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

OUT17/11473

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

anthony.ko@planning.nsw.gov.au

Dear Anthony

Western Coal Services Project (SSD 5579 MOD 1)
Response to Submissions

I refer to your email dated 3 March 2017 inviting the Division of Resources & Energy (DRE) to provide comments on the Response to Submissions from Springvale Coal Pty Limited (the Proponent) in regard to the Western Coal Services Project (SSD 5579 MOD 1).

DRE has reviewed the *Response to Submissions Western Coal Services Mod 1* report dated February 2017. DRE's original comments on the Statement of Environmental Effects (SEE) were limited to issues impacting on the rehabilitation of areas covered by mining leases at the WCS site.

A review of the Response to Submissions shows no reference to DRE's correspondence dated 13 December 2016. The following statement was not included in the final SEE:

If the Modification is approved, the Mining Operations Plan (MOP)/Rehabilitation Management Plan for the Western Coal Services Site needs to be reviewed by the company and updated if required to ensure consistency with the Modification. This is to include provision of updated Appendices (including the 'Rehabilitation and Closure Plan') attached to the current MOP, where applicable".

The statement above should be included in any final comments to the Proponent.

DRE has no objection to the proposed Modification. Material placed into the Reject Emplacement Area (REA) will be managed in accordance with the existing water management procedures and the additional solid material component will be largely insignificant compared to the large amount of coal waste material to be emplaced (25 million tonnes total over 25 years).

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

NSW GOVERNMENT | Department of Primary Industries

OUT16/49006

Mr Paul Freeman
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Paul.freeman@planning.nsw.gov.au

Dear Mr Freeman

Western Coal Services Project (SSD 5579 MOD 1)
Comment on the Statement of Environmental Effects

I refer to your email of 13 December 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 application and Statement of Environmental Effects and has no further comments at this time.

Yours sincerely

Mitchell Isaacs
Director, Planning Policy & Assessment Advice
13 December 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

Your reference :
Our reference : SF14/6738; DOC16/602437-04
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

13 December 2016

Dear Mr Freeman

I refer to your request by email to the Environment Protection Authority (EPA) on the 28 November 2016 for comments and recommendations on the Western Coal Services SSD 5579 Modification 1 (MOD1).

The modification is to permit the receipt of the "residuals" waste stream from the proposed Springvale Water Treatment Project (SWTP) to be constructed at Mount Piper Power Station (MPPS). The residual waste is proposed to be disposed within the existing Reject Emplacement Area (REA) at the Springvale Coal Services Site (SCCS). Changes to the decommissioning and rehabilitation strategy approved in SSD 5579 are also being sought. The EPA has reviewed the Statement of Environmental Effects (SEE) including the supporting appendices and provides the following comments.

The EPA supports the proposed SWTP at MPPS, and acknowledges the benefits to water quality in the Coxs River Catchment as a result. In addition, the proposed implementation of clean water diversion works at SCCS are predicted to reduce the catchment contributing to the discharge at Licensed Discharge Point 006 (LDP006) is also supported. The diversion of clean water is predicted to reduce the average annual discharge from LDP006 from 848 ML to 441 ML.

However, MOD1 predicts that the annual disposal of 157 ML (approximately 10 KL at a time) of residuals from the SWTP will result in the annual average discharge increasing from 441 ML to 570 ML; while this is a reduction in the current annual average of 848 ML, and this is dependent on the success of the clean water diversion, the disposal of residuals still results in a predicted discharge of 129 ML (with an estimated EC of 2500 µS/cm) annually from LDP006.

As stated above, the EPA welcomes the construction of the SWTP and the beneficial outcomes to water quality. However the EPA does not support the transfer and disposal of SWTP waste in a liquid state to the SCCS - REA that will result in water with an elevated EC (2500 µS/ccm) contributing to an increased daily rate of discharge in the order of 0.3-0.5 ML/day from LDP006. Allowing a discharge of up to 0.5 ML/day of mine water back to the Coxs River (via an increased discharge at LDP6 into Neubecks Creek), is counter to the intent of the SWTP.

The EPA acknowledges that the residuals material will be decanted from the REA and managed in accordance with the current water management practices at SCCS. The EPA requests that options to dewater the residuals on-site at MPPS treatment facility or the SCCS prior to disposal at the REA as a solid waste be considered. Following disposal as a solid waste placement, the material could be managed to restrict influx of rainfall and the subsequent generation of leachate.

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Level 2, 203 – 209 Russell Street Bathurst NSW 2795
Tel: (02) 6332 7600 Fax: (02) 6332 7630
ABN 43 692 285 758
www.epa.nsw.gov.au

In addition, the EPA is seeking clarification on the exact location proposed for disposal of the residuals. Figure 5 of the main report titled '*Springvale Coal Services Site Infrastructure*' shows the Co-disposal REA located near the main entrance on the eastern side of the site. Whereas, Figure 11 of the main report titled '*Residuals Transfer Pipeline at Springvale Coal Services Site*' shows the Residuals Transfer Pipeline terminating at the REA located on the southern boundary of the site.

In the event the project is approved, and a decision is made on the most suitable form to dispose the waste into the REA, the licensee will be required to formally classify the waste as per the EPA guidelines, and apply for a licence variation to permit the receival of waste from off-site.

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

1452861: LGS
Environment & Development Dept.

Lithgow CITY COUNCIL

8 December 2016

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

Paul.Freeman@planning.nsw.gov.au

Dear Sir/Madam,

WESTERN COAL SERVICES PROJECT - STATE SIGNIFICANT DEVELOPMENT SSD 5579, MODIFICATION 1, CASTLEREAGH HIGHWAY, LIDSDALE

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

Council considers the Environmental Assessment adequately highlights the relevant issues, and has no objection to the project subject to Council's original conditions remaining on the consent.

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

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Office of Environment & Heritage

DOC16/613325
SSD 5579 MOD1

Mr Paul Freeman
Team Leader, Resource Assessments
Department of Planning and Environment
paul.freeman@planning.nsw.gov.au

Dear Mr Freeman

Western Coal Services Project (SSD 5579) MOD 1

I refer to the Statement of Environmental Effects for the Western Coal Services (SSD 5579) Modification 1.

OEH understands that the proposed modification will not require changes to surface infrastructure at the Western Coal Services site. As such, there will be no additional ground disturbance or clearing of native vegetation.

The proposal will result in some changes to the rehabilitation strategy relating to Domain 2 (Reject Emplacement Area) and Domain 7 (haul roads and overland conveyor system). There will be no changes to the Additional Rehabilitation Initiatives for the Lamberts Gully Creek catchment, which require the establishment and enhancement of locally endemic native vegetation species and improvement of fauna habitat values in the area. The final landform planned for the site is not proposed to change.

Based on the information provided, OEH has no specific comments regarding the proposed modification. If you have any queries, please contact Liz Mazzer, Conservation Planning Officer on (02) 6883 5325 or email liz.mazzer@environment.nsw.gov.au.

Yours sincerely

STEVEN COX
Senior Team Leader, Planning
North West Region

Date: 8 December 2016
Contact officer: LIZ MAZZER
02 6883 5325

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Level 1, 48-52 Wingewarra Street Dubbo NSW 2830
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PO Box 323, Penrith NSW 2751
Level 4, 2-6 Station Street
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1300 722 468
www.waternsw.com.au
ABN 21 147 934 787

Our Ref: D2016/141219

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

Dear Mr Freeman

Western Coal Services Project Modification 1 (SSD 5579)
Review of Statement of Environmental Effects

I refer to the Statement of Environmental Effects (SEE) for the modification of the Western Coal Services consent SSD 5579. The modification application seeks permission to allow receipt of the residuals form the prosed Springvale Water Treatment Plant project.

