

## ASSESSMENT REPORT

### Springvale Water Treatment Project

#### Brine Management and Pipeline Realignment Modification (SSD 7592 MOD 1)

#### EXECUTIVE SUMMARY

Springvale Coal has approval to operate the Springvale Water Treatment Project, which is located west of Lithgow (see **Figure 1**). It would involve transferring mine water from the Springvale Coal Mine to the Mount Piper Power Station, then treating and re-using it in the power station's cooling towers.

During the detailed design stage of the project, Springvale Coal identified a number of areas in the design of the project that should be modified. These include modifications to the management of residual brine from the reverse-osmosis treatment process, minor changes to the pipeline infrastructure, and an increase in the construction and operational workforce.

The proposed brine management process would dehydrate the brine and remove the need for additional holding dams. The pipeline changes involve straightening the alignment of the water transfer pipeline and installing a hydraulic break tank to regulate the flow of water more effectively. The increased workforce would not create any significant additional strain on local services and would result in greater economic and social benefits for the Lithgow region.

The Department considers this modification application presents an opportunity to rationalise existing site infrastructure and reduce the environmental impacts of the project. Subject to the imposition of strict conditions, the Department considers that the modification would result in a benefit to the local community and is therefore in the public interest.

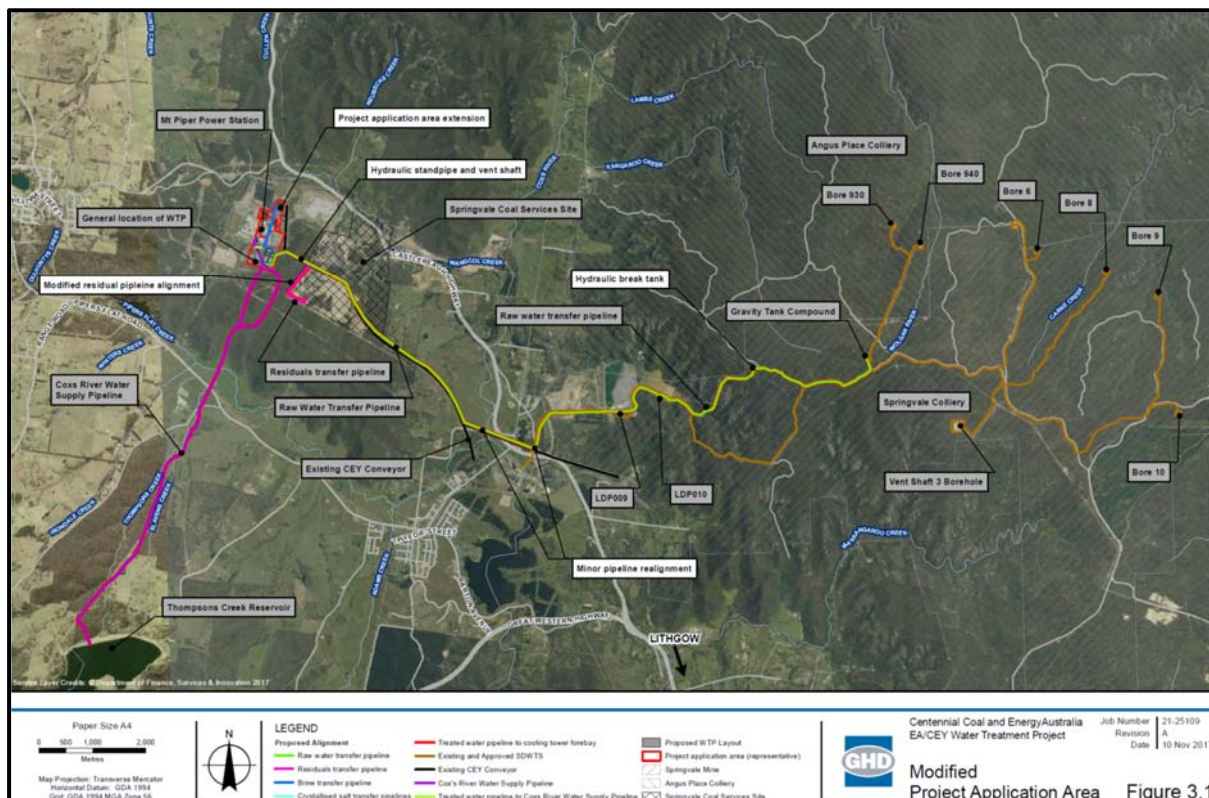


Figure 1: Project location

## 1 BACKGROUND

To meet the performance measures for water quality in the Springvale Mine Extension Project, Springvale Coal is collaborating with Energy Australia to develop the Springvale Water Treatment Project. Once constructed, this project would transfer up to 42 million litres (ML) of mine water from the Springvale coal mine to Mount Piper Power Station for treatment and reuse in the power station's cooling towers.

The project includes a pipeline from the Springvale coal mine to the power station, a reverse osmosis water treatment plant and ancillary infrastructure at the power station, and a small pipeline to transfer residual material to the neighbouring Western Coal Services site (see **Figure 1**).

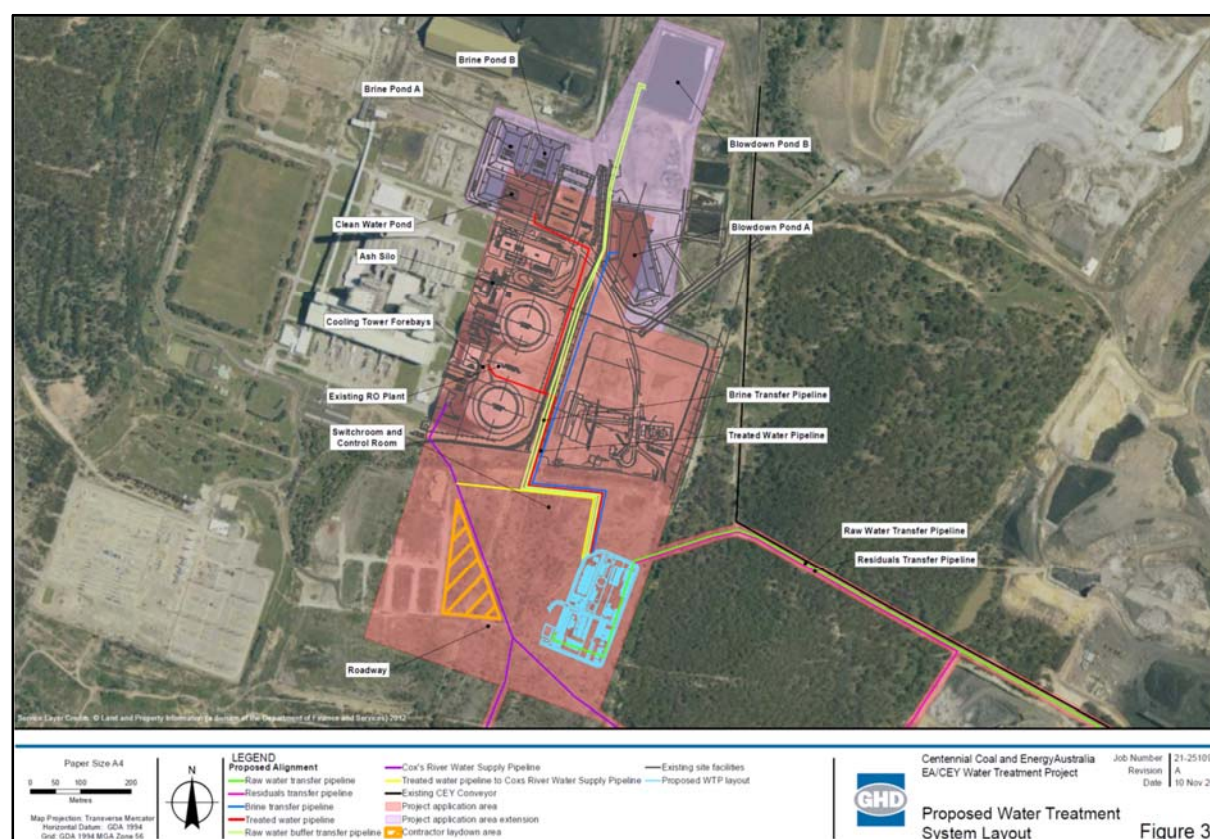
The project was approved by the Planning Assessment Commission in June 2017. Springvale Coal commenced preliminary construction works in September 2017.

