its approval of Springvale Mine Extension Project, the PAC agreed with the EPA that the EPL limits should only be considered 'interim'.

The mine water is currently only subject to a minimal amount of treatment involving a series of holding ponds that contain chemical flocculants before being released into Sawyers Swamp Creek.

6.2 Drinking Water Catchment SEPP

Under clause 10 of the State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (the Drinking Water Catchment SEPP), the consent authority must "*not grant consent to carrying out of development*" in the drinking water catchment unless it would have a 'neutral or beneficial effect' on water quality (the NorBe test).

While the consent authority must apply the NorBe test in "*grant(ing) consent to the carrying out of development*", section 96(4) of the EP&A Act provides that the modification of a development consent is "*taken not to be the granting of development consent*" (emphasis added).

The Department has therefore sought legal advice about the applicability of the Drinking Water Catchment SEPP and the NorBe test to this modification application.

The legal advice confirms that the SEPP as a whole must be considered as part of the broader considerations required under section 79C of the EP&A Act.

However, it also confirms that the specific clause in the SEPP containing the NorBe test (i.e. clause 10) does not strictly apply to the modification of a development consent in the same way as it does to the granting of a development consent. As a result, the NorBe test does not operate to constrain the determination of a modification application as it does for the granting of development consent.

Nevertheless, it is clear that the intention behind clause 10 of the SEPP is to protect Sydney's drinking water catchment, and the Department believes that this should be given significant weight in considering whether to approve the modification application.

Furthermore, the modification of a development consent must be substantially the same development as the development for which consent was originally granted, and the Department believes that the nature of scale of the proposed changes should be given significant weight in considering whether to approve the modification application.

The Department has carefully considered whether the proposed deferral of salinity and toxicity reductions for up to two years would result in substantially the same development as that which was originally assessed and approved.

The proposed modification would not increase the level of mine water discharges that already occurs at the mine and the discharges would continue to be meet the relevant limits of the EPL on the site in the interim period.

Notwithstanding the proposed delays in achieving some interim improvements in water quality, the long-term target for improving water quality in the catchment would be achieved in the same timeframe required under the original approval.

The Department is satisfied that the the project would ultimately result in a permanent improvement in the water quality of the mine water discharges at LDP009 as originally intended, which means the proposed modification is in accordance with the NorBE test (see detailed discussion in **section 6.5**).

6.3 Reasons for Delays

The Department recognises that the performance measures for improving water quality in the mine water discharges at Springvale Mine were always difficult to achieve, in terms of the nature of the target and the required timeframes.

During the assessment process for the Springvale Mine Extension Project, there was an extensive negotiation between the EPA and Springvale Coal about both the requisite level of improvement (i.e. the actual criteria) and the appropriate timeframes to achieve the improvements.

In fact, the PAC accepted that there were inherent difficulties in improving the water quality of mine water discharges in its first Review Report on this project, stating that *"EPA has acknowledged that reducing the salinity of mine water discharges to 350 $\mu\text{S/cm EC}$ may not be achievable in the short term."*

Notwithstanding the fundamental difficulties underpinning the performance criteria, the Department acknowledges that Springvale Coal ultimately agreed that it could achieve them in the required timeframes. While some submissions have claimed that Springvale Coal made 'false and misleading statements' in that regard, the Department does not agree and believes there are genuine reasons for the delay of the project.

In fact, one of the key delays in the project is due to a request from key government agencies and community groups for Springvale Coal to amend its original development application to further reduce the potential impacts on the water catchment. This change is widely regarded to be a positive change to the project and represents a reasonable reason for delaying the project.

There have also been a number of delays relating to the inherent difficulties in developing a complex \$100 million water treatment project. The desalination component of the project is fundamentally challenging from a technical perspective, particularly given the large volumes of water and the high level of salinity. The project also crosses a large area of land with various existing development consents, which has required extensive negotiations between the key stakeholders, including Springvale Coal and EnergyAustralia.

Furthermore, the Department has taken a comprehensive approach to the assessment of the Springvale Water Treatment Project application, through extensive consultation with expert agencies and various meetings with community stakeholders. While this approach may have caused additional delays in the assessment process, the Department believes it is important to achieve the optimal outcome.

6.4 Interim Alternatives

Numerous government agencies and community groups raised questions about whether there are other ways for Springvale Coal to meet its performance measures by June 2017. While the Department believes that the Springvale Water Treatment Project is the best long-term option and has supported it from the beginning, it does believe that Springvale Coal should consider any potential interim measures.

In the Response to Submissions and in further requests from the Department, Springvale Coal investigated the following options:

- delaying discharges and storing the water in underground workings;
- treating the discharge in a 'mobile' reverse osmosis plant; and
- diluting mine water from Springvale Mine with mine water from the nearby Clarence Colliery, which has a median salinity level of around 440 $\mu\text{S/cm}$;

The storage of water in former underground workings is not a sustainable option, as the available storage areas in both the Springvale Mine and Angus Place Colliery workings would only allow up to a maximum of three weeks of storage at the current discharge rates.

The options involving a reverse osmosis plant or diluting the mine water with Clarence Colliery Mine water would require the development of a significant amount of additional infrastructure. For either of these options, the lead time to implement the option would be similar to the lead time to develop the Springvale Water Treatment Project.

A 'mobile' reverse osmosis would require a number of modules to allow sufficient capacity to treat all the mine water discharges, and would also require a suitable facility to store the brine waste product. Dilution with Clarence Colliery would require a huge network of pipelines, particularly as it is located over 20 kilometres away from the Springvale Mine.