WaterNSW has reviewed the SEE and notes that the salt and water balance modelling results predict an adverse environmental impact along Wangcol Creek due to increase in salinity as a result of the proposed residuals material transfer and emplacement at the Springvale Coal Services Site (SCSS). This indicates that the proposed modification would not have a neutral or beneficial effect on water quality in Wangcol Creek.

WaterNSW have the following comments:

- The SEE states that the increased EC is primarily due to increased salt load on Cooks Dam (EC within Cooks Dam - median 3273 µS/cm and can be as high as 4460 µS/cm) which is higher than the assumed of 2500 µS/cm for residuals material stream. WaterNSW notes that water from the Rejects Emplacement Area is pumped to Cooks Dam (see Vol. 1, Page 29, Section 3.3.9.3). WaterNSW considers that this may be the reason for high salinity and water levels in Cooks Dam and appropriate mitigation measures should be adopted to rectify this issue.
- Appendix D, Page 39, Section 5.1.1 and Figure 5-3 states discharges from LDP006 range from 0-14 ML/day. While salinity loads for average annual discharges have been estimated, salinity loads and consequences for higher end of discharges are not estimated. WaterNSW considers these should be estimated and impacts on Wangcol Creek assessed.
- Clarification is required on the timeframe when the clean water diversions at the SCSS would be installed, monitoring completed and salt and water modelling results validated for future conditions. WaterNSW requests that the modelling validation results be provided to agencies.

WaterNSW requests the opportunity to continue to be involved in any ongoing assessment of the Project. Further queries about our comments can be directed to Girja Sharma on 47242459.

Yours sincerely

MALCOLM HUGHES
Manager Catchment Protection
CC: Darryl Clift - EPA

16/12/16

THE COLONG FOUNDATION FOR WILDERNESS LTD.

Tuesday December 13th, 2016

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

Dear Sir/Madam,

Submission regarding Western Coal Services SSD 5579 Mod 1

The Colong Foundation finds the modelling analysis that predicts a decrease of salt load from LDP006 following modification 1 to be unconvincing. This optimistic prediction is based on the diversion of so-called clean water, which is not clean, but the modelling asserts it will become clean following the proposed minor earthworks. The modelling also has omitted the cumulative impacts from the approved significant extensions of the ash emplacement area to the Lamberts North and Lamberts South areas, along with the water quality influence of the Springvale Coal Services Site coal reject emplacement (REA). These are major omissions to the cumulative impact assessment must result in a gross understatement of likely salinity of discharges from LDP006.

The potential role of the municipal waste emplacement also needs to be considered, as it may not be secured from groundwater due the liner integrity issues that will be explained in this submission.

The Colong Foundation requests that the assessment of SSD 5579 Mod 1 be combined with consideration of SSD7592 Springvale Water Treatment Project and the two matters be dealt with together and subject to a Planning Assessment Commission review and determination process. The justification for making this request is that these two matters are interconnected and both involve control of major pollution of Sydney's drinking water supplies.

Modelling omits cumulative impacts located within the project area

The Department of Planning and Environment must require the water and salinity load modelling to be redone with the cumulative impacts within the project area to be fully accounted for, as the likely consequences of these impacts are likely to greatly magnify the already large salinity problem associated with LDP006. Salinity levels at Cooks Dam discharge, LDP006, already approaches 5,000µS/cm.

The modelling analysis for the proposed minor works modification combines the beneficial outcomes from the treatment and power plant reuse of Springvale mine water from LPT009 with the adverse saline discharge from LTP006, to predict favourable cumulative downstream flows and salinity outcomes. While the cumulative assessment for this modification proposal is done for the downstream environment, the cumulative water input flows and salinity assessment is not done *for* the project area. This selective cumulative modelling assessment of the proposed modification creates an unreasonably favourable outcome that cannot eventuate as saline inputs from the ash and REA waste emplacements are omitted from the model.

Statement of Environmental Effects (SEE) does not recognise the need to treat the toxic water discharging from LDP006 in any way whatsoever, even though there is recognition of its saline nature this is downplayed. This salinity problem will be magnified by the already approved Reject Emplacement Area and extensions of the ash emplacement on this porous landscape. The SEE does not appropriately respond to or even identify these overlapping environmental problems – as depicted on *Figure 1* on the following page. Groundwater contamination also may be increased by establishment of a municipal waste heap if there is a failure in the heap liner as will be discussed.

The modelling assessment admits that mine water from old underground mine workings will find its way to LPT006 through Cooks Dam to Wangcol Creek (see *Figure 3 modelling schematic*) but ignores the large non-point groundwater discharges from the project area (see *additional Figure A* at the end of this submission).

Adequate Treatment of discharges from LDP006

This proposed modification must not be approved unless the Cooks Dam Licenced Discharge Point (LDP006) and the associated 'clean water diversion' flows are adequately treated. The maximum flow rate for LDP006 is 36ML/day and the SEE fails to acknowledge the importance of treating this large point source of salinity.

The Colong Foundation has been advised by the EPA that LDP006 is unsuitable for treatment and reuse in the power plant. If that is the case, then the LDP006 discharge must be treated at the point of discharge by metals removal and another reverse osmosis water treatment plant established for this discharge point to tackle this major source of pollution. The joint funding contributions from EnergyAustralia, Centennial Coal and perhaps Lithgow City Council will require resolution.

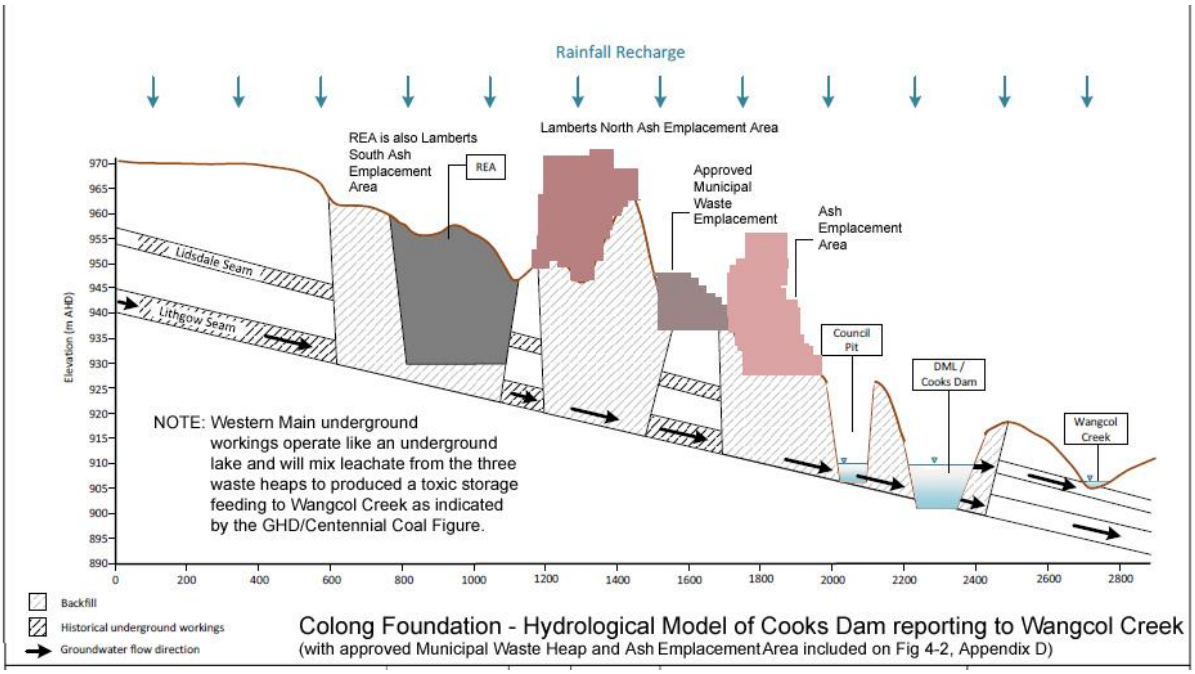


Figure 1 - Revised Cooks Dam/Wangcol Creek hydrological model to include significant cumulative impacts of leachate from various waste heaps on project site groundwater.

