

**Modification Report
Springvale Water Treatment Project
SSD-7592 Mod 7**

1. Introduction

1.1. Background

The Springvale Water Treatment Project (WTP) involves the transfer of water from existing mine dewatering facilities on the Newnes Plateau to a water treatment facility at the Mount Piper Power Station (MPPS) to allow beneficial reuse of the mine water. The Springvale WTP was initiated to improve the environmental outcomes and water quality in the Upper Coxs River catchment and achieve compliance with the water management performance measures required under the Springvale Mine Extension Project (MEP) development consent.

The Springvale WTP was approved as State Significant Development (SSD) 7592 on 19 June 2017. Development consent was granted based on the development described in the Springvale WTP Environmental Impact Statement (EIS), the Response to Submissions and the Amendment to Development Application. The Springvale WTP has been previously modified on six occasions which included the ability to implement an Interim Water Management Strategy.

1.2. Interim Water Management Strategy

The Interim Water Management Strategy was initially approved as Modification 3 to SSD 7792 in May 2019 and provided for the management of up to 2700 ML of mine water through filtration and storage in Thompsons Creek Reservoir until 31 January 2020.

Modification 4 to SSD 7792 was approved on 5 November 2019 and authorised the transfer of an additional 3060 ML of filtered water to Thompsons Creek Reservoir as part of the Interim Water Management Strategy.

Modification 5 to SSD 7792 was approved on 30 January 2020 and authorised the extension of time to implement the Interim Water Management Strategy up till 30 June 2020.

Only 2220ML (38%) of the approved transfer volume (5760ML) of filtered mine water was pumped to Thompsons Creek Reservoir during the implementation of the Interim Water Management Strategy.

1.3. Proposed Modification Overview

Recent issues with the Springvale Water Treatment Plant have resulted in periods of non-operation that has resulted in mine water not being treated and mine water accumulating in the underground workings of Springvale Mine and Angus Place Colliery. This volume of water has also increased because of challenges in treating mine water with high sediment loads and most recently because the Plant Operators have been unable to promptly source filter cartridges crucial for the operation of the Springvale Water Treatment Plant. The accumulation of mine water is fast approaching levels that will significantly impact infrastructure and operations at the mine and could result in an unauthorised discharge of untreated mine water to the sensitive environment of the Newnes Plateau and/or waterways within the Sydney Drinking Water Catchment.

As a temporary solution, Springvale Coal Pty Limited (Springvale Coal) is seeking to reactivate the planning approval for SSD 7592, modifications 4 and 5, to temporarily allow filtered mine water to be transferred to Thompson's Creek Reservoir for the period up to 31 October 2021. The temporary transfer of filtered mine water to Thompsons Creek Reservoir will utilise capacity of the 5760 ML

previously assessed and approved but not fully utilised. As noted previously, only 2,220 ML or 38% of the approved transfer capacity of filtered mine water was transferred to Thompsons Creek Reservoir during the previously approved periods for the implementation of the Interim Water Management Strategy.

If approved, the proposed modification will result in a change to the date currently contained within condition 6A from 30 June 2020 to 31 October 2021. As Springvale Coal does not propose any change to the previously assessed and approved volume of filtered mine water transferred to Thompsons Creek Reservoir, there will be no change in the previously assessed and approved impacts authorised by Springvale WTP Modification 4.

2. Modification Report Purpose

This Modification Report has been prepared to support the application to modify development consents SSD 7592 pursuant to Section 4.55 (1A) of the *Environmental Planning & Assessment Act 1979* (EP&A Act). The Modification Report describes the need for the modification and assesses the potential environmental impacts associated with the reinstatement of the Interim Water Management Strategy for the period up until 31 October 2021.

3. The Applicant

Springvale Mine is operated by Springvale Coal Pty Limited. Springvale Coal is the applicant for the Springvale WTP.

The relevant postal address for Springvale Coal is:

Springvale Coal Pty Limited
Level 18
1 Market St
Sydney NSW 2000

4. Stakeholder Consultation

4.1. Department of Planning, Industry & Environment

An initial briefing letter was provided to the NSW Department of Planning, Industry & Environment (DPIE) to introduce the proposed modification on 3 June 2021 and seek confirmation on the proposed approval pathway and level of assessment.

Feedback from DPIE was received on 3 June 2021 confirming that the appropriate approval pathway for the modification application would be under section 4.55(1A) of the EP&A Act. DPIE was generally satisfied with the issues identified to be addressed in the Modification Report however also requested additional requirements be included.

