



Hy-Tec Industries Pty Limited

ABN: 90 070 100 702

Austen Quarry Stage 2 Extension Project

Response to Submissions

Major Project Application No. SSD-6084

January 2015

Prepared by:



R.W. CORKERY & CO. PTY. LIMITED





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1. INTRODUCTION

This document provides a response to submissions received by the Department of Planning and Environment (DPE) following the public exhibition of an *Environmental Impact Statement* (EIS) supporting an application made by Hy-Tec Industries Pty Limited (“the Applicant”) to extend the extraction area and overburden emplacement within the existing Austen Quarry. The development application has been made under Part 4, Division 4.1 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) and in accordance with Section 79C(1d) of the EP&A Act the consent authority must take into consideration any submissions made in accordance with the EP&A Act and the *Environmental Planning & Assessment Regulations 2000* (EP&A Regs) in determining the application.

In accordance with Section 85A of the EP&A Regs all submissions received by the DPE have been provided to the Applicant. Submissions were received from 10 government agencies or public authorities and two members of the general public (see **Appendices 1a** to **1k**). The following sections identify and respond to the issues raised in each submission with submissions addressed in no particular order.

2. GOVERNMENT SUBMISSIONS

2.1 DEPARTMENT OF ENVIRONMENT

On Friday 28 November 2014, Mr Mark Jenkins, EPBC Assessment Officer of the Commonwealth Department of the Environment (DoE), sent an email querying the application and output of the EPBC Offsets Calculator for assessing the adequacy of the proposed offset on the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed Silver-leafed Mountain Gum (*Eucalyptus pulverulenta*) (see **Appendix 1a**).

Summary of Submission

The email query of Mr Jenkins stated:

“I ran the figures you provided through the EPBC offsets calculator (using the number of individuals line at the bottom of the impact calculator table) and came up with a raw gain of 0% and 0% of the impact offset. As far as I can work out the project will result in a net loss of 721 individuals and no net gain in individuals (because the trees in the proposed offset area already exist). You will need to propose revegetation strategies to increase the Eucalyptus pulverulenta population in order to achieve the offset target.”

Response

The application of the EPBC Offsets Calculator was reviewed by Niche Environment & Heritage and an error in the entry of data acknowledged.

Accounting for the commitment of Hy-Tec to plant at least 1,000 *Eucalyptus pulverulenta* individuals as part of Quarry rehabilitation, an offset equivalent to 173.44% of the impact would be achieved. The following provides a summary of the updated cells of EPBC Offsets Calculator, which has been supplied to the Department of the Environment.

- Time horizon (cell W36). 20 years, i.e. the maximum time allowed. It is noted the offset will extend beyond this time.

- Start value (cell Y36). 1,850 currently existing *Eucalyptus pulverulenta* individuals.
- Future value without offset (cell AA36). 1,665 *Eucalyptus pulverulenta* individuals. This assumes a 10% decrease in the number of individuals over 20 years if the proposed offset is not established (and managed), based on increased weed invasion, feral animal grazing, inappropriate fire regimes, etc.
- Future value with offset (cell AC36). 3,055 *Eucalyptus pulverulenta* individuals. This assumes a 10% increase over 20 years (as a result of management for conservation), plus the replanting of 1,000 individuals. This converts to a raw gain of 1,370 individuals (cell AE).
- Confidence in result (cell AF). 95%.

Confirmation of adequacy is awaited from the DoE, however, we do not anticipate the revised calculations to be rejected.

2.2 NSW OFFICE OF WATER

2.2.1 Introduction

The submission provided by the NSW Office of Water (NOW) provided comments and recommendations for assessment as well as recommended conditions of approval (see **Appendix 1b**). The concerns raised by the NOW are summarised in the following subsections and a response provided to address each issue.

2.2.2 Assessment of High Rainfall Events

Summary of Submission

The submission notes that no data or assessment is provided relating to short high intensity rainfall events and the potential impacts where sediment dams may overflow into nearby tributaries. The submission indicates that the advice of the Environment Protection Authority and the Sydney Catchment Authority (WaterNSW) should be sought to ensure that sediment and pollution control measures and monitoring is appropriate.

Response

It is noted that the Surface Water Assessment Report (SCSC Part 2) prepared by Groundwork Plus (the Surface Water Assessment) has used a water balance model utilising actual rainfall statistics for both a dry year (15th percentile rainfall – 2002) and wet year (90th percentile – 2010) (refer to *Section 2.1.1* of the Surface Water Assessment, p. 2-18). Both years would include short high intensity events and the analysis of discharges therefore includes these.

Section 10 of the Surface Water Assessment Report (p. 2-80) describes the approach to assessment of water quality for controlled and uncontrolled discharges of water based on the dry and wet years. This assessment acknowledges that available data is limited to distinguish water quality characteristics for water captured in the various Sediment Basins or Storage Dams and that which would be discharged in the event of an uncontrolled discharge (which might

follow a short-term high intensity rainfall event). It is noted, however, that these uncontrolled discharges would only occur if the volume of rainfall exceeds the 5-day 95th percentile rainfall depth for the locality. Under such conditions, compliance with Environment Protection Licence nominated criteria is not required.

For the purpose of the assessment it was assumed that water quality of controlled discharges would comply with the Interim Locally Derived Water Quality Objectives (ILDWQO – see *Table 47* of the Surface Water Assessment, p. 2-79) or alternative release water quality conditions prescribed by Environmental Protection Licence (EPL) 12323.

It is further noted that the EPA and WaterNSW have both commented on surface water management at the Quarry confirming satisfaction with the proposed management of referencing conditions to be imposed through a variation to EPL 12323 (refer to Sections 2.3 and 2.4).

2.2.3 Water Quality Monitoring Program

Summary of Submission

The submission notes the limited availability of monitored data for the Yorkeys Creek and Coxs River environments. NOW requests that the Applicant prepare and submit a water quality monitoring program, in consultation with the EPA and WaterNSW, which establishes measurable parameters at a range of representative and clearly defined sites.

Response

The proposed monitoring programs have been described in *Section 4.5.7* of the EIS (pp. 4-110 – 4-112) and described in detail in *Section 12* of the Surface Water Assessment (pp. 2-88 – 2-91). The monitoring program would be implemented to enable ongoing assessment of affected site water releases and their potential risk/impact to the receiving aquatic environment. The water monitoring program would be included within an updated *Water Management Plan* and prepared in consultation with the EPA and WaterNSW, within 12 months of receipt of development approval.

2.2.4 Surface Water Take

Summary of Submission

The submission notes that one of the sources of surface water for operations would be the Coxs River. The NOW requests that the Applicant provide an assessment of the impact of this take from the Coxs River or nearby tributaries with respect to reductions in base flows, the surrounding aquatic environment and riparian ecosystems.

Response

The Applicant holds Water Access Licence (WAL) 25616 that allows for 20 units to be extracted from the *Upper Nepean and Upstream Warragamba Water Source (Coxs River)* of the *Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources* annually. As stated in *Section 2.10.4* of the EIS (p.2-28), the Applicant intends to only access this water should the quarry exhaust other water sources, and in accordance with the water use approval associated with WAL. As such the quantum of water extracted from the Coxs River is

likely to be negligible, extracted under licence in accordance with the rules of the *Water Sharing Plan* and insignificant when considered against the total flows within the Coxs River annually.

The above notwithstanding, the EIS provides an assessment of catchment hydrology identifying that the total change in annual flow to the Coxs River catchment would be very minor (7.5ML) (refer to *Section 4.5.6.2* of the EIS, p. 4-107). Any water that may be extracted from the Coxs River on each occasion would represent only a very small proportion of the total volume of water flowing past the Austen Quarry each day. Consequently, extraction would almost certainly have no effect on the geomorphology or hydrology of the watercourses which are subject to significant variations in flow due to seasonal variation and storm surges.

Niche (2014) provides site validated mapping of the occurrence and distribution of riparian vegetation along the Coxs River adjacent to the Site. Only the River Oak riparian forest could be affected by a change in local flows influenced by water levels and groundwater base flows. However, in such a steep landscape, seasonal flows and storm surges during high rainfall events are far more deterministic of the condition of this vegetation than minor changes to the water level. The River Oak riparian forest that is dependent on the intermittent flows of the Coxs River, is tolerant of a regular cycle of wetting and drying and does not constitute forested wetland or swamp in semi-permanent standing or sub-surface water. It is therefore considered that a small reduction to flow, either as a result of extraction under licence or reduction in catchment, would not result in significant impacts to the River Oak riparian forest along Coxs River.

2.2.5 Licensing

Summary of Submission

NOW notes its satisfaction with the Applicant's plans and commitments surrounding licensing of water access. The submission notes that any increased extraction of surface water from the Coxs River above the current level of extraction must be licenced appropriately. The NOW request that the Applicant demonstrate that the required groundwater entitlement is held prior to Stage 2 operations commencing.

Response

The Applicant has obtained a zero allocation Water Access License (WAL) for the Coxs River Fractured Rock Aquifer Groundwater Source of the *Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources* (10AL119058) and has received approval for a controlled allocation of 20MLpa from this groundwater source.

As a State Significant Development, the receipt of development consent would provide the necessary approvals (in lieu of water use and water management work approvals under Sections 89 and 90 of the *Water Management Act 2000*) against which the allocation provided by the WAL would be drawn.

2.2.6 Groundwater Resources

Summary of Submission

The submission noted that, following an assessment of impacts against the *Aquifer Interference Policy* minimal impact guidelines (DPI, 2012), NOW anticipated no significant issues with the Proposal proceeding. NOW supports the establishment of a network of piezometers to monitor groundwater levels and requests that regardless of whether the Proposal is approved that a groundwater monitoring program be developed in consultation with NOW. The submission also notes that the appropriate licensing is being sought by the Applicant.

Response

The Applicant notes the feedback from NOW. A groundwater monitoring program would be included within the Water Management Plan that would be updated within 12 months of receipt of development approval. This update would be undertaken in consultation with the NOW.

2.2.7 Management Plans

Summary of Submission

The NOW recommended preparation of the following plans and requested that additional baseline assessment be completed prior to development of appropriate trigger levels included in the various plans.

- A *Groundwater Management Plan* developed with consideration of the *Aquifer Interference Policy* (DPI, 2012).
- A *Soil and Water Management Plan* developed in consultation with the NOW.
- A *Water Monitoring Program* developed in consultation with the NOW.

Response

All management plans would be updated or prepared within 12 months of receipt of approval (or as specified in conditions of development consent). It is proposed that an updated *Water Management Plan* would incorporate groundwater and surface water management, as well as describe the *Groundwater Monitoring Plan* and *Surface Water Monitoring Program*. The *Water Management Plan* would include appropriate trigger levels established in consultation with the NOW and other relevant statutory stakeholders.

2.3 ENVIRONMENT PROTECTION AUTHORITY

2.3.1 Introduction

The Environment Protection Authority (EPA) submission generally supports the Stage 2 Extension with exception of the proposed hours of operation (see **Appendix 1c**). The following subsections summarise the general comments included in the EPA submission and provides a response and further justification as required.

2.3.2 EPL Licence

Summary of Submission

The EPA has requested a generic condition requiring that the Applicant hold and comply with the conditions, or conditions in line with, EPL 12323.

Response

The Applicant retains a copy of EPL 12323 at the quarry at all times and is committed to compliance with current and future conditions of EPL 12323.

2.3.3 Hours of Operation

Summary of Submission

The submission seeks further justification for the proposed changes to the hours of operation for 'Extraction/Processing' and 'Maintenance'. Without further justification the EPA does not support the proposed changes to the Hours of Operation.

Response

The extension to approved operating hours for maintenance operations is considered reasonable given that these operations would be limited to the workshop areas, where practical, and would produce minimal noise emissions. The Applicant's preference for maintenance work to be approved to occur 24 hours each day does not infer that these operations would occur continuously but would provide flexibility for any maintenance work to be undertaken as required, limiting potential interruptions to the ongoing production schedule.

The rationale for increasing the approved operating hours for extraction and processing operations was presented in *Section 2.11.1* of the EIS (pp. 2-32 – 2-33). This rationale was presented by discussing the potential benefits of the increased hours of operations as follows.

- Improvements to operational flexibility, such that maintenance work, shut-downs and other enforced stoppages can be accommodated without compromising the production rate of the quarry. Under the existing approved operating hours (6:00am to 6:00pm), when production levels were to reach 1.1Mtpa extraction and processing operations would be required at a relatively constant level. The Applicant's preference is for greater flexibility during these times without compromising the production schedule.
- To allow for efficient production of all potential products of the quarry. The viability of undertaking the reprocessing of crusher scalps, either those produced each day or stockpiled within the Yorkeys Creek Stockpile Area, is limited within the existing hours of operation as the plant requires operation close to full time producing aggregates and related products. The Applicant's proposed reprocessing and sale of the material contained within the Yorkeys Creek Stockpile Area, which would reduce the visual impact of the Site when viewed from McKane's Falls Road, is therefore largely dependent on the increased hours of operation.

Furthermore, in order to achieve the maximum production level of aggregates and related products approved for the quarry, an increase in hours of operation is critical. The following review demonstrates this.

- Under currently approved hours of operation, the maximum number of operating days is 302 and maximum number of operating hours approximately 3 400. In reality to maintain operational efficiency, operations on Saturdays are restricted to major maintenance on the processing plant reducing the number of operating days to 250 and available hours to a maximum of 3 000 (250 x 12).
- During 2014, 834 000t was produced by the processing plant over 2 578 operating hours (including 659 hours of plant down-time – 25%). Discounting the down time, this equates to an average throughput of 435t per hour (which is the approximate specification of the plant). However, accounting for all of the following factors; 25% down time on the plant, start-up and shut down each day, periods of unscheduled maintenance or other unforeseen circumstances, the production rate achieved reduces to 325t per hour averaged over the year.
- Therefore, to produce 1.1Mt per year, utilising the existing plant as described in the EIS, approximately 3 380 operating hours at the average of 325tph would be required.
- The extension to the hours of operation would provide for an additional 4 hours per day, 5 days per week, i.e. approximately 1 000 additional hours, increasing total hours available (allowing for a continuation of major maintenance only on Saturdays) to 4 000. This buffer will ensure that operations will be positioned to meet the continued demand.
- The additional 4 hours per day would also allow the quarry to have the flexibility of 2 eight hour work shifts. This additional flexibility in staffing arrangements will allow the quarry to explore options to further process scalps / overburden material, with the aim of reducing wastage material and stockpiled material.

On the basis of the above, the additional hours of operation would ensure that 1.1Mt of products can be produced annually.

Given the isolated location of the Austen Quarry, it is not considered that the extended operating hours would result in significant noise or other disturbance to nearby residents. In fact, the results of noise modelling which predict noise levels generally less than 30dB(A) at surrounding receivers during the proposed extended hours of operation (6:00pm to 10:00pm) (refer to *Table 4.38* and *Section 4.9.6.1* of the EIS, pp. 4-186 – 4-188).

The EIS has described management measures to avoid and mitigate the potential impacts from lighting at the Quarry including the selection and placement of lights to minimise the overall 'lume' and ensure the direction of lighting is away from those visual zones with direct views of the extraction area and overburden emplacement.

Based on the information provided above and in *Section 2.11.1* of the EIS, and the assessment of impacts completed for the extended hours of operation, the Applicant contends that the requested amendment to existing hours of operation is necessary, reasonable and justifiable.

2.3.4 Operational Noise and Vibration

Summary of Submission

The EPA submission notes the following regarding operational noise and blasting limits.

- The in-force operational noise and blast and vibration limits currently applicable to EPL 12323 would remain for the amended EPL under the Proposal.
- That ongoing noise monitoring is undertaken on an annual basis rather than over the initial 12 month period as stated in the Noise Impact Assessment. This would involve one day of attended noise monitoring and five days of unattended noise monitoring annually and included with the Annual Return. Noise monitoring would also be undertaken as a result of a substantiated noise-related complaint and if required by the EPA. The results of this monitoring would be provided to the EPA within 21 days of completion.
- That a *Noise Management Plan* be prepared/expanded from the existing *Blast Management Plan 2006*.

Response

The Applicant notes and accepts the EPA comments regarding application of existing noise, blast and vibration limits to the Stage 2 operations (and amended EPL) and would update the existing *Noise Management Plan* to incorporate the Stage 2 operations and incorporating blasting and vibration management, in consultation with the EPA, within 12 months of receipt of development approval. The inclusion of blasting and vibration management in the *Noise Management Plan* will be reflected in the revised Statement of Commitments that will be submitted to the DPE prior to the issue of development consent.

While the recommendations of the Noise Impact Assessment for a program of attended noise validation monitoring within the first 12 months following the issue of development consent is reasonable, the Applicant is willing to accept a condition for annual noise monitoring. It is requested, however, that a note be included with such a condition providing for the requirement to undertaken annual monitoring to be subject to review and revision in consultation with the EPA. This would ensure that should, as expected, noise levels remain well below noise criteria, the continuation of redundant monitoring can be ceased without the requirement to modify the development consent.

2.3.5 Air Quality and Odour

Summary of Submission

The EPA submission notes the following regarding air quality and odour.

- The in-force operational dust conditions currently applicable to EPL 12323 would remain for the amended EPL under the Proposal.
- That the following items be included regarding dust conditions.
 - *That activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind blown or traffic generated dust.*

- Trucks transporting material to and from the premises must be covered immediately prior to unloading and immediately after loading to prevent wind blown emissions and spillage.
- That an Air Quality Management Plan be prepared/expanded from the existing Air Quality Management Plan 2006.