Deposition of water treatment plant residuals

The consent must require selective emplacement of contaminated residual materials from the water treatment plant.

There is no evidence in the SEE that the salinity from residuals will be closer to the raw mine water feed than laboratory bench top 'jar test' data of the residual materials. This assertion is based on heavy treatment of these liquid residual materials to render it environmentally inert. The treatment assertion will be swamped by the cumulative leachate contributions to groundwater from the ash and coal reject emplacement that will occur in with the residual emplacement area (see *Figure 1*, and addition *figures B* and *C* at end of this submission). These combined contributions will result in increasingly high contamination levels in Cooks Dam and Wangcol Creek via LDP006. These leachate contributions will also increase salinity of uncontrolled groundwater contamination of Wangcol Creek (see *additional figure A*).

The placement of water treatment residuals in the *existing* ash emplacement area is restricted. The brine conditioned ash is placed above the water conditioned ash, but this practice does not appear to be a consideration in the proposed modification in relation to combined REA/ash emplacement.

The SEE states that 'the water balance modelling predicts an increase in the volume of water discharged through LDP006 as a result of the increased load on the SCSS water management system due the residuals transfer.' The saline load on Wangcol Creek must increase as LPT006 receives discharges from three types of waste. The effect of mixing leachate from coal reject, ash emplacement and the water treatment plant residuals is possibly synergistic but not considered by the SEE.

The proposed cancellation of this increase through separation of clean surface water will not eventuate for reasons that will outlined in the following section.

Clean and dirty water flows from the project area

The claim of clean water diversion flows as described on page 23 of SEE is unconvincing. Lamberts Gully is the main feature of the "clean catchment" and it contains an old rehabilitated open cut coal mine.

The Retention Pond where the clean area diversion water collects has an EC of 1146 µS/cm (Table 5-4, Appendix D, Vol 2), which is nothing like clean background surface water. It is not clean water and the proposed measures are unlikely to significantly improve the quality of water in the Retention Pond due to the presence of decant water from the Co-disposal Area and runoff from the old Lamberts Gully open cut area.

Figure 5-2, Appendix D of Volume 2 shows the clean water diversion includes the main sediment dam (also known as the Conveyor Dam). Figure 5-2 shows the clean/rehabilitated catchment diverted from LDP006 catchment receives water from the main sediment dam that sometimes can be too dirty to discharge. Sediment settling appears to be the only purpose of the "clean water" diversion, as the runoff is saline, but not nearly as saline as Cooks Dam.

The lower part of the proposed "clean" catchment surrounds appears to be separated from the Co-disposal REA. This REA is described in the text on page 28 as having six cells. The two eastern cells are described as holding decant water, however *figure 3* shows decant water from these cells going to LDP006.

The Co-disposal REA is not separate from the clean area. The decant water discharges/reports to the Retention Dam and mixes with the clean water in the Retention Dam downslope of the two ponds. These flows contaminate and compromise the purpose of the clean catchment separation.

Further, as discharge from the "clean" catchment then flows into and mixes with the LDP006 discharge, so the purpose of clean catchment separation is defeated at the discharge point.

The minimisation of the moderately contaminated water collected in the Retention Dam must be adequately treated. The proposed water treatment plant could treat this water as it is only moderately contaminated. Without treatment the proposed clean/rehabilitated catchment separation is unable to provide any significant environmental gain in water quality.

If the water quality of discharges from the separated clean/rehabilitated catchment markedly declines, then it should be collected with LDP006 discharges and treated in a specific purpose water treatment facility as discussed in the previous section.

Groundwater controls the project area water balance – implications for dirty catchment monitoring and pollution control

Half the water balance in the SEE modelling for the project area is groundwater that reports to Wangcol Creek. As far as project area groundwater is concerned, the separation of "clean" and dirty catchments is not possible. In other words, the outcome of proposed separation of clean and dirty catchments is further compromised by the highly porous nature of these catchments.

Groundwater is interconnected through the old bord and pillar workings of the Western Main mine, (see *figure 2*). The "clean" groundwater may "float" on top of the denser more saline groundwater within the mine workings. Such saline groundwater behaviour has implications for monitoring and management if it commences to report to Wangcol Creek in considerable volume.

The regulation and treatment of contaminated groundwater within the project area is not investigated by the SEE. Ground water collection at Cooks Dam seems the most favourable option for its collection and subsequent treatment according to the schematic below (see *Figure 3*).

There is evidence that non-point source groundwater from the project area already reports to Wangcol Creek.

This ability of Cooks Dam to collect contaminated groundwater should be subject to further investigation. *Additional Figure A* indicates that Cooks Dam *does not* collect all saline groundwater.

Further, surface salinity monitoring data for Wangcol Creek demonstrates salinity increases from the Newbecks Creek junction to the Wangcol Creek gauge station to 585µS/cm (see Table 5-3, Vol 2, Appendix D of SEE) and again to the Wangcol Up Stream sampling site that read 2,577µS/cm, compared to LDP006 reading of 4,722µS/cm (Table 5-9, Vol 2, Appendix D of SEE, both sampled May

2016). These data when read with the groundwater cross section suggests that LDP006 does not collect all saline groundwater from the project site.

The project area groundwater must be further investigated to determine the proportion of saline groundwater that can be monitored and treated at LDP006. For example, it may be possible to control non-point groundwater discharges reporting to Wangcol Creek by a grout barrier or by management of storage levels in Cooks and DML dams at lower storage levels.

The consent should require further consideration of groundwater pollution with the view to improved containment and treatment.