The DPIE requirements and where they have been addressed within this Modification Report are detailed in **Table 1**. A copy of the correspondence from DPIE is provided as **Appendix A** to this Modification Report.

Table 1 – DPIE Modification Report Requirements

Requirement	Where Addressed
A detailed justification for the proposed modification	Section 8

Requirement	Where Addressed
A summary of the environmental, social and economic benefits and impacts associated with the proposed modification.	Section 9
A summary of the water quality and water transfer/storage impacts that were assessed and approved as part of modifications 3, 4 and 5, and any changes in these impacts resulting from the extended timeframe proposed.	Section 9
A summary of the monitoring and management framework relevant to the proposed	Section 10

4.2. Environment Protection Authority

Springvale Coal has been in regular engagement with the Environment Protection Authority (EPA) regarding the ongoing issues in relation to the Springvale Water Treatment Plant and this proposed modification. Correspondence was received from the EPA on 3 June 2021 in support of the proposed modification. A copy of the correspondence from the EPA has been provided in **Appendix B**.

5. Statutory Approval Framework

5.1. Consent Modification

Section 4.55 of the EP&A Act contains three modification powers, one of which is the power contained in s 4.55(1A) of the EP&A Act to enable the relevant consent authority to approve a modification application in circumstances where the modification would, if approved:

- (a) involve "minimal environmental impact"; and
- (b) result in "substantially the same development" as that originally approved, being carried out.

A modification application must include or be accompanied by the information that is contained in Clause 115 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). When assessing an application under Section 4.55 for modification to consent, the consent authority is required to take into consideration the relevant matters outlined in Section 4.15 of the EP&A Act.

The requirements of Clause 115 of the EP&A Regulation and where they are addressed in this document are outlined in **Table 2**.

Table 2 - Requirements for application for modification of development consent

Requirement	Response/reference
(1) An application for modification of a development consent under section 4.55(1), (1A) or (2) or 4.56 (1) of the Act must contain the following information:	This document
(a) the name and address of the applicant,	Section 3
(b) a description of the development to be carried out under the consent (as previously modified),	Section 6.1

Requirement	Response/reference
(c) the address, and formal particulars of title, of the land on which the development is to be carried out,	Section 6.2
(d) a description of the proposed modification to the development consent,	Section 7
(e) a statement that indicates either: (i) that the modification is merely intended to correct a minor error, misdescription or miscalculation, or (ii) that the modification is intended to have some other effect, as specified in the statement,	Section 5.2
(f) a description of the expected impacts of the modification,	Section 9
(g) an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	Section 5.2
(g1) in the case of an application that is accompanied by a biodiversity development assessment report, the reasonable steps taken to obtain the like-for-like biodiversity credits required to be retired under the report to offset the residual impacts on biodiversity values if different biodiversity credits are proposed to be used as offsets in accordance with the variation rules under the Biodiversity Conservation Act 2016,	Not applicable
(h) if the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner),	Not applicable – public notification development in accordance with Clause 49(2)(b) of the EP&A Regulation
(i) a statement as to whether the application is being made to the Court (under section 4.55) or to the consent authority (under section 4.56),	Not applicable - The application is being made to the consent authority under Section 4.55(1A)

5.2. Substantially the same development

The Springvale WTP will remain substantially the same development as originally approved under SSD 7592. The proposed modification does not seek to significantly alter the nature or scale of the proposed development and will continue to facilitate the improved environmental outcomes for the Upper Coxs River catchment.

The project will continue to transfer all mine water from dewatering facilities on the Newnes Plateau to MPPS for treatment and reuse with the power stations cooling water system.

The modification involves the reinstatement of the previously approved Interim Water Management Strategy in order to utilise approved, but not fully utilised transfer capacity of filtered mine water to Thompsons Creek Reservoir. Reinstatement of the Interim Water Management Strategy is sought for the period up until 31 October 2021. The reinstatement of the Interim Water Management Strategy will utilise the existing infrastructure approved for use as part of the original Springvale WTP.

5.3. Drinking Water Catchment SEPP

State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (the Sydney Drinking Water Catchment SEPP) applies to land within Sydney's Drinking Water Catchment including the Upper Coffs River system. The aims of the policy are:

- (a) to provide for healthy water catchments that will deliver high quality water while permitting development that is compatible with that goal, and
- (b) to provide that a consent authority must not grant consent to a proposed development unless it is satisfied that the proposed development will have a neutral or beneficial effect on water quality, and
- (c) to support the maintenance or achievement of the water quality objectives for the Sydney drinking water catchment.

