Concept Plan Approval

Section 75O and 75P of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Infrastructure, I approve the Concept Plan referred to in Schedule 1, subject to the modifications in Schedule 2, and the future environmental assessment requirements for subsequent development applications for components of the Concept Plan, in Schedule 3.

Richard Pearson
Deputy Director-General

Sydney 21 November 2012

SCHEDULE 1

Application No:	08_0067
Proponent:	Tweed Shire Council
Approval Authority:	Minister for Planning and Infrastructure
Land:	Lot 1 DP 34555 Lot 1 DP 1159352 Lot 602 DP 1001049
Project:	Eviron Road Quarry Landfill Project

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DEFINITIONS

BCA	Building Code of Australia
Concept Plan	The Concept Plan described in the EA, as generally depicted in Appendix 2
Council	Tweed Shire Council
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department (or nominee)
EA	Environmental Assessment titled *Report for Eviron Road Quarry and Landfill Proposal Part 3A Environmental Assessment* dated June 2011 and the associated response to submissions dated May 2012
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning & Assessment Act 1979*
EP&A Regulation	*Environmental Planning & Assessment Regulation 2000*
General Solid Waste	As defined by the *Waste Classification Guidelines (DECCW 2008)*
Haul Road	The area shown as a blue line shown on the plan in Appendix 2
Land	In general, the definition of land is consistent with the definition in the EP&A Act
Minister	Minister for Planning and Infrastructure
North Valley Quarry and Landfill	The area shown as purple shading on the plan in Appendix 2
Project	The project described in the EA, as generally depicted in Appendix 2
Proponent	Tweed Shire Council, or its successor
Quirks Quarry Landfill	The area shown as blue shading on the plan in Appendix 2
Rehabilitation	The treatment or management of land disturbed by the project for the purpose of establishing a safe, stable and non-polluting environment
Site	The land listed in Schedule 1
Stage 1 Project Application	Project Application 08_0068 for Quirks Quarry Landfill and West Valley Quarry
Statement of Commitments	The Proponent's Statement of Commitments in Appendix 1
West Valley Quarry and Landfill	The area shown as yellow shading on the plan in Appendix 2

SCHEDULE 2
CONCEPT PLAN MODIFICATIONS

GENERAL TERMS OF APPROVAL

1. Concept plan approval is granted for 3 landfills and 2 quarries, comprising:
   (a) Stage 1: Quirks Quarry Landfill and West Valley Quarry;
   (b) Stage 2: West Valley Landfill and North Valley Quarry; and
   (c) Stage 3: North Valley Landfill.

   Note: The general scope of this approval is depicted in the plans in Appendix 2.

MODIFICATIONS TO THE CONCEPT PLAN

2. Prior to the lodgement of any development applications to develop stages 2 and 3 of the Concept Plan, the Proponent shall prepare a staging plan in consultation with relevant State Government agencies to the satisfaction of the Director-General. The plan must describe how development will be staged over the life of the Concept Plan.

3. The Proponent must not lodge any development applications for stages 2 and 3 of the Concept Plan until it has received written agreement to do so from the Director-General.

   Note: In seeking the Director-General's written approval, the Proponent must demonstrate that it has met all relevant requirements of 08_0068.

CONSISTENCY OF FUTURE DEVELOPMENT

4. The Proponent shall ensure that all future development on site is carried out generally in accordance with the:
   (a) EA;
   (b) statement of commitments (see Appendix 1);
   (c) Concept Plan as modified, including any staging plan (Condition 2 of this schedule); and
   (d) conditions of this approval.

5. If there is any inconsistency between the above, then the most recent document shall prevail to the extent of any inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

LIABILITY TO LAPSE

6. This approval shall lapse if the Proponent does not physically commence the development of any of the components of the Concept Plan within 5 years from the date of this approval.

LIMITS ON APPROVAL

7. This approval does not allow any components of the Concept Plan to be carried out without development consent being obtained.

Waste Material Volume

8. The Proponent shall not receive more than 75,000 tonnes of General Solid Waste on the site in any calendar year.

Quarrying Operations

9. Unless the Director-General agrees otherwise, the Proponent may operate:
   (a) West Valley Quarry for up to 11 years; and
   (b) North Valley Quarry for up to 5 years.

Quarrying Material Volume

10. The Proponent shall not extract more than 200,000 tonnes of extractive material from the site in any calendar year.

SCHEDULE 3
DEVELOPMENT APPLICATION REQUIREMENTS

FUTURE ENVIRONMENTAL ASSESSMENT REQUIREMENTS

1. The environmental assessment requirements in this schedule apply to all future development applications under Part 4 of the EP&A Act.

