

June 2015

Independent Environmental Audit Central Coast Sands



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REPORT: HCM/REV 2/SEPTEMBER 2015

Independent Environmental Audit Central Coast Sand Quarry

June 2015

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applied environmental management consultants

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19 Sep 2015

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Attachment A Project Approval Conditions

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Executive Summary

Project Approval 08_0173 was granted to Hanson Construction Materials Pty Ltd (Hanson), by the Executive Director of the Development and Assessment Systems and Approvals Branch of the Department of Planning and Environment (DP&E) on 1 August 2014.

This Independent Environmental Audit was commissioned by Hanson and conducted by Trevor Brown of Trevor Brown & Associates to satisfy the requirements of Project Approval (08_0173, Schedule 5 condition 9).

Due to the early stage of the Central Coast Sand Quarry Extension project the assessment of the status of compliance with the implementation of management requirements of the management plans prepared for the project has been undertaken for the current operations which do not yet include development in the extension area. The review and adequacy of the management plans prepared and implemented at the date of this audit (i.e. June 2015) has been conducted to assess compliance with Project Approval 08_0173 of Schedule 5 condition 2.

The status of the quarry operations is considered to be generally compliant with the Project Approval and Environment Protection Licence. As the development of the quarry extension had not commenced at the date of this audit, the preparation of some management plans and implementation of monitoring programs not required until commencement of the quarry extension works were still to be prepared.

A summary of the audit findings for the current Central Coast Sand Quarry project activities and operations is:

Environmental Management Strategy **Status:** Compliant

The Environmental Management Strategy provides a sound basis for the management of the environmental matters related to the existing Central Coast Sand Quarry and quarry extension.

Environmental Management Plans **Status (at the date of this audit)** In progress

In general the management plans address the requirements of the Project Approval 08_0173 Schedule 5 condition 2. Where components of Project Approval 08_0173 Schedule 5 condition 2 are not included in the plans it is recommended that revision of the Plan(s) occur with inclusion of the missing component(s) should be considered, or a waiver obtained from the Secretary DP&E in accordance with the condition.

Water Management **Status (at the date of this audit)** In progress

A Surface Water Audit and Water Management Improvement Program was prepared for the existing quarry and quarry extension area and submitted to the DP&E on 28 November 2014. A Water Management Plan was also prepared in accordance with Project Approval 08_0173 Schedule 3 condition 7, and submitted to the Secretary for approval on 28 November 2014. The Water Management Plan included a Site Water Balance, Surface Water Management Plan, Groundwater Management and Surface and Ground Water Contingency Strategy. Water quality monitoring has been undertaken in accordance with the Environment Protection Licence conditions and impacts from the quarry operations on downstream water bodies are assessed based assessment of water quality monitoring results and EPL No. 3751 criteria. Water quality discharge from Point LDP2 has exhibited exceedances of the pH water quality criteria (pH range 6.5 to 8.5) between 1 August 2014 to May 2015 period that appear have been associated with the treatment of water entering the Make-Up Dam using lime addition. Water quality suspended solids discharge from Point LDP2 is generally satisfactory and compliant with Environment Protection Licence conditions. Discharge of water from LDP2 with increased total suspended solids occurred during an extreme rainfall event in April 2015. This incident was reported to the EPA in accordance with EPL condition R2.2.

Noise Management **Status (at the date of this audit)** **Compliant**

The Noise Management Plan monitoring program proposed at the closest residences, will provide adequate monitoring to check compliance of the operations with the noise assessment criteria in Project Approval 08_0176 Schedule 3 condition 10. The noise monitoring will commence when all components of the quarry extension project are operating.

Air Quality Management **Status (at the date of this audit)** **Compliant**

The Air Quality Management Plan prepared by SLR to satisfy Project Approval 08_0173 Schedule 3 condition 15 was submitted to DP&E for approval on 28 November 2014. A weather station measuring temperature, wind speed and direction, humidity, and rainfall was installed at the Central Coast Sands Quarry site in 2015. Installation of a DustTrak Monitor for PM₁₀ and HVAS for respirable crystalline silica is planned for 2016 when the quarry extension commences. The dust deposition results were compliant with the impact assessment criteria between 1 August 2014 and 30 May 2015 indicating the activities at Central Coast Sand Quarry are managed and minimise dust generation from the site operations. Dust generated from the off-site activities (e.g. cut and fill for construction of buildings on adjacent properties) resulted in some reported levels of material in the dust gauge that were not attributable to the Central Coast Quarry activities during 2014 and 2015.

Traffic Management **Status** **Compliant**

A Traffic Management Plan and Truck Driver Code of Conduct was prepared for Hanson by Intersect Traffic to satisfy Project Approval Schedule 3 conditions 21 in November 2014. The Truck Driver Code of Conduct is initiated when heavy vehicle haulage drivers attend the Central Coast Sand Quarry site induction. Accurate records of the amount of quarry products transported from the site (recorded at the weighbridge at the exit from the quarry site) and the number of laden vehicle movements from the site are kept for the quarry operations.

Landscape and Rehabilitation Management **Status** **In progress**

The Landscape and Rehabilitation Management Plan was prepared and submitted by the end of July 2015 to address Project Approval Schedule 3 conditions 31. The rehabilitation activities at the Central Coast Sand Quarry will occur over time where extraction and disturbance of areas of the quarry are completed. This currently limited to the previously disturbed area of Lot 118 where the surface has been profiled to establish grass species and control surface runoff. DP&E reviewed the Landscape and Rehabilitation Management Plan and provided comments on the 3 August 2015.

1. Introduction

1.1 Background

The Project Approval 08_0173 was granted to Hanson Construction Materials Pty Ltd (Hanson), by the Executive Director of the Development and Assessment Systems and Approvals Branch of the Department of Planning and Environment (DP&E) on 1 August 2014.

This Independent Environmental Audit was commissioned by Hanson and conducted by Trevor Brown of Trevor Brown & Associates to satisfy the requirements of Project Approval (08_0173, Schedule 5 condition 9):

INDEPENDENT ENVIRONMENTAL AUDIT

By 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:

- (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;*
- (b) include consultation with the relevant agencies;*
- (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licences for the project (including any assessment, strategy, plan or program required under these approvals);*
- (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and*
- (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy, plan or program required under the abovementioned approvals.*

The Independent Environmental Audit site inspections and documentation assessment for compliance with Project Approval 08_0149 and other environmental approvals for the Metropolitan Colliery were carried out in May 2015, by a team of experienced and independent experts endorsed by the by the Secretary of the Department of Planning and Environment on 16 December 2014.

1.2 Scope of Work

The Independent Environmental Audit was conducted generally in accordance with the Australian/New Zealand Standards ISO 19011:2002 – Guidelines for Quality and/or Environmental Systems Auditing. The scope of work for the independent environmental audit of the Central Coast Sand Quarry operations included the following components:

- review of compliance with Project Approval 08_0173 conditions and other approvals for the project;
- conduct of a site inspection and review on-site documentation and monitoring data for the project, relevant to the audit;
- discussion of the development consent and other approval conditions and operation of the project with Central Coast Sand Quarry personnel;
- assessment of environmental performance of the development with the requirements in this Project Approval, Environment Protection Licence and Mining Lease conditions (including any assessments, plans or programs required under these consents/approvals);
- review of the adequacy of strategies, plans or programs prepared under the abovementioned consents/approval;

- provision of recommendations if considered necessary for implementation of measures or actions to improve environmental performance of the development, and/or any assessment, plan or program required under the project approvals; and
- preparation of the Independent Environmental Audit Report providing assessment of compliance against each approval condition and provision of recommendations or actions where considered appropriate to improve the environmental performance of the development, and/or the environmental management and monitoring systems

1.3 Structure of the Report

The report has been prepared to provide comment on each condition of approval in a tabulated form, with additional discussion where required on specific matters. The tabulated comments are in the Attachments to this Independent Environmental Audit Report. The Independent Audit Report sections are:

Section 1	Introduction
Section 2	Central Coast Sand Quarry Development
Section 3	Consents, Approvals and Licenses
Section 4	Review of Environmental Management
Section 5	Conclusions and Recommendations
Attachment A	Project Approval (08-0173 dated 1 August 2014)
Attachment B	Environment Protection Licence No. 3751
Attachment C	Mining Lease 6309

1.4 Compliance Table

This audit assessed the activities for compliance with the intent of the Project Approval, Environment Protection Licence and Mining Lease conditions via site inspections, document review and verification of relevant documentation related to the conditions of approval. The compliance status is expressed in the Attachments to this report as:

Table 1.4: Compliance Status and Description

Status	Description
Compliant	Adequacy and appropriateness of implementation against the Development Consent and Project Approval Conditions, or compliance with commitment made.
Compliant Ongoing	The intent and specific requirements of the condition have been met and the requirements are ongoing for the operation of Central Coast Sands Quarry.
Non-Compliant	The intent or one or more specific requirements of the condition have not been met and is environmentally significant.
Administrative Non-compliance	A technical non-conformance with a condition of the consent that would not result in material harm to the environment
Not active / Not applicable	Condition or requirement that had not been triggered at the time of the review, therefore a determination of compliance could not be made.
Noted	Conditions that are statements of requirement but not auditable.

Any Non-compliance (if identified) will be subject to a risk assessment in accordance with the Draft Guidelines – Independent Environmental Audits of Mining Projects section 7.2 and reported in section 5 Conclusions of this audit report.

2. Central Coast Sand Quarry Development

The quarry on Lot 33 DP755246 Reservoir Road Somersby has been in operation since the 1960's under various names and ownership. Hanson Construction Materials Pty Ltd (Hanson) acquired the site in 1989 and currently own and operate Central Coast Sands Quarry, located on the Somersby Plateau, 8.5 kilometres (km) northwest of Gosford, NSW.

Quarrying activities located on Lot 33 DP755246 Reservoir Road Somersby were covered by an existing development consent that was granted by Gosford City Council in 1962. The quarry extension area into Lot 10 DP1090880 granted on 1 August 2014, was used for a range of agricultural purposes, including poultry farming and orchards (primarily avocado) and a range of ancillary uses including timber cutting (firewood) with small milling equipment and timber (as well as un-sawn logs) on the site.

The Central Coast Sand Quarry Project Area includes:

- The quarry located on Lot 33 DP755246 (48.6ha) and part Lot 118 DP755246 (6.4ha) Reservoir Road, Somersby, and
- The quarry extension onto Lot 33 and approximately eight (8) hectares of part Lot 10 DP1090880 Keighley Road, Somersby.

The Central Coast Sand Quarry Project involves:

- Extraction of friable sandstone on Lot 33 limited to a depth 190m AHD;
- Administration buildings, process fixed plant sand washing and processing, equipment, loading facilities, mobile plant or machinery, weighbridge and workshop and ancillary structures on Lot 33 DP755246;
- Water management systems on Lot 33 and Part Lot 118 DP755246;
- Haulage routes and traffic volumes in accordance with the Traffic Management Plan;
- Surrender of existing approvals prior to end of December 2015, that cover operations on Lot 33 and Part Lot 118 DP 755246. The Project Approval 08_0173 is a consolidated approval that covers the existing operations and the area of extension into Part Lot 10 DP1090880; and
- Rehabilitation activities on Part Lot 118 DP755246 (covered by ML 6309).

When the quarry extension area has been cleared and bunding constructed around the boundary the extraction of resource process will occur. The bunding will be vegetated following construction to prevent erosion and dust nuisance and will reduce the views of the quarry from the surrounding area.

The sand extraction process involves 'loosening' the material (i.e. friable sandstone), with the blade of a bulldozer, and loading into trucks (no blasting is required).

The trucks transport the extracted material to the on-site grading/sorting facilities where it is sorted and graded, resulting primarily in a high quality sand resource for the manufacture of concrete for the construction industry;

The project involves the approved extraction of up to 310 000 tonnes per annum (tpa) of sand resource from the quarry. The extracted material is processed on site and transported by road to local and regional customers.

The high quality sand resource is stock-piled on the site and then collected for transport to concrete batching plants, construction sites or other areas across the Central Coast, Lower Hunter and Greater Sydney areas.

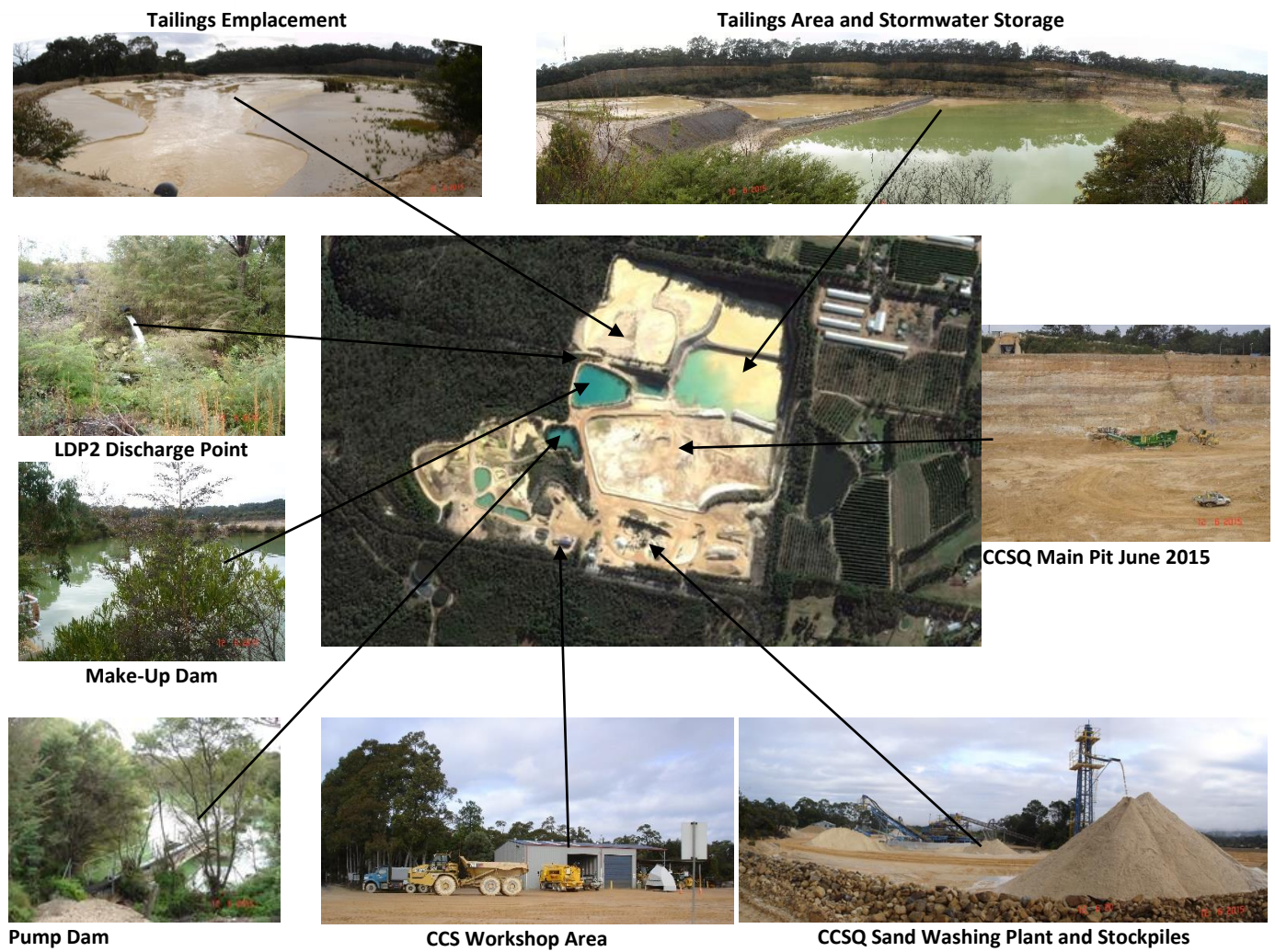


Figure 2: Central Coast Sand Quarry Layout – June 2015

3. Consents, Approvals and Licenses

3.1 Development Consents and Project Approvals

The existing quarry located on Lot 33 DP755246 Reservoir Road Somersby has been operated under development consent granted by Gosford City Council in 1962.

