APPENDIX B:
SUBMISSIONS

Government Agency and Special Interest Group submissions are attached. Community submissions are available from the Department's Major Projects Website www.majorprojects.planning.nsw.gov.au

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Our Ref: D2016/121748

Paul Freeman
A/Team Leader, Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Anthony Ko

Dear Mr Freeman

Springvale Water Treatment Project (SSD 7592)
Review of Environmental Impact Statement

I refer to your email received 26 September 2016 seeking WaterNSW's comments and recommended conditions on the Springvale Water Treatment Project (SWTP). WaterNSW appreciates the opportunity.

WaterNSW understands that Springvale Coal Pty Limited has proposed an amendment to the SWTP which involves transfer of treated mine water, not used by Mount Piper Power Station, to Thompsons Creek Reservoir, instead of discharging to Wangcol Creek. WaterNSW also notes that Springvale Coal has requested the Department provide any further assessment requirements for this amendment. WaterNSW has provided the Department its further assessment requirements for the amendment. Notwithstanding this proposed amendment to the SWTP, the Department has requested comments on the EIS.

WaterNSW supports the implementation of the SWTP including the proposal to store excess treated mine water in Thompsons Creek Reservoir rather than discharging to Wangcol Creek. The SWTP has been proposed to meet performance measures for salinity of the discharge mine water required in the Springvale Mine Extension Project (SSD 5594) approval conditions including the Upper Coxs River Action & Monitoring Plan.

WaterNSW has reviewed the current EIS for the SWTP and identified some inconsistencies and deficiencies (see Attachment 1). WaterNSW requests that these inconsistencies and deficiencies be addressed.

WaterNSW considers Springvale Coal should also investigate the provision of additional capacity at the water treatment plant for future integration of mine water from other current and future mining operations within the vicinity, particularly within the Wangcol Creek catchment. This would include consideration of LDP006 discharges and any discharges from the Neubecks Creek Coal Project, should this be approved.

WaterNSW will provide recommendations regarding conditions following assessment of the documentation on the amended Project.

WaterNSW requests the opportunity to continue to be involved in any ongoing assessment of the Project. Further queries about our submission can be directed to Nicole Wallwood on 4724 2458 or Girja Sharma on 47242459.

Yours sincerely

MALCOLM HUGHES
Manager Environment and Planning
CC: Darryl Clift - EPA

14/11/16

Attachment 1: WaterNSW's comments on the EIS for the Springvale Water Treatment Project (SSD 7592)

1. NorBE Assessment

The neutral or beneficial effects (NorBE) assessment for the SWTP is mainly focused on salinity and associated impacts on water quality. The following have not been considered in the NorBE assessment:

- a detailed discussion of other water quality parameters (such as metals etc) during operations
- how the SWTP will have a neutral or beneficial effect on water quality during construction and decommissioning.

Discussion on page 10-44 and 10-45 reports a slight deterioration in water quality at Wangcol Creek compared to existing conditions through increased discharges at LDP006 as a result of disposal of residue material from the treatment plant at the reject emplacement area (REA). This is considered to be a detrimental impact, not a beneficial impact as stated in the EIS.

2. Assessment of Impacts on Existing Licensed Discharge Point (LDP006)

The disposal of solids from the treatment plant in the REA at the Springvale Coal Services Site (SCSS) and highly concentrated brine disposal with ash at Mount Piper Power Station (MPPS) have not been thoroughly assessed for their impact on LDP006. While it is noted that LDP006 is not part of the SWTP, the salt and water balances indicate discharges will be further impacted by the Project.

- The discharge volumes from the SCSS at LDP006 are reported on average to be 1.29 ML/day, with historical ranges between 0-14 ML/day. WaterNSW understands that current discharges at LDP006 are close to 4-5ML/day. The correct volume should be identified and water and salt balance modelling should be updated accordingly.
- LDP006 discharge salinity is currently more than 3000 µS/cm. It is likely that the salinity of existing discharges from LDP006 may increase due to disposal of SWTP solids at the REA at the SCSS. There may also be other potential water quality impacts from residue materials being deposited at the REA which have not been addressed in the EIS. The potential surface water and groundwater quality impacts should be thoroughly assessed.
- WaterNSW considers Springvale Coal should incorporate discharges from LDP006 into the SWTP. It is noted that the salinity levels at LDP006 are currently considered too high to treat, and would require a new brine concentrator to be installed as part of the Project. WaterNSW understands an investigation is proposed to clarify where the increased dirty water is coming from, and results of investigations may lead to further modifications of the SWTP in the future. WaterNSW requests involvement in any discussions relating to LDP006.
- Appendix B, Page 169 - Water Resources Impact Assessment (WRIA) reports that Wangcol Creek discharges at LDP006 are expected to increase by 0.43ML/day. This figure is inconsistent with all other figures throughout the EIS, including the difference between discharges at LDP006 from the do nothing Scenario and Scenario 3 in the annual water transfers diagrams (Figures 6-7 and 6-8), which indicates a 0.2ML/day increase. This inconsistency needs clarification and correction. Given the salt and water balances indicate increased discharges and salt loads from LDP006, WaterNSW considers Wangcol Creek would be negatively impacted by the project. WaterNSW recommends a proposal be developed to offset this negative impact on the water quality of Wangcol Creek. This should also be incorporated in the updated draft Upper Coxs River Action and Monitoring Plan (UCRAMP).

- The brine concentration process is estimated to increase total dissolved solids (TDS) from 180,000 mg/L to 500,000 mg/L. The increases are proposed to be managed as part of the existing ash emplacement management strategy in place at MPPS and the EIS claims the SWTP would not increase the potential for impact to the groundwater environment from the current ash placement conditions. There is no justification for this claim and it is a particular concern for WaterNSW, considering there has been a continued increase in chloride levels at various groundwater monitoring sites within the MPPS site including at Neubecks Creek (Wangcol Creek upstream of LDP006) in recent years, the source of which is still yet to be determined.
- The indicative metal loads from the residual materials stream are outlined on page 222 of the WRIA (Appendix B). Arsenic, boron, nickel, zinc and iron are identified as primary issues, with iron particularly due to use of ferric chloride as a coagulant in the treatment plant. The expected iron output of 968 kg/day for the residual waste is a concern for WaterNSW given the existing water quality issues in Wangcol Creek via LDP006, specifically with regard to significant iron precipitate observed in the creek, and the low riparian, channel and environmental inventory and low diversity of macroinvertebrates outlined in the Aquatic Ecology Impact Assessment. It is expected that the disposal of residual materials at the REA would compound the existing issues. WaterNSW considers that further assessment of the impacts of these metals including arsenic, boron, nickel, zinc and iron on Wangcol Creek from discharges at LDP006 should be undertaken.

3. Other Comments

- Given the late change in directing SWTP discharges to Thompsons Creek Reservoir instead of Wangcol Creek via a new LDP, it is not clear whether upgrades to the existing discharge point LDP006 and channel within Wangcol Creek are still proposed. This should be clarified and included in the amended EIS and the Soil and Water Management Plans for the Project.
- Appendix B – WRIA, Pages 241-242 and Table 9-3 proposes additional surface water monitoring locations. These will need to be updated in light of the change in proposed discharges to Thompsons Creek Reservoir and should also consider additional groundwater monitoring downstream of the salt slurry ponds within the MPPS.
- There are no details of the likely chemicals to be used through the reverse osmosis treatment process, the resultant quality of backwash water, and their potential environmental impacts. Pages 6-11 of the EIS briefly discusses storage of hazardous chemicals but no detail of how they will be managed and stored on site and the appropriate transportation and disposal of chemicals. WaterNSW had required this detail in our recommendations for the SEARs. This should be addressed in the amended EIS.
- Given the proximity of the proposed salt slurry ponds to identified areas of groundwater contamination within the MPPS site, WaterNSW considers that stringent design, construction and management measures should be required for these ponds to ensure no additional impacts on groundwater in this location, and potentially on Neubecks (Wangcol) Creek. This should include appropriate lining of the ponds, and appropriate monitoring and management of storage levels, surface water and groundwater quality.
- There are discrepancies between water and salt balance figures in the draft UCRAMP compared to the WRIA (Appendix B) for the existing conditions indicating that the impacts from Upper Coxs River catchment to Lake Burragorang were underestimated in the draft UCRAMP, which should be updated accordingly.
- It is noted on Page 82 of the WRIA (Appendix B) that the LDP009 sedimentation ponds are dredged twice annually and materials are placed in the REA at SCSS.

Given discharges from LDP009 will cease as a result of the project, there is no indication as to whether these ponds would be decommissioned. This should be addressed.

- It is noted on Page 217 of the WRIA (Appendix B) that the nature of discharges cannot be established until the WTP is constructed. WaterNSW would like to be consulted once the quality of treated water and discharges, and ecotoxicology testing from the project are known.
- The proposal assumes salinity of treated mine water of 450 µS/cm will be achieved and assessment predictions are based on this salinity, however Table 10.13 and Page 232 of Appendix B proposes limits of 901 µS/cm in the new EPL. WaterNSW considers this limit unsuitable. Considering treated mine water is proposed to be directed to Thompsons Creek Reservoir, a new LDP will not be required.

Your reference :
Our reference : SF16/23773; DOC16/483093
Contact : Mr Allan Adams; (02) 6332 7610

Mr Paul Freeman
Team Leader, Resource Assessments
NSW Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Attention: Ms Melanie Prior

9 November 2016

Dear Mr Freeman

I refer to the Environmental Impact Statement (EIS) for the proposed Springvale Water Treatment Project – SSD 7592 (the Project) and to the request from NSW Department of Planning & Environment (DPE) of 23 September 2016 requesting comments and recommended conditions for the Project. I also refer to the notification of proposed amendment dated 2 November 2016.

The Environment Protection Authority (EPA) is supportive of any project that improves water quality in the natural system of the Upper Coxs River Catchment and is pleased to see this initiative from Energy Australia and Centennial Coal.

The EPA has reviewed the EIS and provides the following comments. The EPA recommended conditions of approval are also provided Attachment 1 to this letter.

Environment Protection Licence (EPL 3607)

The EPA notes that the Executive Summary states that the project will meet Condition 12 of Schedule 4 development consent condition (SSD 5594) with regards to a reduction in electrical conductivity (EC) by 2019.

Western Coal Services and Licensed Discharge Point (LDP006)

The EPA raised the need for the assessment of the current discharge at LDP006 as the Project will involve the discharge of both excess treated mine water through LDP006 with the current combination of groundwater seepage into Cooks Dam and rainfall runoff which is presently discharged through LDP006. Having discussed the investigation and source of the current groundwater discharge at LDP006 the EPA accepts that this discharge can't be addressed by the Project and that options to address the current discharge at LDP006 will be addressed by the licensee as a separate matter to the Project.

Springvale coal will be required to apply for a new LDP for the discharge of excess treated mine water associated with the Project at Western Coal Services.

Brine Management and Disposal

The EPA understands that a crystalliser will be used to generated concentrated brine with the slurry then directed to the newly proposed crystallised salt ponds prior to disposal.

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The additional salt load to be generated by the project is understood to be managed by the new crystalliser in order to maintain brine to ash ratios. The use of the crystalliser may alleviate any additional brine quantities but will result in brine with greater concentrations being disposed at the ash emplacement area.

The EPA notes that the salt ponds will be lined and be of the same design and construction of the existing brine at Mount Piper Power Station (MPPS). With regards to the existing MPPS ash placement project approval (PA09_0186), the EPA believes that a modification to PA09_0186 may be needed for the co-disposal of brine with a different chemical composition to that currently disposed at MPPS, as well as for disposal of sediment from the crystallised salt ponds.

The EPA also raised concern (EAR's 15/4/16) about the leakage of saline water from the MPPS ash emplacement area into local groundwater. Both the EPA and WaterNSW have raised concern at increased chloride levels at various monitoring sites around the MPPS ash emplacement area in recent years including near Wangcol/Neubecks Creek following a review of monitoring reports prepared by consulting firm Aurecon for Energy Australia NSW (EA).

The EPA notes that Section 2.2.7 of the original Environmental Impact Statement for the MPPS (Electricity Commission of NSW, November 1989) under Groundwater Management - Mount Piper Ash Storage describes the theory and management practices to be implemented in managing groundwater contamination associated with the ash emplacement area. The EIS states that monitoring of the groundwater collection basin (GCB) will be undertaken, and if the quality of the water would cause the water quality in Neubecks creek to be exceeded, then the water from the GCB will be pumped for reuse on site. Taking into consideration the increasing chloride levels and that the Project will facilitate the disposal of more concentrated brine to the MPPS ash emplacement area, a condition of approval might include that those recommendations contained in the original MPPS EIS for managing contamination be implemented.

Use of Thompsons Creek Dam

The EPA notes that the proposed amendment to the application will result in the transfer of excess treated water into Thompsons Creek Reservoir. The EPA is supportive of this option as it will remove the need to discharge water into Wangcol/Neubecks Creek. The EPA will review the detail of this change when it is provided. Should you have any further enquiries in relation to this matter please contact Mr Allan Adams at the Central West (Bathurst) Office of the EPA by telephoning (02) 6332 7610.

Yours sincerely

DARRYL CLIFT
Head Central West Unit
Environment Protection Authority

ATTACHMENT 1

EPA COMMENTS ON EXHIBITED ENVIRONMENTAL ASSESSMENT AND RECOMMENDED CONDITIONS OF APPROVAL

NOVEMBER 2016

NOISE AND VIBRATION

Construction Noise – Hours of Operation

The Environmental Impact Statement (EIS) and Noise and Vibration Impact Assessment (NVIA) indicate that the construction hours of operation associated with the project will be in accordance with those construction hours of operation as outlined by the Interim Construction Noise Guideline (DECC 2009), as follows:

7:00 am to 6:00 pm Monday to Friday;
8:00 am to 1:00 pm on Saturday; and
At no time on Sundays or Public Holidays.

As all construction activity for the project is expected to occur during recommended standard hours, sleep disturbance impacts are not expected.

Recommended Condition of Approval 1:

The EPA recommends that the construction hours of operation (not including blasting activities) be restricted to:

7:00 am to 6:00 pm Monday to Friday;
8:00 am to 1:00 pm on Saturday; and
At no time on Sundays or Public Holidays.

Note 1: This does not apply to emergency work to avoid the loss of life or damage to property, or to prevent environmental harm.
Note 2: This does not apply to the delivery of oversized plant or structures that police or other authorities determine require special arrangement.
Note 3: This does not apply to construction activities that shorten the length of the project so long as such works are supported by all affected noise sensitive receivers.
Note 4: This does not apply to construction activities where the proponent demonstrates and justifies a need to operate outside these hours, with the prior written approval of the determining authority and/or the EPA.

The EIS and NVIA indicate that the construction noise associated with the project will result in exceedances of the relevant criteria at many of the identified noise sensitive receivers at Lidsdale and Wallerawang.

The EPA advises that the proponent (including any contractors and sub-contractors engaged by the proponent) has statutory obligations under Sections 139 and 140 of the POEO Act in regards to noise associated with the operation of plant and when dealing with material.

The EPA understands that the linear and transient/moving nature of the construction activities associated with the project will provide for noise mitigation itself. However, the EPA further recommends;

Recommended Condition of Approval 2:

That the proponent (including any contractors and sub-contractors engaged by the proponent) must implement all feasible and reasonable noise mitigation measures during construction activities in accordance with Australian Guidelines 2436-2010 and other relevant guidelines including the Interim Construction Noise Guideline.

Recommended Condition of Approval 3:

That the proponent must consult with noise sensitive receivers and must consider periods of respite from construction activities for noise sensitive receiver, where the predicted or measured noise level from construction activities exceeds 75 dB (A) L Aeq (15 min).

Operational Noise – Hours of Operation and Noise Impacts

The EPA understands that the infrastructure associated with the project may operate at any time with minimal to no noise impact if the project specific operating rules are implemented.

The EPA therefore has no recommended Condition of Approval to this topic.

The EPA gain reiterates that the proponent (including any contractors and sub-contractors engaged by the proponent) has statutory obligations under section 139 and 140 of the POEO Act in regards to noise associated with the operation of plant and when dealing with materials.

Vibration

All activities are located within the human comfort buffer distance under table 13.7 and as such no impacts are predicted during standard construction hours.

As project activities will comply with standard construction hours, the EPA has no recommended Conditions of Approval on this topic.

Blasting

Recommended Condition of Approval 4

No blasting is to be undertaken

AIR QUALITY AND ODOUR

The EPA has no recommended Condition of Approval in relation to this topic.

The EPA wishes to advise that the proponent (including any contractors and sub-contractors engaged by the proponent) has statutory obligations under Section 124 and 126 of the POEO Act in regards to air and odour pollution associated with the operation of plant and when dealing with material.

LAND *CONTAMINATION*

Recommended Condition of Approval 5

That the Construction Environmental Management Plan (CEMP) for the project include a protocol for dealing with unexpected contamination. The protocol should include a requirement for sampling and classification of the contaminated material particularly where the material is to be removed.

EROSION AND SEDIMENT CONTROL

The EPA notes that the EIS has identified all adequate/relevant guidance material in regards to erosion and sediment controls and expects that such controls will be appropriately installed and maintained during construction activities.

Recommended Condition of Approval 6

An Erosion and Sediment Control Plan (ESCP) must be prepared and incorporated into the CEMP for the project in accordance with the relevant guideline "Managing Urban Stormwater: Soils and Construction, Volume 1 (The Blue Book; Landcom, 2004).

Recommended Condition of Approval 7

The proponent must implement erosion and sediment control measures as detailed under Section 15.1.13 of the EIS.

WATER CONTAMINATION

Of importance is the rehabilitation of affected areas. Progressive rehabilitation should be implemented where practicable and at all other times as soon as practicable once construction activities have ceased at a particular area. The EPA would expect that the Rehabilitation Plan identified in the EIS Draft Statement of Commitments would address this.

The EPA wishes to advise that the proponent (including any contractors and sub-contractors engaged by the proponent) has statutory obligations under Section 120 of the POEO Act in regards to the pollution of water, including scour water as well as Section 167 of the POEO Act in regards to control equipment.

WASTE

Brine Waste disposal

As previously raised, the additional salt load to be generated by the project is understood to be managed by the new crystalliser in order to maintain brine to ash ratios. The use of the crystalliser may alleviate any additional brine quantities but will result in more concentrated brine waste being disposed at the ash emplacement area.

Recommended Condition of Approval 8

That the proponent apply for a modification to the existing ash emplacement approval PA09_0186 to allow for disposal of concentrated crystallised salt slurry to the ash emplacement area.

Waste in General

All waste arising from the Project construction and operations activities is to be classified for appropriate treatment such as reuse, recycling or disposal.

Recommended Condition of Approval 9

That all waste generated by the project be classified in accordance with the Waste Classification Guidelines – Part 1: Classifying Waste (DECCW 2009).

This will allow for the wastes appropriate reuse, recycling or disposal.

The EPA advises that the proponent (including any contractors and sub-contractors engaged by the proponent) has statutory obligations under Section 143 and 144 of the POEO Act in regards to waste.

HAZARDOUS CHEMICALS AND FUELS

The EPA has no recommend Conditions of Approval in relation to this topic.

INCIDENT MANAGEMENT PROCEDURES

The proponent needs to be aware of the relevant incident management procedures that apply to the project, especially those identified by Part 5.7 of the POEO Act.

GENERAL MATTERS

Recommended Condition of Approval 10

That proponent be required to have in place and operate a complaint register that:

a) records complaints (including date, time, place and nature of the complaint; and
b) the action that was taken to resolve the complaint; and
c) the feedback that was provided to the complainant.

NSW GOVERNMENT | Office of Environment & Heritage

Our Ref. DOC16/524271
Your Ref. SSD 7592

Mr Anthony Ko
Planning Officer – Resource Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Anthony

Springvale Water Treatment Project (SSD 7592)

Thank you for your invitation for the Office of Environment Heritage (OEH) to comment on the exhibited Environment Assessment for the Springvale Water Treatment Project.