West Valley and North Valley Landfills

2. The Proponent shall ensure that in seeking approval for West Valley and North Valley Landfills, the development application includes:
   (a) clear demonstration that the development is consistent with this Concept Plan and the limits of approval (see Schedule 2);
   (b) clear justification that the development meets the relevant requirements of Clause 123 of State Environmental Planning Policy (Infrastructure) 2007;
   (c) a detailed description of the development including:
      - details of any proposed building works, including engineering and/or architectural plans, an assessment of compliance with the BCA;
      - details of the landfill design, including landfill gas, leachate and stormwater management system;
      - an infrastructure plan to show how all essential utilities and services are to be provided;
      - the various components and stages of the development; and
      - the likely inter-relationship between the existing and proposed operations on site including details of existing approvals, management systems and details of past environmental performance.
   (d) consideration of whether the development is consistent with the principles included in the following publications: *EIS Guideline: Landfilling* (Department of Planning) and *Environmental Guidelines: Solid Waste Landfills* (EPA);
   (e) a risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment;
   (f) a detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:
      - a description of the existing environment, using sufficient baseline data;
      - an assessment of the potential impacts of all stages of the development taking into consideration any relevant guidelines, strategies, policies, plans and statutory provisions and identification and justification of any inconsistencies; and
      - a description of the measures that would be implemented to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the development, including detailed contingency plans for managing any potentially significant risks to the environment.
   (g) a description of all environmental management, mitigation and monitoring measures;
   (h) justification for the development, taking into consideration: the suitability of the site, the economic, social and environmental impacts of the development, and whether it is consistent with the objects of the *Environmental Planning and Assessment Act 1979*, and in particular the principles of ecologically sustainable development;
   (i) a waste assessment which determines the type of waste to be received on site, how it will treated, handled, stored and disposed of at the facility and the potential impacts of doing so (taking into consideration any waste recovery methods and monitoring programs);
   (j) an assessment of groundwater and surface water impacts;
   (k) how soils and stormwater will be managed to prevent impacts such as cross contamination and erosion;
   (l) a flooding assessment;
   (m) an air quality assessment, including odour;
   (n) a greenhouse gas assessment;
   (o) a biodiversity assessment;
   (p) a traffic assessment including traffic volumes that are likely to be generated and how this traffic will impact on the safety and efficiency of the surrounding road network and details of suitable infrastructure required to ameliorate any traffic or safety impacts;
   (q) a construction, operational and road traffic noise assessment;
   (r) Aboriginal and non-Aboriginal heritage assessments;
   (s) a hazard assessment;
   (t) a visual impact assessment and a landscape management plan;
   (u) a description of the measures that would be implemented to:
      - monitor and maintain the infrastructure and landscaping on site over time;
      - minimise energy and water use on site;
      - avoid, minimise, reuse and recycle waste;

(v) a socio-economic assessment to demonstrate a net benefit to the community paying particular attention to potential impacts of the development on waste minimisation and resource recovery in the region.

(w) justification for the final landform and details regarding the potential future land uses and a description of how the site would be progressively rehabilitated and integrated with the final landform and the proposed Tweed Regional Botanical Gardens; and

(x) consultation with Council and relevant Government agencies.

North Valley Quarry

3. The Proponent shall ensure that in seeking approval for North Valley Quarry, the development application includes:

(a) a clear demonstration that the development is consistent with this Concept Plan and the limits of approval (see Schedule 2);

(b) a detailed description of the development including:

- details of any proposed building works, including engineering and/or architectural plans, an assessment of compliance with the BCA;
- details of the surface water and stormwater management system;
- an infrastructure plan to show how all essential utilities and services are to be provided;
- various components and stages of the development; and
- the likely inter-relationship between the existing and proposed operations on site including details of existing approvals, management systems and details of past environmental performance.

(c) a risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment;

(d) a detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:

- a description of the existing environment, using sufficient baseline data;
- an assessment of the potential impacts of all stages of the development taking into consideration any relevant guidelines, strategies, policies, plans and statutory provisions and identification and justification of any inconsistencies; and
- a description of the measures that would be implemented to avoid, minimise, mitigate, rehabilitate/remediate, monitor and/or offset the potential impacts of the development, including detailed contingency plans for managing any potentially significant risks to the environment.

(e) a statement of commitments, outlining all environmental management and monitoring measures;

(f) justification for the development, taking into consideration: the suitability of the site, the economic, social and environmental impacts of the development, and whether it is consistent with the objects of the *Environmental Planning and Assessment Act 1979*, and in particular the principles of ecologically sustainable development;

(g) an assessment of the potential impacts on soils and land capability (including salinity and contamination), landforms and topography and land use, including agricultural, forestry, conservation and recreational use;

(h) a surface and groundwater assessment including:

- an assessment of potential impacts on the quality and quantity of surface water and groundwater resources;
- a detailed site water balance;
- an assessment of proposed water discharge quantity and quality against receiving water quality and flow objectives;
- identification of any licensing requirements or other approvals under the *Water Act 1912* and/or *Water Management Act 2000*;
- demonstration that water for the construction and operation of the development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plan (WSP) or water source embargo;
- a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP; and
- a detailed description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts;

(i) a biodiversity assessment;

(j) a heritage assessment;

(k) an air quality and odour assessment;

(l) a greenhouse gas assessment;

(m) a construction, operational and road traffic noise assessment;

(n) a blasting assessment;

(o) an Aboriginal and non-Aboriginal heritage assessment;

(p) a traffic assessment including traffic volumes that are likely to be generated and how this traffic will impact on the safety and efficiency of the surrounding road network and details of suitable infrastructure required to ameliorate any traffic or safety impacts;

(q) a visual impact assessment and a landscape management plan;
(r) if a hazard assessment;
(y) a description of the measures that would be implemented to:
- monitor and maintain the infrastructure and landscaping on site over time;
- minimise energy and water use on site;
- avoid, minimise, reuse and recycle waste;

(s) a socio-economic assessment to demonstrate a net benefit to the community paying particular attention to potential impacts of the development on waste minimisation and resource recovery in the region.
(t) justification for the final landform and details regarding the potential future land uses and a description of how the site would be progressively rehabilitated and integrated with the final landform and the proposed Tweed Regional Botanical Gardens; and
(u) consultation with Council and relevant Government agencies.

