Orchard Hills Waste and Resource Management Facility

Response to Submissions

Part A: Response to Issues Raised

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SECTION 1. ADDRESSING STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

1.1 DETERMINATION OF DEVELOPMENT APPLICATIONS

Clause 123 in the Infrastructure SEPP prescribes the assessment criteria that the consent authority must have regard for when assessing and determining applications for landfill facilities. An assessment of the Project with respect to this new and additional criterion is provided as follows:

1. *In determining a development application for development for the purpose of the construction, operation or maintenance of a landfill for the disposal of waste, including putrescibles waste, the consent authority must take the following matters into consideration:*

    a. *whether there is a suitable level of recovery of waste, such as by using alternative waste treatment or the composting of food and garden waste, so that the amount of waste is minimised before its is placed in the landfill,*

Response

In the first instance it should be re-emphasised that the Project would not be accepting putrescible waste like food. The main focus of the facility is a recycling re-processing centre. The Project aims to recycle 67% of the incoming waste stream. Only that material, which cannot be recycled and residual materials arising from the on-site separation processes will be emplaced in the landfill.

    b. *whether the development:*

        i. *adopts best practice landfill design and operation, and*

        ii. *reduces the long term impacts of the disposal of waste, such as greenhouse gas emissions or the offsite impact of odours, by maximising landfill gas capture and energy recovery, and*

Response

As detailed in the *Environmental Assessment* supporting the application, the Project would adopt the best practice in terms of landfill design by incorporating features like appropriate leachate management and stormwater control. Given, non-putrescible waste would only be accepted on site, there would be no adverse levels odours derived or adequate levels gas generation for the purposes of energy recovery.

if the development relates to a new or expanded landfill:

iii. whether the land on which the development is located is degraded land such as a disused mine site, and

Response

The site is a former clay/shale quarry that has been significantly disturbed over the past 30 years. Although there are still some clay/shale resources available for extraction on the site (which will be excavated as part of the Project), unless a viable rehabilitation process is initiated, such as that proposed as part of this Project, the land will remain in its currently degraded and environmentally unsuitable state.

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whether the development is located so as to avoid land use conflict, including whether it is consistent with any regional planning strategies or locational principles included in the publication EIS Guideline: Landfilling (Department of Planning, 1996), as in force from time to time, and

Response

The site is located 0.5km away from the nearest residential development to the north "The Vines" Estate. This residential development was introduced post approval of the former quarry. Consideration of the potential impacts of the quarry on the future amenity of this residential area therefore must have been undertaken. The off-site impacts or the Project would be managed and within the acceptable guidelines for issues like noise and dust and no worse or even better than the former quarry operations. This management combined with the adequate separation between the site and existing residential development is more than appropriate.

The following table lists the locational principles nominated in the "Guidelines for Landfills" and the compliance status for the project.

Locational Principles	Compliant	Notes
(a) Zoning permissibility.	Yes	The Project Site satisfies the planning / zoning requirements for Penrith City Council (see EA Section 2.3.3)
(b) Compatibility with Planning provisions or land use constraints.		
(i) Easements or other restrictions affecting the site including heritage or environmental protection.	Yes	The project design takes account of the power transmission line easement across the northern side of the Project Site and the riparian zone for Blaxland Creek at the northwestern corner of the Project Site.
(ii) Relevant provision of any state environmental planning policy, regional or local environmental plans, or development control plan.	Yes	The Project satisfactorily addresses all relevant provisions of the nominated documents – see EA Section 3.2.3.

Locational Principles	Compliant	Notes
(iii) Relevant catchment management plans, regional strategies or management plans for the area	Yes	The design and operational safeguards for the project satisfy the aims and objectives of all relevant plans.
(c) title details; land tenure; owner's consent (if not the proponent).	Yes	Dellara Pty Ltd is both the Proponent and Land Owner.
(d) if Crown Land involved – any constraint associated with the form of lease or tenure; Native Title status of land addressed and outline provided of procedures followed to satisfy requirements of the Commonwealth's *Native Title Act (1993).*	Not Applicable	
(e) maps, plans or aerial photographs clearly identifying location of proposal in relation to:	Yes	The *Environmental Assessment* dated April 2010 includes all relevant plans and aerial photographs.
(i) surrounding roads, adjoining communities or dwellings, any land use or natural features likely to be affected by the proposal, ie nearby airports or water supply resources (ground or surface).	Yes	The *Environmental Assessment* dated April 2010 includes all relevant details.
(ii) utilities including transmission lines, pipelines, cables or easements.	Yes	The easement for the power transmission line has been addressed in the Preferred Project Report.
(iii) sight-lines from dwellings or public places such as roads.	Yes	Various cross-sections, photomontages etc. have been prepared to address visual issues.
(iv) other activities which in combination with the landfill have the potential to generate significant impacts (such as traffic, air, noise or water impacts).	Yes	The *Environmental Assessment* comprehensively addresses each of the nominated issues.
Affected Environment		
(a) meteorological characteristics which may influence flooding, erosion, evaporation, dust, odour or noise impacts – these may include wind direction and intensity, rainfall intensity, frequency, duration and seasonal distribution.	Yes	The *Environmental Assessment* and the supporting reports record all necessary meteorological data required for assessing the nominated impacts.
(b) geomorphological factors ie. major landform features, slope gradients, geological characteristics.	Yes	Detailed topographic mapping is included in the *Environmental Assessment*.

Locational Principles	Compliant	Notes
(c) use and vulnerability of any natural waterbodies including wetlands, estuaries likely to be affected by the proposal, general hydrological and water quality characteristics.	Yes	The proximity of Blaxland Creek to the operational area has been addressed through a range of safeguards and commitments.
(d) use and vulnerability of groundwater; general hydrological and water quality factors.	Yes	Both surface water and groundwater issues have been fully addressed.
(e) characteristics of land to be affected re: general soil characteristics; existing soil problems including salinity, acid sulfate soils potential or erosion problems.	Yes	Very small areas of the Project Site remain undisturbed. No salinity issues are evident and no acid sulphate soil issues are relevant.
(f) predominant vegetation communities in areas to be disturbed. Potential habitat and conservations values.	Yes	The Project Site is effectively devoid of native vegetation. The riparian zone on site will be protected.
(g) heritage, conservation, archaeological, historical, cultural, scientific or scenic significance of buildings, items, places or areas likely to be affected by the proposal.	Yes	Aboriginal heritage values have been studied and identified artefacts will be appropriately salvaged in consultation with relevant Aboriginal stakeholders.

c. whether transport links to the landfill are optimised to reduce the environmental and social impacts associated with transporting waste to the landfill.

Response

The only transport link to the site is via road. The main connecting roads to the site are Mamre and Luddenham Roads, which are classified by the RTA as State and Regional Roads respectively. The routes to service the Project would be the same as that approved for the former quarry operations. The Traffic study undertaken as part of the *Environmental Assessment* indicates that the levels of truck movements on these roads would not adversely affect the level of service at intersections and would only minutely affect their existing saturation levels. The same can be said therefore in terms of the likely environmental and social impacts.

As detailed in the above assessment, the Project satisfies the amendments to Infrastructure SEPP given its focus on recycling, using and rehabilitating a site which is significantly degraded and minimising off-site environmental impacts such that they are within the acceptable guidelines.

1.2 LANDFILL CAPACITY

Representative Comment(s)

The Proponent's Environmental Assessment does not justify the need for the project, which was a requirement of the Director General. Sydney currently has a 20 year reserve for non-putrescible waste disposal. We do not believe that there is any necessity for another non-putrescible waste facility in the Sydney region at this time, which would only serve to extend the environmental impact of the other sites in this region.

Form Letter 4

The Director General has required that the proponent address the following matter:

> *whether a justifiable demand exists for the landfill, having regard to the provisions of the NSW Waste Avoidance and Resource Recovery Strategy and the waste disposal data provided from time to time by the Department of Environment and Climate Change,*

The Proponent's EA does not provide justification for the need for the project. Currently within the Western Sydney region, encompassing Penrith, Liverpool, Fairfield, Campbelltown and Blacktown Local Government Areas, there are eleven (11) DECCW licensed operational landfills that can accept General Solid Waste (Class 2). The most recently approved waste facility, which includes land filling, is the Lighthorse facility that was approved on 22 November, 2009 by the NSW Planning Assessment Commission. Mr Tony Wright, a waste expert, was engaged by the Department of Planning to assess whether a justifiable demand existed for the Lighthorse project. 'Mr Wright in his assessment found that:

> *"the fundamental measure to justifiable demand is the extent of existing landfill capacity in excess of disposal demand. Prudent planning practices suggest that a measure of contingency capacity should always be allowed for, say 10 years. Conversely, if excess capacity is to be avoided, then a maximum capacity limit should also be considered, say 20 to 30 years of demand at current disposal rates' (NSW Department of Planning, 2009).*

Mr Wright found that Sydney had sufficient capacity to accommodate 14 years waste input at expected future disposal rates. With the approval of the Lighthorse project capacity, is now in excess of 20 years. The maximum landfill capacity of the Patons Lane proposal is 7,800,000 tonnes, and based on the figures provided by the Department of Planning this equates to 3.4 years of demand at the expected future disposal rates. There is capacity within the system (i.e. approved waste disposal operations) to accommodate 20 years of waste disposal at the expected future disposal rates. The Patons Lane proposal is not justifiable now in terms of demand. If the Patons Lane proposal were supported then there would be a de facto extension to the operation of the other waste management facilities in the City of Penrith. Approval of the Patons Lane proposal would delay completion of the other landfill sites and extend environmental impacts of these sites.

The proponent has not demonstrated that there is a demand or need in the next twenty years for a waste management facility on the site.

Penrith City Council – Page 7

Director-General's requirements for new landfill sites specify that the Environmental Impact Assessment (EA) must provide a detailed description of the need for the extra landfill capacity, which takes into account the capacity of other currently available facilities in the region to accept the type of waste proposed and the future demand for such a facility. Approximate capacity of potential and approved sites in the Sydney Metropolitan area for non-putresible waste is currently approximately 26 million m^3 of waste. Table 1 below presents a list of non-putrescible waste landfills within Sydney.

Table 1 – Existing non-putrescible waste landfills in Sydney

Name	***Licensed to***	***Address***
Penrith Waste (Penrith Waste Services)	*Penrith Waste Services Pty Ltd*	*842 Mulgoa Road, Mulgoa 2745*
Elizabeth Drive (SITA)	*SITA Australia Pty Ltd*	*1725 Elizabeth Drive, Kemps Creek 2178*
Schofields (Hlebar & Draga)	*Hlebar; Draga*	*North Street Schofields 2762*
Kemps Creek (Kari & Ghossayn)	*Karis & Ghossayn Pty Ltd*	*Clifton Ave, Kemps Creek 2171*
Kimbriki (Warringah Council)	*Warringah Council*	*Kimbriki Road, Terrey Hills 2084*
Kurnell (Breen Holdings)	*Breen Holdings Pty Ltd*	*Captain Cook Drive, Kurnell 2231*
Alexandra (Dial-a-Dump)	*Alexandria Landfill Pty Ltd*	*10 Albert Street, St Peters 2044*
Brandown	*Brandown Pty Ltd*	*Lot 9 Elizabeth Drive, Kemps Creek 2178*
Blacktown (Blacktown Council)	*Blacktown Waste Services Pty*	*Richmond Road, Marsden Park 2765*
Horsely Park (Veolia)	*Veolia Environmental Services (Australia) Pty Ltd*	*Wallgrove Road, Horsley Park 2164*
Lighthorse Waste Facility	*A.C.N 114 843 453 PTY LTD*	*Eastern Creek NSW*
Erskine Park (Enviroguard)	*Enviroguard Pty Ltd*	*Mamre Road and Erskine Park Road, Erskine Park NSW 259*

Sydney currently has sufficient landfill sites and recycling facilities to support the waste needs of the population for another 20 years – given the current rate of disposal. This is by far more than enough capacity. Dellara's proposal, if approved, would be superfluous and unnecessary for the needs of Sydney and in effect only add 3.4 years of waste capacity. If approved, it would also have flow-on effects to the other landfill sites located around Sydney as less waste will be taken to these sites and effectively, these sites would take longer to fill and therefore their environmental impacts upon their communities and surrounding would be extended.

It is evident that Dellara's proposal cannot justify that a new waste landfill site is required, especially given the existing landfill sites that are located within the Sydney Metropolitan region.

Tanya Davies – Page 3-4

Response

Dellara commissioned Mark Ritchie & Associates to prepare a review of justifiable demand for the proposed facility. Their report is reproduced in Part D4 in this document.

The principal observations from the subject report are as follows.

The Waste Avoidance and Resource Recovery (WARR) Report 2008 commissioned by DECCW, sets out the 2014 targets for recycling of materials as follow:-

- Municipal Waste 2000 baseline of 26% recycled to 66% in 2014.
- Commercial and Industrial 2000 baseline of 28% recycled to 64% in 2014.
- Construction and Demolition 2000 baseline of 65% recycled to 76% in 2014.

Sydney generated 9.8 million tonnes of waste in 2006-2007, 2.25 million tonnes more than in 2004-2007. Of the 9.8 million tonnes generated, 4.5 million tonnes was landfilled. Almost half of this waste (47%) originated from Commercial and Industrial waste, with the remaining half comprising 24% Municipal and 29% Construction and Demolition waste.

In 2007-2008, 2,223,856 tonnes of Commercial and Industrial (C&I) waste including wood, food, plastic paper and cardboard was delivered to Sydney landfills. According to the 2008 WARR Report, current performance against the strategy targets and goals identify improving recycling of waste from C&I sources as a key area where greater effort will need to be applied over the coming years.

The C&I waste stream is generated by a wide range of organisations including business, industry, government agencies, shopping centres, institutions such as hospitals and universities, and recreational facilities.

Orchard Hills Measures to Achieve C&I Recycling Targets

With the NSW government setting recycling goals of 64% for C&I waste, these targets cannot be achieved by the existing recycling facilities operating in the Sydney metropolitan area. The principal existing facilities for C&I recycling in metropolitan Sydney are set out below.

Existing C&I Recycling In Sydney

Facility	Location	Operator	Quantity Processed (tpa)	System
Earthpower	Camellia	TPI/Veolia	80,000	MRF
Macarthur Resource Recovery Park	Jacks Gully	WSN	90,000	MRF
SITA Facility	Camellia	SITA	Unknown	AWT
Galloway	Seven Hills	Galloway Waste Management	30,000	MRF

With 2 million tonnes of C&I waste being generated annually in Sydney, the existing facilities fall far short of what is needed to achieve the recycling targets.

The recycling activities at the Orchard Hills Waste and Resource Management Facility would focus on two waste streams, namely, C&D and C&I. Whilst the C&D division would add to the production of road base, recycled concrete and metals products (which are in strong demand), it is the Materials Recycling Facility set up in a 1800m^2 warehouse to process C&I waste that will play a critical role in resource recovery and meeting the WARR 2014 recycling targets.

The Orchard Hills Facility would, at maximum capacity, receive up to 450 000 tonnes of C&D and C&I waste. With C&I 200 000 tonnes (at full capacity), a considerable proportion of this material would consist predominantly of wood, plastic, paper, cardboard, ferrous and non ferrous metals.

The equipment located within the Materials Recycling Facility (MRF) warehouse would separate the C&I waste by mechanical and manual sorting, together with mechanical cleaning (such as an agitator).

The C&I recycling at the Orchard Hills W&RMF would involve the separation and cleaning of C&I materials to become products suitable for re-sale. Markets are already present for ferrous and non ferrous metals, and plastic which is also sold as two separate products, plastic film and rigid containers.

The cardboard, together with fines, would be combined to become a product used in landscaping and agriculture. It can also be used for landfill sites.

The higher grade paper can be sold to paper recycling industries such as Visy.

Market opportunities for recycled products continue to grow all of which are supported by DECCW. For example shredder timber is now a commonly used fuel source for the Sugar Mill Industry.

Other growing markets for recycled C&I products would include glass fines as a replacement material for natural sand in pipe embedment, wood and plastic shredder chips as a fuel source for power stations, and shredded timber for sawdust products.

Conclusion

The Orchard Hills Recycling and Re-processing Facility would assist NSW to achieve the Waste Avoidance Resource Recovery targets for recycling, particularly to the C&F waste sector. The establishment of a C&I Materials Recycling Facility would add to much needed recycling of C&I waste in the Sydney metropolitan area and provide products for Sydney's planned Northwest and Southwest growth centres.

Landfill Capacity

The remainder of his response has been assembled by Wolter Planning Consultants.

The Tony Wright Report (Wright report) commissioned and endorsed by the NSW State Government stipulates that a contingency landfill capacity is required and should be allowed for 10 years. To avoid excess capacity, a maximum of 20 to 30 years of demand should be applied.

There are currently two key reports and/or studies that deal with estimating the amount of remaining solid waste capacity in Sydney, these being the Hyder report and the Wright report. The Mike Ritchie & Associates Report (MR report) analyses these reports, outlines the results of its own survey and uses the most recent data to deduce the available Class 2 landfill capacity in Sydney.

One of the key pieces of data is the amount of waste per year being emplaced in landfill. The MR report details that according to the NSW Department of Environment, Climate Change and Water (DECCW) the realistic emplacement figure is 3.37 million tonnes per year, which differs significantly from the 2.5 million figure used in the Wright report.

For the purposes of our review, we have:

- Applied the disposal rate of 3.37 million tonnes to all reports and/or studies.
- Included the capacities of both the recently approved but not operational Lighthorse facility (14 million tonnes) and the proposed Dellara facility (6.3 million tonnes).
- Assumed it will take at least another year before the Lighthorse and Dellara facilities would come on line therefore reducing the capacity of existing facilities a further 3.37 million tonnes by 2011.

Taking into account all of the above factors, we have determined that the Class 2 landfill capacities in Sydney are approximately:

- 6.9 years based on the data in the Hyder report;
- 15.1 years based on data in the Wright report; and
- 10.9 years based on the data in the MR report.

The MR report states that the Wright report presents the most optimistic landfill capacity for Sydney. It is therefore submitted that the demand reserve capacity offered by Dellara's project is justifiable as 15.1 years doesn't even cover the lower end of the acceptable 20 to 30 year contingency demand considered acceptable by the NSW Government.

Demand for additional landfill capacity has also been expressed commercially with two major waste companies having recently approached Dellara expressing interest to purchase air space on the site.

Other benefits of the landfill forming part of the project, is that it would ease the significant amount of pressure on the severely depleted putrescible waste facilities by redirecting non-putrescible waste to Class 2 landfills.

The facility will accommodate a Materials Recycling Facility (MRF) and competition to the Lighthorse operations. The facility would also be well located to serve identified residential and employment growth areas.

With respect to recycling, the NSW State Government has set ambitious targets of 63% for C&I waste and 76% for C&D waste. The MR report states that these targets cannot be met by the existing recycling facilities that largely operate on their capacity limits.

The Dellara project plans to recycle 67% of its incoming waste stream. This will assist in improving the recycling targets by at least 10% on the 2007/2008 average recycling rate of C&I and C&D in Sydney.

The MR report concludes that based on their assessment, which involves an analysis of the Hyder and Wright Reports, combined with recent waste disposal and recycling data that justifiable demand clearly exists for Dellara's Waste and Resource Facility at Orchard Hills.

SECTION 2. ASBESTOS

Representative Comment(s)

The former owner "got away" with illegal dumping of asbestos and there is nothing which would possibly ease concerns of local residents the practice wouldn't continue.

CA Hill & Associates Pty Limited – Submission

Can the NSW government guarantee that no more illegal asbestos will be dumped and its fibre particles blow straight into my family's direction?

Lawrence – Submission

I have major concerns about the disclosure that approximately 5000 tons of Asbestos has been illegally dumped on the site.

C. Young – Submission

Response

Dellara is committed to operating the Orchard Hills Waste and Resource Management Facility in a legally compliant manner at all times and will never by party to illegal practices on its land. The attention that the application has drawn, together with Dellara's commitments and likely strict conditions of a project approval would likewise result in a high level of scrutiny, etc, to assure the surrounding residents that a similar situation ever arises.

Dellara suggest that there is approximately 5,000 tonnes of asbestos in the Eastern Bund wall of the site. This suggestion needs to be challenged as there was only 1 bore test site which revealed a level of asbestos. Upon what rigorous, scientific investigation have Dellara's consultants followed to take this one positive reading for asbestos and calculate the 5,000 ton figure? There could be significantly more asbestos or significantly less. Unless further testing at regularly spaced intervals at the same depth are conducted, a more accurate understanding of the content of the bund walls cannot be provided.

This brings into question their justification to leave the bund wall in place. It there is significantly less asbestos that their ambit claim of 5,000 tonnes, then they have no health and safety justification for leaving the bund walls in situ and using the existing bund wall as a foundation upon which they'll fill the site up to a pyramidal monolith of 65 AHD.

If there is significantly more asbestos, then the EPA must be involved in the safe extraction and removal of the product from the walls.

Further methodical testing of all the bund walls by the applicant must be undertaken.

Tanya Davies – Page 11

Response

Dellara has discussed this issue with officers of Penrith City Council and as a result commissioned Douglas Partners to undertake further investigations in the area of Hole 12. The

results of that survey are included in Part D1. The letter report arising from the survey concluded "the current testing confirms that the extent of Special Waste is, at least, broadly similar to that delineated in the previous DP report dated August 2009".

While we accept that asbestos will be received at the facility in very small amounts as a component of other C&D wastes and will be matrix bonded and therefore safe for receipt and disposal at the facility, we do not believe that the EA provides adequate measures for the treatment of the asbestos located in the vicinity of Hole 12 in the eastern bunding wall, the concentration of which exceeds the reporting limit. The issue is discussed in Specialist Report 5 (Section 5.3.3.), and is also briefly mentioned in Section 2.5.2. but there is no consideration of how this material will be disposed of in the draft statement of commitments. We therefore request that the disposal measures discussed in Specialist Report 5 be incorporated into the draft statement of commitments.

Darley Australia Pty Ltd – Page 4

Response

In recognition that there may be a small likelihood that further elevated concentrations of asbestos in the C&D materials in the eastern bund wall, Dellara has two approaches.

Approach 1: All C&D wastes that need to be removed to achieve the final landform on the eastern side of the Project Site would be removed and placed in a low section of Cell 1A – thereby immobilising any asbestos present. Any C&D materials removed from the eastern bund wall would be undertaken strictly in accordance with an Asbestos Management Plan - Document D2 provides a draft of the Asbestos Management Plan – this plan will be finalised if the Project is approved and will reflect any conditional requirements from the project approval.

Document D3 provides an overview of the process to be adopted by Hibbs & Associates for Dellara when the Asbestos Management Plan is reviewed / updated. Hibbs & Associates, who are Occupational Health and Safety Consultants, will ensure that all appropriate health and safety requirements are incorporated into the Asbestos Management Plan. Adoption of the plan would ensure safe working conditions for persons on the Project Site. Any residents >500m away from the site would similarly be protected with the adoption of this plan.

Approach 2: The remaining areas of the eastern bund wall would be covered with a compacted clay layer and soil and vegetated. This likewise would immobilise any asbestos present elsewhere within the bund wall.

SECTION 3. AIR QUALITY

3.1 PM_{10} DUST

Representative Comment(s)

The assessment predicted marginal exceedances of DECCW's 24-hour PM_{10} impact assessment criteria. These exceedances were predicted based on:

- *average clay/shale production (200 000 tpa);*
- *incorporating all dust mitigation measures proposed by the Proponent; and*
- *modelling scenarios that have omitted potential dust emission sources.*

The DECCW recommends that prior to project approval, the air quality impact assessment should be revised to assess dust impacts based on maximum proposed waste receivals, re-processing and clay/shale extraction rates.

Specifically, the assessment should:

i) be based on operations that provide for the despatch of 400 000 tpa of clay/shale;

ii) include emissions from recycling/re-processing activities in the recycling/ re-processing area, such as the proposed mobile crushers and screens;

iii) include emissions from all other potentially dust generating activities associated with bulk earthworks, such as dismantling and/or reforming/ reshaping existing site bunding and construction of new leachate and stormwater ponds;

iv) detail additional management and control options to ensure that there are <u>no additional exceedances</u> of DECCW's 24-hour PM_{10} impact assessment criteria at sensitive receptor locations.

DECCW – Page 4

Response

The air quality impact assessment for the proposed Orchard Hills Waste and Resource Management Facility showed that the predicted impacts from the proposed operations comply with all relevant DECCW dust impact criteria at all the sensitive receptors. It is noted that cumulative impacts showed a predicted 24-hour average concentration above the criteria in Scenario 1 for one day a year at two receptors due to elevated background levels. The incremental impact from the Project at the residences at the time of this predicted exceedance is less than 6 $\mu g/m^3$, compared with the existing background level of 45 $\mu g/m^3$.It has been shown in Section 8.1 of the air quality assessment that the impacts from the emissions from this project to result in any exceedences will be minimal.

It is noted that the National Environmental Protection Measure air standard permits exceedences of the 50µg/m^3 criteria for up to 5 days per year. This is to make allowances for extraordinary events such as bushfires and dust storms which can elevate the ambient PM_{10} concentrations over and above more reasonable levels that may not be expected under normal circumstances. The assessment predicts only one day of exceedence of 1µg/m^3 over the 50µg/m^3 goal.

The request for the air quality assessment to consider (i) to (iii) above is discussed below, however, it is acknowledged at the outset that in selecting operational scenarios, it is important that realistic scenarios are considered. It is not, for example, appropriate to consider (i) to (iii) above in one scenario as they would not all be occurring at the same time.

The air quality impact assessment for the proposed Orchard Hills Waste and Resource Management Facility considered the dust impacts based on operating scenarios as outlined in **Table 1** below. The total materials handled are also shown for each scenario.

Table 1: Modelled Scenarios for Orchard Hills Waste and Resource Management Facility

Scenario ID	Description	(i) Waste Receival (tpa)	(ii) Waste Emplaced (tpa)	(iii) Products Despatched (tpa)	(iv) Clay/Shale Despatched (tpa)	Total Materials (ii) (iii) & (iv)
1	Site Establishment	Nil	Nil	Nil	200,000	200,000
2	Initial waste placement and recycling (typical operations)	300,000	200,000	100,000	200,000	500,000
3A	Stage 2A waste operations (typical operations)	300,000	200,000	100,000	200,000	500,000
3B	Stage 2A waste operations (worst-case operations)	600,000	450,000	150,000	Nil	600,000
4	Stage 3B operations (typical operations)	300,000	200,000	100,000	200,000	500,000
5	Early morning operations (typical operations)	300,000	200,000	100,000	200,000	500,000

From **Table 2** it is noted that operational scenarios considered would involve the annual movement of either 500 000 or 600 000 tonnes of material. It is not appropriate to consider a scenario where all maximum levels are included. The 400 000tpa despatch of clay/shale is only envisaged to occur in the early stage of the operation when the level of waste receipts is building up. The situation would not arise (due to truck movement restrictions) where 400 000tpa would be despatched with even the average level of waste receipts and re-processing.

Scenario 3B also reflected the situation where there would be no despatch of any clay/shale material when the annual waste receival is at the maximum rate. This scenario also reflects, the worst-case operations with activities occurring on-site in areas close to sensitive receptors. The predicted impacts for Scenario 3B show no additional exceedences at nearby residences when compared to the predicted impacts for Scenario 3A.

The estimated amount of dust generated from the activities of crushing and screening would be minor compared with the total quantity of dust generated on site. It is noted that this equipment

would have dust control measures applied, including localised enclosures and use of water sprays, to limit the amount of potential dust generated.