OEH understands that Centennial Coal Pty Limited seeks to establish a pipeline and ancillary facilities to transfer water from existing dewatering facilities on the Newnes Plateau for treatment and reuse at the Mount Piper Power Station (MPPS). This involves a new pipeline along a 10 metre wide corridor from the existing Gravity Tank on the Newnes Plateau to a new water treatment plant at MPPS.

Attachment A details OEH's recommendations and **Attachment B** provides detailed comments.

Should you require further information regarding issues that are the responsibility of the OEH please contact David Geering on 02 68835335 or david.geering@environment.nsw.gov.au.

Yours sincerely

STEVEN COX
Senior Team Leader Planning, North West Region
Regional Operations

8 November 2016

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ATTACHMENT A

Springvale Water Treatment Project Recommendations

1. Geographic features that were not selected in the BioBanking Calculator should be included in Table 10 of the BAR and noted as not selected.
2. Further information on survey methodology and effort for the threatened species detailed in Section 3.2 of the BAR is required.
3. A more complete assessment of the potential to impact the Bathurst Copper Butterfly and Broad-headed Snake, based on adequate survey effort, is required.
4. All efforts should be made to avoid impacts to *Persoonia hindii* and *Eucalyptus cannonii*.
5. Preliminary offsetting requirements for the project should include all potential impacts.
6. Final offsetting requirements to be confirmed once pre-construction surveys have been completed.
7. All efforts should be made to avoid impact to *Caesia parviflora* var. *minor*.
8. Pre-construction surveys for *C. parviflora* var. *minor* be conducted in all areas of suitable habitat to determine the size and extent of the local population and determine the number of individuals that may potentially be impacted.
9. The definition of local population should be redefined to reflect the potential contact of *C. parviflora* var. *minor* within the Study Area with other populations.
10. Restrict vehicle assess along the pipeline during construction and operation to prevent public access.
11. The proponent demonstrate that they have exhausted all reasonable steps for securing like for like offsets prior to applying the FBA variation rules.
12. Validate offsetting opportunities at Western Region Biodiversity Offset Package (WRBOP) to determine if it contains suitable offsets for the Springvale Water Treatment Project. OEH won't be in a position to assess the adequacy of offset package until the information is assessed.
13. Targeted test excavation should be undertaken of places likely to contain undisturbed deposits or, if such areas are not present, then close monitoring should be undertaken of locations where the proposed easement approaches and intersects with creek lines.

ATTACHMENT B

Springvale Water Treatment Project Detailed Comments

Biodiversity

Geographic and Habitat Features

Recommendation

1. The geographic features that were not selected in the BioBanking Calculator should be included in Table 10 of the BAR and noted as not selected.

Section 2.4 of the BAR states that the Geographic and Habitat Features not occurring in the Study Area were not selected and were filtered out of the assessment. These features should be included in Table 10 and noted as not selected.

Threatened Species Assessment

Recommendations

2. Further information on survey methodology and effort for the threatened species detailed in Section 3.2 of the BAR is required.

3. A more complete assessment of the potential to impact the Bathurst Copper Butterfly and Broad-headed Snake, based on adequate survey effort, is required.

Tables 13 and 14 of the BAR detail whether Species Credit Species are known or assumed to occur on the Northern and Southern Study Areas respectively. OEH has concerns with the assessment of the following species as not being present.

Bathurst Copper Butterfly

The Likelihood of Occurrence Table, of the Biodiversity Inventory and EPBC Act Assessment indicates that this species may occur as *Bursaria spinosa* subsp. *lasiophylla* was recorded in the Study Area and that there is potential for the species to be impacted. Table 15 and the EPBC Act Assessment of Significance, however, states that no areas of *Bursaria* were observed.

While the BAR indicates that targeted surveys were conducted for the Bathurst Copper Butterfly no details are provided indicating when, where or how the surveys were undertaken. Targeted searches for flora species of conservation significance were performed using the Random Meander Technique however it is not stated whether searches for *B. spinosa* subsp. *lasiophylla*, the Bathurst Copper Butterfly host plant, were included. Surveys should be undertaken along the entire route options to detect the presence of potential Bursaria clumps.

Broad-headed Snake

Section 4.1.3 of the Biodiversity Inventory and EPBC Act Assessment states that the study area passes through some areas considered suitable for the Broad-headed Snake and that there is potential for the habitat of this species to be impacted. However Table 14 of the BAR indicates that the species is assumed not to be present thus no offsets are proposed. The reports are unclear on whether potential habitat is considered to be present or not.

It is not clear whether targeted searches for the Broad-headed Snake were included in the general herpetofauna surveys. As the species is difficult to detect within its summer foraging habitat targeted surveys are recommended from March to November in the species winter refuge habitat. It is not clear whether targeted surveys of Broad-headed Snake winter refuge habitat adjacent to the impact area were conducted.

Impact Avoidance

Recommendations

4. All efforts should be made to avoid impacts to *Persoonia hindii* and *Eucalyptus cannonii*.

5. Preliminary offsetting requirements for the project should include all potential impacts.

6. Final offsetting requirements to be confirmed once pre-construction surveys have been completed.

Section 4.1 of the BAR, Impact Avoidance, provides a summary of the pros and cons of potential impacts along the Northern and Southern Study Areas. While this is an important matter for consideration it does not demonstrate avoidance.

Section 4.2, Impact Minimisation, provides further detail of potential opportunities to avoid some impacts on individual threatened plants and hollow trees. This includes the potential to completely avoid impacts to *Persoonia hindii* as well as avoiding three individuals of *Caesia parviflora* var. *minor* and three individuals of *Eucalyptus cannonii*. The BAR does, however state that these assumptions would be confirmed prior to construction through the completion of pre-construction surveys to validate offsetting requirements. Recommendations regarding *C. parviflora* var. *minor* are made below.

Offsetting requirements for the project should include all potential impacts under a worst case scenario. These requirements can be reduced once pre-construction surveys have confirmed whether avoidance measures are possible.

Matters for Further Consideration

Recommendation

7. All efforts should be made to avoid impacts to *Caesia parviflora* var. *minor*.

8. Pre-construction surveys for *C. parviflora* var. *minor* be conducted in all areas of suitable habitat to determine the size and extent of the local population and determine the number of individuals that may potentially be impacted.

9. The definition of local population should be redefined to reflect the potential contact of *C. parviflora* var. *minor* within the Study Area with other populations.

The endangered *Caesia parviflora* var. *minor* is included in the SEARs as a matter requiring further consideration as only two records are included in the Bionet Atlas in the Sydney Basin Wollemi IBRA subregion. There are no records in the adjacent South Eastern Highlands Capertee Uplands IBRA sub-region.

Three individuals of this cryptic species were identified (despite flora surveys being conducted outside its flowering season) as being potentially impacted. All known records within the Study Area are within the Sydney Basin Wollemi IBRA subregion. The BAR recommends that pre-construction surveys be conducted within the Southern Study Area during the flowering period. As the BAR recommends the Northern Study area as the preferred route for the pipeline the rationale for the surveys in the Southern Study Area is unclear. OEH recommends pre-construction surveys be conducted in all areas of suitable habitat to determine the size and extent of the local population and determine the number of individuals that may potentially be impacted.

The offset requirement for *C. parviflora* var. *minor* would need to be revised if additional plants are located during pre-construction surveys.

Vehicle Access

Recommendation

10. Restrict vehicle assess along the pipeline during construction and operation to prevent public access.

During and post construction public vehicle access along the pipeline should be prevented. Public access along the pipeline has the potential to facilitate impacts to sensitive areas, such as swamps and sites of cultural value that occur in the surrounding area.

Suitability of the Biodiversity Offset Package

Recommendation

11. The proponent demonstrate that they have exhausted all reasonable steps for securing like for like offsets prior to applying the FBA variation rules.

12. Validate offsetting opportunities at WRBOP to determine if it contains suitable offsets for the Springvale Water Treatment Project. OEH won't be in a position to assess the adequacy of offset package until the information is assessed.

The Biodiversity Offset Package relies entirely upon the WRBOP to fulfil the credit requirements of the Springvale Water Treatment Project. However, the WRBOP is unable to provide **like for like** offsets for 1,050 of the required 1,097 ecosystem credits and 54 of the required 90 species credits. The offset strategy relies on applying the FBA variation rules to shift the required credits to other entities within the WRBOP.

The approach suggested does not comply with the FBA. The FBA clearly states that the consent authority may approve a variation of the offset rules for matching ecosystem credits (Section 10.5.4.2) or allow species credits for a different species (Section 10.5.7.2) where in the consent authority's opinion the BOS demonstrates that all reasonable steps to secure matching credits have been taken by the proponent. These include:

- Checking the BioBanking public register and placing an expression of interest for credits wanted on it for at least six months;
- Liaising with an OEH office and relevant local councils to obtain a list of potential sites that may meet the requirements for offsetting;
- Considering properties for sale in the local area; and
- Providing evidence of why offset sites are not feasible; suitable evidence may include:
    - The willingness of a landowner to sell or establish a biobank site
    - The cost of an offset itself should not be a factor unless it can be demonstrated the landowner is charging significantly above market rate.

The proponent must demonstrate how the proponent has exhausted the above reasonable steps.

Further information is required to demonstrate how PCTs to which the variation rules will be applied are to be offset. Additional columns in Table 24 detailing the PCTs involved and their level of clearing is needed to determine if the variation rules can be applied to each PCT to be impacted

It should be noted that FBA variation rule 10.5.4.2(b) appears to have been misinterpreted by Centennial Coal. OEH believes the intention of Centennial Coal is to offset the non-threatened HN588 (Narrow-leaved Peppermint - Mountain Gum - Brown Barrel moist open forest on high altitude ranges, northern South Eastern Highlands) with a threatened ecological community however the variation rules do not allow for this.

Section 10.5.4.2 (b) does not address the potential to offset non-threatened PCTs with PCTs of higher conservation value. Section 10.5.4.2 (b) identifies that the variation rules cannot be applied when the ecosystem credit being impacted is associated with a CEEC on the *Threatened Species Conservation Act 1995* or an ecological community on the *Environment Protection and Biodiversity Conservation Act 1999*.

As a result the proposed offset package does not identify any offsetting measures to offset the required 58 credits of HN558.

OEH understands that the potential offset areas that form the WRBOP are yet to be verified via the collection of field data and the assessment of each offset site using the BioBanking Credit Calculator. There is the subsequent risk that the WRBOP may not contain suitable offset areas for the Springvale Water Treatment Project.

In order for OEH to complete the assessment of the proposed offset package for the Springvale Water Treatment Project, OEH requires (as a minimum):

- Identification of the precise offset areas to be used for the project;
- Details documenting the PCTs and species credit habitat areas occurring within the offset areas;
- Method and results details from field surveys conducted across the offset sites to verify the presence of ecological attributes currently identified from desktop analysis in the WRBOP;
    - Field surveys must be undertaken in accordance with the NSW Biodiversity Offset Policy for Major Project and the FBA.
- Summary tables of the credits generated by the offset sites; and
- BioBanking Credit Calculator assessments for each offset site to be submitted to OEH.

The above requirements could be part of a BOS for the Springvale Water Treatment Project or part of a revised WRBOP. OEH won't be in a position to assess the adequacy of offset package until the above information is assessed.

Aboriginal Cultural Heritage

OEH have examined the following ACH documents with regards to the Springvale Water Treatment Project.

- Volume 1 of the EIS which provides the main body of the ACH assessment specifically, method and results of the investigation concluding with management recommendations.
- Volume 2 of the EIS Appendix D2 which shows the results of AHIMS searches for the proposed easement and the consultation communication log with Aboriginal people registered in the project and, method of advertising the project to interested parties.
- The Centennial Coal Aboriginal Cultural Heritage Management Plan. Western Region second version (July 2016).

OEH accept the assessment undertaken for the proposed pipeline route which consisted of a desktop assessment, interrogation of AHIMS data and field inspection at select locations. The results of the investigation show that no evidence of Aboriginal objects or cultural values within the proposed easement but identified Aboriginal sites outside of the proposed footprint.

The EIS concludes with 3 recommendations pertaining to Aboriginal heritage that OEH support. In summary, they include 1) Works to be confined to the designated easement, 2) Visible marking of AHIMS sites that are located near the proposed easement to ensure protection of the sites, and 3) Protocols for the discovery of skeletal remains. The EIS refers to the management of ACH, post approval, through the Centennial Coal Aboriginal Cultural Heritage Management Plan.

Test excavations or Monitoring for Potential Archaeological Deposits.

Recommendation

13. Targeted test excavation should be undertaken of places likely to contain undisturbed deposits or, if such areas are not present, then close monitoring should be undertaken of locations where the proposed easement approaches and intersects with creek lines.

OEH is unable to assess with confidence if the project will impact on potential archaeological deposits (excluding those areas identified with intense land use disturbance). OEH considers that there is the potential for PADs to occur along the proposed easement. OEH recommends that subsurface test excavations or at least close monitoring of sensitive areas is conditioned into the project approval.

NSW GOVERNMENT | Department of Primary Industries

OUT16/42131

Mr Anthony Ko
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Anthony.ko@planning.nsw.gov.au

Dear Mr Ko

Springvale Water Treatment Project (SSD 7592)
Comment on the Environmental Impact Statement

I refer to your email of 23 September 2016 to the Department of Primary Industries (DPI) in respect to the above matter. Comment has been sought from relevant divisions of DPI. Views were also sought from NSW Department of Industry - Lands that are now a division of the broader Department and no longer within NSW DPI.
Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

DPI has reviewed the Environmental Impact Statement and provides the following recommendations:

- The proponent should provide details on all watercourse crossings associated with the project.
- All works should be conducted in accordance with DPI Water Guidelines for Controlled Activities.
- A number of unformed Crown roads located within the pathway of the proposed pipeline, are currently being assessed for road closures. It is also noted, an easement for a 'brine pipeline' has been recorded over affected Lots of freehold land, however, it does not appear to be recorded for the unformed Crown roads. Further consultation is required with DoI –Lands to determine the most appropriate pathway on agreement for access and use of the unformed roads until such time the roads are closed. Please contact Kay Oxley, Senior Natural Resource Management Officer on (02) 6391 4334.

Yours sincerely

Mitchell Isaacs
Director, Planning Policy & Assessment Advice
8 November 2016

DPI appreciates your help to improve our advice to you. Please complete this three minute survey about the advice we have provided to you, here:
https://goo.gl/o8TXWz

NSW GOVERNMENT | Department of Industry

OUT16/37866

Melanie Prior
DA Coordinator
Resource Assessments, Business Systems and Compliance
Department of Planning & Environment
GPO Box 39 SYDNEY NSW 2001

Melanie.Prior@planning.nsw.gov.au

Dear Melanie

Springvale Water Treatment Project (SSD 7592) Environmental Impact Statement

I refer to your email dated 23 September 2016 inviting the Division of Resources & Energy (the Division) to provide comments on the Springvale Water Treatment Project EIS (SSD 7592).

The Division provides the following comments:

Rehabilitation
Section 5.6 of the Environmental Impact Statement (EIS) is very general and short on detail but does not contain any information considered to be inappropriate or incorrect, however further detail on rehabilitation within mining title areas will be expected in RMP/MOP documents to be subsequently submitted to the Division.

Mining leases are shown in Figure 2.3 of the EIS. A total of 4 leases are identified: MPL314, ML1448, ML1352 and ML1323. However, CCL733 which includes surface areas is also within the project boundary and is not identified in this section of the EIS as being relevant to the project. The Division notes that a section of the Treated Water Transfer pipeline passes across a surface area of CCL733. This appears to be an oversight by the proponent in preparing the EIS.

The EIS states that no new titles will be required for this project. ESU notes that the existing MLA497, currently being assessed by the Division, covers a section of the proposed Treated Water Transfer Pipeline at the Western Coal Services site.

The Division notes that key components of the project will not be located within a mining title, either at the Mt Piper Power Station (new water treatment plant) or off-title sections of the proposed new pipeline, and that the EIS does state (in Section 6.4.2) that Springvale Coal may apply for a mining lease in future for their Water Management Assets within State Forests on the Newnes Plateau.

Rehabilitation Management Plan/Mining Operation Plan issues
A condition of the Development Consent requires that activities within a Mining Title area must be covered in an approved Rehabilitation Management Plan/Mining Operations Plan (RMP/MOP) to be prepared to the satisfaction of the Division. A standard Rehabilitation Management Plan condition (in place for the Springvale Mine and Western Coal Services) would be appropriate.

This requirement may be addressed by modification to the existing RMP/MOP documents for

- Springvale Colliery (part MPL314, ML1323 and, if applicable, ML1326 – which is a subsurface only lease),
- Western Coal Services (part MPL314, CCL733, ML1448, ML1352 and any lease granted in respect of MLA497), and;
- Angus Place Colliery (if applicable).

The RMP/MOP, or modification to the existing MOP/RMP documents, is to be approved prior to commencement of the applicable surface disturbing activities.

It is recommended that rehabilitation of areas not within a mining title should be in to the satisfaction of the landowner.

The Division will hold a security bond to cover rehabilitation liabilities associated with the project in areas where mining titles are in place. Rehabilitation Cost Estimates will need to be submitted with MOP/RMP documents. As such, it should be clear in the Development Consent that the Division responsibility for rehabilitation is only applicable for these areas.

General comments
The Division should be given the opportunity to review proposed conditions prior to final approval.

For consistency with the Springvale and Western Coal Services Development Consents, the Division would support a section on Progressive Rehabilitation and Rehabilitation Objectives

The Division has no objection to the project being approved.

Should you have any enquires regarding this matter please contact Steve Cozens, Senior Project Officer, Royalty & Advisory Services on 9842 8573.

Yours sincerely

Zane West
Manager Royalties & Advisory Services

Forestry Corporation of NSW
Northern Softwood Region
Cnr Browning St & Panorama Ave Bathurst NSW 2795
PO Box 143 Bathurst NSW 2795
T 02 6331 2044
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www.forestrycorporation.com.au

2/11/2016
Ref No.: F2010/01269

Anthony Ko
Resource Assessments
NSW Department Planning & Environment
GPO Box 39
Sydney NSW 2001

Sent via email: anthony.ko@planning.nsw.gov.au

Dear Mr Ko,

Centennial Springvale Pty Ltd – Springvale Water Treatment Project Environmental Impact Statement

I have reviewed the Environmental Impact Statement (EIS) on behalf of Forestry Corporation of NSW (FCNSW), whose primary interest in the water treatment project is the impact on Newnes State Forest. FCNSW is pleased that Centennial Coal has considered a broad range of issues, however there are a number of matters that require further consideration:

1) All constructed access tracks are the responsibility of Centennial Coal must be rehabilitated fully once no longer required, and will remain the responsibility of Centennial Coal, under the Forest Permit, until they are closed and rehabilitated. The only exception to this would be if FCNSW requested a track be left open.

2) With regard to traffic, FCNSW support the proposed traffic access routes, and I note that the heavy vehicle route restrictions within the EIS are consistent with those applied by FCNSW. However, the introduction and chapter *14.3* both make statements that there is sufficient road network capacity to support these activities. It is the view of FCNSW that the impact on roads from this activity should not be considered in isolation of the wider mining traffic movements across Newnes State Forest. FCNSW believe there is a higher risk of failure of the road network, particularly natural surface roads, than is expressed in the EIS. It is likely that Centennial Coal will need to contribute to the upkeep of all roads identified for use in the EIS, and more broadly for maintenance of existing operations.

3) With regard to chapter *15.7.1 Newnes Plateau – State Forest*, the pipe alignment within the Newnes SF, where it diverges from the existing pipeline alignment, FCNSW does not consider a 'former logging trail' to be an access road and therefore Centennial will be constructing a new road ('4WD track'), which will need to form part of a permit and associated requirements as outlined in Point 1 above.

4) Any vegetation clearing in relation to fire mitigation surrounding ancillary infrastructure must be considered within the EIS (if outside the 20m corridor).

5) With regard to Chapter *15.8.3 Mitigation Measures*, FCNSW would like to review the bushfire management plan prior to approval. FCNSW would also like an additional mitigation measure during the construction phase, of works to comply with FCNSW fire restrictions, which require all vehicles to carry certain fire-fighting equipment depending on daily fire risk. The restrictions also stipulate ceasing particular types of work at certain times of the day, depending on fire risk. This can be facilitated through our system of daily colour code notification.