APPENDIX 1
STATEMENT OF COMMITMENTS

Issue	Commitment
Environmental Management Plans	Environmental management plans would be prepared and implemented to guide environmental management and monitoring activities during establishment and operation of all landfills and quarries. This will take the form of an LEMP for Quirks Quarry Landfill and a Plan of Management for West Valley Quarry. Council is committed to best practice environmental management for both the quarry and landfill activities. A draft LEMP has already been prepared for the Quirks Quarry Landfill which outlines environmental management requirements for the waste disposal activities, including conceptual leachate management. The final LEMP will be developed in conjunction with the detail design of the landfill and will include a Soil, Water and Leachate Management Plan. It will address the EPA's requirements outlined in the recommended conditions of approval provided on 19 January 2012, and will include a surface water, groundwater and leachate response plan providing protocols to investigate and respond to potential surface or groundwater contamination associated with the development. The Office of Water and EPA will be consulted in the development of the LEMP which will be undertaken in conjunction with the detailed landfill design, particularly regarding the monitoring and management of stormwater, groundwater, leachate and landfill gas. The quarry plan of management will include the following sub-plans: ◗ Surface Water management and response plan – The plan would include a site water balance, the measures to retain and re-use the maximum amount of water on-site and ensure the surface run-off water is maintained at acceptable levels. The plan would also include erosion and sediment mitigation measures. ◗ Groundwater management and response plan – the plan would include baseline groundwater data, impact assessment criteria, trigger levels, a program to monitor, assess and report on groundwater inflows and impacts on regional aquifers and surrounding watercourses.
Environmental Management Plans (cont).	◗ Air quality management plan – The plan would include mitigation measures for control of odours, dust and particles and monitoring undertaken. Noise management plan – The noise management plan will include noise and vibration control measures and the required monitoring activities. ◗ Traffic management plan – The plan will include parking and access requirements, safety signage and training of personnel in traffic management. ◗ Fire management plan – The plan would include details of sources of water for firefighting, the need for fire extinguishers on all mobile equipment and suitable training for site-based personnel as well as a fire response plan.
Surface Water	Specific measures to maintain the quality of onsite and downstream surface water quality for the Stage 1 Project Application have been outlined in the Quirks Quarry Landfill Concept Design Report and draft Landfill Environmental Management Plan. General concepts for the West Valley Quarry have been provided in the Preliminary Quarry Study and include the following (note that a Soil, Water and Leachate Management Plan will accompany the application for an Environmental Protection Licence which will include further detail): ◗ A site water balance for quarrying and landfilling activities will be undertaken which will provide details of water sources and security of water supply, site water use and water management, off site water transfers, measure to minimise reuse of contaminated water ◗ Clean stormwater runoff from undisturbed or areas upstream of the quarry and landfill activities will be diverted around the activities to minimise the quantity of stormwater required to be stored (and potentially treated) onsite. ◗ Stormwater runoff generated from active areas of the quarry and landfill will be captured in sediment basins and reused onsite wherever possible (for example for dust suppression). Concept designs for sediment basins associated with the Stage 1 Project Application have been developed and devices have been sized to minimise the opportunity for uncontrolled discharge from the site. Sizing and location of the stormwater management devices will be further refined during detail design. ◗ A perimeter bund will be established around the northern end of the Quirks Quarry Landfill to a minimum RL of 6.5m AHD to address flooding in a 100 yr ARI regional flood event. In addition, the base of the landfill in Stage 3 will be raised by between

	1m and 3m (based on the finished quarrying levels) such that the base of the landfill will fall towards the eastern end of the cell to reduce the impacts of potential overflowing of the perimeter bund. ◗ The haul road from Stotts Creek has been designed to provide flood immunity to activities in the North and West Valley areas in 100 yr ARI regional flood event. ◗ Any works within 40 m of a watercourse will be undertaken in a manner consistent with the NOW (2008) *Guidelines for Controlled Activity Approvals.*
Surface Water (continued)	◗ Leachate generated by the landfill activities and any stormwater which comes into contact with waste will initially be stored within the waste cell and once characteristics such as quantity, quality and generation rates are determined a leachate treatment process will be established. Prior to the establishment of a leachate treatment process, leachate levels within the landfill will be closely monitored to ensure that the storage capacity of the waste is not exceeded and if necessary leachate can be pumped out and appropriately disposed of to avoid impacts on surface water quality. ◗ Should any of the sediment basins proposed, be classified as dams under SEPP 52 *Farm Dams,* they will be constructed and operated in accordance with this policy and with any Harvestable Right Order published under section 54 of the *Water Management Act 2000.* ◗ The baseline surface water monitoring program will continue in the lead up to the establishment of the landfill and quarry such that site specific water quality objectives/trigger values can be established. During quarry and landfill operations surface water monitoring will be conducted in accordance with the conditions of the Environmental Protection Licence (including specified frequencies and analytical suite). ◗ Following completion of landfilling, sediment basins used for stormwater detention will be converted to wetlands.
Groundwater	Minimisation of potential impacts to groundwater resources will be ensured by the following commitments: ◗ Preparation of a Soil, Water and Leachate Management Plan including details of planned responses and proposed measures to investigate potential groundwater contamination associated with the development. ◗ Further geotechnical and hydrogeological investigations will be undertaken during detail design of the landfills and quarries to address potential issues associated groundwater management such as dewatering during quarrying and hydraulic conductivity and connectivity between alluvial deposits and bedrock. ◗ The additional groundwater investigations for West Valley Quarry will be undertaken in consultation with the Office of Water and will include installation and monitoring of groundwater bores to determine groundwater levels, flow direction and quality within the alluvium and hard rock aquifers, bore logs, data logging of groundwater levels and fortnightly sampling data of groundwater quality to establish temporal trends for a minimum period of 12 months, and pump testing to determine hydraulic properties and yield for the alluvium and hard rock aquifers. ◗ A groundwater model for the West Valley Quarry will be prepared that identifies the extent of depressurisation resulting from the project, predicted drawdown or loss of supply to any water courses or groundwater users, and the predicted impacts on any groundwater dependent ecosystems
Groundwater (cont)	◗ No further excavation below the final quarry floor levels will be undertaken for the establishment of the waste cells for Quirks Quarry (and future North and West Valley) landfills. ◗ Council will ensure the proper compaction of the floor of each landfill cell to achieve a uniform low permeability equivalent to less than 1 x 10^{-9} m/s for a depth of at least 0.9 m. The in situ permeability of compacted material would be tested by sampling and laboratory testing to ensure the required permeability level has been achieved in accordance with a construction quality assurance (CQA) plan. In addition a high density polyethylene liner will be installed across the base of the landfill to further prevent migration of leachate to the local groundwater environment. ◗ The base of the Stage 3 cell of the Quirks Quarry Landfill will also be raised by between 1m and 3m (based on the finished quarrying levels) to further reduce potential impacts to the local groundwater environment.