It is acknowledged that the modelling scenarios did not include dust emissions from the crushing and screening activities although, as shown below, the contribution of dust from this source would be minor. The estimated dust emission generated from the activities of crushing and screening are presented in **Table 2**.

Table 2: Estimated Emissions from Crushing and Screening Activities

Activity	TSP Emissions/year (kg)	Waste received (tpa)	Percentage increase in emissions for Scenarios 3A and 3B respectively
Crushing	180	300,000	0.13 %
	360	600,000	0.24%
Screening	330	300,000	0.23%
	660	600,000	0.44%

The predicted increase in total emissions due to these activities for Scenario 3A and 3B are 0.36% and 0.68% respectively. These activities would take place in the Recycling and Reprocessing Area, located approximately 1km from the nearest sensitive receptors. Additionally, the terrain features such as the bund walls and vegetation screening located between these locations would reduce the potential dust impacts generated from these activities. These components were not reflected in the air quality modelling which effectively indicates the modelling was conservative. As such, the impact from these activities will be minor.

With respect to the coverage of the additional activities associated with the bulk earthworks, it is also necessary to highlight that not all construction activities planned during the 6 month site establishment period would be occurring simultaneously. Rather, the earthmoving equipment would be used sequentially for a range of tasks. The construction scenario reflected in Stage 1 reflects the situation where the earthmoving fleet on site is in its worst location during the site establishment period, hence the results for this scenario would equally apply (or exceed) the situations during other periods during the site establishment period when the earthmoving fleet is operating elsewhere on the site. It is further noted that the subsequent activities, eg. excavation of the leachate evaporation pond, etc. would effectively take place behind the perimeter bunds with dust management practices in place to reduce the potential of any additional dust impacts.

Reference

NEPM, 2010

Ambient Air Quality Standards, Department of the Environment, Water, Heritage and the Arts website, http://www.environment.gov.au/atmosphere/airquality/standards.html

3.2 $PM_{2.5}$ DUST

We request in the Conditions Of Consent that dust levels of $PM_{2.5}$ should also be monitored as a matter of course. We object to only PM_{10} being monitored. We request six monthly reports and chemical analysis of the PM_{10} and $PM_{2.5}$dust particulates and annual reporting in the Applicant's Annual Environmental Management Report (AEMR).

We recognise that PAEHolmes modelling has shown PM_{10} and TSP deposition levels would be below the DECCW acceptability criteria. However, as best practice and in the recognition of the draft standards for $PM_{2.5}$ monitoring, the Applicant must implement $PM_{2.5}$ real-time monitoring as a Condition Of Consent.

Darley Australia Pty Ltd – Page 4

Response

Ultrafine particles and indeed much of the mass in the $PM_{2.5}$ range is generally created via chemical processes e.g. Combustion or chemical reactions involving the gases or ashes produced in combustion. (Ultrafine particles refer to particles with equivalent aerodynamic diameters of 0.1 μm).

Activities that breakdown materials via mechanical means; such as earth works, crushing of materials and sediment erosion, do not lead to the generation of dust in the ultrafine or even the $PM_{2.5}$ size range. The energy required to break down the larger material into smaller particles is proportional to the surface area of the particles created. Hence, in practice, it is not possible to create ultrafine particles by mechanical means.

Small particles would still exist within the dust generated and it has been assumed that approximately 5 % of the particles from these activities are in the $PM_{2.5}$ size range.

NSW DECCW has not currently set impact assessment criteria for $PM_{2.5}$ concentrations, although the National Environment Protection Measures (NEPM) has an advisory reporting standard which was set to facilitate the collection of this data. The NEPM advisory standard for $PM_{2.5}$ is:

- A maximum 24-hour average of 25 μg/m^3; and
- An annual average of 8 μg/m^3.

PAEHolmes have conducted dispersion modelling to predict the $PM_{2.5}$ concentrations due to activities at the facility. The predicted impacts at sensitive receptors are presented in the **Table 3.1**. It is noted that the predicted impacts are all below the NEPM advisory reporting standard.

Table 3.1: Dispersion Modelling Predictions for $PM_{2.5}$ Impacts

Page 1 of 2

Sensitive Receptor ID	Predicted $PM_{2.5}$ impacts (μg/m^3)											
	Scenario 1		Scenario 2		Scenario 3A		Scenario 3B		Scenario 4		Scenario 5	
	24-hour	Annual	24-hour	Annual	24-hour	Annual	24-hour	Annual	24-hour	Annual	24-hour	Annual
A	1.8	0.1	1.3	0.1	1.7	0.1	1.7	0.1	1.3	0.0	0.8	0.0
B	2.5	0.1	1.5	0.1	1.9	0.1	1.9	0.1	1.0	0.0	0.5	0.0
C	1.2	0.1	1.2	0.1	1.3	0.1	1.4	0.1	0.8	0.0	0.6	0.0

Table 3.2: Dispersion Modelling Predictions for $PM_{2.5}$ Impacts

Sensitive Receptor ID	Predicted $PM_{2.5}$ impacts ($\mu g/m^3$)											
	Scenario 1		Scenario 2		Scenario 3A		Scenario 3B		Scenario 4		Scenario 5	
	24-hour	Annual	24-hour	Annual	24-hour	Annual	24-hour	Annual	24-hour	Annual	24-hour	Annual
D	1.0	0.1	1.0	0.0	1.1	0.1	1.2	0.1	0.8	0.0	0.6	0.0
E	1.1	0.0	1.0	0.0	1.2	0.0	1.2	0.1	0.8	0.0	0.6	0.0
F	0.9	0.0	0.9	0.0	0.9	0.0	1.0	0.0	0.6	0.0	0.5	0.0
G	0.7	0.0	0.7	0.0	0.7	0.0	0.7	0.0	0.5	0.0	0.4	0.0
H	0.7	0.0	0.6	0.0	0.7	0.0	0.7	0.0	0.5	0.0	0.4	0.0
I	0.8	0.0	0.8	0.0	0.9	0.0	0.9	0.0	0.6	0.0	0.5	0.0
J	0.9	0.0	0.8	0.0	0.9	0.0	0.9	0.0	0.6	0.0	0.5	0.0
K	0.9	0.0	0.9	0.0	1.0	0.0	1.0	0.0	0.6	0.0	0.5	0.0
L	1.0	0.0	0.9	0.0	1.0	0.0	1.0	0.0	0.6	0.0	0.5	0.0
M	1.0	0.0	0.9	0.0	1.1	0.0	1.1	0.0	0.7	0.0	0.5	0.0
N	1.0	0.0	1.0	0.0	1.1	0.0	1.1	0.0	0.7	0.0	0.5	0.0
O	1.1	0.0	1.0	0.0	1.1	0.0	1.2	0.0	0.7	0.0	0.5	0.0
P	1.1	0.0	1.0	0.0	1.2	0.0	1.2	0.1	0.7	0.0	0.5	0.0
Q	1.1	0.0	1.0	0.0	1.2	0.1	1.2	0.1	0.7	0.0	0.5	0.0
R	1.2	0.1	1.0	0.0	1.2	0.1	1.2	0.1	0.8	0.0	0.6	0.0
S	1.2	0.1	1.1	0.0	1.2	0.1	1.3	0.1	0.8	0.0	0.6	0.0
T	1.2	0.1	1.1	0.1	1.3	0.1	1.3	0.1	0.8	0.0	0.6	0.0
U	2.6	0.2	2.0	0.1	2.3	0.1	2.4	0.1	1.1	0.1	0.9	0.0
V	5.0	0.5	3.8	0.3	3.7	0.2	3.8	0.2	1.8	0.1	1.6	0.1
W	4.6	0.7	3.2	0.4	4.1	0.3	4.2	0.4	1.8	0.1	1.2	0.1
X	3.4	0.4	2.0	0.2	2.6	0.3	2.7	0.3	1.2	0.1	0.9	0.1

3.3 ODOUR

Representative Comment(s)

DECCW highlighted the following paragraph from the assessment at the pre-exhibition adequacy stage:

"As the proportion of biodegradable material accepted to landfill for this project will be low (and substantially lower than that accepted by Class 2 landfills in the 1990s), a proportionate reduction to the standard "Class 2" odour emissions is considered to be appropriate. At a similar landfill site operated by Dial-a-dump Industries in Alexandria, the total amount of organic or biodegradable material received in 2006 was 5,282 tonnes (Holmes Air Sciences, 2007). In the past, all of this would have been landfilled at a standard Class 2 operation. However, under the modern operating conditions most of the materials were recovered or recycled and, of the 5,282 tonnes of organic and potentially biodegradable materials, only 32 tonnes actually went to landfill. Thus, less than 1% was landfilled [32 / 5282 = 0.6%]. Odour emissions from capped areas have therefore been taken to be 1% of the standard historical Class 2 odour emissions."

The assessment has been revised, with the assessment stating that: "odour emissions from capped areas have therefore been taken to be 5% of the standard historical Class 2 odour emissions".

DECCW recommend that an approved proposal should limit the amount of organic and potentially biodegradable materials that can be accepted and landfilled at the facility to less than 5% of the total waste.

The assessment includes odour emissions from the leachate pond(s). The emissions from the leachate pond represent -5% of total odour emissions assessed for the proposal. Stringent operational management of the leachate will be necessary to minimise emissions from the leachate dam.

DECCW recommend that the Proponent should prepare and implement an Air Quality Management Plan that ensures that the leachate pond is managed appropriately to prevent the leachate turning anaerobic.

DECCW – Page 4

Response

Dellara notes the above recommendations but considers it appropriate for the limitation on potentially biodegradable materials on the Orchard Hills site to be consistent with all other Class 2 landfills in Sydney.

Gases and odours eg (methane) to be generated by waste materials being stored, processed or just buried will be highly evident and assisted by the predominant southerly winds which have not been correctly addressed in their proposal.

D. Anderson – Submission

Response

The dispersion modelling for the air quality assessment used a meteorological data set obtained from a nearby NSW DECCW monitoring site, located on Mamre Road at St Marys, approximately 2.7km northeast of the facility. The location of this monitoring station is shown in **Figure 1** of the air quality assessment. It is noted that the predominant wind directions recorded at this station were from the south-southwest and south for approximately 30% of the annual period.

For further detail regarding this data, see Section 4 of the air quality assessment.

"The site would be operated without causing dust or odour levels at the surrounding residences in excess of levels that could affect the health of residents". How can this facility possibly be approved? By the developer's own admission there will be dust and odour, but it will not be at levels that will affect our health……. At the moment there is no odour or dust, so why must we tolerate any dust and odour from this tip? How can such a development be allowed, the tranquil environment that is currently enjoyed by the residents of The Vines will be forever spoiled by dust and odour from this tip. It is cold comfort to be in the receipt of lip service to say it will not be "in excess of levels that could affect the health of residents".

M. & R. Saporito – Submission

Response

The air quality assessment shows compliance of all relevant dust and odour impact criteria as set by the NSW DECCW. These criteria have been set at a level designed to safeguard the health and amenity of the general public.

Orchard Hills will be smelling like the Eastern Creek tip and those scavenging birds will be taken food off our plates at the family BBQ.

A. Lawrence – Submission

Response

Waste materials accepted at the proposed facility would comprise of non-putrescible materials. In comparison the Eastern Creek landfill accepts both putrescible and non-putrescible material.

Putrescible waste can be defined as organic material that is capable of being decomposed which often leads to the release of an offensive odour. Non-putrescible material is material that cannot be decomposed by microorganisms and hence would not generate this odour. The type of non-putrescible material likely to be emplaced on-site may include; concrete, bitumen, bricks, roofing tiles, metals, wood, plastics and cardboard.

3.4 GENERAL DUST

Representative Comment(s)

Dust generation from waste storage (stockpiles) and processing the waste. It has been proven that no measure possible would be able secure the hazardous materials.

D. Anderson – Submission

Response

The proposed facility will implement a waste screening and refusal procedure at weighbridge and the unloading area(s) to ensure only approved waste is accepted.

Any stockpiles kept on-site will be regularly watered to minimise the chance of dust lift-off, dust emission controls will used during the processing of these materials to ensure dust emissions from these activities are low.

My family has tank water. I'm concerned that the air-born dust will find its way onto the roofs and finally into the residents' water supply. The way the proponent plans to manage this is to spray water on the site when its dusty?!?! Surely that's not sufficient assurance for the residents' health!

Angela Lawrence - Submission

Response

Air quality impacts of the project were assessed against a dust fallout criterion of 4 g/m^2/month. The predicted impacts at the sensitive receptors were found to be below this nuisance criterion for all the scenarios modelled.

As per advice from **NSW Health (2007)** it is good practice for any rain water system in any location to install a simple first flush system to prevent particulate matter (or any other undesirable materials) that have collected on the roof being washed into the rain water tank.

A study by **Buonicore and Davis (1992)** found that the use of water on haul roads can achieve controls of up to 95%. This activity results in increasing the overall moisture content of the dusty material and aggregating these particles. The overall mass of the dust particles increases making it difficult for them to be lifted off the surface and transported. Watering can also act as a natural binding agent for some soils which will compact and form a crust when dried.

Reference

Buonicore, A and Davis, W (1992)
"Air Pollution Engineering Manual", Air and Waste Management Association

NSW Health (2007)
Rainwater Tanks Brochure
http://www.health.nsw.gov.au/pubs/2007/pdf/rainwater_tanks.pdf

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The crushing, screening and shredding processes in the reprocessing and recycling component have the potential to generate a lot of dust. The applicant has not provided details of management practices in this regard.

It is not clear how crushing, shredding and screening operations will be undertaken without dust emissions.

Penrith City Council – Page 6

Response

As discussed in the response to DECCW, the emissions from the activities of crushing and screen will be minimal. Control measures to be applied to these activities include enclosures and use of water sprays if required.

Dellara have also not explained how they will manage the dust in Cell 3 where the majority of the recycling, vibrating, trammelling, crushing, shredding or demolished products will occur. It would not be viable to be spraying this area with water to reduce dust generation when people are working within the vicinity. As the prevailing winds are Southerly, the dust generation activities will impact upon the local residents.

Photo D

Photo D illustrate the dust generation when 1 truck turns into Patons Lane off Luddenham Road. Dellara are proposing potentially up to 400+ truck movements in one day when the operation reaches maximum output.

Tanya Davies – Page 8

Response

The use of water sprays as a dust control measure will target potential dust generation areas such as on haul roads, stockpiles and equipment. Watering these areas will not be at level to make working in these areas impossible; the aim is to increase the moisture content of the surface material to reduce the likelihood of potential dust-lift off. The use of water as a dust control measure is very common in industries that have a propensity to generate dust.

The date shown on Photo D is the 2nd December 2002. It is noted that since this date the relevant section of Patons Lane has since been sealed.

What guarantee do we have to support the use of daily covers will contain offensive odours… What happens when the covers are removed? How will the offensive odours be maintained?

G & R Pagano – Submission

Response

The odour emissions used in this assessment have been calculated from actual measurements taken at the Englands Road Waste Management Facility in Coffs Harbour. Odour measurements from an active tipping face with a 'daily cover' and 'no cover' were taken. These measurements are shown in **Table 7.7** and discussed in **Section 7.2** of the air quality assessment. From this table, it is clear that the daily cover can reduce the potential odour emissions from an active tipping face with no cover by approximately 86%. The waste emplacement design of the facility would ensure the area of the active tipping face is kept as small as possible and that covers are applied to those areas where active tipping is not taking place.

There appears to be some inconsistency in the data presented in Appendix 5 Air Quality Table 8.1 (page 5-29) when compared to Table 8.3 (page 5-30)…

Sydney West Area Health Service

Response

Table 8.3 (page 5-30) of the air quality assessment contained a typographical error in the column headings. **Table 3** below shows the correct column headings.

Table 3
Further analysis for sensitive receptor "W"

Date	PM_{10} 24-hour average ($\mu g/m^3$)			Date	PM_{10} 24-hour average ($\mu g/m^3$)		
	Background	Predicted increment	Total		Highest predicted increment	Background	Total
22/10/2007	46.9	2.9	49.7	11/06/2007	33.5	12.6	46.0
12/01/2007	45.3	5.4	50.6	19/08/2007	25.6	10.0	35.6
20/10/2007	44.6	3.1	47.7	6/06/2007	23.3	18.0	41.3
4/05/2007	40.7	4.7	45.4	14/07/2007	22.7	9.5	32.2
23/01/2007	40.4	0.3	40.6	9/04/2007	22.4	7.7	30.1
30/01/2007	40.3	0.4	40.6	21/08/2007	19.6	10.4	30.0
30/10/2007	39.1	1.6	40.6	18/08/2007	19.3	14.3	33.5
21/04/2007	38.4	1.1	39.5	24/06/2007	18.5	13.9	32.3
23/10/2007	37.3	1.0	38.3	20/08/2007	17.7	8.2	26.0
8/01/2007	36.7	1.5	38.1	19/04/2007	17.5	25.1	42.6

SECTION 4. HEALTH

4.1 GENERAL

Representative Comment(s)

Major Health issues which would arrive due to the exposure to hazardous substances such as Asbestos, Lead, Fibres, Construction Dusts and other air borne contaminants.

D. Anderson – Submission

Response

The air quality assessment shows compliance of all relevant dust impact criteria as set by the NSW DECCW. These criteria have been set at a level designed to safeguard the health and amenity of the general public.

The proposed facility will implement a waste screening and refusal procedure at weighbridge and the unloading area(s) to ensure only approved waste is accepted.

Any stockpiles kept onsite will be regularly watered to minimise the chance of dust lift-off, Dust emission controls will be used during the processing of these materials to ensure dust emissions from these activities are low.

The predominant winds that exist are from the south, which in turn would blow any contaminants or hazardous substances to families located only 500 meters away.

JR & JA Wells – Submission

Response

As discussed in Section 4 of the air quality assessment, the dispersion modelling has taken into account the predominant winds from the south.

It must be noted that the proponent has not provided any Material Safety Data Sheets within the report that details the impacts and hazards to the community and the environment of the proposed material to be deposited i.e Concrete, Bricks, Roof Tiles, Bitumen, Plasterboard and all the other types of proposed waste covered off in the C&I & C&D waste steams.

The proponent must provide a complete and detailed list of everything that is intended to be deposited on this site.

The proponent must provide a health report analysis to support his proposal.

Tom Thornton - Submission

Response

The Proponent will maintain a comprehensive MSDS register on site for all relevant materials on site. The focus of the use of the register is upon occupational health and safety.

4.2 ASTHMATICS

Representative Comment(s)

We strongly believe that this site will cause health issues with our family. Our 7 year old son is allergic to dust which then triggers him to have an asthma attack. He has had an allergy test at The Children's Hospital Westmead which has outlined his allergy to dust and dust mites. He is on controlled medication and seeing a Pediatrician to control his asthma episodes.

A total of 11 submissions identified that one or more members of their household suffers from Asthma (see summary of submissions).

Mrs Xerri & Mr and Mrs Castillo - Submission

High levels of dust will be generated from the site affecting air quality and creating possible health issues eg Asthma etc.

D. Anderson – Submission

Response

The air quality assessment for the proposed facility shows compliance at nearby residences of all relevant dust impact criteria as set out the NSW DECCW. The criteria have been set at a level designed to safeguard the health and amenity of the general public. The predicted impacts due to operations occurring at the proposed facility are all below the assessment criteria.

The proponent has stated in the Draft Statement of Commitments to cease any earthmoving operations during periods of high temperature and wind speeds. No account of these dust management actions have been considered in the dispersion modelling. The predicted impacts presented in the air quality assessment are likely to be conservative. Any dust management plans applied to the facility would assist in reducing the likelihood of unnecessary dust impacts at nearby receptors.

The Proponent's compliance with air quality criteria, particularly 24hr PM_{10} levels, would ensure that asthmatic conditions in the existing sufferers is not exacerbated.

SECTION 5. NOISE

5.1 BACKGROUND NOISE LEVELS

We understand the criteria are derived from the background monitoring data collected. However, the derived background noise levels of 34dB(A) daytime for The Vines is considered overstated since levels appear to drop to below 30dB(A) on 2 and 5 June 2009 and on other days it repeatedly falls to 32dB(A) (See Appendix 3 of Noise report). This has the potential impact of distorting current noise levels and the true contribution of the project's noise to total noise. As the current noise levels are lower than as stated in the EA, the proposed development is in fact likely to contribute to more noise as a proportion of total noise. Ie as the background levels of noise are overstated, the noise potential attributed to the proposal is effectively understated. Similarly, for the Bates residence, background data gain falls to 32dB(A).

Darley Australia Pty Ltd – Page 3

Response

The representative background noise levels used in the assessment for daytime periods (refer to the daytime Rating Background Levels shown in Tables 3.1 – 3.3) have been determined strictly in accordance with the methodology prescribed in the Department of the Environment, Climate Change and Water's (DECCW) Industrial Noise Policy (INP). It is important to appreciate that this methodology delivers the MEDIAN (or middle) – and not the LOWEST – value of the representative lowest daily background levels (refer to Section 3 of the INP).

5.2 CONSTRUCTION NOISE CRITERIA

The Noise Impact Assessment proposes that the first 6 months of operation be assessed against a construction noise criteria (background plus 10dB(A)). For extractive industries, overburden stripping and associated activities are not a construction activities, but rather part of the operational phase of the development. However, DECCW considers that construction noise limits could be applied for the first 6 months of site activity, provided that no product was sold from the site during that time.

DECCW Page 4 and Page 5

Construction

Construction noise associated with noise mitigation measures at the facility should be assessed against a criteria derived from background plus 10dB(A), as presented in Table 4.2 in the Noise Impact Assessment.

DECCW – Page 7

The results of construction noise modelling are presented in Table 5.3 in the Noise Impact Assessment. The predicted levels do not exceed the assessment criteria, and are less than noise levels predicted for operations. It is proposed to regulate construction noise impacts associated with the site establishment stage with a requirement for standard daytime construction hours only i.e. 7am to 5pm Monday to Friday and 8am to 1pm Saturday. Because predicted noise levels for construction are less than predicted level for operation, DECCW recommends applying the noise limits for operation to construction.

DECCW – Page 8

Response

It is understood the DECCW does in fact accept that construction noise criteria presented in Table 4.2 are appropriate. These criteria are based on the "background + 10dBA" approach referred to above. Dellara acknowledges that construction activities on the northern bund wall will be completed in the first 4 months of the 6 months construction period.

5.3 OPERATIONAL NOISE CRITERIA

The project Specific Noise Levels (PSNLs) for the operation of the facility are presented in Table 4.4. DECCW does not fully concur with the PSNL assigned for the morning shoulder period. The Industrial Noise Policy (INP) specifies that the RBL for the morning shoulder period is the mid-point value between the night-time RBL and the day-time RBL. DECCW notes that there is not one week of valid data for the night-time period to calculate a night-time RBL, and therefore best estimate of night-time RBLs from the graphs in Appendix 3 of the Noise Impact Assessment are: 33dB(A) for Site 1 (13 Cabernet Crt, The Vines); 34 dB(A) for Site 2 (Bates Residence); and 37 dB(A) for Site 3 (216 Luddenham Road). Based on these night-time RBLs and the proponent's day-time RBLs in Tables 3.1, 3.2 and 3.3, DECCW estimates that the morning shoulder RBLs would be 34 (Site 1), 34 (Site 2) and 37 (Site 3), which are the same as the day-time RBLs.

DECCW – Page 7

Response

The preferred project will now have revised hours of operation such that ALL activities associated with ALL stages of the site will now be wholly contained to daytime hours (7am-6m). Subsequently, there is no further need to consider background noise levels or criteria outside of these hours.

5.4 TRAFFIC NOISE CRITERIA

assuming Patons Lane is not accessible to the public, the traffic on Patons Lane at the intersection of Luddenham Road should be assessed against the Industrial Noise Policy criterion of background + 5 dB(A).

DECCW therefore recommends that traffic movements associated with the site be confined to day hours only.

DECCW – Page 9

Response

Dellara understands that since the time of this question, DECCW now agrees with the interpretation of Patons Lane being a public road for the period when activities are permitted on site during the day time. Therefore, that the assessment is correct as presented, ie, that noise from Project traffic on Patons Lane should be assessed against the NSW Government's Environmental Criteria for Road Traffic Noise (ECRTN). It is recognised that the INP criteria will apply for any maintenance activities undertaken outside normal operating hours.

5.5 SLEEP DISTURBANCE

In reviewing the data, it would also appear the sleep disturbance criteria adopted are only relevant to traffic on public roads. In addition, sleep disturbance assessment was not undertaken for sources operating onsite between 5am to 7am.

Darley Australia Pty Ltd – Page 3

Response

Given no activities are now proposed on site before 7:00am, this issue no longer needs to be discussed.

Should Department of Planning approve the project, DECCW have included recommended Conditions of Approval based on the proponent's predicted noise levels at three most affected receiver locations. DECCW does not support operation of the facility in the early morning shoulder period, as the potential for road traffic noise impacts associated with the project (including sleep disturbance) have not been adequately addressed. DECCW therefore recommends that operation not commence before 7am as there is insufficient information in relation to potential traffic noise impacts.

DECCW – Page 5

Response

The preferred project will now have revised hours of operation such that ALL activities associated with ALL stages of the site will now be wholly contained to daytime hours (7am-6m).

DECCW does not concur with the sleep disturbance criteria proposed for Pattons Lane. DECCW understands that Pattons Lane is gated and locked, in which case its use is consistent with a private road and should be assessed against the Industrial Noise Policy. The sleep disturbance criteria should be based on L_{A90} + 15 dB(A), as indicated in the Noise Impact Assessment. If DECCW's estimated night-time RBLs are used, then the sleep disturbance criteria are 49 dB(A) for Sites 1 and 2, and 52 dB(A) for Site 3.

DECCW – Page 8

Response

The preferred project will now have revised hours of operation such that ALL activities associated with ALL stages of the site will now be wholly contained to daytime hours (7am-6m).

The predicted sleep disturbance noise level is based on one truck passby noise level of 66 dB(A) at the most affected residences. The predicted noise level is between 14 dB(A) and 17 dB(A) above DECCW's estimated sleep disturbance criteria for the morning shoulder period, as discussed above.

Given the inadequacy of the assessment to accurately predict the potential impact and that it appears that the assessment of sleep disturbance should be made against the Industrial Noise Policy criteria (because Pattons Lane is not a public road: DECCW understands that Pattons Lane is gated and locked), DECCW is unable to recommend Conditions of Approval for the morning shoulder period.

DECCW considers that further assessment of the potential for sleep disturbance should be undertaken, as described in the Industrial Noise Policy Application Notes.

DECCW – Page 9

Response

The preferred project will now have revised hours of operation such that ALL activities associated with ALL stages of the site will now be wholly contained to daytime hours (7am-6m). Subsequently, there is no further need to consider the potential for sleep disturbance from activities associated with the project.