Under clause 10 of the Sydney 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).

Development consent for the Springvale WTP was granted through the Planning Assessment Commission on 19 June 2017, as the project demonstrated a considerable beneficial effect to the catchment through the elimination of mine water discharges to the environment.

While the consent authority must apply the NorBe test in "grant(ing) consent to the carrying out of development", section 4.55 (4) of the EP&A Act provides that the modification of a development consent is "taken not to be the granting of development consent". The Sydney Drinking Water Catchment SEPP must be considered as part of the broader considerations under Section 4.15 of the EP&A Act. However, the NorBe test does not apply to a modification in the same way as it does to the granting of consent. In particular, the requirement for a consent authority to be satisfied of NorBe prior to determining a development application does not extend to the determination of a modification application.

However, it is recognised that the intent of the NorBe test is for the protection of water within the catchment and this was considered as part of the development of the Interim Water Management Strategy forming the basis of the proposed modification. Detailed water quality modelling was undertaken as part of previous assessment, which highlighted:

- that the Interim Water Management Strategy will have negligible impact upon water quality; and
- will continue to result in net beneficial effects upon the catchment during the limited period in which the Interim Water Management Strategy operates.

Modification 7 does not seek to increase the volume of filtered water permitted to be transferred to Thompsons Creek Reservoir above the 5760 ML volume previously assessed and approved.

The environmental impact of a filtered water transfers associated with the modification are considered to fall within the conservative modelling assumptions contained in previous assessments for the Interim Water Management Strategy and will have a neutral impact upon water quality in the catchment.

6. Project Setting

6.1. Overview

The Springvale WTP involves the transfer of water from existing dewatering facilities on the Newnes Plateau to a water treatment plant located at MPPS. Treated water is prioritised for industrial reuse to meet the demand for make-up water requirements within the MPPS cooling water system. Any excess treated water is temporarily stored within Thompsons Creek Reservoir for subsequent reuse during periods of high water demand in the MPPS cooling water system. The approved project as defined in SSD 7792 comprises the following major elements:

- A system to transfer up to 42 ML/day of dewatered mine water from the existing gravity tank forming part of the approved Springvale Delta Water Transfer Scheme (SDWTS) on the Newnes Plateau to the MPPS site.
- A new water treatment plant at MPPS incorporating desalination processes to reduce the salinity in the mine water.
- Transfer of treated water from the water treatment plant to the MPPS cooling water system to contribute to the demand for make-up water.
- Use of the existing Cocks River Water Supply pipeline to transfer excess treated water to Thompsons Creek Reservoir for storage and subsequent reuse in the cooling water system.
- Disposal of residuals from the pre-treatment process in the reject emplacement area (REA) at the neighbouring Springvale Coal Services site (part of Western Coal Services Project, SSD 5579).
- Implementation of an Optimised Pre-treatment and Unique Separation (OPUS) process including the addition of an additional reverse osmosis system and brine crystalliser to replace the use of the brine concentrators and manage salt load from the new water treatment plant (WTP). Disposal of brine will continue in accordance with existing approvals and practices at MPPS.
- The management of up to 5760 ML of mine water at inflows through filtration and storage in Thompsons Creek Reservoir to 30 June 2020.
- The receipt of Angus Place Water into the MPPS Pond D for treatment and reuse through the MPPS brine concentrators.

6.2. Site Location

The Springvale WTP is located in the western coalfields of NSW near Lithgow. A transfer pipeline extends from the existing water management infrastructure on the Newnes Plateau approved under the existing Springvale MEP SSD 5594 Consent. The pipeline transfers mine water from the Newnes Plateau to a Water Treatment Plant located on the MPPS site, to the south of the existing cooling water system.

The existing Cocks River Water Supply pipeline will be used to transfer excess water between MPPS and Thompsons Creek Reservoir for storage and subsequent reuse in the power station operations. The pipeline transfers mine water from the existing "Gravity Tank" to the MPPS.

7. Proposed Modification

7.1. Overview

The Interim Water Management Strategy approved as part of Modifications 3, 4 and 5 to SSD 7792 allows for the transfer of up to 5760 ML of filtered mine water to Thompsons Creek Reservoir up until 30 June 2020. During this period, only 2220 ML or 38% of the approved transfer volume of mine water was directed to the Thompsons Creek Reservoir storage.