Response

The Applicant notes and accepts the EPA comments regarding application of existing dust limits to the Stage 2 operations (and amended EPL), the recommended conditions and would update the existing *Air Quality Management Plan*, in consultation with the EPA, within 12 months of receipt of development approval.

2.3.6 Land Management

Summary of Submission

The EPA submission requests that a *Rehabilitation and Environmental Management Plan* be prepared based on rehabilitation best practice.

Response

The Applicant notes and accepts the EPA comments regarding preparation of the *Rehabilitation and Environmental Management Plan*. This plan would be developed in consultation with the EPA.

2.3.7 Water Management

Summary of Submission

The EPA submission notes the following regarding water management.

- (1) That the EPA is satisfied that terminology and referencing is suitable in the EIS and that identification of a diversion for clean water from Storage Dam 5 around Storage Dam 6 allows greater capacity to store and treat dirty water
- (2) The EPA no longer supports the concept of pumping water from Storage Basin 1 to another storage in order to compensate for inadequate design storage capacity based on the proximity to Coss River, the broader catchment area and historical regulatory issues.
- (3) There is a limited data set available to assess potential pollution impacts from total suspended solids and some metals within Sediment Basin 2. More monitoring is required for this water management structure.
- (4) That the EPA requires sediment basin capacities to be reviewed and where necessary upgraded in accordance with relevant NSW Guidelines. This will be required through a Pollution Reduction Program (PRP) attached to EPL 12323 when updated in 2015.

- (5) The in-force water and pollution conditions currently applicable to EPL 12323 would remain for the amended EPL under the Proposal. Some flexibility is requested for additional concentration limits inclusions if required. It is also noted that likely variations will be result from review of Sediment Basin capacity in 2015.
- (6) That a *Soil and Water Management Plan* be revised in consultation with relevant agencies and in accordance with relevant guidelines.

Response

The response to the EPA comments on water management are addressed in the order presented above.

- (1) The Applicant notes and accepts the EPA comments regarding the clean water diversions.
- (2) The Applicant accepts the EPA's requirement for the design storage capacity of Sediment Basin 1 to meet the 5-day 95th percentile capacity requirement for the catchment. The Applicant considers the EPA's proposal to vary EPL 12323 to include a Pollution Reduction Program (PRP) for this purpose to be appropriate. At this stage, the Applicant considers a reduction in the capacity of the catchment reporting to Sediment Basin 1 to be the most feasible approach to achieving the objectives of the PRP and will consult with the EPA and WaterNSW in designing water diversion structures.
- (3) The lack of available data relating to Sediment Basin 2 is acknowledged, however the Surface Water Assessment has utilised available water quality data to identify the potential risk of pollution impacts. In addition, a monitoring program would be implemented to enable ongoing assessment of affected site water releases and their potential risk/impact to the receiving aquatic environment. The monitoring program is described in Section 4.5.7 of the EIS (pp. 4-110 – 4-112) and Section 12 of the Surface Water Assessment and would provide the additional information required to establish the baseline water quality at Sediment Basin 2.
- (4) The sediment basin and storage dam capacities would be addressed in consultation with the EPA and WaterNSW in accordance with a PRP to be conditioned as a variation to EPL 12323.
- (5) The Applicant notes the EPA comments regarding the application of in-force water and pollution conditions to Stage 2 operations. The Applicant is agreeable to further negotiation regarding additional concentration limits.
- (6) The Applicant would update the existing *Water Management Plan*, in consultation with the EPA, within 12 months of receipt of development consent.

2.3.8 Draft Statement of Commitments

Summary of Submission

The submission requests that the Draft Statement of Commitments be updated to incorporate the Applicant's response to the previously raised concerns.

Response

The Applicant would abide by the commitments made in the EIS, this Response to Submissions Document and any relevant documentation as stated in the final conditions of approval. It is expected that a final Statement of Commitments will be included as an appendix to the development consent.

2.4 WATERNSW (FORMERLY SYDNEY CATCHMENT AUTHORITY)

2.4.1 Introduction

The submission provided by the Sydney Catchment Authority (SCA), now rebranded as WaterNSW following a merger with Sydney Water, asserted that the information contained in the EIS was not sufficiently comprehensive or scientifically robust and did not address cumulative impacts (see **Appendix 1d(i)**). The SCA expressed concern that the development would not have a neutral or beneficial effect on water quality. A preliminary response to the issues raised was provided to Water NSW on 7 January 2015 and a teleconference held on 8 January 2015 to discuss the issues and the Applicant's approach to the assessment of water resources. Participants in the teleconference included the following representatives.

- Water NSW – Ms Frances Kelly (Manager, Planning and Assessments), Dr Marlène van der Sterren (Acting Senior Assessment Officer) and Ms Nicole Wallwood (Senior Assessment Officer).
- Hy-Tec Limited – Mr Darryl Thiedeke (National Development Officer).
- R.W. Corkery & Co. – Mr Alex Irwin (Senior Environmental Consultant) and Mr Nicholas Warren (Environmental Consultant)
- Groundwork Plus – Mr Shane Stuart (Senior Environmental Consultant)

Following the meeting, correspondence was provided by Dr Marlene van der Sterren that confirmed the information sought by WaterNSW and noted their position on several items following the teleconference. This correspondence is provided as **Appendix 1d(ii)**.

2.4.2 Uncontrolled discharge

Summary of Submission

The submission raised concerns regarding the potential for uncontrolled discharge of untreated sediment laden water to the Cocks River from Sediment Basin 1 (SB1) and Storage Dam 6 (SD6).

Response

In the preliminary response to WaterNSW, it was noted that uncontrolled discharges of untreated sediment laden waters from SB1 to the Cocks River will still occur regardless of whether this basin is constructed to provide the 5-day 95th percentile design rainfall event capacity requirements and managed in accordance with *Managing Urban Stormwater, Soils and Construction – volume 2E Mines and Quarries, NSW* (DECC, 2008) (“the Blue Book”). The Applicant asserted that by continuing to implement the proposed water management strategy (involving the transfer of water from SB1 to SD6) the frequency and volume of uncontrolled discharges, predicted through modelling, would be significantly reduced, i.e. a beneficial impact is provided. This is addressed in detail in *Section 6.7* and *Tables 33* and *34* of the Surface Water Assessment Report.

The frequency and volume of uncontrolled discharges would be further reduced by the proposed water management controls that relate to SD6, namely:

- diverting overland flows from SD5 around SD6; and
- undertaking controlled discharges of treated waters within SD6 to maintain free board.

In fact, the water modelling indicates that the proposed water management strategy would provide for fewer uncontrolled discharges of less volume than would be achieved by increasing the capacity of SB1 to achieve the 5-day 95th percentile rainfall event capacity.

WaterNSW has not formerly responded to the demonstration of a beneficial impact on the receiving waters of the proposed water management strategy, however, since providing the submission WaterNSW have consulted with the EPA (see **Appendix 1d(ii)**). WaterNSW has confirmed that it is satisfied with the EPA approach to addressing this issue through a variation to EPL 12323 conditioning the development and implementation of a PRP to achieve compliance with the Blue Book sediment basins capacity requirements. The Applicant has committed to consulting with WaterNSW during the development of the PRP so that it would be acceptable to both EPA and WaterNSW.

2.4.3 Capacity of water management structures

Summary of Submission

WaterNSW considers that the storage capacity of Sediment Basin 1 (SB1) is not sufficient to manage polluted water generated by the Stage 2 operations.

Response

As described in *Section 5.2* above, WaterNSW has confirmed that the development and implementation of a PRP, in consultation with WaterNSW, is an acceptable outcome.

2.4.4 Groundwater Impacts on Surrounding Watercourses

Summary of Submission

The submission expresses concern that the proposed extraction depth of 685m AHD would be lower than the water level in Yorkeys Creek (700m AHD) and would therefore result in water being drawn from Yorkeys Creek that would normally flow to Coxs River. WaterNSW suggest no groundwater investigations have been undertaken.

A preliminary response was provided to WaterNSW on 7 January 2015 and discussed on 8 January 2015 with representatives of WaterNSW. Following this discussion, WaterNSW clarified the request for additional information as follows.

“... the following information could be included in the response to submissions report to enable Water NSW to better understand the potential groundwater / surface water impacts:

- Frequency graphing of the current flows and discharges and the proposed flows and discharges in the Cox's river and Yorkey's Creek (either by flow, volume or both)*
- Frequency graphing of the groundwater drawn-down effects on the river and creek (either by flow, volume or both)*
- Impact and assessment on the different flow regimes (e.g. impact during low flows and impact during high flows)”*

Response

As noted in the preliminary response to Water NSW, a Groundwater Assessment was completed for the Stage 2 Extension by Ground Doctor Pty Ltd (Part 3 of the Specialist Consultant Studies Compendium) and this assessment considered the potential impacts of the Proposal on Yorkeys Creek. Notably, the Groundwater Assessment (Section 6.2, p. 3-21) confirms that *“groundwater would continue to flow toward Yorkeys Creek as a result of groundwater recharge occurring in the undisturbed area between the excavation and the Creek.”*

Ground Doctor Pty Ltd has considered the request for additional analysis of potential impact and further assessment, however, considers this additional analysis and assessment to be unnecessary in the consideration of the potential impact of the Proposal on the flow regimes of the Coxs River and Yorkeys Creek. The following provides the detailed justification and additional clarification of Ground Doctor Pty Ltd to support this conclusion.

The Groundwater Assessment prepared for the Austen Quarry Stage 2 Extension Project (“the Groundwater Assessment”) clearly illustrates that the reduction in groundwater availability to the Coxs River and Yorkeys Creek would be minimal and therefore the potential for impact on base flows to these drainage features insignificant. The potential for impact (negligible) does not warrant the requested additional analysis and assessment requested by WaterNSW. The following reviews, further discusses and clarifies the information presented in Groundwater Assessment with respect to potential losses of groundwater to the Coxs River and Yorkeys Creek.

Coxs River

The base of the proposed extraction area (685m AHD) remains well above the elevation of the Coxs River in the vicinity of the site (660m AHD). Therefore dewatering of the excavation cannot physically drain water from the Coxs River.

The Applicant holds Water Access Licence (10AL119058) and has been approved for the allocation of 20MLpa of groundwater from the Coxs River Fractured Rock Groundwater Source of the *Water Sharing Plan* for the Greater Metropolitan Region Groundwater Sources. The predicted take of groundwater associated with the proposed quarry from drawdown and seepage (<10ML/yr) has therefore been appropriately licensed. Licensing is only permitted where extraction falls within sustainable limits established in the relevant *Water Sharing Plan*.

Yorkeys Creek

The right of The Applicant to take up to 20ML of groundwater annually from the Coxs River Fractured Rock Groundwater Source notwithstanding, the Groundwater Assessment concludes that there will be no impacts on the groundwater level at Yorkeys Creek. Relevant sections of the Groundwater Assessment are presented below with some further discussion and clarification.

Section 4.3 of the Groundwater Assessment (p. 3-13) states:

Yorkeys Creek is the only substantial drainage close to the Site. Yorkeys Creek stretches over a distance of approximately 4km which is significant when compared to most gullies adjacent to the Site, which typically discharge surface water to the Coxs River within 1km of their headwaters. Yorkeys Creek runs in a southwest to northeast direction from Jenolan Caves Road to the Coxs River. Yorkeys Creek discharges into the Coxs River to the west of the administration area and product sorting and stockpiling area. Yorkeys Creek drains the elevated ridges along Jenolan Caves Road (in excess of 900m), however, in the vicinity of the Site, has an elevation less than 700m AHD. The Yorkeys Creek valley is a physical boundary which keeps surface water from the elevated western portion of the HPC property from the area immediately adjacent to the Quarry.

Yorkeys Creek has a relatively small catchment which extends approximately 4 to 5km to the southwest of the Coxs River. The catchment is steep, falling from in excess of 900m AHD to approximately 660m AHD over a horizontal distance of approximately 4km with an average gradient of approximately 5 to 6%. The lower portion of Yorkeys Creek where it drains into the Coxs River (adjacent to the Secondary Processing Area of the Quarry) was observed to be dry during several site visits. Site personnel confirm that flow within Yorkeys Creek is ephemeral (intermittent) and dependent on rainfall. The absence of permanent water confirms that groundwater discharge is not a significant contributor to flow in Yorkeys Creek.

The lack of permanent water within Yorkeys Creek, and the low permeability of the surrounding geology, indicates there is little or no potential for groundwater to drain from Yorkeys Creek to the proposed extraction area. Whilst there is little groundwater data available, the low permeability of the geology is demonstrated by the steep hydraulic gradients identified. As discussed in Section 5.3 of the Groundwater Assessment (p. 3-13):

There appears to be mounding beneath ridgelines with steep gradient to discharge points in the adjacent valleys. At the Site the observed standing water level (730m AHD) is approximately 70m to 100m above the Coxs River, which is less than 500m from the Quarry at its closest point. Similarly groundwater elevations along Jenolan Caves Road (approximately 4km west of the Site) are as much as 190m above the standing water level within the Quarry. These

observations demonstrate that the fractured rock supports relatively steep hydraulic gradients. For example, groundwater seepage was observed at an elevation of approximately 720m AHD adjacent to the primary crusher. The Coks River is located approximately 400m to the north of the primary crusher at an elevation of approximately 660m AHD. This equates to an average hydraulic gradient of at least 15%. Similarly, the Coks River is located approximately 500m to the east of the extraction area at an elevation of approximately 630m AHD. This equates to an average hydraulic gradient of approximately 20%.

Steep hydraulic gradients can only be supported in material with low average permeability.

On the basis of the low permeability of the geology between the extraction area and local drainage features, such as Yorkeys Creek (650m to the west), Section 6.3.5 of the Groundwater Assessment (p. 3-24) states the following with respect to potential drawdown impacts:

*The lateral spread of any drawdown impacts adjacent to the excavation would be limited by the low average permeability of the aquifer, which has been observed to support hydraulic gradients of at least 20% (refer to **Section 5.4**).*

Based on this observation drawdown impacts would be expected to be negligible at a distance of approximately 225m from all sides of the extraction area. This is based on establishment of a hydraulic gradient of 20% adjacent to the extraction area and assuming pre-development standing water level of 730m AHD.

*Groundwater recharge would continue to occur in the undisturbed areas surrounding the extraction area, resulting in mounding of groundwater between the extraction area and surrounding gullies, which are inferred to be potential groundwater discharge points (see **Figure 7**).*

Based on observations from the Site standing water levels between the extraction area and surrounding gullies (which include Yorkeys Creek), the standing water level would remain more elevated than the gullies. A hydraulic gradient would therefore be maintained toward gullies, with potential for groundwater to continue to discharge, or to maintain pre-development conditions.

The Groundwater Assessment clearly demonstrates that the groundwater does not provide a significant (if any) base flow to Yorkeys Creek. Further, the Proposal is not expected to affect the occurrence of groundwater directly adjacent to or beneath Yorkeys Creek. Hence, any further analysis of flows or discharges is not warranted.

Confirmation of the minimal potential for impact on groundwater discharge to the Coks River or Yorkeys Creek notwithstanding, Hy-Tec has committed to monitoring the affects of the extension of the extraction area to confirm the predictions and assessments made. Section 8 of the Groundwater Assessment (p. 3-33) states:

Ground Doctor recommends establishment of piezometer network that would allow monitoring of water levels around the extraction area, re-evaluation of drawdown risks and re-evaluation of ongoing groundwater losses associated with the Stage 2 Extension.¹

¹ This recommendation has been accepted and is included as Commitments of 10.8 to 10.11 of the EIS.

Further, it is noted that excavation to greater depths will be a slow process (refer to *Figure 2.6* of the EIS). There would therefore be significant time to react to unforeseen issues in the highly unlikely event that unexpected drawdown impacts occurred.

2.4.5 History of non-Compliance

Summary of Submission

The submission noted that the Austen Quarry had a record of non-compliance and cited two instances from the 2012-2013 period as examples. WaterNSW expressed concern that the extent of the development was much greater and required more complex water management.

Response

The Applicant argues that previous performance is not relevant to the assessment of the current proposal. The non-compliances noted by the WaterNSW have been acknowledged in the relevant reports to Lithgow City Council, the EPA and Water NSW and addressed appropriately.

The exceedances of criteria noted during the 2012-2013 occurred during a period of high rainfall when the sediment load of the river was almost certainly also elevated. The fact that monitoring at the control site upstream of Austen Quarry was not undertaken due to the elevated river level and difficulty in accessing this point is evidence of this.

It is further noted that during the most recent reporting period (12 months to June 2014), all water samples were compliant with the nominated criteria.

Finally, it is important to recognise that the Stage 2 Extension does not add significantly to the complexity of water management at the Austen Quarry. All runoff generated by the extension of the open cut would be managed internally within the void and management of the overburden emplacement has required calculations concerning the appropriate size of the sediment basin to collect runoff from this structure.

WaterNSW has accepted this response and requires no further information (see **Appendix 1d(ii)**).