	◗ Council would continue to undertake a groundwater monitoring program including groundwater level and quality monitoring both for continued baseline data collection prior to commissioning of site activities and will continue the program in accordance with the eventual EPL's for the proposed activities. ◗ In the event that any onsite infrastructure intercepts the water table, or if dewatering is required consultation will be undertaken with NOW officers during detail design to determine licencing issues. ◗ Any required groundwater licenses will be obtained and associated works appropriately authorised prior to works commencing.
Acid Sulfate Soils and Pyritic Materials	Council makes the following commitments to manage acid sulfate soils and pyritic materials: ◗ Additional acid sulfate soils investigations along the haul road during detail design to better characterise potential issues and identify management requirements for construction of the road; ◗ Development of a revised Acid Sulfate Soils Management Plan following completion of additional investigations; ◗ Ongoing groundwater monitoring as described in the groundwater commitments to monitoring acid sulfate soil indicators; and ◗ Vigilant monitoring of any clay imported from offsite sources for the construction of landfill liners.
Acid Sulfate Soils and Pyritic Materials (cont)	◗ If required the design of a management system for pyritic materials site will follow detailed drilling, testing and delineation of PAF material to be conducted as part of the detailed design for the quarry. The key management measure for pyritic materials will be to avoid disturbance or drainage of PAF. Where this is not feasible, typical management options will be based on: – Maintaining saturated conditions to exclude oxygen and prevent oxidisation; – Excluding air to prevent oxidisation; – Capping to exclude water, to prevent leachate generation, by separate cell construction or storage in or beneath post-quarry landfill; – Carbonate-rich capping, to develop alkaline infiltration to neutralise leachate and coat sulfide grains to reduce oxidisation (passivation); – Direct neutralisation of potential acidity of excavated PAF material; or – A combination of the above. ◗ Additional soil and rock testing for net acid generation (NAG) and net acid potential (NAPP) and metallic elements will be undertaken during detail design together with geotechnical investigations. Additional hydrogeological assessment will also be performed, based on water level data from all existing monitoring bores and core holes, to assess the final post-operation water table, to determine if significant quantities of PAF will be drained in-situ, leading to additional risk of AMD generation.
Soils and Land Capability	A Soil, Water and Leachate Management Plan will be prepared to the satisfaction of the EPA as part of the application for an Environmental Protection Licence and will include all detailed measures for managing soils and land capability. As a minimum Council will implement the following measures: ◗ Minimise soil erosion and sediment mobilisation to the downstream receiving environment identification of high risk activities and areas, and development of appropriate mitigation and control measures. ◗ Topsoil removed for quarrying would be stockpiled and used later for revegetation and rehabilitation of the final landfill cover. ◗ Care would be taken to ensure that topsoils and subsoils are not stripped when they are too moist. ◗ Topsoil stockpiles would be up to 1 m high and subsoil/overburden stockpiles would not exceed 3 m in height. ◗ Subsoil and topsoil stockpiles would be located within the footprint of the landfill, quarry or on the upper surface of completed landfill stages.