The proposed modification seeks to reactivate the planning approval for SSD 7592, modifications 3, 4 and 5, to temporarily allow filtered mine water to be stored within the Thompsons Creek Reservoir for the period up until 31 October 2021 to allow urgent dewatering of the underground mine workings. The temporary transfer of filtered mine water to Thompsons Creek Reservoir will utilise transfer capacity of the 5760 ML previously assessed and approved but not fully utilised during the implementation of the previously approved Interim Water Management Strategy. Filtered water transferred to Thompsons Creek Reservoir will subsequently be reused within the MPPS cooling water system as originally described within the Springvale WTP EIS.

If approved, the Springvale WTP will remain substantially in accordance with the development as described in the Springvale WTP EIS and subsequent modifications. An outline of key changes proposed to the approved development are presented in **Table 3**.

Table 3 - Springvale WTP amendments

Schedule 2 Condition 6A	
Approved development	Proposed amendments
Transfer of up to 5,760 ML of filtered mine water to Thompsons Creek Reservoir until 30 June 2020	Transfer of up to 5,760 ML of filtered mine water to Thompsons Creek Reservoir until 31 October 2021

7.2. Mine Water Transfer System

Water will continue to be transferred from dewatering facilities on the Newnes Plateau to the water treatment plant at MPPS in accordance with the existing Springvale WTP consent. The transfer pipeline extends from the gravity tank forming part of the Springvale MEP mine dewatering system to the inlet works at the water treatment plant.

Flows will be transferred at up to 42 ML/day in accordance with the limits in the consent.

7.3. Treatment System

The Springvale Water Treatment Plant includes both pre-treatment filtration for solids removal and reverse osmosis treatment units for desalination of the incoming mine water. All incoming mine water will receive pre-treatment filtration for solids removal referred to as filtered water.

After pre-treatment filtration, incoming mine water can bypass the desalination units and be directed to Thompsons Creek Reservoir.

7.4. Thompsons Creek Reservoir Transfer

Filtered mine water will be transferred to the Thompsons Creek Reservoir using the existing Cocks River Water Supply Pipeline and associated infrastructure approved for use within the Springvale WTP. The

volume of water transferred will utilise the capacity of the 5760 ML previously assessed and approved but not utilised during the implementation of the previously approved Interim Water Management Strategy. Transfers will continue up to 31 October 2021 to allow urgent dewatering of the underground mine workings. Water levels within the reservoir will be managed to ensure there is sufficient capacity beneath the full storage level to accommodate the mine water transfers.

The filtered water will mix with existing water stored within the reservoir, which is drawn predominantly from Lake Lyell and will be subsequently reused as supplementary cooling water within the MPPS cooling water system.

8. Justification

Recent issues with the Springvale Water Treatment Plant have resulted in periods of non-operation that has resulted in mine water not being treated and mine water accumulating in the underground workings of Springvale Mine and Angus Place Colliery. The period of non-operation has exceeded the maximum period contemplated and has placed significant risk on the mine's and their coal reserves. The increased stored volume of water underground has also created challenges in treating mine water with high sediment loads. The pre-treatment system at the Springvale WTP has been unable to cope with elevated turbidity which has resulted in the fouling of cartridge filters that protect the reverse osmosis stage of treatment. The plant operators for the Springvale Water Treatment Plant have been unable to promptly source filter cartridges crucial for the operation of the Springvale Water Treatment Plant. The pre-treatment process of the Springvale Water Treatment Plant is working effectively to reduce turbidity to very low levels, appropriate for environmental receptors, however not to the levels that is required to achieve effective reverse osmosis treatment.

The accumulation of mine water is fast approaching levels that will significantly impact infrastructure and operations at the mine and could result in an uncontrolled discharge of untreated mine water to the sensitive environment of the Newnes Plateau and/or waterways within the Sydney Drinking Water Catchment. Alternatively, the mine will flood resulting in the sterilisation of coal reserves and significantly impact the future coal supplies for MPPS.

A temporary solution to manage underground water levels in the mine is required until additional and sufficient numbers of filter cartridges have been sourced. The modification is necessary to ensure the ongoing security of the Springvale Mine and Angus Place Colliery, avoid sterilisation of coal reserves and ensure ongoing coal supplies to the adjacent Mt Piper Power Station.

9. Environmental Assessment

9.1. Introduction

The Interim Water Management Strategy utilises existing infrastructure approved for use as part of the Springvale WTP. A detailed water resources assessment was undertaken to assess the likely impacts of the Interim Water Management Strategy as part of Modification 3 and 4 to SSD 7592. The assessment utilised two modelling approaches including geochemical modelling to assess the potential change in water quality within Thompsons Creek Reservoir and a water and salt balance model to assess flow volumes and electrical conductivities within the broader Cocks River catchment.