Yours Sincerely,

Dan Kirby
Fire & Stewardship Manager
Northern Softwood Region

Reference: LGS
Environment & Development Dept.

Lithgow CITY COUNCIL

3 November 2016

Mining Projects
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

CC: anthony.ko@planning.nsw.gov.au
Melanie.Prior@planning.nsw.gov.au

Dear Sir/Madam,

Springvale Water Treatment Project (SSD 7592)

I refer to the abovementioned project and your request for submissions for the development.

Council considers the Environmental Assessment adequately highlights the relevant issues, and has no objection to the project subject to the following conditions being considered to be attached in the consent:

Planning Agreement

1. Council would like the opportunity to enter into a Voluntary Planning Agreement for the project. Council has a Section 94A Contributions Plan which imposes a 1% Contribution on all development over $200,000. Should the proponent not enter into a Voluntary Planning Agreement for the proposal then a condition should be placed on the consent requiring payment of a contribution in accordance with Council's Section 94A Contributions Plan.

Please do not hesitate to contact Miss Lauren Stevens who is available between 8:15am and 10:30am Monday to Friday on (02) 63549999, in Council's Environment & Development Department should you have any queries in relation to this matter.

Yours sincerely

J Nichols
ACTING GROUP MANAGER ENVIRONMENT AND DEVELOPMENT

The Bluett AWARD
LITHGOW CITY COUNCIL
2015 WINNER

PO Box 19, LITHGOW NSW 2790
Tel: (02) 6354 9999 Fax: (02) 63514259
Web: www.lithgow.nsw.gov.au Email: council@lithgow.nsw.gov.au

Transport
Roads & Maritime
Services

7 February 2017

SF2012/046018; WST12/00134/12

Team Leader
Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Anthony Ko

Dear Mr Ko

SSD 7592: Springvale Water Treatment Project
Development Application Amendment and Response to Submissions (RtS)

Thank you for your email on 11 January 2017 referring an amendment to and RtS for SSD 7592 to Roads and Maritime Services for comment.

The documentation has been reviewed and Roads and Maritime notes the proposal still includes pumping water from Springvale Mine to Mount Piper Power Station (MPPS), but no longer includes discharging treated water into Wangcol Creek. Instead, treated water will be pumped to Thompsons Creek Reservoir. The transfer of water from the mine site to MPPS will involve the installation of a pipeline crossing the Castlereagh Highway (HW18) below an existing bridge structure south of Lidsdale.

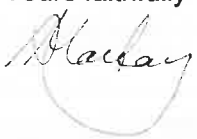
The proposed pipeline crossing of the Castlereagh Highway will, in accordance with section 138(2) of the *Roads Act 1993*, require the prior concurrence of Roads and Maritime. Roads and Maritime is not in a position to grant concurrence at this time. However, the following recommended conditions are provided for inclusion in any consent issued by the Department in relation to this proposal:

- A Construction Management Plan (CMP) is to be developed for the project in consultation with Lithgow City Council and Roads and Maritime Services. The CMP is to detail how traffic generation, traffic movements and construction activities on or close to the classified road network will be managed to ensure the safety and traffic efficiency of the classified road network is not compromised by construction activities.

- Works within classified road reserves require prior concurrence from Roads and Maritime Services under section 138(2) of the *Road Act 1993*. Castlereagh Highway is a classified road. To apply for Roads and Maritime Services' concurrence, a request accompanied by drawn to scale plans of the proposed crossing is to be sent to westernlandaccess@rms.nsw.gov.au The pipe line crossing of the Castlereagh Highway is to be in accordance with the attached *Roads and Maritime Services Requirements for Classified Road Crossings.* The submitted drawings are to be accompanied by details of required pipeline maintenance and access needs as well as details of how Roads and Maritime Services' access for bridge maintenance will be maintained.
- Prior to the commencement of construction work, the proponent is to contact Roads and Maritime's Field Traffic Manager on 02 6861 1461 to determine if a Road Occupancy Licence (ROL) is required. In the event that an ROL is required, the proponent will obtain the ROL prior to works commencing within three (3) metres of the travel lanes in the Castlereagh Highway.
- Any damage or disturbance within public road reserves is to be restored to match surrounding landform in accordance with the requirements of the relevant road authority.
- At the completion of the project, Works-As-Executed plans are to be provided to Roads and Maritime indicating final levels, distances and locations of the pipeline and associated infrastructure.

Please forward a copy of Council's determination of the development application to Roads and Maritime at the same time it is sent to the applicant. Should you require further information please contact Andrew McIntyre, Manager Land Use Assessment, on 02 6861 1453.

Yours faithfully



Susie Mackay
Network & Safety Manager
Western

THE COLONG FOUNDATION FOR WILDERNESS LTD.

Mining and Industry Projects
NSW Department of Planning & Environment
GPO Box 39
Sydney NSW 2001

Dear Sir/Madam,

Re: Springvale Water Transfer and Treatment Project SSD 16_7592

The Colong Foundation welcomes the decision to eliminate mine water by its reuse in the Mount Piper Power Plant. The Foundation believes that this proposal should have been part of the Springvale mine extension, and if it were it would have saved time and money.

The current proposal must be revised though as it:

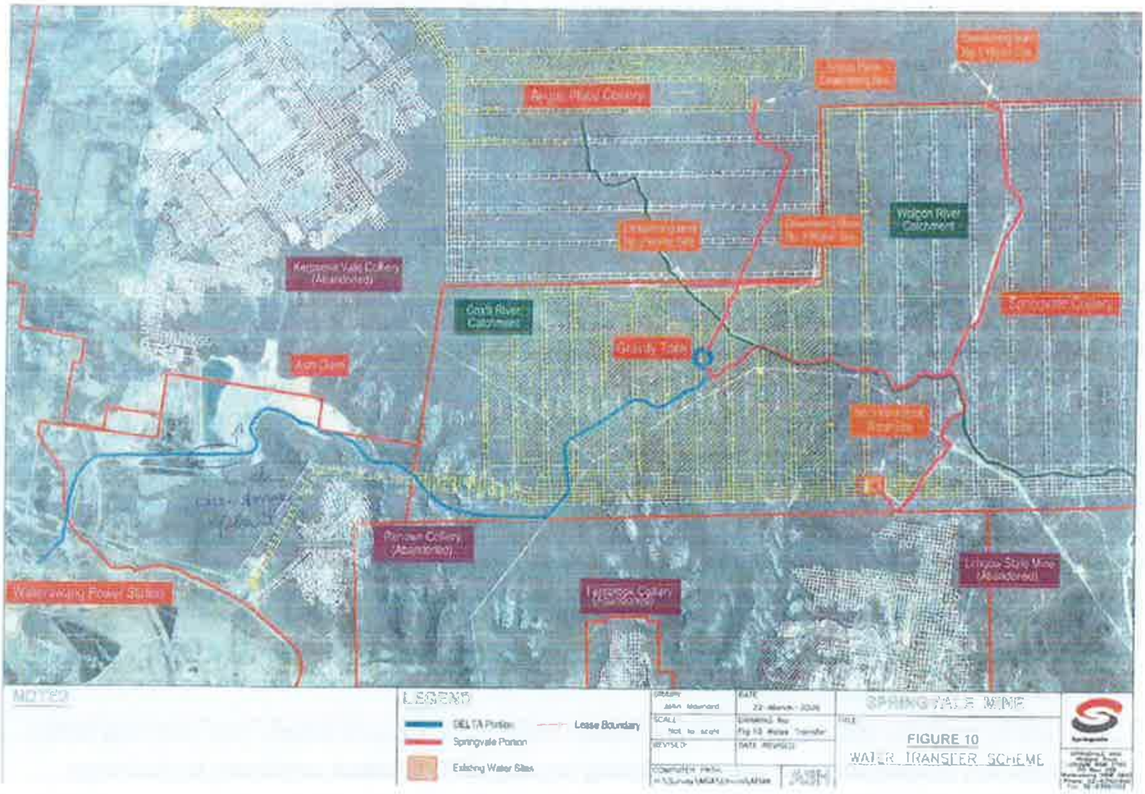
1. Cuts through an Endangered Ecological Community (EEC);
2. Duplicates Springvale's existing pipeline and therefore the environmental impact on Newnes Plateau and its escarpment;
3. Fails to examine the benefits of mine water reuse replacing untreated, 'raw' drinking water;
4. Does not remove all mine water, including nearby LDP006 which continues to discharge from the Cooks Dam;
5. Seeks approval for an unnecessary new treated mine water discharge point and does not adequately consider treated mine water storage options;
6. Adopts discharge standards that create perverse incentives to encourage the discharge of treated mine water, rather than its reuse in the Mt Piper power plant – the discharge standards in the Springvale mine extension consent should not apply to this consent;
7. Fails to identify Wangcol Creek as an unsuitable receiving water for mine water discharge; and
8. Proposes temporary mine water storage in Angus Place mine, which should not be part of this transfer project.

1 Pipeline relocation cuts through an EEC

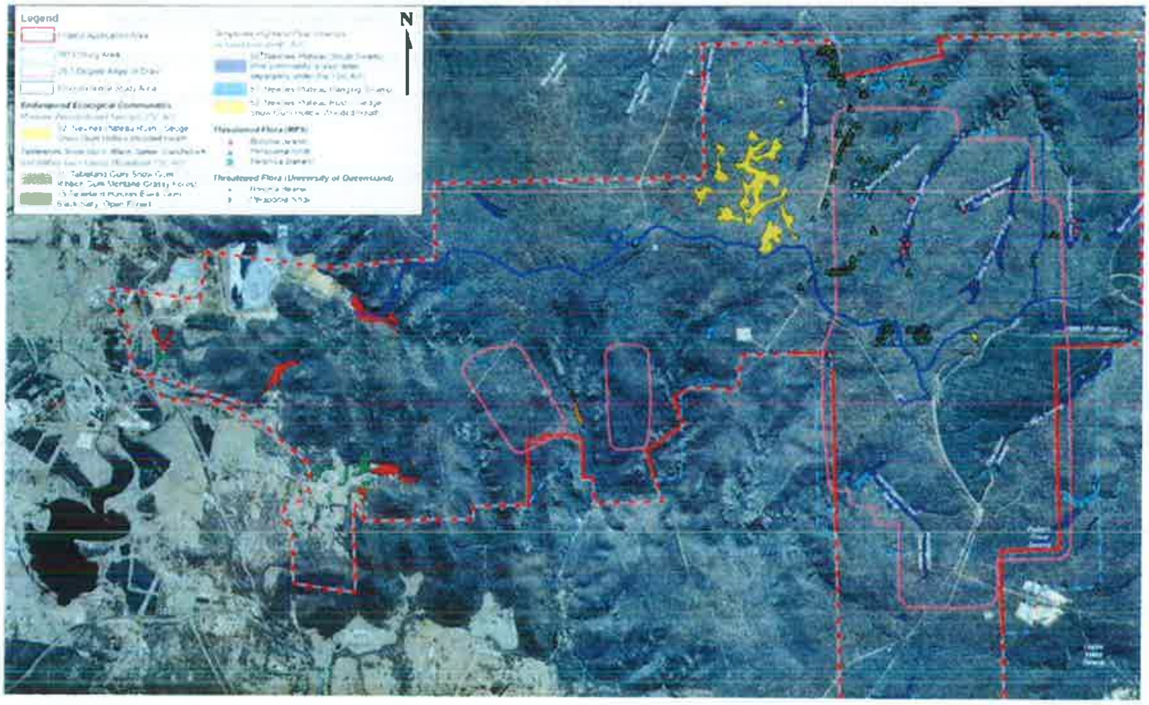
The consent for the proposed new pipeline should be required to follow the existing SDWTS pipeline alignment off Newnes Plateau to prevent unnecessary damage to a scenic and ecologically important part of the Gardens of Stone region known as the Clerestory Spurs that link downslope with an EEC community beside Sawyers Swamp Creek.

On face value, the EIS conclusion that a new pipeline following an existing pipeline route will have greater environmental impact than establishing a new pipeline route is not credible. The comparison between the existing pipeline route and new route is flawed, as disturbance of the existing easement environment should have discounted impacts when compared to those of the proposed new easement. If the new easement is to save money or to ensure pipeline reliability, or if the old route was found to be unsuitable for further development, then these reasons should have

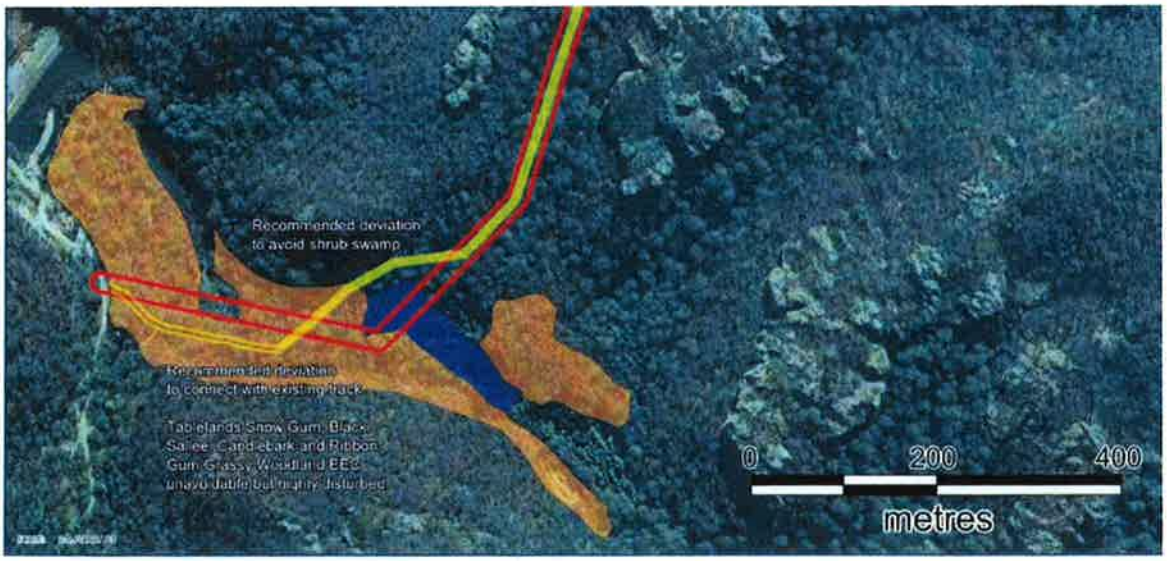
been clearly stated. The EIS instead presents a strained numerically-based argument that contradicts the common sense impact minimisation of using the existing easement.



Existing transfer pipeline enters Sawyers Swamp Creek valley from the west (figure above), the proposed pipeline would enter this valley from the north causing unnecessary environmental disturbance (figure below from the 2014 Springvale Mine extension EIS).



Proposed pipeline and road route descends through a gully that lies between Clerestory Spurs 7 and 8 and then proposes to clear MU11, an endangered ecological community. How can this be less damaging than following the existing pipeline easement, and what are the justifications for pipeline relocation? (figure below from the 2014 Springvale Mine extension EIS).



2 Duplicates escarpment disturbance

One easement is better than two, unless there are exceptional extenuating circumstances, such as avoidance of further impacts on EECs. To reduce environmental impact, the rule should be to minimise surface disturbance, not duplicate it.

The Colong Foundation requests removal of the proposed new easement from this project.

3 The benefits of mine water reuse by the energy industry not examined

The water balance analysis in the EIS is unhelpful because it does not examine the benefits of substituting surface water with mine water for power generation. In other words the EIS does not determine how much more drinking water is made available by replacing it with mine water in power generation. In fact on page 10-25 the EIS water modelling concludes that 'Compared to the

do nothing scenario, the inflow to Lake Wallace was slightly reduced, due to the cessation of discharges from LDP009 following commencement of the Project.' So, according to the EIS the project is taking water from Sydney's water supply.

The modelling is misleading. The Project does not reduce the amount of drinking water available when the power plan is operating at or greater than 50% capacity. The water modelling in the EIS creates an incorrect impression regarding the benefits of the proposal.

At 50% plant capacity, all the mine water would be used for the purpose of power generation releasing surface water (raw drinking water) for use in the water supply downstream. Further, the remarks under scenario 3 that "The cessation of LDP009 discharges associated with the Project resulted in a slight decrease in the upper ranges of the Coxs River flow into Lake Burragorang" (pg 10-26) are also unhelpful. Again the assessment does not distinguish industrial quality mine water from surface runoff (raw drinking water) but instead considers them to be of equivalent value.

Data released in April from the National Pollution Inventory showed that the Springvale coal mine increased its discharge of heavy metals into the water catchment of the Warragamba Dam in 2015, despite already being one of the worst polluters in the previous year. These data are the result of LDP009 discharges and mine water should not be considered as suitable raw drinking water in the modelling for this project.

Since the closure of Wallerawang power plant in 2014, Springvale's operation has caused the Coxs River to become much more saline due to the discharge of mine water. The median Electrical Conductivity (EC) of the mine effluent from LDP009 is 1055µS/cm (microSiemens per centimetre), while background for the Coxs River headwaters is 30µS/cm[1]. The pollution emitted at LDP009 is about 35 times background salinity. The mine wastes discharged at LDP009 contain unnatural concentrations of calcium, zinc, potassium, magnesium, sulfate, alkalinity, chloride and sodium. Conservation groups are understandably concerned about the toxicity of the discharge.

The purpose of the proposed transfer scheme must be to eliminate mine water discharges to the environment, by transfer and use in the power plant. The use of mine water in the cooling towers of Mt Piper power plant releases surface water from this use. The benefit of making surface water available for drinking, by the reuse of mine water, is not considered by the EIS, which as a result grossly underestimates the value of the proposal.

In 2015 the Department of Planning and Environment was incorrect in concluding that there would be an environmental benefit to the Coxs River from the discharge of treated mine water discharged by the Springvale mine extension. Mine water disposal to the environment is an inferior outcome to the proposed waste elimination process outlined in the EIS. Surely the waste elimination process must strive for no mine water releases to the environment.

The water licence for the power plant supports a no mine water release policy. EnergyAustralia must not take any water from the Coxs River under Water Access Licence #27428 unless the Licence Holder has first used *all available mine water from its storages* for the purpose of power generation (condition 4 and my emphasis). The Colong Foundation believes that the clear intent of this licence

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[1] Birch, G., Siaka, M., and Owens, C. (2001). The source of anthropogenic heavy metals in fluvial sediments of a rural catchment: Cox's River, Australia. Water, Air and Soil Pollution **126**, pp.13-35. [Reference for background salinity of 30µS/cm]

condition is to ensure the use of as much mine water as possible in the power plant. The licence also indicates that it would be appropriate for treated mine water to be stored in Thompsons Creek Reservoir for use by the power plant.

Mt Piper power plant is said to not currently discharge effluent. The Coxs River can be restored to health if the plant is required to use 'all available mine water from its storages'. The removal of this mine's toxic effluent will help to protect Sydney's Drinking Water Supply and the integrity of the Greater Blue Mountains World Heritage Area.

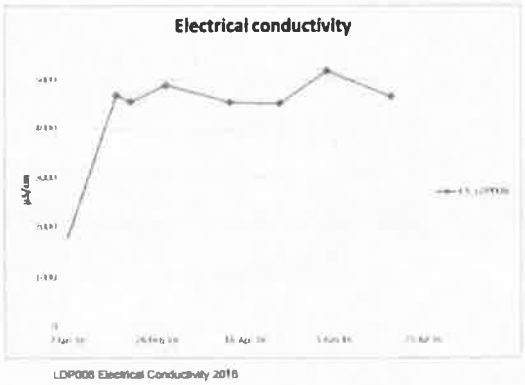
It is clear that the EIS does not implement the intent of condition 4 by storing mine water in Thompsons Creek reservoir, just as the EIS does not clearly state the main benefit of the project.

Thompsons Creek reservoir should be used to store all treated mine water and achieve compliance with condition 4 of the power plant's water licence. The current proposal is in breach of the power plant's water licence and should not be approved until this is fault remedied.