Springvale Coal has been finalising the detailed design of the project with its construction contractor. Its discussions have resulted in a number of proposed minor refinements to the approved design of the project. These proposed minor changes are designed to increase operational efficiency and reduce the potential environmental risks on-site.

## 2 PROPOSED MODIFICATION

Springvale Coal is seeking three key modifications to the Springvale Water Treatment Project.

Firstly, it proposes to change the management process for the brine stream from the reverse-osmosis plant. The approved process involves sending the brine through a concentrator and a crystalliser which would turn the brine into a slurry, and then temporarily storing the slurry in holding ponds before emplacement. The proposed new process would instead send the brine directly to an upgraded crystalliser, which would dehydrate the brine and allow it to be stored in existing ponds (see **Figure 2**).

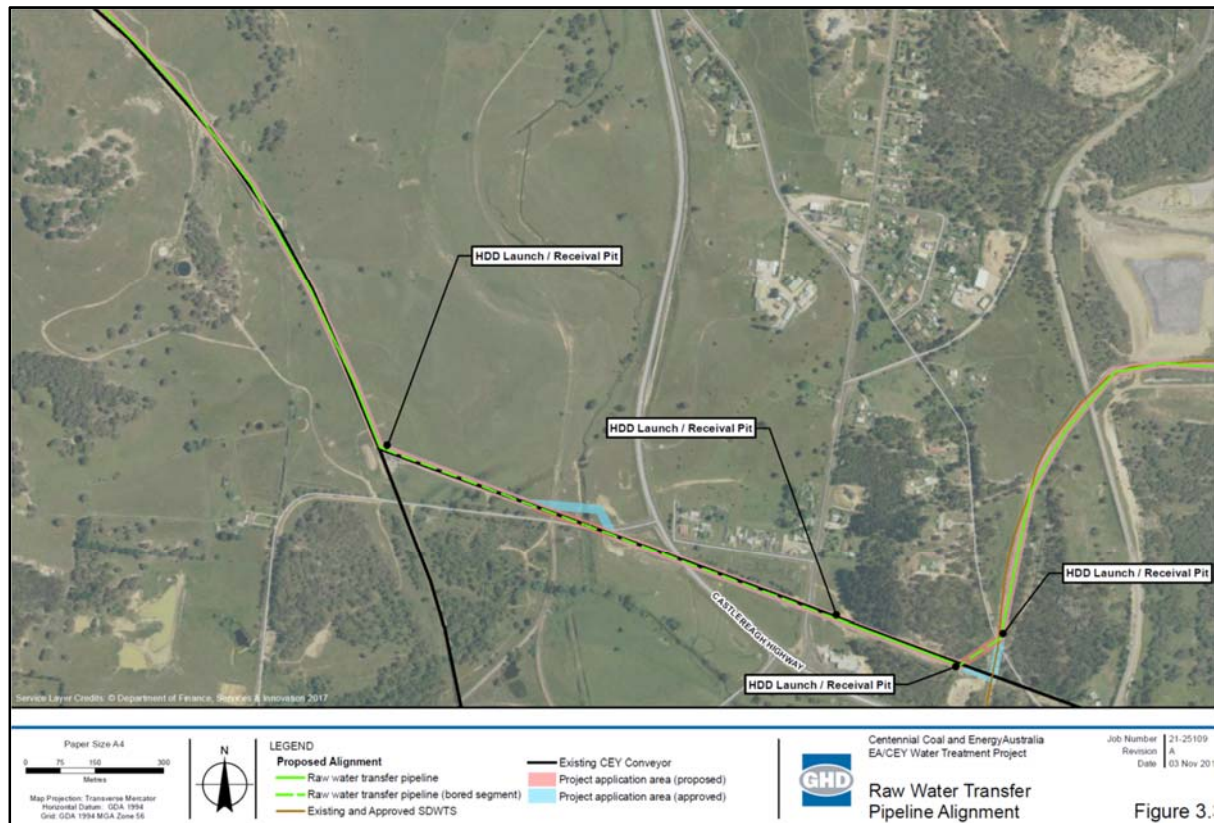


**Figure 2: Proposed new brine management process**



Secondly, the proposal seeks to make minor modifications to both the water transfer and residual material transfer pipelines. These changes include:

- minor realignments of the water transfer pipeline near Lidsdale in the vicinity of Skelly Road, the Castlereagh Highway and the Coxs River, to allow more effective directional drilling (see **Figure 3**);
- installing a hydraulic break tank on the water transfer pipeline at the top of the Newnes Plateau escarpment to minimise pumping requirements; and
- installing hydraulic controls on the residuals transfer pipeline and a minor alignment change to a small section to avoid a reject emplacement area at the Western Coal Services site.