Project Approval 08_0173 was granted to Hanson by the Executive Director of the Development and Assessment Systems and Approvals Branch of the Department of Planning and Environment (DP&E) on 1 August 2014.

Project Approval 08_0173 replaces any existing development consent held for the site and the previous development consent is required to be surrendered by the end of December 2015 in accordance with Section 104A of the EP&A Act (Project Approval Schedule 2 condition 9). Project Approval 08_0173 was granted for the extension of the existing quarry development involving boundary adjustment between Lot 33 DP 755246 Reservoir Road, Somersby (the existing quarry) and the adjoining Lot 10 DP 1090880, Keighley Road, Somersby adding approximately 8 hectares of additional area to the existing quarry and expansion of the resource extraction operations of the existing quarry into the extension land.

3.2 Environment Protection Licence

Environment Protection Licence No. 3751 was granted to Hanson Construction Materials Pty Ltd on 2 February 2000 and Variations granted between 18 November 2002 and 9 January 2013. The latest Variation Notice No. 1509648 on 9 January 2013 involved the following:

Environment Protection Licence No. 3751 is varied by:

- Condition L2.4 - Limits for Oil and Grease at Points 1 and 2 changed to 10 mg/l or none visible
- Condition L2.5 - new condition added relating to the establishment and use of a turbidity:total suspended solids correlation developed specifically for the premises. The condition states: it is deemed a non-compliance with the total suspended solids limit shown in the licence if the turbidity level obtained exceeds the value shown in the current turbidity:total suspended solids correlation table/graph in use at the premises.
- Condition L3 - Standard Waste condition added
- Condition L4 - Standard Noise condition added
- Condition L5 - Standard Odour conditions added
- Condition O4 - Bunding conditions added
- Condition M2.2 - Points 1 and 2 Table altered to include testing for Turbidity
- Condition M2.2 - Points 1 and 2 Table altered to reduce frequency for testing for TSS.
- Condition M2.2 - Points 1 and 2 Table altered for testing frequency for pH and Oil and Grease
- Condition M2.3 - Definition for Testing Frequencies - added
- Condition R2 - Note reflects changes to part 5.7 of the POEO Act and reporting pollution incidents.

Refer to Attachment C to this report for the compliance status of the Central Coast Sand Quarry operations with the EPL conditions of approval.

3.3 Mining Leases

Lot 118 DP755246, was subject to Mining Lease ML 6309 until the mining lease expired in 2013. No mining or excavation activities have occurred since that time and the disturbed area of the site (approximately 6.4ha) is being progressively rehabilitated.

3.4 Water Licences

Hanson advised that no Water Access Licences were held at the date of this audit (June 2015).

Recommendation – Water Licences

It is recommended that Hanson commission a water licensing review for the Central Coast Sand Quarry operations to determine if the water use on the site requires any Water Access Licence(s) under the *Water Management Act 2000*.

4. Review of Environmental Management

4.1 Environmental Management Strategy

[Project Approval 08_0173 Schedule 5 condition 1]

4.1.1 Environmental Management Strategy

[Project Approval 08_0173 Schedule 5 condition 1]

The Environmental Management Strategy was prepared to satisfy the requirements of Project Approval 08_0173 Schedule 5 condition.

The Environmental Management Strategy:

- provides the framework for environmental management of the project;
- identifies the statutory approvals that apply to the project;
- describes the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
- describes procedures to be implemented to: o keep the local community and relevant agencies informed about the operation and environmental performance of the project; o receive, handle, respond to, and record complaints; o resolve any disputes that may arise during the course of the project; o respond to any non-compliance; and o respond to emergencies; and
- includes copies of the strategies, plans and programs required under the Project Approval conditions and monitoring to be implemented under conditions of approval.

The key environmental management and performance outcomes for the site are summarised in the Environmental Management Strategy Table.

Table 4.1.1 Environmental Management Strategy vs AS/NZS ISO14001 Elements

ISO 14001 Element	Construction Environmental Management Plan section
4.2 Environmental Policy	Hanson Environmental Policy 1 Jan 2014
4.3.1 Environmental Aspects	Section 1.3 Project/Site Description
4.3.2 Legal and Other Requirements	Section 3 Legislative and External Requirements
4.3.3 Objectives and Targets	Section 2.1 - Environmental Management / Performance Criteria
4.3.4 Environmental Management Programs	Section 2.1 Environmental Management and Performance Criteria
4.4.1 Structure and Responsibility	Section 4.1 Personnel Structure and Responsibilities
4.4.2 Training Awareness and Competence	Section 4.2 Training
4.4.3 Communication	Section 4.3 Communication and Consultation
4.4.7 Emergency Preparedness and Response	Section 4.4 Emergency Response
4.5.1 Monitoring and Measurement	Section 5 Monitoring and Corrective Action
4.5.2 Non-conformance, Corrective and Preventative Action	Section 5.1 Non-Compliance

4.1.2 Conclusion

Environmental Management Strategy **Status:** **Compliant**

The Environmental Management Strategy provides a sound basis for the management of the environmental matters related to the existing Central Coast Sand Quarry and quarry extension.

4.2 Environmental Management Plans

[Project Approval 08_0173 Schedule 5 condition 2]

The management plans required to be developed for the Central Coast Sand Quarry to satisfy Project Approval 08_0173 are:

Project Approval	Management Plan
Schedule 3, condition 7(a)	Water Management Plan (WMP)
Schedule 3, condition 12	Noise Management Plan (NMP)
Schedule 3, condition 14	Air Quality Management Plan (AQMP)
Schedule 3, condition 21	Traffic Management Plan (TMP)
Schedule 3, condition 28	Groundwater Dependent Ecosystem Monitoring and Management Program (GDEMMP)
Schedule 3, condition 31	Landscape and Rehabilitation Management Plan (LRMP)

The Water Management Plan, Noise Management Plan, Air Quality Management Plan and Traffic Management Plan were prepared with the Environmental Management Strategy and approved in November 2014. The Landscape and Rehabilitation Management Plan and Groundwater Dependent Ecosystem Monitoring and Management Program had not been prepared for submission to the DP&E at the date of this audit (June 2015), as the requirement for the two plans had not been triggered at this date.

The environmental management plans for the Central Coast Sand Quarry were prepared generally in accordance with Project Approval 08_0173 Schedule 5 condition 2. Table 4.2 provides a summary of the management plan sections addressing Project Approval 08_0173 Schedule 5 condition 2 components.

Table 4.2: Summary of the Management Plan sections addressing Schedule 5 condition 2 components.

Project Approval 08_0173 Schedule 5 condition 2	Management Plans (section reference)	Summary Comments on Management Plan content
(a) detailed baseline data	AQMP – section 5, and Air Quality Impact Assessment for the Quarry Extension (SLR 2012) LRMP -	WMP – baseline data is in EA (2013) section 8.13 and 8.14 NMP – Baseline data not included TMP – baseline transport data included in the EA (2013) Attachment 18 – Traffic Impact Assessment
(b) description of: (i) statutory requirements (including approvals, licence or lease conditions)	WMP – section 2 NMP – section 2 AQMP – section 2 TMP – section 3 LRMP – section 1.2	
(ii) limits or performance measures/criteria	WMP – section 2.4 NMP – section 2 AQMP – section 2.1 and 2.2 TMP – section 2 LRMP – section 6	TMP – section 2 Drivers Code of Conduct
(iii) specific performance indicators	WMP – section 3 NMP – section 2 AQMP – section 2.1 and 2.2 TMP – section 2 LRMP – section 6	TMP – section 2 Drivers Code of Conduct
(c) measures to be implemented to comply with the statutory limits, or	WMP – sections 3, 4 and 5 AQMP – section 2 TMP – section 2 and 3 LRMP – section 7	NMP – mitigation measures not addressed in the NMP. EA (2013) Attachment 16 addresses noise mitigation measures. TMP – section 2 Drivers Code of Conduct

Project Approval 08_0173 Schedule 5 condition 2	Management Plans (section reference)	Summary Comments on Management Plan content
performance measures /criteria		
(d) program to monitor and report (i) impacts and environmental performance; (ii) effectiveness of management measures	WMP – section 6 NMP – section 3 AQMP – section 7 TMP – section 3 LRMP – section 8	
(e) contingency plan	WMP – section 7 AQMP – section 9 TMP – whole document LRMP –	NMP – Contingency Plan not required.
(f) program to investigate and implement ways to improve environmental performance of the project over time	WMP – section 9 NMP – section 5.3 AQMP – section 12 TMP – All of the TMP LRMP – section 8	
(g) protocol for managing and reporting any: (i) incidents; and	WMP – section 8.1 NMP – section 5.2 AQMP – section 11.2 TMP – section 3.2 LRMP – section 8.3	
(ii) complaints;	WMP – section 8.2 AQMP – section 10.1	NMP, LRMP and TMP – complaint procedure included in the EMS section 4.3.3
(iii) non-compliances with statutory requirements;	WMP – section 7 NMP – section 5.2 AQMP – section 9.2 and 9.3 TMP – section 3.2 LRMP – section 6.2	
(iv) exceedances of the impact assessment criteria and/or performance criteria;	WMP – sections 7 and 8 NMP – section 5.2 AQMP – section 11.1 TMP – section 3.2 LRMP – section 6.2	
(h) a protocol for periodic review of the plan	WMP – section 9 AQMP – section 11.4 LRMP – section 10	NMP – periodic review of NMP not addressed.

Recommendation:

Where detailed baseline data or procedure(s) are not included in the Plans, revision of the Plan(s) with inclusion should be considered (with reference to the Environmental Assessment or other available baseline information), or a waiver obtained from the Secretary DP&E in accordance with Project Approval Schedule 5 condition 2.

4.2.2 Conclusion**Management Plans****Status (at the date of this audit)****In progress**

In general the management plans address the requirements of the Project Approval 08_0173 Schedule 5 condition 2. Where components of Project Approval 08_0173 Schedule 5 condition 2 are not included in the plans it is recommended that revision of the Plan(s) occur with inclusion of the missing component(s) should be considered, or a waiver obtained from the Secretary DP&E in accordance with the condition.

4.3 Site Water Management

[Project Approval 08_0173 Schedule 4 conditions 1 to 7]

The surface area of the existing Central Coast Sand Quarry site is approximately 48.6 ha, plus an additional 8ha for the quarry extension. All runoff from the Central Coast Sand Quarry site (excluding the vegetated northern and western boundary) is collected within extraction pits and processed as part of the stormwater management process. During heavy or prolonged periods of rainfall some runoff discharges into Unnamed Tributary 1 that flows to the Mooney Mooney Dam.

The quarry upslope catchment is approximately 49.5 ha and includes the proposed quarry expansion site. Modelling of flow rates from the quarry upslope catchment based on design rainfall estimates, indicated that during a 1 in 100 year event, the flow rate for surface water entering the quarry is approximately 12 m³/s.

Water collected within the Eastern Pit (from intercepted rainfall; groundwater ingress; and the upslope catchment) is pumped into the 'Make Up' dam where entrained sediment settles out. In the event that the site collects excess water, overflow is discharged via an EPA licenced Point 2 (LDP2) to Unnamed Tributary 1.

Water collected within the Western Pit (consisting of tailings dams/cells) is allowed to settle and flows to the 'pump dam'. - Water stored within the 'pump dam' is distributed to either the 'Wash out dam', to the processing plant area or is passes to the make-up dam. This water is used on-site for product washing and dust suppression.

Wastewater from the process plant area is discharged to the western pit to remove fine sediment and then to the pump dam for recycling as above.

During periods of peak flow, water may be discharged via EPA Point 1 (LDP1) into the National Park from the 'pump dam'. The LDP1 and LDP2 discharges drain to an Unnamed Tributary that flows into Mooney Mooney Creek and ultimately into Mooney Mooney Dam, approximately 700 m downstream of the Site.