	◗ Stabilisation measures would be used until vegetation is established on the stockpiled soil.
Biodiversity	Council makes the following commitments in terms of maintenance and protection of the biodiversity values of the site: **Substantially avoid clearing of areas of higher ecological significance.** ◗ The quarry footprint and haul road have been designed such that they minimise clearing of native vegetation and predominantly avoid areas of higher ecological value vegetation. ◗ Council has realigned the haul road concept to avoid clearing of vegetation type 7, and commits to the avoidance of clearing of an area of this vegetation type that falls within the eastern section of the quarry footprint currently shown. The quarry footprint would be revised to reflect this during detailed design. ◗ Retain and Manage Higher Ecological Value Areas – Council commits to a restriction on use on a portion of Lot 1 DP 1159532 registered on the title imposing a legal obligation in perpetuity to abide by the management actions of a Habitat Management Plan (to be developed by Council). A plan showing the habitat areas on the lot would be registered with the s88B instrument to identify the area burdened by the restriction. ◗ Areas of higher ecological value will be clearly marked by fencing with high visibility fauna permeable fencing or similar. Include these areas as 'vegetation protection areas' in an approved Environmental Management Plan.
	Maintain and enhance or restore habitat connectivity. ◗ Retain a vegetated corridor along the ridgeline - the quarry footprints have been designed such that they retain a vegetated corridor along the western ridgeline. ◗ Develop an east-west movement corridor - To provide future potential habitat and an alternate route for connectivity across the site, planting of suitable riparian / floodplain vegetation will be undertaken adjacent to the watercourse in Lot 1 DP1159352. This will create a vegetated corridor that connects the lowland areas to the ridgeline and effectively connect vegetation adjacent to the eastern side of Quirks Quarry to retained eucalypt open forest in the central western area of the site and link to the ridgeline. ◗ Restore connectivity along the southern boundary – a vegetated corridor would be developed along the southern boundary of Lot 1 DP 34555 along Eviron Road that would contain species consistent with existing remnant vegetation along the ridgeline. ◗ Undertake works as per a finalised Restoration Plan. A Preliminary Restoration Plan (refer Appendix L) has been prepared by Council to guide works in the abovementioned corridors.
Biodiversity (continued)	**Minimise impact to conservation significant fauna species.** ◗ Manage Clearing - all clearing of vegetation will be undertaken in the presence of an experienced fauna spotter-catcher. ◗ Contractor awareness – all contractors (construction and operation) to be made aware of the potential presence of fauna species. ◗ Heavy vehicle movements - restricted speed limits to be implemented near to vegetated areas. ◗ Environmental Management Plans - management plans will include actions for management of potential direct and indirect impacts to fauna species. ◗ **Locate and translocate threatened plant species.** ◗ Target surveys for threatened plant species will be undertaken once the final development footprint has been confirmed. ◗ A 'Preliminary Translocation Plan for Threatened Plants' has been prepared by Council in accordance with the *Guidelines for the Translocation of Threatened Plants in Australia* (Appendix L). ◗ In the event that any additional threatened species are located in the development footprint, the Preliminary Translocation Plan would be revised to incorporate additional individuals or species.
	Maintain habitat values. ◗ Environmental Management - implement measures detailed in the approved EMP and

	undertake site works in general accordance with AS 4970-2009. ◗ Maintain habitat - nest boxes will be installed in vegetation to be retained and managed on Lot 1 DP 1159532 in order to offset a reduction in hollow recruitment. In relation to vegetation protection: ◗ Establish vegetation protection areas prior to construction. ◗ Activities permitted in the vegetation protection area would include weed management, habitat management, and restoration / translocation activities. ◗ Activities prohibited in the vegetation protection areas would include: use of or parking of vehicles and equipment (unless associated with a permitted activity), placement of construction materials, refuse, excavated spoils and stockpiling, use of tree trunks as a winch support.
Cultural Heritage	Council commits to the following actions regarding the management of cultural heritage at the site: ◗ On-going consultation with all registered local Aboriginal representatives to develop a Cultural Heritage Management Plan for the site; ◗ All reasonable efforts will be made to avoid items of Aboriginal and European Cultural Heritage. If impacts are unavoidable, mitigation measures will be negotiated with the EPA and local community. ◗ The Cultural Heritage Management Plan will include as a minimum: – *Procedures for ongoing Aboriginal consultation and involvement.* – *Management of any recorded sites of higher archaeological potential within project footprint.* – *Responsibilities of all stakeholders.* – *Details of proposed mitigation and management strategies of all sites.* – *Procedures for the identification and management of previous unrecorded sites (excluding human remains).* – *Details of an Aboriginal cultural heritage education program for contractors and personnel associated with construction activities.* – *Corrective procedures in the unlikely event that a non compliance with the CHMP is identified.* ◗ A program of site monitoring by representatives of the Aboriginal Party during activities causing ground disturbance for the recognised areas with a higher potential for the presence of unidentified cultural heritage. In the event that additional Aboriginal objects are uncovered during the monitoring program, the objects are to be recorded and managed in accordance with the requirements of the *National Parks and Wildlife Act 1974*. ◗ If human remains are located, all works must halt in the immediate area and the NSW Police must be immediately contacted. No action is to be undertaken until police provide written notification. ◗ An Aboriginal Cultural Education Program will be developed in collaboration with the local Aboriginal community for the induction of all personnel and contractors involved in the construction activities. ◗ The five springboard trees will be retained *in situ* wherever possible and relocated to an appropriate location where they can be preserved and displayed along with appropriate interpretation where they cannot be retained *in situ*.
	◗ Cultural heritage inductions will be undertaken so that work crews are aware of specific obligations to look for cultural heritage material aiming at informing workers what archaeological materials may look like and give them clear instructions on procedures for inadvertent discoveries
Noise and Vibration	Council will design and operate the facilities to ensure that there are no adverse noise and vibration impacts at sensitive receivers. Follow up noise monitoring will be undertaken at the commencement of the Stage 1 activities.