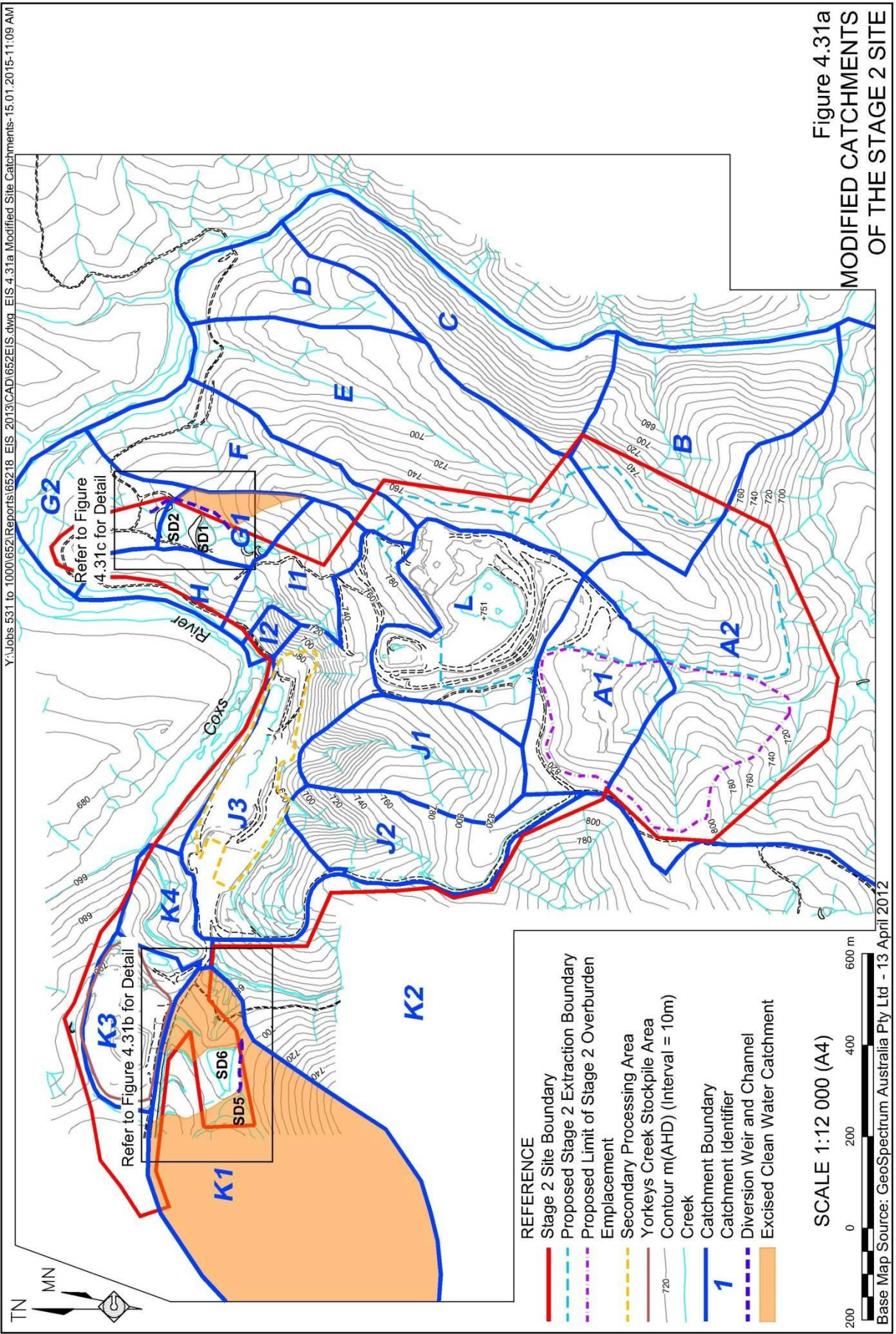
2.4.6 Clean Water Diversions

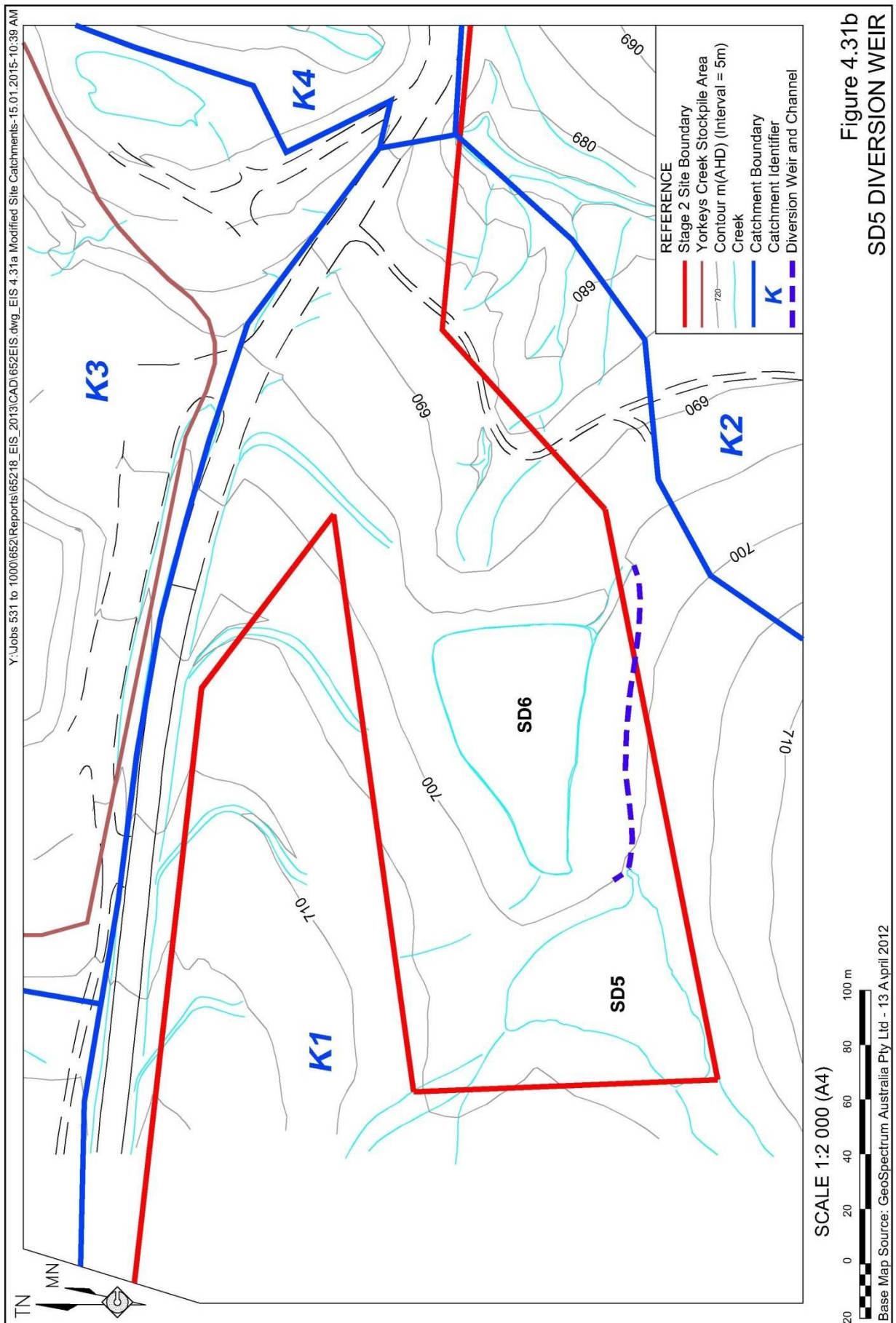
Summary of Submission

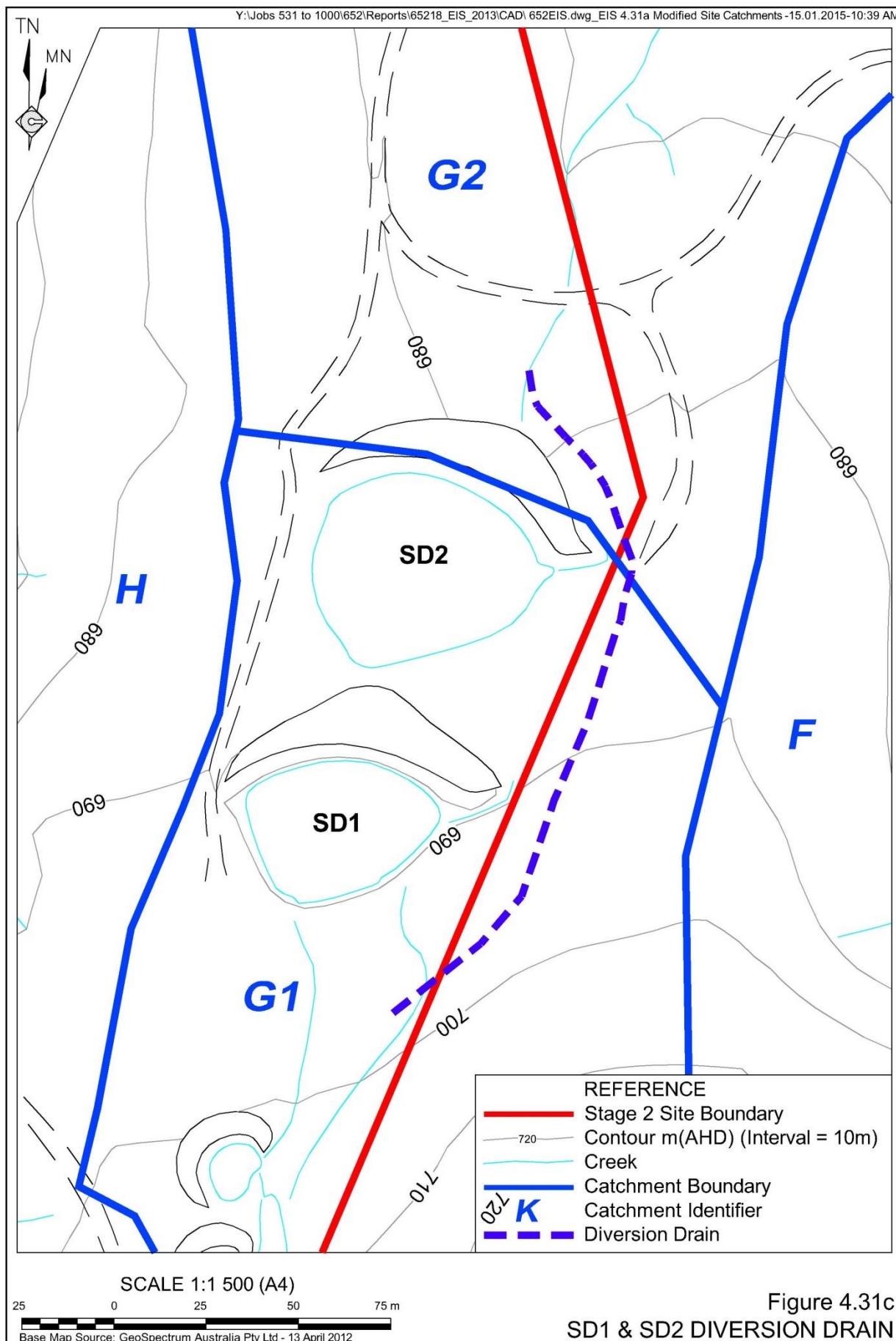
The submission seeks further information regarding the location of proposed clean water diversions so that it can assess these adequately.

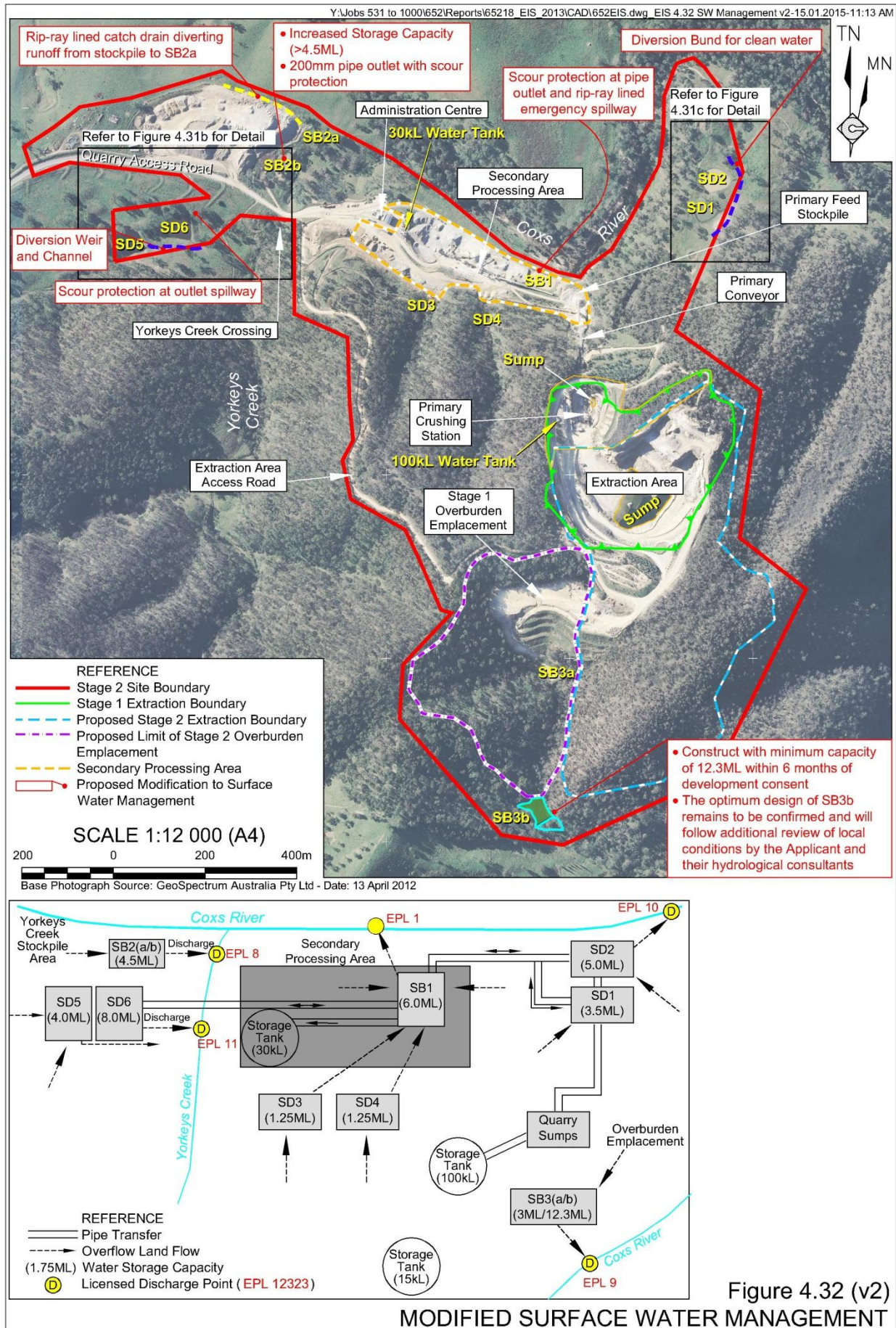
Response

Natural topography has been utilised to separate catchment areas where practicable, including clean water and disturbed catchments. Where this is not suitable, perimeter or diversion bunds would be installed. **Figures 4.31(a to c)** and **4.32** of the EIS have been updated to more clearly display the location and direction of proposed clean water diversions.









2.4.7 Water Quality at Discharge

Summary of Submission

The submission raised concerns that the quality of water discharged would not be known prior to discharge.

Response

Efforts to obtain alternative data sets for the catchment (within the past two years) were sought and data obtained was reviewed for consideration in preparation of the Surface Water Assessment. The available information was found to be of little added benefit (focused mostly on base flow conditions rather than event flows when uncontrolled discharges from the Site is likely to occur and/or were limited in the analytes of interest being monitored). This is generally the case for equivalent systems water quality data as well.

A monitoring program would be implemented to enable ongoing assessment of affected site water releases and their potential risk/impact to the receiving aquatic environment. The monitoring program is described in detail in *Section 4.5.7* of the EIS and *Section 12* of the Surface Water Assessment.

2.4.8 Clarification of Assessment Results

Summary of Submission

The response requested clarification of the following elements of the surface water assessment.

- Uncontrolled discharges from Storage Dam 6 are higher under dry conditions than under wet conditions (page 2-70, Table 39 and Table 40).
- Uncontrolled discharges from Storage Dam 2 during wet conditions are predicted to be 10.4ML (Table 22 and Table 23), however it is reported to be 104.8ML on page 2-56.
- Controlled and uncontrolled discharges are less for Sediment Basin 1 at its current capacity than when its capacity is increased from 6 to 11ML.

Response

The Applicant notes that administrative errors occur from time to time and responds as follows.

- *Tables 39 and 40* of the Surface Water Assessment have been amended to correct errors with calculations for dry and wet conditions (these tables on p. 30).

Given the proposed water management strategy considered in these tables is not been supported by the EPA or WaterNSW, with revisions to SB1 to be conditioned through a Pollution Reduction Program on EPL 12323, the results presented in these table have little relevance to the assessment of water management at the quarry.

- Text within the Surface Water Assessment (p. 2-56) has been amended to be consistent with the *Tables 22 and 23* (i.e. 10.4 ML).

Table 39 (Modified)
Revised Water Balance Assessment for SD6 Receiving Flows from SB1 for Prolonged Dry Climatic Conditions

Water Storage	Stage of Quarry Development	Predicted Uncontrolled Discharge Frequency	Predicted Uncontrolled Discharge Volume (ML)
SD6	Current	26	2.83
	End of Stage 1	26	8.73
	A		
	B		
	C		
	D		
	E		
	F		
	G		

Table 40 (Modified)
Revised Water Balance Assessment for SD6 receiving Flows from SB1 for Prolonged Wet Climatic Conditions

Water Storage	Stage of Quarry Development	Predicted Uncontrolled Discharge Frequency	Predicted Uncontrolled Discharge Volume (ML)
SD6	Current	30	9.5
	End of Stage 1	33	17.2
	A		
	B		
	C		
	D		
	E		
	F		
	G		

- The final point is an error in Water NSW's interpretation of the information provided in *Section 4.5.5.4* of the EIS and in *Section 6.7* of the Surface Water Assessment. The Surface Water Assessment does not provide a direct comparison of controlled and uncontrolled discharges for Sediment Basin 1 between its current size (i.e. 6 ML) and the calculated regulatory required size of 11 ML.