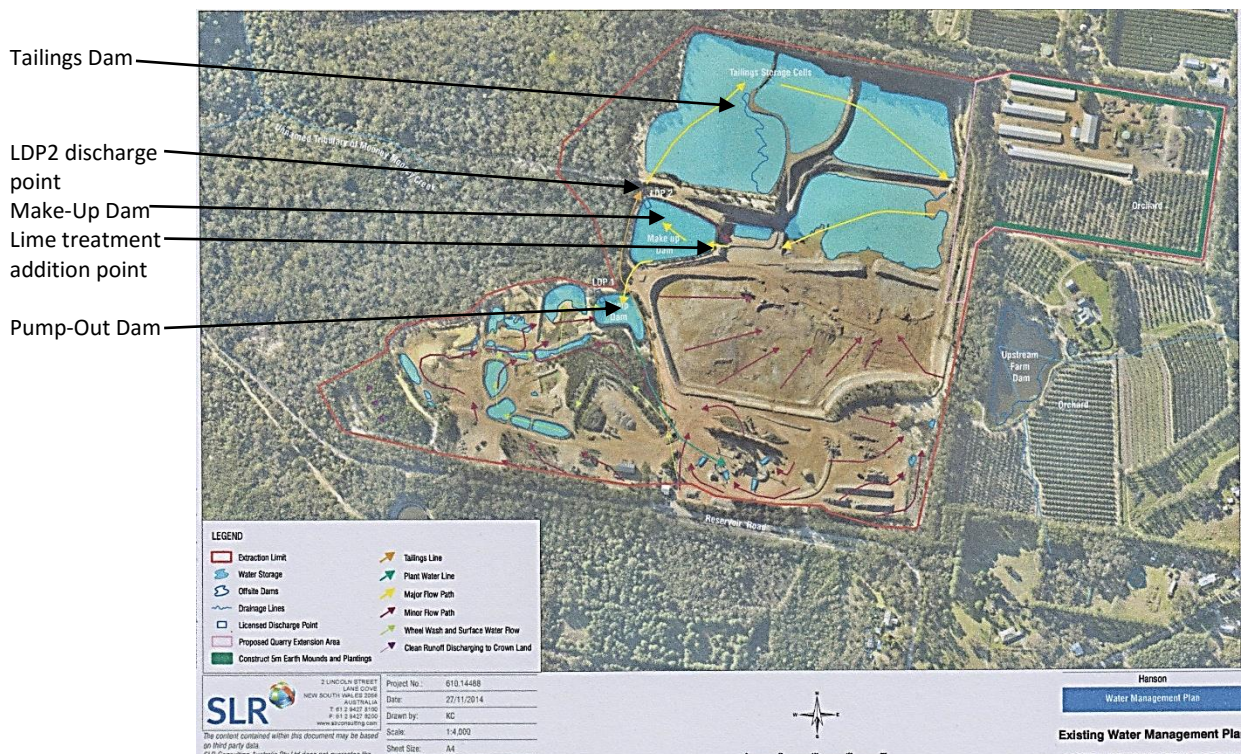


Figure 4.3: Existing Water Management Plan for Central Coast Sand Quarry.

4.3.1 Surface Water Audit and Water Management Improvement Program

[Project Approval 08_0173 Schedule 3 condition 2]

The Project Approval 08_0173, was granted on 1 August 2014 and the Surface Water Audit and Water Management Improvement Program prepared by SLR who was commissioned within 3 months of the Project Approval. The Surface Water Audit and Water Management Improvement Program was submitted to the DP&E on 28 November 2014.

The Surface Water Audit was undertaken by SLR in consultation with NOW. The response from NOW received on 10 November 2014 stated *“the proposed objectives and scope of work to be acceptable in relation to Conditions 2 and 3 and will facilitate the development of the Water Management Improvement Program required by Conditions 3 and 4”*. The Surface Water Audit addressed the current and proposed surface water management practices and infrastructure on the site and provided Water Management Improvement Options for the existing site and Quarry Extension Area, with reference to opportunities to divert clean water away from the site and recommended design parameters for water management systems on the site.

4.3.2 Water Management Plan

[Project Approval 08_0173 Schedule 3 conditions 7]

The Water Management Plan prepared by SLR in consultation with NOW in accordance with Project Approval 08_0173 Schedule 3 condition 7, was submitted to the Secretary for approval on 28 November 2014.

The Water Management Plan included:

- Site Water Balance
- Surface Water Management Plan
- Groundwater Management
- Surface and Ground Water Contingency Strategy

4.3.3 Site Water Balance

[Project Approval 08_0173 Schedule 4 condition 7(c)(i)]

A site water balance was undertaken by Martens Associates as part of the Surface Water Hydrology Assessment and Management (Martens, 2010) prepared for the Environmental Assessment (February 2013) for the Central Coast Sand Quarry operations. SLR undertook a review of the water balance as part of the Site Water Audit (November 2014) and considered the hydrological assumptions and methodology suitable for the purpose of the Water Management Plan.

The water balance assessment indicated that the site has a surplus of water after all site demands / uses are satisfied. The water balance demonstrated that sufficient water would be available to satisfy the quarry demands for process waters and future demands associated with irrigation of remediation areas.

4.3.4 Surface Water Management

4.3.4.1 Clean Water Management

Clean water from a small rehabilitated catchment (approximately 0.55 ha) in the south west corner of the Central Coast Sand Quarry site is diverted around the operation areas of the quarry and discharges directly to crown land.

Surface water runoff from the upstream catchment to the east of the quarry site currently drains to a farm dam within an adjacent property. Overflows from the dam drain to a pipe outflow through the wall of the existing extraction area before being managed within the quarry water management system.

4.3.4.2 Quarry Water Management ('dirty water')

Surface water flows from the quarry extraction area drain to the sump prior to being pumped to the Make-Up dam for treatment and settlement.

Water within the Make-Up dam is dosed with lime as required to manage the pH of the water to within the EPL condition L2.4 criteria.

Wheel wash water and surface water flows from operational areas of the quarry that do not drain to the tailings cells are drained via gravity to a series of retention dams for settlement of suspended solids. Following circulation around the retention dam system, water is discharged to the Pump Dam.

Under normal conditions, water is pumped from the Pump Dam to the plant for product washing, dust suppression and wheel washing. A licenced water truck also uses the water for washing the bitumen road immediately outside the quarry.

Under normal conditions, water may be discharged via gravity from the Make-Up dam to the pump dam if required. During peak flow conditions the Make-Up dam overflows from LDP2 via an overflow pipe and discharges to the Unnamed Tributary of Mooney Mooney Creek.

Rip rap downstream of the make-up dam outlet mitigates scour and erosion at the outlet.

4.3.5 Surface Water Management Plan

[Project Approval 08_0173 Schedule 4 condition 7(c)(ii)]

The Surface Water Management Plan prepared by SLR as section 3 of the Water Management Plan and included:

- Surface water management system on site:
 - Section 3.1.4 Clean Water Management;
 - Section 3.1.3 Dirty Water Management and erosion control;
 - Section 3.1.1 Water Storages;
 - Section 6.1 Surface Water Monitoring of flows and quality.

The Water Management Plan has not included any baseline data on surface water flows and quality in water bodies that could potentially be affected by the project.

Recommendation:

It is recommended that baseline data/information on surface water flows and surface water quality be included in, or a relevant reference to the data, be included into the Water Management Plan to conform with the requirement of Project Approval Schedule 4 condition 7(c)(ii) and Schedule 5 condition 2.

4.3.6 Surface Water Monitoring Criteria

[Environment Protection Licence 3751 condition L2.4]

Water quality monitoring is undertaken in accordance with the EPL conditions P1.1 and L2.4 requirements.

Table 4.3.6: Surface water discharge monitoring program

Parameter	Frequency and Location	Monitoring Method
pH	Daily during discharges from LDP1 and/or LDP2	In-situ test and lab analysis of sample
Oil and Grease		Visual inspection and lab analysis of sample
Total Suspended Solids		Lab analysis of sample
Turbidity		In-situ test
Flow rates	Flows rates estimated during discharge based on the depth above pipe invert and hydraulic equations for the overflow pipe.	In-situ measurements

The Central Coast Sand Quarry has two EPA approved discharge points (LDP1 and LDP2) with discharge water quality criteria:

EPL No. 3751 condition L2.4 - Points LDP1 and LDP2

Pollutant	Unit of Measure	100 percentile Limit
Oil and Grease	mg/L	10 or nil visible
pH	pH units	6.5-8.5
Total Suspended Solids	mg/L	50

4.3.7 Review of Surface Water Monitoring Results

Impacts from the quarry operations on downstream water bodies are assessed based assessment of water quality monitoring results and EPL No. 3751 criteria.

Unnamed Tributary 1 receives flows from the Make-up Dam via the drainage line during high flow conditions and receives surface water runoff from the National Park at all times. The Unnamed Tributary of Mooney Mooney Creek is *"not considered an environmental corridor and is of minimal quality for terrestrial and aquatic habitat"* (Martens, 2010).

To enhance the removal of colloidal clays and other sub-75µm material, the water entering the Make-Up Dam is treated with lime to adjust the pH to the EPL criteria for discharge. The outlet of EPA discharge 'Point 2' (LDP2) is protected by rip rap and is adequately armoured to withstand the discharge rates from LDP2 and protect the creek from erosion and scour. It is considered that the existing rip rap works are adequate and should be maintained.

The site has only discharged water from one licenced discharge point (LDP2) during the 1 August 2014 to June 2015 period (i.e. discharge point LDP2 from the Make-up Water Dam). Water quality is monitored during any discharge event. No discharge from EPA licenced discharge point (LDP1 from the Process Water Dam) occurred during 1 August 2014 to June 2015 period as water in this dam was reused on site or pumped back to the Make-Up Dam for treatment prior to release from LDP2.

Water quality discharge from Point LDP2 has exhibited some pH values outside the water quality criteria (pH range 6.5 to 8.5) between 1 August 2014 and 1 June 2015. The pH values outside the water quality criteria range appear to have resulted from the lime treatment of water entering the Make-Up Dam. Hanson personnel are investigating modification to the lime addition method to provide better mixing of the lime with the incoming water being treated, to reduce the potential for "slugs" of high pH water to occur within the dam before discharge.

Month	Date	pH	Exceedance of Criteria (6.5 to 8.5)	Total No. of Discharge Days/Month
August 2014				1
	27 August 2014	9.18	+0.68	
September 2014				11
	17 September 2015	8.74	+0.24	
	18 September 2014	8.52	+0.02	
	25 September 2014	6.46	-0.04	
	26 September 2014	6.35	-0.15	
	29 September 2014	6.42	-0.08	
October 2014				2
	7 October 2014	5.41	-1.09	
November 2014		Nil		1
December 2014				6
	8 December 2014	8.54	+0.04	
January 2015		Nil		0
February 2015		Nil		0
March 2015				7
	26 March 2015	6.24	-0.26	
April 2015				11
	8 April 2015	5.66	-0.84	
	9 April 2015	6.45	-0.05	
	10 April 2015	6.32	-0.18	
	14 April 2015	6.25	-0.25	
May 2015				22
	8 May 2015	6.45	-0.05	
	12 May 2015	6.36	-0.14	
	13 May 2015	6.31	-0.19	
	14 May 2015	6.41	-0.09	
	22 May 2015	6.3	-0.20	
	25 May 2015	9.0	+0.50	
	30 May 2015	6.3	-0.20	
June 2015	1 June 2015	6.2	-0.30	1

Water quality discharge from Point LDP2 is generally satisfactory and compliant with license conditions for total suspended solids. Water quality suspended solids discharge from Point LDP2 is generally satisfactory and compliant with Environment Protection Licence conditions. Discharge of water from LDP2 with increased total suspended solids occurred during the extreme rainfall events between 8 and 23 April 2015. These incidents were reported to the EPA in accordance with EPL condition R2.2. All other discharges were compliant with the <50mg/l criteria. This suggests that the water management system generally treats current water flows satisfactorily, but any increase in flows may require improved treatment to reduce the suspended solids levels in discharge waters.

Recommendation Surface Water Treatment:

Modification to the lime addition method to provide better mixing of the lime with the incoming water being treated should be introduced to reduce the potential for pH exceedance in the discharge water.

4.3.8 Erosion and Sediment Control

[Project Approval 08_0173 Schedule 4 condition 7(c)(ii)]

A Sediment & Erosion Control Plan prepared by Marten's Consulting Engineers (January 2010) for the Hanson Quarry:

- Reviewed sediment generation characteristics for the existing quarry and the extension area;
- Reviewed the adequacy of existing Sediment & Erosion Control Plan measures.
- Assessed Sediment & Erosion Control Plan requirements for the extension of the quarry.
- Reviewed the size and location of sediment and erosion control structures;
- Provided recommendations relating to sediment and erosion control for on-going site management of the quarry operations; and
- Prepared engineering plans that outlined the location and management of required sediment and erosion control structures.

The operation and maintenance of the sediment basins are considered adequate and include:

- Sediment basins are inspected weekly and following a rain events of greater than 20 mm.
- Accumulated sediment depth is checked to ensure remaining storage capacity is adequate for storm events and sediment deposition. (Sediment build-up is removed and the basin restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the basin. The removed sediment is deposited on site outside of surface water flow paths, allowed to dewater and used in site rehabilitation works).

4.3.9 Groundwater

[Project Approval 08_0173 Schedule 4 condition 7(c)(iii)]

4.3.9.1 Groundwater Management

The site lies within Zone 8 of the Kulnura Mangrove Mountain Groundwater Management Area and is subject to management under the Water Sharing Plan for the Kulnura Mangrove Mountain Groundwater Sources (DWE, 2003).

The primary water bearing strata for the region is Hawkesbury Sandstone. Aquifers within the stratum exist within zones of permeable sandstone and/or within fractures (Martens, 2010).

An ecological assessment (RPS, 2010) indicated that none of the vegetation communities within the Central Coast Sand Quarry site equate to any Groundwater Dependant Ecosystems (GDEs) and that the closest GDE habitat to the quarry are Sandstone Hanging Swamps approximately 500 m to the south and Hawkesbury Banksia Scrub - Woodland located and 500 m to the south east of the quarry extension area.

With regard to GDEs, the quarry extension development will have significantly reduced impacts on GDEs as the results from the sensitivity/uncertainty modelling indicate equivalent or reduced impact with respect to drawdown at GDEs (Martens, 2013).

4.3.9.2 Groundwater Level Assessment Criteria

Groundwater levels are monitored and data recorded hourly at bores P3 and P4 and assessed against impact assessment criteria for groundwater bores adopted for the Central Coast Sand Quarry in the Water Management Plan section 6.2.1 are:

- Notification of reduction in yield from private bore (Condition Amber)
- Slightly greater drawdown than predicted in monitoring bores (Condition Amber)
- Notification of complete loss of yield from private bore (Condition Amber)
- Significantly greater drawdown than predicted in monitoring bores (Condition Red).

Groundwater requirements and trigger levels for action in relation to the Groundwater Dependant Ecosystems (GDEs) are currently unknown (RPS, 2010). RPS (2010) stated that “*due to the distance of the identified GDEs from the quarry, it is unlikely that the quarry extension will have any significant impacts upon these GDEs*”.

4.3.9.3 Groundwater Monitoring

Groundwater level monitoring is undertaken at bores P3 and P4 located within the proposed quarry expansion area. (If the monitoring bore locations conflict with upcoming active quarry areas, the monitoring equipment will be removed and a replacement monitoring bore installed at an appropriate alternative location). Groundwater levels are monitored and data recorded hourly at bores BH03 (P3) and BH04 (P4) to identify the extent of groundwater level drawdown for comparison with predicted impacts. The monitoring in BH03 and BH04 have exhibited stable groundwater levels between August 2014 and June 2015.