5.6 NOISE MITIGATION MEASURES

- *DECCW is concerned about whether the noise mitigation measures relied on in the Noise Impact Assessment are feasible and reasonable to be implemented, and therefore, whether the predicted noise levels can be achieved during the operation of the site. It is not clear in the Noise Impact Assessment what material the 4metre-high mobile noise barrier will be constructed of, what level of attenuation this mobile noise barrier will achieve, and whether this mitigation method is feasible and reasonable to construct and operate effectively. The assessment appears to rely heavily on the use of this mobile noise barrier to achieve the predicted noise levels.*

- *DECCW does not fully concur with the PSNL assigned for the morning shoulder period. The Industrial Noise Policy specifies that the Rating Background Level (RBL) for the morning shoulder period is the mid-point value between the night-time RBL and the day-time RBL. DECCW notes that there is not one week of valid data for the night-tme period to calculate a night-time RBL, and therefore DECCW's best estimate of night-time RBLs from the graphs in Appendix 3 of the Noise Impact Assessment are:*

  - *33 dB(A) for Site 1 (13 Cabernet Crt, The Vines)*
  - *34 dB(A) for Site 2 (Bates Residence); and*
  - *37 dB(A) for Site 3 (216 Luddenham Road).*

- *Based on these night-time RBLs and the proponent's day-time RBLs in Tables 3.1, 3.2 and 3.3 of the Noise Impact Assessment, the estimated morning shoulder RBLs would be 34 (Site 1), 34 (Site 2) and 37 (Site 3). These levels are the same as the day-time RBLs.*

DECCW – Page 4 and 5

Response

The preferred project will now have revised hours of operation such that ALL activities associated with ALL stages of the site will now be wholly contained to daytime hours (7am-6m). Subsequently, there is no further need to consider the potential for sleep disturbance from activities associated with the project.

- *DECCW is concerned that the facility could exceed the criteria during the operational phases. It is not clear in the Noise Impact Assessment what material the proposed 4metre-high 100-150metre-long mobile noise barrier will be constructed of and what level of attenuation this mobile noise barrier will achieve, and therefore where this mitigation method is feasible and reasonable to construct. The assessment appears to rely heavily on the use of this mobile noise barrier to achieve the stated noise levels.*

DECCW – Page 5

DECCW has concerns about whether the predicted noise levels can practicably be achieved. There is a lack of detail about the mobile noise barrier in the Noise Impact Assessment so that it is difficult to make an informed assessment of whether it is feasible and practicable to construct and operate.

DECCW – Page 5

A major impact associated with the proposal is the excessive noise that will be experienced by residents of the "The Vines" once the filling of the site exceeds the height of the northern bund wall. The noise consultant for the applicant has found that works above the northern bund cannot meet the relevant DECCW noise criteria unless work is carried out only when the wind direction is favourable and secondly, it will be necessary to rely on the use of a four(4) metre high (100 - 150 metre long) 'moveable' noise barrier.

No details have been provided in respect of the noise barrier that is,

- *What will the barrier are made of?*
- *How will the barrier be moved? This is important because for every two metre increase in height of fill, the barrier needs to be repositioned up the hill.*
- *How will the barrier be secured so that it is not blown over?*
- *What are the occupational, health and safety issues associated with working near such a large temporary structure?*
- *How long is temporary?*
- *What are the visual impacts of the temporary structure?*

Penrith City Council – Page 4 – 5

The Response mobile noise barrier will be constructed from acoustically absorptive-faced sheet steel panels mounted atop concrete jersey barriers. The total height of the barriers will be 4m, and they will be wind-loading rated. The barriers will of a length (typically 4m) such that can be relocated by a single franna crane.

Unattended ambient noise monitoring was undertaken in June 2009 at 15 Cabernet Circuit, Bates Residence and 216 Luddenham Road (residences W, A and R respectively on Figure 2.1 in the Noise Impact Assessment). No attended noise monitoring was undertaken to confirm the elevated noise levels during the morning shoulder period. The Noise Impact Assessment assumes that the elevated levels are due to traffic noise. It has also been assumed that there is no existing industrial noise.

The calculated Assessment Background Levels (ABLs) and Rating Background Level (RBLs) are presented in Table 3.1 – 3.3 in the Noise Impact Assessment.

Response

The hours of operation of the preferred project have been revised so as to be wholly contained within daytime hours (7am-6pm). The consideration of background noise levels or criteria for the morning shoulder period (the hours immediately prior to 7am) are no longer relevant to the project.

5.7 TRAFFIC NOISE

Off-road truck noise emission levels adopted are considered low and therefore results in an underestimation of received noise.

Darley Australia Pty Ltd – Page 3

Response

The $L_{Aeq,15min}$ sound power levels nominated for trucks in Table 5.2 of the Noise Assessment are consistent with those in other acoustic assessments submitted to and accepted by DECCW.

The noise report indicates there will be truck movements to and from the site between the hours of 6am and 7am. It is not considered appropriate to permit any noise generating activities associated with this proposal during these early morning hours. Such movements have the potential to exceed the DECCW sleep disturbance and other relevant noise criteria. Council does not support the proposed facility being open between the hours of 6.00am to 7.00am.

As a technical comment, traffic generated noise impacts should be assessed based on actual traffic movements and not estimates or averages. In addition worse case scenarios such as high number traffic movements and traffic movements during quieter periods need to be adequately assessed. The noise report needs to be updated in this regard.

Penrith City Council – Page 5

Response

The preferred project will now have revised hours of operation such that ALL activities associated with ALL stages of the site will now be wholly contained to daytime hours (7am-6m).

5.8 GENERAL NOISE ISSUES

For large parts of the year wind directions are not favourable for earthworks to be undertaken above 57 metres AHD. As the maximum height of the development is proposed to be 65 metres AHD this represents a significant restriction to works being carried out in a timely manner without disrupting the amenity of nearby residents. The final height of the Cells is higher than the final level of the Northern Bund walls. As such there is a concern that works carried out as part of the final capping and landform works will not meet the predicted noise levels and therefore exceed the relevant DECCW noise criteria.

New, lower land profiles are proposed for the Preferred Project which will mitigate this impact.

The noise report suggests that a crushing plant will be used on site. The noise impact of this activity does not appear to be assessed and there is some confusion as to whether the modelling has combined this and other plant activities under the banner of the 'Recycling Plant'. This aspect requires further clarification.

Penrith City Council – Page 5

Response

The Noise Assessment includes the cumulative noise emissions from all components of the "Recycling Plant". As indicated in Table 5.2, this is inclusive of noise from the concurrent operation of the Crusher, Trommel, Shredder and Picking Station. The crushing plant has been separately included in the re-assessment of noise attributed to the redesigned recycling and re-processing area.

Dellara's proposal to erect a 4 meter high 150 meter buffer wall and position this on the north bund wall to ameliorate the noise generation activities is practically problematic. The north bund wall is not a flat, even surface whereby the buffer wall can be easily and accurately placed. There is not explanation will not exceed the 44db as specified in the DECCW requirements. Dellara's only assurance to the community is that they will ensure noise and dust monitoring occurs throughout the operations. This assurance by Dellara does not equate to ensuring that the noise is kept below acceptable levels.

In any case, Dellara's proposal to continue operations until the site is 65 AHD (it is currently approximately 25 AHD) means that once the onsite fill has reached 30 AHD (existing bund walls maximum height of 25 AHD plus the 4 meter high buffer wall) the residents will be directly exposed to the operating noise from 30 AHD – 65 AHD, a period of many years.

The activity of recycling construction waste will also involve shredders, trammels and other heavy machinery which will impact upon the residents in Orchard Hills by the frequent southerly winds that are very common in this area. Dellara's noise report does not appear to assess the impact of the crushing plant and there is some confusion as to whether the modelling has combined this and other plan activities un the banner of the "Recycling Plant".

Tanya Davies – Page 6

Response

The 4m high noise barrier will be mounted on the outer (resident-side) edge of the bunding as it is being developed. The noise barriers have a narrow (approx 1m wide) footprint which will allow for their being placed on a narrow, elevated lip behind which the plant will operate. The barriers will be edged up the face of the northern bund by a franna crane which will lift the component barrier sections from "behind" the barriers (as viewed from the residences in The Vines). It is noted that similar barriers have been used by AGL to successfully limit noise generation.

The prediction of noise from this stage of operations is based on noise modeling using the Environmental Noise Model (ENM) which is accepted by DECCW. As described in Section 5.1 of the Noise Assessment, the predicted noise levels represent the noise level that will not be exceeded for more than 10% of all day periods in each season.

As described in previous responses, the Preferred Project will incorporate lowered land profiles to address the concern of plant operating at elevations above noise barriers.

The Noise Assessment of the April 2010 project included noise from the concurrent operation of ALL "Recycling Plant" components, including the Crusher, Trommel, Shredder and Picking Station. The crushing plant has been included in the re-assessment of noise from the recycling and re-processing area.

As well as the noise of the trucks travelling 80 km along the roadways, residents live up to 470 metres from the site. It would destroy these people's peaceful existence and health for such an industrial activity to operate Mon-Fri 7am-6pm and Sat 8am-5pm.

Form Letter 1

The Noise Assessment details how noise from all operations associated with the Project will comply with DECCW noise criteria. The Assessment outlines the noise mitigation measures to be adopted by the Project. It remains important to recognise that traffic noise due to existing high levels of traffic already dominate the noise climate. It remained for Dellara to demonstrate that the vehicles travelling to and from their site does not increase the noise from the total traffic by an acceptable level.

"On site activities will have safeguards to ensure whilst audible from time to time, the actual noise would not be offensive".....Why should residents of The Vines tolerate any noise from "time to time" from the tip? What does "time to time" mean?..... I am certain that like us, many (if not all) of the residents of The Vines were drawn to the estate due to its peace and tranquillity, and not to hear the noise of a tip from "time to time". Further we are asked to have faith in the developer that it will not be "offensive".

M. & R. Saporito – Submission

Response

The response to the matter of why residents should have to bear any noise at all is a matter of planning rather than the science of acoustics. The Noise Assessment shows how the Project will comply with the noise criteria promulgated by the NSW Government. As outlined in Section 1.1 of its Industrial Noise Policy (INP) "…the overall aim is to allow the need for

industrial activity to be balanced with the desire for quiet in the community." The judgment of the trade-off between an a acceptable level of environmental impact (in this case, noise impact) and amenity for the community is a question for Government. Further, Section 1.4.1 of the INP states that the "…[INP's] criteria… have been selected to protect 90 per cent of the population… from the adverse effects of noise for at least 90 per cent of the time. Provided the [INP] criteria… are achieved, then it is unlikely that most people would consider the resultant noise levels excessive."

5.9 PREFERRED PROJECT REPORT

The preferred Project incorporates the following modifications that would have implications on the noise generated by the Project.

- The final landform would be 7m lower than originally proposed.
- The two earth mounds around the recycling and re-processing area have been joined to form a continuous noise barrier around the area. It is further noted the topographic barrier provided by these earth mounds would be between 14m and 16m above the local ground level of the cell.
- The re-arrangement of the recycling and re-processing equipment within the recycling and re-processing area together with the use of a partially enclosed warehouse for the materials recycling facility.

Wilkinson Murray has re-assessed the operational scenarios incorporating these principal modifications and established that subject to a range of management measures, the operation of the modified facility will comply with the DECCW criteria relevant to the project. Details of the computer modelling demonstrating the predicted compliance has been separately provided to the DECCW.

5.10 CONCLUDING COMMENTS

The management of noise on the Project Site is recognised to be an important issue for all parties concerned. Dellara is very confident that it has incorporated sufficient design and operational safeguards to achieve the required compliance. Dellara does, however, recognise that vigilance will be required to manage noise sources and that regular assessments will be required of the proposed real time monitoring data during the operational stages of the Project.

The operational activities on the Project Site will be gradually introduced over time as will the receipt of wastes increase over time. This gradual build up of activities will provide Dellara with the opportunity to monitor its progress and compliance to ensure that noise exceedances do not occur throughout the life of the Project.

SECTION 6. TRAFFIC AND TRANSPORT

6.1 INTERSECTIONS

The Mamre Road and M4 intersection is going to have to be re-constructed into another 'LightHorse Interchange' (similar to where M4 meets M7) to accommodate for the additional traffic, as it is already at capacity without this additional stress. Have you also considered that there's a primary school just off Mamre Road on Banks Drive and has there been any consideration for the children's safety with all these extra trucks driving up and down all day?!?!

Angela Lawrence – Submission

Response

The proposal has an estimated potential to contribute approximately 31 additional vehicle trips (24 trucks) onto Mamre Road north of Luddenham Road per hour. The traffic study prepared by Traffic Solutions Pty Ltd was referred with the application to the Roads and Traffic Authority who are responsible for the M4 and Mamre Road interchange. The Authority raised no concerns about the impact of the traffic generated by the proposal on this interchange.

No trucks associated with the Project will be permitted or be required to travel along Banks Drive unless they are collecting Waste in the area of St Clair.

The local road network that Dellara propose to use for the trucks carrying loads of building and demolition products are local roads and are not a heavy-industry designed road network. There are two intersections which are insufficient to manage this influx of truck type and frequency.

Tanya Davies - Submission

Response

Mamre Road is classified a State Road and has no vehicle restrictions imposed upon it. Luddenham Road is classified a Regional Road which serves a sub-arterial road function by providing access between Mamre Road and Elizabeth Drive. Council receives part funding from State government for maintenance and upgrades to Luddenham Road which reveals that the RTA considers the road as a sub-arterial road. Patons Lane is a local road, however, it will be reconstructed to cater for heavy vehicles.

6.2 LUDDENHAM ROAD DESIGN AND CONSTRUCTION

Luddenham Road was not designed for such volume let along the weight of the trucks. The road will disintegrate before our eyes.

CA Hill & Associates Pty Limited – Submission

Response

Luddenham Road is classified a Regional Road which serves a sub-arterial road function by providing access between Mamre Road and Elizabeth Drive. Council in recent years received a funding grant which was used to provide the quality road surface that exists today.

Council as part of the reconstruction should have resurfaced the road to cater for heavy vehicles appropriate with the roads regional road classification.

Notwithstanding this, the Proponent is proposing a trust fund in which monies will be contributed for the purposes of road maintenance.

As can be seen in Photo F Luddenham Road has a 5t truck limit. Luddenham Road is currently identified in the Australian Government Black Spot Funding program (Photo G). This selection for Black Spot funding illustrates the inadequate capacity of the local road infrastructure to safely and professionally manage the proposed influx of trucks. Luddenham Road is one of the main arterials for trucks accessing the proposed site.

Photo F

Photo G

Tanya Davies – Page 12

Response

The 5t load limit was applied to legally reduce/eliminate heavy vehicles using Luddenham Road as an alternative route to the main road system between Mamre Road and Elizabeth Drive. This restriction is not an indication of the weight capacity of Luddenham Road.

Legally all heavy vehicle (with the exception of B-Doubles) can use Luddenham Road if they have a legitimate destination along that route providing they use the most direct route from the main road system.

Consequently, all heavy vehicles up to 19m articulated vehicles associated with the proposal (should it be approved) will legally be able to travel along Luddenham Road.

The proposal will significantly increase the amount of heavy vehicles that will use Luddenham Road. Council's Asset Manager has identified that the existing pavement in Luddenham Road has not been designed to withstand the significant increase in heavy vehicles. Accordingly the Proponent is to upgrade the pavement of both Patons Lane and the section Luddenham Road from Patons Lane to Mamre Road to accommodate the increase in heavy vehicles arising from the development.

Penrith City Council – Page 6

Response

Luddenham Road is classified a Regional Road which serves a sub-arterial road function be providing access between Mamre Road and Elizabeth Drive.

Council receives part funding from State government for maintenance and upgrades to Luddenham Road which reveals that the RTA considers the road as a sub-arterial road.

Council in recent years received a funding grant which was used to provide the quality road surface that exists today.

Council as part of the reconstruction should have resurfaced the road to cater for heavy vehicles appropriate with the roads regional road classification.

Notwithstanding, the Proponent is proposing a trust fund in which monies will be contributed for the purposes of road maintenance.

A review of Council's document 'Guidelines for Engineering Works for Subdivision and Developments – Parts 1 and 2' reveals that

2.2.10 Pavement Design

The road pavement is to be designed in accordance with the Australian Road Research Board Special Report No. 41 - "A Structural Design Guide for Flexible Residential Street Pavements" for roads with a design traffic loading up to and including 1 x 10^6 Equivalent Standard Axles (ESA). Roads with a traffic loading greater than 1 x 10^6 ESA are to be designed in accordance with AUSTROADS "Pavement Design - A guide to the Structural Design of Road Pavements".

A minimum design life of 20 years shall be used to determine the pavement thickness.

The pavement design shall generally be based on a granular pavement with thin bituminous surfacing, using the design traffic

loadings given in the Table 2. Special consideration is to be given to the design of pavements where specific loading criteria (eg: turning) is likely - roundabouts, single lane carriageways, etc.

Table 2

CLASSIFICATION	A.A.D.T.	N(ESA)
Residential		
Access Place (max 12 lots)	0-150	2×10^4
Access Street	150-500	5×10^4
Access Street - likely bus route	150-2000	2×10^5
Collector	2000-4000	5×10^5
Distributor	4000-10000	1×10^6
Commercial		2×10^6
Industrial		
Light Industry		5×10^6
Heavy Industry		1×10^7

Shareways are to be constructed with a decorative concrete finish approved by Council's Engineer. Thickness of concrete to be as specified in Section 6.7 of Penrith City Council's "Guidelines for Engineering Works for Subdivision and Developments - Part 2 - Construction".

Unless otherwise approved by Council's Engineer, pavements shall consist of:

Wearing Course - 50mm Asphaltic Concrete on a single coat hot bitumen flush seal. (See Section 2.2.12)
Base Course - 150mm of DGB20.
Sub-base Course - crushed sandstone or DGS40.

Design subgrade CBR values shall be determined by a suitable site investigation. The investigation must be undertaken by either Geotechnical Engineering Consultants and/or agents of a N.A.T.A. registered laboratory.

The investigation will include "logging" of test holes to a depth not less than 1 metre below design subgrade levels (unless rock is encountered). Soil samples shall be taken at the design depth and CBR tests undertaken after 10 days soaking. The frequency of test holes shall be in accordance with Table II of A.R.R.B. Report No. 41.

Where the design subgrade CBR is less than 3, the subgrade shall be chemically stabilised to a minimum depth of 150mm, with the pavement design based on a CBR of 3.

Given that Luddenham Road is a regional road Council should have constructed the road with a N(ESA) of at least 1×10^6 which is sufficient for heavy vehicles.

6.3 PATONS LANE

We request that a line of sight analysis be conducted for both the horizontal and vertical planes.

Darley Australia Pty Ltd – Page 4

Response

Sight distances for vehicles was considered as part of the Traffic impact assessment (in both the horizontal and vertical planes). The available sight distances at the intersections of Patons Lane with Luddenham Road and Luddenham Road at Mamre Road is considered to be very good and easily exceeds the appropriate requirements for the approach and design speeds suggested in the AUSTROADS and RTA guidelines.

While we commend the commitment to establish a trust fund to enable ongoing maintenance of Luddenham Road (Section 5(10.7), we note that such a commitment is absent for Patons Lane.

Darley Australia Pty Ltd – Page 4

Response

Dellara has committed to providing 100% funding for the maintenance of Patons Lane (see Commitment 10.7).

6.4 TRUCK QUEUING ON LUDDENHAM ROAD/PATONS LANE

It is not clear in the EA where heavy vehicles awaiting acceptance by the facility will be stationed. We therefore request that the impacts on truck movements from our property be addressed, and that the subsequent measures ensure that heavy vehicles will not queue along, or park on the verges of, Patons Lane or Luddenham Road so that full and safe access to our entrance is not compromised.

Darley Australia Pty Ltd – Page 4

There are concerns in relation to actual traffic numbers and the cumulative impact this increase in traffic will have on the amenity of the area especially in times when trucks might queue while waiting to enter the site due the access gate being closed.

Penrith City Council – Page 6

Response

No heavy vehicles are proposed to access or egress Patons Lane from Luddenham Road south of Patons Lane. The Proponent now proposes to strictly enforce that the gates at the intersection with Patons Lane will not be opened for heavy vehicles before 7:00am. It is proposed that all transport companies will be advised that waiting at the entrance to Patons Lane or adjacent to Luddenham Road will not be tolerated under any circumstances.

The intersection of Luddenham Road will operate at a very good level of service with no anticipated queuing on Luddenham Road whilst waiting to turn right into Patons Lane.

The area is rural/residential and this amount of truck activity is simply not appropriate to the area. People's backyards face onto Mamre Road and people's properties face onto Luddenham Road. It would severely impact their ability to enjoy their rural outlook and peaceful setting.

Form Letter 1

Response

Mamre Road is classified a State Road. Luddenham Road is classified a Regional Road which serves a sub-arterial road function by providing access between Mamre Road and Elizabeth Drive. As such heavy vehicles are permitted to use Mamre Road 24 hours a day 7 days a week. Luddenham Road can be used by heavy vehicles exceeding 5t with a legitimate destination as is legally permitted with this load limit regulation.

Luddenham Road via Mamre Road is the only access road to the site. Mamre Road, St Marys is already a listed black spot for accidents, and the entire length of Luddenham Road is on the Australian Government Black Spot Program. The proposal will allow an additional 316 truck movements per day, or about one truck every 2 minutes. I fear this will result in increased accidents and injury to the local community.

In addition to this, the gate entrance to the proposed site is located at the intersection of Patons Lane and Luddenham Road, which will probably result in large truck queues building up along Luddenham Road near opening times, which would be hazardous to other traffic. Alternatively, if the gate entrance was moved further along Patons Lane to allow for trucks to queue, then it is feared this recessed area would become both an illegal dumping ground and a place of anti-social behaviour.

Form Letter 2

Response

Mamre Road is a State Road under the care and control of the RTA. The traffic study prepared by Traffic Solutions Pty Ltd was referred with the application to the Roads and Traffic Authority who are responsible for Mamre Road. The Authority raised no concerns about the impact of the traffic generated by the proposal on Mamre Road.

Discussions with Council's Traffic Engineer reveals that Luddenham Road has already received Black length funding as a result of a submission in the 2009 financial year and all associated safety upgrade works required by Council have been completed. As such Luddenham Road would no longer be listed as a Black length.

Nowhere in the Report No 582/02 – May 2009 does it mention the Dogs NSW site although it is obviously the area of largest impact. I am involved in this industry and would consider that the 15 tonne average payload as estimated on the Development Application is grossly under the actual. My belief is that 90 percent of vehicles within this industry are Truck and Dogs which average a Gross Vehicle Mass of 47.50 tonne. Backloading to reduce vehicle movements is good in theory but is limited to industry practice. Due to Customer and Supplier contractual arrangements the figure of backloaded vehicles would also raise concern.

Ian Glen – Submission

Response

The Final report dated February 2010 broke down the heavy vehicle trip payloads to:

- 20t average load for waste receipts.
- 30t average load for clay/shale despatch
- 25t average load for recovered materials

It should also be noted that these are load tonnages, not the permissible gross vehicle mass, which includes the vehicle weight.

Dogs NSW, as the Lessee of the property at 44 Luddenham Road, wishes to lodge its objection to the above mentioned proposal for an excavation site approval. Dogs NSW property contains grounds upon which are conducted regular dog shows and trial which involve members coming to the property and leaving with trailerloads full of dogs. These trailers are not easy to maneuver and Dogs NSW feels that the dramatic increase in traffic load will present a danger to its members with dog trailers from entering and exiting the property.

Christine Davis – Submission

Response

It should be noted that the Project would not operate on Sundays. The Project has the potential to contribute approximately 31 additional vehicle trips (of which 24 are trucks) onto Luddenham Road north of Patons Lane. This on average is 1 vehicle every 2 minutes for both directions of traffic along Luddenham Road. This will not have an unacceptable impact upon cars with dog trailers entering or exiting the Dogs NSW site.

This excessive heavy vehicle use of the predominately rural-residential road network cannot be justified and is not safe for residents who live, work and socialise in the affected suburbs'. There are families whose properties lay adjacent to Mamre and Luddenham Roads. It would severely impact their ability to enjoy their current standard of living and has the potential to jeopardise their safe travelling around the area.

 Photo A	*As can be seen from photo A, trucks are entering and existing Patons Lane but are doing so by driving along the road shoulder and a residential driveway.*
 Photo B	*Photos B & C demonstrate that the road network is inappropriate for the scale of operation which Dellara Pty Ltd is proposing. These photos were taken when the previous quarry was in operation – on average 16-24 truck movements a day (the DA provided for a maximum of 40 truck movements a day).*

Photo C

Drivers of vehicles are verging onto the roadside shoulders to move away from oncoming trucks.

Tanya Davies – Page 7-8

Response

Mamre Road is classified a State Road. Luddenham Road is classified a Regional Road which serves a sub-arterial road function by providing access between Mamre Road and Elizabeth Drive. As such heavy vehicles are permitted to use Mamre Road 24 hours a day 7 days a week. Luddenham Road can be used by heavy vehicles exceeding 5t with a legitimate destination as is legally permitted with this load limit regulation.

The photographs provided are during road works which could were prior to/or a part of the resealing of Luddenham Road. Luddenham Road now has 3.5m lane with 1.2m should for each direction of travel which easily exceeds the minimum road widths for trucks and cars.

6.5 TRAFFIC LEVELS

This proposal is not consistent with the approved Development Application (DA) for the site and I am concerned that it will create a significant imposition on the health and safety of surrounding residents. In particular the numerous operational activities not the least being the increased traffic, up to 316 vehicle movements (truck and dog combination) plus light vehicles along Mamre Rd and Luddenham Rd which equates to approximately one truck every 2 minutes.

The original approved DA for the quarry allowed for a maximum of 40 truck movements per day and envisaged an operational life of 20 years.

Form Letter 3

Response

The existing road traffic volumes plus the proposed volumes are well below the capacity of Mamre Road, Luddenham Road and Patons Lane for their respective road classifications.

6.6 GENERAL COMMENTS

We would also like to understand the security aspects of the entrance to Patons Lane and into the site.

Darley Australia Pty Ltd – Page 4

Response

Dellara will maintain the entrance to Patons Lane locked for truck access until 7:00am (weekdays) and 8:00am (Saturdays). The gates would be locked no later than the weekday closure time (6:00pm) and Saturday closure time (5:00pm).

Company personnel or contractors may remain on site beyond the closure time should they be involved in maintenance activities or administration.

6.7 CONCLUDING COMMENTS

In brief the proposal is considered appropriate from a traffic engineering point of view as summarised:

1. The proposal has an estimated potential to contribute approximately 31 additional vehicle trips per hour (24 trucks) onto Mamre Road north of Luddenham Road.
2. Mamre Road is classified a State Road and has no vehicle restrictions imposed upon it. As such heavy vehicles are permitted to use Mamre Road 24 hours a day 7 days a week.
3. Luddenham Road is classified a Regional Road which serves a sub-arterial road function be providing access between Mamre Road and Elizabeth Drive. Luddenham Road can be used by heavy vehicles exceeding 5t with a legitimate destination as is legally permitted with this load limit regulation.
4. Luddenham Road has already received Black length funding as a result of a submission in the 2009 financial year and all associated safety upgrade works required by Council have been completed. As such Luddenham Road is no longer listed as a Black length.
5. Council receives part funding from State government for maintenance and upgrades to Luddenham Road which reveals that the RTA considers the road as a sub-arterial road.
6. Council in recent years received a funding grant which was used to provide the quality road surface that exists along Luddenham Road today.
7. Council as part of the reconstruction should have resurfaced Luddenham Road to cater for heavy vehicles appropriate with the roads regional road classification.
8. Notwithstanding, the Proponent is proposing a trust fund in which monies will be contributed for the purposes of road maintenance.

SECTION 7. GROUNDWATER

7.1 CELL LINING

Representative Comment(s)

The description of the proposal on pages 2-26 & 27 of the applicant's Environmental Assessment (EA) is vague as to the method of lining the cell walls and floor so that leachate does not escape. The applicant is not certain which technique or what materials to use. The applicant advises that further testing will be undertaken to formulate a leachate containment barrier strategy. The applicant states that a HDPE liner (plastic) may be used to seal the cells. The applicant states on page 2-42 that the membrane will leak but such leakage will be within acceptable limits. Council is very concerned about the long term stability of the proposed final landform and the potential for leachate to leak out into the receiving waters of the adjacent Blaxland Creek.