Table 33 and *34* of the Surface Water Assessment provide a comparison of predicted uncontrolled discharges per annum (frequency and estimated volume of discharge) between the current water management regime (Sediment Basin 1 holding capacity of 6ML with current on-site pumping water management protocol) and should the holding capacity of SB1 be increased to meet regulatory requirements (i.e. SB1 to 11 ML, without use of current on-site water management/pumping protocol).

WaterNSW has accepted this response and requires no further information (see **Appendix 1d(ii)**).

2.4.9 Rehabilitation Bond

Summary of Submission

The submission notes that WaterNSW does not currently hold a rehabilitation bond for the Austen Quarry.

Response

A review of the relevant paperwork currently held by the Applicant confirms that the existing rehabilitation bonds for the Austen Quarry were issued to Lithgow City Council and the then Department of Infrastructure, Planning and Natural Resources. This department has since been renamed the Department of Planning and Environment (DPE) with several functions under the remit of other departments such as the OEH and NOW. This resulted in confusion at the time of drafting of the EIS as to which department currently held the bond.

WaterNSW has accepted this response and requires no further information (see **Appendix 1d(ii)**).

2.4.10 Errors in the EIS

Summary of Submission

The submission noted errors in use of the names of some of the storage dams and sediment basins in the EIS.

Response

The Applicant acknowledges that errors occur from time to time and has made every effort to edit and amend errors as they have been discovered. This notwithstanding, these minor errors are not considered consequential to the assessment of neutral or beneficial impact.

WaterNSW has accepted this response and requires no further information (see **Appendix 1d(ii)**).

2.5 OFFICE OF ENVIRONMENT AND HERITAGE

2.5.1 Introduction

The submission provided by the NSW Office of Environment & Heritage (OEH) requested further clarification as to the management of the existing Conservation Area, and the intended offset mechanism (see **Appendix 1e**). The concerns raised by OEH are summarised in the following subsections and a response provided to address each issue.

2.5.2 Conservation Area H

Summary of Submission

The OEH submission recommends that specific information be provided regarding conservation and management of Conservation Area H including:

- the agreements and conditions that apply to the area; and
- how the area is currently managed.

The OEH also recommends that Conservation Area H be managed as part of the proposed Biodiversity Offset and be included in the Biodiversity Offset Plan of Management.

Response

Conservation Area H consists of 2.2 hectares designated for the protection of *E. pulverulenta*. It is maintained as required by *Condition 7b* of DA 103/94 and lies approximately 150 metres to the northeast of the Stage 2 Extension. Condition 7b states:

The developer is to pursue the attainment and fund implementation of a Conservation Agreement or flora preservation conditions over suitable E. pulverulenta habitat identified by the National Parks and Wildlife Service of NSW within the Hartley area.

The management of Conservation Area H is the result of this agreement. There are currently 286 individual *E. pulverulenta* trees established in Conservation Area H.

In accordance with Principle 4 of the ‘New Offset Principles’ referenced in *Section 2.14.2.1* of the EIS (p. 2-59), namely, “Offsets must be additional to other legal requirements”, Conservation Area H has been excluded from consideration as a part of the proposed offset area. Conservation Area H would remain unaffected by the Stage 2 Extension and, subject to consultation with the OEH regarding the establishment of a conservation of the proposed BOA, would either continue to be monitored to record the extent of growth and natural regeneration of *E. pulverulenta* or be included in management plans for the BOA.

2.5.3 Offset Mechanisms

Summary of Submission

The OEH have noted that it is satisfied that the proposed Biodiversity Offset Area (BOA) adequately offsets the impacts that have been identified. The OEH recommends that the Applicant secure the BOA through a BioBanking Agreement as this is Department’s preferred mechanism for securing offsets.

Response

It is proposed that agreements relating to the BOA would be finalised within 12 months of receipt of development consent. The Applicant will consult with the OEH regarding the most suitable mechanism for securing a conservation agreement for the BOA ‘in perpetuity’. While the preference of the OEH for as BioBanking Agreement is noted, in accordance with the “Interim Options for Securing an Offset Site” identified by OEH for the transitional implementation period of the *Biodiversity Offset Policy for Major Projects*, several other options are available for the securing the offset, including:

- Biobanking agreement (preferred);
- dedication of land under the National Parks and Wildlife Act 1974;
- Trust Agreements under the Nature Conservation Trust Act 2001; or
- Property Vegetation Plan registered in title under the Native Vegetation Act 2003.

2.6 TRADE & INVESTMENT – GEOLOGICAL SURVEY OF NSW

2.6.1 Introduction

The submission provided by NSW Trade & Investment – Geological Survey of NSW (GSNSW) recognised the significance of the Austen Quarry as an important source of a range of hard rock aggregate and road base products for the local and Sydney markets (see **Appendix 1f**). The submission indicated that GSNSW was satisfied that the resource has been significantly assessed. A single comment included in the submission has been addressed in the following subsection.

2.6.2 Annual Production Statistics

Summary of Submission

The submission requests that a condition of development consent include that the Applicant provide annual production data to the Division of Resources and Energy (DRE).

Response

The provision of these statistics was included in the Draft Statement of Commitments of the EIS (*Commitment 19.10*). The Applicant would abide by this commitment and submit relevant production statistics to the DRE.

2.7 ROADS AND MARITIME SERVICES

2.7.1 Introduction

Roads and Maritime Services (RMS) did not object to the Proposal and provided a series of comments and recommended conditions for approval (see **Appendix 1g**). These conditions have been summarised below and a response or comment included as necessary.

2.7.2 Road and Traffic Management Plan

Summary of Submission

The submission asserts that the Quarry should operate in accordance with the existing Austen Quarry – *Road and Traffic Management Plan*, dated 24 June 2011.

Response

It is proposed that operations would continue to be guided by the Applicant's *Road Truck Traffic Management Plan* which would be updated to incorporate details of the proposed Stage 2 operations. Furthermore, the Applicant proposes to maintain the following measures.

- Maintain the existing complaints management system.
- Continue to implement the Hy-Tec Chain of Responsibility – Driver Check System.
- Logistically plan transport operations, where feasible, to minimise impacts to the transport environment.

2.7.3 Intersection Monitoring

Summary of Submission

The submission supports the recommendation for the Applicant to monitor the performance of the intersection of Jenolan Caves Road and the Great Western Highway.

Response

The Applicant notes and accepts the RMS comments regarding monitoring of the intersection of Jenolan Caves Road and Great Western Highway beyond 2020. The Applicant would consult with RMS in preparation of a monitoring plan for the intersection 6 months prior to commencement of the monitoring.

2.7.4 Code of Conduct for Transportation Activities

Summary of Submission

The submission requests that the Applicant prepare and implement a code of conduct relating to transport of materials on public roads.

Response

The Applicant considers that the existing Hy-Tec “Chain of Responsibility: Driver – Vehicle Checks”, that is implemented company-wide to direct transport activities, provides for the requirements of a code of conduct.

2.8 NSW RURAL FIRE SERVICE

Summary of Submission

The NSW Rural Fire Service (RFS) have indicated that it has no comments on exhibition of the EIS and referred the DPE to the original submission dated 28 August 2013.

Response

The Applicant is satisfied that it has met the assessment requirements provided in the RFS letter dated 28 August 2013.

2.9 LITHGOW CITY COUNCIL

2.9.1 Introduction

The submission provided by the Lithgow City Council (LCC) notes the LCC's satisfaction that the EIS adequately addresses the relevant issues and states that LCC has 'no objection' to the development subject to inclusion of several conditions (see **Appendix 1h**). These conditions are summarised in the following subsections and comments and/or a response provided for each.

2.9.2 Compliance with Previous Approvals, EIS and Development Application

Summary of Submission

LCC have requested that the development comply with the conditions of existing Development Consent No. 103/94 (DA 103/94) and is carried out in accordance with the development application, EIS and all modifications to development consent issued by LCC.

Response

Upon receipt of suitable approval to cover the entire Stage 2 Site, the Applicant would relinquish DA 103/94. However, it is assumed that all relevant conditions of DA 103/94 would be included within the new approval, updated to reflect the current conditions at the Austen Quarry or changed to comply with legislation since DA 103/94 was granted.

The Applicant would also abide by the statements and commitments made in the development application, EIS and any modifications granted by the LCC that relate to the Austen Quarry. This would be irrespective of whether these statements and commitments are included as specific conditions in the new approval. The EIS and associated documents would supersede previously prepared documentation in relation to the Austen Quarry in all situations excepting where information is not included in this documentation. In this instance the next most recent documents would apply for these issues.

2.9.3 Notifications

Summary of Submission

LCC have requested that it be notified of any modifications and determinations regarding the Austen Quarry.

Response

The Applicant would consult with the LCC on all future modifications to the Austen Quarry and would provide information regarding future determinations should this not be provided by the DPE.

2.9.4 Hours of Operation and Project Life

Summary of Submission

The LCC have requested that operations not occur on Sundays and Public Holidays and that consent lapse after a period of 30 years.

Response

Section 2.11.1 of the EIS describes that proposed operations would not occur on Sundays and Public Holidays. Furthermore, *Section 2.11.2* of the EIS describes that proposed operations would extend from the expiry date of the existing approval in 2020 for a further 30 years i.e. until 2050.

2.9.5 Annual Reviews

Summary of Submission

The submission requests that an Annual Review document be provided to LCC for review which incorporates the following.

- A description of development carried out over the year
- A review of monitoring results and complaints recorded during the year and compares these to:
 - the relevant statutory requirements, limits of performance measures and criteria;
 - monitoring results of previous years; and
 - relevant predictions made in the EIS.
- A description of any non-compliance recorded over the year and described what remedial actions have been or are being taken to ensure compliance.

Response

The Applicant currently provides an Annual Environmental Performance Report for the existing operations at the Austen Quarry to LCC for the period ending 30 June each year. The information requested by LCC is included in those reports and would continue to be provided each year under the proposed Stage 2 operations.

2.9.6 Voluntary Planning Agreement

Summary of Submission

The submission notes the LCC preference to enter into a Voluntary Planning Agreement (VPA) with the Applicant and notes the progress of negotiations regarding this agreement.

Response

The Applicant is currently in negotiations with the LCC regarding a VPA and would have these completed prior to commencement of Stage 2 operations.

2.9.7 Inaccurate Figures in the EIS

Summary of Submission

The submission notes that LCC believe that *Figures 4.9* and *4.10* of the EIS include errors and are possibly out of date while *Figure 4.12* of the EIS includes traffic upgrades that are not committed to.

Response

Figures 4.9 and *4.10* display the speed and related zones along the Great Western Highway, through the Blue Mountains. Assessment of these speed zones involved a considered review of indicated speed zones in both directions along these routes and was completed by Mr Rob Corkery, Principal Environmental Consultant with R.W. Corkery and Co. in April 2014. The information was gathered to provide a representation of the changing speed zones, schools and other public buildings along this route. R.W. Corkery & Co. maintain that the data was accurate at the time it was gathered, however, given the nature of construction and road work along this route it is not surprising that the information may be considered out of date. Nonetheless, this does not affect the validity of the assessment.

Figure 4.12 provides concept designs for the completion of highway upgrades proposed by RMS in their document *Mount Victoria to Lithgow – Great Western Highway Upgrade Concept Design – Completion Report April 2013*. That document describes the general concept design of future upgrades to the Great Western Highway as follows.

the concept design generally comprises the realignment and future upgrade of about 20.4 kilometres of the existing Great Western Highway between Soldiers Pinch, about 400 metres east of Browntown Oval, Mount Victoria and Magpie Hollow Road, South Bowenfels.

The document provides the images used in *Figure 4.12* of the EIS (as Figure 1-1).

The document was current as of April 2013 and represented the most the most up-to-date information publicly available at the time of drafting the EIS. It is acknowledged that the final plans for these upgrades may have changed since April 2013. Nonetheless, this does not affect the validity of the assessment.

2.10 BLUE MOUNTAINS CITY COUNCIL

2.10.1 Traffic Volumes

Summary of Submission

The Blue Mountains City Council (BMCC) has reiterated previous concerns regarding the volume of traffic using the Great Western Highway to cross the Blue Mountains towards Sydney (see **Appendix 1i**). The submission highlighted several specific concerns that are summarised as follows.

- Safety, amenity and functioning of the Great Western Highway as a highway, regional route and in some cases the ‘main street’ of some towns/villages.
- Use of rail as an alternative to the Great Western Highway for product delivery to the Sydney Metropolitan Region.
- Impacts to tourist traffic using the Great Western Highway.

Response

It is anticipated that over the remaining life of the quarry, sales production will steadily increase to the existing limit of production and therefore the volume of product transported from the Austen Quarry will increase to this limit (1.1mtpa). *Section 4.3.4* of the EIS specifies the expected ratio of product delivery across the Blue Mountains using the Great Western Highway. The EIS includes an assessment of existing and predicted future traffic volumes concluding that potential impacts related to traffic and transportation of quarry related materials would be suitably mitigated by the operational controls, safeguards and management measures proposed in the EIS. The specific issues raised by the BMCC are addressed as follows.

- The Applicant appreciates the significance of BMCC’s concern with regards to safety, amenity and the functioning of the Great Western Highway in the Blue Mountains region. However, the Great Western Highway remains the most appropriate arterial route for heavy vehicles travelling to Sydney. The planned upgrades to the Great Western Highway in these areas are being designed to take into account heavy vehicles on this highway and improve the safety and amenity related to the use of the highway. In addition the *Hy-Tec Road Truck Traffic Management Plan* will continue to be implemented with the aim of maximising road safety and reducing the risk of incidents associated with the quarry-related transport.
- The use of rail transport and alternate routes for road based traffic were considered in the planning of the Stage 2 Extension and addressed in *Section 2.15.6* of the EIS. The use of road transport through the Blue Mountains using the Great Western Highway remains the most appropriate route based on considerations of feasibility, cost, safety and general amenity. The high cost of rail transport and associated infrastructure development requirements make this option prohibitive.
- The Applicant also appreciates the various traffic types (commuter, tourist, haulage) that occur in the Blue Mountain region, especially on the Great Western Highway. Significant care has been taken to address all potential impacts relating

to the transportation of products, especially in areas where the Great Western Highway passes through towns and built up areas. It is noted that the Austen Quarry has been operating alongside and with little impact to either regional amenity or tourism since 2005.

2.10.2 Visual Amenity

Summary of Submission

The submission raises concerns regarding potential impacts to the visual landscape resulting from the Stage 2 Extension at vantage points on the Blue Mountains Escarpment and from within the Blue Mountains Local Government Area. The Bardens Lookout at Mount York is specifically mentioned in reference to the proposed development of camping grounds and interpretive education elements at this location.

Response

Significant attention has been paid to identifying all vantage points towards the quarry, assessing the progressive exposure of the quarry to these vantage points and proposing measures to minimise or mitigate any impacts on the visual amenity from these points. In general, the measures proposed involved either:

- specific quarry design and sequence planning to minimise the areas exposed at any one time; and/or
- the implementation of measures in particular component areas of the quarry to manage or mitigate the exposure of areas from vantage points in the visual landscape.

Bardens Lookout is considered within Zone C (as described in Section 4.4 and identified on *Figure 4.13* of the EIS). The EIS acknowledges that the Stage 2 Extension would potentially increase the area of the extraction area exposed to views from this lookout. The upper lifts of the proposed overburden emplacement would also become visible. Management measures to avoid and mitigate visual impacts at this lookout include:

- the sequencing of operations to minimise the area of exposed disturbance at any given time;
- maximising the effective screening provided by natural topography, e.g. the Northern, Central and Southern Ridges;
- progressive rehabilitation; and
- application of a bituminous film to completed or inactive extraction faces.

The Applicant considers that the potential impacts to the visual landscape from the proposed Stage 2 Extension have been suitably addressed in the EIS.

2.10.3 Cyclists on the Great Western Highway

Summary of Submission

The submission raises concern over potential impacts to cyclists along the proposed transportation route.

Response

The total volume permitted to be despatched from the quarry would not increase over what is currently approved and therefore would not result in any increase in exposure between cyclists and vehicles on Great Western Highway and the surrounding road network. The Proposal would therefore not warrant any additional cyclist facilities noting that the completed and planned upgrade works on Great Western Highway are likely to result in improved conditions for cyclists, irrespective of the Austen Quarry operations. Therefore any additional analysis of trends or predicted growth in cyclist usage of the Great Western Highway is not considered warranted.

2.10.4 Convoying

Summary of Submission

The submission raised concerns regarding the potential for convoying to occur along the transport route and the potential impacts of this occurring.

Response

The time required for truck loading and processing via the weighbridge provides for a natural staggering of vehicle exits. Once on the public road network, in particular the Great Western Highway, the natural flow of traffic will dictate the separation distance between trucks. It is worthy of note that even at maximum production, trucks from the Austen Quarry would represents less than 0.9% of all vehicle movements across the Blue Mountains. This combined with the numerous dual lane sections of the Great Western Highway will provide for the natural management of truck spacing.

3. PUBLIC SUBMISSIONS

3.1 SUBMISSION 1

3.1.1 Introduction

A confidential submission provided to the Applicant by DPE objected to the extension of the Austen Quarry and raised several issues with the Proposal (see **Appendix 1j**). These issues are summarised in the following subsections and a response provided for each issue.