The groundwater assessment conducted for the Environmental Assessment (2013) did not consider groundwater quality monitoring was necessary as the quarrying operations were not assessed as likely to cause any significant groundwater quality impacts.

4.3.9.4 Groundwater Inflow Monitoring

A water balance based upon hydrological assumptions and process input and output monitoring is used to estimate the groundwater inflow. An Annual Groundwater Inflow Estimate was proposed in the Water Management Plan section 6.2.2.

As the sand extraction progresses, process flow monitoring and water balance assumptions can be modified to ensure the correct flow paths are monitored and water balance inputs are confirmed. Validation of the groundwater model should occur after two Annual Groundwater Inflow Estimates (Martens, 2010).

4.3.10 Surface and Ground Water Contingency Strategy

[Project Approval 08_0173 Schedule 4 condition 7(c)(iv)]

Hanson has a formal agreement in place with adjacent landholders with respect to potential impacts to water supply yields on the adjacent properties. The agreement outlines a response strategy for Hanson to follow should water supply yield issues occur. The response strategy includes mitigation and compensation measures equivalent to the loss of water supply attributable to the project. If potential water supply yield impacts that are attributable to the project occur to other privately owned bores on nearby properties, Hanson will implement a response strategy with mitigation and compensation measures.

Where surface water or groundwater quality triggers are exceeded, the Contingency Response Plan (Water Management Plan section 7) will be activated.

Element	Trigger/ Response	Condition Green	Condition Orange (Action)	Condition Red (Action Required)
Surface water quality monitoring	Trigger	Levels within EPL Limits	One off EPL exceedance with no ecological damage evident.	Recurrent EPL exceedance; or Actual or potential material harm to the environment.
	Response	Continue surface water monitoring program	Consult with EPA and DP&E. Investigate cause by Environmental Coordinator and apply appropriate mitigation measures. Continue surface water monitoring program with additional monitoring as required.	Immediate notification to EPA and DP&E and implementation of remediation measures to prevent any material harm to the environment or prevent further potential material harm to the environment. Investigation of cause by Environmental Coordinator and application of appropriate mitigation measures.

				Review surface water discharge volume data (if available) to provide context to the magnitude of pollutant loading to downstream waters. Review of Water Management Plan and related operational procedures to prevent recurrence. Continue surface water monitoring program with additional monitoring as required.
Groundwater level monitoring	Trigger	No significant fall in groundwater level	Reduction in groundwater level of greater than the predicted drawdown within monitoring wells; or Notification by landowner of reduction in yield from private bores; or Reduction in groundwater level that impacts GDEs (to be confirmed by Ecological Assessment).	Notification by landowner of complete loss of supply from private bores; or Reduction in groundwater level that significantly impacts GDEs (to be confirmed by Ecological Assessment).
	Response	Continue groundwater monitoring program	Review of climatic conditions. Consult with DP&I, NOW and potentially affected landowners. If required, replace water supply as per response plan for privately owned bores outlined in Section 7.1. Undertake hydrogeological investigation of cause and groundwater model. Continue groundwater monitoring with additional monitoring as required.	Immediately notify DP&I, NOW and potentially affected landowners. Replace water supply as per response plan for privately owned bores outlined in Section 7.1 and provide long term supply of water to the affected landowner up to the equivalent loss of supply attributed to the project. Continue groundwater monitoring with additional monitoring as required

In the event of unforeseen impacts associated with groundwater, the following protocol would be triggered and relevant actions implemented:

- conduct a preliminary review of the nature of the impact, including:
 - (i) any relevant monitoring data; and
 - (ii) current quarrying activities and land use practices;
- commission of an investigation by an appropriate qualified expert into the unforeseen impact to confirm cause and effect and consider relevant options for amelioration of impact(s) as appropriate;
- an action plan would be prepared (in consultation with the appropriate regulatory agency if required) to mitigate causal factors where possible and implement monitoring as necessary to measure the effectiveness of the controls implemented.

The implementation of any mitigation measures will be undertaken in consultation with DP&E, NOW, EPA and reported annually. If the Contingency protocol is implemented the outcomes will be reported in the Annual Review.

4.3.11 Water Management Conclusion

Water Management **Status (at the date of this audit)** **Compliant**

A Surface Water Audit and Water Management Improvement Program was prepared for the existing quarry and quarry extension area and submitted to the DP&E on 28 November 2014. A Water Management Plan was also prepared in accordance with Project Approval 08_0173 Schedule 3 condition 7, and submitted to the Secretary for approval on 28 November 2014. The Water Management Plan included a Site Water Balance, Surface Water Management Plan, Groundwater Management and Surface and Ground Water Contingency Strategy.

Water quality monitoring has been undertaken in accordance with the Environment Protection Licence conditions and impacts from the quarry operations on downstream water bodies are assessed based assessment

of water quality monitoring results and EPL No. 3751 criteria. Water quality discharge from Point LDP2 has exhibited exceedances of the pH water quality criteria (pH range 6.5 to 8.5) between 1 August 2014 to May 2015 period that appear have been associated with the treatment of water entering the Make-Up Dam using lime addition. Water quality suspended solids discharge from Point LDP2 is generally satisfactory and compliant with license conditions.

4.4 Noise

[Project Approval 08_0173 Schedule 3 conditions 8 to 12]

4.4.1 Noise Management Plan

[Project Approval 08_0173 Schedule 3 conditions 12]

The Noise Management Plan was prepared by SLR in consultation with the EPA in 2014 for the Central Coast Sand Quarry, and submitted to DP&E on 28 November 2014.

The Noise Management Plan includes a noise monitoring program and an outline of the process for evaluating the measured contributed noise emissions from quarrying, processing and transporting operations, assessed against the noise emission criteria in the Project Approval Schedule 3 condition 7.

The Noise Management Plan does not include a description of the measures that would be implemented at the Central Coast Sand Quarry to ensure compliance with the relevant conditions of the Project Approval or the requirements to meet best management practice to minimise potential noise impact from the quarry operations.

Recommendation Noise:

It is recommended a revision of the Noise Management Plan to include a description of the mitigation measures described in the Environmental Assessment (2013), or a reference to the Environmental Assessment is undertaken.

4.4.2 Environmental Assessment Prediction and Commitments

4.4.2.1 *Environmental Assessment Report (2013) – Attachment 16*

The Environmental Assessment Report (2013) – Attachment 16 Noise Impact Assessment (SLR, March 2012) identified numerous residential receivers who could potentially receive noise impacts from the operation of the quarry, as a result of the distance from the active areas of the site.

Predicted noise levels in the Environmental Assessment (2013), indicated that quarry operations would comply with the Project Approval Operational Noise Impact Assessment Criteria $LA_{eq(15\text{ min})}$ under most weather conditions (i.e. calm and temperature inversion) at the nearest most affected residential locations to the quarry extension, when the 5 metre soil bund was constructed. The predicted noise levels also indicated that noise levels at all nearest affected residents would not exceed the sleep disturbance noise criteria.

4.4.2.2 *Secretary's Environmental Assessment Report*

The DP&E assessment indicated that it was *"satisfied that Hanson has assessed the potential noise impacts of the project in accordance with relevant guidelines, including the INP. The Project Approval has recommended conditions that limit operational hours in order to ensure acceptable noise impacts."*

The Department has also recommended conditions which apply strict noise criteria, which must be adhered to, and which require the preparation and implementation of a NMP to ensure that operational and construction noise impacts are managed in accordance with best practice and in compliance with the noise criteria".

4.4.2.3 Environmental Assessment Report (2013) -Commitments

The Noise management commitments in the Environmental Assessment will be implemented when works commence in the quarry extension area:

Statements of Commitment – Acoustic/Noise	Actions / Comments
<ul style="list-style-type: none"> A 5m high earth bund will need to be constructed around the proposed extension area boundary. This bund is a permanent fixture and will remain there for the duration of quarry operations. 	The earthen bund will be constructed prior to the commencement of sand quarrying in the quarry extension area.
<ul style="list-style-type: none"> Only 1 x Excavator or 1 x 480 Loader, 1 x Haul Truck and 1 x Water Cart may operate in the proposed extension area once the 5m high earth bund is constructed. 	The operations in the quarry extension area will only involve one excavator / loader, one haul truck and a water cart, once the 5m high earth bund is constructed.
<ul style="list-style-type: none"> 1 x Dozer can operate once the proposed extension area ground level reaches a depth of 5m below the existing ground level. We note that if the dozer operates in the proposed extension area, only the water cart may operate at the same time. 	When the quarry extension area reaches a depth of 5m below the existing ground level a dozer will operate in the quarry.
<ul style="list-style-type: none"> All mobile plant onsite be fitted with quacker type reversing alarms. 	Mobile plant onsite are fitted with 'quacker' type reversing alarms.

5.4.3 Noise Monitoring

[Project Approval 08_0173 Schedule 3 condition 12(d)]

Monitoring at the closest locations (B, C, D, G, P and R) have been selected to check compliance with Project Approval 08_0176 Schedule 3 condition 10. Noise monitoring will commence when all components of the quarry extension project are operating (i.e. after construction of the earthen bund).



The Central Coast Sand Quarry noise monitoring program for the quarry extension will be conducted in accordance with the Noise Management Plan section 3, monitoring requirements of AS 1055 1997 "Acoustics - Description and Measurement of Environmental Noise" and the NSW EPA's Industrial Noise Policy, 2000 (INP), when the quarry extension commences operation.

The operator attended noise measurements and recordings will quantify the intrusive noise emissions from quarrying and processing operations and the overall level of ambient noise. The operator will quantify and characterise the LA_{max} and the average $LA_{eq(15minute)}$ intrusive noise level from quarrying and processing operations. In addition, the overall levels of ambient noise (i.e. LA_{max} , LA_1 , LA_{10} , LA_{50} , LA_{90} , LA_{99} , LA_{min}) will be quantified and characterised for reporting the Noise Monitoring Reports.

4.4.4 Complaints

No noise complaints were recorded between August 2014 and June 2015.

4.4.5 Conclusion

Noise Management	Status (at the date of this audit)	Compliant
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The Noise Management Plan monitoring program proposed at the closest residences, will provide adequate monitoring to check compliance of the operations with the noise assessment criteria in Project Approval 08_0176 Schedule 3 condition 10. The noise monitoring will commence when all components of the quarry extension project are operating.

4.5 Air Quality

[Project Approval 08_0173 Schedule 3 conditions 13 to 16]

4.5.1 Air Quality Management Plan

[Project Approval 08_0173 Schedule 3 condition 15]

The Air Quality Management Plan was prepared by SLR in consultation with the EPA to satisfy Project Approval 08_0173 Schedule 3 conditions 15 and submitted to DP&E for approval on 28 November 2014.

The Air Quality Management Plan section 8 provides examples of best practice mitigation measures and the site specific mitigation measures employed at the Central Coast Sand Quarry for minimisation of dust generation from the operations.

4.5.2 Dust Management Commitments

[Project Approval 08_0173 Schedule 4 condition 14]

The potential for emissions to atmospheric from the quarry operations are to be minimised through the implementation of best practice mitigation measures:

- Water sprays will be used to control dust generation.
- Watering of all internal haul roads at 2 litres/m²/application rate and addition of dust control suppressants on access/haul roads if required to reduce dust generation by haul truck movements.
- Spraying of the shovel / bucket for excavators / front-end loaders when loading trucks.
- Spraying the bucket of trucks before loading and direct water spraying of trucks.
- Sprays / atomisers to moisten ambient air during operations with the potential to generate high volumes of dust.
- Truck washing to prevent the tracking of dusty materials onto sealed roadways Wheel-wash / shaker grids and visual inspection of trucks prior to exiting the site onto public roads.
- Vacuuming / sweeping of dirt track-out out onto public roads.
- Ceasing operations such as bulk storage, loading and unloading, and surface grading during strong wind conditions (wind speed of 15 m/s is commonly used as the trigger for stopping certain operations).
- Covering loads of material transported from the site.
- Driver Code of Practice informing all drivers of dust suppression measures (e.g. compliance with site vehicle speed restrictions etc).
- Minimising exposed areas to the maximum extent possible.
- Progressive rehabilitation / stabilisation of available areas of disturbance.

The application of the mitigation measures have generally been implemented for the Central Coast Sand Quarry operations and dust generation conform to the requirements in the Project Approval and EPL.

4.5.3 Environmental Assessment Predictions

The Air Quality Impact Assessment for the Quarry Extension (SLR 2012) presented results of a dispersion modelling assessment and contains detailed baseline monitoring data and an analysis of the local meteorology and topography for the local area.

Provided specific design and operational safeguards were implemented, dispersion modelling predicted that operations at Central Coast Sand Quarry would comply with the relevant air quality assessment criteria:

- Dust deposition levels were predicted to be below the air quality assessment criterion at all surrounding sensitive receptor locations (refer to the CCSQ AQIA [2012] for details).
- Cumulative annual average PM₁₀ concentrations were predicted to satisfy the air quality criterion at all surrounding sensitive receptor locations.
- Cumulative annual average TSP concentrations were predicted to satisfy the air quality criterion at all surrounding sensitive receptor locations.
- Cumulative 24-hour average PM₁₀ concentrations were predicted to satisfy the air quality criterion at all surrounding sensitive receptor locations.

Compliance with the predicted air quality impacts from the Central Coast Sand Quarry operations has been demonstrated by the monitoring data and lack of community complaints during the 2014 to June 2015 period.

4.5.4 Dust Assessment Criteria

[Project Approval 08_0173 Schedule 4 condition 13]

Air quality impact assessment criteria for the Project are provided in Project Approval 08_0173 Schedule 3, Condition 13. To comply with the Project Approval, the operations at the Central Coast Sand Quarry and associated activities must not cause any exceedances of the air quality impact assessment criteria at any residence on privately-owned land.

Long term impact assessment criteria for particulate matter

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³

Short term impact assessment criterion for particulate matter

Pollutant	Averaging Period	Criterion
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³

Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

4.5.5 Dust Monitoring Program

The monitoring procedures described in the Air Quality Management Plan section 7, comply with the requirements of:

- AS 3580.1.1:2007 Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment
- AS/NZS 3580.10.1:2003 Determination of particulate matter – Deposited matter – Gravimetric method.
- AS/NZS 3580.9.6:2003 Determination of suspended particulate matter - PM10 high volume sampler with size-selective inlet - Gravimetric method.
- AS/NZS 3580.14:2011 Method for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality monitoring applications
- *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (2005).