4 Does not remove all mine water and LDP006 discharges from the Coxs River

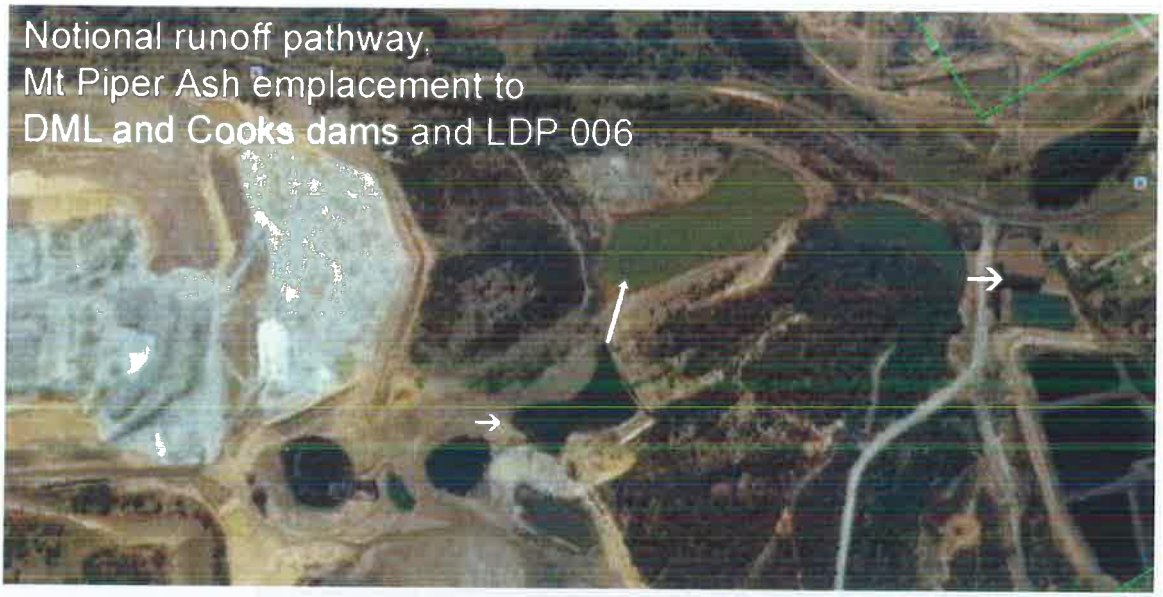
The intent of the Springvale mine water transfer is to remove mine water from the Coxs River. The proponents have designed continued discharges from the Coal Services Area at LDP006 and proposed a new LDP beside it into Wangcol Creek.

The failure to divert waste water in the Cooks Dam storage above LDP006 into the mine water treatment plant is a design weakness in the proposal. LDP006 has a very high salinity of 5,150µS/cm, in June 2016 making the Cooks Dam the most saline of all waste water in the Coxs River catchment. To protect the Coxs River catchment the highly saline wastes in Cooks Dam must be sent to the water treatment plant and then used in the Mt Piper power plant. If this is not done, then the Colong Foundation believes the Cooks Dam will pollute the Coxs River via LDP006.



Springvale Coal Services, Environmental Monitoring Data, July 2016, Pg 7.

From examination of images of Cooks Dam, the adjoining DML Dam and the Ash Emplacement, as well as Google Earth images, the Cooks Dam seems to be hydrologically connected with the Ash Emplacement Area through the DML Dam and various storages to the west that spill into it.



The uncovered fly ash emplacement area has not been continuously rehabilitated as revealed in this 2016 Google Earth image, above, and a plume highly saline groundwater and runoff finds its way to LDP 006 and Wangcol Creek via DML Dam below. Note also the scour due to discharge from pipe shown at bottom of image.

The proposed increased discharges from LDP 006 are unacceptable. The highly saline discharges from LDP006 must be removed from the Coxs River catchment by reuse after water treatment in the power plant.

When the power plant is operating at 50 % capacity or greater, the modelled salinity discharge for LDP 006 indicates it is the prevailing source of salt to Wangcol Creek of 1,613 tonnes/year. When the power plant is operating below 50% capacity the proposed licensed discharge point will emit up to 3,312 tonnes/year to Wangcol Creek in addition to LDP 006. The large salt load of up to

5,000 tonnes/year under these proposed arrangements indicate that the water treatment process is inadequate for discharge to the drinking water catchment.

Cooks Dam located just south of DML Dam was close to overflowing in October and a quantity of water had recently been pumped between it and DML Dam.

Condition 13 of Schedule 4 of the consent for the Springvale mine expansion, SSD 5594 requires the "identification" of water management measures to meet discharge criteria, including water transfer to the power plant and "consideration" of all discharge points in the Upper Coxs river catchment. This direction should require Centennial Coal to examine in detail treatment of water stored in Cooks Dam, which is alleged to be runoff from the Springvale Coal Services Area.

In addition to the mine water transfers, LDP 006 and the storage proposal at Thompsons Reservoir, an expansion of the Springvale mine water transfer proposal should include capacity for Clarence Colliery mine water transfer. Such an enlarged pipeline would enable Centennial to meet upgraded EPL renewal requirements for Clarence colliery.

The pipeline should have capacity for an additional 15ML/day of mine water from Clarence Colliery to clean up the Wollangambe River.

The advantage of inclusion of this transfer in the pipeline capacity would be that such a future transfer would remove all pollution from the Wollangambe River. The river is listed as a wild river and the Greater Blue Mountains World Heritage Area is only a kilometre downstream of the mine's primary discharge point. The 15ML/day mine water discharge currently kills 90 per cent of macroinvertebrate life in the river for at 20 kilometres downstream of the mine.

Rarely does one single treatment initiative result is such a potential dramatic improvement in stream condition as would be achieved by the transfer of Clarence mine water to the Mt Piper power plant.

5 New licensed discharge is unnecessary

The annual water licence extractions permitted for the power plant are up to 23,000 ML/year or 63 ML/day from the Coxs River system, and 8,184 ML/year or 22 ML/day from the Fish River system (GHD, p 3.10, WAL 27428 and WAL 36230 summarised at p 3.15).

It is difficult to understand how the Mt Piper power plant, with a water licence allocation of 85 ML/day, requires a mine water transfer system with a licensed discharge to Wangcol Creek of up to 32 ML/day. The mine water is only 37% of the daily water licence allocation and could be comfortably doubled by the addition of say mine water from the Clarence Colliery, as long as the proposed mine water treatment system incorporated storage at Thompsons Creek Reservoir.

The water treatment plant does not need to be designed for discharge for the Springvale mine water project, as it can easily be designed as a closed system with the introduction of storage into the project. The proposal must be redesigned to store any temporary excess mine water in Thompson Creek reservoir as required by Water Access Licence #27428.

The EIS fails to quantify in detail the proposed amounts of mine water to be released under the project. These discharges could grow to unacceptable levels and in ways contrary to the power plant's water licence.

The rejection of the storage of treated mine water in Thompsons Creek reservoir because of its environmental impacts appears to be an excuse to avoid expense. The stated impacts on trout are unimportant as these fish are regularly released into Lake Lyell, which is used for fishing and it seems strange to use another smaller dam for the same purpose in the same catchment. The Colong Foundation does not support the release of trout upstream of the Greater Blue Mountains World Heritage Area into either storage. Trout are a feral fish and do not belong in national parks.

6a Discharge standards in the Springvale mine extension 2015 consent must be reviewed to prevent perverse incentives encouraging treated mine water discharge rather than its reuse in Mt Piper power plant

The Coxs River, a source of raw drinking water, must not be worse off if less or no coal power is generated using coal from Springvale mine.

It is possible, and perhaps even likely, that other future coal suppliers may provide the power plant with cheap open-cut thermal coal. Economic drivers will then see low ash thermal coal from Springvale Mine exported. In these circumstances, water treatment should be enhanced to reduce salt levels in Lake Burragorang and Wangcol Creek to the same level as if power generation was operating at 100% capacity using Springvale coal. In other words Springvale mine water treatment must be decoupled from Springvale coal consumption.

The total salt discharged to Lake Burragorang via Wangcol Creek also should not be inversely proportional to power generation, where an increase in cooling water uptake will result in increased salt removal (p 10.28). Discharged water requires higher levels of treatment when the amount of coal power generated is reduced as the treated mine water is to become a source of drinking water.

The alternative is to store treated mine water to prevent the perverse outcome where less coal power produces more mine water pollution.

If it is cheaper to discharge than to reuse mine water, then more mine water will be discharged than necessary and the power plant water licence will be ignored. Mine water treatment/discharge standards must be increased to prevent a perverse incentive where mine water discharge is cheaper than its reuse. This would encourage treated mine water storage.

Mine water is the main variable in the salinity load in the catchment. Mine water must be eliminated by industrial reuse or treated to a standard equivalent to that of the Coxs River headwater streams.

6b Springvale mine water discharge standard not relevant to a mine water reuse project

The discharge standards in the September 2015 consent for the Springvale mine extension are not appropriate to this project. This is a new development application for a different project, primarily for mine water reuse, not mine water discharge. It must be considered with new eyes.

To encourage compliance with the Mt Piper Power Plant water licence so that reuse of mine water is maximised through storage, there must be a considerable financial and regulatory disincentive for any discharges from the water treatment project. Water quality standards are the best tool to ensure discharges are either minimised or prevented altogether.

Mine water discharge to Wangcol Creek can only become environmentally neutral by being treated to an EC standard of 30µS/cm, which is the natural background for the Coxs River headwaters. Otherwise discharges will be maximised and the project will become a waste of resources.

Blue-green algae Red alerts have occurred in Lake Wallace, between Lake Wallace and Lake Lyell, in the past 3 years. These alerts are due to high levels of nutrients in these lakes. Mine water from the Springvale mine is associated with high levels of ammonia. Plant nutrients must be removed from mine water to prevent future algae and aquatic weed outbreaks.

The long term water quality objective in the development consent (SSD 5594) of reducing salinity in the Coxs River to 350 uS/cm is unachievable unless all sources of salinity are addressed by the proposed mine water transfers to and use by the Mt Piper Power Station.

7 Wangcol Creek unsuitable to receive treated mine water

The Springvale Water Treatment Project proposes to discharge to Wangcol Creek. On page 5.17 the EIS states that 'The treatment process would result in losses through the treatment process associated with the residuals and brine management streams resulting in up to 32 ML/day potentially available for either use in the power station or release to Wangcol Creek.'

The analysis on table 10.7 on page 10-29 is a considerable understatement and not based on real measurements from this creek but on assumed salinity levels. If there are new discharges to Wangcol Creek, the salt balance modelling has understated the consequent salt loads for scenarios 1 to 3 because of unassessed contributions made by contaminated groundwater. Wangcol Creek carries salt emitted from waste heaps associated with Mt Piper power plant and former open-cut areas that surround it. When discharges flow through Wangcol Creek, areas previously subjected to open-cut mining will emit saline groundwater to Wangcol Creek. These unassessed groundwater

contributions will then flow to the Coxs River. There may also be seepages from the uncapped fly ash emplacement area that emerge upstream of LDP 006.

The more water discharged to Wangcol Creek, the more salinity will be discharged from near-surface groundwater in open-cut areas located downstream from the discharge point. More water from the treatment plant will also facilitate salt to be swept through Wangcol Creek.

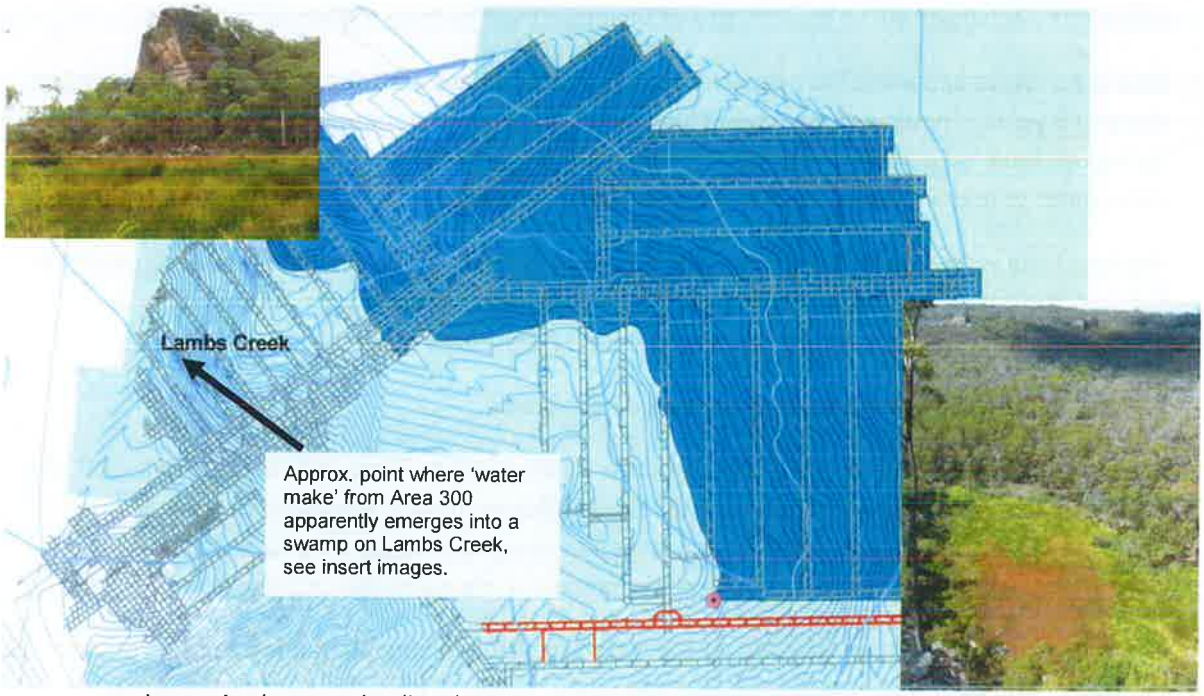
While headwater streams naturally have low salinity of around 30µS/cm, highly disturbed Wangcol Creek flows are much more saline than 108µS/cm, and not just due to LDP006. The catchment runoff salinity could be at least an order of magnitude greater than the estimate of 316.3 tonnes/year.

The very last thing that should be proposed is to increase discharges down Wangcol Creek, as they will be highly saline. The Colong Foundation is totally opposed to any discharges to Wangcol Creek and these discharges will push a plume of salt down the Coxs River.

8 Proposed temporary mine water storage in Angus Place mine should not be part of this project

Angus Place Mine has in the past denied that it is possible for mine water to emerge at Lambs Creek as their storage is about 100 metres below the surface. The Colong Foundation retains doubts about this underground storage and Lambs Creek. The large unnatural 'spring' on Lambs Creek at the point indicated below remains a mystery.

The figure and inset images above indicate the arrangement of Angus Place underground storage and a very



green, iron stained swamp that lies above it. Swamps that receive mine effluent, such as those at the Baal Bone Colliery have a similar appearance.

The Colong Foundation opposes use of this underground storage as part of the Springvale Water Treatment project. The spring that surfaces at Lambs Creek is suspect and probably contaminated

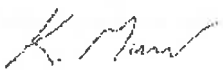
with untreated mine water. The use of this storage may see untreated additional mine water discharged to Lake Burragorang via Lambs Creek.

The Colong Foundation proposes the following consent conditions:

1. The existing pipeline easement from the balance tank on Newnes Plateau to LDP009 should be used by any future pipeline.
2. The operator of Mt Piper Power Plant must store all surplus mine water in its storages.
3. The operator of Mt Piper Power Plant must use all available mine water from its storages for the purpose of power generation.
4. The operator of Springvale Mine must provide all mine water to the operator of Mt Piper Power Plant in a manner suitable for reuse in the plant's cooling towers.
5. The operator of Springvale Mine must construct the mine water transfer pipeline with sufficient capacity to accept transfers from the Clarence Colliery.
6. No treated mine water shall be released to Wangcol Creek. [As an alternative to this preferred condition, Mine water discharged to Wangcol Creek must be treated to an EC standard of 30µS/cm.]
7. Cooks Dam shall not discharge to Wangcol Creek.
8. All water stored in Cooks Dam must be provided to the operator of Mt Piper Power Plant in a manner suitable for reuse in the plant's cooling towers.
9. Mine water must not be stored in Angus Place mine as part of the Springvale Water Treatment Project.

Thank you for the opportunity to comment on the Springvale Water Treatment Project.

Yours sincerely,



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Nature Conservation Saves for Tomorrow

6 November 2016

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NSW Department of Planning & Environment
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Springvale Water Transfer and Treatment Project SSD 16_7592 [SWTTP]

1. Summary and conclusions

1.1 Overarching comments

- The Blue Mountains Conservation Society (herein BMCS or the Society) recognises the benefits of transferring mine-water to the Mount Piper Power Station (MPPS); indeed, along with the Colong Foundation and others within the Gardens of Stone Alliance, BMCS has strongly advocated this action.
- The SWTTP states (Executive Summary piii) that the key objectives are to (i) *"improve environmental outcomes for the receiving waters of the Upper Coxs River catchment"*, and (ii) *"meet the water quality performance measures for mine-water discharges required under the Springvale Mine Extension Project"*. Objective (i) is admirable, but objective (ii) entrenches performance measures that were a compromise devised[1] to accommodate discharges through LDP009 and various other discharge points; the SWTTP renders the compromise redundant.
- The SWTTP emphasises compliance with SSD_5594 Schedule 4 Condition 12 in relation to mine-water discharges (Executive Summary piii), but seemingly disregards Condition 13 (Upper Coxs River Action & Monitoring Plan)[2] items (c) and (e).
- **The Society strongly opposes parts of SSD 16_7592 because they fail to more comprehensively use the transfer option and insufficiently avoid adverse environmental consequences; these deficiencies can and must be rectified.**

1.2 List of conclusions

C1. The performance measures relating to mine-water discharges in SSD_5594 Schedule 4 Condition 12 are rendered inapplicable by Option 2 in the EIS; any consent related to the SWTTP must include new performance measures and have an appropriately amended Upper Coxs River Action & Monitoring

[1] Through discussions between Centennial, the EPA, and perhaps other unknown parties.

[2] The Secretary may have deferred the Plan's submission date (due 30/06/2016), but major concerns exist about the aquatic system in relation to the long-term objective for salinity and the concentration-limits for a range of toxic metallic and non-metallic ions; the EIS inadequately addresses this.

Plan; and, any SWTTP consent must contain penalties for failing to meet the planning, construction and commissioning deadlines determined for Option 2.