The Department has assessed the various options for interim treatment of water while the Springvale Water Treatment Project is assessed and completed (if approved). The Department is satisfied that there is no reasonable or feasible option available Springvale Coal to meet its 2017 performance measures.

6.5 Predicted Impacts

The key issue raised in most submissions relates to the potential impacts of continued mine water discharges on the water quality in the Cocks River Catchment.

Springvale Coal has modelled the impact of continuing its current discharges for the likely two year period until the Springvale Water Treatment Project is developed (if approved). The model used 11 locational data sources in the Cocks River catchment and further downstream, including Sawyers Swamp Creek, Lake Wallace, Lake Lyell, Thompsons Creek Reservoir and Lake Burragorang.

The results of the modelling show that the proposed delay to the cessation of discharging mine water would not increase the current salinity of the receiving environment. The Department also notes that any discharges would continue to be regulated by the Environmental Protection Authority under the existing EPL, and would meet the relevant limits of the EPL.

Springvale Coal's ecological assessment found that the majority of riparian flora species near the discharge point are tolerant to salinity levels far greater than the salinity level of the current discharges from the mine. It concluded that the proposed delay would have a negligible additional impact on the receiving aquatic environment. OEHL also did not raise any concerns about the potential effect on toxicity in aquatic species.

While the current situation would remain the same, the Department recognises that the proposed delay would prevent the interim water quality improvements from occurring. That means there will be a period of up to two years where the overall water quality in the catchment would not experience any of the potential improvements it may have otherwise experienced.

However, it is important to note that the interim performance measures in the existing development consent were never intended to achieve a complete recovery of the water quality in the catchment. The interim target is essentially intended to be a 'stepping-stone' in the long-term plan to reach an overall salinity target of 500 $\mu\text{S}/\text{cm}$. This reflects the approach of developing a "plan of action", which the PAC recommended in its first Review Report on the Springvale Mine Extension Project.

The proposed Springvale Water Treatment Project removes the need for a staggered approach to achieving the overall end-goal in terms of the quality of mine water discharges. Moreover, this project would ultimately result in an even better outcome than the long-term performance measure for salinity (i.e. 500 $\mu\text{S}/\text{cm}$). If completed, the Springvale Water Treatment Project would virtually eliminate mine water discharges from the licensed discharge point altogether.

In summary, the Department is satisfied that the proposed modification would not increase the level of mine water discharges that already occur at the mine or the impacts on aquatic ecology. While the interim improvements in water quality would not be achieved, the long-term target for improving water quality in the catchment would be achieved and exceeded.

Given that context, the Department considers that the proposed modification would result in substantially the same development as the development for which consent was originally granted.

6.6 Compensatory Works

As discussed in **section 6.4**, the Department does not believe there is any reasonable or feasible interim option available for Springvale Coal to meet its 2017 performance measures. However, the Department accepts that proposed modification would mean that the interim water quality improvements would not occur.

The Department has therefore adopted WaterNSW's recommendation and requested that Springvale Coal consider options for compensatory catchment improvement works within the Springvale Mine site.

Springvale Coal subsequently identified a number of riparian areas along the Coxs River within the mine site that have experienced degradation or are currently in a low condition. The Department considers there is an opportunity to improve these areas in the short-term, and maintain in the long-term, as an appropriate compensatory measure for the proposed delay in achieving salinity and toxicity reductions.

Consequently, the Department has recommended a condition of consent requiring Springvale Coal to prepare a Catchment Improvement and Land Management Plan, in consultation with WaterNSW and OEH. This plan would include measures to protect and manage the land, and improve its riparian habitat. It would also make arrangements to provide long-term security for the subject land to ensure the improvements are maintained.

7 CONCLUSION

Springvale Coal is seeking to modify its development consent for the Springvale Mine Extension Project to remove the interim water quality performance measures that are required by 30 June 2017.

The Department is satisfied that the proposed modification would not increase the level of mine water discharges that already occur at the mine or the impacts on aquatic ecology. The Department recognises that interim improvements in water quality would not be achieved, however notes that the long-term target for improving water quality in the catchment would be achieved and exceeded.

Consequently, the Department is also satisfied that the proposed modification would result in substantially the same development as the development for which consent was originally granted.

The Department considers that the Springvale Water Treatment Project is the most appropriate way to deal with the issue of improving the overall water quality in the Coxs River catchment.

The Department understands that the performance measures for improving water quality in the mine water discharges at Springvale Mine were always likely to be difficult to achieve. One of the key delays in the Springvale Mine Extension Project is due to a request from government to amend the original development application, which would result in a significant improvement for the catchment.

From a strategic perspective, the Springvale Mine is now the only local mine currently supplying coal to the Mt Piper Power Station, which provides approximately 15% of NSW's electricity and is extremely important to the State's energy security. The Springvale Water Treatment Project and this proposed modification would allow the mine to continue operation and ensure that the power station can continue to operate.

Consequently, the Department is satisfied that the proposed modification is in the public interest and recommends that it is approved, subject to the proposed changes in the conditions of consent.


8 CONDITIONS


The Department has prepared a Notice of Modification (see **Appendix E**) and consolidated development consent (see **Appendix F**). The Department notes that acute toxicity is no longer an issue at the discharge point and has therefore not removed it from the existing conditions.

9 RECOMMENDATION

It is recommended that the Planning Assessment Commission, as delegate of the Minister for Planning:

- considers the findings and recommendations of this report, noting that the Department considers the request is approvable, subject to conditions; and
- if the Planning Assessment Commission determines to grant consent to the request, that it signs the attached Notice of Modification (see **Appendix E**).


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