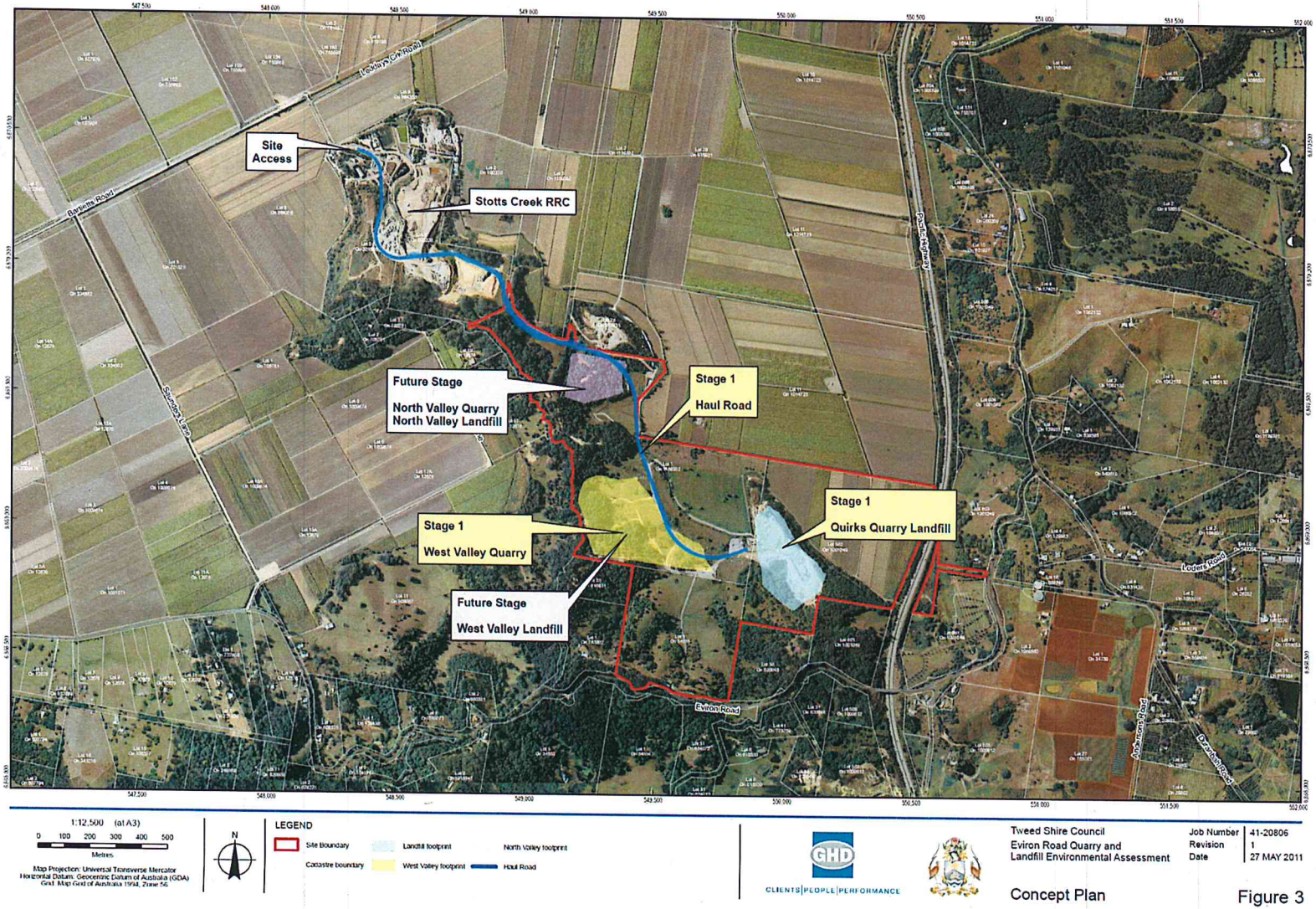
	Specific Control Measures ◗ Hard rock drill: Although its operation is expected to be limited, it has potential to cause short-term noise impacts at the nearest receivers. Therefore, the use of other quarry equipment, such as the processing plant and dozer will be limited (or ceased) during times when drilling is occurring. ◗ Quarry processing plant: Specific noise mitigation measures will be implemented at West Valley Quarry to reduce the impacts of noise from the processing plant. Potential options include the following, however the feasibility will be reviewed during detail design when the quarry layout is developed, such that the most practical option can be adopted: – Locating the processing plant in locations on site which are naturally shielded by the existing topography will also assist in minimising noise impacts. As a last resort, treating the building facades of affected receivers will assist in minimising internal noise. Building treatments should generally be considered only when other measures, such as noise barriers are impractical or not cost-effective. Approaches to the acoustic treatment of buildings include improved window glazing and insulation to external walls. **Blasting Controls** Blasting will be limited to times when condition are suitable and avoided at times, as outlined below: ◗ Avoid at times of adverse wind condition, as this may promote the impact of blast over pressure. ◗ Avoid at times of temperature inversion. ◗ Avoid overfilling holes with blasting agent. ◗ Avoid firing holes in the front row which have insufficient burden. – All blasting designs should contain considerations to minimise factors such as ground vibration and air blast. The blast design should include an assessment of noise and vibration impacts based on blast specific parameters.
Noise and Vibration (continued)	**General Management Controls** General noise management controls that would be implemented during operation of the quarries and landfills are as follows. ◗ All activities would be undertaken during the approved operating hours only: Monday to Friday 7am – 5pm, Saturday 7am to 12pm noting that blasting can only occur Monday to Friday 9am – 3pm and Saturday 9am – 12pm. ◗ Review available fixed and mobile equipment fleet and prefer more recent and silenced equipment whenever possible. ◗ All equipment, particularly the quarry fleet and waste delivery trucks, will be maintained to a high standard to ensure there are no unnecessary noise emissions. ◗ All vehicles accessing the site will used the designated haul routes and approved access points only. ◗ Neighbouring properties shall be notified of the date and time of blasting activities in advance.
Air Quality and Odour	Council will design and operate the facilities to maintain the existing rural air quality. A dust management plan will be included for both the landfill and quarry activities with the LEMP and Quarry Plan of Management, respectively. The following will be implemented: ◗ Installation of a meteorological station onsite. ◗ High dust-generating activities would be avoided during adverse wind conditions when blowing directly towards the nearest residences. ◗ Cease or reduce operations when prevailing winds are in the direction of sensitive receptors, particularly to the south and south-west of the quarry (northerly or north-easterly winds). ◗ The use of a real-time reactive dust monitoring at locations representative of the