Modification 7 does not seek to increase the volume for 5760 ML of filtered mine water permitted to be transferred to Thompsons Creek Reservoir during the extended operation the Interim Water Management Strategy. This assessment is therefore based upon a review of the previous water modelling results prepared as part of Modification 4.

Consideration of NorBe has also been undertaken as part of the assessment.

9.2. Water Quality

Geochemical modelling was used to assess the impact of the filtered mine water transfers on water quality in the immediate catchment of Thompsons Creek Reservoir using the PHREEQc geochemical modelling program. The modelling was used to indicate the concentration of dissolved solids that would be likely to occur by the mixing of the filtered mine water with existing water within Thompsons Creek Reservoir.

The results of the geochemical modelling were assessed against the relevant default guideline values (DGVs) from the Australia and New Zealand Water Quality Guidelines for 95% species protection of aquatic ecosystems.

The results of the modelling of water quality are presented in **Table 4** along with the 95th percentile water quality data for Thompsons Creek Reservoir. This shows that the EC and the phosphate concentration predicted by the model exceeded the relevant DGVs. However, neither of these exceedances was as a result of the mine water transfer, as the Thompsons Creek Reservoir 95th percentile water quality exceeded the DGVs for the same parameters.

Table 4 - Water quality modelling results

Parameter	Units	DGV	TCR 95 %ile	MOD3 modelling results	MOD 4 Modelled result
pH	pH units	6.5-8.0	8.60	8.18	7.97
Electrical conductivity	µS/cm	350	641	681	741
Bicarbonate alkalinity as CaCO ₃	mg/L	NA	153	207	261
Sulfate as SO ₄	mg/L	NA	124	113	102
Chloride	mg/L	NA	20	18	17
Calcium	mg/L	NA	18	16	14
Magnesium	mg/L	NA	10	9	8
Sodium	mg/L	NA	97	117	138
Potassium	mg/L	NA	9	9	8
Aluminium	mg/L	0.055	0.012	0.012	<0.001
Arsenic	mg/L	0.013	0.0008	0.002	0.003
Cadmium	mg/L	0.0002	0.00005	0.00005	0.0001
Copper	mg/L	0.0014	0.0009	0.0009	<0.001
Cobalt	mg/L	NA	0.0005	0.0009	0.0009

Parameter	Units	DGV	TCR 95 %ile	MOD3 modelling results	MOD 4 Modelled result
Nickel	mg/L	0.011	0.002	0.002	0.002
Zinc	mg/L	0.008	0.0025	0.004	0.005
Iron	mg/L	NA	0.011	0.017	<0.001
Boron	mg/L	0.370	0.11	0.11	0.10
Manganese	mg/L	1.900	0.003	0.004	<0.001
Lead	mg/L	0.0034	0.0009	0.0009	0.001
Mercury	mg/L	0.0006	0.00005	0.00009	0.0001
Hexavalent chromium	mg/L	0.001	0.001*	0.0009	0.0009
Selenium	mg/L	0.011	0.0001	0.001	0.001
Phosphate as P	mg/L	0.005	0.01	0.009	0.008
Ammonia as N	mg/L	0.900	0.02	<0.001	<0.001

Exceedances of the DGVs are indicated in **orange bold**.

* Result is for total chromium (unspeciated).

The modelling is considered conservative as it assumed instantaneous mixing of the full volume of filtered water transfers for each modification (2700 ML for Modification 3 and 3060 ML for Modification 4) with the 95th percentile water quality monitoring results in Thompsons Creek Reservoir. In practice filtered water transfers occur progressively over a period of months and water quality within Thompsons Creek Reservoir is also influenced by other inputs such as transfers of treated water, catchment run-off and pumping from Lake Lyell.

The geochemical modelling indicated the potential for a minor increase in electrical conductivity (40 $\mu\text{S}/\text{cm}$) within Thompsons Creek Reservoir as a result of Modification 3 and further increase in electrical conductivity (60 $\mu\text{S}/\text{cm}$) associated with filtered water transfer volumes proposed as part of Modification 4. The increased electrical conductivity is largely due to higher bicarbonate and sodium concentrations in the mine water.

At time of Modification 4 and 5, the electrical conductivity in Thompsons Creek Reservoir was in the order of 720 – 770 $\mu\text{S}/\text{cm}$. This was largely influenced by drought conditions at the time and water quality in the Coxs River and Lake Lyell being reflective of the influence of Springvale Mine water discharge.