C2. *No significant argument has been presented in favour of the northern easement and that, from an environmental viewpoint, the southern easement must be followed.*

C3. *Treatment to a salinity of 500 µS/cm EC inadequately meets the long-term target of 350 µS/cm EC for the Coxs River catchment and definitely does not restore the pre-mining water quality of ~30 µS/cm EC.*

C4. *SWTTP (SSD 16_7592) inadequately addresses the consequences of: shutting down (temporarily or otherwise) the MPPS; transferring excess treated water to Wangcol Ck; and failing to fully comply with SSD_5594 Schedule 4 Condition 13 items (c) and (e), and MPPS's Water Access Licence #27428 Condition 4.*

C5. *Irrespective of which option, or variant of an option, in EIS Table 4.1 p4-4 is ultimately chosen, the existing southern easement should be used.*

C6. *As advocated in the EIS, Option 2 is the best of the five options proposed, but it is deficient in the context of conclusions C1, C3 and C4, and must be modified.*

C7. *If the treatment plant shuts down, the raw mine-water should be diverted to Thompsons Ck Reservoir for dilution and future availability - this issue must be addressed and a solution identified in any approval of a modified SSD 16_7592.*

C8. *Excess treated water should be transferred to the Thompsons Ck Reservoir, rather than sending it, via the proposed new discharge point, to the already polluted Wangcol Ck – this should be addressed and an outcome justified in any approval of a modified SSD 16_7592.*

C9. *The treatment plant could continue to operate after the permanent shut down of MPPS. The treated water could discharge principally to Wangcol Ck and the treatment should achieve a salinity of less than 350 µS/cm EC, but as close to 30 µS/cm EC as is practicable – these aspects should be considered in any approval of a modified SSD 16_7592.*

C10. *With due reference to conclusions C6, C8 and C9, the raw mine-water supply could and should be boosted by supply from other LDPs and Clarence Colliery, and treated water in excess of MPPS's needs should be sent to Thompsons Ck Reservoir, and/or the treatment plant's salinity target should be lowered.*

C11. *The proposed closure of LDP009 and the transfer of the raw mine-water to a treatment plant at MPPS, together with returning excess treated water to the Wangcol Ck catchment, would yield positive outcomes. Nevertheless, there are simple modifications which could and should be made; they would increase the effectiveness of the treatment plant and have better environmental outcomes.*

C12. *Wangcol Ck contributed salinity and other contaminants to the Coxs R pre-LDP006. The toxic discharges from LDP006 have greatly magnified the problem, and discharging treated water (~500 µS/cm EC) to Wangcol Ck from the proposed new discharge point will further detract from water-quality of the Coxs R. To the extent that an important aim of the whole exercise is to greatly improve the water-quality, there has been a lowering of the salinity but this has in many cases been accompanied by increased water volumes and larger salt loads. There is room for improvement.*

2. Contentious issues

2.1 The selected strategy

The base case (Option 1) and the preferred case (Option 2) are in the Environmental Impact Statement (EIS) Section 4.2 pp 4-3 to 4-7; there is no difference between these two until June 30, 2017, at which time the much-vaunted consent in SSD_5594 Schedule 4 Condition 12[3] should be implemented. In reality, there has been no significant movement in relation to Option 1, and Option 2 is the preferred strategy. This means that

[3] Meet limits for salinity of 700 (50th percentile), 900 (90th percentile) and 1,000 (100th percentile) µS/cm EC **by 30 June 2017.**

the requirements in footnote 3 **will be disregarded** and highly saline mine-water (1200 µS/cm) will be discharged via LDP009 on Sawyers Swamp Creek to the Coxs River **until the transfer infrastructure and treatment plant at MPPS are fully commissioned.**

Based on the Secretary's apparent decisions to date, it is unlikely that the consent condition for 30 June 2019[4] will be rigidly enforced. Statements about fast-tracking the infrastructure required for Option 2 are easily made, but the current situation of discharging saline mine-water (→1200 µS/cm) to the Coxs River could continue unabated until such time as Option 2 comes on line; it is unlikely that this would disturb Centennial! In effect, the whole process would now seem to be open-ended, as there are no applicable performance measures.

The Society concludes that:

C1. The performance measures relating to mine-water discharges in SSD_5594 Schedule 4 Condition 12 are rendered inapplicable by Option 2 in the EIS; any consent related to the SWTTP must include new performance measures and have an appropriately amended Upper Coxs River Action & Monitoring Plan; and, any SWTTP consent must contain penalties for failing to meet the planning, construction and commissioning deadlines determined for Option 2.

2.2 Raw mine-water transfer pipeline (EIS Section 4.2.3 pp4-11 to 4-13)

The Society finds the argument, that the northern alignment has better environmental outcomes than the southern alignment, totally devoid of logic. It is conceivable, that the new route is preferred because it will cost less to implement and be easier to maintain, but if this is the case, presenting an argument based on environmental outcomes is deceptive and should be treated accordingly.

In terms of the number of hectares compromised, the northern alignment is said to impact 3.6 ha less. This is seemingly due to the southern route being slightly longer, which BMCS acknowledges, but it seemingly disregards the fact that the southern route is already damaged by emplacement of the Springvale-Delta-Water-Transfer-Scheme (SDWTS).

The northern easement will desecrate a scenic and ecologically significant section of the escarpment termed the Clerestory Spurs, as well as impacting endangered ecological communities, removing large numbers of hollow trees and threatening fauna[5]. These aspects can be offset under the current system, but it must surely be asked why cause this damage with a new route when the original southern route (at least considered the best route at that time) has already suffered?

Exacerbating disturbance along an already damaged route, as opposed to creating a new route down an undamaged section of the escarpment is deplorable.

The Society concludes that:

C2. No significant argument has been presented in favour of the northern easement and that, from an environmental viewpoint, the southern easement must be followed.

2.3 Raw mine-water treatment (EIS Section 5.1.2 pp5-3 to 5-4)

The Society supports **the concept** of transferring raw mine-water to MPPS for treatment and industrial use. However, the matters to be resolved are whether or not: (i) the level of treatment, and (ii) the non-industrial disposal of excess treated water, best fit the long-term ambitions for water quality in the Upper Coxs River catchment. Although items (i) and (ii) are inevitably interdependent, the principal examination of item (ii) will take place in Section 2.4.

In Section 3.1 above, the original consent (SSD_5594 Schedule 4 Condition 12) set the target salinity for mine-water **discharges from LDP009** as 500 (90th percentile) µS/cm EC by 30 June 2019, and the EPA opted for a long-term aspirational target for the Coxs River catchment of 350 µS/cm EC [6]. The aspirational

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[4] Meet a limit for salinity of 500 (90th percentile) µS/cm EC by **30 June 2019.**

[5] MU 11 (HN 572) Snow gum grassy forest on damp flats, and MU 53 (HN 602); see EIS Fig. 11.1 and Tables 11.3 and 11.7 pp11-6 and 11-13 to 11-15 respectively.

[6] This is to be determined as identified in SSD_5594 Schedule 4 Condition 13(c).

target seemingly disregards the fact that the waters upstream of mining have very low salinities in the order of 30 µS/cm EC.

The selection of 500 µS/cm EC as the treatment outcome under the **original consent** apparently resulted from discourse between the EPA and Centennial, and a statement by Energy Australia[7] that it would prefer the water in Lake Wallace to have a salinity at (or less than) 500 µS/cm EC. BMCS was not a party to the discourse which resulted in the **original consent,** and nor was it a party to the discourse leading to the **SWTTP** and the **current EIS.** In both cases, however, it seems that 500 µS/cm EC was chosen to meet the needs of Springvale and Energy Australia, rather than to achieve the best environmental outcome for the Coxs River.

The Society concludes that:

C3. Treatment to a salinity of 500 µS/cm EC inadequately meets the long-term target of 350 µS/cm EC for the Coxs River catchment and definitely does not restore the pre-mining water quality of ~30 µS/cm EC.

2.4 Treated water disposal (EIS Section 5.2.2 pp5-7 to 5-9; Section 5.4 pp5-17 to 5.18)

The Society is only concerned with the disposal of the excess treated water (i.e., the water excess to MPPS's needs that will be directed to Wangcol Ck and then, in the open watercourse, to the Coxs R). Fig. 5.5 p5-9 shows that the piped excess will enter an improved channel, which already carries the discharge from LDP006, before **both** enter Wangcol Ck. The input to Wangcol Ck in terms of flow-volumes and salinity will be a function of the two sources.

EIS Section 5.4 provides information pertinent to the effectiveness of the SWTTP and the water quality entering Wangcol Ck:

- Transfer of raw mine-water will peak at 36 ML/dy, but losses in the treatment process of ~4ML/dy will reduce this to about 32 ML/dy of treated water. The raw mine-water supply is variable (see Fig. 5.9 p5-18); **the available treated water** will follow the same-shaped curve but, assuming constant treatment-losses, will be consistently less by 4 ML/dy.
- MPPS's 'make-up' water needs range from 54 ML/dy at full capacity, down to 30ML/dy when working at or less than 50% capacity, to virtually nothing should shut down be necessary.
- The 'make-up' (under the favoured Option 2) is to be firstly met by the available treated water and secondly (only when necessary) by water from the catchment under the Coxs River and Fish River Water Supply schemes.
- When MPPS is operating at 50% capacity or less, excess treated water will be sent to Wangcol Ck – amounts at 50% capacity will be 0-5 ML/dy, but this could be 32ML/dy should MPPS be shut down temporarily (~1-2 dy/annum) or permanently. The latter would have ramifications; **the possibility MUST be covered in any agreement between Centennial and EA, and in any approval of SSD 16_7592.**

The principal problems associated with favoured Option 2, **in addition to those already identified in Section 2.3 conclusion *C3* and dot-point 4 above,** are now more apparent and comprise:

- ➢ wasting treated water by sending it to Wangcol Ck and thence down-stream to the Coxs River, rather than retaining it for industrial use;
- ➢ using treated water to flush the polluted Wangcol Ck would enhance the **volume of polluted water** and thereby increase its dissolution capacity; in contrast, the EIS (Executive Summary, pvi) places emphasis on the reduction of Wangcol Ck's salinity by averaging it down through mixing (but still leaving it highly saline and toxic), and thereby providing a beneficial outcome[8].

[7] Prior to the discussions related to transferring the raw water to Mt Piper for treatment and industrial reuse

[8] In simple terms, if a litre of high-salinity water is mixed with a litre of low-salinity water the result is two litres of moderate-salinity water – examination of EIS Tables 10.5 and 10.7 provide some insight into the water-volumes and salt-tonnes contributions from the proposed discharge point and LDP006.

- failing to treat other polluting discharges (e.g., LDP006) in accordance with what was envisaged in SSD_5594 Schedule 4 Condition 13 items (c) and (e), despite the emphasis placed on this in EIS Section 4.1 p4-2[9]; and,
- failing to comply with MPPS's Water Access Licence #27428 Condition 4 which requires that all available mine-water be used for generating power, before drawing water from the Coxs River.

The Society concludes that:

C4. SWTTP (SSD 16_7592) inadequately addresses the consequences of: shutting down (temporarily or otherwise) the MPPS; transferring excess treated water to Wangcol Ck; and failing to fully comply with SSD_5594 Schedule 4 Condition 13 items (c) and (e), and MPPS's Water Access Licence #27428 Condition 4.

3. Resolution of contentious issues

Conflict exists between the key objectives of SSD 16_7592 (SWTTP – see Section 1 dot-point 2 above), SSD_5594 Schedule 4 Conditions 12 and 13 [items (c) and (e)], and MPPS's Water Access Licence #27428 Condition 4. The aim should be to reconcile these whilst minimising the environmental damage resulting from ongoing discharges of LDP009, **and various other discharge points,** to the Coxs River. The conflict reflects the evolution of the consent conditions in SSD_5594 Schedule 4 from ones designed to enable approval of the Springvale extension, whilst concurrently cleaning up a range of other saline discharge points, **all to be done at Springvale's expense**, to ones potentially considering the industrial reuse of mine-water in relation to stipulations in MPPS's Water Access Licence[10].

3.1 The transfer and treatment system

3.1.1 Transfer to LDP009 (Relates to Section 2.2 above)

Section 3.2, conclusion ***C2***, indicated that the southern easement for the raw mine-water transfer pipeline must be followed to ensure the least environmental impact. Provided that the southern easement is followed, this part of the transfer system is not contentious because all five options in EIS Table 4.1 p4-4 require piping the mine-water to LDP009.

The Society reiterates that:

C5. Irrespective of which option, or variant of an option, in EIS Table 4.1 p4-4 is ultimately chosen, the existing southern easement should be used.

3.1.2 Treatment and reuse aspects (Relates to Section 2.3 above)

Due to the expressed preference for Option 2 in the EIS, relatively little consideration (beyond EIS Section 4.2.2 p4-11) was given to why Option 2 was chosen. There are, however, significant differences, so to highlight this, each is now summarised:

- Option 1 (base case) plus Option 1 (involving RO desalination of **'all flows'**[11] before discharge through LDP009) is as originally negotiated between Centennial and concerned parties including the EPA, Water NSW and Energy Australia. It requires treatment by RO before discharge at LDP009 and therefore involves minimal additional piping. All the LDP009 effluent is **ultimately** to be treated to a salinity of 500 µS/cm EC. The option is considered by Centennial to be too costly and impracticable, despite Centennial having the benefit for many years of more than favourable discharge conditions and high coal prices.
- Option 2 requires piping the raw mine-water through to the treatment plant at MPPS – all the water will be treated to achieve a salinity of 500 µS/cm EC – provision exists for disposal ('environmental release') of excess treated water to Wangcol Ck and thence to the Coxs River.

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[9] Condition 13 includes the requirement to *"...identify all available water management measures including...consideration of all licensed discharge points within the Upper Coxs River Catchment."*

[10] The details of any agreement between centennial and Energy Australia regarding who pays for what are unavailable.

[11] This is taken to mean flows from LDP009 **plus other Centennial-controlled LDPs impacting on the Upper Coxs River.**

- Option 3 involves direct transfer of raw mine-water to MPPS for use without prior treatment – MPPS would need to make substantial modifications to its plant and operational procedures – raw mine-water excess to MMPS's requirements would be sent either to Thompsons Ck Reservoir or Angus Place underground storage. This may well have satisfied Centennial, but it is likely that MPPS opposed this.
- Option 4 involves direct transfer of raw mine-water to Thompsons Ck Reservoir where dilution would be effected by blending with water from Lake Lyell via Thompsons Ck Reservoir. This was arguably the best option in view of it using much existing infrastructure and resolving the problem in Option 3 of storing 'excess' raw mine-water. Option 4 would have suited Centennial and MPPS but was considered to have substantial social and technical difficulties, and faced the risk of accumulated salinity in the reservoir.
- Option 5 necessitated transferring raw mine-water to Wallerawang Power Station to use the existing RO infrastructure. Although this has the advantage of using existing pipelines and RO infrastructure, the limited capacity of the RO plan meant that large volumes of raw mine-water would need to be sent to Thompson's Ck Reservoir as in Option 4.

All of these options potentially resolve Centennial's problem of needing to stop highly polluting mine-water from LDP009 being discharged to the Coxs River, **but only Option 1 (post-June 30, 2017) and Option 2 treat all the raw mine-water by RO**[12]. The importance of RO treatment, as opposed to various forms of dilution and blending employed in several of the other options, is that as well as reducing the salinity, it more efficiently removes the toxic metallic and non-metallic ions which particularly impact on macroinvertebrate fauna. This is especially important for Option 1 because **all the treated water** will be discharged to the Coxs River.

The downside for Option 1 is that **none of the treated water** will be industrially reused, whereas in Option 2, a high proportion will be reused by MPPS. From an environmental viewpoint, industrial reuse is preferable because the costs associated with treatment are effectively offset by a form of industrial reuse which greatly lessens the need to use 'make-up' water from Lake Lyell.

In terms of achieving the 500 µS/cm EC 'consensus'[13] value, or aiming for something better, Option 1 will not reach 500 µS/cm EC until June 30, 2019, while Option 2 has yet to have performance measures finalised, unless those in SSD_5594 Schedule 4 Condition 13 items (c) and (e) are deemed to apply?

The Society concludes that:

C6. As advocated in the EIS, Option 2 is the best of the five options proposed, but it is deficient in the context of conclusions C1, C3 and C4, and must be modified.

3.2 Option 2 water disposal (Relates to Section 2.4 above)

3.2.1 Treatment plant shut down

Were the treatment plant to shut down for maintenance, or on a more protracted basis, the raw mine-water would need to be transferred to a holding reservoir. Two possibilities are envisaged:

- Transfer to Angus Place's underground workings, where it would effectively become part of the groundwater and, although not clearly stated, be lost from the SWTTP – there is some concern about the integrity of this option to the extent that it might leak to the nearby surface[14].
- Pumping the mine-water to Thompsons Ck Reservoir where a degree of dilution could take place – the diluted water could then be sent to the treatment plant (or direct to the MPPS) should the need arise. **BMCS sees this as the better possibility**.

[12] Unless, with either option, the treatment plant is shut down for maintenance or a major breakdown occurs – in such circumstances, raw mine-water would probably be sent to Thompsons Ck Reservoir or Angus Place underground storage.
[13] The 'consensus' does not include environmental groups which continue to argue that the RO output should match the pre-mining salinity of the receiving watercourse (**~30 µS/cm EC**); even where this salinity-level is opposed on the basis of cost, the output should at least conform with the Upper Coxs R catchment target of 350 µS/cm EC.
[14] This is covered in the submission by Mr Muir on behalf of the Colong Foundation.

The Society concludes that:

C7. If the treatment plant shuts down, the raw mine-water should be diverted to Thompsons Ck Reservoir for dilution and future availability - this issue must be addressed and a solution identified in any approval of a modified SSD 16_7592.

3.2.2 MPPS shut down and treated water exceeds MPPS's needs

The main concerns to be resolved in this subsection are: the reduction of economic and environmental benefit from sending the treated water down Wangcol Ck; the future of the treatment plant should MPPS permanently shut down; and, the long-term implications for the transfer of raw mine-water to the treatment plant.

Other concerns such as the impact of the cumulative flows on Wangcol Ck, and the role of Wangcol Ck and other sources of pollution in the water quality of the Upper Coxs R will be considered in Section 3.4.1 and 3.4.2.

Were the MPPS to shut down (temporarily or otherwise), or were the availability of treated water to exceed MPPS's needs, up to 32 ML/dy of treated water could be transferred to the proposed discharge point near Wangcol Ck (refer to Sections 2.4 and 3.1.2 Option 2). Should this transfer happen, or should the treated water be retained for future use in the MPPS?

Treating Springvale's polluted mine-water, as opposed to sending it down the Coxs River, creates a substantial environmental benefit. By promoting reuse of mine-water in place of water from Lake Lyell, the EPA is commendably attempting to clean up the consequences of past practices. Energy Australia also gains an efficiency dividend by having a compositionally consistent low-salinity source of water for use in the MPPS.

The EIS Option 2 does not consider retaining the treated water, presumably because the costs of transferring it to Thompsons Ck Reservoir for subsequent reuse are apparently deemed unacceptable. The Society believes that transfer and reuse should be (re)considered, rather than Centennial being too influenced by the cost and claims of a beneficial outcome from discharging to Wangcol Ck (refer to Section 2.4 arrow-point 2 above and also to footnote 8). The need for reconsideration particularly applies, because the high volumes of water using Wangcol Ck, especially if MPPS is shut down or on less than 50% capacity (for an indication, see EIS Table 10.5 p10-14), could cause local flooding and scouring of the water course with release of partly buried coal waste.

The Society concludes that:

C8. Excess treated water should be transferred to the Thompsons Ck Reservoir, rather than sending it, via the proposed new discharge point, to the already polluted Wangcol Ck – this should be addressed and an outcome justified in any approval of a modified SSD 16_7592.

The future of the treatment plant should MPPS **permanently shut down**, and the implications for the transfer of raw mine-water to the treatment plant over the long term, do not seem to have been addressed in the EIS. It is likely that:

- the treatment plant would continue to process all available mine-water;
- the treated mine-water would presumably be sent to the Coxs R via the proposed discharge point on Wangcol Ck, although some could be used to maintain water levels in Thomsons Ck Reservoir, despite this no longer being needed for the MPPS; and,
- there seems to be no reason why this couldn't continue over the longer term, although the impact on Wangcol Ck's morphology would need further investigation (see EIS Section 10.3.3 p10-41.

In view of the large volume of treated water continuously flowing down Wangcol Ck and into the Coxs R system, the RO process should achieve a salinity of at most 350 µS/cm EC and ideally about 30 µS/cm EC to maximise the environmental benefit.

The Society concludes that:

C9. The treatment plant could continue to operate after the permanent shut down of MPPS. The treated water could discharge principally to Wangcol Ck and the treatment should achieve a salinity of less than 350 µS/cm EC, but as close to 30 µS/cm EC as is practicable – these aspects should be considered in any approval of a modified SSD 16_7592.

3.3 The SWTTP – an aims/deficiencies summary

From an environmental viewpoint, the main aims of the SWTTP should be to:

- use mine-water in MPPS in place of surface water which feeds Sydney's drinking-water supply – this benefits Springvale by taking its mine-water and Energy Australia by accepting the mine-water and thereby complying with its Water Access Licence;
- ensure discharges from LDP009 and several other Centennial-controlled discharge points comply with water quality performance measures and the action and monitoring plan stipulated in SSD_5594 Schedule 4 Conditions 12 and 13 [items (c) and (e)] – this benefits Centennial by focusing the need to resolve long-standing discussions with the EPA over many LDPs, and thereby improve water quality in the Upper Coxs River Catchment; and,
- not to enshrine parts of existing operations which detract from the overriding intention to restore water quality within the Upper Coxs River Catchment.