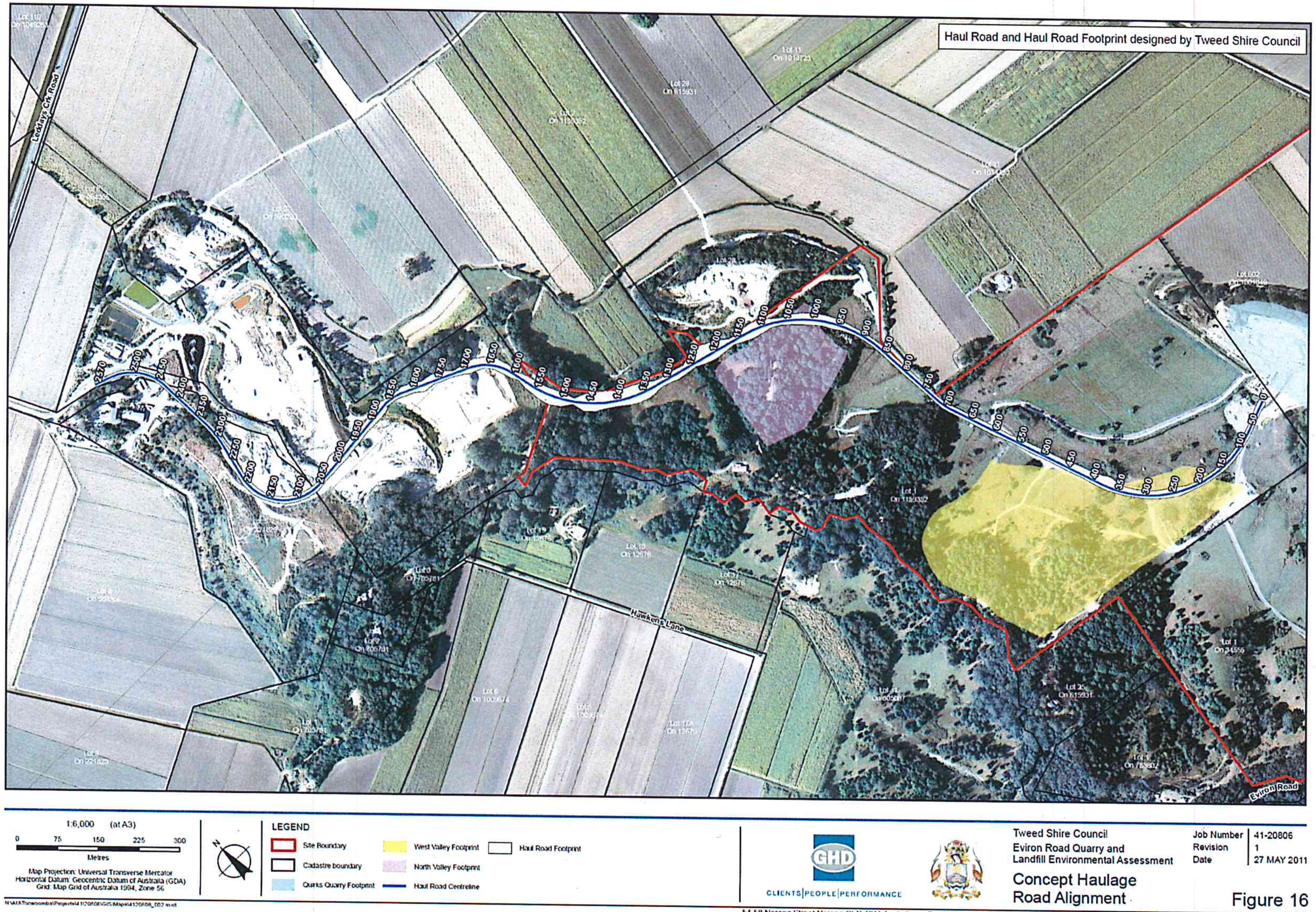
	nearest sensitive receptors to alert the quarry manager when dust levels exceed the nominated criteria. ◗ Specific dust control measures to increase the moisture content of quarried material. ◗ Use of water sprays/trucks and sprays to wet down access and haul roads. Clean sealed roads at access and egress points regularly to minimise the re-suspension of dust on sealed roads. ◗ Ensure materials are appropriately stored and contained to prevent windborne releases to the atmosphere. ◗ Where material is removed from the site or fill brought to the site, trucks will be covered whenever conditions are such that dust nuisance is occurring. ◗ To address dust generated by crushing and screening, install spray systems on equipment and stabilise working surfaces around the work area.
Air Quality and Odour (continued)	◗ Exposed surfaces, including stockpiles unless revegetated or have a stable surface, would be watered. ◗ Completed areas of the landfill would be progressively rehabilitated and revegetated to minimise dust emissions. ◗ Odour emissions from the landfill will be minimised by limiting the working face of disposal areas, covering all exposed waste at the end of each day, limiting the disposal of malodorous wastes, planning for receival of malodourous waste to minimise the time such wastes would be exposed and minimising the disturbance of previously filled areas. ◗ Records of any complaints would be kept with respect to odour and dust and correlating with weather conditions and deliveries of particularly odorous wastes.
Traffic and Transport	Council will commit to the following measures: ◗ Cessation of access to the site via Eviron Road; ◗ Design of the haul road in accordance with good practice for heavy vehicle traffic. ◗ Safety audit for the Tweed Valley Way and Leddays Creek Road intersection to ensure safe access to and from the major arterial, especially for heavy quarry traffic. ◗ Maintenance of the Leddays Creek Road access intersection and provision of maintenance for the duration of the operation of the quarry and landfill activities. ◗ Preparation of traffic management plans (as part of the environmental management plans) to ensure safe movement of vehicles into and around each the site. ◗ Requirement that each driver would sign a Code of Conduct (during their first visit to the operational site).
Visual	◗ Review the vantage point analysis conducted in the Environmental Assessment to include the property at 355 Farrants Hill Road. If necessary, undertake additional screening planting where feasible or consider other alternatives. ◗ Council will undertake strategic tree planting for screening purposes, including along a drainage line across Lot 1 DP1159352, which will in the longer term facilitate sheltered movement of species such as koalas across the presently cleared lowland area of the site. ◗ Progressive rehabilitation and revegetation of all landfill sites would be undertaken to visually blend the landfill capping with the surrounding landscape. ◗ The site will be kept clean and tidy at all times as per the LEMP and Quarry Plan of Management (or other site operations plans as relevant).
Greenhouse Gas	◗ Greenhouse gas emissions from landfilling activities will be minimised through active landfill gas management (as per the LEMP). Depending on the quantity of landfill gas generated and captured infrastructure such as a flare will be installed as a minimum, and investigations into the viability and feasibility of tapping into or replicating the Stotts Creek Renewable Energy Facility. ◗ As and when appropriate Council will consider alternative fuels for the onsite plant and equipment as well as more fuel efficient equipment (where cost competitive).
Hazards	Council will implement the following measures to address potential hazards: ◗ Hazard and risk associated with the proposed activities would be managed through