Since HDPE is a very stiff material, it cannot be prefabricated into panels. Instead it is delivered to the site in rolls, usually up to 6m wide and all the seaming is done on-site. The literature shows that its effectiveness in stopping liquid transmission is not conclusive. For example, in a project in Victoria, an HDPE plastic liner underneath 400mm of earth cover was estimated to have an effectiveness of only 75% in reducing seepage (Sinclair Knight Merz, 1998).

Penrith City Council – Pages 2 and 3

The applicant states that a HDPE Liner may be used to seal the cells. Unfortunately, this lack of certainty is clearly unacceptable in terms of the potential negative impacts on the environment. It is further exacerbated by the fact that the applicant cannot provide any guarantees that the waste deposited in the site will not contain toxic or carcinogenic materials.

Tanya Davies – Page 5

Response

The EA provides the conceptual design and a commitment from Dellara to implement any one of a number of barrier options to ensure that leachate and landfill gas does not migrate off site. Each of these options (eg compacted clay, HDPE) meets the engineered barrier performance requirements as detailed in the DECCW (EPA) *Environmental Guidelines: Solid Waste Landfills*.

It is standard practice when seeking project approval to provide the conceptual designs and a commitment to implement the selected design. Once certainty is provided and a project approval has been granted, Proponents can then invest the additional monies and provide the detailed design and construction documentation before commencing operations. Furthermore, as the emplacement cells would be constructed over a number of years, Dellara recognises the benefits of maintaining the flexibility to be able to utilise the most suitable barrier option for different areas of the emplacement cells, depending on the depth and other circumstances. There is no intent by Dellara to create confusion or not commit to implementation of one of the proposed barrier systems.

This stepwise or iterative process is normally promoted and accepted by DECCW (EPA) which is the government agency responsible and experienced in the environmental regulation of licensed waste facilities in NSW.

The stepwise process is reflected in DECCW (EPA) recommended conditions for an environment protection licence as detailed in its submission to the Department of Planning dated 3 July 2010. DECCW (EPA) advises that in the event project approval is granted, it would require the detailed design and construction information for installing the selected barrier to accompany the application for the environment protection licence for the Orchard Hills Waste and Resource Management Facility. This DECCW (EPA) indicated requirement has been addressed by Dellara as a commitment in **Section 2.7.2.1** of the EA and **Section 4.4.9** of the Cell Design and Groundwater Assessment Report (Aquaterra 2010). Dellara would prepare detailed design documentation and a construction quality assurance plan for the selected barrier (and other works) and provide it with its application for an Environment Protection Licence.

Extensive work has been undertaken by leading experts on landfill barriers (K Rowe, *et al*) and conclusive evidence has been provided to demonstrate that HDPE barriers perform better than the DECCW (EPA) standard compacted clay liner, provided primarily that appropriate construction quality assurance and control procedures are adopted during the installation of a HDPE barrier.

Penrith City Council questions the effectiveness of a HPDE engineered barrier in being able to reduce the seepage of leachate from emplaced waste. Council selectively quotes work undertaken by Sinclair Knight Merz (SKM) in 1998 and suggests that HDPE has an 'effectiveness of only 75% in reducing seepage'. This SKM study is based on a seepage assessment for the Donald Main Channel and it has not been possible to review this document as it is unpublished. Penrith City Council has acknowledged that it does not have access to the paper. Penrith City Council referenced the unpublished paper from a report prepared by the Australian National Committee on Irrigation and Drainage titled, *Open Channel Seepage & Control Guidelines for Channel Seepage Remediation, 2004* (ANCID Report). Council does not explain in its submission to the Department of Planning dated 24 June 2010 that the ANCID Report also states that in 2003 a further seepage assessment was undertaken of the Donald Main Channel and it was found that the HDPE had reduced the seepage by a greater amount than reported by SKM (between 87% - 92%). The ANCID Report also notes the importance of sound construction quality assurance procedures when installing HDPE engineered barriers.

The site has a series of elevated bunds placed by the previous land owner around its perimeter which may become unstable, unless suitably shaped. Dellara proposes to shape these bunds and integrate them into the final rehabilitated surface and this would ensure that the final landform is stable into the future.

A number of other safeguards are available to ensure that the site does not pollute off site waters. A high level of environment protection is offered by the site's naturally very low permeability clays and shales and leachate would be sustainably managed at the site. Furthermore, no putrescible, restricted, liquid or hazardous waste would be received or disposed of at the site.

7.2 FALSE CLAIM OF LEACHATE LEAKAGE

Representative Comment(s)

There is currently observable seepage of groundwater from the site into Blaxland Creek. The location of this seepage was approximately 5 - 10 metres west of a groundwater bore installed in the north-western corner of the site. There may be groundwater movement toward the creek. The groundwater assessment suggests that there are no groundwater impacts from the site on Blaxland Creek currently and for the proposed development. The report does not acknowledge the evidence of this current groundwater seepage and contains no analysis how this seepage may be problematic to ongoing maintenance and rehabilitation of the site and the protection of the pristine ecosystem of Blaxland Creek.

Penrith City Council – Pages 2 and 3

Response

Groundwater in the shale at the NW piezometer is not connected to Blaxland Creek as detailed in the Cell Design and Groundwater Assessment (Aquaterra 2010).

The observed minor seepage to Blaxland Creek 5-10 metres west of the NW piezometer is attributed to the nearby existing unlined sediment dam associated with the former quarry. It is not uncommon for older unlined sediment dams to experience leakage, especially if not well constructed and/or with lack of maintenance over an extended period. The Surface Water Assessment for the proposed new facility (GSSE, BMT WBM, 2010) has proposed that Dam 2 be upgraded to a best-practice stormwater sediment dam with a compacted clay floor barrier (or similar) and expanded capacity. This would be undertaken in consultation with, and approval of DECCW (EPA & NOW) via an Environment Protection Licence and Controlled Activity Approval, and would include the cleaning out of the existing sediments within the dam collected over a long period, and expansion of capacity without extending the existing footprint of the dam toward Blaxland Creek.

It is also noted that the installation of an engineered barrier around the emplaced waste cells and the implementation of sustainable leachate level controls are designed to minimise the potential for similar leakage of leachate into Blaxland Creek from the emplaced waste. Specifically, the level of leachate in the cells would be maintained below the surrounding groundwater level, resulting in the seepage of groundwater into the waste emplacement cells (ie. they would act as a hydraulic trap), rather than providing any potential for leachate seepage from the cells. Dellara commits as the licensee to operating and maintaining the site even during the post closure period in the state of a groundwater 'hydraulic trap'.

Penrith City Council officers inspected the site in May 2010 and witnessed seepage from the direction of Cell 1 into Blaxland Creek. The discolouration was evident, however the Council officers were not water quality experts and not qualified to sample and test the content of the seepage. What is very concerning is that Dellara Pty Ltd did not report this serious problem in their proposal.

Tanya Davies – Page 4

Response

The observed presence of orange discolourisation within this low-flow area of Blaxlands Creek adjacent the observed seepage is primarily associated with a natural phenomenon commonly occurring in Australian streams and in this case is caused by leakage from the nearby unlined sediment dam (Dam 2). Water samples recently collected at the site have been analysed for iron-oxidising bacteria which are typically associated with these orange discolourisation. The iron-oxidising bacteria were positively identified within Blaxland Creek upstream near the bridge and at the seepage point (*Gallionella sp, Crenothrix/Clonothrix sp*), and more notably not confirmed within Dam 2 ('probably absent'). That is, these are naturally occurring iron-bacteria within the creek.

Whilst the bacteria are present naturally in the creek, they require an iron source. Iron is an extremely widely occurring metal and often occurs in waters in contact with iron-rich soils, where it can naturally become soluble as ferric iron (Fe^{2+}) prior to oxidation to ferrous iron (Fe^{3+}), which precipitates as an orange-brown sediment. Whilst pump tests have confirmed that groundwater in the shale at the nearby location of the NW piezometer is not hydraulically connected with Blaxlands Creek (as explained above), the minor seepage observed moving through the soil is thought likely to be from the nearby leaky sediment dam (Dam 2) due to its location, age, lack of maintenance and poorer construction compared to current best practice. With the proposed upgrading of Dam 2 for the proposed facility (without extending its footprint any further toward the creek), which would be constructed to current best practice and include a compacted clay floor barrier (or similar), the currently observed seepage would reduce significantly and should cease and subsequently also the occurrence of the iron precipitate.

7.3 LEACHATE CONTAINMENT, COLLECTION & STORAGE

Representative Comment(s)

There is no certainty from the Environmental Assessment (EA) that the proposal will contain leachate on site and that the receiving waters of Blaxland Creek (and South Creek) will not be polluted in the short term. In the long term, there is even less certainty that leachate will not be seeping out of the "landfill" hill when the final landform has been constructed and the proponents have left the site.

Penrith City Council – Pages 2 and 3

Response

The risk of leachate from the site's proposed operations polluting Blaxland Creek (and South Creek) is very low and would continue to be very low at all times into the future after operations cease. A detailed justification for this circumstance is provided in the Cell Design and Groundwater Assessment Report (Aquaterra, 2010). The primary reasons justifying this position are as follows:

- The clay and shale geology at the site have a very low permeability and offers a natural barrier to prevent leachate from seeping site.
- No putrescible, restricted, liquid or hazardous waste would be received or disposed of at the site.

- The emplaced waste would be enclosed in an engineered barrier meeting the performance specifications stipulated by DECCW (EPA).
- The seepage of groundwater would be maintained into the waste emplacement cells by controlling the level of leachate in the cells below the surrounding groundwater level. This would be achieved by the pumping of leachate to the surface during the operational life of the facility and the limited inflow of rainfall after the facility closes due to be effective capping designed to limit rainfall infiltrating into the emplacement cells. This would result in the site being operated and maintained during the post closure period in the state of a groundwater 'hydraulic trap'.

The assessment and conclusion of the very low risk of leachate polluting Blaxland Creek is not refuted by DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010.

DECCW (EPA) has recommended a number of project approval conditions to legally require the measures proposed by Dellara to be implemented to prevent leachate entering and polluting Blaxland Creek. Dellara supports the inclusion of the DECCW (EPA) recommended conditions in the project approval.

Furthermore, as detailed in **Section 13.2** of this document, the licensee would be legally required by DECCW (EPA) to ensure that the site continues to meet the environmental performance requirements (eg preventing water pollution) into the future after waste operations cease.

The applicant acknowledges that stormwater falling on the site needs to be collected into purpose built dams and then pumped off the site and into Blaxland Creek. The applicant's strategy to discharge stormwater from the site is as follows:

"Discharge would only occur when the storage level exceeds 10% of the total maximum storage capacity, i.e. up to a level of 50%. Low flow discharge would be up to 50m³/day. Secondly, when the storage level exceeds 50% of the total maximum storage capacity, the excess water would be discharged to Blaxland Creek at a rate of up to 64L/s."(Page 4-34).

Pumping at the maximum rate of 64L/sec is equivalent to pumping 230m³ of water off the site per hour. This means that proposed Dams 2 or 3 could be pumped out to Blaxland Creek in half a day. The potential for high loads of suspended solids leaving the site is understated in the EA. The apparent strategy is to pump water off the site when Blaxland Creek is running so that turbid water on the site will be mixed with the swollen waters of the creek which have the potential to be already carrying a higher than normal suspended sediment load. Such a strategy masks the impact of releasing waters with high levels of suspended sediments. This strategy is not supported as it is not environmentally sustainable and will result in significant adverse impacts on receiving waters downstream from the site.

Penrith City Council – Pages 3 and 4

Response

It is noted that any waters released from the site would be tested before discharge to ensure they do not exceed the suspended solids criteria requirements of an Environment Protection Licence (EPL) for the site. The design, management and monitoring of the site surface water

management system for the proposed Orchard Hills Waste and Resource Management Facility has been undertaken in accordance with the industry best practice requirements of the NSW Department of Environment, Climate Change and Water (DECCW) as established in the current guidelines "*Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills"*, commonly referred to as the "Blue Book". Significant design, source control and treatment of sediment-laden waters has been proposed to ensure that the quality of water leaving the site would meet the water quality criteria objectives.

Low flow releases of quality water meeting EPL criteria (or better) have prudently been proposed in accordance with environmental best practice to maintain ecological flow regimes within Blaxland Creek contributed from the Project catchment (ie. not lost to dams as has been in past). This would be an improvement to the previous water management system of the former quarry.

The specialist consultants Surface Water Assessment report (GSSE, BMT WBM, February 2010) included detailed assessment of water quality management for the site including modelling using the MUSIC model. The best practice management system was designed specifically for the dispersive soils identified at the site, and accordingly conservative sediment basin designs and water management measures were undertaken including the following as described in detail in Section 6 of the Surface Water Assessment report (GSSE, BMT WBM, 2010):

- Sediment Dams designed for the most dispersive soil hydrologic group in accordance with best practice guidelines issued by the NSW Department of Environment, Climate Change and Water (DECCW) known as the "Blue Book" (Volume 2B - Waste Landfills);
- Source controls to minimise transport of sediment to sediment basins (and hence minimise treatment requirements), including potential use of sediment filter fences, straw bale barriers, rock groynes, vegetated buffer zones, diversion banks/drains and level spreaders to reduce concentration of flow (lower erosive force);
- Progressive revegetation to minimise sediment transport loads;
- Treatment of sediment laden waters where required (eg flocculation/coagulation) as successfully tested and discussed within the Surface Water Assessment report;
- In accordance with the Blue Book best practice designs, sediment dams for the site are sized to retain all rainfall to the 5-day 90th percentile rainfall event (top 10th percentile recorded), with a range of additional controls including treatment where necessary (eg flocculation) in place to ensure that the required water quality standards are met under an Environmental Protection Licence to protect Blaxland Creek.
- All discharges would be required to meet the water quality standards set in the Environment Protection Licence (EPL).

DECCW agrees with …

The proposal relies on the evaporation of collected leachate and stormwater from on-site dams. There does not appear to be enough capacity in these dams for worst case scenario (e.g. severe storms). The 12ML sized dams do not have enough freeboard (refer to page 4-19 of EA). The capacity of these dams needs to be recalculated and the dams should be enlarged.

Penrith City Council – Pages 3 and 4

Response

The stormwater and leachate circuits have been sized, configured and would be operated to be kept separate at all times. All leachate from the emplaced waste would be contained on site and disposed of sustainably via evaporation, utilising the natural evaporative features of western Sydney. The size of the leachate evaporation pond at 12 ML, combined with automated pump cut off systems, would ensure that the pond is incapable of being overfilled. It would have a freeboard of 0.5 m which is greater than the recorded maximum monthly rainfall depth at Orchard Hills. There would be daily visual checks of the level of leachate in the pond and this provides another layer of certainty that it would never overtop, thereby preventing leachate entering the stormwater circuit or Blaxland Creek.

Water from the separate stormwater circuit would be treated via settlement and discharged off site in the event excessive volumes are accumulated on site. DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 confirms the stringent discharge quality criteria that would be applied to the site. The Orchard Hills and Resource Management Facility has been designed and would be operated to ensure that the settled water discharged off site would meet DECCW (EPA) discharge quality criteria and not pollute Blaxland Creek.

It is also worth noting that the sizing of the leachate and stormwater circuits and their management at the Orchard Hills Waste and Resource Management Facility is fully in accordance with the requirements stipulated by DECCW (EPA) in its submission to the Department of Planning dated 15 April 2009 and reflected in the Director-General's Requirements. DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 does not refute the proposed sizing and operation of the leachate and stormwater systems and recommends a number of conditions which would legally require the 12ML (plus 0.5 m freeboard) leachate evaporation pond and stormwater dams and management regime proposed by Dellara. Dellara supports the inclusion of the DECCW (EPA) recommended conditions in the project approval.

7.4 GROUNDWATER MONITORING

Representative Comment(s)

We ("Coolamon Park") have facilitated and provided water data and gave approval for testing of our bore water, contrary to Dellara's submission.

Darley Australia Pty Ltd – Page 3

Response

It is acknowledged that Darley Australia Pty Ltd did provide some information on their licensed groundwater bore.

Dellara commits to undertaking a sample of water from the "Coolamon Park" bore to determine the water quality at the same time as the initial round of groundwater monitoring at the Orchard Hills Waste and Resource Management Facility. This initial sampling round would be undertaken before waste is received at the site.

We request well monitoring by the Applicant (through an independent expert as agreed to by both parties) to establish base line data before the project commences. This monitoring should be ongoing for the life of the project and reported in AEMRs.

Darley Australia Pty Ltd – Page 5

Response

The groundwater bore on "Coolamon Park" is located in the Hawkesbury Sandstone, which would not be intersected by the proposed landfill, and is also assessed to be "up gradient" from the Project Site, and is therefore isolated from the proposed waste emplacement cells by the shale aquitard and the engineered barrier proposed to surround the waste. Consequently, it is improbable that leachate from the emplaced waste might reach the bore on the "Coolamon Park" property. The pumping of the maximum licensed quantity of water (16ML per year) is highly unlikely to influence groundwater levels in the "Coolamon Park" bore. It also remains that if the licensed quantity of groundwater is increased to 32Ml per year, a similar lack of influence on the "Coolamon Park" bore would occur.

Whilst the monitoring of both groundwater quality and levels is considered appropriate prior to project commencement (once only), regular monitoring is unlikely to be able to detect impacts from the distant landfill operations. It would be necessary to record all water pumped from the Coolamon bore to gain an accurate record of fluctuations attributable to its use as it is much more likely to respond to its own pumping than from the distant landfill operations. Finally, it is considered appropriate to record in each Annual Environment Management Report the quantity of groundwater pumped from Dellara's bore and whilst it is less than 16ML per year, no adverse impacts on groundwater levels could occur.

7.5 GROUNDWATER QUALITY

Representative Comment(s)

The site currently has licenses to access two bore holes to use in its operation. Environmental experts and the environmental industry acknowledge that bore holes are traditionally problematic as they often have higher salinity levels compared with other natural water systems. The proposal to access bore water to hose down the dust generated during operations is only going to exacerbate the contamination of the bore water and create an increasingly toxic water source.

Tanya Davies – Page 4

Response

Dellara has a licence (10BL161098) to extract groundwater from one bore at the site. It also holds a licence (10BL602962) for groundwater monitoring piezometers.

The salinity concentrations recorded in the groundwater sampled from the site bore and piezometers are attributable to the Bringelly Shale's natural chemical composition. The Bringelly Shale's origin is from a marine environment, consequently groundwater in the shale contains elevated concentrations of salts. The high salinity of the groundwater also means that the shale has very low permeability and its contained groundwater has a very long residence time in the shale, otherwise the salts would have been flushed from the shale over time. The very low permeability of the shale is a primary reason why the site is suitable for the sound environmental containment of waste.

The Orchard Hills Waste and Resource Management Facility has been designed and would be operated to ensure that it does not result in the pollution of Blaxland Creek. As detailed in Section 7.3 the DECCW (EPA) does not refute the proposed water control measures and has recommended that they be adopted in their recommended conditions for the approval.

7.6 EFFECTIVENESS OF FINAL CAPPING (AND SLOPE)

Representative Comment(s)

Council's past experiences with landfill proposals is that once approval has been given for a proposal the applicant will seek to modify the consent to ensure all slopes are no less than 5% to ensure that there is adequate drainage and no seepage which causes problems in terms of leachate generation.

It is likely that a similar scenario will develop over the current proposal and the applicant will request more fill to be imported to attain the required slopes. This would also result in a final landform with a height of 72 metres AHD.

This aspect needs resolution prior to any determination of the proposal. The applicant should be requested to address this issue and provide commentary on the adequacy of the final landform design as shown on page 2-36.

Penrith City Council – Page 9

The proposal indicates that the top will be a large flat surface; this will collect rain water which will seep into the buried waste and continue the Leachate process well beyond that stated in the proposal.

The final landform has slopes <5% which will be problematic in terms of stormwater infiltration. I fear that once the proposal is approved the proponent will amend the proposal to increase the height and capacity of the landform to ensure that the recommended landform slopes can be attained.

Tom Thornton - Submission

Response

Modelling has been undertaken with a final landform slope of less than 5% to demonstrate that the volumes of rainfall infiltrating the final landform would be able to be sustainably managed continuously into the future and prevent leachate polluting waters off site. On this basis there would be no need to increase the height of the final landform to achieve greater slopes. The proposed final landform as presented in **Figure 2.18** Part B would enable water to shed off the final landform without causing excessive infiltration.

Following the consultation period, a number of comments were made about the height of the proposed landform. Rather than increase the height, Dellara has amended its proposal to decrease the height of the final landform by approximately 7m.

Dellara is supportive of an imposed approval condition which stipulates the reduced height of the final landform to be in accordance with **Figure 2.18** Part B**.**

7.7 EXTRACTION LIMIT FOR DELLARA'S GROUNDWATER BORE

Representative Comment(s)

The NOW's licensing records for Lot 40, DP738126 show the groundwater bore (10BL 161098) is only licensed to allow for the extraction of 16ML/year and not 32ML/year.

NOW – Attachment A

Response

The licensed extraction rate of 32 ML/year was provided verbally from an officer from DECCW (NOW). It is now evident that incorrect information was provided. Reliance was placed upon this information to be correct.

The DECCW (NOW) groundwater database which is publically available does not include the licensed extraction quantity for the site's groundwater bore (10BL161098) but it does include information on the bore's construction, water quality and yield at the time it was installed. This information indicates that the bore's yield may be as high as 1.5L/second or 47ML/year.

Dellara would only extract water up to the quantity permitted by the licence under the *Water Act 1912*. In light of the above information, Dellara will be seeking approval from the NSW Office of Water to increase the licensed allocation from its bore to 32ML per year.

7.8 SITE WATER BALANCE

Representative Comment(s)

The NOW recommends the water balance for the project is revisited to determine if an adequate water supply is available, particularly as the water deficit is proposed to be sourced from the groundwater bore.

NOW – Attachment A

Response

The water balance undertaken for the *Environmental Assessment* identified that for the first year of operations, in the unlikely case a 'dry rainfall year' occurred, that a maximum of 26ML of additional water may be required, principally for dust control purposes. This estimate was conservatively modelled assuming maximum water usage and minimal water efficiency on site. It was understood (see Section 7.7 above) when the *Environmental Assessment* was assembled that the site's groundwater bore was licensed by DECCW (NOW) to extract 32ML/year. This licence allocation would have covered the deficit.

However, as clarified by DECCW (NOW), the site's groundwater bore is in fact licensed to extract 16ML/year, which means that robust procedures need to be put in place to ensure that there would not be a deficit of water for dust control at the site.

Dellara at the outset of the project identified the importance of having water available for dust control and set aside the water contained in Dam 1, which contains an estimated 30ML of water as a contingency water source. The water contained in Dam 1 was conservatively not included as a source of water in the water balance modelling which estimates the site's water needs (Section 4.3.6.2 of the *Environmental Assessment*). Furthermore, this dam would be retained for about 20 years and an initial leachate evaporation pond would be utilised before Dam 1 is replaced with the long-term leachate evaporation pond (Section 2.7.4.1 of the *Environmental Assessment*).

As the site's groundwater extraction bore is licensed to extract up to 16 ML/year, the deficit would be a maximum of 10ML for Year 1 of site operations, if Year 1 were a dry year. Dam 1 contains about 30ML which would be available for a number of years to make up any shortfall should a dry period occur. A further safeguard in the early years is Dam 4. This dam was utilised for dewatering what would become Cell 1 and presently contains an additional 10ML of water available for site usage and was conservatively excluded from the water balance.

It is proposed that during the first year of operations that the site's water balance would be verified with site data to confirm the site's water needs, which would also identify the effectiveness of a range of water efficiency measures that were identified to be undertaken in the EA (but were conservatively excluded from the water balance). A number of water minimisation measures would also be implemented, including:

- optimising depths and surface areas for sediment dams onsite to minimise evaporation losses;
- undertaking progressive rehabilitation of the Project Site to minimise dust suppression requirements for disturbed areas;
- minimising the need for dust suppression water use via the implementation of dust mitigation measures, as recommended in the Air Quality and Greenhouse Gas Assessment;
- preferential use of water collected in the sediment dams to meet water operational requirements;
- implementation of water conservation measures and practices within the site to improve efficiency, reduce evaporation and reduce the long term water demand; and

- sourcing stored water from the other sediment dams (i.e. Dams 2, 3 and 6) and pumping this to the central sediment dams to reduce evaporation losses and increase the available water.

DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 recommends an approval condition for the revision of the site water balance before site operations commence. One of the requirements of this condition is to develop measures 'to minimise water use on site' and as proposed above, Dellara would implement water saving measures.

Dellara is confident that the site would have available sufficient water for dust control in the event of a dry period. The refinement of the water balance and its verification with actual site data in Year 1 would confirm this view.

7.9 GENERAL

Representative Comment(s)

Although we understand that there may be case by Dellara Pty Limited that the area is built on a clay bed, there are not guarantees that water will not leach from the site and enter the local river system, as this area forms part of a natural drainage area.

O & E Illy - Submission

Response

The risk of leachate from the site's proposed operations polluting Blaxland Creek and the local river system is very low and would continue to be very low at all times into the future when operations cease.

The assessment and conclusion of the very low risk of leachate polluting Blaxland Creek is not refuted by DECCW (EPA) which is the government agency responsible for the environmental regulation of waste disposal facilities in NSW.

The geology of the site comprises very low permeable clays and shale and this offers a natural barrier. Backing this up, the emplaced waste would be surrounded by an engineered barrier which meets the performance requirements for barriers stipulated by DECCW (EPA). Leachate and landfill gas would be managed in an environmentally sound manner at the site.

7.10 CONCLUDING COMMENTS

The geology at the Orchard Hills Waste and Resource Management Facility is ideally suited to the environmentally sound containment of emplaced waste. The very low permeability Clay and Bringelly Shale barrier forms a natural *in situ* barrier under and surrounding the site. An engineered barrier and sustainable leachate management system is also proposed. The combination of the natural system characteristics, the engineering barrier and the operational controls work together to ensure that leachate would not migrate off site and pollute waters. Furthermore, no putrescible, restricted, liquid or hazardous waste would be received or disposed of at the site.

Observations of a minor seepage of water into Blaxland Creek through the ground is actually the result of leakage from the nearby unlined stormwater dam (Dam 2). The installation of an engineered barrier around the emplaced waste cells and the implementation of sustainable leachate level controls are designed to minimise the potential for similar leakage of leachate into Blaxland Creek from the emplaced waste. Specifically, the level of leachate in the cells would be maintained below the surrounding groundwater level, resulting in the seepage of groundwater into the waste emplacement cells (ie. they would act as a hydraulic trap), rather than providing any potential for leachate seepage from the cells. Dellara commits as the licensee to operating and maintaining the site even during the post closure period in the state of a groundwater 'hydraulic trap'.

SECTION 8. SURFACE WATER

8.1 BLAXLAND CREEK

Representative Comment(s)

I draw your attention to investigations by DECCW, your lead NSW Government department with responsibility for protecting and caring for our environment, who have openly published on their website that:

> *"Blaxland Creek, on Department of Defence land near Penrith, is probably the last near-pristine freshwater stream in the Cumberland Plain. Conservation efforts will be vital in ensuring that freshwater streams with their specialised aquatic species are protected. Blaxland Creek, because it has been relatively untouched by development, can be used not only as a touchstone for understanding the biodiversity of other freshwater steams on the Cumberland Plain but as a way of reintroducing native species to other streams."*

An industrial waste facility operating virtually on top of Blaxland Creek would clearly go against the findings and wishes of DECCW.