Modification 4 was modelled to have a potential increase of ~60 $\mu\text{S}/\text{cm}$ in Thompsons Creek Reservoir at the time. Approximately 38% or 2,200 ML of the approved transfer volume of filtered water was pumped to Thompsons Creek Reservoir during the implementation of the Interim Water Management Strategy period (up to 30 June 2020). The electrical conductivity in Thompsons Creek Reservoir was predicted to decrease over time and water quality overall, would improve. This has been the case with the current electrical conductivity at 652 – 682 $\mu\text{S}/\text{cm}$ in Thompsons Creek Reservoir. The water quality in Thompsons Creek Reservoir in regard to electrical conductivity has improved since the Modification

4 assessment in 2019 and the ~60 $\mu\text{S}/\text{cm}$ electrical conductivity increase will therefore still be less than the baseline electrical conductivity considered when Modification 4 was originally approved. As such the transfer of filtered water to Thompsons Creek Reservoir proposed by this modification will not cause the electrical conductivity to go above the baseline level assessed in Modification 4 and will therefore have negligible impact on water quality in Thompsons Creek Reservoir.

9.3. Aquatic Ecology

Three fish species have been previously identified within Thompsons Creek Reservoir during surveys undertaken as part of the original development Springvale WTP application. These are the native Flathead gudgeon (*Philypnodon grandiceps*), and two introduced species being Rainbow Trout (*Oncorhynchus mykiss*) and Brown Trout (*Salmo trutta*).

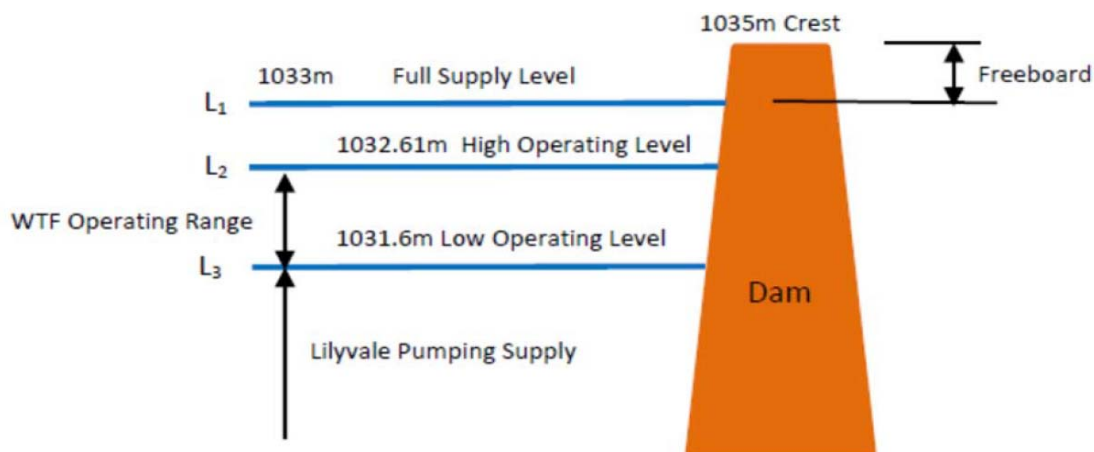
Potential impacts from increased turbidity within Thompsons Creek Reservoir are considered likely be temporary and localised around the 11.6 m submerged inlet outlet structure that is located within the centre of Thompsons Creek Reservoir. The localised potential for impact from turbidity would allow any individual fish to relocate to other areas within the reservoir, which provide superior habitat, thereby preventing any significant impact upon any species within the reservoir. The minor increase in electrical conductivity was considered unlikely to impact upon the species identified within Thompsons Creek Reservoir.

Given the current water quality and the conservative predictions of impacts of MOD 4 being adopted, impacts of water quality on aquatic species that inhabit Thompsons Creek Reservoir are considered unlikely.

9.4. Water Overflows

Thompsons Creek Reservoir can hold up to 27,500 ML of water. Management of water levels at Thompsons Creek Reservoir has been refined to manage water levels during the implementation of the Springvale WTP. The water level is typically managed between the high and low operating levels as shown on **Figure 1**. The full storage level (FSL) at the reservoir is set at 1,033 m AHD, which is 0.3 m below the invert level of the spillway to allow the reservoir to hold any catchment run-off without spilling. The reservoir is typically operated at between 0.4 m and 1.4 m below the FSL (between 1,032.6 m AHD and 1031.6 m AHD). The operating levels are based upon catchment rainfall and management requirements, in addition to safety freeboard requirements between the FSL level and spillway crest.