Neither Option 2 nor any of the other options fully comply with the aims. The main deficiencies of the favoured Option 2 are:

- The MPPS at times requiring **more than** the available amount of treated water and therefore needing to draw water from Lake Lyell – this contravenes dot-point 1. **This could be overcome by increasing the supply of raw mine-water by adding the supply from other LDPs, and including the relatively low-salinity water from Clarence Colliery**[15].
- The MPPS at times requiring **less than** the available amount of treated water, thereby necessitating the excess treated water being discharged to Wangcol Ck – in fact, the discharge-volumes increase as power generation decreases (e.g., see EIS Table 10.5 p10-14). Dot-points 1 and 2 are both contravened, but the matter could be resolved by sending the discharges to Thompsons Ck Reservoir, and/or lowering the salinity of the treatment plant's output.
- The failure to commit to treating the other sources of polluted water that exist within the catchment (see EIS Fig, 10.1 p10-10) contravenes dot-point 3. The problem could be resolved by connecting these discharge points to the treatment plant or (perhaps less satisfactorily) to Thompsons Creek Reservoir.

The Society concludes that:

C10. With due reference to conclusions C6, C8 and C9, the raw mine-water supply could and should be boosted by supply from other LDPs and Clarence Colliery, and treated water in excess of MPPS's needs should be sent to Thompsons Ck Reservoir, and/or the treatment plant's salinity target should be lowered.

3.4 Wangcol Ck and other sources of pollution (Partly relates to Sections 2.4 and 3.3 above)

3.4.1 Wangcol Ck condition pre-LDP006

EIS Fig 5.2 p5-2 shows the relationships between the Coxs R, Wangcol Ck and Neubecks Ck, while EIS Fig 10.1 p10-10 shows the location of LDPs, coal mines, and handling and treatment facilities, relative to Wangcol Ck. A legend of ownership of the LDPs is in EIS Fig 10.4 p153.

[15] This is environmentally desirable in that it would protect the Wollangambe R and World Heritage Area from Clarence's polluting discharges.

LDP1 (also reported as LMP1 in EPA Licence #13007)[16] relates to a holding pond which seems to drain via a narrow channel to Neubecks Ck. Below the confluence, the watercourse is called Wangcol Ck

Neubecks Ck has been used as a guide to background water-quality in the EIS's modelling, despite it running through a cleared region with possible evidence of exploration activity that suggests less than pristine conditions. This, together with input from LDP1, may explain why the modelling opted for a run-off salinity of 108 µS/cm EC[17], whereas pristine headwaters of the Coxs catchment have salinities ~30 µS/cm EC[18].

Further downstream on the northern bank of Wangcol Ck, the Yarraboldy Extension of the Pine Dale open-cut mine (currently owned by Energy Australia and under 'care and maintenance') has interfered with the groundwater regime and remains an ongoing potential source of contamination. The old Original Pine Dale open-cut mine has a much larger footprint, fully encompassing Wangcol creek [still called Neubecks Ck in some documents such as the Pollution Incident Response Management Plan (PIRMP), referred to in footnote 18 (b)] such that the whole tract was intensely disturbed, inadequately rehabilitated, and certainly a substantial source of pollution[19]. The damaged region extends through to LDP013, close to the Wangcol Ck-Coxs R confluence.

Wangcol Ck pre-LDP006 was a disrupted watercourse with significant salinity due to being a 'gaining' (influent) system with respect to the contaminated groundwater. In EIS Tables 10.1 p10-5 and 10.3 p10.7, the Wangcol Ck's catchment run-off of 2180 ML/yr and the contained 317.1 t/yr of salt, are not representative of the pre-mining natural conditions; rather, **they convey the characteristics imposed by mining before the advent of LDP006.**

3.4.2 Wangcol Ck condition post-Cooks Dam/LDP006 discharges

The Cooks Dam/LDP006 discharges are highly saline (~4550 µS/cm[20]) and toxic. For existing conditions (2016), EIS Tables 10.1 and 10.3 show that (at 50% power generation) LDP006 discharges 720 ML/yr of highly saline liquid with 1465 t/yr of salt load; for conditions into the future (2030) EIS Tables 10.5 p10-14 and 10.7 p10-29 predict that LDP006 will discharge 785 ML/yr with a salt load of 1614 t/yr.

Disregarding any proposed LDP discharges, which should be sent to the Thompsons Ck Reservoir rather than to Wangcol Ck (conclusion C10 above), the cited Tables show that salt loads entering the Coxs R from Wangcol Ck are dominated by LDP006. Even if the proposed LDP discharges are considered, the salt loads become roughly equivalent for Scenario 2 (25% power generation), but dominant for Scenario 1 (0% power). This outcome implies that:

- As the aim is to substantially improve the water-quality of the Coxs R, the LDP006 and proposed LDP discharges must be transferred to the treatment plant via Thompsons Ck Reservoir. To do otherwise would be totally unacceptable.
- Due to the proposed LDP discharges, Scenarios 1 and 2 show that the volume of salt entering the Coxs R increases, while the power generated falls to zero. This must always happen unless the salt-load in the treated water is zero. However, the rate of salt-increase is a function of the amount of salt stripped by the treatment process – the more efficient the stripping, the better will be the outcome.

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[16] I have not investigated the details of this discharge, but the holding pond would seem to relate to run-off from the main coal reserve – the discharge is likely to be saline and carry some coal fines and metallic ions.

[17] The upstream water-quality was based on 1 Neubecks Ck site and 3 Wangcol Ck sires and showed increasing salinity down flow (EIS Section 10.2.5 p10.11).

[18] Birch, G., Siaka, M., and Owens, C. (2001). The source of anthropogenic heavy metals in fluvial sediments of a rural catchment: Cox's River, Australia. Water, Air and Soil Pollution **126**, pp.13-35

[19] The history and current concerns may be sighted by entering https://www.google.com.au/search?q=LDP013+pinedale+NSW&ie=utf-8&oe=utf-8&gws_rd=cr&ei=5pQeWLiHPMr-0gShxrDwCA, clicking on: (a) Independent Environmental Audit Pine Dale Mine 2014 and opening the pdf; and (b) Energy Australia NSW Pine Dale Mine and opening the PIRMP pdf.

[20] Submission about Springvale Water Transfer and Treatment Project SSD 16_7592 by Keith Muir on behalf of the Colong Foundation.

Although salt-loads are important, it is salinity which influences the ecological health of the creek. EIS Table 10.10 p10-39 obtains a 'model' salinity of 850 µS/cm at the Wangcol Ck-Coxs R confluence for Scenario 3. This is too high from an environmental viewpoint and supports the view that:

- the LDP006 discharges must be transferred to the treatment plant via Thompsons Ck Reservoir; and,
- the treatment plant should be designed to achieve a lower salinity output (<<350 µS/cm EC).

3.4.3 Other sources of Coxs R pollution

EIS Figs 10.1 p10-10 and 10.4 p10-20 show the distribution of the other LDPs linked to Springvale and Angus Place mines. They comprise LDP001 and LDP002 from Angus Place Colliery, Springvale's LDP001, and Lidsdale Siding's LDP004[21]; others such as Springvale's LDP009 and LDP010 will be discontinued (EIS Exec Summary pvii), or are in a different catchment (Springvale's LDP004 and LDP005).

The sources collectively amount to 922.3 ML/yr (EIS Table 10.6 p10-16) and 436.6 t/yr of salt load (EIS Table 10.8 p10-30) under all Scenarios. These sources are of little significance in terms of their impact on the Coxs River catchment. Likewise, even if diverted to the Thomsons Ck Reservoir, their contribution to power generation would be negligible. It follows that their principal value is environmental, and that will only be achieved by sending them to the treatment plant via Thomsons Ck Reservoir so that most of their salt and metallic ions are stripped from the Coxs R catchment.

It seems likely that the reason the EIS made no provision for these sources of raw mine-water to be captured and treated is one of cost for the companies.

3.4.4 Flow and Salinity outcomes

The decision by Springvale to discharge highly saline (~1200 µS/cm EC) and toxic mine-water into the Coxs R via LDP009 on Sawyers Swamp Ck was strongly opposed by environmental groups, the EPA and the IESC (Independent Expert Scientific Committee). The ultimate Consent Conditions (not least in respect of SSD_5594 Schedule 4 Conditions 12 and 13) were a somewhat clumsy and contrived attempt to deal with problems which should have been sufficient to reject the Springvale Extension. The matters of how to resolve the mine-water discharge and adequately protect endangered Newnes Plateau Shrub Swamps and Hanging Swamps are still an unacceptable mess.

The EIS Tables 10.9 and 10.10 p10-39 attempt to portray the SWTTP in a positive light. Only Scenario 3 is used to convey what might happen as predicted by modelling.

The water-volumes at various points in the Upper Coxs R system (Tables 10.9) show very little difference other than for the Wangcol Ck-Coxs R confluence and the Sawyers Swamp Ck-Coxs R confluence. The latter is a direct function of the proposed closure of LDP009; the former reflects the proposed transfer of the LDP009 discharges to the treatment plant and the discharge of excess treated water to the proposed LDP adjacent to Wangcol Ck and LDP006.

The salinity data (Table 10.10) are more interesting. The Swayers Swamp Ck-Coxs R confluence result for Scenario 3 is a direct consequence of the proposed closing of LDP009. The Wangcol Ck-Coxs R confluence shows a small decease in salinity due to flushing of the system by substantial discharges from the proposed LDP of excess low-salinity (~500 µS/cm EC) treated water. The remaining locations show substantial improvements (lowering) of the salinity due to salt being removed in the treatment plant and excess treated water being returned to the system.

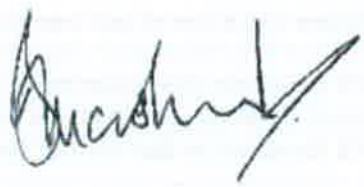
3.4.5 Conclusions for Section 3.4

[21] The possibility of transferring mine-water from Clarence Colliery to Thompsons Ck Reservoir as a basis for expanding the feed to the treatment plant is not part of this EIS, but it could resolve Clarence's problems over its pollution of the Wollangambe R.

The Society concludes that:

C11. The proposed closure of LDP009 and the transfer of the raw mine-water to a treatment plant at MPPS, together with returning excess treated water to the Wangcol Ck catchment, would yield positive outcomes. Nevertheless, there are simple modifications which could and should be made; they would increase the effectiveness of the treatment plant and have better environmental outcomes.

C12. Wangcol Ck contributed salinity and other contaminants to the Coxs R pre-LDP006. The toxic discharges from LDP006 have greatly magnified the problem, and discharging treated water (~500 µS/cm EC) to Wangcol Ck from the proposed new discharge point will further detract from water-quality of the Coxs R. To the extent that an important aim of the whole exercise is to greatly improve the water-quality, there has been a lowering of the salinity but this has in many cases been accompanied by increased water volumes and larger salt loads. There is room for improvement.



Dr Brian Marshall,
For the Management Committee.

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Preserving the Balance of Nature

Mining and Industry Projects
NSW Department of Planning & Environment
GPO Box 39 Sydney NSW 2001

8 November 2016

Dear Sir/Madam,

Re: Springvale Water Transfer and Treatment Project SSD 16_7592

The Lithgow Environment Group Inc. (LEG) welcomes this Proposal to re-use Springvale Colliery's minewater for cooling purposes in Mount Piper Power Station, which will finally:

- Enable Springvale Colliery to meet the commitments made to the EPA in 2005 under the Springvale – Delta Electricity Water Transfer Scheme[70] to protect swamps on Newnes Platea and clean up the Wolgan River by transferring minewater to Wallerawang Power Station for industrial reuse;
- Enable Energy Australia to meet Condition 4 of Water Access Licence No. 27428 issued in February 2014[71], which states:

  "The Licence Holder must not take any water from the Coxs River under this access licence unless the Licence Holder has first used all available mine water from its storages for the purpose of power generation." [71]
- Enable the Springvale Extension to (hopefully) achieve a Neutral or Beneficial Effect (NorBE) as required by State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011[75].

LEG does however have serious reservations about whether this Proposal in its current form can meet the stated objectives, and urges the DP&E to revise the following:

1. Wangcol Creek is not a suitable receiving environment for emergency minewater discharges;
2. LDP006 is a highly polluted and unstable environment;
3. The proposal fails to address all of Springvale's minewater discharge points;
4. Unnecessary duplication of the existing Springvale – Delta Electricity Water Transfer Scheme (SDWTS) pipeline alignment will cause unnecessary damage to the scenic Clerestory Spurs;
5. Appears to be designed more to dilute extremely high salinity (5190 uS/cm in April 2016) in Springvale's LDP006, rather than for reuse as cooling water in Mt Piper Power Station;
6. Toxicity of the LDP009 discharge – has it been addressed?
7. Temporary storage of Minewater underground at Angus Place Colliery

1. **Wangcol Creek is not a suitable environment for Emergency Discharges from LDP006.**

The Proposal intends to use LDP006 for Emergency Discharges whenever Mt Piper Power Station power has stopped for maintenance or is operating below capacity. Those emergency discharges will be dumped into receiving waters of LDP006, which has a current Salinity level >5000 uS/cm. This discharge will also exacerbate Salinity and Acid Mine Drainage (AMD) in Wangcol Creek downstream.

Wangcol Creek downstream of LDP006 is not a natural creekline. It is a highly disturbed artificial drain carved through coal waste and coal chitter from the old Wallerawang Colliery (now Pine Dale Mine). The photos below were taken in 2004, before Pine Dale Mine began operations. The unstable coal chitter along the creekbank can be clearly seen. The sinkhole where water was diverted into the old Wallerawang Colliery underground mine workings can also be clearly seen.

Allowing up to 30ML/day of emergency discharges to flow through such a highly disturbed environment will only exacerbate Acid Mine Drainage, Salinity problems, erosion, and siltation further downstream in the Coxs River.

LEG urges the DP&E to consider alternatives the LDP006 and Wangcol Creek for Emergency Discharges.

2. **LDP006 is a highly polluted unstable environment which must be addressed as part of this proposal**

LEG has been monitoring water quality at Springvale Coal Services LDP006 since 2006. LDP006 is by far the most polluted watercourse in the entire Lithgow LGA, and has been since 2010. Yet this is not identified in any of the documents presented in support of this Proposal?

Salinity at LDP006 has quadrupled in the past 10 years - from 1200 uS/cm in 2006, to 5190 uS/cm in June 2016. Salinity may quadruple again in the next 10 years, unless this issue is seriously addressed.

It would appear to LEG that the actual and perverse aim of this Proposal may be to use Springvale's treated minewater to dilute the LDP006 discharge - by dumping treated minewater with a Salinity of 500 uS/cm

into LDP006 with a Salinity of 5190 uS/cm. This defeats the entire purpose of this Proposal, which is supposed to be about lowering Salinity in the Coxs River by reusing minewater for cooling at MPPS. Furthermore no modelling has been provided to demonstrate if or by how much this will ultimately reduce the Salinity in the LDP006 discharge – short term or long term.

LEG points out that Salinity is a serious issue. Springvale's consultant Cardno Ecology Lab (2014) identified in the EA for the Springvale Extension that ***"The aquatic biota will thus be exposed to salinity conditions they have not previously experienced. These may result in direct toxic effects on some organisms and indirect effects on others through modification of species composition of the ecosystem."***

LEG's water quality monitoring since 2006 has identified Salinity as a major issue in the Coxs River catchment. The default ANZECC guideline trigger value for conductivity for an upland river is 350 uS/cm. 15 of the 30 sites regularly monitored by LEG exceed 350 uS/cm, all of which are associated with minewater or power station discharges. All undisturbed sites have a median salinity in the range of 30 – 50 uS/cm.

The Coxs River NOW Gauge (212054) confirms that Salinity levels have doubled between 1992 and 2016, from a mean of 615 uS/cm to a current mean of 1200 uS/cm.

The highest Salinity recorded by LEG was once Wallerawang Power Stations "Tortuous Water Course" discharge into the Coxs River below Lake Wallace, with a level of 2600 uS/cm. The Springvale LDP006 discharge far eclipses this at **5190 uS/cm** recorded in the Springvale Coal Services Environmental Monitoring Report June 2016[74].

The Water NSW NOW Gauge (2120654) Data demonstrates an upward trend in Salinity since 1992, and a marked increase since Wallerawang Power Station closed in 2014. Lake Wallace has the highest Salinity level ever. This is entirely attributable to Springvale's LDP009 minewater discharges of 1200+ uS/cm. This is over 4 times higher than the default ANZECC guideline trigger value for conductivity in an upland river of 350 uS/cm, a value which is totally unacceptable to LEG, and we believe to most people.

LEG has raised concerns on numerous occasions in submissions to the DP&E about Salinity levels in the Coxs River, Nuebecks Creek, Wangcol Creek, and the LDP006 discharge.

LEG's monitoring results for Salinity only at LDP006 since 2006 are shown below. LEG's Electrical Conductivity metre has a limit of 2000 uS/cm, so we have backed this up with data from monthly Springvale Coal Services Environmental Monitoring Reports[74] available on Centennial Coal's website. LEG has similar records for other Centenial LDP's, which LEG will retained for use through the most effective avenues.

SITE 18	DATE	EC uS/cm	COMMENTS
Springvale LDP006	24/10/06	1240	
Castlereagh Hwy,	18/11/06	1240	
Blackman's Flat.	31/12/06	1290	12mm rain
Downstream	25/1/07	1280	40mm rain

Lamberts Gully mine, Springvale Coal Services, Main Settlement Dam, Washery Sediment Dam, Stockpile Sediment Dam, coal fines recovery project, coal conveyor, and proposed LCC Regional Solid Waste Landfill. **33° 21.818'S** **150° 3.514'E** Altitude: 904m	1/4/07	1460	
	12/4/07	1450	
	22/4/07	1520	
	23/4/07	1510	
	29/4/07	1410	18mm rain
	6/5/07	1420	
	15/5/07	***1410***	***SCA Field Data***
	26/5/07	970	48mm rain
	1/6/07	1040	8mm rain
	14/6/07	870	88mm rain
	22/6/07	1170	35mm, no frogs
	30/6/07	1230	34mm, muddy
	23/7/07	1210	Rusty creekbed
	29/7/07	1180	Rusty creekbed, no frogs
	28/8/07	1120	25mm rain, rusty coloured water
	7/9/07	1050	Rusty creekbed, no frogs
	27/9/07	1010	Oil slick on surface, milky, no frogs
	11/10/07	1010	Oil slick on surface, slightly turbid
	30/10/07	1140	Oil slick with round silver blobs
	4/11/07	-	Turbidity after 50mm storm overnite
	30/11/07	1140	150mm rain Nov, muddy/milky
	31/12/07	1220	Rust colour water, rust on creekbed
	20/1/08	890	Muddy after 70mm rain o'nite
	2/3/08	1200	71 mm rain. Slightly muddy
	2/4/08	1040	Oil slick, flowing, rusty creekbed
	30/7/08	1150	Flowing, slight oil slick
	30/9/08	1100	Flowing, rusty colour, iron odour
	31/10/08	1110	
	25/1/09	1120	Milky/rust colour, good flow, Gambusia
	25/2/09	1120	Yellow/rusty, flowing, 30mm rain 7 day
	1/4/09	1200	20mm o/nite,rusty,good flow,Gambusia
	31/5/09	1390	Blue/grey, oil slick
	28/6/09	1510	Flowing well, clear, slight oil slick
	28/7/09	1500	Higher flow than usual, iron odour, yellow
	1/9/09	1290	Usual flow, oil slick on surface. Iron odour
	9/9/09		EPA Pollution Reduction Notice to Lambert's Gully Mine to reduce EC, Zn, Al, Ni, Mn in discharge from LD6
	30/9/09	1310	Yellow, oily scum on surface
	6/11/09	1650	Yellow/brown, pronounced oil slick
	12/12/09	1420	Low flow, rusty muck on surface, yellow
	11/2/10	1180	60mm rain w'end, brown, oil slick, low DO
	12/3/10	1750	High flow, slightly milky, poss. Gambusia
	10/9/10	-	Centennial dispute above but agree to try and reduce Ni, Zn & EC
	29/7/11	-	Julie attended inspection with Rob Hunt st LD6, aim to concrete-line creek as high metals are leaching from chitter previously dumped in creek
	April 2012	*2170*	*Springvale Coal Services Enviro Monitoring Report April 2012: A total of 101.6 ML of*

		water was discharged from LDP006 during April 2012, averaging 3.4 ML/day. Max was 6592 kL on 23 April 2012
May 2012	*2190*	*Springvale Coal Services Enviro Monitoring Report April 2012: A total of 44.8 ML of water was discharged from LDP006 during May 2012, averaging 1.4 ML/day. Max was 3799 kL on 1 May 2012*
June 2012	*1130*	*Springvale Coal Services Enviro Monitoring Report June 2012: A total of 29.18 ML of water was discharged from LDP006 during June 2012, averaging 0.97 ML/day. Max was 3447 kL on 16 June 2012*
July 2012	*554*	*Springvale Coal Services Enviro Monitoring Report July 2012: A total of 28.89 ML of water was discharged from LDP006 during July 2012, averaging 0.93 ML/day. Max was 3104 kL on 11 July 2012*
August 2012	*1380*	*Springvale Coal Services Enviro Monitoring Report August 2012: A total of 19.82 ML of water was discharged from LDP006 during August 2012 averaging 0.64 ML/day. Max 2357 kL, 8 July 2012 (August, their typo not mine!)*
September 2012	*1480*	*Springvale Coal Services Enviro Monitoring Report August 2012: A total of 26.27 ML of water was discharged from LDP006 during September 2012, averaging 0.88 ML per day. Max was 4569.43 kL on 17 September 2012.*
26/9/12	>2000	Flowing. Confronted by rude, arrogant defensive Big Rim staff member
October 2012	*1498*	*Springvale Coal Services Enviro Monitoring Report October 2012: A total of 12.8 ML of water was discharged from LDP006 during September 2012, averaging 0.41 ML per day. Max 989 kL 1/10/12*
22/11/12	>2000	Murky
November 2012	*2130*	*Springvale Coal Services Enviro Monitoring Report November 2012: A total of 7.91 ML of water was discharged from LDP006 during November 2012, averaging 0.28 ML per day. Max 492 kL on 28/11/12*
December 2012	*2610*	*Springvale Coal Services Enviro Monitoring Report December 2012: A total of 6.8 ML of water was discharged from LDP006 during September (their typo not mine!) 2012, averaging 0.2 ML per day. Max 2768 kL on 25/12/12*
10/1/13	>2000	Browny-milky
January 2013	*1340*	*Springvale Coal Services Enviro Monitoring Report January 2013: A total of 16.83 ML of water was discharged from LDP006 during January 2013, averaging 0.54 ML per day.*