**Figure 3: Proposed water transfer pipeline infrastructure changes**

Thirdly, the proposal seeks to increase the construction workforce from 50 to 120 people, and the operational workforce from 5 to 22 people.

The modification is described in detail in the Statement of Environmental Effects (see **Appendix A**).

### 3 STATUTORY CONTEXT

The project was originally approved under section 89E of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Section 96 of the EP&A Act allows for a development consent granted in this way to be modified by the consent authority that granted the original consent.

The proposed modification does not seek to significantly alter the nature or scale of the approved development and would decrease its environmental impacts. The proposal would make the project more efficient and makes use of existing infrastructure at the power station.

Consequently, the Department is satisfied that the application can be characterised as a modification to the existing consent under section 96(1A) of the EP&A Act as it would result in substantially the same development as the development for which consent was originally granted.

The Minister for Planning is the consent authority for the modification application. However, under the Minister's delegation dated 11 October 2017, the Director Resource and Energy Assessments may determine the application. This is because no objections were received on the proposal, no reportable political donations were made, and Lithgow City Council did not object to the proposal.

## 4 CONSULTATION

The modification application and associated Statement of Environmental Effects were made publicly available on the Department's website from 15 November 2017. The Department also asked relevant government agencies and key special interest groups for comments on the proposed modification.

The Department received six submissions from public authorities and one from a special interest group (see **Appendix B**).

### 4.1 Public Authority Submissions

The **EPA** did not object, advising that the proposed change to the brine management process would address potential environmental risks from using approved brine concentrators.

The **Crown Lands and Water Division (CL&W)** within the **Department of Primary Industry** asked to be consulted during the preparation of the Water Management Plan for the project. The Department will ensure that CL&W will be consulted on any future updates of the Water Management Plan.

**WaterNSW** asked if the proposal would change the approved way that brine would be stored at the existing power station ash dams, and for clarification about whether the proposed new brine management process would affect local water quality. These matters are addressed in **section 5.1**.

The **Office of Environment and Heritage, Roads and Maritime Services (RMS)** and **Lithgow City Council** did not object.

### 4.2 Special Interest Group Submission

The Blue Mountains Conservation Society reiterated its support for the project, but commented that aspects of the proposed modification should have been addressed during the original assessment. It noted that the proposed changes to the brine management process would reduce potential leaching. It also commented on the positive effect of the additional jobs that the project would now create.

### 4.3 Response to Submissions

Springvale Coal provided a Response to Submissions document to address the issues raised in the submissions (see **Appendix C**).

## 5 ASSESSMENT

### 5.1 Brine Management

The proposed brine management process would change the chemical composition of the brine and result in a dehydrated (i.e. non-liquid) brine product. This brine product would therefore no longer be held on site in dedicated evaporative holding ponds before being emplaced. It would instead be stored in existing (repurposed) ponds to the north of the power station's cooling towers (see **Figure 2**).

The proposed brine management process would also increase the compaction level of the emplaced brine product as compared to the brine slurry resulting from the currently approved process. This would reduce the risk of potential leaching to the groundwater table and remove the need to add sulfuric acid to the brine to balance pH levels prior to emplacement.

The brine product would still be emplaced within the approved brine ash emplacement areas. Due to the elimination of additional holding ponds and the changed chemical composition of the brine product, the proposed brine management process would reduce any risks to local water quality.

In addition, the proposed process would reduce the amount of power required to operate the brine management system by up to 80%.

The proposed new brine management system would be implemented in accordance with the Brine and Residual Waste Disposal Plan required under the existing conditions of consent. This plan requires Springvale Coal to analyse soil contamination and leachability from residual wastes and brine, and identify further options to decrease the quantity of residual wastes and brine over time.