Figure 1 - Thompsons Creek Reservoir operating levels



Thompsons Creek Reservoir is currently operating 1,265ML below low operating level. As such, there is considered to be sufficient storage capacity for filtered mine water to be transferred to Thompsons Creek Reservoir as proposed by this modification without compromising the storage capacity of Thompsons Creek Reservoir or increasing the risk of water overflows. It is considered that it would be very unlikely for Thompsons Creek Reservoir to overtop or require additional flow releases during the reinstatement period for the Interim Water Management Strategy.

9.5. Consideration of NorBe

A consent authority must not grant consent for a project in the drinking water catchment unless it would have a 'neutral or beneficial effect' on water quality (the NorBe test) in accordance with the Sydney Drinking Water Catchment SEPP. Development consent was initially granted for the Springvale WTP, as a result of the beneficial effect to the catchment achieved through the elimination of mine water discharges from the Springvale Mine to the environment.

The proposed modification will continue to realise the overall net benefits of the removal of direct mine water discharges into the catchment by the proposed temporary storage of water in an offline reservoir until full operational capacity of the Springvale Water Treatment Plant can be restored.

While the NorBe test is not considered to strictly apply to determination of a modification, detailed modelling was undertaken as part of the previous modifications (Modifications 3 and 4) to demonstrate the Interim Water Management Strategy will have a negligible effect on the catchment in comparison to the approved development.

The water quality modelling undertaken demonstrated a negligible or neutral effect upon water quality in the catchment. Water will be temporarily stored within Thompsons Creek Reservoir, which is managed predominantly as an offline storage to provide water security to MPPS.

The potential impacts associated with the reinstatement of the Interim Water Management Strategy for the period up to 31 October 2021 is expected to fall with the conservative modelling assumptions used to assess previous modifications.

9.6. Biodiversity

Under the relevant provisions of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*, a Biodiversity Development Assessment Report is not required to be submitted with the application as the modification will not result in any increase in impacts on biodiversity values.

9.7. Socio-economic impacts

Springvale Mine represents a significant coal provider to the adjacent MPPS. MPPS provides approximately 15% of NSW's electricity and is extremely important to the State's energy security. The impacts of current water levels within the Springvale Mine are at critical levels and unless alternative water management options are implemented, the mine will flood. Flooding of the mine will have significant impacts on underground infrastructure and sterilise significant remaining coal reserves.

With approval to produce up to 5.5 Mtpa of ROM coal and employ up to 450 full time equivalent personnel, Springvale Mine has significant flow-on economic benefits for the broader Lithgow community. With approximately 14,812,382 tonnes of coal reserves remaining at the Springvale Mine for extraction, the loss of this reserve would represent a significant impact on future coal supplies to MPPS and a significant loss of royalties to the State.

The proposed modification represents the best temporary solution to ensure coal reserves are not sterilised, unnecessary impacts from mine water discharges to the environment are avoided and Springvale mine can continue to supply critical coal supplies to MPPS.

10. Monitoring and Management

Water quality and discharge volume monitoring at Thompsons Creek Reservoir will be undertaken as per the current Springvale Water Treatment Facility Water Management Plan. The program includes the requirements detailed in **Table 5** for Thompsons Creek monitoring.

Table 5 - Thompsons Creek Reservoir Monitoring

Location	Monitoring Point Identification	Type	Frequency
Thompsons Creek Reservoir Storage	TC1	Water Quality	Weekly
Confluence Thompsons Creek and Pipers Flat Creek	Thompsons Creek	Water Quality	Quarterly
Pipers Flat Creek waterway	PFUp	Water Quality	Quarterly
Discharge from Springvale Water Treatment Plant to Thompsons Creek Reservoir	Treated Water at the Thompsons Creek Reservoir Delivery Point	Volume	Daily

The data gathered through the monitoring program will inform management objectives for the reservoir which will be reported within the Annual Review for the Springvale WTP.

11. Conclusion

Springvale Coal is seeking a modification to the Springvale WTP development consent for the reinstatement of the previously approved Interim Water Management Strategy to enable emergency dewatering of the Springvale Mine. Emergency dewatering is required as a result of extended periods of non-operation of the Springvale Water Treatment Plant and the inability of the plant operators to promptly source filter cartridges crucial for the operation of the Springvale Water Treatment Plant. The impacts of current water levels within the Springvale Mine are at critical levels and unless alternative water management options are implemented, the mine will flood. Flooding of the mine will have significant impacts on underground infrastructure and sterilise significant remaining coal reserves.