			Max 4115 kL on 27/1/13
	February 2013	*1860*	*Springvale Coal Services Enviro Monitoring Report February 2013. A total of 79.5 ML of water was discharged from LDP006 during February 2013, averaging 2.84 ML per day. Max7695kl on 23/2/13*
	7/3/13	>2000	Grey-blue
	March 2013	*1620 1/3/13 2590 7/3/13*	*Springvale Coal Services Enviro Monitoring Report March 2013. A total of 90.9 ML of water was discharged from LDP006 during March 2013, averaging 2.93 ML per day. The first of March 2013 recorded a discharge of 11,652 kL, this is 1652 kL above the EPL discharge limit of 10,000 kL.*
	23/4/13	>2000	Milky-blue
	April 2013	*2790*	*Springvale Coal Services Enviro Monitoring Report April 2013. A total of 21.9 ML of water was discharged from LDP006 during April 2013, averaging 0.73 ML/day. Max 1688 kL 0n 1 April 2013*
	May 2013	*2490*	*Springvale Coal Services Enviro Monitoring Report May 2013. A total of 1.1 ML of water was discharged from LDP006 during May 2013, averaging 0.04 ML/day.*
	June 2013	*1100*	*Springvale Coal Services Enviro Monitoring Report June 2013. A total of 6.6 ML of water was discharged from LDP006 during June 2013, averaging 0.22 ML/day.*
	July 2013	*3000*	*Springvale Coal Services Enviro Monitoring Report July 2013. A total of 56.0 ML of water was discharged from LDP006 during July 2013, averaging 1.8 ML/day. Max 3816 kL on 6 July 2013*
	August 2013	*3180*	*Springvale Coal Services Enviro Monitoring Report August 2013. A total of 23.8 ML of water was discharged from LDP006 during August 2013, averaging 0.77 ML per day. Max 2340 kL 8/8/13*
	September 2013	*3140*	*Springvale Coal Services Enviro Monitoring Report September 2013. A total of 13.6 ML of water was discharged from LDP006 during September 2013, averaging 0.45 ML per day. Max 2105 kL 17/9/13*
	October 2013	*NA*	*Springvale Coal Services Enviro Monitoring Report Oct 2013. NA*
	November 2013	*NA*	*Springvale Coal Services Enviro Monitoring Report November 2013.*
	December 2013	*NA*	*Springvale Coal Services Enviro Monitoring Report December 2013.*
	January 2014	*NA*	*Springvale Coal Services Enviro Monitoring Report January 2014.*
	February	*NA*	*Springvale Coal Services Enviro Monitoring*

	2014		*Report February 2014*
	March 2014	*2920*	*Springvale Coal Services Enviro Monitoring Report March 2014. Max 4744 kL on 27 March 2014*
	April 2014	*3040*	*Springvale Coal Services Enviro Monitoring Report March 2014. Max 13542 kL on 4 April 2014, 3542 kL above the EPL discharge limit of 10,000 kL.*
	May 2014	*3250*	*Springvale Coal Services Enviro Monitoring Report May 2014. Max 3070 kL 29 Max 2014*
	June 2014	*3040*	*Springvale Coal Services Enviro Monitoring Report June 2014. 10935 kL on 7 June 2014 10728 kL on 8 June 2014 10427 kL on 9 June 2014*
	July 2014	*NA*	*Springvale Coal Services Enviro Monitoring Report July 2014.*
	August 2014	*2136*	*Springvale Coal Services Enviro Monitoring Report August 2014.*
	7/9/14	>2000	Murky
	September 2014	*3080*	*Springvale Coal Services Enviro Monitoring Report September 2014*
	October 2014	*1620*	*Springvale Coal Services Enviro Monitoring Report October 2014*
	November 2014	*NA*	*Springvale Coal Services Enviro Monitoring Report November 2014*
	December 2014	*3.67 mS/cm 3670 µS/cm*	*Springvale Coal Services Enviro Monitoring Report December 2014*
	January 2015	*4194, 4330*	*Springvale Coal Services Enviro Monitoring Report January2015*
	February 2015	*3420, 4550*	*Springvale Coal Services Enviro Monitoring Report February2015*
	March 2015	*4480, 4530*	*Springvale Coal Services Enviro Monitoring Report March 2015*
	April 2015	*2220,1220*	*Springvale Coal Services Enviro Monitoring Report April 2015*
	May 2015	*4000*	*Springvale Coal Services Enviro Monitoring Report May 2015*
	24/5/15	>2000	No great flow, grey green, photo
	June 2015	*3340*	*Springvale Coal Services Enviro Monitoring Report June 2015*
	July 2015	*2810*	*Springvale Coal Services Enviro Monitoring Report July 2015*
	August 2015	*3780*	*Springvale Coal Services Enviro Monitoring Report August 2015*
	September 2015	*2030*	*Springvale Coal Services Enviro Monitoring Report September 2015*
	November 2015	*1537, 1870*	*Springvale Coal Services Enviro Monitoring Report November 2015*
	December 2015	*4550*	*Springvale Coal Services Enviro Monitoring Report December 2015*
	12/1/16	>2000	Flowing well
	January	*1703*	*Springvale Coal Services Enviro Monitoring*

	2016		*Report January 2016*
	09/02/16	>2000	Flowing, 200mm rain in January
	February 2016	*4690, 4560*	*Springvale Coal Services Enviro Monitoring Report February 2016*
	09/03/16	>2000	Flowing
	March 2016	*4900*	*Springvale Coal Services Enviro Monitoring Report March 2016*
	10/4/16	>2000	Flowing, salt visible roadside drain
	03/05/16	>2000	Rusty slick on water surface
	April 2016	*4550*	*Springvale Coal Services Enviro Monitoring Report April 2016*
	May 2016	*4520*	*Springvale Coal Services Enviro Monitoring Report April 2016*
	June 2016	*5190*	*Springvale Coal Services Enviro Monitoring Report June 2016*
	July 2016	*4660*	*Springvale Coal Services Enviro Monitoring Report July 2016*

Licence Limit for Salinity

Springvale's EPL3607 has a Salinity limit of 1200 uS/cm for discharges from LDP009 into Sawyers Swamp Creek. However there is no Salinity limit for the LDP006 discharge into Wangcol Creek. Why not?

LEG urges the DP&E to Recommend a Salinity Discharge Limit for LDP006 as part of this Proposal.

Reinstate volumetric flow reporting at LDP006

From April 2012 to December 2014 Springvale Coal Services reported flow rates from LDP006 in monthly Environmental Monitoring Reports[74]. Centennial stopped reporting flow rates in December 2014.

LDP006 has volumetric discharge limit of 10,000 kL (10ML)/day under EPL3607. This has been exceeded on at least 5 occasions since 2013 – on 1 March 2013, 4 April 2014, 7 June 2014, 8 June 2014, and 9 June 2014. The maximum reported flow was 13,542 kL on 4 April 2014.

Some of that flow data from Springvale's monthly reports[74] is summarised below -

- April 2012: A total of 101.6 ML of water was discharged from LDP006 during April 2012, averaging 3.4 ML per day. Max was 6592 kL on 23 April 2012
- May 2012: A total of 44.8 ML of water was discharged from LDP006 during May 2012, averaging 1.4 ML per day. Max was 3799 kL on 1 May 2012
- June 2012: A total of 29.18 ML of water was discharged from LDP006 during June 2012, averaging 0.97 ML/day. Max was 3447 kL on 16 June 2012
- July 2012: A total of 28.89 ML of water was discharged from LDP006 during July 2012, averaging 0.93 ML/day. Max was 3104 kL on 11 July 2012
- August 2012: A total of 19.82 ML of water was discharged from LDP006 during August 2012 averaging 0.64 ML/day. Max 2357 kL, 8 July 2012 (read August, their typo not mine!)
- September 2012: A total of 26.27 ML of water was discharged from LDP006 during September 2012, averaging 0.88 ML per day. Max was 4569.43 kL on 17 September 2012

- October 2012: A total of 12.8 ML of water was discharged from LDP006 during October 2012, averaging 0.41 ML per day. Max was 989 kL 1/10/12
- November 2012: A total of 7.91 ML of water was discharged from LDP006 during November 2012, averaging 0.28 ML per day. Max was 492 kL on 28/11/12
- December 2012: A total of 6.8 ML of water was discharged from LDP006 during September (read December, their typo not mine!) 2012, averaging 0.2 ML per day. Max was 2768 kL on 25/12/12
- January 2013: A total of 16.83 ML of water was discharged from LDP006 during January 2013, averaging 0.54 ML per day. Max 4115 kL on 27/1/13
- February 2013: A total of 79.5 ML of water was discharged from LDP006 during February 2013, averaging 2.84 ML per day. Max 7695 kl on 23/2/13
- March 2013: A total of 90.9 ML of water was discharged from LDP006 during March 2013, averaging 2.93 ML per day. Max 11,652 kL on 1 March 2013, 1652 kL above the EPL discharge limit of 10,000 kL
- April 2013: A total of 21.9 ML of water was discharged from LDP006 during April 2013, averaging 0.73 ML/day. Max 1688 kL On 1 April 2013
- May 2013: A total of 1.1 ML of water was discharged from LDP006 during May 2013, averaging 0.04 ML/day
- June 2013: A total of 6.6 ML of water was discharged from LDP006 during June 2013, averaging 0.22 ML/day
- July 2013: A total of 56.0 ML of water was discharged from LDP006 during July 2013, averaging 1.8 ML/day. Max 3816 kL on 6 July 2013
- March 2014: Max 4744 kL on 27 March 2014
- April 2014: Max 13542 kL on 4 April 2014, 3542 kL above the EPL discharge limit of 10,000 kL
- May 2014: Max 3070 kL 29 Max 2014
- June 2014: exceeded 10 ML discharge limit on 3 occasions: 10935 kL on 7 June 2014, 10728 kL on 8 June 2014, and 10427 kL on 9 June 2014

Despite Centennial's reports[74] claiming zero flow on many occasions, LEG has never seen LDP006 not flowing since monitoring commenced at LDP006 in 2006. Centennial have averaged flow rates so that they appear to be as low as possible. However by averaging reported flow rates[74] from the 2012 – 2014, it is in the order of 2 - 4 ML/day – not an insignificant flow, and large enough to adversely impact on water quality and aquatic life in the Coxs River downstream.

How can the DP&E and EPA monitor compliance with the 10,000 kL (10ML)/day limit on LDP006 if it is not being recorded/reported? LEG urges the DP&E to reinstate Volumetric Reporting at LDP006.

Salt encrustation and Acid Mine Drainage along Castlereagh Highway adjacent Cookes and DML Dam

Of great concern to LEG is the salt encrustation and Acid Mine Drainage (AMD) observed along the Castlereagh Highway road verge adjacent LDP006 at various times since 2010, most notably in May 2013 and April 2016 (See photos below).

LEG cannot comprehend how the DP&E or any responsible NSW government agency can possibly regard this as acceptable in any waterway, let alone a drinking water catchment for 5 million people?

Photos taken adjacent the Springvale Coal Services Site - April 2016

Photos taken adjacent the Springvale Coal Services Site - April 2016

LEG urges the DP&E to seriously consider how this Proposal can address this ongong and escalating problem. Introducing yet more highly saline minewater into an already saturated environment is only likely to exacerbate the salt encrustation and Acid Mine Drainage issues adjacent LDP006. Dilution with minewater will only create additional problems now and long into the future.

The minewater flow from LDP006 should be collected as part of this proposal and be adequately treated.

The Springvale – Delta Electricity Water Transfer Scheme (SDWTS)

WPS once drew the majority of its cooling water needs from the Springvale Coal – Delta Electricity Water Transfer Scheme (SDWTS)[70] commissioned in 2006 to protect endangered swamps on Newnes Plateau and clean up the Wolgan River by transferring Springvale's polluted minewater to Wallerawang Power Station (WPS) for reuse for industrial purposes (ie. For power station cooling).

The Scheme had a capacity of 30 ML per day, and over the first six months of operation averaged a transfer rate of 15.55 ML of water each day. Since WPS closed that minewater has been dumped via Sawyers Swamp Creek into the Coxs River, undoing all of the good work done by the SCA, OEH and EPA over many years in an attempt to clean up Angus Place/Springvale Colliery minewater discharges.

The orginal intent of the SDWTS was to re-use that minewater for power station cooling. Springvale's minewater should have been diverted to Mount Piper Power Station as a Condition of Consent of the Springvale Extension, instead of being dumped into the Coxs River and Sydney's Drinking Water Catchment.

The DP&E, Springvale Coal, and Energy Australia should honour the original intent of the SDWTS.

EnergyAustralia's Water Access Licence 27428

WPS once drew approximately 25,000ML/year of water from the upper Coxs River catchment. This amount of water is no longer being extracted. Energy Australia's current Water Access Licence 27428, Statement of Conditions dated February 2014[71], allows for the extraction of 25,000 megalitres per year for cooling at Mount Piper Power Station. Condition 4 of that Licence states -

The Licence Holder must not take any water from the Coxs River under this access licence unless the Licence Holder has first used all available mine water from its storages for the purpose of power generation.

LEG urges the DPE&E to require Energy Australia to abide by Condition 4 of its Water Access License, and use the 30ML/day of available minewater Springvale Colliery is currently dumping into the Coxs River.

Lake Wallace and Lake Lyell are spilling more often

LEG believes there has been a tendency for the DP&E to regard Lake Wallace and Lake Lyell has huge 'pollutant traps' in the upper Coxs River catchment, which allow contaminants to 'settle out' prior to that water continuing further downstream into the Sydney Drinking Water Catchment.

But because Wallerawang Power Station has now closed, and Springvale Colliery has massively increased minewater flows, Lake Wallace has been constantly overflowing since the Springvale Extension was approved in September 2015, and Lake Lyell has similarly been overflowing more regularly. Prior to this Lake Wallace only overflowed during storms, and Lake Lyell didn't overflow for 11 years from 1999 to 2010.

Since WPS has closed and is no longer drawing 25,000ML/year from the catchment, and because Springvale Colliery has increased its minewater discharges to 30,000 ML/year, the 'pollutant trap' effect of Lake Wallace and Lake Lyell no longer applies. The upper Coxs River has become more of a 'direct flow system', polluted sediment accumulated over many decades is now being mobilised, and polluted minewater is now penetrating further down into the Sydney Drinking Water catchment than at any time in history.

Springvale's own consultant Cardno Ecology Lab (2014) identified in the EA for the Springvale Extension that ***"The aquatic biota will thus be exposed to salinity conditions they have not previously experienced. These may result in direct toxic effects on some organisms and indirect effects on others through modification of species composition of the ecosystem."***

This has implications for all aquatic life and all water-users downstream. The DP&E must ensure that Springvale's minewater is genuinely used for Power Station Cooling, and not as an adhoc stop-gap measure to dilute salinity in the LDP006 discharge.

4Nature vs Centennial Coal Court Case

LEG reminds the DP&E that the Land and Environment Court decision on 13 September 2016 demonstrated that the State Environmental Planning Policy (Sydney Drinking Water SEPP) cannot adequately protect water quality. This SEPP requires decision-makers to determine whether or not a proposal has a neutral or beneficial effect (NoRBE) on the water quality of receiving waters.

Two separate submissions by the SCA to the NSW Department of Planning and Environment and Planning Assessment Commission on 3 April 2014 and 12 November 2014 clearly stated that the 2015 Springvale Extension did not achieve NoRBE - yet the mine was still approved?

There is no guarantee that this Proposal will ever be built, and if so whether it will achieve NorBE.

4Nature is currently appealing Judge Pepper's decision.

It is a great shame that community groups have to go to such extraordinary lengths to do what the DP&E should have done in approving the Springvale Extension.

LEG strongly urges the DP&E to ensure that this proposal will genuinely have a neutral or beneficial effect (NoRBE) on water quality of receiving waters in Sydney drinking water catchment.

COMMUNITY CONCERNS ABOUT WATER QUALITY

LEG refers the DP&E to the Environment Assessment Report on the Springvale Extension. The report identified that of the 320 submissions received from the general public and interest groups, 229 (**72%**) objected to the project, 80 (**27%**) supported the project, and 5 (**1%**) were comments.

The two highest priority issues were Subsidence damage to peat swamps, and Water discharge quality.

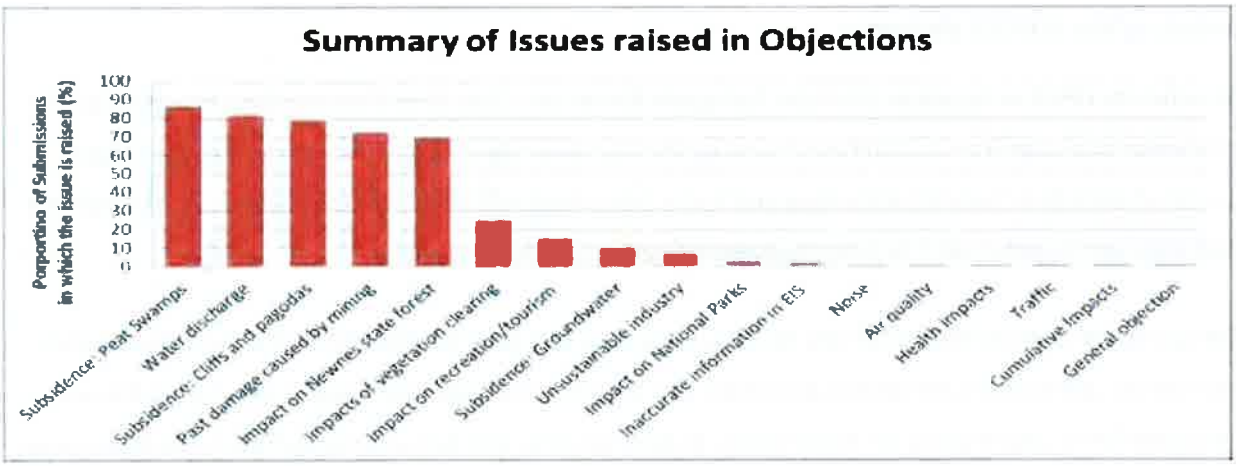


Figure 5: *Summary of Issues raised in submissions objecting to the project (*DP&E Assessment Report April 2015)

LEG was therefore devastated that the DP&E and PAC were so out of touch with the concerns of the majority of respondents, and chose to ignore the advice of the NSW Governments own expert advisers in the OEH, IESC, EPA and SCA, by recommending approval of the Proposal virtually as exhibited.