Form Letter 2

Response

The protection of stream ecology and flow regimes (water quality and quantity) has been a major consideration of the Surface Water Assessment report for the project by specialist consultants GSSE and WBM BMT (February, 2010). Blaxland Creek is a valued freshwater system and will not be negatively influenced by plans to develop the proposed waste and resource management facility. A range of controls and aspects of the Project to support this are outlined below.

Although Blaxland Creek traverses a small section of the Project Site, the majority of the Creek reach, and tributary feeders, are upstream as illustrated in **Figure A** below. The vast majority of the 'near-pristine' and highly vegetated and sensitive reaches of Blaxland Creek (including that located on Department of Defence lands mentioned by DECCW on their website) are located *upstream* of the proposed Project site and will not be disturbed or affected by the Project. The Project Site is located in the cleared and existing disturbed areas downstream in the Blaxland Creek catchment nearer the confluence with South Creek, and is situated within the site of a highly disturbed former industrial quarry site, surrounded immediately downstream by cleared agricultural and livestock grazing lands and a recent residential subdivision (The Vines).

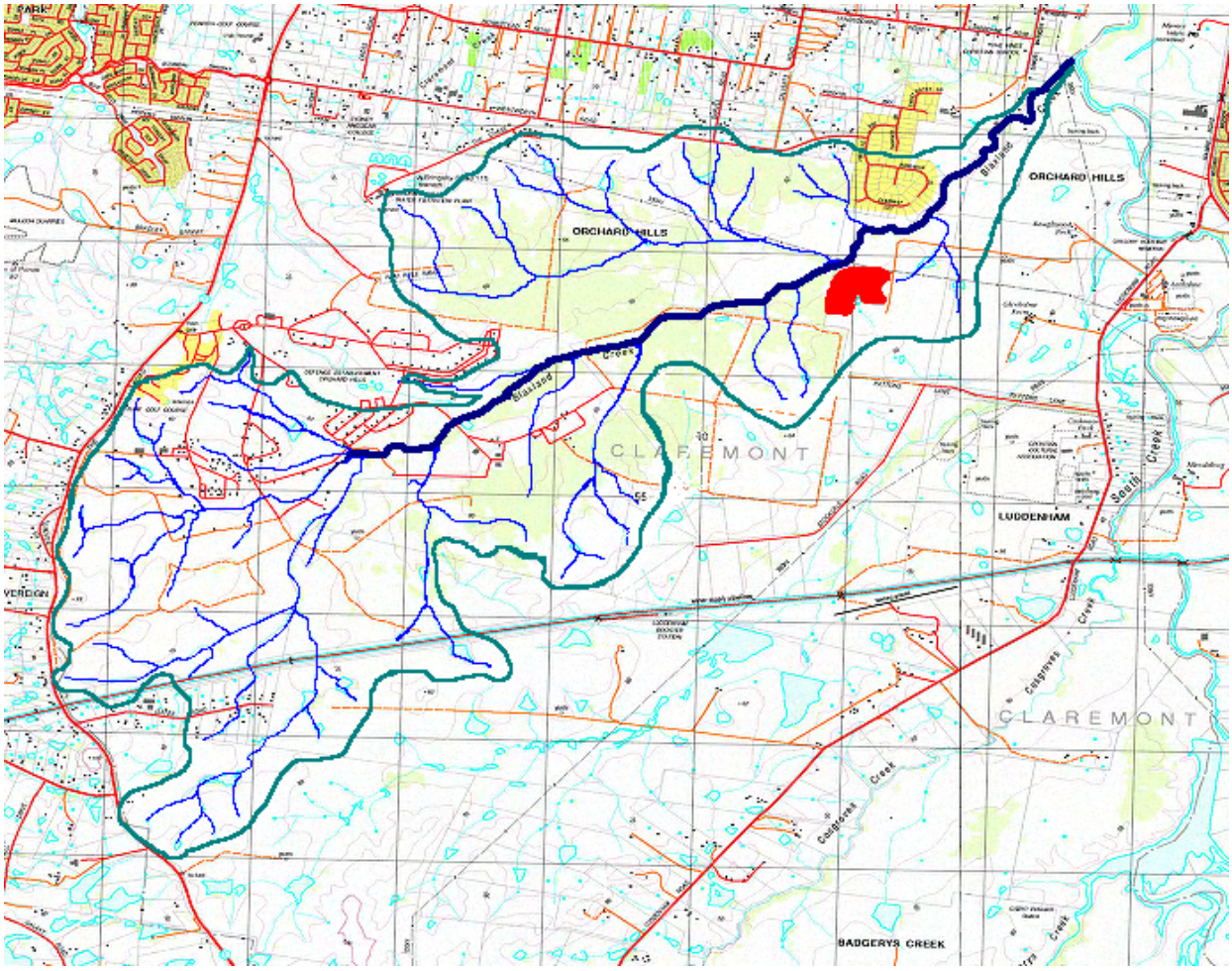

Figure A: Blaxland Creek catchment in context of proposed Project site location (in red)

Notwithstanding this, best practice design, management and monitoring of the facility has been proposed in accordance with DECCW guidelines[1]. This has included characterisation of the existing receiving water quality and flow regimes in Blaxland Creek and modelling of potential flow releases from the site to develop appropriate control measures to protect stream aquatic ecology. Surface water controls and management measures (including treatment) will be a significant improvement to the sediment management of the outdated controls employed by the former quarry site. The proposed new facility will be operated and monitored in strict accordance with an Environmental Protection Licence (EPL) issued by DECCW to ensure appropriate standards of water quality are entering Blaxland Creek after passing through the sites treatment systems. An additional design factor to limit the environmental affect of development on the project site will be allocations of water collected on site as environmental flow releases. This will provide the creek with the essential water supplies that would have been previously occurred to the system prior to man-made development (including the former quarry) and further maintain the health of the creek and its aquatic life downstream.

Accordingly, with the proposed designs and control measures in place as discussed in detail in the Surface Water Assessment report (GSSE and BMT WBM, 2010), the proposed project is not expected to adversely affect the condition of the river or its specialized aquatic species. In conclusion, the waste and resource management facility will not go against the objectives of the DECCW in relation to Blaxland Creek because of the following factors:

- Controlled water quality and quantity (flow regimes) in accordance with best practice and DECCW guidelines[1];
- Provision of environmental flows previously intercepted by the former quarry site (low flows, especially in key dry periods); and
- Project site position in relation to surrounding land uses and sensitive sections of Blaxland Creek upstream of the Project site.

The design for the leachate and stormwater circuits and their management at the Orchard Hills Waste and Resource Management Facility is fully in accordance with the requirements stipulated by DECCW (EPA). DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 does not refute the proposed design and operation of the leachate and stormwater systems and recommends a number of approval conditions which would legally require the works and management regime proposed by Dellara. Dellara supports the inclusion of the DECCW (EPA) recommended conditions in the project approval.

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[1] *"Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills", commonly referred to as the 'Blue Book' guidelines*

Blaxland Creek runs very close to the north-west boundary and it is one of the last pristine examples of a clean, healthy and strong creek system. The plan to pump the excess water into the creek when it is running at high levels is an environmental travesty.

Form Letter 1

Response

Refer above response to Form Letter 2 for similar query. In addition, it is noted that the design of sediment dams has been undertaken in accordance with current best practice DECCW guidelines "*Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills",* commonly referred to as the 'Blue Book' guidelines. In accordance with best practice, sediment dams are sized to retain all rainfall to the 5-day 90th percentile (top 10th percentile) rainfall event, with a range of additional controls including treatment where necessary (eg flocculation) in place to ensure that the required water quality standards are met under an Environmental Protection Licence to protect Blaxland Creek. Accordingly, uncontrolled flows do not leave the site, and indeed, the system will be an improvement on the existing outdated controls of the former quarry site.

The proposal states that the facility will not accept Hazardous Waste however I am concerned that when the waste breaks down the Leachate becomes extremely toxic and hazardous to the environment, what happens should it enter the local waterways, ie. Blaxland Creek.

Form Letter 3

Response

The controlled and regulated flows of surface water from the site will be treated via sediment dams, and it is noted that leachate is <u>not</u> part of the stormwater system and would not enter local waterways. It is noted that the sediment runoff (stormwater) system is separated from the leachate system such that only runoff containing soil and water will be delivered to the sediment dams prior to treatment (where required) and controlled release to Blaxland Creek in

accordance with water quality standards regulated under an Environmental Protection Licence. Separation of the stormwater system (sediment) and the leachate management system includes controls such as bunding and piping to direct leachate into a separate management system and daily cover of waste emplacement areas. The management of leachate from the emplaced waste has been designed and will be managed so it is unable to gain access to Blaxland Creek (refer the Groundwater Assessment specialist consultants report by Aquaterra 2010).

Blaxland Creek which has been designated as being a Category 1 stream of the state government or, in other words, a stream that has high environmental values. Pollution emanating from the site can occur as:

- *Contamination of downstream water quality through discharge/spill of contaminated water (leachate).*
- *Discharge of sediment-laden or turbid water from the Project Site*
- *Long term contamination of downstream water quality through major or repeated discharge/spill of contaminated water.*

If allowed to escape from the site, leachate has the potential to soak into surrounding soil and groundwater systems and enter into the flowing waters of the adjoining Blaxland Creek.

Penrith City Council – Pages 2 and 3

Response

Refer response above to Form Letter 3 clarifying the **separation** between the *stormwater* management system (which feeds to sediment dams and treatment prior to controlled release offsite under an Environmental Protection Licence) and the *leachate* management system from the water emplacement areas, which is retained and managed separately onsite, as detailed in the specialist consultant Groundwater Assessment report by Aquaterra (2010).

A detailed Surface Water Assessment report (GSSE and BMT WBM, 2010) was prepared to assess, design and manage surface water from the site to industry best practice standards compliant with DECCW guidelines for waste emplacement facilities[1]. The assessment included characterisation of existing receiving waters and the site's dispersive soils to develop the appropriate design of sediment management controls, retention basins and treatment systems (including flocculation to control suspended solids and turbidity), and included MUSIC modelling of water quality and quantity to consider flow regimes in Blaxland Creek.

In accordance with best practice under the DECCW guidelines[1], sediment dams are sized to retain all rainfall to the 5-day 90th percentile (top 10th percentile) rainfall event, with a range of additional controls including treatment where necessary (eg flocculation) in place to ensure that the required water quality standards are met under an Environmental Protection Licence to protect Blaxland Creek. Further, it is noted that in the rare case of extreme rainfall events (above 90th percentile rainfalls historically recorded), the design of the waste emplacement cells is such that additional capacity in the sump areas of the cells would mean that flood waters are retained onsite, adding even further system redundancy. Accordingly, uncontrolled surface water flows do not leave the site (particularly contaminated/leachate), and indeed, the system will be an improvement on the existing outdated controls of the former quarry site. Refer to both the specialist Groundwater Assessment report (Aquaterra 2010) and the Surface Water Assessment Report (GSSE, BMT WBM, 2010) for full details.

[1] *"Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills", commonly referred to as the 'Blue Book' guidelines*

I am concerned that from an ecological perspective, the quarry is situated close to Blaxland Creek which according to one of the previous owners of this site incurs massive water problems in times of heavy rain due to the 100 acre catchment area surrounding it.

Form Letter 3

Response

The design, management and monitoring of the site surface water management system for the proposed Orchard Hills Waste and Resource Management Facility has been undertaken in accordance with (and in appropriate areas exceeds), the industry best practice requirements of the NSW Department of Environment, Climate Change and Water (DECCW) as established in the current guidelines "*Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills"*, known the 'Blue Book'. This involves a **redesign** of the existing system of outdated water management for the former quarry site, tailored specifically to the requirements of the new proposed facility by Dellara Pty Ltd. The proposed new design is industry best practice and will significantly improve previous water management exhibited by the former quarry.

In accordance with best practice under the Blue Book guidelines, sediment dams are sized to retain all rainfall to the 5-day 90th percentile (top 10th percentile) rainfall event, with a range of additional controls including treatment where necessary (eg flocculation) in place to ensure that the required water quality standards are met under an Environmental Protection Licence to protect Blaxland Creek. This requirement is reflected in DECCW (EPA) recommended conditions of approval. Further, it is noted that in the rare case of extreme rainfall events (above 90th percentile rainfalls historically recorded), the design of the waste emplacement cells is such that additional capacity in the sump areas of the cells would mean that flood waters are retained onsite, adding even further system redundancy. Accordingly, uncontrolled flows do not leave the site, and indeed, the system will be an improvement on the existing outdated controls of the former quarry site. It is noted that the water quality for any waters ultimately leaving the site after passing through water management and treatment systems will be monitored in accordance with the proposed Surface Water Monitoring Program (refer Section 9 of the Surface Water Assessment report (GSSE, BMT, WBM 2010).

Accordingly, it would be expected that any previous water management problems that may have occurred in the past for the quarry would no longer occur.

8.2 BLAXLAND CREEK RIPARIAN ZONE

Representative Comment(s)

The NOW reiterates consideration be given to NOW's previous recommendation that a minimum 50m wide riparian corridor be established along Blaxland Creek.

The proposed enlargement/increased capacity of Dam 2 should be designed so there is no further encroachment of the dam into the riparian corridor (ie. towards to creek). Based on Section 4.9 of the Surface Water Assessment report, Dam 2 is currently located approximately 40m from the creek. It is noted the final landform would incorporate Dam 2 (Section 4.3.7.1 of the EA, page 4-38) but it is recommended Dam 2 is relocated outside the riparian zone as part of the final landform, to be consistent with the DWE Guidelines (February 2008).

NOW – Attachment A

Response

It is acknowledged that the NOW has requested that a 50m wide riparian corridor be established adjacent to the 87m length of Blaxland Creek that traverses the Project Site, i.e. only on the southern side of the creek. This width of 50m comprises the maximum 40m wide Core Riparian Zone (CRZ) and a 10m Vegetated Buffer (VB). The maximum CRZ width is drawn from "Guidelines for Controlled Activities – Riparian Corridors" – DWE (2008) which, in fact, nominates the CRZ width could vary between 20m and 40m subject to a merit assessment based on riparian functionality of the creek, the site and the long-term land use.

It is concluded that such a merit assessment does not necessarily support a CRZ of 40m given the following.

i) The 1:100 year flood level for Blaxland Creek does not extend beyond the 40m setback from the edge of the creek.

ii) The section of the riparian corridor on the Project Site simply serves as an overbank area during an above average flood event.

iii) The site is currently very well vegetated with only one small area that could benefit from minor earthworks / soft engineering.

iv) The long term land use of the 40m wide setback is for riparian vegetation consistent in density with the naturally vegetated area west of the Project Site on the Commonwealth land.

It is respectfully requested that the riparian zone for the 87m section of Blaxland Creek remain at 40m, the distances nominated when Dam 2 was constructed. Given the above assessment, there would be negligible benefit in removing Dam 2 at the end of the Project Life simply to satisfy an in-exact arbitrary guideline. Removal of the dam wall in 25 years time once the surrounding area is fully vegetated and getting access with earthmoving equipment would in fact be counter productive to the vegetation grown within the core riparian zone.

Section 4.6.2.1 of Surface Water Assessment specialist report notes Blaxland Creek is currently disturbed due to past grazing activities which has caused degradation of the riparian zone and bank erosion (page 3-28). It is recommended the stream bank erosion is rehabilitated on the site as part of this proposal. The stream bank rehabilitation types should be selected by a geomorphologist and should comprise soft engineering where practical.

NOW – Attachment A

Response

As detailed in Section 4.6.2 of the Surface Water Assessment report (GSSE, BMT WBM, 2010), management of Blaxland Creek as a Category 1 stream will aim to protect and enhance ecological connectivity between key remnant native vegetation and establish an appropriate Core Riparian Zone (CRZ). Proposed rehabilitation works will be developed in consultation with the NSW Office of Water (NOW) by an appropriately qualified and experienced personnel/consultant to be agreed with NOW.

As discussed in **Section 5.7** (Works within Riparian Corridors) of the Surface Water Assessment report, proposed rehabilitation works would consider NOW guidelines relating to for controlled activities works within riparian corridors, and it is expected would not involve any direct disturbance of creek bed or banks. Rehabilitation and revegetation would include native trees and shrubs. Details on rehabilitation works will be incorporated into a site Water Management and Monitoring Plan to be submitted with an EPL application subsequent to Project approval. Factors contributing to existing erosive scouring will be assessed and considered in developing appropriate strategies, including consideration of potentially excessive debris in the creek and potential high flow influence downstream of the hard engineered bridge abutments (immediately upstream of the site on Dept of Defence land). An application for a Controlled Activity Approval will be prepared accordingly where required.

8.3 SURFACE WATER POLLUTION

Representative Comment(s)

Dellara Pty Ltd's mitigation plan is to pump out 65L/minute of this storm water into Blaxland Creek when Blaxland Creek is running at a high level. This plan is flawed and environmentally dangerous as the rainfall water will have mixed with the remnants of the demolished and broken down building and construction products and will be tainted with the chemical compounds that make up cement, iron, glues, bonded asbestos, etc.

Tanya Davies – Page 5

I would like to submit my objection to the Orchard Hills Waste project and its vicinity to the complex owned by Dogs NSW. As a member, I am a regular user of the grounds and am concerned about possible contamination of our grounds during times of flood. This could affect the health of not only our dogs but us as well. I think a more suitable location should be sought.

Liz White

Response

It is understood that the mentioned complex owned by Dogs NSW (a dog showground) is located approximately <1.5km to the east of the proposed project site off Luddenham Road as shown on **Figure B** below. The surface flow from the Project site during times of flood is by no means a cause for 'contamination' at the dog showgrounds.

Firstly, the project site is divided into 6 catchment areas, 5 of these flowing northwards into Blaxland creek, leaving only approximately 15% of the site to drain in the south east of the site prior to passing through Dam 6 (adjacent Patons Lane). Any potential flows from the southeast of the Project site flow via Dam 6 controlled release (meeting water quality criteria under an Environmental Protection Licence) into a tributary that runs into the large flows of South Creek. Both this smaller tributary and Blaxland Creek run into South Creek, but do so downstream of the South Creek reach closest to the dog showground. i.e. these are generally on separate creek drainage lines and would not likely affect the Dog Showground.

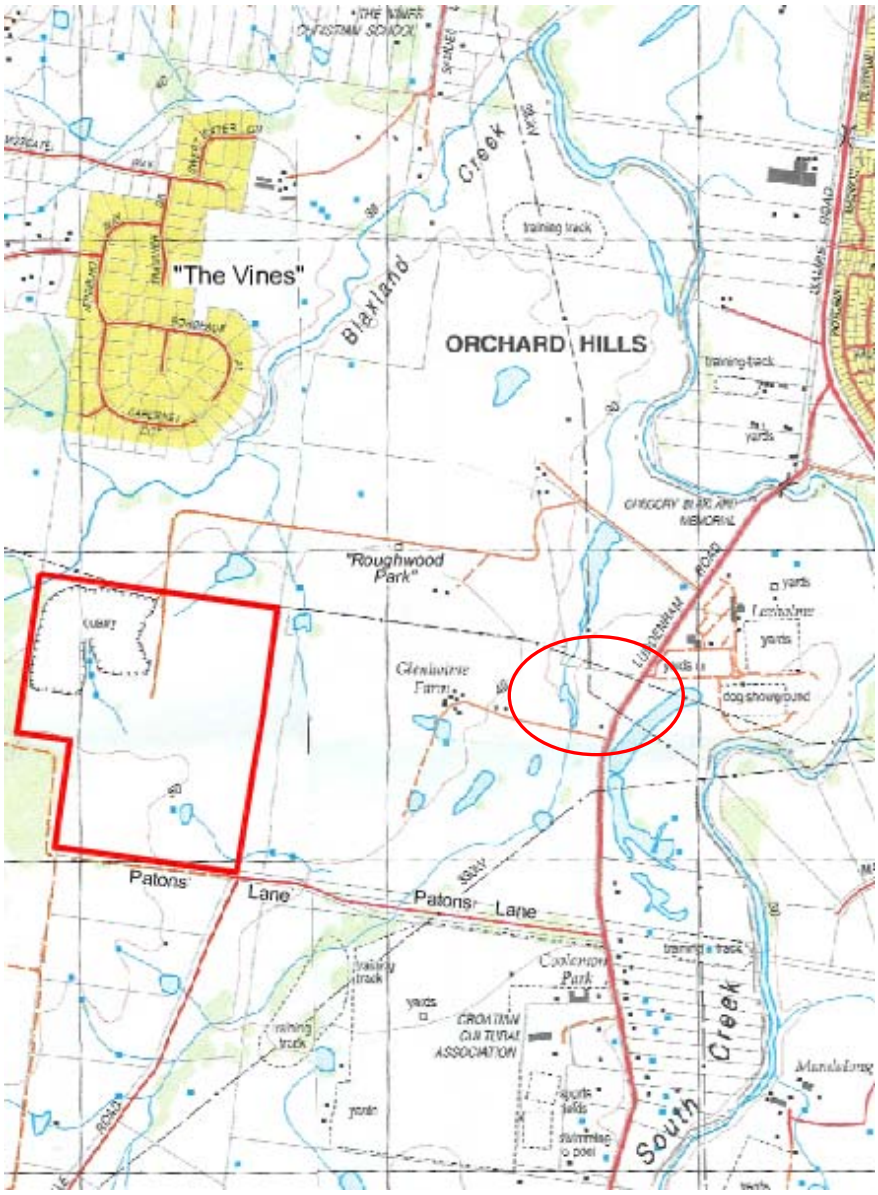

Figure B: Project site in relation to the dog showground and separated stream reaches.

There are controls that will prevent this portion of water flow reaching the dog showground in times of flood. With respect to Sediment Dam 6 located in the south east corner of the Project site with licensed discharge point (LDP), in extreme rainfall (in the top 10^{th} percentile (>90^{th} percentile)), water would likely flow directly into a tributary that runs into South Creek, downstream of the reach closest to the dog showground.

Additionally, it is noted that that the waste emplacement *leachate* management system is a separate system to the *stormwater* management system (sediment-laden water such as that via Dam 6 discussed above), and that leachate is retained and managed internally onsite. Stormwater, however, would be treated where required (e.g. via flocculation/coagulation) prior to discharge to ensure the appropriate water quality standards are met in accordance with an Environmental Protection Licence.

Concerns about the Water pollution; it is already recognised that there is a significant impacts from all sorts of pollution to the local waterways in this locality, Dellara's report highlights that there may be elevated salt level in the ground which has the potential to affect perennial growth.

Form Letter 3

Response

Section 4.5 (Soils & Geology) of the Surface Water Assessment report (GSSE, BMT WBM, 2010) references soils testing undertaken by Geoff Cunningham Natural Resource Consultants (2010) for the specialist Soils Assessment report for the Project. The context is provided both for rehabilitation and final landform design, as well as surface water management. With respect to the former, sub soils are generally poor, being dispersive and slightly to moderately saline which could cause problems for establishing pasture during revegetation. Accordingly subsoils were identified as not preferable for use in designing the surface profiles for final landform and rehabilitation. It is noted that it is quite typical in project assessments and investigations in many locations in Australia where subsoils are not suitable for topsoil use, and are managed and designed for accordingly. The context for water management is discussed below.

The natural geology at depth in the area includes shales which are estuarine in their geologic formation, and as such contain salts. Surface waters in the surrounding area (including two gauging stations in South Creek) were investigated for existing water quality as part of the surface water assessment.

Section 5.6.2 (Surface Water Quality Assessment) discusses electrical conductivity and salinity with respect to the proposed Project. Electrical conductivity (EC) within the existing surface water storages on the Project Site is within the upper range for freshwater environments and is consistent with the existing soils and geology. Although electrical conductivity is within the higher freshwater range, electrical conductivity within the Project Site is typically within the lower range of continuously recorded values in South Creek and is lower than values observed in Blaxland Creek. High surface runoff within the site that currently has limited interaction with the more saline sub-soils (which include estuarine shales at depth) is likely to result in runoff with lowered electrical conductivity draining to the existing storages. It is considered that optimising the discharge of surface water that has lower electrical conductivity than the receiving streams would have a beneficial impact to water quality.

Within the site storages, higher electrical conductivity should assist with settling of finer suspended soil particles and subsequently assist with reducing turbidity. It is noted that the groundwater assessment (Aquaterra, 2010) identified some levels of high electrical conductivity in the groundwater in the NE and NW piezometers, ranging from 8,930mg/L to 13,000mg/L respectively. Whilst this groundwater would be intercepted by the clay/shale extraction activities, the volume of groundwater inflow is expected to be small relative to the surface water runoff, and would occur for a very short period of time, and hence is not expected to impact on the overall surface water quality should this water enter the SMS. However, if water of a high electrical conductivity is intercepted during extraction activities, this water would be re-used on site.

This lack of certainty in regard to sealing the cells is clearly unacceptable in terms of the potential negative impacts on the environment. It is further exacerbated by the fact that the applicant cannot provide any guarantees that the waste deposited in the site will not contain toxic or carcinogenic materials. The applicant has admitted that soils will be deposited on the site that would contain potential contaminants such as metals, hydrocarbons, polycyclic aromatic hydrocarbons (commonly produced when petrol /diesel products are burnt) and chlorinated hydrocarbons (e.g. DDT and the like) that have undergone prior thermal treatment. There is potential for chemicals to be interred on the site that have extremely long half lives (such as DDT) that could be leached from the site in the future. The potential of pollution entering the adjoining Blaxland Creek, which has been designated as being a Category 1 stream by the State Government , is clearly not acceptable given the uncertainty associated with the issue of leachate containment and the long half life of toxic materials that will be disposed of on-site.

Penrith City Council – Pages 2 and 3

Response

As stated within the Groundwater Assessment report (Aquaterra 2010) and the Surface Water Assessment report (GSSE, BMT WBM, 2010), it is noted that the site *leachate* management system (from waste emplacements which is managed wholly onsite) is a completely separate system to the *stormwater* management system (sediment-laden water, which is controlled and treated prior to licensed discharge to water quality standards). Separation controls (including diversion bunding, daily cover and automated leachate pump cut-off systems) keep stormwater runoff separate. Any water that is contacted with emplaced waste enters the leachate management system, and is wholly treated and managed onsite. The control measures with respect to protection of groundwater are discussed separately in Section 7 (Groundwater) in the Response to Submissions, and detailed within the Groundwater Assessment report (Aquaterra, 2010).

It is noted that the design, management and monitoring of the site surface water management system for the proposed Orchard Hills Waste and Resource Management Facility has been undertaken in accordance with (and in appropriate areas exceeds), the industry best practice requirements of the NSW Department of Environment, Climate Change and Water (DECCW) as established in the current guidelines "*Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills"*, known the 'Blue Book'. Refer the specialist Surface Water Assessment report (GSSE, BMT WBM, 2010) for full details.

It is also worth noting that the design for the leachate and stormwater circuits and their management at the Orchard Hills Waste and Resource Management Facility is fully in

accordance with the requirements stipulated by DECCW (EPA) (refer the specialist Groundwater Assessment report for full details (Aquaterra, 2010). DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 does not refute the proposed design and operation of the leachate and stormwater systems and recommends a number of approval conditions which would legally require the works and management regime proposed by Dellara. Dellara supports the inclusion of the DECCW (EPA) recommended conditions in the project approval.

8.4 SUITABILITY OF SURFACE WATER MANAGEMENT STRUCTURES

Representative Comment(s)

Furthermore there needs to be a high level of vigilance and operational best practice in regard to preventing the admixing of leachate rich water and stormwater during storm events inside the operating areas. Once these waters are mixed there is often no option but to pump them offsite into receiving waters so that the landfill/recycling and extraction operations can again become operational.