3.1.2 Proximity of Operations to Coxs River

Summary of Submission

The submission raised concern that the operations at the Austen Quarry would come in close proximity to the Coxs River and damage this source of drinking water for Sydney.

Response

The proximity of Stage 2 operations to the Coxs River has been addressed in the EIS and Surface Water Assessment. The Applicant has previously received a Part 3A Permit under (the now repealed) *Rivers and Foreshores Act 1948* (No. PAR9012617) approving operations, and rehabilitation of these, within 40m of the Coxs River. No modification to the approved works is proposed. Noting the relevant Act has since been repealed, and expiry of the Permit, the Applicant made application for a Controlled Activity Approval under the *Water Management Act 2000* for the ongoing activities within 40m of the Coxs River in 2014. At this date no response has been received from NOW as to the status of this application.

The above notwithstanding, the Applicant has operated the Austen Quarry for over 10 years and undertaken monitoring of water quality, aquatic ecology and terrestrial ecology annually or more frequently during this time. The results of this monitoring, which are reporting in Annual Reports to Lithgow City Council, the EPA (and provided to WaterNSW), have consistently illustrated quarry operation has had no adverse affect on river hydrology, chemistry or ecology.

The Applicant is committed to ensuring the continued operation of the Quarry without adverse impact on the Coxs River. Notably, the surface water management regime will be upgraded to ensure that all sediment basins provide water settlement and sediment storage that satisfy the 5-day 95th percentile design rainfall event capacity requirements in accordance with the relevant guideline used by the EPA and WaterNSW. Water quality and ecological monitoring will continue and the Applicant will continue to consult with the NOW, WaterNSW and the EPA in relation to water management and monitoring.

Given these measures the Applicant is satisfied that the regulatory requirements have been satisfied and that potential impacts to the Coxs River have been suitably avoided, mitigated or would be managed to reduce the risk of pollution to the waterway as much as is practically possible.

3.1.3 Aquifer Impacts

Summary of Submission

The submission raised concern that the depth of the extraction areas will be below the water table and therefore impact water quality and the availability of groundwater to other users.

Response

A Groundwater Assessment has been completed for the Stage 2 Extension by Ground Doctor Pty Ltd and is provided as *Part 3* of the *Specialist Consultant Studies Compendium*. Section 5.4 of this document also reviews the potential affects of groundwater drawdown associated with the proposed quarry extension on the surrounding watercourses (Coxs River and Yorkeys Creek) in light of a submission of WaterNSW (formerly Sydney Catchment Authority).

As noted in the Groundwater Assessment, the affected aquifer is isolated topographically from surrounding groundwater sources, and has low permeability (illustrated by the significant hydraulic gradients), the extent of drawdown would be limited to less than 250m from the extraction area. No groundwater bores would therefore be impacted by the proposed quarry extension. Furthermore, the restricted extent of drawdown is such that there would be no

impact on flows within local watercourses (see also Section 5.4) or Groundwater Dependent Ecosystems (refer to *Section 4.8.5.2* of the EIS).

Section 5.4 provides further clarification and discussion to confirm that the potential for the drawdown induced by the proposed quarry extension to affect flows within the Coxs River or Yorkeys Creek is negligible.

3.1.4 Visual amenity

Summary of Submission

The submission raised concerns regarding the visual impact of operations at the Austen Quarry and the residual impacts post-Quarry life.

Response

Proposed environmental controls, design feature and management of potential visual impacts are described in *Section 4.4.4* of the EIS. In order to manage the visual impacts of the Stage 2 Extension the Applicant aims to reduce the areas visible from various vantage points at any one time and mitigate the effects of exposure of those areas that are exposed. Measures to achieve these objectives incorporate specific planning of the design and sequence of the extraction area and overburden emplacement to reduce the areas exposed as much as possible and the implementation of measures in particular component areas of the quarry to manage or mitigate the exposure of areas from vantage points in the visual landscape.

Management measures to avoid and mitigate visual impacts include:

- the sequencing of operations to minimise the area of exposed disturbance at any given time;
- maximising the effective screening provided by natural topography, e.g. the Northern, Central and Southern Ridges;
- progressive rehabilitation; and
- application of a bituminous film to completed or inactive extraction faces.

The Applicant considers that the potential impacts to the visual landscape from the proposed Stage 2 Extension have been suitably addressed in the EIS.

3.1.5 Rehabilitation

Summary of Submission

The Submission raised concerns that not all areas of the Proposal would be rehabilitated at the end of the Quarry life.

Response

Section 2.13 of the EIS describes in detail the proposed strategy and activities that would be undertaken to rehabilitate the Site following cessation of extraction and processing operations. The Site would be rehabilitated to provide for the final land uses which have been identified as passive biodiversity conservation and low intensity agriculture. The only area that would

involve minimal rehabilitation would be the final void. It is expected that water would accumulate within the void, primarily in response to local rainfall conditions with some minor contribution (<4MLpa) from groundwater. Therefore it is likely that this area would be integrated into the final landform as a water body and potentially provide habitat for native fauna and flora.

3.1.6 Trucks along the Great Western Highway

Summary of Submission

The submission raised concerns that the traffic levels on the Great Western Highway would increase by 25%.

Response

While the existing approved maximum traffic levels for the Austen Quarry would not be exceeded the Applicant acknowledges that this maximum level is expected to be reached more frequently under the Stage 2 operations. *Section 2.8.3* of the EIS describes the proposed product distribution and traffic levels for the Stage 2 operations and *Section 4.3.6.2* of the EIS provides an assessment of the potential road traffic impacts relating to traffic volumes.

Given the results of the assessment, the Applicant considers that product trucks travelling to and from the Austen Quarry can be suitably accommodated on both Jenolan Caves Road and the Great Western Highway. Nonetheless, the Applicant proposes to maintain the following measures.

- Maintain the existing complaints management system.
- Continue to implement the Hy-Tec Chain of Responsibility – Driver Check System.
- Logistically plan transport operations, where feasible, to minimise impacts to the transport environment.

It is reiterated that even at maximum production, trucks from the Austen Quarry would represents less than 0.9% of all vehicle movements across the Blue Mountains.

3.1.7 Project Life and Projected Need for the Products of the Austen Quarry

Summary of Submission

The submission questioned the projected need for the products of the Austen Quarry over the proposed 30 year quarry life. The respondent felt that the project term was too long given the unreliable nature of the construction industry.

Response

Section 2.2 of the EIS addresses the need for the Proposal. In summary, the need for the Proposal is demonstrated both by the ongoing demand for the high quality products produced within the Austen Quarry and in proximity to the Sydney Metropolitan Area, and the opportunity to source the quarry's products in an environmentally responsible manner from an existing operation rather than develop an additional source to supply the construction industry.



3.1.8 Climate Data Used in Assessment of Surface Water and Groundwater Impacts

Summary of Submission

The submission questioned the climate data used as inputs to the surface water and groundwater assessment reports. The respondent felt that the assessment had not considered what the respondent described as ‘*reliable knowledge that the climate in Western Sydney will get hotter and drier and water supply will reduce...*’.

Response

Without a reliable and scientifically recognised source for this information it is difficult to address the concerns raised. The surface water and groundwater assessment reports prepared for the EIS have sourced publically available data provided by the Bureau of Meteorology. The Applicant remains satisfied that these inputs have provided a reliable representation of climate that the Austen Quarry and in the surrounding area.

3.2 SUBMISSION 2

3.2.1 Introduction

A second public submission provided to the Applicant by DPE objected to the extension of the Austen Quarry and raised several issues with the Proposal (see **Appendix 1k**). These issues are summarised in the following subsections and a response provided for each issue.

3.2.2 Traffic Impacts

Summary of Submission

The submission raised concerns regarding the various impacts that may result from heavy vehicles crossing the Blue Mountains including road degradation, accidents and noise from air brakes. The respondent requested that road use be monitored by the consent authority.

Response

Road traffic impacts on the Great Western Highway within the Blue Mountains have been addressed in Section 2.10.1 in response to concerns raised by the Blue Mountains City Council.

The Applicant is not ultimately responsible for the condition of state-managed arterial roads. Table 4.2 in the EIS provides an estimate of daily traffic volume on the Great Western Highway and estimates that 2 159 heavy vehicles would pass Blackheath each day. These represent approximately 12% of total vehicles passing Blackheath with Austen Quarry traffic representing 0.88% of total vehicles and 7.32% of heavy vehicles on an average day. This data indicates that Austen Quarry traffic would contribute minimally to potential impacts such as road degradation, accidents and road noise. Nonetheless, the Applicant proposes to maintain the following measures.

- Maintain the existing complaints management system.
- Continue to implement the Hy-Tec Chain of Responsibility – Driver Check System.
- Logistically plan transport operations, where feasible, to minimise impacts to the transport environment.

3.2.3 Vibration Impacts

Summary of Submission

This submission raises concerns regarding the potential vibration impacts resulting from blasting at the Austen Quarry. The respondent questioned the use of vibration measurements from 1994 which would not represent the existing impacts of operations. The respondent requested that the consent authority include requirements to regularly monitor vibration and other relevant conditions such as hours of operation.

Response

Potential blasting impacts are addressed in *Section 4.9.6.4* of the EIS. The results of blast monitoring since April 2014, as well as correspondence from the blast contractor (Orica) are presented in **Appendix 2** and confirm that air blast overpressure and ground vibration remain less than 100dBl and 0.51mm/s (as measured at the Little Hartley village), both well below the respective criteria of EPL 12323 (115dBl and 5mm/s). On the basis that compliance against the criteria set by EPL 12323 continues to be easily achieved, and that blasting will remain consistent with current size and practice, operations associated with Stage 2 Extension would continue to meet these criteria.

3.2.4 Project Life

Summary of Submission

The submission questioned the length of the proposed 30 year quarry life. The respondent felt that the project term was too long and should be broken down to smaller periods of five years.

Response

Section 2.2 of the EIS addresses the need for the Proposal. In summary, the need for the Proposal is demonstrated both by the ongoing demand for the high quality products produced within the Austen Quarry and in proximity to the Sydney Metropolitan Area, and the opportunity to source the quarry's products in an environmentally responsible manner from an existing operation rather than develop an additional source to supply the construction industry.

In addition, drilling associated with the Stage 2 Extension has identified approximately 44Mt of available recoverable rhyolite resources. The proposed quarry life is based on extracting this resource at the maximum sales rate of 1.1Mtpa. The overall resource within the Site is estimated to approach 100Mt making it conceivable that prior to 2050, an application for a third stage of development would be lodged for the ongoing operation of the quarry to recover further rhyolite hard rock resource.

Reducing the quarry life to 5 year periods, as suggested in the submission, does not recognise the critical nature of aggregate supply to the Sydney construction industry and the significance of the resource at the Austen Quarry to supply these aggregates (refer to *Section 2.2* of the EIS). This notwithstanding, conditions of development consent would require operations to be of a high standard and regularly monitored, audited and assessed. Inability to adhere to imposed conditions of development consent could lead to penalties being imposed on the Applicant, including cessation of operations.

As long as operations at the Austen Quarry continue to operate in accordance with the development consent and any other regulatory approvals, the Applicant considers it appropriate that these operations are permitted to continue for the life of the identified resource.

3.2.5 Monitoring of Development Approval Conditions

Summary of Submission

The submission requested that the consent authority monitor issues such as traffic volume, hours of operation and production volumes on a regular basis.

Response

This request is a matter for DPE, however, the Applicant would retain records of the following which would be made available to a relevant regulatory body upon request.

- Traffic volumes are recorded through existing and ongoing records taken at the quarry's weighbridge. These include the weight and time that trucks depart the quarry and were used in the Road Transport Assessment to provide a guide to traffic volumes exiting the quarry.
- Hours of operations are strictly monitored to determine production and operational efficiency.
- Annual production volumes would continue to be provided to DRE.

3.2.6 Mining of Other Products

Summary of Submission

The submission raised concerns that quarrying operations would uncover other rock and coal deposits within the proposed extraction area. The respondent requested that the consent authority regularly determine whether un-approved mining for coal or other minerals is occurring.

Response

The resources extracted from the Austen Quarry are strictly monitored and enforced by the Department of Trade and Investment – Division of Resources and Energy. The Applicant would not risk the fines, loss of its approval and the already significant investment in the operations at the Austen Quarry to extract resources that it is not approved to extract and which it is not aware exist. The extensive exploration drilling involved in quantifying the rhyolite resources has not identified any other resources that could be efficiently extracted suggesting that it is highly unlikely that these resources are present.

4. REFERENCES

Department of Environment and Climate Change (DECC) (2008). *Managing Urban Stormwater: Soils and Construction, Vol. 2E*, DECC, NSW, Sydney.

Department of Primary Industries (DPI) (2012). *NSW Aquifer Interference Policy*.

Ground Doctor (2014). *Austen Quarry Stage 2 Extension Project Groundwater Assessment. Part 9 of the Specialist Consultant Studies Compendium*. Prepared by Ground Doctor Pty Ltd on behalf of Hy-Tec Industries Pty Limited.

Groundwork Plus (2014). *Austen Quarry Stage 2 Extension Project Surface Water Assessment. Part 8 of the Specialist Consultant Studies Compendium*. Prepared by Groundwork Plus Pty Ltd on behalf of Hy-Tec Industries Pty Limited.

Landcom (2004). *Managing Urban Stormwater: Soils and Construction (The Blue Book)*. 4th Edition. New South Wales Government, Sydney.

Niche Environment and Heritage (2014). *Austen Quarry Stage 2 Extension Project Terrestrial Ecology Assessment. Part 2 of the Specialist Consultant Studies Compendium*. Prepared by Niche Environment and Heritage on behalf of Hy-Tec Industries Pty Limited.

NSW Office of Water (NOW) (2011). *Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources. Cocks River Fractured Rock Groundwater Source - Rules summary 2 of 13*.

R.W. Corkery & Co. Pty Limited (2014). *Environmental Impact Statement for the Austen Quarry Stage 2 Extension Project*. Prepared on behalf of Hy-Tec Industries Pty Limited.

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Appendices

(Total No. of pages including blank pages = 48)

Appendix 1 Submissions

- (a) Department of the Environment (28 November 2014)
- (b) NSW Office of Water (12 December 2014)
- (c) Environment Protection Authority (1 December 2014)
- (d) WaterNSW
 - i. Original Submission (as Sydney Catchment Authority) (12 December 2014)
 - ii. Submission following Review of Preliminary Response (8 January 2015)
- (e) Office of Environment & Heritage (3 December 2014)
- (f) Trade & Investment – Division of Resources & Energy (13 November 2014)
- (g) Roads and Maritime Services (28 November 2014)
- (h) Lithgow City Council (10 November 2014)
- (i) Blue Mountains City Council (17 December 2014)
- (j) Public Submission 1 (10 December 2014)
- (k) Public Submission 2 (10 December 2014)

Appendix 2 Consolidated Results of Blast Monitoring and Correspondence from Orica (21 July 2014)

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Appendix 1

Submissions

(Total No. of pages including blank pages = 32)

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(a) Department of the Environment (28 November 2014)

Coralie Guy

From: Jenkins, Mark <Mark.Jenkins@environment.gov.au>
Sent: Friday, 28 November 2014 5:15 PM
To: Alex Irwin
Subject: RE: 652 - RE: Austen Quarry part 4 Terrestrial Ecology Section 8.2 [SEC=UNCLASSIFIED]

Alex

I ran the figures you provided through the EPBC offsets calculator (using the number of individuals line at the bottom of the impact calculator table) and came up with a raw gain of 0% and 0% of the impact offset. As far as I can work out the project will result in a net loss of 721 individuals and no net gain in individuals (because the trees in the proposed offset area already exist). You will need to propose revegetation strategies to increase the *Eucalyptus pulverulenta* population in order to achieve the offset target.

We need to discuss this next week.

Regards

Mark Jenkins
6274 1558

From: Alex Irwin [<mailto:alex@rwcorkery.com>]
Sent: Wednesday, 5 November 2014 1:45 PM
To: Jenkins, Mark
Subject: 652 - RE: Austen Quarry part 4 Terrestrial Ecology Section 8.2 [SEC=UNCLASSIFIED]

Mark,

I trust this is what you are after.

Regards,

Alex Irwin
Senior Environmental Consultant

RW Corkery & Co Pty Limited

Geological and Environmental Consultants



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From: Jenkins, Mark [<mailto:Mark.Jenkins@environment.gov.au>]
Sent: 4 November 2014 4:50 PM
To: Alex Irwin
Subject: Austen Quarry part 4 Terrestrial Ecology Section 8.2 [SEC=UNCLASSIFIED]

Hi Alex

Thanks for sending us the Austen Quarry EIS. I inherited this project from another assessment officer – so am getting up to speed with it.

On page 4-62 of Volume 1 Specialist Studies Part 4 Terrestrial Ecology Section 8.2 (Niche) it is stated that the guide used for the assessment can be provided on request. I assume this means the completed EPBC Offsets Calculation sheet(s) and not the Department's guidance notes.

Please send the completed sheet(s) to me or if it is in one of the assessment documents let me know where to look.

Regards

Mark Jenkins
EPBC Assessment Officer
NSW Section 6274 1558

(b) NSW Office of Water (12 December 2014)

From: [Wayne Jones](#)
To: [Brendan Liew](#)
Subject: Austen Quarry Extension (SSD 13_6084) EIS
Date: Friday, 12 December 2014 10:35:25 AM

Hi Brendan

Please see following draft DPI response to the above project. Formal response should follow shortly.
Apologies for the delay.