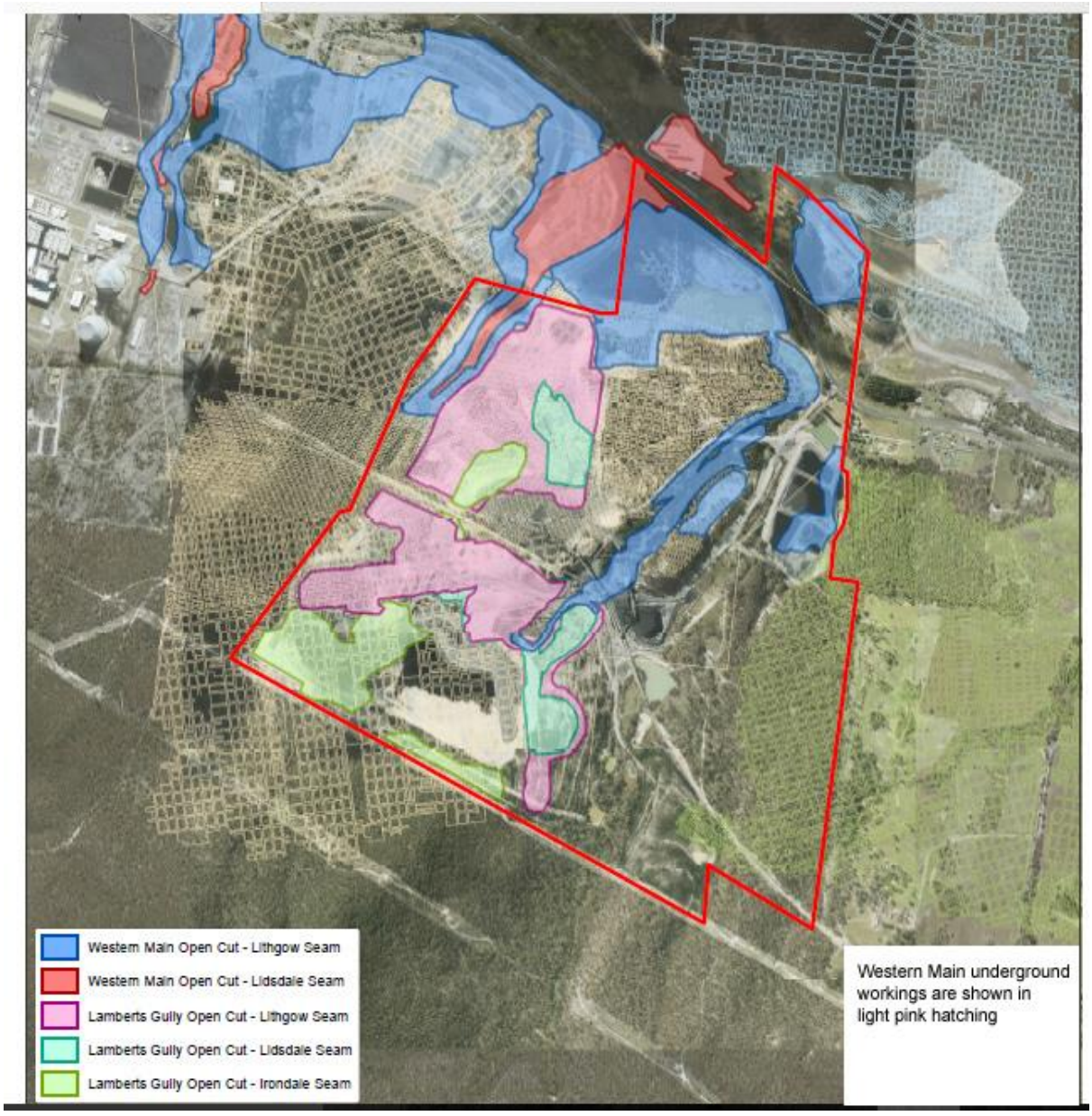


Figure 2 shows extent of shallow old mine workings and open cut mines that make the project area porous and ensures that groundwater controls the water balance of the project area.

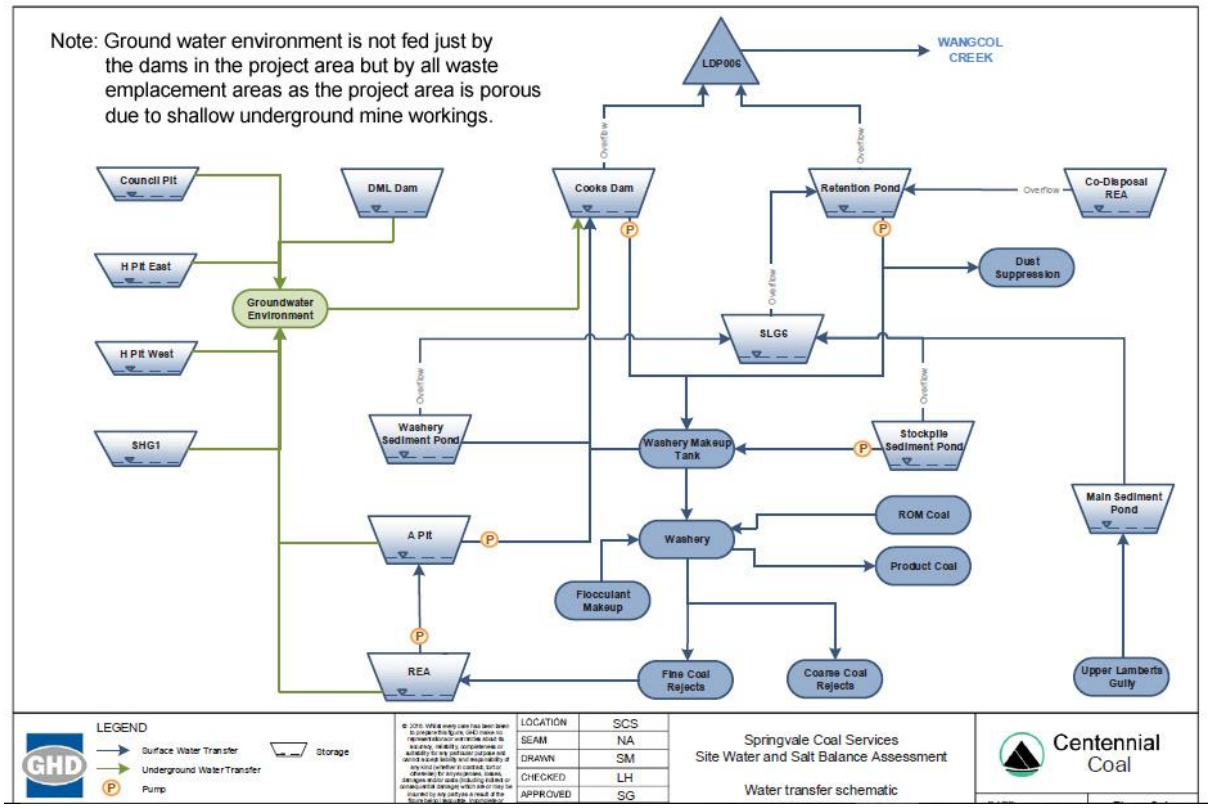


Figure 3 The water transfer schematic does not explain that the 'Groundwater Environment' receives large inputs from the extensive waste heaps in the project area, not just the REA but also the ash emplacement areas, and possibly metropolitan waste area.

The approved Municipal Waste Emplacement Area should never be developed

Lithgow's approved municipal waste emplacement area overlies shallow mine workings. The coal pillars of these old workings are unlikely to support the additional loads arising from of this large waste heap and movement of heavy machinery over it. Collapse of the pillars or the bord areas is a likely contingency as it regularly happens in areas of shallow mine workings that are not subject to additional loadings. Subsidence events must compromise any liner places under the metropolitan waste heap leading to groundwater contamination.

In these circumstances where the approved municipal waste heap can not be sealed from groundwater when sitting over old and perhaps unstable underground workings, suggests that the site needs to be reconsidered.

The toxic mine waters and ash heap leachate may then combine with rubbish heap leachate in a shallow groundwater aquifer that (from the groundwater salinity data above) already reports to Wangcol Creek.

Placing municipal waste on land subject to mine subsidence at the head of the Coxs River catchment is highly inappropriate.

Municipal waste dump development also will replace a large part of the "Lamberts Gully Rehabilitation offset areas" (see *additional figure D*). Loss of this offset appears not to be accommodated by further offsets, and is a poor practise, as ecosystems can't be traded as commodities without unexpected ecological outcomes.

The municipal waste emplacement must not proceed in such an inappropriate area that risks contaminating Sydney's drinking water supplies with such a potentially nasty toxic cocktail.

The EPA and DPE should work with Lithgow Council and the community to identify locations for waste facilities that are not located on highly inappropriate porous ground.

Rehabilitate Kerosene Vale Stockpile Area

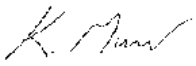
The Kerosene Vale Stockpile Area should be outside the mine operations envelope for Centennial Coal's mines now that Wallerawang Power Plant is being rehabilitated. This stockpile site is now unnecessary.