Daily site inspections are carried out during quarrying operations including:

- Visual inspection of the site activities for airborne dust emissions;
- Check that roads leaving the site are free of soil/sand, to prevent soil/sand tracking onto the public road network; and
- Inspection of rehabilitated areas for any erosion or exposed soil surfaces that may generate wind-blown dust.

Environmental inspection reports include observations with remedial or corrective actions noted (as appropriate).

4.5.5.1 Dust Deposition Gauges

The Air Quality Monitoring Program currently includes two dust deposition gauges located at the west corner of quarry site (Rehab Area DDG1) and the east of the quarry site (DDG2 - High Wall).

All air quality monitoring samples are analysed at a NATA accredited laboratory (vgt Laboratories). Data from the dust deposition gauges is used to determine the impact of the operations on the surrounding private properties and determine compliance of the Central Coast Sand Quarry operations with Project Approval Schedule condition 13.

4.5.5.2 Particulate Monitoring (PM₁₀ and TSP)

A DustTrak Monitor is planned to be installed adjacent to DDG 1 (in proximity to Residence Q) in 2016 to continuously measure the PM₁₀ size fraction. TSP concentrations will be derived using the multiplier outlined in the Air Quality Management Plan Section 5.3. The annual average PM₁₀ measurements as recorded by the DustTrak unit will be multiplied by a factor of 2 to determine the annual average TSP concentration for comparison with the Project Approval conditions.

4.5.5.3 Crystalline Silica Monitoring

There is no current Australian Standard or equivalent methods for the ambient monitoring of respirable crystalline silica (RCS). In the absence of any approved method, monitoring of crystalline silica is performed using a PM₁₀ HVAS (in general accordance with AS/NZS 3580.9.6:2003). A PVC filter with a 0.5 µm pore size will be used to collect an air sample over a period of 24 hours in accordance with AS/NZS 3580.9.6:2003. Filters will be collected and sent to an appropriate laboratory for analysis using x-ray diffraction (XRD) to determine the concentration of RCS in the sample.

When the HVAS is installed, RCS will be collected (as PM₁₀), and compared to the health based value relevant to PM₄. A ratio of the measured RCS with measured PM₁₀ will be generated, which will allow a factor to be applied to the continuous PM₁₀ measurements to determine compliance with the annual average RCS health based criterion.


4.5.5.4 Meteorological Data

Meteorological data is available from Bureau of Meteorology Weather Stations at Gosford Aws and Gosford Narara Research Station approx. 5km from the quarry area in Somersby, Mangrove Mountain 10km from the site and Norah Head 28km from the site. There are also two (2) OEH/EPA air quality monitoring sites at Richmond (southwest of the quarry area) and Wallsend (northeast of the quarry area). A weather station has recently been installed at the Central Coast Sands Quarry site to provide site specific data on temperature, wind speed and wind direction and rainfall.

4.5.6 Review of Dust Monitoring Results

4.5.6.1 Dust Deposition Gauges

Date	Dust Deposition Gauge Data (g/m ² /month)			
	Rehab		Highwall	
	Insoluble Solids	Combustible Matter	Insoluble Solids	Combustible Matter
14 August 2014	0.8	0.2	0.3	0.1
15 October 2014	2.9	1.1	0.6	0.2
14 November 2014	7.6	3.7	0.9	0.4
15 December 2014	3.9	2.3	0.3	<0.1
16 January 2015	1.6	0.7	5.8	0.7
16 February 2015	0.8	0.2	1.4	0.2
19 March 2015	1.3	0.3	0.8	<0.1
16 April 2015	1.2	0.2	1.1	0.2
18 May 2015	0.3	<0.1	12.8	0.4

 Dust deposition results greater than impact assessment criteria of 4 g/m²/month for the dust deposition

Insoluble solids results that exhibited values greater than the impact assessment criteria resulted from:

- 14 November 2014 – 7.6 g/m²/month – dust gauge fell over and was contaminated with sand.
- 16 January 2015 - 5.8 g/m²/month – insect and algae contamination within the gauge.
- 18 May 2014 – 12.8 g/m²/month – adjoining property cut and fill works occurred for new sheds. The dust gauge was also full of water and there was sand in the bottle.

4.5.7 Conclusion

Air Quality Management Status Compliant

The Air Quality Management Plan prepared by SLR to satisfy Project Approval 08_0173 Schedule 3 condition 15 was submitted to DP&E for approval on 28 November 2014. The Air Quality Management Plan provides an outline of best practice mitigation measures and the site specific mitigation measures implemented for the Central Coast Sand Quarry operations.

A weather station measuring temperature, wind speed and direction, humidity, and rainfall was installed in 2015. Installation of a DustTrak Monitor for PM₁₀ and HVAS for respirable crystalline silica is planned for 2016 when the quarry extension commences. The dust deposition results were compliant with the impact assessment

criteria between 1 August 2014 and 30 May 2015 indicating the activities at Central Coast Sand Quarry are managed and minimise dust generation from the site operations.

The dust deposition results between 1 August 2014 and 30 May 2015 have indicated that the activities at Central Coast Sand Quarry are managed and minimise dust generation from the site operations. Dust generated from the off-site activities (e.g. cut and fill for construction of buildings on adjacent properties) and dust deposition gauge contamination resulted in reported levels of material in the dust gauge that were not attributable to the Central Coast Quarry activities.

4.6 Traffic

[Project Approval 08_0173 Schedule 3 conditions 17 to 21]

4.6.1 Traffic Management Plan

[Project Approval 08_0173 Schedule 3 conditions 21]

A Traffic Management Plan and Truck Driver Code of Conduct was prepared for Hanson by Intersect Traffic to satisfy Project Approval Schedule 3 conditions 21 in November 2014, prior to operations commencing at the quarry extension.

Intersect Traffic was also commissioned to organise with Grants Road Sand Quarry to conduct a road condition assessment and road maintenance contributions study of Grants Road, in accordance with Project Approval Schedule 3 condition 19.

The objectives of the Traffic Management Plan and Driver Code of Conduct are to:

- Encourage compliance and acceptance of the Truck Driver Code of Conduct by all heavy vehicle drivers using the quarry;
- Minimise the heavy vehicle impacts on the community;
- Foster an understanding and awareness within the company of community expectations and legislative requirements in regard to heavy vehicle movements;
- Protect and enhance public safety through compliance with relevant road rules;
- Increase driver understanding in relation to fatigue, vehicle operation in public areas and obligation to the general public.

All trucks leaving the quarry site pass through a truck and wheel wash to clean off sand and other material that may fall on the road and the loads are covered.

Central Coast Sand Quarry hours of operation for the transportation of quarry products from the site are 6.00 am to 4.00 pm, Monday to Friday; and 6.00 am to 2.00 pm, Saturday with no transportation of quarry products from the site on Sundays or Public Holidays.

The Traffic Management Plan and Driver Code of Conduct was initiated for the project and will be reviewed 12 months after commencement of the quarry extension operations. The document is to be signed by individual drivers and a Hanson Construction Materials Pty Ltd authorised representative at the time when heavy vehicle haulage drivers attend the site induction.

4.6.2 Monitoring of Product Transport

Accurate records of the amount of quarry products transported from the site (recorded at the weighbridge at the exit from the quarry site) and the number of laden vehicle movements from the site are kept for the quarry operations.

4.6.3 Conclusion

Traffic Management Status Compliant

A Traffic Management Plan and Truck Driver Code of Conduct was prepared for Hanson by Intersect Traffic to satisfy Project Approval Schedule 3 conditions 21 in November 2014. The Truck Driver Code of Conduct is initiated when heavy vehicle haulage drivers attend the Central Coast Sand Quarry site induction.

4.7 Biodiversity

[Project Approval 08_0173 Schedule 3 conditions 22 to 28]

4.7.1 Flora and Fauna Management

The Environmental Assessment (2013) Attachment 12 Ecological Assessment was conducted by RPS Harper Somers O'Sullivan, for the quarry extension area and areas to the south adjoining the existing quarry and included:

- A fauna and flora survey and significance of impact assessment;
- A groundwater assessment and its potential impacts upon groundwater dependent ecosystems; and
- Identification of environmental strategies for rehabilitation of the project area.

The quarry extension area is located between the quarry and adjacent agricultural lands, with broken links to Brisbane Waters National Park.

Previous clearing of the quarry extension area occurred for a variety of agricultural uses (including poultry farming, avocado farming, and other minor land use activities). It was reported that very few native species were present and the site offered little habitat for native fauna and flora. Small areas of degraded native vegetation communities at the quarry extension area consist of Somersby Plateau Open Forest (approximately 1.25 ha), and exotic Pine Lantana Open Forest on disturbed lands within the proposed Quarry Extension Area.

No threatened or significant flora species were identified.

Habitat within the Quarry Extension Area was not of high quality due the disturbed nature of the land.

During the Environmental Assessment (2013) Ecological Assessment, three potential threatened fauna species were identified - cave bats *Miniopterus australis* and *Miniopterus shreibersii* with a probable recording of *Myotis adversus* (Large-footed Myotis). One species of threatened frog *Pseudophryne australis* was possibly heard calling although its presence was not confirmed).



Red-crowned Toadlet (*Pseudophryne australis*)

Where possible, the drainage line running east-west along the southern boundary of the proposed Quarry Extension Area will be protected from direct and indirect disturbance by the quarry activities.

Prior to any disturbance required to the drainage line, a targeted survey for the Redcrowned Toadlet will be undertaken in accordance with Project Approval Schedule 3 condition 23, with relocation of any Red-crowned Toadlet (*Pseudophryne australis*) to occur to appropriate adjoining suitable habitat.

4.7.2 Groundwater Dependant Ecosystems

The Ecological Assessment (RPS, 2010) indicated that none of the vegetation communities within the Central Coast Sand Quarry site equate to any Groundwater Dependant Ecosystems (GDEs) and that the closest GDE habitat to the quarry site are Sandstone Hanging Swamps approximately 500 m to the south and Hawkesbury Banksia Scrub - Woodland located and 500 m to the south east of the quarry extension area. Mapping of Groundwater Dependend Ecosystems (GDE) occurred for Hanson by Bell (2013) and a map of High Priority GDE's developed.

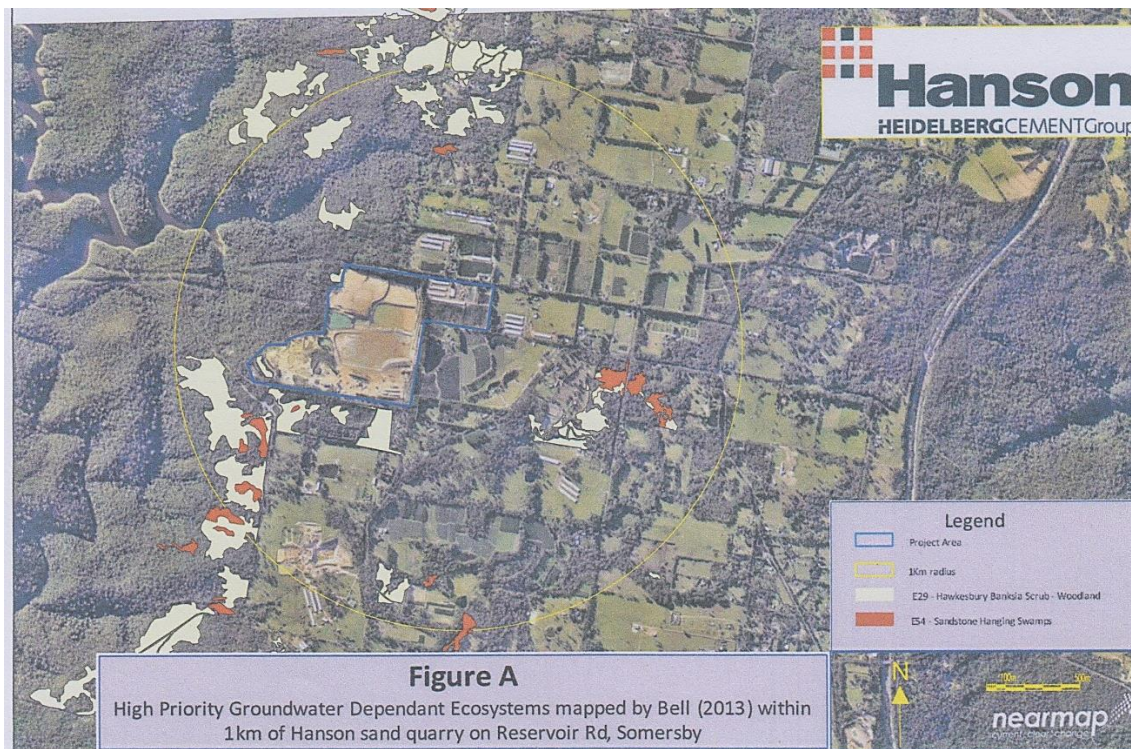


Figure 5.6: Mapping of Groundwater Dependend Ecosystems (GDE) Bell (2013)

With regard to GDEs, comparable drawdown impact between the proposed and existing development could occur when the existing quarry development extraction level reaches approximately 182 m AHD. The quarry extension will have significantly reduced impacts on GDEs if quarry extends to 120 m AHD (Martens, 2013). Results from the sensitivity/uncertainty modelling indicate equivalent or reduced impact with respect to drawdown at GDEs (Martens, 2013).

The development of the Groundwater Dependend Ecosystem Monitoring and Management Program will occur in consultation with NOW prior to commencement of quarrying of the quarry extension area.

4.8 Waste

[Project Approval 08_0173 Schedule 3 condition 35]

4.8.1 Waste Management Plan

A Waste Management Plan was prepared for the Environmental Assessment (2013) Attachment 25, in accordance with NSW waste management guidelines.

The primary sources of waste and management from the Central Coast Sand Quarry are:

- Office general waste - This waste is placed in bins on site and collected by a waste contractor (Veolia).
- Ablutions waste – is collected in a septic tank and collected by a contractor (Transpacific).
- Workshop Waste – general waste is collected by Veolia; steel waste is separated and collected by One Steel recycling; oil and other oily waste is collected by Southern Oil Recycling, and oil filters are collected by Bullbeck Environmental Solutions.
- Sand production waste (tailings resulting from the sand washing process) consist of clay and silt particles suspended in the recycled processing water. The tailings pond(s) settle the clay and silt particles and the supernatant water is redirected back to the processing plant and recycled for washing further raw feed won from the extraction area). (On completion of the active tailings dam the contents will consolidate to produce an area suitable for rehabilitation after placement of top soil and vegetation);
- The removal of vegetation and stripping of topsoil will occur from the quarry site to access the sand resource. These material will be used for the construction of the earth bund around the quarry extension area and rehabilitation on the existing quarry site.
- The demolition of Poultry Sheds was being undertaken by the property owner at the time of this audit (June 2015) with any recyclable/reusable materials to be sold to demolition yards/building materials recycling businesses.