Regards
Wayne

OUT14/40573

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

Brendan.Liew@planning.nsw.gov.au

Dear Mr Liew,

**Austen Quarry Extension (SSD 13_6084)
Response to exhibition of Environmental Impact Statement**

I refer to your email dated 4 November 2014 requesting advice from the Department of Primary Industries (DPI) in respect to the above matter.

Comment by NSW Office of Water

The NSW Office of Water has reviewed the EA and provides comments and recommendations in Attachment A, and recommended conditions of approval in Attachment B.

Enquiries in relation to water licensing should be directed to Wayne Conners, Senior Water Regulation Officer (Parramatta Office) on (02) 8838 7531 or at wayne.conners@water.nsw.gov.au

Fisheries NSW advise no issues.

Attachment A

**Austen Quarry Extension (SSD 13_6084)
Response to exhibition of EIS
Comments by NSW Office of Water**

Surface Water Assessment

The Specialist Consultancy Report on surface water assessment provides summary statistics in the form of background reference conditions for Yorkeys Creek, and Cocks River. While this dataset of background water quality is useful, no data is provided for high rainfall events which may result in local sedimentation impacts in downstream environments.



In design for the storage capacities of the sediment basins and water storages required for the project, Section 4.5.4.1 notes that a design rainfall event of 95th percentile and 5 day duration is considered for the water management system. There is no assessment of the impact of short high intensity rainfall events when runoff from the sediment ponds may overflow into the nearby tributaries.

The advice of the Environment Protection Authority and the Sydney Catchment Authority should be sought to ensure that sediment and pollution control measures and monitoring is appropriate.

Monitoring requirements for surface water

The Surface Water Assessment has provided summary statistics for limited water quality parameters at Yorkeys Creek and Coxs River environments.

To ensure that local water quality objectives as set out in the ANZECC Water Quality Guidelines are met, and that the operations of the quarry are not having impacts on receiving waters downstream, the proponents will need to submit a water quality monitoring program which sets out measurable water quality parameters at a range of representative, clearly defined sites. It is recommended the advice of the Environment Protection Authority and Sydney Catchment Authority is sought on this point.

Surface Water Take

Section 2.10.4 on page 2.30 has estimated the total water requirement volume for the quarry at 45 ML/year. This includes an estimate of 31.5 ML/year for dust suppression. The report notes, water sourced from on site water storages, extraction area sumps or extracted from the Coxs River. If water is extracted from the Coxs River or nearby tributaries, and the overall water requirement volume for the site is going to increase as a result of the proposal, then the proponents will need to provide some assessment of the impact of this take from the Coxs River or nearby tributaries in terms of reduction of base flows, and to the surrounding aquatic environments and riparian ecosystems.

General Licensing Requirements

The Office of Water's earlier response to the draft version of the EA identified several issues in relation to the licensing requirements for both existing and proposed operations. The licensing issues identified included the requirement for groundwater access licenses and the need to demonstrate how adequate entitlement to cover any surface or groundwater take (including evaporative losses) will be obtained.

The Office of Water appreciates the proponent's response to the above, to resolve outstanding licensing matters. It is noted that the proponent has lodged an application for a zero share water access licence and also have lodged an application for entitlement in the form of a controlled allocation.

It is noted that the current estimate of groundwater take is 3.7 ML/year and the proponent has lodged an application for 20 ML/year.

In section 2.10.4 Water Use- surface water is collected in a series of dams and sediment basins. The construction of sediment dams to achieve environmental outcomes is described as excluded works, according to Schedule 1 of the *Water Management (General) Regulation 2011* and the use of water from these sediment dams in dust suppression and product processing does not require a WAL.

The proposed quarry extension is situated within the Upper Nepean and Upstream Warragamba Water Source within the *Water Sharing Plan for the Greater Metropolitan Region Unregulated Water Sources 2011*. The applicant holds WAL 25616 (20 unit shares), which is located in the correct water source.

The proponent has indicated the possibility of extraction of water from the Coxs River as an alternative source of water supplies. Any proposed increase of extraction from the Coxs River above the current level of extraction must be licensed appropriately with the appropriate level of surface water entitlement.

Groundwater Assessment

The Office of Water had an opportunity to review a draft version of the Groundwater Assessment (GA), and most of the comments initially provided have been addressed in the updated version of the GA.

An assessment of the quarry impacts against the AIP minimal impact considerations has been undertaken. It was demonstrated that the project proposal satisfies Category 1 impacts. Due to the remote locational setting, low aquifer characteristics limiting lateral of drawdown impacts, no significant issues have been identified with the project proceeding.

An analytical approach was utilised to determine the appropriate licensing requirements. The average predicted annual take is conservatively set at 10 ML of groundwater sourced from the Coxs River Fractured Rock Water Source. The applicant has made an application for a zero share Water Access Licence and is seeking appropriate allocation under a controlled allocation order.

The GA included a recommendation that a piezometer network be established to monitor water levels around the quarry with re-evaluation on on-going groundwater losses associated with Stage 2 Extension. A groundwater monitoring network, developed in consultation with the Office of Water, is supported.

Detail of proposed investigations and monitoring to support the understanding of groundwater conditions around the existing and proposed quarry extensions is vague (i.e. details of where, how and how often monitoring will occur and how the results will be used to assess the performance of the quarry). It also suggests that monitoring would only be undertaken if the quarry extension is approved, however if this extension does not proceed the Office of Water requests consultation with the proponent about establishing an appropriate monitoring network to contemporary standards.

Recommendations

1. If the project is approved, a detailed Water Management Plan is to be developed in consultation with the Office of Water.
2. The quarry operators demonstrate that they hold the required groundwater entitlement prior to commencement of Stage 2 operations.
3. A groundwater monitoring program will need to be designed and implemented in consultation with the Office of Water to measure and assess groundwater levels and quality at a range of representative sites within the area of the proposed extension to monitor any changes the proposed extension may have to groundwater parameters, including groundwater quality.
4. The proponents need to do further baseline assessment to develop water management plans before appropriate triggers can be developed at that point.

End Attachment A

Attachment B

Austen Quarry Extension (SSD 13_6084)
Response to exhibition of EIS
NSW Office of Water Recommended Conditions of Approval

The following are recommended conditions of approval:



1. The proponent must prepare a Groundwater Management Plan which includes arrangements to give consideration to the aquifer Interference Policy.
2. The proponent must prepare a Soil and Water management plan in consultation with the Office of Water.
3. The proponent must prepare a Water Monitoring Program in consultation with the Office of Water

End Attachment B

Regards
Wayne

Wayne Jones | Land Use Planning Coordinating Officer
Department of Primary Industries
Level 48, MLC Centre, 19 Martin Place Sydney NSW 2000
T:02 9338 6708 | E: wayne.jones@dpi.nsw.gov.au

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(c) Environment Protection Authority (1 December 2014)



Your reference :
Our reference : EF13/2563 (SF14/13409); DOC14/270079
Contact : Mr Matthew Corradin; (02) 6332 7603

Mr Howard Reed
Manager Mining Projects
Department of Planning & Environment
GPO Box 39
SYDNEY, NSW, 2001

Attention: Mr Brendan Liew

1 December 2014

Dear Mr Reed

HY-TEC INDUSTRIES PTY LTD AUSTEN QUARRY STAGE 2 EXTENSION PROJECT (SSD-6084)

I refer to an email from Mr Brendan Liew of the Department of Planning & Environment (DP&E) to the Environment Protection Authority (EPA) dated 4 November 2014 seeking comment on the abovementioned Extension Project, its exhibition and any recommended conditions of approval.

The EPA has reviewed the Environmental Impact Statement and accompanying specialist reports and can generally support the Extension Project with the exception of the proposed hours of operation, as is in keeping with other new proposals where increased hours of operation are not fully justified, and the management of sediment basins generally.

The EPA currently regulates environmental pollution matters/impacts at the Austen Quarry by way of Environment Protection Licence 12323 (the licence). The licence will continue to remain in-force should the Extension Project be approved. The licence can be searched at the following website if required for reference: <http://www.epa.nsw.gov.au/prpoeoapp/>.

Detailed comments on the EPA's area of responsibility where required, including recommended conditions of approval are located at Attachment A. The EPA asks that the licence be considered when developing any potential conditions of approval by way of a generic condition requiring that the licence be held and complied with, or more specific conditions in line with the licence, except where superseded by any recommended conditions of Attachment A.

Should you have any further enquiries in relation to this matter please contact Mr Matthew Corradin at the Central West (Bathurst) Office of the EPA by telephoning (02) 6332 7603.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Darryl Clift'.

DARRYL CLIFT
Head Central West Unit
Environment Protection Authority

PO Box 1388 Bathurst NSW 2795
Level 2, 203 – 209 Russell Street Bathurst NSW 2795
Tel: (02) 6332 7600 Fax: (02) 6332 7630
ABN 43 692 285 758
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ATTACHMENT A DETAILED COMMENT AND RECOMMENDED CONDITIONS OF APPROVAL

Planning/Licensing

Should approval be granted, the Extension Project as described within the Environmental Impact Statement (EIS) will require a variation to the licence due to a need to change/include the new/relevant property descriptors. This is the only variation nominated by the proponent's consultant although a change to EPA Point 9 may also be required.

That said the EPA would take the opportunity to review the licence in its entirety and update or include other relevant conditions that relate to the EPA's areas of responsibility in consultation with the licensee/proponent.

Recommended Conditions of Approval:

1. The EPA is looking to have some flexibility between any project approval and the conditions of the licence and would prefer that a generic condition requiring the proponent to hold an in-force environment protection licence with the EPA covering environmental pollution matters/impacts be included within the Project Approval should approval be granted. If this is not able to be accommodated, the EPA would refer DP&E to the licence and comments herein.

Noise/Vibration

Hours of Operation:

The licensee/proponent currently undertakes activities across all three time periods i.e. day, evening, night (with the early morning night time period a potential shoulder period with increasing noise) with these Hours of Operation generally above and beyond other quarries in the EPA's Central West Region. The most recent comparable quarry in terms of operation, size and scale being the Hanson Construction Materials Pty Ltd Byng Quarry, which had its proposed Hours of Operation amended due to potential noise impacts and limited justification.

CURRENT HOURS	Mon-Fri	Sat	Sun-PH
Extraction/Processing	0600-1800	0700-1500	NA
Blasting	1000-1500	NA	NA
Loading/Transport	0500-2200	0500-1500	NA

PROPOSED HOURS	Mon-Fri	Sat	Sun-PH
Extraction/Processing	0600-2200	0600-1500	NA
Blasting	1000-1500	NA	NA
Loading/Transport	0500-2200	0500-1500	NA
Maintenance	Anytime 24/7	Anytime 24/7	Anytime 24/7

The current Development Approval permits extraction to 1.1 Mtpa with the current Hours of Operation in effect and the EPA has concern as to why these Hours of Operation have to be changed as this is a fundamental mitigation measure.

Comment:

- The Noise Impact Assessment has identified potential minor exceedences within the shoulder period under specific conditions. The EPA questions why the Hours of Operation need to be increased for Extraction/Processing and Maintenance and believes that the licensee/proponent must provide further justification based on calculated rates of extraction or similar, otherwise, the proposed changes to the Hours of Operation are not supported by the EPA.

Operational Noise and Vibration:

The Noise Impact Assessment correctly references the applicable guidance material and identifies all three of the applicable L90 Rating Background Levels, the Project Specific Noise Goals, the Modelled Impacts, the Blasting and Vibration Impacts and also commits to one 12 monthly monitoring program should approval be granted.

The Operational Noise Limits stipulated by the licence will not change and will remain as is for sensitive receivers during all time periods. Refer to Section L4 of the licence.

The Blasting and Vibration Limits stipulated by the licence will not change and will remain as is for the most affected nearby sensitive receiver. Refer to Section L5 of the licence.

The EPA has begun implementing conditions on environment protection licences requiring ongoing annual noise monitoring to determine whether the conditions of the licence are being complied with or not. An example extract is as follows:

The licensee must undertake yearly (in-line with the reporting period) noise monitoring as outlined below, to determine compliance with the noise limits stipulated by condition L5.1:

- a) 1 day attended noise monitoring covering the day, evening and night time periods; and
- b) 5 days unattended noise monitoring (monitor and logger) covering each days day, evening and night time periods.

The results of the noise monitoring required by condition M4.1, and an interpretation of these results, must be provided as an attachment to each corresponding years Annual Return.

The licensee, following the receipt of a noise related complaint and if required by the EPA, must undertake noise monitoring as required by the EPA to determine compliance with the noise limits stipulated by condition L5.1.

The results of the noise monitoring required by condition M4.3, and an interpretation of these results, must must be provided to the EPA within 21 days of the completion of the noise monitoring.

The blast monitoring as stipulated by the licence would be incorporated/retained.

Recommended Conditions of Approval:

Note: See point 1 at page 3 above.

2. The EPA recommends that the in-force Operational Noise and also Blast and Vibration Limits remain as is;
3. The EPA recommends that the abovementioned noise monitoring conditions for the long term, not just 12 months as indicated in the Noise Impact Assessment; and

4. The Blast Management Plan 2006 be expanded and revised to a Noise Management Plan covering all noise and vibration aspects/matters in consultation with relevant agencies.

Air/Odour

The Air Quality Assessment correctly references the applicable guidance material and identifies the applicable Background Factors (including F class dispersion conditions), the Project Specific Air Criteria, the Modelled Impacts and proposes a number of mitigation measures although the EPA believes the blasting mitigation measures should be committed to rather than being a potential mitigation measure given that some of the criteria for fine particulates (PM₁₀) approach the criteria under scenario 2.

The existing dust condition stipulated by the licence will remain with the addition of two more. Refer to Section O3 of the licence.

Recommended Conditions of Approval:

Note: See point 1 at page 3 above.

5. The EPA recommends that the in-force dust condition remains as is;
6. The EPA recommends the inclusion of the following dust conditions:
 - a) Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust;
 - b) Trucks transporting material to and from the premises must be covered immediately prior to unloading and immediately after loading to prevent wind blown emissions and spillage.
7. That the Air Quality Management Plan 2006 be revised in consultation with relevant agencies.

Land Management

The EPA strongly supports progressive rehabilitation and revegetation as it directly relates to potential fugitive dust generation and erosion and sediment movement across the premises.

Recommended Conditions of Approval:

8. The Rehabilitation and Environmental Management Plan be revised in consultation with relevant agencies that focuses on best practice progressive rehabilitation.

Water Management

The EPA wrote to DP&E on 18 June 2014 regarding the Adequacy Review of the EIS for the Extension Project and specifically made a number of comments regarding Water Management.

The first point regarding Water Management was around terminology and referencing in the EIS in regards to Storage Dams 5 and 6. The terminology and referencing have been adequately resolved. Furthermore, a diversion drain has been identified as a mitigation measure to divert clean water from Storage Dam 5 around Storage Dam 6 and therefore in effect allow for greater capacity to store and treat dirty water.

The second point regarding Water Management was around the management of Sediment Basin 1 whereby the EPA indicated that it no longer supported the concept of pumping water from this storage to another storage given its proximity to the Cocks River, the broader catchment area it services, and also

historical regulatory issues, as pumping between storages is to compensate for inadequate design storage capacity. This issue was not refined within the EIS and in essence, is not different to what was originally proposed.

The third point regarding Water Management was around the management of Sediment Basin 2 and in particular, potential pollution impacts from total suspended solids and also some metals. The EPA notes that there is a limited dataset for Sediment Basin 2 and that more monitoring is required.

The EPA maintains its position that the Sediment Basins be sized and upgraded in accordance with relevant NSW Guidelines as was previously outlined. The EPA as was previously outlined will be requiring that Sediment Basin sizes be reviewed in accordance with relevant NSW Guidelines and upgraded as necessary by way of a Pollution Reduction Program attached to the licence in 2015.

Other generic conditions such as that the licensee/proponent must not pollute waters remain and more specific conditions authorising surface water discharges remain although it is noted that the abovementioned variation will likely need to incorporate a new sediment basin/s. Refer to Sections P1, L1, L2 of the licence.

Recommended Conditions of Approval:

Note: See point 1 at page 3 above.

9. The EPA recommends that the in-force water and pollution conditions remains as is (with flexibility given to additional concentration limit inclusions if required); and
10. The Soil and Water Management Plan be revised in consultation with relevant agencies *and* including assessment and upgrade of Sediment Basins in accordance with the Blue Book and addendum publications.

Draft Statement of Commitments

The Draft Statement of Commitments must be revised to incorporate the comments contained herein.

(d) Water NSW

i. Original Submission (as Sydney Catchment Authority) (12 December 2014)



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Level 4, 2-6 Station Street
Penrith NSW 2750
Tel 1300 722 468 Fax 02 4725 2599
Email info@sca.nsw.gov.au
Website www.sca.nsw.gov.au

Our Ref: D2014/123924

Mr Howard Reed
Manager Mining Projects
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Attention: Brendan Liew

Dear Mr. Reed

Austen Quarry Stage 2 Extension (SSD 6084)

Thank you for providing the Sydney Catchment Authority (SCA) with the opportunity to comment on the final EIS for the proposed Austen Quarry Stage 2 extension.

The SCA has reviewed the EIS in terms of the proposed quarry's likely impact on water quality and quantity in the Sydney drinking water catchment. Overall the information contained in the EIS is not sufficiently comprehensive and scientifically robust and it does not address cumulative impacts.