The stockpile area is located near the village of Lidsdale and generates contaminated runoff that can be avoided. The use of this stockpile area will require truck haulage, and adversely affect air quality at Lidsdale and also annoy people with truck movements. There is no necessity to create a very large stockpile of coal next to Lidsdale and if the municipal waste emplacement area does not proceed, as the coal stockpile could go there instead. This would avoid expensive and unnecessary double handling and truck movements.

The Kerosene Vale Stockpile Area should be rehabilitated and planted with native species of local provenance.

Thank you for the opportunity to comment.

Yours sincerely,



Keith Muir
Director
The Colong Foundation for Wilderness Ltd

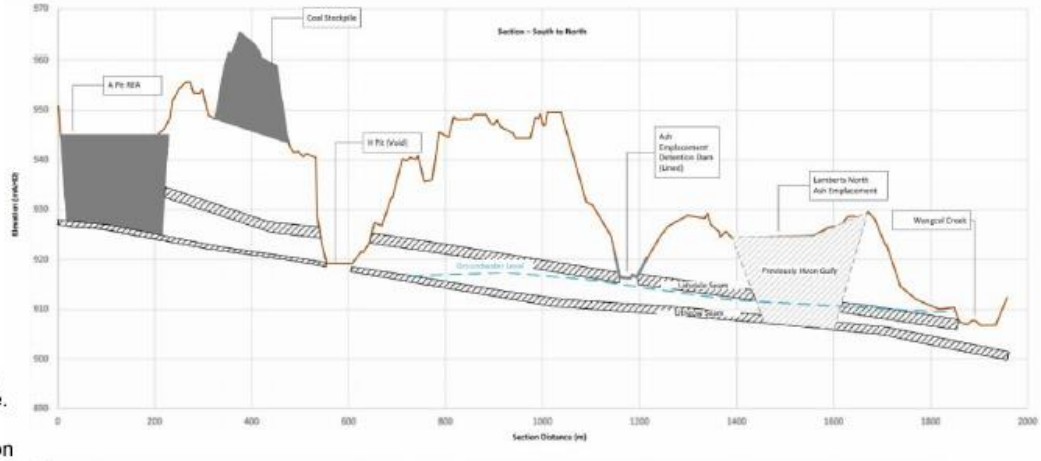
SSD 7592, Vol 2, App B pg 149

NOTE: localtion of groundwater and Wangcol Creek.

Entire project area subject to open-cut or bord and pillar coal mining.

Implications for pollution control of salinity are dire.

Non-point salinity pollution of Wangcol Creek is certain to increase unless groundwater intercepted.



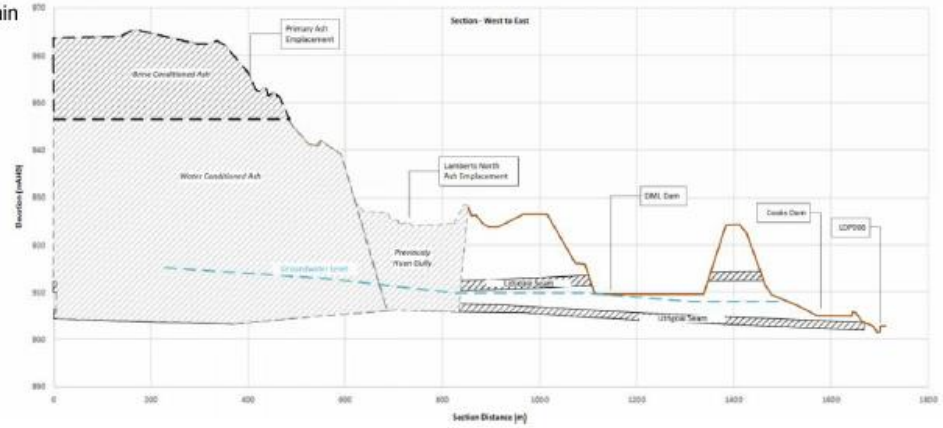
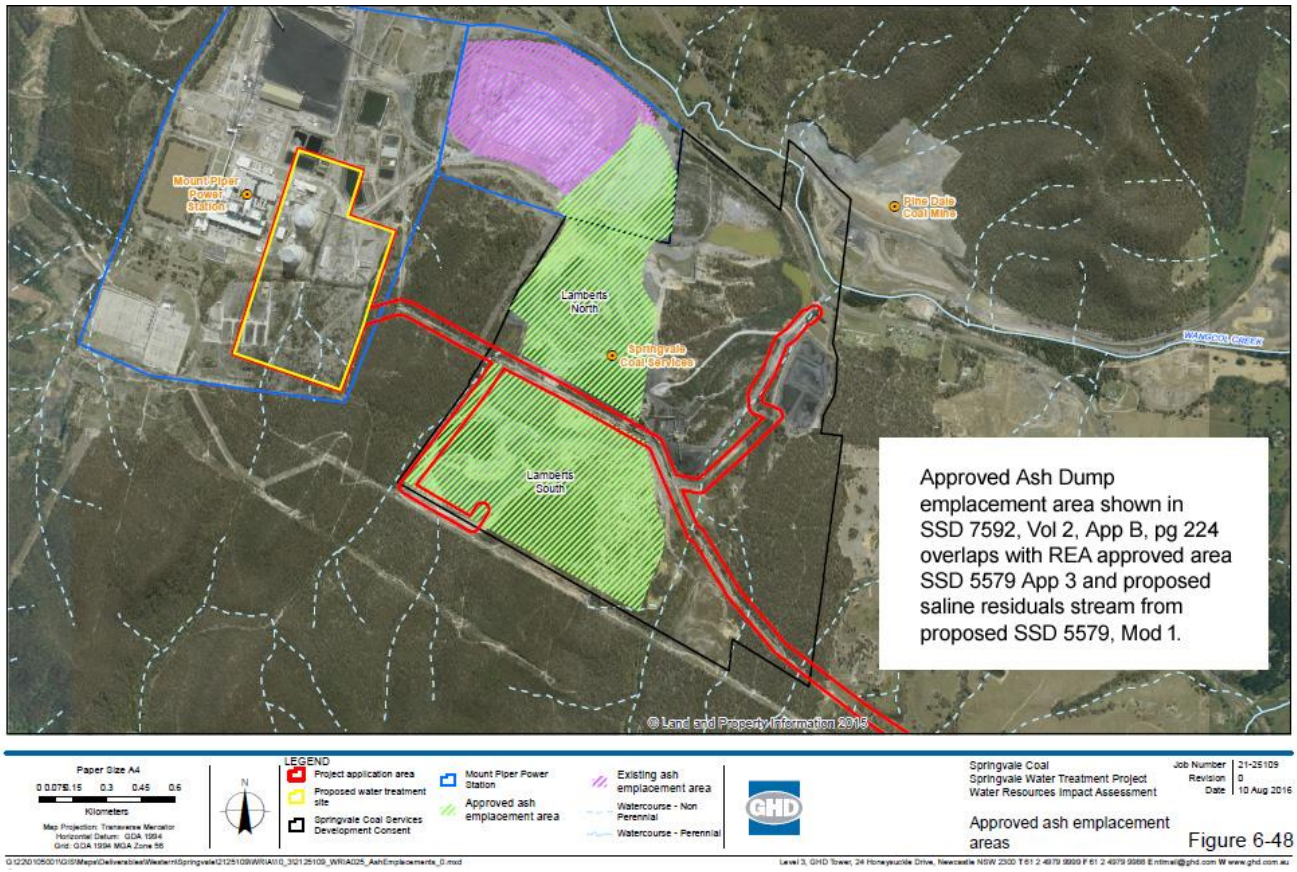


Figure 5-27 Groundwater level cross sections

Additional Figure A – Saline groundwater – a growing non-point source of Wangcol Creek pollution.