The previously approved Interim Water Management Strategy allowed for the transfer of up to 5760 ML of filtered mine water to Thompsons Creek Reservoir to be undertaken up until 30 June 2020. During this period, only 2220 ML or 38% of the approved transfer volume of mine water was directed to the Thompsons Creek Reservoir storage.

This proposed modification seeks to utilise the remaining capacity of the previously assessed and approved transfer volumes not fully utilised during the implementation of the Interim Water Management

Strategy for the period up until 31 October 2021. Water quality impacts are anticipated to be below those assessed and approved as part of Modifications 4 and 5 to the Springvale WTP development consent and there is sufficient storage capacity within Thompsons Creek Reservoir to accommodate the proposed temporary transfer of filtered mine water from the Springvale WTP.

Any water transferred to Thompsons Creek Reservoir will subsequently be reused within the MPPS cooling water system as originally described within the Springvale WTP EIS. Springvale Coal considers that the proposed modification meets the relevant objects of the EP&A Act, is consistent with the principle of ecologically sustainable development, and is therefore justified on the basis of environmental performance and socio-economic benefits.

Appendix A – DPIE Correspondence

Mr James Wearne
Group Manager – Approvals/Environment
Centennial Coal Company Limited
PO BOX 1000
TORONTO NSW 2283

03/06/2021

Dear Mr Wearne

**Springvale Water Treatment Project (SSD 7592) – Proposed Modification 7
Response to Scoping Report**

I refer to your letter dated 3 June 2021 regarding a proposed modification to the Springvale Water Treatment Project (SSD 7592 - Modification 7).

The Department can confirm that the appropriate approval pathway for the modification application would be under section 4.55(1A) of the *Environmental Planning and Assessment Act 1979*.

The Department is generally satisfied with the issues identified in your letter to be addressed in the Modification Report. In addition to these matters, the Department requests you provide the following:

- A detailed justification for the proposed modification
- A summary of the environmental, social and economic benefits and impacts associated with the proposed modification
- A summary of the water quality and water transfer/storage impacts that were assessed and approved as part of modifications 3, 4 and 5, and any changes in these impacts resulting from the extended timeframe proposed
- A summary of the monitoring and management framework relevant to the proposed modification.

If you wish to discuss this matter further, please contact Gabrielle Allan on 02 9585 6078 or at gabrielle.allan@planning.nsw.gov.au.

Yours sincerely,



Stephen O'Donoghue
Director
Resource Assessments

Appendix B – EPA Correspondence



DOC21/454733

James Wearne
Group Manager Approvals/Environment
Centennial
Level 18, 1 Market St
Sydney NSW 2000

Via email: James.Wearne@centennialcoal.com.au

3 June 2021

Springvale Water Treatment Project, SSD – 7592, modifications 4 and 5, Proposal for temporary piping of mine water from Springvale Colliery to Thompsons Creek Reservoir.

Dear Mr Wearne

I refer to the phone call of 2 June 2021 between representatives from the NSW Environment Protection Authority (EPA), Energy Australia and Centennial regarding ongoing issues with the Springvale Water Treatment Facility (SWTF) operated under contractual arrangements by Veolia Water Pty Ltd (Veolia).

I understand that recent issues with the SWTF have resulted in periods of non-operation that has resulted in mine water not being treated and mine water accumulating in the underground workings of Springvale and Angus Place Collieries. This volume of water has also increased because of challenges in treating mine water with high sediment loads and most recently because Veolia has been unable to promptly source filter cartridges crucial for the operation of the SWTF. I also understand that this accumulation of mine water is fast approaching levels that will significantly impact infrastructure and operation at the mine and could result in an uncontrolled discharge of untreated mine water to the sensitive environment of the Newnes Plateau and/or waterways within the Sydney Drinking Water Catchment.

The EPA supports your proposed emergency solution which will essentially reactivate the planning approval for SSD 7592, modifications 4 and 5, to temporarily allow partially treated mine water to be stored within Thompson's Creek Reservoir for a period of approximately four months. These contingency arrangements will not change any environmental impacts that have previously been assessed through the modifications 4 and 5. Therefore, the EPA also support the use of approval pathway through Section 4.55 (1A) of the Environmental Planning and Assessment Act 1979.

If you have any questions about this matter, please contact Dr Sandie Jones on 6333801 or via email at EPA.Southopsregional@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Sandie Jones'.

DR SANDIE JONES
Regional Manager – Regional South Operations
Regulatory Operations Regional

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