4.8.2 Conclusion

Waste Management	Status	Compliant
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The wastes generated by the Central Coast Sand Quarry operations are managed in accordance with the waste hierarchy with reuse and recycling of waste practiced where practicable and other general waste collected by licenced waste contractors and disposed of to an approved landfill.

4.9 Landscape

[Project Approval 08_0173 Schedule 3 conditions 29 to 33]

4.9.1 Landscape and Rehabilitation Management Plan

[Project Approval 08_0173 Schedule 3 conditions 31]

The Landscape and Rehabilitation Management Plan was prepared and submitted to the DP&E prior to end of July 2015. DP&E reviewed the Landscape and Rehabilitation Management Plan and provided comments on the 3 August 2015.

The Landscape and Rehabilitation Management Plan addresses Project Approval Schedule 3 condition 31 and considers the rehabilitation principles outlined in the Environmental Assessment (2013) section 9 and Attachment 12 Component C: Site Rehabilitation.

4.9.2 Rehabilitation

[Project Approval 08_0173 Schedule 3 conditions 29 to 37]

Following exhaustion of resource extraction from the quarry, the disturbed quarry landform of approximately 265,000m² will be rehabilitated with native grasses.

The Environmental Assessment (2013) indicated the primary objectives for rehabilitation of the site are:

- to restore soil stability using vegetation and / or mulching,
- to create an agricultural grazing pasture of predominantly native grasses; and
- maintain a free-draining landscape.

To achieve stability of the quarry rehabilitated landscape, and avoid issues with topsoil loss and erosion, a grass/herb-land is planned to be established on areas of the site where no further disturbance by quarrying is to occur. Succession of grasses and herbs will ensure that soil stability is restored to the site and ultimately provides a base for any further revegetation works that may be required for the site prior to closure.

4.9.3 Rehabilitation Principles

The Environmental Assessment (2013) section 9 addresses Rehabilitation and Final Land Form and outlines the general principles that will apply to the quarry site:

The site should be rehabilitated back to a final landform to provide the opportunity to use the rehabilitated land for agricultural activities. This will generally be achieved by applying the following principles:

- Topsoil to be used for rehabilitation on the site to be sourced to grow mainly native grasses and legumes;
- Topsoil preparation to assist in the success of the rehabilitation of plants on site to occur via direct seeding and the spreading of vegetation mulch containing seed;
- Planting to include coloniser and soil stabilizing grass species that will establish quickly;
- Watering of seedlings to be continued as required until all plants are established;
- Use of locally occurring native species to enhance habitat connectivity and visual impact; and
- Monitoring for a period of 5 years to ensure success of revegetation, stability of soils, the landscape is retaining water and nutrients, and weed invasion is controlled.

Environmental Assessment (2013) Attachment 12 – Component C: Site Rehabilitation prepared by RPS outlines activities for the land to be rehabilitated to a level where the landscape and soils are stabilised upon completion of all sand mining.

4.9.5 Rehabilitation Progress

Rehabilitation at the date of this audit included portion of the south-western corner of the site within Lot 118 (previous Mining Lease 6309) and an area in the south-eastern section of the quarry where extraction of resource had been completed. The areas have been profiled to establish grass species and control surface runoff from rainfall. Surface runoff from these areas is reused on site or may be discharged via EPA Point LDP1 (if the water quality is compliant with the EPL criteria) to Un-named Tributary 1.

4.9.6 Conclusion

<u>Land Management</u>	<u>Status (at the date of this audit)</u>	<u>Compliant</u>
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The Landscape and Rehabilitation Management Plan required to be prepared by the end of July 2015 to address Project Approval Schedule 3 conditions 31. The rehabilitation activities at the Central Coast Sand Quarry will occur over time where extraction and disturbance of areas of the quarry are completed. The rehabilitation is currently limited to previously disturbed areas of Lot 118 and the south-eastern corner of the site where the surface has been profiled to establish grass species and control surface runoff.

4.10 Visual

[Project Approval 08_0173 Schedule 3 condition 34]

The Quarry area is visually enclosed as a result of topography and existing vegetation in the locality. There are limited properties and public places that have direct view of the quarry development and these are limited to

very small section of Keighley Road which has no through traffic and no properties accessed beyond the western boundary of the Central Coast Sand Quarry area. Also, views from Keighley Avenue are dominated by the existing poultry sheds situated less than 10 metres from the northern boundary of the quarry extension area. During the development of the quarry extension area for sand extraction, a 5m soil bund will be constructed to reduce visual impact of the operations to the surrounding area.

4.10.1 Environmental Assessment 2013 Commitments

The Environmental Assessment (2013) suggested that the hedgerow plantings along the property boundaries should be retained to reduce visual impact of the quarry extension from the closest residences. (At the time of this audit – June 2015 – the hedgerows had been retained).

The enclosed nature of the Somersby locality and extensive use of hedgerows on the properties in the area creates a circumstance where the use of relatively narrow vegetated buffers around the quarry extension area will be entirely consistent with local visual characteristics.

4.10.2 Conclusion

<u>Visual Management</u>	<u>Status (at the date of this audit)</u>	<u>Compliant</u>
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The existing nature of the locality, topography and hedgerow plantings on the surrounding properties result in the quarry extension area being contained within a very small visual catchment.		
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5. Conclusions and Recommendations

This Independent Environmental Audit commissioned by Hanson's and conducted by Trevor Brown of Trevor Brown & Associates to satisfy the requirements of Project Approval (08_0173, Schedule 5 condition 9) was conducted in June 2015.

Due to the early stage of the Central Coast Sand Quarry Extension project the assessment of the status of compliance with the implementation of management requirements of the management plans prepared for the project has been undertaken for the current operations which do not yet include development in the extension area. The review and adequacy of the management plans prepared and implemented at the date of this audit (i.e. June 2015) has been conducted to assess compliance with Project Approval 08_0173 of Schedule 5 condition 2.

The status of the quarry operations is considered to be generally compliant with the conditions of the Project Approval and Environment Protection Licence. As the development of the quarry extension had not commenced at the date of this audit, the preparation of some management plans and implementation of monitoring programs not required until commencement of the quarry extension works, were still to be prepared.

The following recommendations are made in relation to the current status of the Central Coast Sand Quarry development, to improve compliance with the conditions of approval:

Recommendation – Water Licences

It is recommended that Hanson commission a water licensing review for the Central Coast Sand Quarry operations to determine if the water use on the site requires any Water Access Licence(s) under the Water Management Act 2000.

Recommendation Management Plans:

Where detailed baseline data or procedure(s) are not included in the Plans, revision of the Plan(s) should be considered (with reference to the Environmental Assessment or other available baseline information), or a waiver obtained from the Secretary DP&E in accordance with Project Approval Schedule 5 condition 2.

Recommendation Noise Management Plan:

It is recommended that a revision of the Noise Management Plan to include a description of the mitigation measures described in the Environmental Assessment (2013), or a reference to the Environmental Assessment.

Recommendation Surface Water Management Plan:

It is recommended that baseline data/information on surface water flows and surface water quality be included in, or a relevant reference to the data be included into the Water Management Plan to conform with the requirement of Project Approval Schedule 4 condition 7(c)(ii) and Schedule 5 condition 2.

Recommendation Surface Water Treatment:

Modification to the lime addition method to provide better mixing of the lime with the incoming water being treated should be introduced to reduce the potential for pH exceedance in the discharge water.

Attachments

Attachment A Project Approval Conditions

Attachment B Environment Protection Licence Conditions

Appendix

Appendix 1 Agency Consultation

Attachment A

Project Approval 08_0173

1 August 2014

Condition No.	Project Approval Condition	Verification	Comments	Compliance
	SCHEDULE 2 ADMINISTRATIVE CONDITIONS			
	OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT			
1	In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project			Noted
	TERMS OF APPROVAL			
2	<p>The Proponent shall carry out the project generally in accordance with the:</p> <p>(a) EA;</p> <p>(b) project layout plans;</p> <p>(c) proposed plan of subdivision;</p> <p>(d) Statement of Commitments; and</p> <p>(e) conditions of this approval.</p> <p>Notes:</p> <ul style="list-style-type: none"> The general project layout plans of the project are shown in Appendix 1. The proposed plan of subdivision is shown in Appendix 2. The Proponent's statement of commitments is reproduced in Appendix 3. 	<ul style="list-style-type: none"> Environmental Assessment and Statement of Commitments; Feb 2013 Project layout plans Proposed plan of subdivision Project Approval 08_0173 conditions. 	The Central Coast Sand Quarry operations are being developed generally in accordance with the Environmental Assessment and Statement of Commitments, February 2013, project layout plans; proposed plan of subdivision; and the Project Approval conditions.	Compliant Ongoing
3	If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency			Noted
4	<p>The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:</p> <p>(a) any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in accordance with this approval;</p> <p>(b) any reviews, reports or audits, commissioned by the Department regarding compliance with this approval; and</p>			Noted

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Central Coast Sand Quarry

Condition No.	Project Approval Condition	Verification	Comments	Compliance
	(c) the implementation of any actions or measures contained in these documents.			
	LAPSING OF APPROVAL			
5	If the project has not been physically commenced within 5 years of the date of this approval, then this project approval shall lapse.		The Central Coast Sand Quarry extension works had not commenced by Hanson at the date of this audit (June 2015). The previous landowner was dismantling the sheds on the property and generally clearing improvements from the proposed quarry extension area.	Noted
	LIMITS ON APPROVAL			
	Quarrying Operations			
6	The Proponent may carry out quarrying operations on the site until 30 June 2044. <i>Note: Under this approval, the Proponent is required to rehabilitate the site and carry out additional undertakings to the satisfaction of the Secretary. Consequently, this approval will continue to apply in all other respects other than the right to conduct quarrying operations until the rehabilitation of the site and those undertakings have been carried out to a satisfactory standard.</i>			Noted
7	The Proponent shall not carry out quarrying operations below a level of 190 m AHD. <i>Note: This condition does not apply to the construction of any monitoring bores or drill holes</i>		No quarrying operations in the active Central Coast Sand Quarry have occurred below 190 m AHD.	Compliant Ongoing
	Production Limit			
8	The Proponent shall not extract, process and transport more than 310,000 tonnes of quarry products from the site in any calendar year.		The sand extracted from the quarry between 1 August 2014 and 30 May 2015 had not exceeded the approved tonnage.	Noted
	SURRENDER OF EXISTING DEVELOPMENT APPROVALS			
9	By the end of December 2015, or as otherwise agreed by the Secretary, the Proponent shall surrender all existing development consents that it holds for the site in accordance with Section 104A of the EP&A Act. <i>Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of consent should not be understood as implying that works legally constructed under a valid consent can no longer be legally maintained or used</i>		The surrender all existing development consent for the Central Coast Sand Quarry site will occur by the end of December 2015.	Noted

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Condition No.	Project Approval Condition	Verification	Comments	Compliance
10	Prior to the surrender of any existing development consent, the conditions of this approval shall prevail to the extent of any inconsistency with the conditions of that consent			Noted
	STRUCTURAL ADEQUACY			
11	<p>The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.</p> <p>Notes:</p> <ul style="list-style-type: none"> Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works; and Part 8 of the EP&A Regulation sets out the requirements for the certification of the development or project. 		<p>The only new buildings erected on site between 1 August 2014 and 30 May 2015 were demountable structures adjacent to the administration office.</p> <p>No permanent buildings were constructed requiring compliance with the requirements of the BCA.</p>	Compliant
	DEMOLITION			
12	The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	<ul style="list-style-type: none"> AS 2601-2001: The Demolition of Structures 	Hanson had not undertaken demolition of any buildings on the site between 1 August 2014 and 30 May 2015.	Not triggered
	PROTECTION OF PUBLIC INFRASTRUCTURE			
13	<p>The Proponent shall:</p> <p>(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and</p> <p>(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.</p> <p>Note: This condition does not apply to damage to roads caused as a result of general road usage.</p>			Noted
	OPERATION OF PLANT AND EQUIPMENT			
14	The Proponent shall ensure that all the plant and equipment used at the site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.		All plant and equipment used at the CCSQ site is maintained and operated in a proper and efficient manner. Maintenance is undertaken at the on-site workshop.	Compliant Ongoing
	UPDATING AND STAGING OF STRATEGIES, PLANS OR PROGRAMS			
15	To ensure that strategies, plans and programs required under this approval are updated on a regular basis, and that they incorporate any appropriate additional measures to improve the environmental performance of the project, the Proponent may at any time submit revised strategies, plans or programs for the approval of the		The Environmental Management Strategy, Water Management Plan, Air Quality Management Plan and Noise Management Plan were prepared and submitted in November 2014.	Compliant Ongoing

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Central Coast Sand Quarry

Condition No.	Project Approval Condition	Verification	Comments	Compliance
	Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis. With the agreement of the Secretary, the Proponent may prepare a revision of or a stage of a strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this approval.		The Landscape and Rehabilitation Management Plan will be prepared and submitted in accordance with Project Approval 08_0173 Schedule 3 condition 31 and the Groundwater Dependent Ecosystem Monitoring and Management Program will be submitted in accordance with Project Approval 08_0173 Schedule 3 condition 28.	
	PRODUCTION DATA			
16	The Proponent shall: (a) provide annual quarry production data to DRE using the standard form for that purpose; and (b) report this data in the Annual Review (see condition 4 of Schedule 5).	<ul style="list-style-type: none"> DRE Return 2013-2014 	Annual quarry production data is submitted to the DRE as required on the prescribed form. Reporting of the Annual Quarry Production will also occur in the Annual Review (being prepared at the date of this audit June 2015).	Compliant Ongoing
	IDENTIFICATION OF APPROVED EXTRACTION LIMITS			
17	By 30 September 2014, unless otherwise agreed with the Secretary, the Proponent shall: (a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction within the entire site; and (b) submit a survey plan of these boundaries with applicable GPS coordinates to the Secretary.	<ul style="list-style-type: none"> Email to DP&E re Central Coast Sand Quarry Survey, 24 Jul 2015 Survey Plan Central Coast Sand Quarry, Cahill & Cameron Surveyors, 24 Jul 2015 	A registered surveyor (Cahill & Cameron Surveyors) was commissioned and the boundaries of the approved limits of extraction established on a survey plan. A copy of the survey plan was submitted to the DP&E on 24 July 2015.	Compliant Ongoing
18	While quarrying operations are being carried out, the Proponent shall ensure that these boundaries are clearly marked at all times in a manner that allows operating staff to clearly identify the approved limits of extraction.		Boundaries of quarrying operations are clearly marked clearly identify the approved limits of extraction.	Compliant Ongoing
	SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS			
	SOIL AND WATER			
	<i>Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Proponent is required to obtain the necessary water licences for the project, including in respect of the extraction and/or interception of groundwater</i>			
	Water Supply			
1	The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations under the approval to match its available water supply to the satisfaction of the Secretary.	<ul style="list-style-type: none"> Surface Water Hydrology Assessment and Management, Martens, 2010 	The site water balance prepared for the site confirmed that there was sufficient water for all stages of the project.	Noted
	Surface Water Audit and Water Management Improvement Program			