Additional Figure B - shows approved brine modified ash emplacement overlaps – Lamberts South - with approved SCSS REA as shown in Addition Figure C below, which all overlap with the proposed residuals emplacement from the water treatment plant.

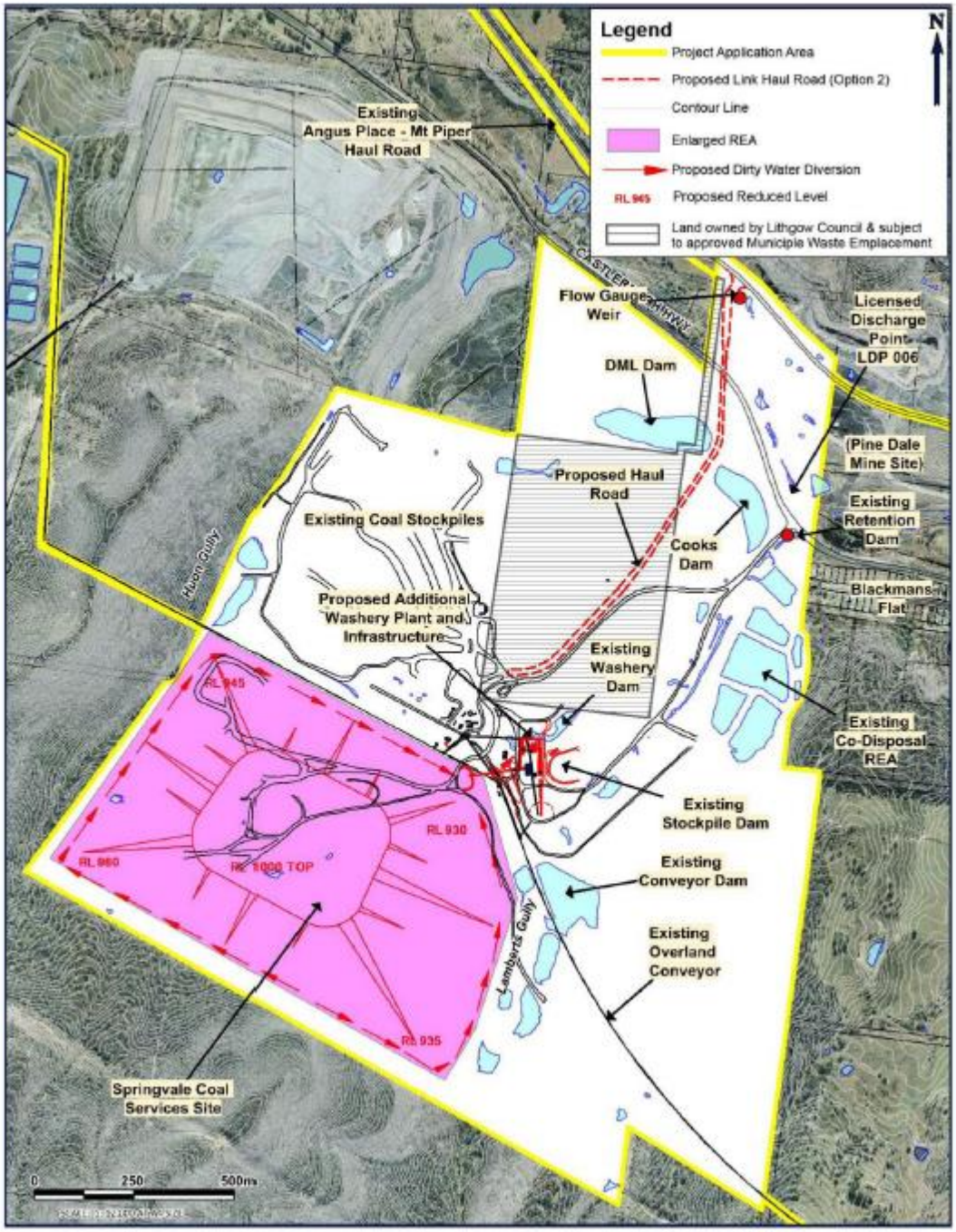
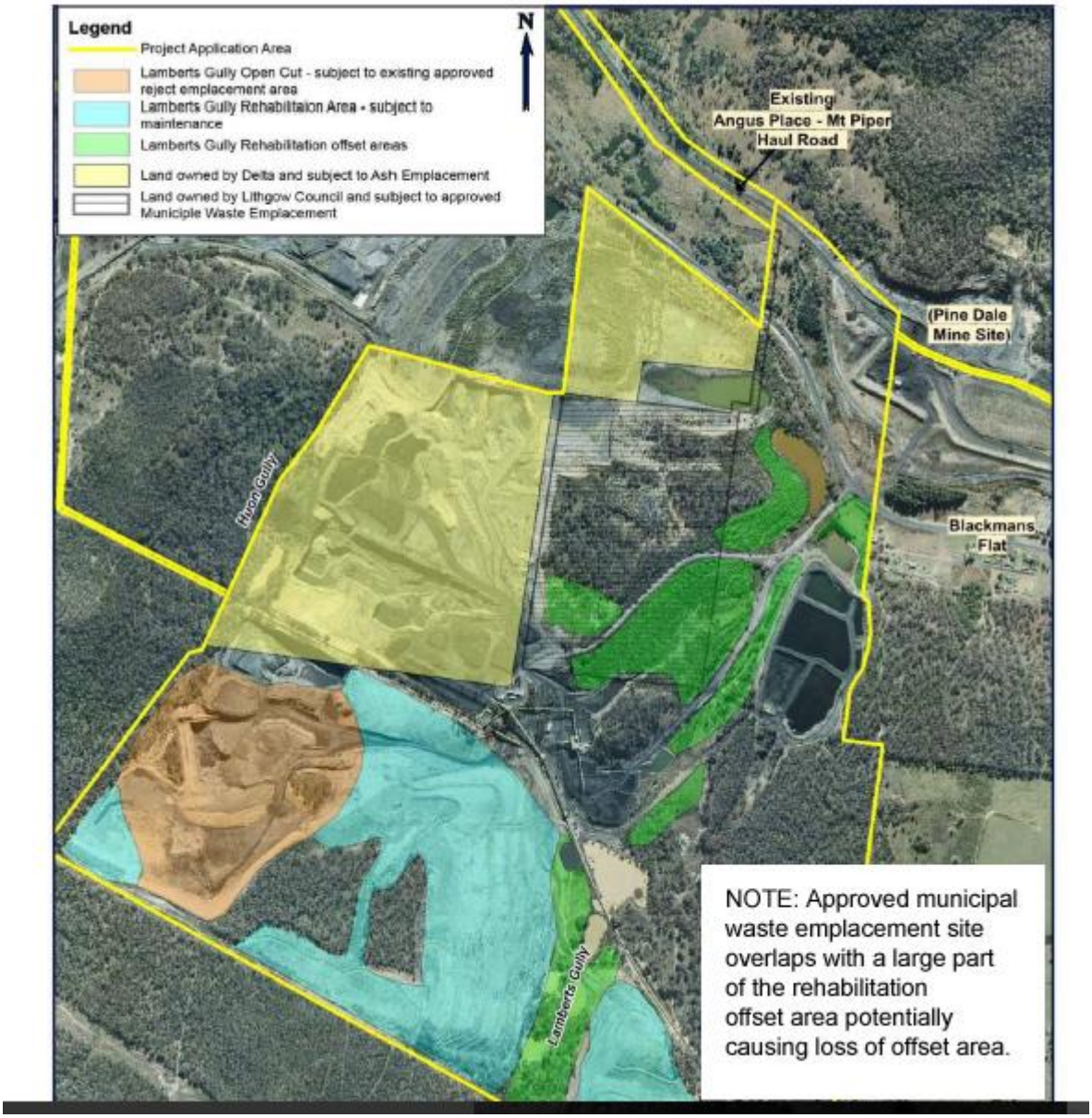


Figure 1: *General layout of proposed infrastructure on the SCSS*

NOTE: Location of Municipal Waste Emplacement to SCSS site, DML & Cooks Dams

Addition Figure C - shows size of SCSS site where co-disposal is proposed for saline residuals and large size of metropolitan waste emplacement area relative to it and the coal washery.