	development and implementation of a site operations plan which will address safety hazards and develop occupational health and safety procedures and emergency management procedures. ◗ The siltstone present at the site is likely to contain silica, which could potentially be released as respirable crystalline silica in rock dust released during crushing operations. Site-specific data on the mineral composition of the rock resource and the particle size distribution of the rock dust released during crushing operations will be analysed during detail design to facilitate an assessment of potential RCS exposure. ◗ A preliminary assessment of the hazard to building infrastructure and other assets within the lands under the care and control of Council will be undertaken as a priority when the initial activities on site begin as potential sources of ignition may become evident or will be reduced in some areas. ◗ A fire management plan will be included in the site management plans for fires caused by onsite and offsite activities. As part of the management plan, Council will identify risk reduction measures. ◗ Occupational health and safety procedures and appropriate personal protective equipment would be followed during use of plant and equipment as relevant to the particular activity. ◗ Residents would not be permitted to deliver waste to or access any of the landfills. All public access to waste management facilities will be conducted at Stotts Creek RRC. ◗ All landfills will be lined to prevent off-site migration of landfill gas, and a gas management system would be designed in the detailed design phase to prevent methane from being discharged to the atmosphere from closed areas of the landfill. ◗ No dangerous goods would be stored on site, apart from small quantities primarily used for equipment maintenance, and herbicides used for controlling weeds on site.
Hazards (continued)	◗ All chemicals, fuels and oils stored onsite will be contained within an appropriately designed impervious bunded area capable of containing 110% of the largest container stored within the bund. Bunds shall be design and installed in accordance with the requirements of relevant Australian Standards and/or the EPA Environment Protection Manual *Technical Bulletin Bunding and Spill Management*. ◗ Implement suitable measures to manage pests, vermin and declared noxious weeds including regular inspections, monitoring and management.
Revegetation, rehabilitation and post closure management	Council commits to the following: ◗ Preparation and implementation of a Rehabilitation and Closure Plan prepared by a suitably qualified and experience expert in consultation with EPA. ◗ Undertake a program of progressive revegetation in those areas disturbed by the operations taking account of the intended future Botanic Gardens. ◗ Conversion of stormwater detention areas to wetlands following cessation of landfilling activities. ◗ Continue to manage the site following closure of the landfill facility, in accordance with the commitments and procedures to be documented within the Site Closure plan. This includes long term monitoring of groundwater, leachate, surface water, landfill gas, revegetation success and capping integrity
Community	◗ Council will undertake consultation with relevant community stakeholders including during the site establishment period and will proactively engage with the community during operations. This will as a minimum include residents whose properties directly adjoining Council's landholding. ◗ The waste education facility at Kingscliff Wastewater Treatment Plant – adjacent to the Stotts Creek RRC will continue to be utilised. ◗ Areas not required for project-related activities will be maintained in a manner that enhances their ecological values as described in the Biodiversity and Rehabilitation section. ◗ The site will ultimately be returned as a community asset in the form of the Tweed Shire Botanic Gardens in accordance with the existing Master Plan. ◗ Council will implement a complaints management system that includes: – A hotline for receiving complaints about the development;

	– A commitment to investigate the source of all complaints and take the required immediate action to reduce the impact where valid, and to communicate this to the complainant; – A record of complaints and responses/actions which is readily accessible to the community and regulatory authorities; – A system for providing feedback to the community

APPENDIX 2
GENERAL LAYOUT OF THE CONCEPT PLAN




Haul Road and Haul Road Footprint designed by Tweed Shire Council
Leddays Crk Road
Hawkens Lane
Eviron Road
1:6,000 (at A3)
0 75 150 225 300
Metres
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56
LEGEND
Site Boundary
Cadastre boundary
Quirks Quarry Footprint
West Valley Footprint
North Valley Footprint
Haul Road Centreline
Haul Road Footprint
GHD
CLIENTS | PEOPLE | PERFORMANCE
Tweed Shire Council
Eviron Road Quarry and
Landfill Environmental Assessment
Concept Haulage
Road Alignment
Job Number 41-20806
Revision 1
Date 27 MAY 2011
Figure 16
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