The SCA's considers the quarry extension, as proposed, will not have a neutral or beneficial effect on water quality therefore **objects** to the proposal. The main reasons for objection are:

1. The EIS predicts uncontrolled discharges of untreated sediment laden water to the Cocks River from Sediment Basin 1 and Storage Dam 6. This is a significant concern to the SCA.
2. The SCA considers the water quality control measures are not sufficient to manage polluted water generated by the Stage 2 quarry operations. Sediment Basin 1 which relies on redirecting dirty water to a number of storage dams to cope with dirty water, is half the capacity required for the management of polluted water for the Stage 2 quarry operations. The EIS states that Sediment Basin 1 cannot be increased in size because:
 - of the potential impacts on the Cocks River as it is very close to the river;
 - it reduces the size of processing area;
 - of the costs involved, and
 - the predicted controlled and uncontrolled discharges are less for Sediment Basin 1 at its current capacity than when its capacity is increased from 6 to 11 ML therefore it does not provide any benefit. There is no explanation in the EIS for these predictions.

The SCA considers this is not acceptable justification for discharging sediment laden water to the receiving environment.

Other Comments

1. The EIS states that the predicted drawdown will not affect base flows of surface waters due to the presence of aquifer boundaries in all directions from the extraction area and if the extracted groundwater after treatment is returned to surface waters. Yorkey's Creek

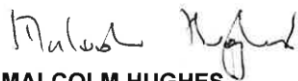
water levels are higher (700 AHD) than the proposed extraction depth (685 AHD) and therefore there is a potential that Yorkey's Creek may lose water to a deeper groundwater system. No groundwater investigations have been undertaken and the EIS does not address this matter. This is a significant concern to the SCA.

2. There is a record of non-compliances at the quarry and this is concern to the SCA – for example:
 - during period 2012-13 concentration limits for total suspended solids were exceeded at a number of licence discharge points, and
 - during the period 2012-13 the EPA issued two penalty infringement notices as result of a dam wall failure (and this resulted in sediment laden water washing into the floodplain of the Cocks River).The proposal involves a greater area of disturbed land and a more complex water quality management system.
3. The SCA notes that some separation of clean and dirty water is proposed with the construction of diversion channels or bunds. However the location of these structures is unknown and therefore it is not possible to assess whether these structures are practically feasible on such a constrained and steeply sloping site.
4. The quality of water prior to discharges is unknown and this needs to be addressed to enable the proper assessment of impacts on water quality.
5. The following surface water assessment results need clarification:
 - uncontrolled discharges from Storage Dam 6 are higher under dry conditions than under wet conditions (Page 2-70; Tables 39 and 40)
 - uncontrolled discharges from Storage Dam 2 during wet conditions are predicted to be 10.4ML (Tables 22 and 23), however it is reported to be 104.8ML on page 2-56, and
 - controlled and uncontrolled discharges are less for Sediment Basin 1 at its current capacity than when its capacity is increased from 6 to 11 ML. These predictions need more explanation.
6. The EIS states (page 2-54) that rehabilitation bonds currently lodged with the LCC and SCA would be supplemented for the rehabilitation of the site, if the rehabilitation is unsatisfactorily completed. The SCA does not have any rehabilitation bond for the site.
7. The name of some of the storage dams and sediment basins in the EIS are incorrectly used.

The SCA requests it be consulted during further stages of the assessment process.

If you would like to discuss any matter raised in this letter, please do not hesitate to contact Dr Girja Sharma, Team Leader Assessments, on 4724 2459 or girja.sharma@sca.nsw.gov.au

Yours sincerely



MALCOLM HUGHES
Senior Manager Planning and Environment

12/12/14

ii. Submission following Review of Preliminary Response (8 January 2015)

Coralie Guy

From: Marlene Van Der Sterren <Marlene.Vandersterren@sca.nsw.gov.au>
Sent: Thursday, 8 January 2015 11:52 AM
To: Nicholas Warren
Cc: Frances Kelly; Darryl Thiedeke (Darryl.Thiedeke@hy-tec.com.au); Alex Irwin; 'matt.corradin@epa.nsw.gov.au'; Nicole Wallwood
Subject: Austen Quarry - meeting 8 January 2015 - outcomes and agreed actions

Dear Nick,

Thank you for meeting with us today regarding your response to the SCA's submission to the Austen Quarry Stage 2.

Please find below is a summary of our response to each of the response to submission points as discussed in the meeting.

1.2.1 Uncontrolled discharge and 1.2.2 Capacity of Water Management Structures

Following the meeting, we have now spoken with Matthew Corradin from the EPA regarding these issues. It is understood from discussions with the EPA that a collaborative approach towards a Pollution Reduction Program (PRP) acceptable to both EPA and Water NSW to address uncontrolled discharge and capacity of water management Structure will be undertaken.

On this basis the above points are no longer a reason underpinning Water NSW's objection to the proposal.

Item 1.3.1 Groundwater Impacts at Yorkeys Creek

As suggested in the meeting, the following information could be included in the response to submissions report to enable Water NSW to better understand the potential groundwater / surface water impacts:

- Frequency graphing of the current flows and discharges and the proposed flows and discharges in the Cox's river and Yorkey's Creek (either by flow, volume or both)
- Frequency graphing of the groundwater drawn-down effects on the river and creek (either by flow, volume or both)
- Impact and assessment on the different flow regimes (e.g. impact during low flows and impact during high flows)

(Please, note this may require further statistical analysis of the water balance model prepared for the surface and groundwater report, according to the relevant guidelines, such as the Australian Rainfall and Runoff and associated documents).

Item 1.3.2 - No further response.

Item 1.3.3 Clean water diversions

As suggested in the meeting a more detailed description of the proposed location and discharge points for the clean water diversion drain could be provided, including revising Figure 4.32 to show clear diversion drain directions, rather than circles. A close up of the proposed diversion drain locations would help in this regard.

Item 1.3.4 Water Quality at Discharge

We acknowledge your comment that there is limited local historic data on water quality at the site and that the discharges will be governed by the EPL. It is suggested that alternative data sets could be considered for inclusion in a revised response, such as regional water quality data or equivalent system water quality data. This data may be available through a range of government and private organisations.

Item 1.3.5 Clarification of Assessment Results

At this stage there is no further response however, there may be further comment, once information has been provided for item 1.3.1.

Item 1.3.6 Rehabilitation Bond

As clarified by you and us, this was an error in the EIS.

Item 1.3.7 – no further response.

If you have any further questions, please contact me on the number below.

Kind regards,

Marlene

Dr. Marlène van der Sterren *CPEng, MIEAust*
Acting Senior Assessment Officer

WaterNSW
PO Box 323 PENRITH NSW 2750
Phone:(02) 4724 2458
[Linkedin](#)

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Any views expressed in this e-mail do not represent the views of the Sydney Catchment Authority unless otherwise stated.

(e) Office of Environment & Heritage (3 December 2014)



Office of
Environment
& Heritage

Your reference: SSD 6084
Our reference: DOC14/261372
Contact: Michelle Crawford 02 6883 5339
Date: 3 December 2014

Brendan Liew
Planning Officer
Planning and Environment
GPO Box 39
Sydney NSW 2001

Dear Brendan

RE: Exhibited EIS Austen Quarry Extension (SSD 6084)

I refer to your request dated 4 November 2014 seeking comment from the Office of Environment and Heritage (OEH) on the exhibited Environmental Assessment for the Austen Quarry Extension.

OEH has reviewed the information provided and considers that some further clarification of the management of the existing Conservation Area, and the intended offset mechanism, is required. Detailed comments are provided in Attachment A.

If you have any questions regarding this matter please contact Michelle Crawford on 02 6883 5339 or email michelle.crawford@environment.nsw.gov.au

Yours sincerely

A handwritten signature in black ink, appearing to read "S Ardill".

SONYA ARDILL
Senior Team Leader Planning, North West Region
Regional Operations

Attachment A

ATTACHMENT A

Biodiversity Comments

Acronyms

EIS	Environmental Impact Statement
OEH	NSW Office of Environment and Heritage
BOA	Biodiversity Offset Area

1 Management of Proposed offset and Conservation Area H

Page 2-63 of the EIS states:

“The polygon excluded from the proposed BOA represents an easement for the purpose of Conservation Maintenance Work established to comply with Condition 7b of DA103/94”

Consent condition 7b states:

*“The developer is to pursue the attainment and fund implementation of a Conservation Agreement or flora preservation conditions over suitable *E pulverulenta* habitat identified by the National Parks and Wildlife Service of N.S.W, within the Hartley area”*

OEH notes that this area has not been included in the calculation of the proposed Offset in accordance with Principle 4 of the Offset Principles. OEH agrees that this is the correct approach, however believes that information regarding what agreements or conditions currently apply to this area, and how it is currently managed, should be provided in the EIS. It is also recommended that the area be managed as part of the proposed Offset and that the Biodiversity Offset Management Plan specifically show a plan of management for this area.

Recommendations

- 1.1 That specific information is provided regarding the agreements and/or conditions currently applying to Conservation Area H
- 1.2 That detail is provided regarding the current management of Conservation Area H
- 1.3 That Conservation Area H be managed as part of the proposed offset and that the Biodiversity Offset Management Plan specifically shows a plan of management for this area.

2 Offset Mechanisms

OEH is satisfied that the proposed BOA adequately offsets the impacts that have been identified, however Page 4-145 of the EIS states:

‘The conservation value of this area would, however, be enhanced by the conservation of the surrounding vegetation by way of Voluntary Conservation Agreement (VCA), addition to OEH estate, BioBanking Site, covenant on title, or other means’

And

‘At this time, the mechanism for conserving the proposed BOA.....has not being formalised. However once an in-principle agreement for the BOA is obtained from the consent authority, the Applicant would implement an ‘in perpetuity’ conservation arrangement’

The following criteria for suitable offset mechanisms set out in Appendix A of the NSW Biodiversity Offsets Policy for Major Projects¹ must be met when determining a suitable offset mechanism:

- a. The principal objective of ongoing site management is biodiversity conservation.
- b. Management actions are undertaken in accordance with a plan of management.
- c. There is reasonable likelihood that sufficient resources will be available to implement the plan of management over time.

¹ <http://www.environment.nsw.gov.au/resources/biodiversity/140672biopolicy.pdf>

- d. There are appropriate accountability mechanisms in place to secure the outcomes, and these mechanisms cannot be altered without alternative and comparable offsetting arrangements being put in place.
- e. The arrangements are in perpetuity and conservation obligations are transparently transferred and disclosed to any new owners of the land through appropriate administrative procedures.

BioBanking agreements fulfil the above criteria as set out in the NSW Biodiversity Offsets Policy for Major Projects and are therefore OEH's preferred mechanism for securing offsets.

Recommendations

- 2.1 That the proposed BOA be secured through a BioBanking agreement.

(f) Trade & Investment – Division of Resources & Energy (13 November 2014)



13 November 2014

Brendan Liew
Planning Officer
NSW Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Emailed: Brendan.liew@planning.nsw.gov.au

Your Reference: SSD 6084
Our Reference (TRIM): OUT14/37353

Dear Mr Liew

Austen Quarry Extension (SSD 6084) – Notice of Exhibition

Thank you for the opportunity to provide advice on the above matter. This is a response from NSW Trade & Investment – Geological Survey of New South Wales (GSNSW).

The building and construction industries in NSW require ongoing replacement of supplies as sources are exhausted. The expansion of existing quarries, subject to environmental assessment, helps to ensure a continued supply of material for a range of building and construction uses in NSW. Austen Quarry represents an important source of a range of hard rock aggregate and road base products for the local and Sydney markets.

The GSNSW has reviewed the Environmental Impact Statement for the Stage 2 Extension of Austen Quarry and is satisfied that the resource has been adequately assessed.

NSW Trade & Investment - Division of Resources & Energy (DRE) collects data on the quantity and value of construction materials produced annually throughout the State. The statistical data collected is of great value to government and industry in planning and resource management. The GSNSW requests that as a condition of development consent the proponent should be required to provide annual production data to DRE.

Queries regarding the above information, and future requests for advice in relation to this matter, should be directed to the GSNSW Land Use team at landuse.minerals@trade.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Cressida Gilmore'.

Cressida Gilmore
Team Leader - Land Use Assessment

NSW Department of Trade and Investment, Regional Infrastructure and Services
RESOURCES & ENERGY DIVISION
PO Box 344 Hunter Region Mail Centre NSW 2310
Tel: 02 4931 6666 Fax: 02 4931 6726
ABN 51 734 124 190
www.dtrir.nsw.gov.au

(g) Roads and Maritime Services (28 November 2014)



WST08/00023/09

Manager Mining Projects
Department of Planning & Infrastructure
GPO Box 39
Sydney NSW 2001

Dear Sir

Austen Quarry Extension (SSD 6084) – Jenolan Caves Road, Hartley

Thank you for your email received 4 November 2014 referring the Austen Quarry Extension to Roads and Maritime Services for comment.

Roads and Maritime will not object to the proposed extension and provides the following recommended conditions of consent:

- The Quarry must operate in accordance with the Austen Quarry – Road and Traffic Management Plan, dated 24 June 2011.
- We strongly support the recommendation for the quarry operator to monitor the operation of the intersection of Jenolan Caves Road and the Great Western Highway. Please ensure that the report is provided to Roads and Maritime for review and recommendations.
- Require the proponent to prepare and implement a code of conduct relating to transport of materials on public roads as part of the considerations under Clause 16(1) of the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Should you require further information please contact Fiona Francis on (02) 6861 1688.


Susie Mackay
Network & Safety Manager
Western

28/11/14

Roads and Maritime Services

51 - 55 Currajong Street Parkes NSW 2870
PO Box 334 Parkes NSW 2870 DX 20256
www.rms.nsw.gov.au | 13 17 82



(h) Lithgow City Council (10 November 2014)

Reference: LGS
Environment & Development Dept.



10 November 2014

Brendan Liew
Planning Officer
Mining and Industry Projects
NSW Department of Planning & Infrastructure
GPO Box 39
Sydney NSW 2001

Brendan.Liew@planning.nsw.gov.au

Dear Sir,

AUSTEN QUARRY EXTENSION (SSD 6084)

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

Council considers the Environmental Assessment adequately addresses the relevant issues and Council has no objection to the development subject to the following conditions being included on the consent if the development is approved:

General

1. Stage 1 of the development is to comply with 103/94DA approved conditions, is to be carried out generally in accordance with the development application and accompanying Environmental Impact Statement and all modifications of development consents issued by Lithgow City Council.
2. Lithgow City Council is to be notified of any modifications and determinations.
3. There is to be no quarrying, processing, loading or transportation on Sundays and Public Holidays.
4. This consent shall lapse 30 years from the date of endorsement.
5. The applicant is to prepare and submit Annual Reviews (formerly Annual Environmental Management Reports) to Lithgow City Council to review. The annual Review must:
 - (a) Describe the development that was carried out in the previous calendar year;
 - (b) Include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against:
 - The relevant statutory requirements, limits or performance measures and criteria,
 - The monitoring results of the previous years; and
 - The relevant predictions in the EIS,

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Tel: (02) 6354 9999 Fax: (02) 63514259
Web: www.lithgow.nsw.gov.au Email: council@lithgow.nsw.gov.au

- (c) Identify any non-compliance over the last year and describe what actions were (or are being) taken to ensure compliance.

Section 94A Contribution

6. Council would like the opportunity to enter into a Voluntary Planning Agreement for this project. Council recently adopted a Section 94A Contributions Plan in accordance with the *Environmental Planning and Assessment Act 1979*, which imposes a 1% Contribution on all development over \$200,000. However, Council acknowledges that such a contribution may be inappropriate for projects of the type proposed by HyTec Industries.

Please note that Hy-Tec has commenced the initial stages of negotiating a Voluntary Planning Agreement with Lithgow City Council.

It is to be noted that Figures 4.9 and 4.10 are incorrect and possibly out of date.

Figure 4.12 displays Highway upgrades that are not committed to at anytime in the foreseeable future.

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


Mr P G Cashel

TEAM LEADER DEVELOPMENT PLANNER

(i) Blue Mountains City Council (17 December 2014)

Coralie Guy

From: Brendan Liew <Brendan.Liew@planning.nsw.gov.au>
Sent: Wednesday, 17 December 2014 4:25 PM
To: Nicholas Warren
Cc: Alex Irwin
Subject: FW: Austen Quarry Extension (SSD 6084) - response to EIS

Hi Nick,

Please see BMCC's submission below. With this, I understand that all submissions are accounted for with exception of additional information expected from a member of the public (confidential #1).

Kind Regards

Brendan Liew | Planning Officer

Mining Projects | Resource Assessments | Planning Services
NSW Department of Planning & Environment | 23-33 Bridge Street, Sydney NSW 2001
e: brendan.liew@planning.nsw.gov.au | p: 9228 6310 | m: GPO Box 39, Sydney NSW 2001



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From: Susan Bell [mailto:SBell@bmcc.nsw.gov.au]
Sent: Wednesday, 17 December 2014 3:50 PM
To: Brendan Liew
Cc: Andy Turner; Janne Yardy; Michael Hensen
Subject: Austen Quarry Extension (SSD 6084) - response to EIS

Hello Brendan

We are sorry for the delayed response and thank you for the reminder.

Council still has major concerns regarding the Austen Quarry proposal namely:

- **Increase in B-double movements & transportation by rail:** As you know Council has long-standing concerns relating to the impacts of heavy vehicles along the highway particularly in relation to safety, amenity and functioning of the highway as it operates as a regional route and local network. In several instances, the Highway also operates as a town/village mainstreet. The impact of incremental rises in truck movements in the context of all these categories is still of considerable concern. We note that there appears to be little/no consideration of the use of rail as an alternative over the life of the quarry – considered to be until 2050. Also of concern is the interaction of truck traffic with tourism traffic on the GWH which is part of the Greater Blue Mountains Drive – a self-drive tourism route (

<http://www.greaterbluemountainsdrive.com.au/>) . There is considerable collateral around this tourism resource.