Additional figure D – a rehabilitation offset is to be replaced by a large municipal waste heap.

Blue Mountains Conservation Society Inc

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E-Mail: bmcs@bluemountains.org.au **Web Site:** www.bluemountains.org.au

Nature Conservation Saves for Tomorrow

10 December 2016

Western Coal Services Project
State Significant Development 5579
Modification 1

Overarching statements

- The Blue Mountains Conservation Society believes that the above Modification 1, together with the Springvale Water Transfer and Treatment Project SSD 16_7592 (SWTTP) is able to contribute to the water quality and environmental health of the upper Coxs River catchment.
- As with the SWTTP, the current Modification 1 is a work in progress which, from an environmental viewpoint, has substantial room for improvement.
- Despite statements to the contrary, the release of toxic discharges from LDP006 would exacerbate the pre-existing damage to Wangcol Ck, limit any likelihood of environmental recovery, and potentially set a precedent for Pine Dale's Yarraboldy Extension mine (should it reopen) to be less than rigorous with its operations.
- The Blue Mountains Conservation Society is unable to support Modification 1 until: (a) modelling of the water-quantity and water-quality of proposed discharges to Wangcol Ck is further refined; and (b) the proposed discharges are sent to the treatment plant (see the SWTTP) should this prove necessary.

1. Introduction

The Society has approximately 800 members and interacts with various environmental organisations including the Colong Foundation and the Lithgow Environment Group. The latter two and the Blue Mountains Conservation Society collectively comprise the Gardens of Stone Alliance (GoSA), this having especial commitment to the reservation of the Gardens of Stone Stage 2 (GoS2) proposal.

The GoS2 proposal is concerned with the Western Escarpment and the impact of coal mining (both open cut and underground) on the environmental and social values of the region. It also has extreme concerns about the integrity of the Upper Coxs River in view of the discharges into the Upper Coxs and its tributaries of mine-water, and highly polluted water from the Western Coal Services (WCS) area of operations.

In view of the above, the Blue Mountains Conservation Society (referred to as the Society or BMCS in the present document) has attached, as ***Appendix A,*** the **'Summary and conclusions'** from the Society's submission to Planning and Environment (DPE) in relation to the SWTTP. Conclusions C10-C12 are particularly important in that they highlight the need for discharges from the Western Coal Services area to Wangcol Creek via LDP006 to undergo additional treatment. Such treatment could and should be effected by sending the LDP006 discharges to the Mt Piper Power Station (MPPS) Reverse Osmosis (RO) plant either directly, or indirectly via Thompsons Ck Reservoir.

The Society contends that any proposed clean-up of the Upper Coxs River will remain a mockery as long as the untreated discharges from LDP006 and several other LDPs are approved by the DPE and seemingly accepted by the Environmental Protection Authority (EPA).

2. Aim of WCS Modification 1 and the principal conclusions

Mod 1 aims to address operational interactions with the proposed SWTTP. It focuses on the residuals stream, as proposed in the SWTTP, and its emplacement within the existing reject emplacement area (REA) at the Springvale Coal Services Site (SCSS), and also deals with changes to the decommissioning and rehabilitation strategy approved in SSD 5579. The WCS project is not approved to receive residuals material from off-site locations for emplacement within its existing REA.

The above largely assumes that the SWTTP will be approved, essentially unamended. The Society's submission regarding the SWTTP highlights the need for modifications to ensure better environmental outcomes. **One substantial change involving treatment of discharges from LDP006 has already been alluded to in Section 1. This omission will remain the elephant in the room until it is properly addressed.**

Despite the elephant in the room, Mod 1 concludes (Exec summary, vol 1, pviii):

"There are predicted minor adverse environmental impacts along Wangcol Creek due to the proposed residuals material transfer. There is a minor increase in salt loads at the local level due to the proposed modification, however there will be a reduction in salt loads in the Coxs River catchment due to the cessation of mine water discharges from Springvale Mine. The environmental consequences on receiving waters is considered negligible and will only be realised upstream of the confluence of the Coxs River and Sawyers Swamp Creek. The impacts of the discharges (flow, EC) have limited influence at Lake Wallace, and further downstream to Lake Burragorang."

Furthermore, Mod 1 states (Exec summary, vol 1, px):

"The modification is a minor alteration of the approved Western Coal Services Project and the Project as modified can be considered to be substantially the same development. The adverse environmental impacts of the proposed modification elements are minor and conservative. The impacts are predicted at local level in Wangcol Creek but are not predicted to result in harm to the environment. The impacts are mitigated downstream of discharges at Lake Wallace and further downstream in the Coxs River catchment."

Taking the above quotations at face-value, it is absolutely clear that **adverse environmental impacts will be experienced along Wangcol Ck.** [These are additional to those emphasised in relation to the SWTTP and covered in ***Appendix A***.]

It is additionally apparent (Exec summary, vol 1, ppv-vi) that **the adverse environmental impacts** are:

- increased volumes of water (~4-5%)[1] in Wangcol Ck down to its confluence with the Coxs R; and,
- increased salt-loads and EC levels (~16%)[2] in Wangcol Ck through to its confluence with the Coxs R.

3. BMCS's Assessment

Mod 1 considers that the 'face-value' changes are minor (negligible) because the down-river impacts at Lakes Wallace and Burragorang are insignificant. However, this approach is environmentally unsound and is predicated upon the notions that:

- provided there is sufficient down-river dilution, upstream pollution is immaterial – yet the up-river tract is still trashed from an environmental viewpoint – the high salinity and contained metallic ions will still have killed macroinvertebrate populations and adversely affected other species;

[1] This reflects the difference between future conditions and proposed conditions as defined in the Exec summary, vol1, piv.

[2] This reflects the difference between future conditions and proposed conditions as defined in the Exec summary, vol1, piv.

- it is unreasonable to aim for water quality consistent with that in pristine headwaters up-stream from mining-induced impacts – this 'accommodating' approach is embedded in many environmental protection licences and remains a function of the consent conditions relating to the Springvale Extension[3];
- it is unreasonable to place a high $-value on the environment and thereby require mining companies to include comprehensive treatment of their polluted discharges, lest this detracts from the mine's viability; and,
- if a watercourse is partially trashed, the discharge of polluted waters which slightly ameliorate the problem is deemed neutral or beneficial rather than being viewed as an unacceptable cumulative impact.

Much of the above is pertinent to the WCS Mod 1, despite the glowing statements and conclusions in Mod 1, vol 1, Sections 9.5.3, 9.5.4 and 9.6, pp100-102.