Penrith City Council – Pages 3 and 4

Response

It is noted that design and management of sediment-laden *stormwater* (as described within the specialist consultant's Surface Water Assessment report (GSSE, BMT WBM, February 2010)), is deliberately kept separated and isolated from *leachate* generated from waste emplacements through a system of controls including significant separation bunding, daily cover, separate leachate drainage and piping systems, a leachate management pond, automatic leachate pump cut off controls and leachate management system, as described within the specialist consultant Cell Design and Groundwater Assessment report (Aquaterra, 2010).

Only a small active tipping area will have exposed emplaced waste able to come into contact with rainfall. This active tipping area will be bunded and capable of containing a worst case rainfall event and prevent leachate entering the stormwater circuit. No leachate from the emplaced waste would discharged to off site waters.

The stormwater runoff from the waste recycling and reprocessing area will be contained and managed in a dam sized in accordance with the DECCW (EPA) guidelines for waste processing facilities.

An Environmental Protection Licence (EPL) will be sought for the facility which will regulate and monitor water quality management in these storages prior to any treated stormwater leaving the site via the two proposed monitored Licensed Discharge Points (LDP), in accordance with the EPL criteria.

A Soil and Water management plan and surface water monitoring program will be undertaken (refer Sections 8 and 9 of the Surface Water Assessment (GSSE, BMT WBM) to further ensure that best practice and design criteria are maintained for the proposed facility. Also a leachate management and monitoring plan will be prepared and implemented in accordance with the Section 5.1 of the Cell Design and Groundwater Assessment (Aquaterra 2010).

It is also worth noting that the design for the leachate and stormwater circuits and their management at the Orchard Hills Waste and Resource Management Facility is fully in accordance with the requirements stipulated by DECCW (EPA) in its submission to the Department of Planning dated 15 April 2009 and reflected in the Director-General's Requirements. DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 does not refute the proposed design and operation of the leachate and stormwater systems and recommends a number of approval conditions which would legally require the works and management regime proposed by Dellara. For example, Dellara does not propose to discharge leachate from the emplaced waste off site to waters and reflect this commitment in their recommended conditions and state that it would be an offence to discharge leachate to Blaxland Creek. Dellara supports the inclusion of the DECCW (EPA) recommended conditions in the project approval and commits to complying with these conditions.

The proposal fails to show how they will environmentally and appropriately manage a heavy rain. The area is close to 5 hectares and in times of heavy rainfall will gather a significant amount of water. There are inadequate sizes of dams/water storage systems to capture this rainfall and manage it properly.

Form Letter 1

Response

In 2008, the NSW Department of Environment and Climate Change (DECC) (now the NSW Department of Environment, Climate Change and Water (DECCW), released industry-specific design guidelines for best-practice surface water management. In the case of waste facilities, the industry guidelines are *Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills*, generally known as the "Blue Book" (Volume 2B).

The design of the site surface water management system for the proposed Orchard Hills Waste and Resource Management Facility has been undertaken in accordance with, and in appropriate areas exceeds, the industry best practice requirements of the Blue Book Volume 2B. This includes the sizing of all dams **to meet or exceed** the required design storm events for the given catchment areas for each sediment control dam.

Further, the designs have also taken into account the Director General's Requirements issued specifically for the project which consider input from all relevant agencies (including DECCW), and has also considered the assessments undertaken for existing site soils (including dispersive soils) and existing water quality in design considerations.

In accordance with best practice under the Blue Book guidelines, sediment dams are sized to retain all rainfall to the 5-day 90th percentile (top 10th percentile) rainfall event, with a range of additional controls including treatment where necessary (eg flocculation) in place to ensure that the required water quality standards are met under an Environmental Protection Licence to protect Blaxland Creek. Accordingly, uncontrolled flows do not leave the site, and indeed, the system will be an improvement on the existing outdated controls of the former quarry site. It is noted that the water quality for any waters ultimately leaving the site after passing through water management and treatment systems will be monitored in accordance with the proposed Surface Water Monitoring Program (refer Section 9 of the Surface Water Assessment report (GSSE, BMT, WBM 2010).

Accordingly, the design, sizing, management and monitoring of all stormwater storages for the facility are in accordance with current industry best practice, and meet or exceed minimum design guidelines for the proposed facility. They are also in accordance with the DECCW (EPA) recommended approval conditions detailed in its submission to the Department of Planning dated 3 July 2010.

8.5 SURFACE WATER MONITORING AND INSPECTION

Representative Comment(s)

The discharge of stormwater from the site relies on good management practices and effective flocculation techniques to minimise suspended sediments in the discharge waters. There is no effective monitoring system proposed in the EA that regulates the release of stormwater from the site.

Penrith City Council – Pages 3 and 4

Response

The design of the site surface water management system for the proposed Orchard Hills Waste and Resource Management Facility having been undertaken in accordance with (and in appropriate areas exceeds), the industry best practice requirements of the NSW Department of Environment, Climate Change and Water (DECCW) (as set in *Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills*, known the Blue Book Volume 2E). This specifically includes a proposed ***Surface Water Monitoring Program,*** dedicated as **Section 9** of the Surface Water Assessment prepared for the proposed Project (GSSE, BMT WBM, February 2010), presented as Part 3 of the Specialist Consultant Studies Compendium to the Environmental Assessment.

Further, the proposed program has also taken into account the Director General's Requirements issued specifically for the project which consider input from all relevant agencies (including DECCW), and has also considered the assessments undertaken for existing site soils (including dispersive soils) and existing water quality in design considerations. DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 has reflected the proposed program in its recommended conditions to be include in the approval for the project.

The proposed surface water monitoring program for the Project Site includes details for a range of monitoring aspects including, but necessarily not limited to, the following:

- Proposed monitoring locations;
- Proposed monitoring frequencies;
- Proposed water quality monitoring parameters;
- Proposed water quality impact assessment criteria;
- Data recording and reporting requirements.

As stated within the Surface Water Assessment (GSSE, BMT WBM February 2010), an Environmental Protection Licence (EPL) will be sought for the facility which will regulate water quality management in these storages prior to any treated stormwater leaving the site through two proposed monitored Licensed Discharge Points (LDP). Further, a Soil and Water management plan and surface water monitoring program will be undertaken (refer Sections 8 and 9 of the Surface Water Assessment report), to further ensure that best practice and design criteria are maintained for the proposed facility.

All monitoring of waters will be undertaken in accordance with *Approved Methods for Sampling and Analysis of Water Pollutants in NSW* (DECCW, March 2004).

8.6 CONCLUDING COMMENTS

The design, management and monitoring of the site surface water management system for the proposed Orchard Hills Waste and Resource Management Facility has been undertaken in accordance with (and in appropriate areas exceeds), the industry best practice requirements of the NSW Department of Environment, Climate Change and Water (DECCW) as established in the current guidelines "*Managing Urban Stormwater: Soils and Construction – Volume 2b Waste Landfills"*, known the Blue Book Volume 2E. It is noted that design and management of sediment-laden water (as described within the specialist consultant's Surface Water Assessment report (GSSE, BMT WBM, February 2010), is deliberately kept separated and isolated from *leachate* generated from waste emplacements through a system of controls including, but not necessarily limited to, separation bunding, daily cover, automatic leachate pumping cut-off controls, separate leachate drainage and piping systems, a leachate management dam and leachate management pond, as described within the specialist consultant Groundwater Assessment report (Aquaterra, 2010).

With the implementation and maintenance of the surface water management and mitigation measures discussed in detail throughout the specialist consultant's Surface Water Assessment (GSSE, BMT WBM, February 2010), it is anticipated that there would be minimal impact on surface water within and downstream of the Project Site as a result of the proposed operations.

SECTION 9. FINAL LANDFORM AND VISUAL ISSUES

9.1 VISUAL IMPACTS OF FINAL LANDFORM

Representative Comment(s)

The site was approved as an extractive industry with the intention that the site be rehabilitated to a rural land use. The current proposal completely changes the nature of the land use to that of a waste facility. The end landform is at odds with what was contemplated when the extractive industry was approved. This proposal should not been seen as the only option available for the site. The proponent has failed to identify any other alternatives for the site which would identify ways to bring the site into compliance, while at the same time enabling some commercial viability.

Penrith City Council – Page 12

While the exact amount of asbestos located on site is unknown, Dellara's proposal to use the illegally dumped products and original DA breach of the height of the bund walls as their foundation to propose a specific final height of the dump, is using an pre-existing prosecutable and breach action to justify a end product size and dimension of the final land form.

The surrounding landform is predominantly flat and flood prone. Dellara are proposing to construct a flat top pyramid structure. This proposal is completely out of character to the local area.

Tanya Davies – Submission

Concern about the Aesthetic, visual pollution; an even larger mound of dirt where one should not exist according to the topography of the area, the topography of the area is generally flat.

Form Letter 3

How can an artificial mountain (30m higher than the natural ground level) full of toxic waste enhance the scenic quality and rural character.

D. Anderson – Submission

Dellara are proposing to construct a flat top pyramid structure. This proposal is completely out of character to the local area.

Tanya Davies - Submission

Response

The final landform as presented in the Preferred Project Report rises 0 to 14m above the natural landform. This elevation and gentle upper slopes will result in an imperceptible visual impact. The upper gentle slopes have been designed to avoid any long term infiltration – hence a pyramid is not required.

9.2 ROADSIDE LITTER

Rubbish residue from waste filled trucks travelling to the site will produce continuous levels of roadside garbage, for the next 30 years, which will create an unsightly mess and degrade our otherwise beautiful community.

Form Letter 2

Response

The Proponent's decision not to open the facility to the general public will substantially avoid litter issues. However, litter management would be a component in the Drivers Code of Conduct.

9.3 VISUAL IMPACTS AT "COOLAMON PARK"

Our requirement is that our visual amenity is not impaired and that it be protected at the commencement of the project, and that it not deteriorate over the life of the project.

We believe that the continual use of Patons Lane by heavy vehicles will have the potential to detract from the value of our land, given that the Patons Lane frontage is the longest boundary on our block and that heavy vehicles will be visible along this. We therefore require that screen trees be planted and be maintained along our frontage to Patons Lane in order to mitigate visual impact and therefore retain the potential high value of our property.

Darley Australia Pty Ltd – Page 5

Response

Dellara has committed to plant a vegetation screen along the southern side of Patons Lane using a range of native species in context with the surrounding vegetation (see Commitment 12.7).

SECTION 10. ON-SITE AND SURROUNDING LAND USES

10.1 LONG TERM LAND USE ALTERNATIVES

Representative Comment(s)

After completing the waste dump (30 years), that they want to test the waste affected land to see if it is safe for agricultural/grazing purposes. This shows that there is no 100% guarantee of the level of toxicity on the land yet they want to expose people and their families do it.

D. Anderson – Submission

Response

The proposed practice is a standard requirement for the realignment of any facility used for waste disposal – supply for due diligence purposes and confirmation to the relevant authority (currently DECCW) that the land is suitable for a subsequent land use.

The extractive industry has operated since 1981. It was expected to have been completed and the site rehabilitated by now. The works proposed seeks to now double the life-span of the operations on the site, which dramatically extends the impact of its operations on the local community.

From the public's perception of this proposal there is the issue of land use and the legacy left by a development. Penrith Council has for many years been recognised as an area suitable for extractive industries to meet the demands of Sydney's growing population and subsequent development. As demand these important industries begin to wane or the actual resource for which they are established to extract runs out, they should not been seen a refuses for Sydney's waste. This is especially the case when there has been a rehabilitation plan approved. The residents of Penrith should not have what was always contemplated to occur in term of site rehabilitation replaced with a land use that is going to continue challenge the environment within which it is located.

Penrith City Council – Page 11

Response

The intermittent nature of the extraction operation over the part 30 years reflects the cyclical nature of the brick industry. During this period, the number of quarries supplying light firing material has reduced which has recently increased the importance of the resumption of clay/shale quarry on site.

The successional land use involving waste disposal following quarrying is well recognised. It remains the most cost effective way to appropriately rehabilitate the subject land.

10.2 TRANSGRID TRANSMISSION INFRASTRUCTURE

Representative Comment(s)

TransGrid draws attention to the fact that the northern portion of the subject land is currently affected by one of TransGrid's existing 330kV transmission lines, and associated easement of variable width, as shown on the attached copy of Plan P.8315 and extract from TransGrid's GIS. In relation to this existing transmission line and easement TransGrid notes that the proposed bund wall of 20 metres in height, as described in the application, is larger than the existing bund wall and would encroach into TransGrid's easement area, therefore seriously restricting the available working platform around the three existing towers (transmission line structures). An adequate working platform is required for routine operation and maintenance of the transmission line and more importantly, where access to the structures is required in the event of an emergency. The batter and associated drain as detailed in the application would also create additional hazards to the work site, and the proposed drain running parallel to, and beneath the outside conductors of the transmission line would create vehicular access problems for TransGrid. TransGrid also notes that Dam 3 (shown on figure 2.4 on page 2 of report No. 582/03) is located in unacceptably close proximity to the existing transmission line structure. Locating Dam 3 in this position would restrict TransGrid's access to its infrastructure and create a safety hazard.

Response

Dellara has held discussions with TransGrid to discuss the above concerns and has established the following

1. there should be no changes to the topography of the land within 30m of any transmissions tower and 11m of the northern property boundary.
2. Dam 3 should be mid way between Towers 631 and 632.

Dellara has amended its site layout in the Preferred Project Report to reflect the above request.

10.3 LAND USES WITHIN 5KM OF THE SITE

Representative Comment(s)

The approval of a tip will surely destroy the future development of Twin Creeks Estate and this would decimate our local community.

CA Hill & Associates Pty Limited – Submission

Response

The Twin Creeks Estate would not be adversely affected by the project firstly as no project – related heavy vehicle traffic would travel past the estate and secondly it is considerably further than other rural/residential areas surrounding the Project Site.

S. Freeburn – Submission

The proposed site is less than 500 metres from the nearest residential area and there are more than 18 000 homes, 10 schools and 16 child care centres within 5 kilometres of the proposed site. It is inconceivable that such a proposal could even be considered.

Form Letter 2

Response

This issue is separately addressed in Section 17 – The Public Interest.

The area is zoned rural and rural/residential. The proposal to install an industrialised facility within an agricultural-rural setting is incongruous to the themes and approved long-term planning of Penrith City Council.

Tanya Davies - Submission

Response

The installation of a waste management and recycling facility in an area at least 0.5Km from any residence is most appropriate.

10.4 LAND VALUES

Representative Comment(s)

Dellara states that during the life of the tip, nearby property value will not decrease. We and other residents of Orchard Hills believe that this statement is false. Who would want to buy a house near a dump and potentially obtain health risks.

T, S. & M. Scerri – Submission

What effect will the construction of this tip have o the value of our property? Please do not reply to this question by saying something akin to "we do not believe that there will be any decline in the value of your property as a result of the construction of this facility"! Of course property values will decrease! Who will compensate us for the decline in the value of our property which can be directly attributable to the decision to allow this tip to be constructed?

M. & R. Saporito - Submission

The facility is close to residential homes including my own. I am concerned about the value of homes in this area decreasing due to the smell, noise, traffic congestion and unattractive waste facility being within sight of locals and visitors in the area.

Confidential – Submission

Response

This issue is separately addressed in Section 17 – The Public Interest.

SECTION 11. ECOLOGY

11.1 CUMBERLAND PLAIN WOODLAND

Representative Comment(s)

The surrounding area is a delicate and rare source of critically endangered Cumberland Plain Woodland. This proposal would severely impact the ongoing safety and protection of this and other species.

Tanya Davies – Page 3

Response

The area surrounding the Project Site on the western side comprises the Orchard Hills RAAF facility that is vegetated in parts by the Critically Endangered Cumberland Plain Woodland [CPW]. This is shown in the map accompanying Tozer [2003].

The lands on the northern and eastern sides are cleared farmland, while on the southern side a narrow tongue of Cumberland Plain Woodland borders the site and separates it from other cleared farmland.

The vegetation within the Orchard Hills RAAF facility is separated from the Project Site by a cleared strip that appears to be mown on a regular basis – probably as a firebreak / boundary track. A similar cleared area is present around the same boundary within the Project Site.

There is thus a corridor between the disturbed area within the Project Site and the remnant CPW that obviously has existed for many years and the site cannot be said to be surrounded by a "*delicate and rare source of critically endangered Cumberland Plain Woodland*."

While entry to the RAAF lands was not possible, there did not appear to be any major invasion of the CPW remnant by the weeds that predominate within the Project Site.

It should be recognised that the Project Site has been used as a quarry, waste repository in the past and the CPW that surrounds it on two sides appear not to have been adversely affected by past land use at the site.

It is unlikely that the land use proposed in the current EA would have any additional detrimental impact on the EEC or on *Grevillea juniperina* subsp. *juniperina* if the proposed dust, sediment and surface water management measures are implemented.

It should also be noted that the plants of *Grevillea juniperina* subsp. *juniperina* discussed in the Clements report were not noted at the time of my inspection some 17 months earlier.

Makinson [***Flora of Australia*** Volume 17a, Proteaceae 2 Grevillea. ABRS, Canberra; CSIRO Publishing, Melbourne. Pages 210-211] note that "this subspecies shows some ability to colonise mechanically disturbed areas where open ground surface persists; repeated disturbance seems to eliminate it. Populations are restricted to infrequently managed road verges or ungrazed semi-cleared land."

In view of Makinson's comment it would seem that the plants growing on the RAAF land and Patons Lane may well be growing in conditions favourable to their persistence that would not be changed as a result of the sensitive implementation of the proposed development.

11.2 GENERAL FLORA ISSUES

Representative Comment(s)

Orchard Hills is almost entirely vegetated with endangered ecological community and is regarded as a core area for conservation, particularly Blaxland Creek, which passes through the northwestern corner of the proposed site and feeds into South Creek and the Hawkesbury River systems. The site is located on a flood plain. I fear Blaxland Creek will be polluted with leachate from the facility, particularly during periods of heavy rains, which will impact greatly on the environment.

Form Letter 2

Response

It is more correct to state that the Orchard Hills RAAF facility is partly vegetated by endangered ecological communities. Some of it is cleared, particularly in the western section while the remainder carries a cover of two woodland forms that constitute CPW, [Tozer 2003].

It is true that Blaxland Creek and its associated River-flat Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions Endangered Ecological Community passes through the northwestern corner of the Project Site.

It is the Proponent's intention to fence this area from the remainder of the site and to undertake work to replant native species representative of this community to improve its health or condition.The proponent would also separate the Blaxland Creek area from the remainder of the work area to prevent escape of sediment or leachates during wet periods

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*The proponent has not provided details of the study and monitoring of rare and endangered plants in the area thus I would argue that the current environmental analysis and report is invalid. A full environment report **MUST** be commissioned by the appropriate Minister of the Environment Frank Sartor and the Federal Minister Peter Garrett as these lands are governed by both State and Federal Laws.*

Tom Thornton - Submission

Response

This submission puts forward an opinion in relation to the adequacy of the environmental analysis and report. The flora study is only a part of the overall environmental assessment. Fauna and soils are two other components.

We should not forget that this site has been an industrial site for many years as a quarry and then a site for receipt of landfill material.

It has been very much altered in terms of landform and vegetation cover from the largely pristine state evident within the lands of the eastern side of the RAAF facility.

It is highly invaded by weed species including a number of noxious weeds and at least in recent times has been heavily grazed by goats and sheep.

No endangered flora species were recorded on the land during the field inspection although the Clements report notes that, at a time 17 months after the original survey, stems of the endangered *Grevillea juniperina* subsp. *juniperina* were poking through the fence from the RAAF facility.

This plant is not growing on the Project Site and so there is nothing on the site to monitor.

At no time has there been a requirement to survey or monitor the occurrence of threatened species on the RAAF lands and access to these lands would possibly be denied.

The waste facility has the potential to impact the local eco systems as this river runs extremely close to the site northern boundary of the site. This is a significant area and a waste facility is totally inappropriate for this location.

Please see below what DECCW themselves say about Blaxland Creek.

Aquatic macroinvertebrates found in western Sydney Aquatic macroinvertebrates include insects (beetles, moths, dragonflies), aquatic earthworms, freshwater mussels, snails and limpets, and prawns and crayfish. The 1996-96 Western Sydney Urban Bushland Survey used a combination of all available sources of data to draw up a list of 446 species in the western Sydney region. These numbers indicate that the region is rich in macroinvertebrate biodiversity. Aquatic macroinvertebrates rely on local streams and river systems for their survival. Of the streams on the Cumberland Plain and surrounding region, very few remain in their original natural condition. The few that are in their natural condition are vital for conservation. The Hawkesbury-Nepean River, which is a major river system in western Sydney, is important for the conservation of aquatic macroinvertebrates as it supports some unique dragonflies and many mussel species. Habitat profile: Blaxland Creek. Blaxland Creek, on Department of Defence land near Penrith, is probably the last near-pristine freshwater stream in Cumberland Plain. Conservation efforts will be vital in ensuring that freshwater streams with their specialised aquatic species are protected. Blaxland Creek, because it has been relatively untouched by development, can be used not only as a touchstone for understanding the biodiversity of other freshwater streams on the Cumberland Plain but as a way of reintroducing native species to other streams.

T. Thornton – Submission

Response

Blaxland Creek has been flowing through the Project Site since the disturbance associated with the site's previous land uses began with apparently little concern generated about the land use at the Project Site impacting on the stream habitat.

Little precaution has been taken by previous owners of the site to prevent invasion of the section of the creek within the Project Site by weed species. Similarly there appears to have been little impact of sediment accession from the site on the habitat associated with Blaxland Creek.

The Proponent intends to isolate the Creek area from the remainder of the site to prevent any contaminated water or sediment being washed into this section of Blaxland Creek.

It is probably appropriate to acknowledge that the Creek receives more contaminants from farmland and residential and industrial areas within the RAAF facility, upstream of the facility and downstream of the Project Site.

While this does not justify any contributions of habitat damaging material from the Project Site, it places the assertion in its correct context.

That part of Blaxland Creek Mr Thornton refers to is on Department of Defence land, which is upstream of the subject site. Except during those times when South Creek backs up Blaxland Creek and there is a flood event, runoff from the site is not likely to end up within those parts of Blaxland Creek that are near pristine. Regardless of this, there is unlikely to be a decline in water quality downstream of the site.

Dellara Pty Ltd are not proposing to net or cover the dams and leachate ponds to protect the surrounding wildlife from accessing this water. The local and transitory animals will be exposed to toxic water as a drinking source.

Tanya Davies – Page 5

Response

Presumably Ms Davies is referring to the leachate pond. The Environmental assessment states" *"No wastes containing putrescible wastes would be received on site, however, it is acknowledged that small quantities of material contained in the C & I waste would be organic, some of which would contribute to the generation of leachate. No liquid, hazardous or restricted waste or dangerous materials would be accepted on site. The site would not be open for waste receipts from the general public thereby providing considerable control over wastes received."*

Rather than colonising the leachate pond, fauna would preferentially use those ponds on site that have better water quality and can support aquatic plant growth (algae & macrophytes). It is noted that DECCW has not raised water quality as an issue in relation to fauna. A leachate collection system will be constructed to DECCW's satisfaction.

Aquaterra (2009)[1] also notes that the groundwater quality data for the northwest and northeast piezometers demonstrate there is no evidence that groundwater seeping into the piezometers has been contaminated by any leachate which may have been generated from the construction and demolition waste in the existing perimeter bund walls on site.

[1] Aquaterra Consulting Pty Ltd (2009). *Cell Design and Groundwater Assessment*, prepared on behalf of Dellara Pty Ltd (Part 2 of the Specialist Consultants Studies Compendium).

Nine flora sampling quadrats were sampled on the 60 ha site. This constitutes 0.6% area sampled of the total site with no intensive survey of the areas with native component present. No targeted threatened flora species search was undertaken.

From the aerial photograph, shrubs are clearly visible. The areas were not surveyed.

In the areas sampled, species present were recorded. Projected percent foliage cover of the species and vegetation structure was not assessed. The data presented was not sufficient to determine whether the vegetation sampling locations met the listed criteria in the Final Determinations for the endangered ecological community Cumberland Plain Woodland and critically endangered community Cumberland Plain Woodland.

Anne Clements & Associates Pty Ltd – Page 3

Response

The assertions in the Clements report should be considered in the overall perspective of the land within the Project Site and its past use.

[a] Very little of it is not disturbed and most of it is extremely disturbed. It was evident at the field inspection that the vegetation cover on the majority of the land was weed dominated with very few [proportionally] plants of native species.

The decision was taken during the field survey not to keep recording the same weed species in a series of quadrats that added little further to the information available from the 9 quadrats.

Additional quadrats would have just recorded 'more of the same'.

The comment about the surveyed area representing 0.6% of the 60ha site. When the site is examined using an airphoto the area that has not been disturbed is probably very much less than 0.5% so the sampling effort used is adequate.

[b] The native plants growing on the Project Site were closely examined during the field survey because the small number of them present made it essential that all species noted were sampled and identified. This entailed an extra effort to ensure that none were missed.

While this may not exactly equate with the targeted survey mentioned in the Clements report, it is effectively the same thing.

[c] The Clements report notes the occurrence of shrubs at the site after examination of aerial photographs but does not provide details of their identity. The flora Study notes the occurrence of two weedy shrubs on the site – African Boxthorn and Castor Oil Plant.

[d] Re the Site being a possible occurrence of the Critically Endangered CPW as noted in the Clements report.

It is obvious from the amount of disturbance at the site that it is not a fledgling CPW occurrence. No amount of measurement of projected percent foliage cover of the species and

vegetation structure would have been able to enable the site to be considered as a CPW remnant.

It is interesting to note paragraph 14 of the Scientific Committee listing of the CPW as a Critically Endangered Ecological Community where it is noted that on areas where the soil has been disturbed it is very difficult to re-establish CPW even when the disturbance has been relatively minimal. The degree of disturbance at the Project Site is so extreme that it appears unlikely that such a transformation would ever be possible. [**see quote below**]

Consequently, it would be a futile exercise to undertake the suggested measurements given the existing situation.

14. Some areas of Cumberland Plain Woodland subjected to a history of partial clearing and grazing have recently undergone a change in management to conserve the community. Examples include Mt Annan Botanic Garden, Scheyville National Park, Western Sydney Regional Park, Elizabeth Macarthur Agricultural Institute, Orchard Hills Defence Site and the former Australian Defence Industries site at St Marys. Experience from these areas suggests that the community is capable of some recovery, provided the soil has not been disturbed by earthworks, cultivation, fertiliser application or other means of nutrient or moisture enrichment (Benson & Howell 2002; Pellow 2003; Keith *et al*. 2005; J. Howell *in litt*. August 2007; J. Sanders *in litt*. January 2008). In contrast, restoration of Cumberland Plain Woodland has proved to be problematic on sites that have been exposed to such soil disturbance. At Western Sydney Regional Park, for example, Wilkins *et al*. (2003), Nichols (2005) and Nichols *et al.* (2005) studied the recovery of abandoned pastures that had been planted with more than 20 native tree and shrub species of Cumberland Plain Woodland. Over 10 years they found no evidence of convergence in species composition with nearby remnant stands of the community and the species composition of restored areas remained indistinguishable from untreated pastures. There was some evidence that restored vegetation had begun to develop more species-rich assemblages of moths and butterflies compared to untreated pastures, although after 10 years, it lacked a number of species characteristic of remnant woodland (Lomov *et al.* 2006). Ant communities also showed marked differences between restored and remnant vegetation although some ecological processes, such as pollination and seed dispersal, showed some evidence of development at restored sites (Lomov 2005). These results suggest that sites with a history of soil disturbance will be extremely slow to recover characteristics of Cumberland Plain Woodland, if at all, and that experimentation with alternative restoration technologies is required. As a large proportion of the former distribution of the community has either undergone similar histories of soil disturbance or are now occupied by urban development, opportunities for restoration of the community across significant areas appear limited.