- Visibility of the quarry from key points especially Bardens Lookout at Mount York: The Bicentenary of the first crossing of the Blue Mountains has renewed an appreciation of the heritage and significance of the Mount York precinct, resulting in a raised profile for this site. Council has subsequently invested in the upgrade of the site for camping and provided interpretive elements. We note the development of a number of proposed strategies in relation to management of visual impact, however we also note that the proposal will still be visible from Barden's lookout.
- Impact on cyclists along road routes: our emailed addition to our original response stated "Cycling has a strong tourism and transport focus with sections of the highway between the quarry and Katoomba in particular being hazardous with no shoulder or dedicated cycle lane provided". The study cites the GWH upgrades, safety upgrades and provision of off-road shared paths as providing improved facilities for cycling. However the study does not provide a detailed analysis – particularly in the presence of an increasing trend for bicycle usage.
- Council is concerned over the impacts of conveying as we note that it continues to occur.

Thank you for the opportunity to respond.

Regards

Susan Bell | Senior Strategic Planner/Urban Designer | t 02 47805447 | e sbell@bmcc.nsw.gov.au

Blue Mountains City Council • council@bmcc.nsw.gov.au • www.bmcc.nsw.gov.au • Locked Bag 1005 Katoomba NSW 2780

From: Brendan Liew [<mailto:Brendan.Liew@planning.nsw.gov.au>]
Sent: Thursday, 11 December 2014 10:15 AM
To: Blue Mountains Corporate E-Mail
Cc: Michael Hensen; Glenn Sherlock
Subject: FW: Notice of Exhibition: Austen Quarry Extension (SSD 6084)
Importance: High

Good morning,

Please be advised that the exhibition for the Austen Quarry Extension has concluded. I would appreciate it if Council could please advise me if they still wish to make a submission.

Kind Regards

Brendan Liew | Planning Officer

Mining Projects | Resource Assessments | Planning Services
 NSW Department of Planning & Environment | 23-33 Bridge Street, Sydney NSW 2001
 e: brendan.liew@planning.nsw.gov.au | p: 9228 6310 | m: GPO Box 39, Sydney NSW 2001



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From: Brendan Liew

Sent: Tuesday, 4 November 2014 6:20 PM

To: Blue Mountains City Council; Lithgow City Council; Nature Conservation Council of NSW

Subject: Notice of Exhibition: Austen Quarry Extension (SSD 6084)

Dear all,

**Austen Quarry Extension (SSD 6084)
Notice of Exhibition**

Hy-tec Industries Pty Ltd has submitted a Development Application (DA) for the Austen Quarry Extension, located at Jenolan Caves Road, Hartley in the Lithgow local government area.

The proposal involves:

- continued extraction and processing operations at the existing hard rock quarry for up to 30 years;
- extending the existing extraction area by 16.1 hectares (ha) and overburden emplacement area by 9.9 ha;
- transporting quarry products off-site by road to local and Sydney markets; and
- rehabilitating the site.

The DA and Environmental Impact Statement (EIS) will be on public exhibition from **Thursday 6 November 2014 until Wednesday 10 December 2014**. These documents may be viewed on the Department's website (<http://www.planning.nsw.gov.au>) during this time. I have arranged for the application to deliver hard copies and/or CD-ROMs of the EIS to your offices directly. I would appreciate if you could ensure that a copy of the EIS is made publicly available at your offices.

I invite you to invite you to comment on the proposal, including advice on recommended conditions of consent, by **Wednesday 3 December 2014**.

I will be your contact officer for this proposal and can be contacted on the details below.

Kind Regards

Brendan Liew | Planning Officer

Mining Projects | Development Assessment Systems and Approvals
NSW Department of Planning & Environment | 23-33 Bridge Street, Sydney NSW 2001
e: brendan.liew@planning.nsw.gov.au | p: 9228 6310 | m: GPO Box 39, Sydney NSW 2001



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(j) Public Submission 1 (10 December 2014)

From: [REDACTED]
To: [Brendan Liew](#)
Subject: Submission Details for [REDACTED] (object)
Date: Wednesday, 10 December 2014 9:48:13 AM

Confidentiality Requested: yes

Submitted by a Planner: no

Disclosable Political Donation: no

Name: [REDACTED]
Email: [REDACTED]

Address:
[REDACTED]

[REDACTED]

Content:
[REDACTED]

Dear Brendan Liew,
I'm submitting this set of objections to HI-TEC's Austen Extension on the final day of exhibition, i.e., 10 December 2014. I spoke with you by phone and you told me that I may add detail to this submission for a further period of two weeks. If you remember our phone conversation, I told you that I'm blind and finding it difficult to work through relevant issues in time to meet the deadline for a submission, today. You responded by saying that so long as I submitted an objection by the close of business today, I could continue to fill-in detail for about two weeks. Many thanks, I do need the extra time and will follow-up this submission with more.

State Significant Sites On Exhibition
Austen Quarry Extension
Assessment Type SSD
Project Type Mining, Petroleum & Extraction > Extractive Industries
Application Number SSD 6084
DGRS Issued: 03/09/2013

Brendan, I hope to submit my objection in a final form at some later time but within two weeks. I aim to begin by addressing the minister as the appropriate authority.

Dear Minister,
I submit a set of objections to the Austen Quarry Extension below.

First, my local environment, Blackheath, is impacted by trucks carrying heavy loads destined for market. Roads suffer wear and tear, accidents involving trucks affect us and the noise of air brakes applied as trucks brake suddenly to comply with local speed limits are annoying. Please monitor HI-TEC's ongoing, increasing use of roads generally.

Second, I experience constant vibration pollution at all hours of the day and seven days per week. I have approached my local council for help to measure vibration intensity and also to pinpoint the source. I have had no help from BMCC at all. Although I cannot link the experience of vibration with HI-TEC's quarry, I believe that it's reasonable to suspect that very heavy work, perhaps the quarrying activity at Austen, is responsible. Please consider applying your discretion to monitor for compliance with regard to total vibration produced and also hours of operation at the quarry and its extension.

Third, apparently, the Austen extension is a thirty year development Please consider breaking the thirty years

into smaller reviewable periods of time. Where HI-TEC should be compelled to comply with essential terms of their agreement, issues such as hours of operation and volume of product sent to market, need to be monitored constantly as per legislation.

Fourth, the Austen Extension appears to have satisfied all of the necessary standards for operating in a reasonably benign way. I wonder though whether the certifications that give HI-TEC authorisation to operate a very large operation for thirty years would have even conceived of the affect that up-scaled activity, concurrent activity and even deeper activity would have on issues such as vibration. For instance, figures taken in 1994 or later for blasting vibration and operational vibration may not necessarily remain relevant for the whole course of the development. Where solid hyalite may transmit/amplify vibration according to the nature of the deposit itself, vibration readings taken at a superficial level may not be true predictors of the vibration levels achieved through blasting and work at a much deeper level (half a kilometer). In other words, the essential readings for vibration taken in 1994 or later would probably not remain good for thirty years as the nature of the quarry changes from a shallow one to a much deeper one.

Following my reasoning that conditions at the quarry will change over thirty years, please implement ongoing environmental audits for compliance to agreed standards. It wouldn't hurt to make the essential certification time-limited so that HI-TEC would have to re-apply for certification at regular intervals, maybe five years.

Fifth, because HI-TEC is digging such a deep hold in the ground, it's common sense to assume that they will uncover various levels of stratified rock and even coal. Where the vertical quarry face exposes geological strata one by one, an opportunity for a different kind of mining operation may become apparent, that is, the continuous underground mining of coal and other minerals. Where the quarry presents opportunities for sly continuous, horizontal coal mining, please manage the risk by checking for mining activity generally close to the quarry (use of geophones).

I intend to flesh out these points with my reading of legislation and other authorities sources. For now, please understand that I have a set of serious objections to the quarry development as published.

In summary, I object to the lack of enforceable checks and balances that might otherwise be in place to enforce traffic volume, hours of operation and the realistic measurement to ongoing risks to the environment. In a nutshell, I hope the minister will consider and apply measures for an ongoing environmental audit of essential conditions such as vibration. Moreover, I object to the permission for the Austen development being given once and for thirty years rather than for shorter reviewable periods of time.

Sincerely,

[REDACTED]

[REDACTED]

Submission for Job: #6084 Austen Quarry Extension
https://majorprojects.affinitylive.com/?action=view_job&id=6084

Site: #2848 Austen Quarry Hartley
https://majorprojects.affinitylive.com/?action=view_site&id=2848

[REDACTED]

[REDACTED]

(k) Public Submission 2 (10 December 2014)

From: [REDACTED]
To: [Brendan Liew](#)
Subject: Submission Details for [REDACTED] (object)
Date: Wednesday, 10 December 2014 9:36:12 PM

Confidentiality Requested: yes

Submitted by a Planner: no

Disclosable Political Donation: no

Name: [REDACTED]
Email: [REDACTED]

Address:
[REDACTED]
[REDACTED]

Content:

I object to the expansion project for Austen Quarry.
It is massive expansion of the existing quarrying operations (360% increase in volume to be extracted).
The operations go very close to the Cox s River which feeds into the Sydney catchment for Sydney's water supply.
the bottom of the proposed extraction pit will be below the water table and so endangers the water quality and availability;
there will be a large visual impact from the operations and their aftermath.
Not all the proposed area will be rehabilitated
there will be a significant increase in the numbers of trucks on the Great Western Highway between Hartley and Penrith even Sydney. UP to 250 loads a day while any road works are being carried out on the GWH, such as upgrade from Mt Victoria west. At least a 25% increase on current numbers which were due to end shortly.

The extension sought is very long - 30 years from 2020. Population growth predictions for Sydney (and therefore demand for building materials) have many times been proved to be inaccurate, often inflated to secure favourable terms for developers and subsidiary operations such as a quarry for concrete ingredients. The term should be shorter so there can be a better assessment of the demand. As well, there is no way of predicting what % of the market the quarry can be certain to secure, so predicting how much product they would sell is very unreliable data.

Finally, water studies which purport to cover operations and their impacts up to the year 2050, where those studies do not factor in the very reliable knowledge that the climate in Western Sydney will get hotter and drier and water supply will reduce, are completely unreliable in their assessment of impacts of this project. The status quo of rainfall and temperature cannot be assumed in any environmental assessment. The proposal should be refused. It is a massive increase for a very long time in which to accurately predict the demand for the product and the true environmental impacts. And to inflict significant additional heavy truck traffic on the highway through the Blue Mountains LGA.

[REDACTED]

Submission for Job: #6084 Austen Quarry Extension
https://majorprojects.affinitylive.com/?action=view_job&id=6084

Site: #2848 Austen Quarry Hartley
https://majorprojects.affinitylive.com/?action=view_site&id=2848

Appendix 2

Consolidated Results of Blast Monitoring and Correspondence from Orica (21 July 2014)

(Total No. of pages including blank pages = 8)

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Blast results Table – April 2012 to current.

Blasting	Frequency	Date	Blast Number	Limits	Units of measure	Results	Monitor Location - Hartley Village
Ground Vibration	Per Blast	20.04.12	29	5 - trigger point <2.00	mm/s	Nil Trigger	√
Overpressure	Per Blast	20.04.12	29	115 - Trigger point 101	dB	Nil Trigger	√
Ground Vibration	Per Blast	17.05.12	30	5 - trigger point <0.5	mm/s	Nil Trigger	√
Overpressure	Per Blast	17.05.12	30	115 - Trigger point 101	dB	Nil Trigger	√
Ground Vibration	Per Blast	06.06.12	31	5 - trigger point <1.5	mm/s	Nil Trigger	√
Overpressure	Per Blast	06.06.12	31	115 - Trigger point 101	dB	Nil Trigger	√
Ground Vibration	Per Blast	07.06.12	32	5 - trigger point <0.27	mm/s	Nil Trigger	√
Overpressure	Per Blast	07.06.12	32	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	18.07.12	33	5 - trigger point <0.5	mm/s	Nil Trigger	√
Overpressure	Per Blast	18.07.12	33	115 - Trigger point 110.6	dB	Nil Trigger	√
Ground Vibration	Per Blast	30.07.12	34	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	30.07.12	34	115 - Trigger point 90	dB	Nil Trigger	√
Ground Vibration	Per Blast	16.08.12	35	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	16.08.12	35	115 - Trigger point 90	dB	Nil Trigger	√
Ground Vibration	Per Blast	18.09.12	36	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	18.09.12	36	115 - Trigger point 98	dB	Nil Trigger	√
Ground Vibration	Per Blast	17.10.12	37	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	17.10.12	37	115 - Trigger point 105	dB	Nil Trigger	√
Ground Vibration	Per Blast	25.10.12	38	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	25.10.12	38	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	05.11.12	39	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	05.11.12	39	115 - Trigger point 105	dB	Nil Trigger	√
Ground Vibration	Per Blast	06.12.12	40	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	06.12.12	40	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	19.12.12	41	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	19.12.12	41	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	13.02.13	42	5 - trigger point <0.27	mm/s	Nil Trigger	√
Overpressure	Per Blast	13.02.13	42	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	21.02.13	42A	5 - trigger point <0.27	mm/s	Nil Trigger	√

Blasting	Frequency	Date	Blast Number	Limits	Units of measure	Results	Monitor Location - Hartley Village
Overpressure	Per Blast	21.02.13	42A	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	25.03.13	43	5 - trigger point <0.27	mm/s	Nil Trigger	✓
Overpressure	Per Blast	25.03.13	43	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	16.04.13	44	5 - trigger point <0.27	mm/s	Nil Trigger	✓
Overpressure	Per Blast	16.04.13	44	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	23.05.13	45	5 - trigger point <0.27	mm/s	Nil Trigger	✓
Overpressure	Per Blast	23.05.13	45	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	03.06.13	46	5 - trigger point <0.27	mm/s	Nil Trigger	✓
Overpressure	Per Blast	03.16.13	46	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	09.07.13	47	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	09.07.13	47	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	01.08.13	48	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	01.08.13	48	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	01.08.13	49	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	01.08.13	49	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	23.08.13	50	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	23.08.13	50	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	22.08.13	51	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	22.08.13	51	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	22.08.13	52	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	22.08.13	52	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	02.09.13	53	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	02.09.13	53	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	14.10.13	54	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	14.10.13	54	115 - Trigger point 105	dB	Nil Trigger	✓
Ground Vibration	Per Blast	07.11.13	55	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	07.11.13	55	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	25.11.13	56	5 - trigger point <0.51	mm/s	Nil Trigger	✓
Overpressure	Per Blast	25.11.13	56	115 - Trigger point 100	dB	Nil Trigger	✓
Ground Vibration	Per Blast	07.11.13	57	5 - trigger point <0.51	mm/s	Nil Trigger	✓

Blasting	Frequency	Date	Blast Number	Limits	Units of measure	Results	Monitor Location - Hartley Village
Overpressure	Per Blast	07.11.13	57	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	25.11.13	58	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	25.11.13	58	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	05.12.13	59	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	05.12.13	59	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	13.02.14	60	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	13.02.14	60	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	25.03.14	61	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	25.03.14	61	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	03.02.14	62	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	30.02.14	62	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	09.03.14	63	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	09.03.14	63	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	04.03.14	64	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	04.03.14	64	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	14.04.14	65	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	14.04.14	65	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	14.04.14	66	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	14.04.14	66	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	04.05.14	67	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	04.05.14	67	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	04.05.14	68	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	04.05.14	68	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	20.05.14	69	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	20.05.14	69	115 - Trigger point 110	dB	Nil Trigger	√
Ground Vibration	Per Blast	20.05.14	70	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	20.05.14	70	115 - Trigger point 110	dB	Nil Trigger	√
Ground Vibration	Per Blast	29.05.14	71	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	29.05.14	71	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	06.06.14	72	5 - trigger point <0.51	mm/s	Nil Trigger	√

Blasting	Frequency	Date	Blast Number	Limits	Units of measure	Results	Monitor Location - Hartley Village
Overpressure	Per Blast	06.06.14	72	115 - Trigger point 100	dB	Nil Trigger	√
Ground Vibration	Per Blast	08.07.14	73	5 - trigger point <0.51	mm/s	1.66	√
Overpressure	Per Blast	08.07.14	73	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	23.07.14	74	5 - trigger point <0.51	mm/s	0.186	√
Overpressure	Per Blast	23.07.14	74	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	14.08.14	75	5 - trigger point <0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	14.08.14	75	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	02.09.14	76	5 - trigger point <0.51	mm/s	0.312	√
Overpressure	Per Blast	02.09.14	76	115 - Trigger point <88	dB	97.5	√



Technical Centre – Kurri Kurri

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ACN 004 117 828

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Kurri Kurri NSW 2327 Australia
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<http://www.orica.com>

21st July 2014

Mr. Darryl Thiedeke
National Planning and Development Manager
Hy-Tec Group
Silverwater NSW 2128

Dear Darryl,

This letter confirms that for the period of 1st July 2013 through 30th June 2014, all blasts conducted by Orica at the Hy-Tec Austen (Hartley) Quarry were compliant with respect to environmental monitoring requirements. There were no exceedances recorded of either the vibration or airblast limits imposed at the Hartley Village.

The monitor is normally set with the limits at 100 dBI and 0.51mm/sec. All blast events have had no trigger results meaning that the set points have not been exceeded.

If you have any questions regarding the above, please contact me on (02) 4939 5245.

Regards

Cam Harbrow

Cam Harbrow
Area Manager
NSW Quarry & Construction

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