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Condition No.	Project Approval Condition	Verification	Comments	Compliance
2	<p>Within three months of the date of this approval, the Proponent shall commission independent surface water expert/s, approved by the Secretary, to undertake an audit of current and proposed surface water management practices and infrastructure on the site. The audit shall:</p> <p>(a) be undertaken in consultation with NOW;</p> <p>(b) fully describe and audit site water management practices on the existing site;</p> <p>(c) consider proposed water management practices for the Quarry Extension Area</p> <p>(d) identify all reasonable and feasible measures to improve surface water management on the existing site and Quarry Extension Area, with particular reference to opportunities to divert clean water away from the site; and</p> <p>(e) recommend design parameters for proposed water management systems on the site.</p>	<ul style="list-style-type: none"> • Surface Water Audit and Water Management Improvement Program, SLR, 28 Nov 2014 • Email from NOW re Water Management Improvement Program 	<p>The Project Approval 08_010173, was granted on 1 August 2014 and the Surface Water Audit and Water Management Improvement Program prepared by SLR (commissioned within 3 months of the date of this Project Approval), for submission to the Secretary. The Surface Water Audit was undertaken of current and proposed surface water management practices and infrastructure on the site and included:</p> <p>(a) consultation with NOW and response received on 10 November 2014 stated <i>"the proposed objectives and scope of work to be acceptable in relation to Conditions 2 and 3 and will facilitate the development of the Water Management Improvement Program required by Conditions 3 and 4"</i>;</p> <p>(b) section 4.1 describes Current Water Management Practices on the existing site;</p> <p>(c) section 4.3 addresses proposed water management practices for the Quarry Extension Area;</p> <p>(d) section 6 addresses Water Management Improvement Options to improve surface water management on the existing site and Quarry Extension Area, with reference to opportunities to divert clean water away from the site; and</p> <p>(e) section 7 recommends Design Parameters for proposed water management systems on the site.</p>	Compliant
3	<p>Unless otherwise agreed with the Secretary, the Proponent shall submit the Surface Water Audit report to the Secretary within six months of commissioning the audit. The report must be accompanied by a Water Management Improvement Program, based on the report's recommendations, to improve surface water management practices on the site, including a program of proposed timeframes for implementation. Should the Proponent propose to not implement any recommendation of the Audit, it must provide detailed justification to this effect.</p>	<ul style="list-style-type: none"> • Surface Water Audit and Water Management Improvement Program, SLR, 28 Nov 2014 	<p>The Site Water Audit was conducted and submitted to the DP&E within six months of commissioning of the audit. The Water Management Improvement Program was developed following the audit and included with the Site Water Audit (dated 28 November 2014).</p> <p>The implementation of the water improvement program will occur as the quarry extension area is developed.</p>	Compliant Ongoing

Independent Environmental Audit June 2015

Central Coast Sand Quarry

Condition No.	Project Approval Condition	Verification	Comments	Compliance
4	The Proponent must implement the Water Management Improvement Program to the satisfaction of the Secretary.			Noted
	Compensatory Water Supply			
5	<p>The Proponent shall provide a compensatory water supply to any owner of a privately-owned groundwater bore where monitoring indicates that the project is causing (or contributing to, in conjunction with another quarry project) a reduction in pumping yield of more than 10%, or a 2 metre decline in the water table, in consultation with NOW, and to the satisfaction of the Secretary.</p> <p>The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply must be provided (at least on an interim basis) within 24 hours of the loss being identified.</p> <p>If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p>If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary</p>		<p>Hanson have an agreement in place with the nearest landowner in relation to provision of a compensatory water supply if determined by a reduction in pumping yield from the water table.</p> <p>No request for compensatory water supply had been received by Hanson at the date of this audit.</p>	Not triggered
	Pollution of Waters			
6	Unless an EPL authorises otherwise, the Proponent shall comply with section 120 of the POEO Act during the carrying out of the project.	<ul style="list-style-type: none"> Protection of the Environment Operations Act 1997 section 120 EPL No. 3751 		Noted
	Water Management Plan			
7	<p>The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared by suitably qualified person(s), approved by the Secretary;</p> <p>(b) be prepared in consultation with NOW, and be submitted to the Secretary for approval prior to undertaking quarrying operations in the Quarry Extension Area or by November 2014, whichever is the sooner; and</p> <p>(c) include a:</p>	<ul style="list-style-type: none"> Surface Water Audit and Water Management Improvement Program, SLR, 28 Nov 2014 	<p>(a) The Water Management Plan was prepared by SLR to satisfy Project Approval 08_0173 Schedule 3 condition 7.</p> <p>(b) The Water Management Plan was prepared in consultation with NOW, and submitted to the Secretary for approval on 28 November 2014.</p>	Compliant
7(i)	<p>(i) Site Water Balance that includes:</p> <ul style="list-style-type: none"> details of: <ul style="list-style-type: none"> o sources and security of water supply; o water use and management on site; 	<ul style="list-style-type: none"> Surface Water Hydrology Assessment and Management, Martens, 2010 	A water balance was undertaken by Martens Associates as part of the Surface Water Hydrology Assessment and Management (Martens, 2010). Section 5 of Surface Water	Compliant

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Central Coast Sand Quarry

Condition No.	Project Approval Condition	Verification	Comments	Compliance
	<ul style="list-style-type: none"> o any off-site water transfers; o reporting procedures; and • measures that would be implemented to minimise clean water use on site; 	<ul style="list-style-type: none"> • Water Management Plan, SLR, 28 Nov 2014 	<p>Hydrology Assessment and Management identifies:</p> <ul style="list-style-type: none"> • section 5.3 sources and security of water supply; • section 5.4 Water Demand/Uses on site; • no off-site water transfers occur. Any discharge from the site occurs in accordance with EPL 3751; • Water Management Plan section 8 addresses reporting on water data. <p>SLR undertook a review of the Martens water balance and considered the hydrological assumptions and methodology suitable for the purpose of the Water Management Plan. Hanson confirmed the water use assumptions were consistent with current practices onsite.</p>	
7(ii)	<p>(ii) Surface Water Management Plan, that includes:</p> <ul style="list-style-type: none"> • detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the project; • a detailed description of the water management system on site, including the: <ul style="list-style-type: none"> o clean water diversion system; o erosion and sediment controls; o dirty water management system; and o water storages; • a program to monitor and report on surface water flows and quality in water bodies that could potentially be affected by the project; and • a comparison of monitoring results with modelled predictions 	<ul style="list-style-type: none"> • Surface Water Hydrology Assessment and Management, Martens, 2010 • Water Management Plan, SLR, 28 Nov 2014 	<p>The Surface Water Management Plan was prepared by SLR as section 3 of the Water Management Plan and included:</p> <ul style="list-style-type: none"> • detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the project not addressed in the Plan; • Surface water management system on site: <ul style="list-style-type: none"> o Section 3.1.4 Clean Water Management; o Section 3.1.3 Dirty Water Management and erosion control; o Section 3.1.1 Water Storages; • Section 6.1 Surface Water Monitoring of flows and quality. 	Administrative Non-compliance
				Compliant
7(iii)	<p>(iii) Groundwater Management Plan, that includes:</p> <ul style="list-style-type: none"> • detailed baseline data on groundwater levels, yield and quality in local sandstone aquifers, privately-owned groundwater bores and in areas of high priority GDEs that could be affected by the project; • groundwater impact assessment criteria for local sandstone aquifers, privately owned bores and high priority GDEs; • a program to monitor and report on: o groundwater inflows to the quarrying operations; o the impacts of the project on: - local sandstone aquifers; - privately-owned groundwater bores; and - 	<ul style="list-style-type: none"> • Surface Water Hydrology Assessment and Management, Martens, 2010 • Water Management Plan, SLR, 28 Nov 2014 	<p>The Groundwater Management Plan was prepared by SLR as section 5 of the Water Management Plan in November 2014:</p> <ul style="list-style-type: none"> • Section 5.5 Groundwater Quality Martens (2010b) stated that "groundwater quality within the upper portion of Hawkesbury Sandstone is considered to be good based on typical documented electrical conductivity (EC) values and pH levels. Water is suitable for domestic and agricultural uses". 	Compliant

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	<p>high priority GDEs. including provision for continuous groundwater monitoring; and</p> <ul style="list-style-type: none">• a program to validate the groundwater model for the project, and comparison of monitoring results with modelled predictions;• a protocol, developed in consultation with Grants Road Sand Quarry, to appropriately apportion responsibility for any potential impacts to privately-owned groundwater bores and/or high priority GDEs that may be affected cumulatively by the project and operations at Grants Road Sand Quarry; and		<ul style="list-style-type: none">• The assessment (RPS, 2010) indicated that none of the vegetation communities within the Site equate to any Groundwater Dependant Ecosystems (GDEs);• Section 5.6 states the closest GDE habitat to the Project Area are Sandstone Hanging Swamps and Hawkesbury Banksia Scrub - Woodland located approximately 500 m to the south and 500 m to the south east of the proposed extension area respectively.• Section 6.2.2 Monitoring Groundwater Inflows• Section 6.2.3 Validation of the Groundwater Model - describes the program to validate the groundwater model for the project, and compare monitoring results with modelled predictions.					
7(iv)	<p>(iv) a Surface and Ground Water Contingency Strategy, that includes:</p> <ul style="list-style-type: none">• a protocol for the investigation, notification and mitigation of identified exceedances of the surface water and groundwater impact assessment criteria;• measures to mitigate and/or compensate potentially affected landowners of privately owned land including provision of alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to the project; and• the procedures that would be followed if any unforeseen impacts are detected during the project. <p><i>Note: In the event that there is a dispute between the Proponent and Grants Road Sand Quarry concerning the development, finalisation or implementation of the above protocol, then either party may refer the matter to the Secretary for resolution. The decision of the Secretary on the matter shall be final.</i></p>		<p>A Surface and Ground Water Contingency Strategy has been prepared as section 7 of the Water Management Plan:</p> <ul style="list-style-type: none">• section 8.1 addresses environmental incident notification details, protocols and reporting requirements are provided in the Site Pollution Incident Response Management Plan (PIRMP).• Section 7.1 described a formal agreement in place with adjacent landholders with respect to potential impacts to water supply yields on adjacent properties.• Section 7.4 Unforeseen Impacts outlines the protocol for response to unforeseen impacts.	Compliant				
	NOISE							
	Hours of Operation							
8	<p>The Proponent shall comply with the operating hours in Table 1.</p> <p>Table 1: Operating Hours Activity Operating Hours</p> <table><tr><th>Activity</th><th>Operating Hours</th></tr><tr><td></td><td></td></tr></table>	Activity	Operating Hours				<p>The operations of the Central Coad Sand Quarry occur within the hours specified in Schedule 3 condition 8.</p>	Compliant
Activity	Operating Hours							

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Condition No.	Project Approval Condition				Verification	Comments	Compliance
	Transportation of quarry products from the site	6.00 am to 4.00 pm, Monday to Friday; and 6.00 am to 2.00 pm, Saturday. No transportation of quarry product from the site on Sundays or Public Holidays.					
	Other Quarrying operations	6.00 am to 6.00 pm, Monday to Friday; and 6.00 am to 4.00 pm, Saturday. No quarrying operations on Sundays or Public Holidays					
	. Construction activities	7.00 am to 4.00 pm, Monday to Friday; and 7.00 a m to 12.00 pm, Saturday unless noise from these activities does not exceed 38dB(A)LAeq(15min) at any privately owned residence					
	. Maintenance activities	24 hours a day, 7 days per week, providing maintenance activities are inaudible at any privately-owned residence					
Note for Table 1: a During DST, the processing plant may operate from 6am to 8pm, Monday to Friday							
9	The following activities may be carried out on the site outside the hours specified in Table 1: (a) delivery or dispatch of materials as requested by Police or other authorities; and (b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm. In such circumstances the Proponent shall notify the Secretary and affected residents prior to undertaking the activities, or as soon as is practical thereafter.						Noted
	Operational Noise Impact Assessment Criteria						
10	The Proponent shall ensure that the operational noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land.				• Noise Management Plan, Nov 2014	Stage 1 of the quarry extension project had not commenced at the date of this audit (June 2015). The noise generated from the existing quarry operations is not audible at the surrounding residences under the meteorological conditions under which these criteria apply as the extraction activities occur in the base of the pit (at a depth of at greater than 130mAHD. As the quarry activities are not audible at the receivers the LAeq(15 min) operational noise generated by the project	Compliant Ongoing
Table 2: Operational noise criteria (dB(A) LAeq(15 min))							
Receiver	Day	Evening	Morning Shoulder				
	LAeq(15 min)		LAeq(15 min)				
B	37	LAeq(15 min)	37	LA1(1 min)			
C	37	35	38	47			

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	D	38		40			operation would be less than the noise criteria in Table 2.	
	G	36		38				
	R	36		38				
	All other privately owned land	35	35					
	Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy. Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria. However, the noise criteria in Table 2 do not apply if the Proponent has an agreement with the relevant landowner to exceed the noise criteria, and the Proponent has advised the Department in writing of the terms of the agreement. Notes: To interpret the locations referred to in Table 2, see the applicable figures in Appendix 4.							
	Operating Conditions							
11	The Proponent shall: (a) implement best management practice to minimise the construction, operational and road noise of the project; (b) regularly assess noise monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the noise criteria in this approval; (c) maintain the effectiveness of noise suppression equipment on plant and equipment on site; (d) minimise the noise impacts of the project during meteorological conditions under which the noise criteria in this approval do not apply (see Appendix 5); (e) ensure that the applicable acoustic bunds (as shown as earth mounds in Appendix 1) are constructed prior to the commencement of quarrying operations within any relevant stage of the project; and (f) carry out regular noise monitoring to determine whether the project is complying with the relevant conditions of this approval, to the satisfaction of the Secretary					<ul style="list-style-type: none">Noise Management Plan, Nov 2014	The operation of the Central Coast Sand Quarry: (a) minimises construction, operational and road noise of the project; (b) assess noise emissions and relocates, modifies or stops operations on site to manage noise; (c) maintains noise suppression on plant and equipment on site; (d) minimises noise impacts of the project during meteorological conditions under which the noise criteria in this approval do not apply; (e) acoustic bunds will be constructed prior to the commencement of quarry extension operations; and (f) noise monitoring will conducted when the quarry extension operations commence to assess compliance with the relevant conditions of this approval.	Compliant Ongoing
	Noise Management Plan							