From an approximately 2 hour visit on site, the following were recorded by Tony Rodd and Polly Simmonds:

At least four plants of Grevillea juniperina subsp. juniperina were recorded growing on the boundary of the southwest fenceline, with stems located both on and off the site.

A large population of Grevillea juniperina subsp. juniperina growing directly adjacent to the southern boundary of the site, between the site and the Commonwealth land, within the Patons Lane road reserve, and right up to the fenceline marking the boundary of the site (see Appendix 2). Grevillea juniperina subsp. juniperina is a listed vulnerable species under the TSC Act.

The confirmed presence of the endangered ecological community River-flat eucalypt forest on the coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions in the northwestern corner of the site along Blaxland Creek; and

Cumberland Plain Woodland off site adjoining the southern boundary and within 50 m from the western boundary.

Cunningham (2009) incorrectly states:

> *"The outcome of the assessments and field survey observations has been the conclusion that none of the Threatened flora species recorded or predicted to occur in the wider region around the Project Site occurs at the site".*

Consequently, a seven part test was not undertaken for Grevillea juniperina subsp. juniperina. Potential impacts and measures for mitigation on this species have not been considered.

Anne Clements & Associates Pty Ltd – Pages 9-10

Response

The brief for the flora study did not require the completion of a field study on the adjacent Commonwealth land or on Patons Lane.

At the time of survey the plants of *Grevellia juniperina* subsp. *juniperina* were not noted to be growing inside [poking through] the fence between the RAAF facility and the Project Site despite my walking along the fences where they were found [as detailed in the Clements report].

The Project Site was observed to be relatively heavily grazed by goats and sheep at the time of the field inspection. It may be that the plants had not grown through the fence at that time or had been eaten off by the resident goats. The point remains that they were not seen within the Project Site in January 2009 – a time some 17 months before the Clements report was prepared.

It is pleasing to note that the Clements report confirms the existence of the River-flat eucalypt forest on the coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions in the northwestern corner of the site along Blaxland Creek.

The Environmental Assessment of this proposal does not comprehensively consider whether increased salinity from use of bore water on the site (see section 6.0) will impact on the adjacent Commonwealth Natural Heritage Place.

The Final Land Use is to be grazing/agricultural land which is unlikely to be appropriate in future, given the development of the residential estate to the north "The Vines" and to the east – St Clair.

Likely future appropriate final land use should have considered:

- *Conservation over the entire site, given the proximity to the Commonwealth listed Natural Heritage Place and Blaxland Creek flowing to South Creek and to the Nepean River;*
- *Residential with conservation corridor adjoining Blaxland Creek; and*
- *Industrial/commercial employment land with conservation corridor adjoining Blaxland Creek, given the proximity to residential land.*

There is no specific rehabilitation management plan outlining timing of works, where sediment fencing is to be erected, what the measurable targets for reduction of weed covers are or who will be responsible for monitoring and reporting.

Anne Clements & Associates Pty Ltd – Page 17

Response

The suggested land uses for the rehabilitated Project Site are not supported for the following reasons:

1. The rural nature of the area is considered of value, i.e. for grazing. Furthermore, re-instatement of native vegetation similar to the adjoining vegetation is unlikely and the land would not add substantially to any corridor.
2. Penrith City Council's planning does not permit residential development on the Project Site. It remains the preference of the RAAF for the project Site to remain rural/grazing given there is more potential for conflicts when the adjoining land is used for residential purposes.
3. A decision regarding its use for industrial/commercial employment land is not consistent with Penrith City Council's planning.

Dellara will be preparing a range of management plans to satisfy the requirements of a project approval and an environmental protection licence. The details nominated will be compiled into the relevant document.

Planting of vigorous exotic perennial pasture grasses is not desirable owing to the proximity of high value conservation land containing CPW.

An alternative that has not, and should be considered is re-establishing CPW characteristic species or native grassland.

The proposed native species to be planted lack diversity especially of native grasses.

The recommended planting in Cunningham (2009) demonstrates a lack of consideration of natural plant succession and ecology. For example, Exocarpos cupressiformis is a parasitic plant. It can not be planted as tubestock. It is a successional plant that can only establish itself through natural colonisation. Pratia purpurascens is a small herbaceous species that would be inefficient to plant, as the best method of introduction would be natural colonisation from existing established areas, following establishment of primary colonising species and achievement of sufficient cover to provide suitable moist habitat and shade to support its growth and survival.

In addition, although the intention is stated that the planted native area would have ongoing use for nature conservation; there is no specification for use of local provenance.

Cunningham (2009) recommends that the bulk of current weed cover should be left to protect the soil stockpiles until the rehabilitation phase. It then recommends out-competing the existing weeds with introduction of several more competitive exotic perennial pasture grass species. A less risky alternative would be to conduct rehabilitation in staged sections, by scraping off the top few centimetres of weedy cover and carefully removing & disposing of it and then

immediately covering the exposed areas in a pre-prepared locally sourced native grass and herb seed-bearing mulch (hay); containing seeding CPW characteristic grass species such as Themeda australis and Microlaena stipoides, suitable as either lawn or pasture (Martin 2004).

During the brief site visit by Tony Rodd and Polly Simmonds, an individual Cortaderia selloana was observed growing and flowering on the eastern south facing bund wall. This plant is a declared Class 3 noxious weed within the Penrith LGA – "The plant must be fully and continuously suppressed and destroyed" (NSW Department of Primary Industries Noxious Weed Declarations accessed from www.dpi.nsw.gov.au website 26 June 2010). The Cunningham flora assessment did not record this species. Cortaderia selloana needs to be targeted.

No timeframe and measurable targets are stated for reduction of weed cover.

The proposed final landform with elevation of approximately 70m AHD will encourage spread of weed propagules. The final determination for CPW states: the propagules of weeds are spread… by stormwater, dumping of refuse, frugivorous birds and wind. A final landform covered in vigorously competitive fertilised exotic perennial pasture grasses, raised above the level of adjacent conservation land and CPW will capture, act as a breeding ground for and spread wind blown grass seed to surrounding areas.

Anne Clements & Associates Pty Ltd – Page 18-19

The Clements report comments on the recommended plantings suggested in section 12 of the Flora Report.

The list omits the native grasses suggested but these will probably invade the Blaxland Creek area from the RAAF lands. The comment on *Pratia purpurascens* being inefficient to plant is unnecessary – the species is a component of the CPW flora and no different to any other species from the herbaceous layer and the fruits are easily collected form established plants.

With regard to *Exocarpos cupressiformis* – this species is a part parasite [from my discussions with staff at the Royal Botanic Gardens] that could be established by seed once eucalypts are growing on a site as it has what appears to be an exclusive relationship with Eucalyptus species and their root systems. The report nominated the plantings to be by seed or tubestock – not tubestock alone

The recommendations regarding the establishment of an exotic perennial grass pasture was prepared following advice that the Proponent desired to return the Project Site to a grazing situation on completion of reshaping and rehabilitation work.

The recommendation for the use of herbicides to repress exotic non-grass weeds was aimed at, over time, reducing the soil seed bank of these exotic broadleaf species so that a good cover of strong growing grass pasture species could be used to prevent re-invasion and, to provide suitable soil cover and to allow the area to once again become agriculturally productive – a far cry from today's situation

The chance of successfully re-establishing CPW at the site is adequately addressed in an earlier section of this response where the problems of such re-establishment on areas where major soil disturbance has occurred are highlighted.

Topsoil, of any description and source, is at a premium at the site and so the skimming of topsoil to remove weed seeds as proposed in the Clements report appears to be a backward step. The course of action that is proposed in the Flora Study of reducing the weed seed load using herbicides and planting of a vigorous grass pasture is a more practical approach.

Attempting to establish a native grassland would also be fraught with problems as the suggested species would take quite a time to establish – and probably establish in a patchy distribution that would allow re-invasion by broadleaf weeds and possible sediment erosion problems.

It was interesting to note that the Clements report records the presence of one plant of Pampas Grass on the Project Site and points out that it was omitted from the Flora Study.

This plant may not have been present at the time of the original field inspection or may have been grazed low by hungry sheep and goats so that it was not recognisable. Parsons and Cuthbertson [1992] [***Noxious Weeds of Australia. Inkata Press, Melbourne***] note that this species was introduced to Australia as an ornamental and farm fodder grass many years ago. Consequently it must be palatable and subject to grazing during its life cycle.

Despite any fodder value, the species is now regarded as a noxious weed and should be *fully and continuously suppressed and destroyed* as discussed in the Clements report.

The discovery of this species during the Clements inspection has been helpful as it provides further guidance to the Proponent in relation to weed management on the property.

The timeframe for management of the weed cover would depend on the progress of reshaping of the site which would be ongoing as sections reach their final use date. Rehabilitation would then commence and control of the broadleaf weed would begin.

The Clements report raises concerns about the seeds of the planted grass seeds invading the nearby CPW. The recommended grass species are generally those that are not subject to spread by seed or fruit-eating birds and so are unlikely to be significantly spread into the nearby CPW.

The present array of weeds with many attractive fruits [eg. *Solanum* sp., *Lycium ferocissimum*] and fluffy seeds [*Asteraceae species*] would pose an infinitely greater threat of weed invasion that the proposed grass pasture.

11.3 CONCLUDING COMMENTS

The habitat types represented within the Project Site are either highly modified and/or well represented in the locality. Whilst three fauna species listed as vulnerable on the NSW *Threatened Species Conservation Act* (the Eastern Freetail Bat, Eastern Bentwing Bat and the Large-footed Myotis) occur or are likely to occur, there is unlikely to be a significant effect on these species or their habitats. There is unlikely to be any effect on upstream aquatic fauna due to run-off from the site. Leachate ponds are unlikely to be inhabited by resident or transitory fauna given the provision of better quality habitat on site and elsewhere in the locality. Given these factors, it is considered that, in terms of the likely impacts in relation to fauna and fauna habitat, there are no constraints on the Project.

SECTION 12. HERITAGE

12.1 NATURAL HERITAGE

Representative Comment(s)

I can see that the Department of Planning has a heritage protection on Patons Lane yet it appears it will be disregarded if the approval of this project goes ahead……. This is an extract that is found on the internet identifying Patons Lane by the Department of Planning as an item of local significance. Why do we waste money on these reports if they are disregarded……. Band of native vegetation? Patons Lane, Orchard Hills (L-44) as an item of local significance……. I feel our heritage is being destroyed by this development.

J. Wells – Submission

Response

The proposal by Dellara will not result in the removal of any vegetation within the Patons Lane Road Corridor – all approved roadworks will be confined to the existing cleared alignment for Patons Lane.

12.2 EUROPEAN HERITAGE

Representative Comment(s)

The proposed site has historical significance as it is contained within the boundaries of the original 2000 acres of land granted to our famous Australian explorer Gregory Blaxland. It would be a disgrace to build a waste monument on this site.

Form Letter 2

It must not go unnoticed that this is a local heritage area and should be preserved as such, the Stone monument erected by the Citizens of St Marys in 1938, highlighted confirms the site has historical significance... The monument which is located on the Luddenham Rd confirms this heritage:

"Here on the South Creek was Gregory Blaxland's Farm, from it on May 11-1813 he set out with William Lawson and WC Wentworth attended by four servants with pack-horses and five dogs on the first expedition that crossed the Blue Mountains – Citizens of St Marys 1938."

Form Letter 3

I noted there was no History on record on this land. Which I feel has not been addressed properly as I do know that Gregory Blaxland owned land near and around this area. It should have been addressed maybe it could be to the south or the north or could even be part of the quarry. I feel that the history should have address where Gregory Blaxland property is in conjunction with the quarry.

J. Wells – Submission

Response

The land referred to as "Brush Farm" which was owned by Gregory Blaxland is now occupied by numerous land uses many of which are not consistent with its original agricultural use. The fact that the 60.4ha of the Project Site is proposed to be returned for largely agricultural uses would return the land previously used for clay/shale extraction back to agricultural land.

12.3 ABORIGINAL HERITAGE

No issues were raised relating to Aboriginal heritage.

SECTION 13. FACILITY OPERATION AND MANAGEMENT

13.1 PROPONENT'S EXPERIENCE

Representative Comment(s)

The shareholders have no prior experience in such commercial dealings and I would doubt they could prove they have the capacity to run such a venture on all counts including financially.

CA Hill & Associates Pty Limited – Submission

Dellara Pty Ltd has absolutely no former experience or knowledge about waste removal and handling. Its like putting a student in charge of writing their own exam. They could do anything to benefit them and dump as much as they want there.

T, S. & M. Scerri – Submission

Dellara Pty Ltd (the proponent) have no experience in managing waste. They are builders, and admit to knowing nothing about waste. The proponent intends on passing the management of this facility to a waste management company. The 'passing the buck' approach already from the application stage gives me reason to believe the proponent wants nothing to do with the potential problems this facility is to going cause in the future, and wants nothing to do with the poor residents who are going to be faced with at least 25 years of traffic, smell, dust, asbestos concerns etc. The proposal is only an indication of what Dellara intend to do, so when they pass management onto to someone else who's going to make sure they are following the strategies to ensure the residents aren't affected by this tip? How can you, NSW Planning, be sure that only construction waste is dumped there?

Angela Lawrence - Submission

The applicant has not provided Council with any information to establish that the applicant or the future operator has experience in waste disposal/site management. Council has no knowledge about any experience the operator may have with respect to waste disposal site management. Because of the sensitive environmental nature of the waste disposal industry, potential operators of waste disposal sites need to satisfy consent authorities that not only do they have experience in waste disposal, but that they have satisfactory credentials and an ability to respond to day to day problems that may arise on site. The community cannot afford the potential environmental impact associated with inexperienced waste disposal operators with respect to potential for water pollution (ground and surface) and serious site contamination.

Council has little information as to the environmental performance of the current owner with respect to site management. It should be noted that the current owner has not obtained appropriate approvals from state government agencies prior to dewatering the northern-west extraction area. A large volume of water has been pumped by the current owner of the land into Blaxland Creek without the appropriate approvals. This matter is currently being investigated by the relevant state government agency.

Penrith City Council – Page 10

This company was formed in the recent two year period and only has 100 shares issued. The shareholders have no prior experience in such commercial dealing and I would doubt they could prove they have the capacity to run such a venture on all counts including financially. On the front page of the Penrith City Star dated 6th May 2010 the director of Dellara Mr Miller is quoted as saying "if the company did not fill the quarry void and return it to grazing land who else would do it". But if Dellara purchased the land knowing the order was in place then it became their responsibility. There are major concerns with the transaction having been made at a proper market value, how it was made and whether there is any relationship between the parties.

C.A Hill – Submission

We do not want another $2 company destroying our environment and creating a severe health hazard, then winding it self up, like the previous owners who should have been criminally charged.

R. & G. Tesoriero – Submission

There is undeniable illegal dumping that has occurred on site. It is clearly evident that these products are present, however what is concerning to the community and myself is the fact that Dellara Pty Ltd have not disclosed the presence of illegally dumped products within their detailed proposal. This mission brings more serious questions about the thoroughness, transparency and integrity of the whole proposal.

Towards the conclusion of their operations, there will be insufficient space available that can accept the stockpiling of clay/shale which has been extracted. It is apparent that Dellara are willing to sacrifice such a highly sought after product for their overall objective of using the site as a recycling and dumping ground.

Tanya Davies - Submission

Response

Dellara Pty Ltd purchased the property in August 2008 from Orchard Hills NSW Pty Ltd in Liquidation through Condon & Associates, a Forensic Insolvency Specialist via a Tender process.

Dellara Pty Ltd has stated in its Environmental Assessment Page 1-6 under the heading "The Proponent" that Dellara will be entering in to a commercial arrangement with an experienced waste operator to undertake the day to day management of the site. Dellara is committed to remaining the owner of the property for the long term and as such will ensure all environmental requirements are fulfilled.

Dellara and or the operator will be required by DECCW to provide a substantial bond.

Directors, Shareholders of Dellara have approximately 50 years of commercial business experience within the property and construction industry involving Project Management (civil works), Property Development and Construction and Property Investment throughout NSW.

The total site area is 60.4 ha or 150 acres. There is more than enough space to accommodate the activities the company proposes including any stockpiling. Furthermore, Dellara is in receipt of a letter of intent from a major brick manufacturer to acquire on a long term arrangement the highly desirable clay and shale from the site.

13.2 POST OPERATIONAL MANAGEMENT

Representative Comment(s)

Dellara have not provided details of their planned ongoing management of the site after their proposal reaches its end life. At present there is no assurance to the community that upon leaving the site, their operations will not begin to impact the surrounding area.

Tanya Davies – Submission – Page 3

Response

A commitment is made in **Section 2.14.8** of the EA for the planned ongoing environmental management of the site after waste operations cease. The principal components of the post operational management would be as follows.

- Capping, revegetation and sediment and erosion control maintenance.
- Leachate and gas management and maintenance.

This commitment would be supported with monitoring to ensure that the site continues into the future to have no unacceptable off-site impacts. Such a process is common with all modern landfills including those subsequently used for sporting grounds.

Furthermore, under Section 76 the *Protection of the Environment Operations Act 1997* (POEO Act), DECCW (EPA) can require the licensee at the time of the last waste receipts to prepare and implement a Closure Plan. The Closure Plan would detail the steps to be taken to environmentally manage, monitor and maintain the site into the future.

Dellara commits that the last licensee preparing a Closure Plan to comply with **Section 76** of the POEO Act (see Commitment 4.11 in Part C). DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 recommended that the project approval conditions include a requirement for a Closure Plan to be required and implemented when waste operations cease at the site. Dellara supports the inclusion of this recommended condition in the project approval to thereby make it a legal requirement for the last licensee to undertake ongoing environmental management of the site after waste operations cease.

The activity in itself is going to introduce increased amounts of vermin to the area.

G & R Pagano – Submission

Response

No putrescible wastes will be accepted on site. However, it is recognised that a small amount of organic materials would be mixed with some of the incoming wastes. The quantity would be insufficient to attract rats, mice and other vermin to the site.

A further safeguard to prevent vermin at the site is the application of daily cover. At the end of each day's disposal operations, all waste would be covered, for example, with up to 150 mm of soil. This would prevent vermin having access to the waste.

Dellara commits landfill to prepare a detailed landfill Environmental Management Plan (see Commitment 18.1 in Part C). This plan will detail all measures to manage and prevent vermin at the site.

DECCW (EPA) in its submission to the Department of Planning dated 3 July 2010 recommended that the project approval conditions include a requirement for managing and preventing vermin at the site. Dellara will manage and prevent vermin at the site and supports the inclusion of this recommended condition in the project approval to thereby make it a legal requirement to manage vermin at the site.

13.3 HOURS OF OPERATION

Representative Comment(s)

Concern about the proposed operational hours of the facility which highlighted the contempt the proponent has for the community, these hours are totally unacceptable in a non industrial location.

Form Letter 3

The hours of operating are too long. 6pm is unreasonable considering most facilities shut by 5.00pm weeks and 4.00pm Saturdays. These long operating hours, would also set a precedent for other businesses in the area.

O. & E. Illy – Submission

Response

The operational hours are not unreasonable and provide a balance between meeting commercial needs of customers and the surrounding community.

13.4 MONITORING THE SITE'S ENVIRONMENTAL PERFORMANCE

Representative Comment(s)

It must be acknowledged that the DoP will be challenged (in an organisational sense) to effectively monitor the site's environmental records as will the DECCW. This will leave the onus for environmental performance on the operator of the site, who is unknown. It is clear that the current owner is not experienced in managing such as facility and more recently has undertaken works on site without seeking suitable approvals. Self-regulation is certainly not an option for the site.

Penrith City Council – Page 12

Council has no confidence that discharge of sediment-laden or turbid water from the Project Site will be adequately controlled. This is especially relevant in that the proposal requires licensing from DECCW who do not have the resources to adequately monitor and / or police the site.

Penrith City Council – Pages 3 and 4

Response

The ultimate responsibility of the development and operation of the site will be with the Managing Director of Dellara Pty Ltd, however, the day to day management of all activities will be with the Site Manager, employed by a well established and experienced Waste Management company.

The Site Manager will be responsible for implementing the conditional requirements of approval, as well as the conditions of the Environmental Protection Licence, both of which will be regulated by DECCW.

The conditions of approval set out by DECCW will include:-

1. A Water Management Plan
   - Stormwater Management
   - Water Pollution Management
2. Soil, Water and Leachate Management
   - Water Balance Report
   - Erosion and Sediment Control Plan
   - Surface Water, Groundwater and Leachate Monitoring Program and Response Plan.
3. Waste
   - Waste outputs
   - Storage and handling
   - Litter control
   - Pest, vermin, and noxious weed management.
   - Fire management.
4. Leachate Management system
   - Leachate collection system

Community Information and Complaints

1. Air Quality
   - Annual audit
   - Odour emissions
   - Dust and particulate matter.
2. Conditions of Licence include:-
   - Leachate Management
   - Dust
   - Management of surface waters
   - Filling Plan
   - Final landfill contours
   - Covering of waste
   - Fire extinguishment
   - Closure Plan
   - Monitoring records
   - Concentration of pollutants discharged
   - Testing methods
   - Recording of pollution complaints.

The conditions set out in the Licence will be regularly reviewed in consultation with DECCW.

The proposal is only an indication of what Dellara intend to do, so when they pass management onto someone else who's going to make sure they are following the strategies to ensure the residents aren't affected by this tip? How can you, NSW Planning, be sure that only construction waste is dumped there?

Lawrence – Submission

Response

The Project approval for the Project (with all of the comprehensive conditions) would pass to any successive company operating the facility. Dellara hastens to add it has not intentions of divesting the site following the receipt of the project approval.

In the absence of appropriately policed standards of day to day management of waste disposal sites there is the potential for illegal dumping to occur. Council's experience is that putrescibles matter is sometimes dumped on non-putrescible waste disposal sites in the absence of such monitoring. Scope also exists for hazardous toxic materials to be disposed of at the site. This is especially the case in the current proposal where contaminated soils and earth will be routinely bought onto the site for disposal. This creates the risk of contamination of ground and surface water and also the soil.

Penrith City Council – Page 10

Response

The screening and rejection policy for the site will be strictly enforced (and documented) to ensure that the risks referred to are neglible.

13.5 COMPLAINTS MANAGEMENT

Representative Comment(s)

What procedures will be put in place for the residents to be able to make complaints if there is a breach of any of the licence conditions?

O. & E. Illy – Submission

Response

A condition of the Environment Protection Licence will be that Dellara must notify the public of a Complaints Line telephone number and how the community can make a complaint.

The implementation of a Complaints Management System will include the following:-

A. A hotline for receiving complaints.
B. A commitment by Dellara to:-
   - investigate the source of the complaint;
   - take immediate action to reduce the impact of the complaint to agreed levels; and
   - contact the complainant about the action taken in response to the complaint.

C. Keep a record of complaints and responses or actions by Dellara, which will be readily accessible to the community and regulatory authorities.
D. Provide a system of feedback to the community.

13.6 "PROJECT LIFE"

Representative Comment(s)

The applicant has stated that the proposal will have a life span of thirty years.

The life span may be considerably lengthened if works are limited at heights above 57 metres AHD due to prevailing winds carrying noise to adjoining residential properties. Works may have to be suspended until weather conditions are favourable.

This issue needs further clarification from the applicant.

Penrith City Council – Page 10

Response

The Preferred Project Report nominates a Project life of 25 years. This is considered a realistic time frame for a commercial enterprise to cost effectively rehabilitated and distributed quarry site and at the same time provide an important service to community through the recycling and re-processing of the community's wastes.

13.7 CLAY/SHALE RESOURCE USE

Representative Comment(s)

Council has in the past been concerned that there may be a conflict between waste disposal and extractive industries with respect to the appropriate utilisation of the extractive materials.

Past conditions for other proposals have required that an annual audited report is required indicating the total amount of each type of material extracted and their destinations. Any extracted light firing clay/shale is to be made available only to brick making companies and in addition is not to be used as cover material or restoration material.

The current proposal has been designed with waste disposal as the predominant use. The best light firing clay/shale reserves are in Cell 3, the last cell to be developed. It is not clear from the documentation that enough land will be available for stockpiling of extracted material for sale to brick making companies. Nor is there any commitment that this scarce resource will be utilized for the purpose of making bricks.

Significant concern is expressed that the applicant has a greater interest in creating a hole for landfill rather than utilizing the extractive material itself. If this occurred, the extractive material would not be used wisely and the objectives of the Environmental Planning and Assessment Act would be comprised raising significant concern about the merits of the proposed development.

It is recommended that the utilisation of the extractive resource be given a greater priority and that an alternative staging plan be developed to ensure that the "light firing clay/shale" reserves in Cell 3 are extracted at an early stage in the process and utilised for their highest and best purpose. It should be noted that there is no commitment in the EA that this scarce natural resource will be utilised for the purpose of making bricks.

Penrith City Council – Page 9

Response

The proposed sequence of extraction optimises the recovery of light-firing clay/shale as much as possible in the context of a sequential waste emplacement facility. Dellara has pursued disussions with the brick industry to maximise the use clay/shale for brick manufacture.

13.8 UNAUTHORISED LANDFILL

Representative Comment(s)

It has recently come to Council's attention that Cell 1 contains unauthorised landfill. The depth and extent of this fill is not known. This information was not provided in the Proponent's environmental assessment. The photograph in Attachment 1 shows the nature of the unauthorised fill.

Unfortunately, the omission of this data from the EA casts doubt on the validity of the rest of the report in terms of the location of unauthorised fill on the site.

Penrith City Council – Page 10

Response

1. During the Due Diligence period of Erskine Park Quarry, correspondence between the The Department of Environment, Climate Change & Water NSW (DECCW) and Orchard Hills (NSW) Pty Ltd (the former owner) referred to clean-up notices re: soil, bricks, broken timber, plastics and broken tiles. The location of this material was referred to in the bund wall only.

2. During the Environmental Assessment, Douglas Partners investigated all bund walls to determine the quantity and make up of the C&D waste material. The C&D waste material was only discovered in Cell 1 after the Environmental Assessment was completed. The material was discovered late last year after drainage occurred in Cell 1 and the walls were excavated to relocate pipes for surface water control. At this point, all drainage works were immediately stopped.

3. None of the Departments were aware of any waste material being dumped anywhere else other than in the bund walls.

SECTION 14. ALTERNATIVES ASSESSMENT

14.1 ALTERNATIVE FINAL LANDFORM, FILLING MATERIALS AND LAND USES

Representative Comment(s)

Concern about the proposal because the proponent has not put forward any other alternatives for rehabilitating the site.

As a member of the local community I demand that alternative rehabilitation measures be considered. I want to see the quarry re-instated to the productive rural grazing land it once was, using Virgin Excavated Natural Material (VENM) in an environmentally responsible manner as was envisaged by the Penrith Council when approving the original Development Application.

Alternatively given the areas heritage the site could become part of our local tourism trade, by turning it into a park, with maybe a lake and BBQ area.

Form Letter 3

The proponent has not put forward any other alternatives for rehabilitating the site.

The proponent has not demonstrated the impacts of the different filing and extraction options;

The proponent has not demonstrated what occurs if the site is not developed as a land fill site.

Tom Thornton – Submission

One of the Director General requirements for compiling the environmental assessment was that the applicant must include an analysis of the alternatives considered, including detailed justification for the preferred alternative.