In simple terms, WCS is already sending highly polluted discharges to Wangcol Ck via LDP006 – it is the elephant in the SWTTP room. WCS Mod 1 is now trying to dress-up the need to take the residuals stream from the Mt Piper treatment plant (in accordance with the SWTTP) as an environmentally sound practice which conforms with the principles of ecologically sustainable development (Mod 1, vol 1, Section 9.5) and assists the SWTTP to achieve *"…environmental benefits by improving the water quality in Coxs River catchment."*[4] Unfortunately, the Wangcol Ck portion of the Coxs R catchment will continue to be polluted by discharges from LDP006 as clearly indicated (Mod 1, vol 1, Section 7.7, p93):

"The transfer of residuals stream from the Springvale WTP to the SCSS for emplacement within the existing REA results in increases in volume (up to 5%) and salt discharges (up to 16% increase in EC)" through LDP006 to Wangcol Creek."

"The increased frequency of discharges has the effect of increasing the frequency of exposure of aquatic species to potential toxicants (boron, iron, manganese, nickel and zinc), albeit at decreased concentrations. This is not predicted to impact on the existing instream habitat and macroinvertebrate diversity of Wangcol Creek as the creek in the vicinity of LDP006 has the most degraded habitat and the lowest level of macroinvertebrate diversity of the current four Wangcol Creek aquatic ecology monitoring sites."

Although not stated, this is a classic case of 'some other dude did it'! The old Original Pine Dale open-cut encompassed Wangcol Ck such that the whole tract was intensely disturbed, inadequately rehabilitated, and a substantial source of pollution. More recently, the Yarraboldy Extension of the Pine Dale open-cut mine (currently owned by Energy Australia and under 'care and maintenance') interfered with the groundwater regime and remains an ongoing potential source of contamination. Now, WCS is actively polluting Wangcol Ck through discharges from LDP006; and finally, under the Mod 1 proposal (if approved) WCS will continue to pollute Wangcol Ck, justifying its action on the pre-existing degree of degradation.

This above is unacceptable. As Centennial and Energy Australia stand to benefit from the SWTTP, and both companies are involved with the ongoing degradation of Wangcol Ck, it is time to stop the blame-game and acknowledge the role of cumulative impacts. Both companies should be placed on notice to the extent that the discharges associated with Mod 1 must be sent to the RO (reverse osmosis) treatment plant; and any development of the Pine Dale mine must either be a hydrologically closed system, or any released water should have a quality at least matching the up-stream quality of Wangcol Ck.

4. Specific concerns

4.1 Clean and dirty water – requirements, implications and desirable outcomes

The interaction between groundwater and surface-water hydrologic regimes of the region reflects hydraulic connectivity between historical bord and pillar workings, old open-cut operations, numerous surface-water

[3] SSD_5594, 2015, Schedule 4, items 12 and 13, as discussed in the Society's submission to the Springvale Water Transfer and Treatment Project SSD 16_7592.
[4] Mod 1, vol 1, Section 9.5.1, p100.

management ponds, REAs (reject emplacement areas), AEAs (ash emplacement areas), and remnants of natural watercourses (e.g., Mod 1, vol 2, Appendix DA[5], Figs. 2-1 to and 2-4, pp6-9; Appendix DB[6], Fig 2-2, p11). The region is a porous mess, not least because many of the surface water features are unsealed. There is clear acceptance of this connectivity (Mod 1, vol 2, Appendix DB, Section 2.3, pp9-10 and Fig. 4-2 p23).

Despite the foregoing, the intention is to recognize clean and dirty water divisions (Mod 1, vol 2, Appendix D, Fig 5-2, p38). This is justified as follows (Mod 1, vol 2, Appendix D, Section 5.1.1, p36):

"SCSS is currently undertaking design and construction works relating to the separation and optimisation of clean and dirty surface water flow paths within the Lamberts Gully catchment. ***These works are expected to reduce the clean water load from LDP006 and improve the quality of water discharged from the site in both daily and rainfall discharge events.*** *Additionally, the volume of clean water that infiltrates into the groundwater and subsequently reports to LDP006 is expected to reduce, in part due to improved flow efficiency through the site and the planned pumping of water from SHG1 to the Main Sediment Pond. The primary objectives of these works are to promote the capture and settlement of runoff from dirty catchments and to bypass cleaner water appropriately through site. As part of these works ongoing stabilisation of some catchments will be undertaken to reduce the risk of sediment laden water contributing to the clean water system."*

This may be necessary to meet operational commitments, but because of the vertical connectivity and down-dip connectivity throughout the region, such separation into 'clean' and 'dirty' systems has little environmental merit. Both are saline and contaminated with metallic and non-metallic ions (Mod 1, vol 2, Appendix D, Section 5.3.2, p53).

The Society accepts that 'clean' means less polluted than 'dirty'. For example, Table 5-4 (Mod 1, vol 2, Appendix D, p54) shows that the pH differs little, whereas the EC for 'clean' water is 1143 µS/cm by the time it reaches the Retention Pond while the 'dirty' water at Cooks Dam it is 3273 µS/cm. This difference in EC would be important were it not for the facts that both systems are too saline compared with values on Wangcol Ck up-stream from mining (see Mod 1, vol 2, Appendix D, Table 5-3, p50), and the two systems are collectively discharged into Wangcol Ck via LDP006 (Mod 1, vol 2, Appendix DA, Fig. 2.3, p8).

The Society strongly believes that, in the context of improving the water quality in Wangcol Ck and thereby lessening its high-salinity contribution to the Coxs R, all the 'clean' and 'dirty' water should be collected and, together with any other discharges envisaged under the SWTTP, be sent to the proposed water treatment system. Discharging through LDP006 to Wangcol Ck will not have acceptable environmental outcomes.

4.2 Modelling deficiencies

The Society recognizes that modelling necessarily involves assumptions. However, this does not justify disregarding interactions between surface water and groundwater due to enhanced hydraulic connectivity within this highly-disturbed region of historic mine workings (underground and open-cut), reject and ash emplacement areas, a municipal waste tip, and water-management infrastructure. Yes, the interaction is fully recognized, but the implications of this for enhancing salinities and increasing the content of metallic and non-metallic ions within surface-water and groundwater flows to Wangcol Ck have largely been ignored. Such disregard risks underestimating the environmental toxicity of the polluted waters.

Mod 1, vol 2, Appendix DB, Section 2.3, Fig. 4-2 p23 conveys part of the concern. However, a modified Figure available from the Colong Foundation[7] includes ash and municipal waste emplacements and more completely conveys the likelihood of the degree of salinity and other toxic components being underestimated.

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[5] Volume 2 comprises four Appendices (A-D) – Appendix D has three Appendices (A-C) – this is confusing! **For the purposes of this submission, the appendices to Appendix D are identified as DA-DC.**

[6] See footnote 5.

[7] Muir, K, 2016, Submission regarding Western Coal Services SSD 5579 Mod 1, the Colong Foundation for Wilderness (preliminary draft).

4.3 Other aspects

Although the documents supporting Mod 1 have partly looked at improving the outcomes from an environmental viewpoint, the principal approach has been one of accommodating the needs of the SWTTP and meeting regulatory suggestions regarding separation of 'clean' and 'dirty' water systems within the WCS site.

Beyond that, the apparent aim has been to improve the down-stream water quality of the Coxs River, mainly achieved by the SWTTP directing discharges from LDP009 to the Mt Piper treatment plant. But little (or nothing) has been done to ameliorate the damage to Wangcol Ck, that largely reflects impacts from past and current (care and maintenance) mining operations. Cumulative impacts are therefore someone else's problem, rather than inherited factors which need to be addressed within the context of the most recent proposal. This approach is not in keeping with the claims about economically sustainable development and the following conclusion (see Mod 1, vol 1, Sections 9.5-9.6, pp99-102).

Dr Brian Marshall,
For the Management Committee

Appendix A

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6 November 2016

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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[8] 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)[9] 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 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

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

[9] 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.

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.