Futhermore, the DP&E and PAC recommended deferring decisions on the most significant issues raised in the submissions –

- The DP&E and PAC deferred swamp protection until well into the future by requiring only self-regulated long term monitoring to protect the nine (9) swamps that would be directly undermined (Sunnyside East, Carne West, Gang Gang South West, Gang Gang East, Pine, Pine Upper, Paddys, Marrangaroo Ck and Marrangaroo Ck Upper Swamps). This is despite the fact monitoring failed to

protect Kangaroo Creek Swamp, Junction Swamp, Narrow Swamp and East Wolgan Swamp. And if and when monitoring does detect damage, the damage will be irreversible;

- The DP&E and PAC deferred a decision on Offsets and the RBS (Regional Biodiversity Strategy) until end June 2016;
- The DP&E and PAC deferred a desion on minewater discharge quality standards and licence discharge limits by requiring Springvale to negotiate with the EPA and other relevant agencies to develop minewater management options by the end of June 2016;
- The DP&E and PAC deferred a decision on predicted surface water take and water entitlements until 2018.

Clearly community expectations were high that damage to peat swamps should be minimised, and that minewater pollution into the Coxs River and Sydney's drinking water supply should be reduced. These were key matters for decision by the DP&E and the PAC Review on the Springvale Extension, and both failed.

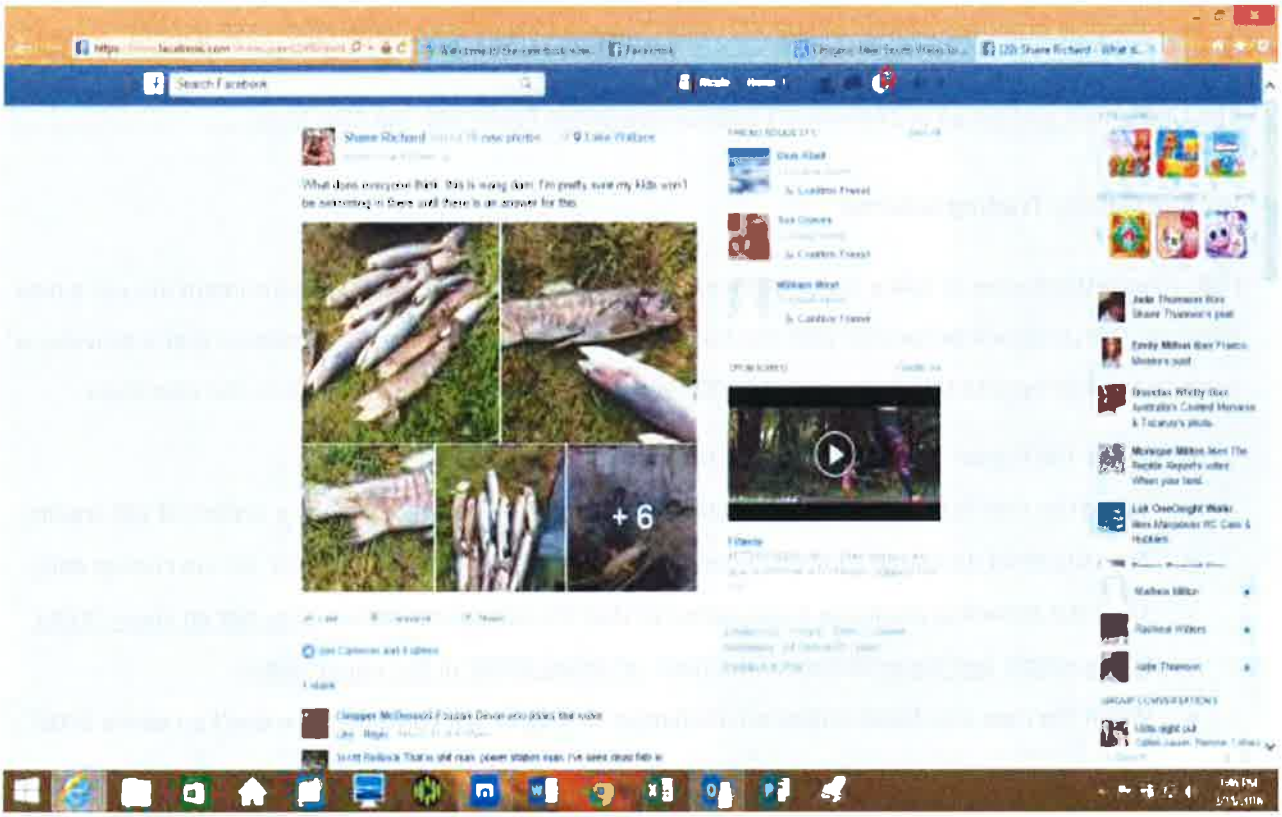
We urge the DP&E genuinely take community concerns into consideration in assessing this Proposal.

Toxicity of the LDP009 discharge

We refer the DP&E to Appendix 10 of the Springvale Extension - Coxs River Ecotoxicology Assessment. The minewater discharge from LDP009 was found by the OEH to be significantly toxic to most of the tested species of animals and plants, with algae and hydra being more sensitive than the cladoceran. **The LDP009 discharge was acutely toxic (ie. effectively lethal) to the tested fish species.**

The Springvale EA failed to identify this toxicity, nor advise how long the LDP009 discharge had been toxic, and how far this toxicity extended downstream. LEG has received disturbing reports about dead fish and deformed fish in Lake Wallace for over 2 years, as have the EPA. LEG believes the LDP009 is the likely cause.

One such incident was widely reported by the Lithgow Mercury http://www.lithgowmercury.com.au/story/3800000/autumn-heatwave-was-fatal-for-trout/, Prime News, and through social media in March 2016. Various agencies blamed this particular fisg death on a heatwave, deoxygenation of water, and algal blooms – not surpisingly all ignored the elephant in the room – LDP009.



The DP&E and PAC claimed the cause of this toxicity identified by the OEH was unknown, speculated that flocculants used by Springvale at LDP009 may be the cause, said that the Proponent was working to find a solution, approved the Springvale Extension as proposed anyway, allowed it to remain toxic, and deferred a decision on Licence Discharge Limits until the end of June 2016. A totally unacceptable situation!

LEG urges the DP&E to fully inform the public as part of the assessment for this Proposal whether the cause of this toxicity has ever been identified, how it has been addressed, how such instances can be detected sooner, and be prevented from occurring in future.

Cumulative sources off salinity

This Proposal fails to address the cumulative impacts of saline discharges over and above those from LDP009, including –

- Angus Place LDP001 & LDP002 (900 – 1100 µS/cm),
- Springvale LDP0010 (1000 µS/cm);
- Western Coal Services LDP006 (5190 µS/cm in June 2016);
- Proposed Nuebeck Coal Project (DGR's issued),
- Proposed Pine Dale Mine Extension, and

- Possible proposed dilution of LDP009 using Clarence Colliery minewater (300 – 350 µS/cm).

This DP&E must address all of Centennial's Licenced Discharge Points into the Coxs River.

Hunter Salinity Trading Scheme

High volume discharges of saline water from mines and power stations into the environment are not a new problem. The DP&E will be familiar with the Hunter Salinity Trading Scheme. LEG believes that it provides a guide to the appropriate salinity levels in LDP006 and other minewater discharges into the Coxs River -

- When the Hunter River is in low flow, no discharges are allowed;
- When the river is in high flow, limited discharges are allowed controlled by a system of salt credits;
- The volume of discharge allowed depends on the ambient salinity in the river, so can change daily;
- The total allowable discharge is calculated so that the salt concentration does not go above 900EC in the middle and lower sectors of the river, or above 600EC in the upper sector;
- When the river is in flood, unlimited discharges so long as salt concentration don't go above 900EC.

Springvale LDP009, Angus Place LDP001, Western Coal Services/Springale LDP006, proposed Neubeck Coal Project and Pine Dale Mine etc. all operate in the upper sector of the Coxs River. Springvale and Angus Place minewater has a salinity level of 1200 EC. Discharges from the Western Coal Services site have been >2000 EC since 2012, and up to 5190EC. Salinity in discharges from the proposed Neubeck Coal Project and Pine Dale Mine Extension are not known, but are highly likely to be 1200+ EC.

If the Hunter Salinity Trading Scheme conditions were applied to the upper Coxs River then Springvale's LDP009 and LDP006 discharges would be Licenced to ensure that Salinity levels did not exceed 600EC in the upper Coxs River.

LEG therefore considers that a discharge of 30 ML/day of minewater with a salinity of 1200+ EC is neither appropriate nor sustainable, and poses a significant threat to aquatic ecosystem health. Such a discharge is likely to kill almost all life in the Coxs River downstream to the stored waters of Lake Burragorang.

LEG urges the DP&E to recommend an acceptable standard for Saline discharges into the Coxs River and Sydney Drinking Water Catchment using the guidelines applicable to the Hunter River, and preferably based on the default ANZECC guideline trigger value for conductivity in an upland river of 350 uS/cm.

Temporary storage of Minewater underground at Angus Place Colliery

Springvale are currently directing 5ML/day of minewater to an underground storage area (Area 300) in Angus Place Colliery. This arrangement cannot be regarded as sustainable long-term, especially given the

amount of surface fracturing that has occurred as a result of longwall mining in the Angus Place Colliery mine lease, and heavy recent rain.

Evidence is emerging that this storage may be seeping to the surface via Lamb's Creek. LEG has recorded higher than usual levels of salinity, detected hydrogen suphide odours, and sighted excessive Iron deposits.

LEG reminds the DP&E that one of the proposed solutions to control underground combustion at Coalpac's Cullen Valley Mine was to raise the water table in the old Tyldsley Mine underground workings. This resulted in at least two relatively recent Acid Mine Drainage seepages appearing at Farley Street Wetlands in Cullen Bullen and on the western boundary of Cullen Valley Mine. Trees and other vegetation have been killed by highly acidic pH4 water high with salinity of 1700 EC, and very high levels of iron and other metals.

We urge the DP&E to recommend against temporary adhoc proposals which may excacerbate far-field Acid Mine Drainage and and Salinity impacts, and require Springvale and Energy Australia to develop long-term sustainable solutions that will reduce pollution in the Coxs River to environmentally acceptable standards.

Nutrients

More Blue-green algae Red alerts have occurred in Lake Wallace, between Lake Wallace and Lake Lyell, and in Lake Lyell in the past 3 years than at any time in memory. The EPA appear unable to find any answers.

LEG notes from the OEH's Response to Submissions to the Springvale Extension that the LDP009 discharge recorded **Ammonia levels of 0.44mg/L, 33 times higher than the ANZECC nutrient trigger value**. LEG also understands that both Angus Place and Springvale mines have had issues with Sewage treatment.

LEG urges the DP&E to recommend an investigation into high Ammonia levels in the LDP009 and LDP006 discharges to assess whether these may be contributing to Blue-green alagal blooms in Lake Wallace, between Lake Wallace and Lake Lyell, and in Lake Lyell itself.

CONCLUSION

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

Yours sincerely,

Chris Jonkers - Vice President
Lithgow Environment Group Inc.

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Mining and Industry Projects
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Sir/ Madam

RE: 4Nature Submission - Springvale Water and Treatment Project SSD 16_7592

1. INTRODUCTION

The proponent's EIS describes a project which aims to transfer mine water from Springvale underground coal mine to Mount Piper Power Station (MPPS) for re-use. As outlined in the proponent's EIS all the mine water will be re-used if the MPPS is operating at or above 50% capacity. When the MPPS is operating at levels below 50%, up to 32 ML/day of treated mine water would be discharged into Wangcol Creek, a tributary of the Coxs River.

In broad terms, 4Nature supports the intent of the project to re-use Springvale mine water and cease the discharge of mine water at Licensed Discharge Point (LPD 09) into Sawyers Swamp. 4Nature supports this project because these outcomes have the potential to improve water quality in the Coxs River catchment. However, as currently described the proposal will increase salinity in the Coxs River catchment which forms part of Sydney's drinking water supply. We have identified three major issues with this project;

(i) the discharge of low quality treated water and the proposed use of Wangcol Creek as a new discharge point,
(ii) lack of detail about increasing flows into the Coxs River, and
(iii) the proposed new easement for the pipeline rather than use the existing easement.

If these three issues are properly addressed, then the project could have appreciable beneficial effects for the environment.

2. WATER QUALITY

2.1 Salinity levels of discharge water are too high

The project intends to discharge up to 32ML/day of re-used water into Wangcol Creek. The proposed salinity level, measured as electrical conductivity, for this discharge is 500µS/cm (90th percentile by June 2019. When compared with the naturally occurring levels of salinity in the catchment waters the treated water discharges with this level of salinity are too high and would increase the salinity levels in the Coxs River catchment.

Based on the available information the salinity levels in the relatively undisturbed headwaters of the Coxs River range from 30µS/cm[(1)] to 100µS/cm[(2)]. Downstream from the project site the Coxs River flows through the Greater Blue Mountains World Heritage Area (GBMWHA) and then into Lake Burragorang reservoir impounded by Warragamba Dam.

The GBMWHA Strategic Plan 2009[3] aims to protect water quality by including a desired outcome of:

> *"any adverse impacts on water quality and quantity within the GBMWHA arising from park management activities, upstream land uses or visitor use are eliminated or, at least mitigated."*

Without improved water quality for discharged water the project will not meet the desired outcomes of the GBMWHA Strategic Plan 2009.

Increased salinity in Warragamba Dam is of also of concern because it is the major source of Sydney's drinking water. The State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 includes the aim of;

> *"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"*[4]

The intent of the Sydney Drinking Water Catchment policy is to ensure developments in the catchment are only approved if there is a neutral or beneficial effect on water quality. Therefore by increasing the level of salinity above levels occurring in the relatively undisturbed headwaters of the Coxs River the project does not meet the criterion of a neutral or beneficial effect on water quality.

In addition to the elevated salinity in the discharge water the use of Wangcol Creek as a discharge point will result in additional pollution in the Coxs River because Wangcol Creek has a historical load of salt and other contaminants from past use. Another discharge point needs to be located so that discharges from that point do not mobilise pre-existing salts and contaminants from prior industrial uses.

2.2 Lack of detail about other contaminants

The proposal focuses on salinity levels as the indicator of water quality. However, treated mine water contains a range of contaminants, including heavy metals and plant nutrients. The levels for the full range of potential contaminants should be documented and measured. The levels of these contaminants in discharged treated water should be equal to or less than those levels found in the relatively undisturbed headwaters of the Coxs River.

2.3 Full range of water quality indicators are needed

It is well established scientifically that water quality indicators must include measurements of temperature, turbidity, pH and dissolved oxygen[2]. The proponent's EIS does not address these indicators of water quality in any detail. However, the discharged mine water should have values for these water quality indicators that are in the same range as water quality indicators for the relatively undisturbed headwaters of the Coxs River. These water quality indicators should be monitored and regular reports on these indicators should be available to the public.

2. WATER QUANTITY

The re-use of water from the Springvale mine should allow additional water to be released into the Coxs River from current storages which rely on surface water collections. However, the EIS does not provide sufficient detail on how much additional water could be released into the Coxs River. Furthermore, if a higher standard of water quality could be achieved then there could additional flows from the treated mine water discharge point.

Also it is not clear why Springvale mine water could not be used when the MPPS was operating at less than 50% capacity. The proponent should model the potential beneficial effects and explain why more of the Springvale mine water could not be re-used when the MPPS is operating at less than 50% capacity.

3. PIPELINE EASEMENT & UTILISATION

The project proposes to build a pipeline to transfer water from the extraction point at the Springvale mine to the MPPS. The alignment of the new pipeline does not utilise the easement (southern alignment) of the current pipeline. The EIS does not adequately explain why a new easement is needed. The argument in the EIS is that a new easement would result in in approximately the same amount of land clearing as using the existing easement. However, the environmental impacts of the land clearing in the two options are not adequately compared. A new easement will destroy native vegetation and disturb animal and plant communities. A new easement (northern alignment) shows an alignment which traverses more relatively undisturbed land than the existing easement and would appear to create unnecessary environmental impacts which could be avoided if the existing easement were utilised.

It is also not clear why water discharges need to continue from Licensed Discharge Point 06 (LDP 06) when LPD 06 is shown to be adjacent to the proposed pipeline.

Consideration should also be given to ensuring that the pipeline design specifications include the capacity to take additional mine water from other mines in the area, such as Angus Place if they are re-commissioned.

4. CONCLUSION

Unless it is modified, the current proposal will have adverse environmental impacts on the Coxs River catchment. These impacts could be avoided or mitigated by including the following consent conditions in the approval.

- Treat the mine water discharge to achieve a higher standard of water quality so that it has a neutral or beneficial effect when compared with the water quality in the relatively undisturbed headwaters of the Coxs River.
- Locate a discharge point for treated water that will not mobilise contaminants from historical industrial use.
- Use the full range of scientifically established indicators to measure the quality of discharge water, including; salinity, heavy metals, plant nutrients, pH, temperature, turbidity and dissolved oxygen.
- Monitor and report regularly and publicly on the quality of the discharge water.
- Provide estimates of the likely increased flows of high quality water into the Coxs River.
- Utilise the existing easement for the construction of the new pipeline, unless the environmental impacts are conclusively shown to be less destructive than using the existing easement.
- Transfer mine water discharges from LPD 06 to the pipeline for treatment.
- Ensure that the pipeline has the capacity to take additional water from other mines in the area

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Submission from 4Nature
President: Andrew Cox
Secretary: Warwick Pearse
8 November 2016

Mining and Industry Projects

NSW Department of Planning and Environment GPO Box 39 Sydney NSW 2001

Dear Sir/Madam,

Submission on the Springvale Water Treatment proposal (SSD 16_7592)

We are a local conservation group which was established in 1966 after a community campaign to protect the Field of Mars Reserve from an expansion of a garbage tip in the reserve. The Field of Mars Reserve and Wildlife Refuge now contains an Environmental Education Centre visited by over 15,000 students annually.

The supply of clean drinking water to Sydney's quickly expanding population must be the priority in the drinking water catchment. This is the most effective and in the longer term cheapest option to supply quality drinking water to millions of people.

Springvale water treatment proposal must be greatly improved if it is to adequately protect the Coxs River catchment, the Greater Blue Mountains World Heritage Area and Sydney's drinking water resources. Mine water must not be simply treated to a minimum standard then released into the catchment.

Wangcol Creek is already contaminated. Discharges from the proposed treatment plant would worsen this situation and send a plume of salt down the Coxs River that is part of Sydney's drinking water catchment.

The treatment proposal must maximise mine water use by storing it for future periods of high demand by the Mt Piper Power Plant. Water treatment must be decoupled from the power plant's coal consumption to prevent an outcome where a reduction in coal-fired electricity generation would cause an increase in mine water pollution.

The water treatment plant must not be built for discharge into the environment. It can be designed as a closed system with treated mine water stored in Thompsons Creek Reservoir which has sufficient capacity to accommodate mine water from both Springvale and Clarence mines for future power plant use.

To take advantage of future mine water transfer upgrades, the proposed pipeline from Springvale to Mt Piper power plant should have sufficient capacity to accommodate mine water from Clarence Colliery.

Runoff from the Springvale Coal Services and fly ash emplacement areas also must be collected and treated for use in the power plant.

Any additional pipeline construction on Newnes Plateau for the mine water transfers must follow the existing pipeline alignment to minimise further damage to endangered ecological communities and pagoda landscapes.

Ryde Hunters Hill Flora and Fauna Preservation Society