The applicant has clearly not complied with this requirement. On page A2-2 of the EA, the applicant states that this consideration is N/A (not applicable.) No justification is provided for such a position.

The applicant must provide an analysis for rehabilitating the site without the need for using waste as landfill. The applicant has provided only one option for the site. Other options that show different levels of using imported fill verses using the extracted material already stored onsite must be provided.

These analyses or documented options are essential for the decision maker to make a reasonable assessment of the best outcome in terms of environmental, economic and social impacts.

Penrith City Council – Page 8

Rehabilitation alternatives must be considered. I believe that instead of industrial waste, the existing cell could be filled with clean excavated natural material from local government works programs and quickly returned to pastured land, or given its heritage, could become part of our local tourism trade, by turning it into a park or botanical garden, with maybe a lake and BBQ area.

Form Letter 2

Response

This section provides an overview of alternatives considered during the design of the overall project and preparation of the *Environmental Assessment* of the project. The advantages and disadvantages of each option are discussed and a justification for the preferred option provided.

Overview

Dellara has explored a number of alternatives for the rehabilitation of the site, a former quarry that is no longer economically viable in its own right.

Alternative uses considered for the site include the following.

1. Do nothing.
2. Fill in the void space with the bund walls, and import natural material to fill up the remaining void space up to the pre-existing ground level.
3. Establish a Waste and Resource Management Facility which would include recycling and reprocessing of C&D and C&I waste material, continued extraction of clay/shale for the brick industry and residual waste emplacement, as set out in the April 2010 *Environmental Assessment.*
4. The preferred project is a waste and resource management facility similar to Option 3, with a reduction in the final landform height, a reduction in the maximum intake of waste material per year from 600 000tpa to 450 000tpa, a reduction in daily truck movements, and a reduction in the life of the project and the amount of residue was being emplaced on site.

A detailed commentary on each of the above options is set out as follows.

Option 1

The do nothing alternative would fail to meet and in actual fact increase the environmental damage to the adjoining creeks (Blaxland and South Creeks) and neighbouring farms and residences. The quarry left unattended and unmanaged would attract unlawful dumping, which has already occurred. Also, with the bund walls (approximately 900,000 tonnes) containing excavated natural material general solid waste and special waste (asbestos), the absence of monitoring may have long term effects with regard to leachate and contaminated dust.

Run-off of contaminated water due to its exposure to extracted clay/shale, particularly on the eastern half of the site, would allow water to enter Blaxland Creek with a turbidity level much greater than that which currently exists in the creek. The increase in the turbidity level reduces oxygen in the water which would have major impacts on the ecological community. Both Blaxland and South West creeks supply water for grazing and run past the "The Vines" Estate. Water run-off needs to be constantly managed to prevent this.

The exposed existing sections of the perimeter bund walls and the exposed areas within the site itself are currently causing slightly elevated deposited dust levels for the adjoining residents.

Finally, there is currently 360,000 tonnes of general solid and special waste in the bund walls. This waste is not properly capped, nor is there any provision for leachate control. This absence of controls would lead to long term damage and impacts on both the residents and the surrounding environment.

Option 2

Option 2 involves filling the void space initially with the bund walls, then importing natural material to fill up the remaining void space to the existing ground level. This would not include any recycling, leachate controls or cell lining, as part of waste cell establishment.

Advantages

Reduces the visual impact of the bund walls.

Returns the land to farmland.

Disadvantages

No private institution or government department could possibly afford to rehabilitate the former quarry with this model. Moving 900 000 tonnes of material from the bund walls into the void space with no income before, during or after the works, could not be financed. There is also the remaining space to be filled by imported natural fill which would be an extra cost.

High quality light firing shale (approximately 2 million tonnes) remains in this quarry, which is sought after by companies such as PGH bricks. This valuable resource for the building industry would no longer be available.

The project was accepted for assessment as a "major project" on its recycling component. The WARR Strategy 2007 states that C&I waste continues to be the largest and hardest stream to tackle (DECCW 2007), and that to meet the 2014 performance targets, the facility needs to be located between growth areas.

Option 3

This option is effective the Resource and Waste Management Facility described in the April 2010 *Environmental Assessment*.

Advantages

The site is rehabilitated with long term monitoring in an environmentally responsible way and at the same time is commercially viable.

Strong consideration in the *Environmental Assessment* was given and achieved with regard to complying with noise, air quality and water quality set by DECCW to avoid adverse impacts on the adjoining conservation area and neighbouring properties.

Maximise opportunities for resource recovery in line with NSW Avoidance and Resource Recovery goals.

Allows the continuation of a valuable clay/shale extraction for the brick industry.

Disadvantages

Local opposition to the height of final landform.

Local opposition to truck movements, life of project, dust and noise impacts.

Option 4

This option is Preferred Project described in Part B of this document.

The preferred project is similar to Option 3 but reflects the concerns raised by the various government agencies, the local community. The main issues raised during consultation and during the public exhibition were as follows:

1. Final landform
2. Traffic
3. Life of project
4. Air & noise pollution.

The preferred project has taken the above issues into account to accommodate the concerns of residents and departments.

The final landform would be reduced from 65m AHDto 58m AHD. This has reduced the maximum height of the final landform above natural ground level by a third, i.e. 21m down to 14m.

The amount of waste material received at the landfill would be reduced from 7.8 million tonnes to 6.3 million tonnes. This would also reduce the life of the project by five years.

The maximum waste material accepted on site in any given year would be reduced from 600 000 tonnes to 450 000 tonnes per annum. This would also considerably reduce the amount of truck movements.

Air and noise pollution was a concern, both from government agencies and surrounding residents, particularly in reference to the recycling operations. Changes to the recycling facility would include creating a material recycling facility (MRF) which would be enclosed on all sides except the south side, and would have stationary plant that would provide far greater control with regard to dust and noise, compared to external plant.

SECTION 15. CONSULTATION

Representative Comment(s)

Dellara have stated that only one resident of Luddenham Road have responded to the site and at The Vines estate only six responded from 78 hand delivered letters. This indicates that the people and families potentially to be affected by this proposal have not been informed of all the detail.

D. Anderson – Submission

I also feel that Dellara Pty Ltd's notification of this proposed tip was done in a sneaky, calculated manner. Only three households, in the Vines Estate, were advised of this proposal and we had to rely on our neighbours to notify us of what was happening in our own neighbourhood. A disgusting display of non professionalism, I must say. All residents should have been informed accordingly.

G. Reed – Submission

This proposed facility is also in close proximity to the suburbs of St. Clair, 4500 house and Erskine Park 2500 houses. To our amazement the many friends we contacted in this area were totally unaware of the proposal. Why have they not been contacted, in view of the fact that the 400 trucks per day will be driving through their suburb to access the tip?

R. & G. Tesoriero – Submission

There have been a number of concerns raised from members of the local community in relation to Dellara's engagement with the community. When examining these concerns it is not difficult to gain an appreciation for Dellara's less than thorough and widespread communication with the engagement of the local community. They failed to notify ALL residents within the 1km radius. When they issued updates and revisions to their original documentation, they did not provide any indication of what had been amended from the original submissions. Despite a resident specifically asking for a list of what had been changed.

The public exhibition could not have been conducted more 'under the radar' than Dellara carried out. The location was a small room located on the Mamre Homestead precinct. There are many type rooms located all over the precinct. There were not signs and no lighting to assist residents to find the room on site. As a local councillor, I wandered around the site for about 10 minutes trying to not walk into gardens, rocks, etc while trying to find the public exhibition. How could a member of the local community, and elderly members of the community, hope to find this exhibition safely?

From the outset, Dellara have not been upfront, open and transparent with the community in assisting the community to know about, let alone understand, their proposal. When a small group affected residents and families cam to understand the proposal and raise their voice through the establishment of RAID (Residents Against Industrial Dum) Committee, then Dellara began to back track by appointing a public relations company, commencing media stories to attack the Committee's legitimate fears and concerns, offering open days to visit the site, and print and distribute brochures to paint a glossy picture of their proposal.

They attempted to 'tick off' the public consultation boxes they are required to complete as part of the process, however they were not honestly and with integrity truly engaging the community.

One must ask the question why did they try to inform as few people as possible and make the public exhibition as difficult to find? Might I suggest, because the proposal is offensive, inappropriate, unnecessary and damaging to the community, livelihood of many, health of humans, environment and peaceful existence residents are now living with.

Tanya Davies – Page 16

Response

Dellara has attempted to be up-front and transparent about its project with its neighbours since its plans for the site were first developed. Dellara rejects claims that it was "sneaky" or "non-professional". Dellara's approach to consultation focussed on early advice to neighbours about the project.

The increased public interest in the Project arose only after some of "The Vines" residents misrepresented the Project and extended the perceived area of impact far beyond the area where residents would even be aware of the operations of the facility.

A summary of the consultation record through the period to date is set out below. This supported by a range of documentation in Part D6 of this document.

1. 30 January 2009 a letter was sent to local residents introducing Dellara Pty Ltd as the new owner of the former Erskine Park Quarry, explaining our intentions and providing our contact details (see CD Attachment A).
2. May / June 2009, receipt of correspondence from one resident of the Vines Estate, Mr TH Schaefer (8 Bordeaux Place) and Ms E Ridley from Darley Australia contacted us re: the neighbouring Horse Stud property.
3. 21 October 2009, Project Update No.1 with covering letter was sent to local residents, which included a feedback form for comments/questions, as well as a request for a CD of all project related documentation (see CD Attachment B).
4. November/December 2009, 15 feedback forms from neighbours were received by Dellara, all of which were responded to.
5. 28 January 2010, a CD of all Project – related documentation and a covering letter was sent to local residents, which also advised them of the upcoming public exhibition the following week (see CD Attachment C).
6. 18 February 2010, a letter was sent to residents advising them that due to some minor inconsistencies in the *Environmental Assessment*, Dellara had withdrawn its documentation relating to the Project from public exhibition (see CD Attachment D).
7. 19 April 2010, a letter was sent to residents inviting them to attend one of three **information evenings** to be held at "Mamre Homestead", St. Marys, on the 27, 28 and 29 April 2010 between 4pm and 8pm (see CD Attachment E).
8. 29 April 2010, a CD containing all modified Project related documentation with covering letter was sent to local residents, which also advised them that the *Environmental Assessment* documentation would be on public exhibition the following day (see CD Attachment F).

9. 30 April 2010, R.W. Corkery & Co Pty Limited submitted a report to Department of Planning summarising the issues raised at the community evenings hosted by Dellara (see CD Attachment G).

10. 4 May 2010, Project Update No.2 was sent to local residents (see CD Attachment H).

11. 3 June 2010, Project Update No.3 with covering letter was sent to local residents (see CD Attachment I).

12. 7 June 2010, invitation letters were sent to local residents for a **drop-in Site visit** on the 19-23 and 26 June 2010, between 1pm and 4pm. 13 residents responded (see CD Attachment J).

13. 17 June 2010, Project Update No.4 with covering letter was sent to local residents (see CD Attachment K).

14. June 30 2010, Parker & Partners sent an overview of the on-site exhibition to the Department of Planning (see CD Attachment L).

SECTION 16. OTHER

16.1 OTHER WASTE LANDFILLS

Representative Comment(s)

After having to cope with the stink of 40 years with the Gibb Street Tip on the north of me. So effectively do not want one now on the south.

Ms J.H Van Dyk - submission

Response

The "stink" associated with landfills is invariably related to sites that accept putrescible wastes. Dellara's project would not involve the acceptance of putrescibles wastes. Whilst there would be minor quantities of organics present in some of the C&I waste, the odour modelling confirms odour would not be an issue at any surrounding residences.

16.2 FLUOROCHEMICAL SURFACTANTS AND POLYMERS

Representative Comment(s)

I am an Industrial Chemist and Chemical Engineer that works with industrial chemicals. I am aware of (and worked with) a family of chemicals that were long considered benign. However, in the last 10 years numerous issues have been identified with these materials known as "flourochemicals surfactants and polymers". They have half lives between decades and hundreds of years. However, they do break down slowly and the by-products of the degradation process are environmentally persistent, bioaccumulative and toxic.

These materials are often used at fabric/carpet coatings, in paints and coatings and concrete building products. These would appear in the potential waste stream that would be targeted for the proposed Orchard Hills site. If any waste water leaked from the proposed site it would enter Blaxland Creek and make its way to the mouth of the Hawkesbury River and will be bioaccumulated by fish and shell fish, then transported into humans.

T. Schaefer – Submission

We are concerned about the use of fluorochemicals (surfactants, polymers, etc) within industrial and commercial waste, and the impact that these chemicals will have on our environment. Fluorochemicals are apparently contained in such things as fabric, carpet coatings, paints, building and concrete products.

Current research reportedly shows that fluorochemicals have a long environmental life and their degradation is low, to the extent that their environmental concentrations keep rising, as they are not disappearing as fast as they are entering the environment.

It is our general understanding the fluorochemicals can break down to an acute level of toxicity, in the range of 100 to 1000 times more toxic than shampoos and detergents (undiluted). We have learned that these are not big issues facing all waste facilities world-wide and we are concerned that the Proponent's proposal has not accounted for the management of these fluorochemicals or how they may impact with our environment over the coming decades.

Tanya Davies – Page 5-6

Response

The proposed facility includes a set of lined landfill cells and an active leachate management system to minimise the potential for groundwater contamination. If the facility receives approval from the Department of Planning, the facility would require an environment protection licence issued by the DECCW. The licence would include strict quality controls to achieve industry standards for lining the emplacement cells and environmental controls to manage waste waters, including stormwater and leachate generated on-site. Such controls will equally manage the fluorochemicals referred to in these submissions.

16.3 RESPONSIBILITY FOR SITE REHABILITATION

Representative Comment(s)

The original order to restore the land to a rural level would have carried to the present owner who knew of its existence when purchasing the land. If Dellara purchased the land knowing the order was in place then it became their responsibility.

CA Hill & Associates Pty Limited – Submission

The previous owner of the dump should be held responsible for the illegally dumped asbestos that is apparently in the site, and the new owners. Dellara Pty Ltd should also be held responsible, because they effectively purchased a toxic waste area which should have been a toxic free site.

Lorraine Vella – Submission

Response

The original development application related to extraction of clay and shale at the property. Dellara Pty Ltd is making a fresh application in relation to the property and is not proposing to undertake the clay and shale extraction activities approved under the original development consent. Such restoration requirements as are contained in the original approval are sought to be varied to the extent that the current application differs from the original requirements. In any event, the conditions of the original approval do not appear to refer to any requirement to restore the land to rural level.

16.4 ROADSIDE LITTER

Litter particularly occurs at and in the vicinity of the entrances and boundaries of waste disposal sites and occurs as a result of materials falling off vehicles entering the site and as a result of illegal dumping and wind blown litter. The illegal dumping occurs because people may arrive at a time the depot is closed and dump material in frustration. In addition waste is also dumped because people realise it is the responsibility of the depot operator to remove waste in the vicinity of the site as a condition of approval. These practices have been observed at other waste disposal sites in the City of Penrith and it is very likely they will occur at this site.

The proposal is not supported as it will generate litter around the site and along roads servicing the site.

Penrith City Council – Page 6

Response

The problem of litter adjacent to roads approaching waste facilities is invariably related to the poor practices adopted by some members of the public. i.e. through lack of covering, poor tie-downs etc. Dellara's proposal is for there to be **no** access to the site to general public. Wastes would only be conveyed to the site by enclosed/fully covered trucks that will travel to and from the facility on a regular basis – hence, litter is not expected to be a problem.

Notwithstanding the above position, Dellara will ensure that full enclosure/coverage of all loads is a component of the "Drivers Code of Conduct". Dellara representatives and its contractors will be travelling along Luddenham Road on a daily basis and will monitor the presence, if any, of any roadside litter. Any offending truck drivers would be disciplined in accordance with the Code of Conduct.

SECTION 17. THE PUBLIC INTEREST

Representative Comment(s)

The nature of the development is such that it is likely to have a detrimental impact on the natural environment and on the lives of the local community living near the site as well as near access roads servicing the site.

Penrith City Council – Page 4

Response

The *Environmental Assessment* and the Preferred Project Report has placed very strict safeguards on the operation of the facility to protect both the local environment and the local community. There are also very strict conditions proposed in the Environment Protection Licence as set out by DECCW to protect the local environment.

Detailed stormwater and leachate management plans required by DECCW will be submitted before any operations begin and will be monitored and carried out in accordance with the proposed contained documents.

Dellara must develop in consultation with DECCW an Air Quality Management Plan. This will include the number and location of continuous monitoring points ensuring sufficient representation of the relevant sensitive receptors at each stage of the proposed works.

In its Statement of Commitments, Dellara has committed to revegetating the northern bund wall with native trees to landscape the wall when it is complete. Dellara will also enhance the existing riparian vegetation adjacent to Blaxland Creek.

The access to the Project Site is excellent. The facts are.

i) Mamre Road is a major road running between the F4 and Elizabeth Drive (and the M7). The maximum daily truck movements related to Dellara's facility amount to 2% of total traffic on Mamre Road.

ii) The maximum daily truck movements on Luddenham Road amount to 9% of total traffic.

iii) There are only two residences within 600m of the Luddenham Road between Mamre Road and Patons Lane with only a few property entrances.

iv) There are 5 homes within 200m of the intersection between Luddenham Road and Patons Lane.

The proposed site is less than 500 metres from the nearest residential area and there are more than 18,000 homes, 10 schools and 16 child care centres within 5 kilometres of the proposed site. There are home based businesses that are going to be severely impacted if this proposal is approved. The local schools within this 5km radius have also voiced their serious opposition to this proposal.

Tanya Davies – Page 16

Response

Statements of fact such as those listed above only serve to unnecessarily alarm far more people than would ever be affected by the Project. The Project has been designed in such a way that most of the people nominated would never know about or be affected by the Project.

A reality check is required as there are numerous locations around Sydney (and elsewhere) where similar or more homes, schools, child care centres are located within 5km of waste management facilities.

Even local Penrith area examples are found.

i) The entire suburb of St Clair is located between 650m and 3.3km from the Enviroguard waste facility – a facility that access waste at a rate at least twice that now proposed by Dellara.

ii) The Mulgoa Christian School has co-existed with the activities of the Penrith Waste Landfill over the past 15 years. The school land lies immediately north of the land used for waste disposal and its entrance adjoins the entrance to the waste facility.

Dellara's facility **will not** accept putrescible wastes which, historically, are the source of most odour complaints.

The Project **will not severely** impact the number of persons claimed. When all **facts** about the project are considered, the locational factors including access by road, establish the Project Site is a suitable site for the proposed facility.

Professional advice from K.D. Wood Valuations (Aust.) Pty Ltd, reveals that local buyer resistance already exists to properties within The Vines Estate because of the known proposal for the Waste Facility. K.D. Wood Valuations consider that property value reductions of between 10% and 20% would be realistic within The Vines if the Waste Facility was approved.

C & M Watkins - Submission

Response

Dellara has sought the opinion of CB Richard Ellis an International Property Consulting Company in relation to the effect on neighbouring property values.

In the opinion of the company, there is no substantiated evidence in the market place of a material change in neighbouring property values when an existing quarry use continues with the addition of associated and compatible uses such as the proposed by Dellara Pty Ltd.

Furthermore, it is known the property at 15 Cabernet Circuit has recently sold at a price of $890,000.

It is a common observation with claims of potential losses of property values with competitive land uses established nearby for such concerns to disappear once a project commences as it is recognised the perceptions regarding impacts do not materialise – hence the absence of substantiated evidence in the market place.

The Vines Estate was established by the original owner of the Erskine Park Quarry intentionally (in accordance with NSW planning guidelines set out in *Sydney Regional Environmental Plan 9*) 500m north of the quarry. This set back was **and is** considered appropriate for a quarry and will equally be applicable for a state-of-the-art recycling and re-processing facility, particularly one that does not accept putrescible wastes.

OTHER RELATED AND CONCLUDING COMMENTS

Addressing issues of Public Interest invariably involves a wide range of issues as well as wide geographic areas. A brief overview of the main issues for the local and wider public interest is provided below.

1. Protection of the Local Environment (Blaxland Creek, South West Creek and Adjoining Farms)

A number of persons, including surrounding rural land owners have expressed concerns with impacts upon the local drainage network.

A Stormwater Management System (SMS) that Dellara had intended to develop in Year 1 of operations, was brought forward to May 2009 to mitigate any adverse effects from the discharge of excess water from the quarry to Blaxland Creek and the riparian zone.

The objective of the SMS was to collect all surface water on site into a single dam, turbidity being the main parameter requiring management. The presence of highly dispersible soils within the site required the application of a flocculant to reduce turbidity in the sediment dams to appropriate levels before the water could be pumped into Blaxland Creek.

During an on-site visit by a representative from the NSW Office of Water in May 2009, concern was expressed that excessive flow of water discharge into Blaxland Creek would be detrimental to banks and catchment. After careful consideration, Dellara designed the discharge of water via a 150mm pipe running into an existing dam near Blaxland Creek and Licensed Discharge Point at a maximum rate of 20 litres per second, which is well within criteria suggested by the NSW Office of Water.

In the interests of the local environment and the local community, Dellara has brought forward the SMS to protect the local waterways and farmland from any harmful discharge of water that was previously coming from the site. Dellara has already committed to controlling the quality and the flow rate of water to protect the local environment.

2. Blaxland Creek Core Riparian Zone

Due to the significance of the Cumberland Plain Woodland and the requirement to vegetate a minimum core zone around Blaxland Creek, the project will include the removal of section of the northwestern bund wall from the existing Blaxland Creek core riparian zone and a reduction in the slope of the bund wall itself.

The removal of the bund wall to accommodate and increase natural vegetation will enhance the preservation of both the riparian zone and the Cumberland Plain Woodland, which is abundant in the adjoining property.

3. Mitigate Dust and Visual Impacts of the Bund Walls

One of the most disturbing legacies for local residents of previous operations of the site are the bund walls. The bund walls currently range in height from 6m to 19m, and wind erosion due to the size, location and lack of suitable vegetation, causes some dust fallout, which is already showing impacts for the surrounding residents.

The proponent has committed to address this problem well before licensed operations commence.

During the construction phase (six months prior to commencement of operations), the outer slopes of the bund walls will be reduced in angle to become part of the final landform. During the re-shaping of the bund walls, a soil layer will be placed upon them to enable re-vegetation, which will reduce erosion and the visual impact of the bund walls.

The 5000 tonnes of special waste containing small quantities of asbestos was discovered during site investigations. This will be removed from the bund walls under the supervision of an OH&S consultant, and emplaced into a specially designed cell. This process will remove a concern for the nearby neighbours.

4. Rehabilitation of the Disturbed Site

The former operator of the quarry allowed illegal and unauthorised dumping of waste materials, unmonitored discharges into Blaxland Creek, formation of illegal bund walls creating erosion, and dust problems, placement of construction and demolition waste containing small quantities of asbestos near the top of the eastern wall.

The Penrith City Council has been unsuccessful in getting the former owner/operator to fix any of the above issues. The site as it stands has a major negative impact on both the environment and the local community. Neither the Penrith City Council nor the former owner are in a position to address any of these issues.

Dellara has already taken responsibility for the quality of water being discharged into Blaxland Creek. During the construction phase, the proponent will address the bund walls by re-shaping and re-vegetating them to blend with the final landform. The small quantity of illegally dumped asbestos will be removed from the section of the eastern bund wall under supervision of an OH&S consultant (which will protect both the workers and the local residents) and emplace the asbestos material in a specially designed cell.

5. The Local Road Network

The road network will be vastly improved by Patons Lane being sealed. An engineering construction certificate for the roadworks is already in place. All clearing for the road has been undertaken and it only remains for the road to be constructed following receipt of project approval for the overall project.

In addition to this, the proponent has committed to contributing via a levy towards the on-going maintenance of Luddenham Road.

6. Monitoring the Performance of the Facility

Dellara is extremely confident that the environmental performance of the facility will comply with all nominated criteria.

During the operation of the facility the proponent has committed to noise, water and air quality monitoring compliant with DECCW criteria. Particular emphasis would be placed upon real-time monitoring during the operation of the facility to enable Dellara to be aware of its impacts and nearby residents to be assured that the nominated criteria are being satisfied.

7. The Final Land Use

The proponent is committed to returning the final landform back to land suitable for grazing. In a submission from Councillor Tanya Davies of Penrith City Council, it was requested that the site be "returned to pastureland, or given its heritage, could become part of our local tourism trade, by turning it into a park or botanical garden, with maybe a lake, or BBQ area". To accommodate public interest on this project, Dellara is prepared to consider an alternative final landform suitable for an alternative use.

8. Employment

The project will provide employment opportunities for local residents. Direct full-time employment for approximately 20 people, direct part-time employment for 10 contractors on site, employment for an estimated 10-15 truck drivers and indirect employment through flow-on benefits, including purchase of consumables and spending of employee wages.

9. Sydney Metropolitan Area

The Orchard Hills Waste and Resource Management Facility was declared by the Director-General of the NSW Department of Planning to be a major project due to the contribution it could make to the recycling of Commercial and Industrial (C&I) and Construction and Demolition (C&D) sectors of the Waste Strategy of NSW.

The recycling targets set out by DECCW include challenges such as the growing demand for infrastructure to facilitate the ever consolidating metropolitan region. Facilities will need to be in locations that optimise logistics, including distances travelled, access issues and the relationship to the network of facilities (DECCW, 2007).

The Orchard Hills facility is in a good location for a recycling facility to service the proposed employment lands and the Western Sydney employment hub identified in the NSW State Government's Metropolitan Strategy for Erskine Park and Eastern Creek. Hence, the wider community will benefit from the improved recycling component.

The Waste Strategy 2007 identifies that the recycling of C&I waste continues to be the largest and hardest waste stream to achieve improved recycling rates. The recycling facility that would be established at Orchard Hills is a Materials Recycling Facility (MRF).

10. Valuable Resources for the Brick Industry

The Orchard Hills facility has 2 million tonnes of light-firing shale, which is not only very high in quality but is also well located in relation to brick manufacturing plants. This shale has been used by PGH Bricks in the past for its light coloured bricks and will become an increasingly important raw material for the brick industry to supply Sydney's planned northwest and southwest growth areas.

PGH Bricks are very keen to continue the quarry of not only the 2 million tonnes of light-firing shale, but also the remaining resources (approximately 2 million tonnes) which are suitable for the manufacture of darker bricks.

SECTION 18. FACTUALLY INCORRECT STATEMENTS IN SUBMISSIONS

Representative Comment(s)

The former owner illegally dumped over 5000 tonnes of asbestos and the local residents have only just discovered this.

CA Hill & Associates Pty Limited – Submission

The quarry has already been lined with 5 000 tons of asbestos contaminated material in order to the stop the noise level of the quarry.

O. & E. Illy – Submission

Response

The fact is there are approximately 5 000 tonnes of C&D waste on site within the eastern bund wall containing up to 0.042% bound asbestos fragments.

The dirt mound that you can see from the Vines Estate towards the Quarry site would be the start of the proposed mountain and would reach a height of approx 30 meters from natural ground level and extend across to approx 800 meters.

D. Anderson – Submission

Response

The original proposal was designed with the maximum height of the final landform being 21m above natural ground level. The proposal in the Preferred Project Report reduces the maximum height by 7m to a maximum 14m above the natural ground level. The upper level of 58m AHD is only 2m higher than the natural landform on the southwestern corner of the Project Site.

Any airborne particles from the chimneys potentially can fall towards the residents located in the hollow 500 metres away.

G & R Pagano - Submission

Response

No airborne particles would be emitted from the "chimneys" or more appropriately described as a gas/leachate drainage column without any surface structure.