The Department is satisfied that the proposed new brine management system aligns with the aims of the Brine and Residual Waste Disposal Plan in terms of reducing soil contamination risks and considers that no additional conditions are required.

## 5.2 Pipeline Infrastructure

The Department considers that the proposed changes to the pipeline infrastructure components would result in a number of operational and environmental benefits.

The minor realignments of the transfer pipeline would avoid the kinks in the approved pipeline alignment where it underbore the Coss River and the Castlereagh Highway. It would also eliminate a 90-degree turn in the pipeline near Springvale Coal's overland coal conveyor (see **Figure 3**).

These minor alignment changes would result in a more efficient construction of the pipeline and increase its operational efficiency. The changes to the alignment beneath the Castlereagh Highway would still be subject to the requirements of RMS, which did not object to the proposal.

The proposed new hydraulic break tank on the transfer pipeline would manage the flow of water in the pipeline and ensure it operates at peak efficiency. It would provide hydraulic separation between the pumped and gravity sections of the transfer pipeline, and reduce the risk of pipeline failure and leaks.

The break tank is a small structure (i.e. 3m<sup>2</sup> x 2m<sup>2</sup>) and its sub-surface installation within the approved disturbance footprint would not involve any additional vegetation disturbance. It also would not affect sensitive natural features such as the pagoda rock formations on the crest of the Newnes Plateau and Aboriginal heritage sites.

The proposed changes to the residual transfer pipeline would allow the flow of residual material to the Western Coal Services site to be more effectively regulated. The minor realignment has been designed to avoid a previously identified Aboriginal cultural heritage site and would be managed in accordance with the Aboriginal Cultural Heritage Management Plan for the project.

## 5.3 Increased Workforce

The employment of 70 additional short-term construction workers and 17 additional operational workers on site is unlikely to affect the levels of service or have a material effect on traffic flows on the Castlereagh Highway. RMS raised no concerns about the proposed increase in job numbers.

Further, the Department is satisfied that any minor unforeseen impacts would be effectively managed by the Construction Traffic Management Plan for the project.

In summary, the increased workforce would not create any significant additional strain on local services and would result in greater economic and social benefits for the Lithgow region.

The Department considers that no additional conditions are required, as the existing conditions already require the site's Construction Traffic Management Plan to be reviewed and updated as necessary.

## 6 RECOMMENDED CONDITIONS

The Department has prepared a Notice of Modification and consolidated development consent for the proposed modification (see **Appendix D** and **Appendix E**).

The Department considers that the proposed changes would be appropriately managed within the existing approval and post-approval management framework for the project, with appropriate updates to the management plans as required.

Springvale Coal has reviewed and accepted the recommended conditions of consent.

## 7 CONCLUSION

Springvale Coal is seeking to modify the development consent to allow an alternative brine management process to be implemented at the Springvale Water Treatment Project. It has also proposed minor changes to the pipeline infrastructure and an increase in the workforce for the project.

The Department considers that the proposed modifications would result in a number of key operational and environmental benefits.

The proposed brine management process would reduce the risk of the emplaced brine leaching into the groundwater and avoid the need to construct additional holding ponds. The minor pipeline changes would improve operational efficiency without any additional impacts to natural or cultural heritage features. The additional jobs would lead to increased socio-economic benefits for the Lithgow region.

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

## 8 RECOMMENDATION

It is recommended that the Director Resource and Energy Assessments, as delegate of the Minister:

- consider the findings and recommendations of this report;
- determine that the application SSD 7592 MOD 1 falls within the scope of section 96(1A) of the EP&A Act;
- modify the development consent for the Springvale Water Treatment Project (SSD 7592); and
- sign the attached approval of the modification (see **Appendix D**).

Recommended by:

Handwritten signature of Paul Freeman in blue ink, dated 11/1/18.

**Paul Freeman**  
**Team Leader**  
**Resource and Energy Assessments**

## 9 DECISION

The recommendation is Approved / Not approved by:

Handwritten signature of Clay Preshaw in blue ink, dated 12/1/18.

**Clay Preshaw**  
**Director**  
**Resource and Energy Assessments**  
as delegate of the Minister for Planning