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12	<p>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA, and be submitted to the Secretary for approval prior to undertaking quarrying operations in the Quarry Extension Area or by November 2014, whichever is the sooner;</p> <p>(b) describe the measures that would be implemented to ensure: (i) compliance with the relevant conditions of this approval; (ii) best management practice is being employed; and (iii) the noise impacts of the project are minimised during meteorological conditions under which the noise criteria in this approval do not apply;</p> <p>(c) describe the proposed noise management system; and</p> <p>(d) include a monitoring program that: (i) uses attended monitoring to evaluate the compliance of the project against the noise criteria in this approval; (ii) evaluates and reports on the effectiveness of the noise management system and the best practice noise management measures; and (iii) defines what constitutes a noise incident at the project, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.</p>	<ul style="list-style-type: none">Noise Management Plan, SLR, 28 Nov 2014	<p>A Noise Management Plan was prepared in 2014 by SLR for the Central Coast Sand Quarry. The plan:</p> <p>(a) The Noise Management Plan was prepared in consultation with the EPA, and submitted to the Secretary for approval on 28 November 2014;</p> <p>(b) Not addressed - measures to be implemented to ensure compliance with the relevant conditions of this approval; apply best management practice; and minimisation of noise during meteorological conditions under which the noise criteria in this approval do not apply;</p> <p>(c) Noise management system not addressed in the Noise Management Plan;</p> <p>(d) section 3 outlines the noise monitoring program and section 5 addresses evaluation and reporting:</p> <p>(i) section 3.2 describes attended monitoring to evaluate the compliance of the project against the noise criteria in this approval;</p> <p>(ii) section 5.2 addresses evaluating and reporting on noise management measures; and</p> <p>(iii) section 5.3 addresses Excessive Noise Emissions and Corrective Action.</p>	Compliant									
				Administrative Non-compliance									
				Compliant									
	AIR QUALITY												
	Air Quality Impact Assessment Criteria												
13	<p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 3, 4, 5 and 6 at any residence on privately-owned land.</p> <p>Table 5: Long term impact assessment criteria for particulate matter</p> <table><tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr><tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>90 µg/m³</td></tr><tr><td>Particulate matter</td><td>Annual</td><td>30 µg/m³</td></tr></table>	Pollutant	Averaging Period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Particulate matter	Annual	30 µg/m ³		<p>Air quality monitoring at the Central Coast Sand Quarry confirms that dust deposition at the monitoring locations DDG1 And DDG2 comply with the criteria in Table 7.</p> <p>Particulate monitoring will be conducted using a DustTrak Monitor when it is installed in 2016, to continuously measuring PM₁₀, installed adjacent to DDG 1 (in proximity to Residence Q) when the quarry extension operations commence.</p>	Compliant Ongoing
		Pollutant	Averaging Period	Criterion									
		Total suspended particulate (TSP) matter	Annual	90 µg/m ³									
		Particulate matter	Annual	30 µg/m ³									

Condition No.	Project Approval Condition	Verification	Comments	Compliance																	
	<table><tr><td>< 10 µm (PM₁₀)</td><td></td><td></td></tr></table> <p>Table 6: Short term impact assessment criterion for particulate matter</p> <table><tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr><tr><td>Particulate matter < 10 µm (PM₁₀)</td><td>24 hour</td><td>50 µg/m³</td></tr></table> <p>Table 7: Long term impact assessment criteria for deposited dust</p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr><tr><td>Deposited dust</td><td>Annual</td><td>2 g/m²/month</td><td>4 g/m²/month</td></tr></table> <p>Notes for Tables 3 to 6: a Total impact (ie incremental increase in concentrations due to the project plus background concentrations due to all other sources); b Incremental impact (ie incremental increase in concentrations due to the project on its own); c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed to by the Secretary in consultation with the EPA; and e Crystalline silica must be analysed in accordance with a test method approved by the Department of Health.</p>	< 10 µm (PM ₁₀)			Pollutant	Averaging Period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month			
< 10 µm (PM ₁₀)																					
Pollutant	Averaging Period	Criterion																			
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³																			
Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level																		
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month																		
	Operating Conditions																				
14	<p>The Proponent shall:</p> <p>(a) implement best practice management to minimise the dust emissions of the project;</p> <p>(b) regularly assess air quality monitoring data and relocate, modify and/or stop operations on site to ensure compliance with the air quality criteria in this approval;</p> <p>(c) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see note d under Table 6); and</p> <p>(d) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site;</p> <p>(e) minimise the area of surface disturbance and maximise progressive rehabilitation of the site; and</p>		<p>The operation of the Central Coast Sand Quarry:</p> <p>(a) minimises operational dust generation and from the project;</p> <p>(b) visually monitor dust emissions and modify or stop operations on site to manage dust;</p> <p>(c) minimise the air quality impacts of the project during adverse meteorological conditions on site;</p> <p>(d) manage operations to minimise the release of greenhouse gas emissions from the site;</p> <p>(e) the area of disturbance at the quarry is associated with the extraction of the sand</p>	Compliant Ongoing																	

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	(f) carry out regular air quality monitoring to determine whether the project is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.		resource. Rehabilitation of areas of the site where extraction has been completed are being progressively stabilised; and (f) dust monitoring is conducted and will continue when the quarry extension operations commence to assess compliance with the relevant conditions of this approval.	
	Air Quality Management Plan			
15	<p>The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA, and be submitted to the Secretary for approval prior to undertaking quarrying operations in the Quarry Extension Area or by November 2014, whichever is the sooner;</p> <p>(b) describe the measures that would be implemented to ensure: (i) compliance with the relevant conditions of this approval; (ii) best practice management is being employed; and (iii) the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events;</p> <p>(c) describe the proposed air quality management system; and</p> <p>(d) include an air quality monitoring program that: (i) is capable of evaluating the performance of the project; (ii) includes a protocol for determining any exceedances of the relevant conditions of approval; (iii) effectively supports the air quality management system; and (iv) evaluates and reports on the adequacy of the air quality management system.</p>	<ul style="list-style-type: none"> Air Quality Management Plan, 28 Nov 2014 	<p>The Air Quality Management Plan was prepared by SLR:</p> <p>(a) the Air Quality Management Plan was prepared and be submitted to DP&E for approval on 28 November 2014;</p> <p>(b) section 8 describes the measures that would be implemented to ensure: (i) compliance with the relevant conditions of this approval; (ii) best practice management is being employed; and (iii) the air quality impacts of the project are minimised during adverse meteorological conditions and extraordinary events;</p> <p>(c) section 8 Mitigation Measures describe the proposed air quality management system; and</p> <p>(d) section 7 Air Quality Monitoring Program includes an air quality monitoring that:</p> <p>(i) section 11.5 Performance Monitoring addresses evaluation of performance of the project;</p> <p>(ii) section 9.1 Pro-active Response Procedure includes a protocol for determining any exceedances of the relevant conditions of approval;</p> <p>(iii) section 12 Continual Improvement supports the air quality management system; and</p> <p>(iv) section 11 evaluates and reports on the adequacy of the air quality management system.</p>	Compliant

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	METEOROLOGICAL MONITORING			
16	For the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements in <i>the Approved Methods for Sampling of Air Pollutants</i> in New South Wales guideline.		Meteorological data is available for the Central Coast Sand Quarry site from the two (2) OEH/EPA air quality monitoring sites at Richmond (southwest of the quarry area) and Wallsend (northeast of the quarry area). Bureau of Meteorology data is also available from the Gosford Aws and Gosford Narara Research Station approx. 5km from the quarry area in Somersby, Mangrove Mountain 10km from the site and Norah Head 28km from the site.	Compliant
	TRANSPORT			
	Monitoring of Product Transport			
17	The Proponent shall: (a) keep accurate records of: (i) the amount of quarry products transported from the site (per calendar month and year); and (ii) the number of laden vehicle movements from the site (per hour, day, week, calendar month and year); and (b) publish these records on its website biannually.	<ul style="list-style-type: none"> Traffic Management Plan, Nov 2014 Truck Drivers Code of Conduct, Nov 2014 www.hanson.com.au/TheCentralCoastSandQuarryProject/ 	Records are kept of: (i) Traffic Management Plan section 1.5 Monitoring of Product Transport (ii) Traffic Management Plan section 1.5 Monitoring of Product Transport (iii) Product transport records will be published on the Company website biannually.	Compliant Ongoing
	Operating Conditions			
18	The Proponent shall ensure that: (a) all project-related heavy vehicles enter and exit the site in a forward direction; (b) all laden vehicles entering or leaving the site have their loads covered; and (c) all laden vehicles leaving the site are cleaned of sand and other material that may fall on the road, before leaving the site.	<ul style="list-style-type: none"> Traffic Management Plan, Nov 2014 Truck Drivers Code of Conduct, Nov 2014 	(a) All project-related heavy vehicles enter and exit the site in a forward direction in accordance with Traffic Management Plan section 1.4; (b) Truck Drivers Code of Conduct section 2.6 Load Covering; (c) Truck Drivers Code of Conduct section 2.7 Vehicle Arrival and Departure.	Compliant Ongoing
	Grants Road Maintenance			
19	The Proponent shall, in conjunction with the operator of the Grants Road Sand Quarry, cause to be prepared a road condition assessment and road maintenance contributions study of Grants Road. The study must: (a) be undertaken by a suitably qualified, experienced and independent person(s) endorsed by the Secretary;	<ul style="list-style-type: none"> Traffic Management Plan, section 4, Nov 2014 	Hanson's organised with the operator of Grants Road Sand Quarry for a road condition assessment and road maintenance contributions study of Grants Road. (a) Intersect Traffic was commissioned to organise and conduct a road	Compliant Ongoing

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	<p>(b) be undertaken in consultation with Council;</p> <p>(c) be submitted to the Secretary by the end of March 2015;</p> <p>(d) be co-funded by the Proponent and the operator of the Grants Road Sand Quarry on a basis which is proportionate to the maximum number of tonnes of quarry product expected to be dispatched from each quarry over the life of their major project approvals, and the length of Grants Road affected by laden vehicles from each quarry;</p> <p>(e) assess current road condition of the length of Grants Road affected by laden vehicles from each quarry and future road maintenance requirements for this length of road over the life of the major project approvals for both quarries;</p> <p>(f) give consideration to the usage of Grants Road by laden vehicles from each quarry over the past five years and the predicted usage of Grants Road by each quarry over the life of their major project approval including any importation of Virgin Excavated Natural Material; and</p> <p>(g) recommend per tonne/per kilometre road maintenance contributions for the project for the haulage of quarry products on Grants Road.</p> <p>If the Proponent and the operator of the Grants Road Sand Quarry cannot agree on any aspect of undertaking this study or the implementation of its recommendations, then either party may refer the matter to the Secretary for resolution. The decision of the Secretary on the matter shall be final</p>		<p>maintenance contributions study of Grants Road, in accordance with Project Approval Schedule 3 condition 19.</p> <p>(b) Gosford Council was consulted during the Grants Road study;</p> <p>(c) The road condition assessment was not submitted to the DP&E until 9 July 2015;</p> <p>(d) Noted</p> <p>(e) The inspection of the road pavement in both Grants Road and Reservoir Road with the exception of the road edges and the table drains was generally in good condition.</p> <p>(f) Noted</p> <p>(g) Hanson Construction Materials Pty Ltd will pay \$94 contributions for road maintenance to the Gosford Council and the Council will ensure Grants Road and Reservoir Road are suitably maintained.</p>	<div>Administrative Non-compliance</div> <div>Compliant Ongoing</div>
20	The Proponent and the operator of the Grants Road Sand Quarry shall pay contributions for the maintenance of Grants Road, in accordance with the study required under condition 19, unless otherwise agreed by the Secretary.			Noted
	Traffic Management Plan			
21	<p>The Proponent shall prepare and implement a Traffic Management Plan for the project, to the satisfaction of the Secretary. This plan must:</p> <p>(a) be submitted to the Secretary for approval prior to the end of November 2014;</p> <p>(b) include a drivers' code of conduct to minimise the impacts of project-related trucks on local residences and road users; and</p> <p>(c) describe the measures that would be put in place to ensure compliance with the drivers' code of conduct.</p>	<ul style="list-style-type: none"> Traffic Management Plan, Nov 2014 	<p>The Traffic Management Plan was prepared for the Central Coast Sand Quarry and:</p> <p>(a) was submitted to the Secretary for approval prior on 28 November 2014;</p> <p>(b) section 2 is the Truck Drivers' Code of Conduct; and</p> <p>(c) section 2.1 describes the general requirements to ensure compliance with the drivers' code of conduct.</p>	Compliant Ongoing
	BIODIVERSITY			
	Pre-Clearance Surveys			

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Condition No.	Project Approval Condition	Verification	Comments	Compliance				
22	The Proponent shall undertake pre-clearance surveys prior to the clearance of any vegetation within the project area.		Survey of any native vegetation to be cleared in the quarry extension area will occur prior to clearance.	Noted				
23	Prior to undertaking quarrying operations in the Quarry Extension Area, the Proponent shall commission suitably qualified expert/s, approved by the Secretary, to undertake targeted surveying for the Red-crowned Toadlet. The surveying shall be: (a) undertaken in accordance with the Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna - Amphibians and any other relevant OEH threatened biodiversity guideline; and (b) accompanied by recommended measures to manage or offset any impacts on the Red-crowned Toadlet, if it is identified on or near the site, to the satisfaction of the Secretary.		No quarrying or other disturbance of areas of potential habitat of the Red-crowned Toadlet had occurred at the date of this audit (June 2015). Targeted surveying for the Red-crowned Toadlet will be undertaken in accordance with the Threatened Species Survey and Assessment Guidelines: <i>Field Survey Methods for Fauna - Amphibians</i> and any other relevant OEH threatened biodiversity guideline.	Not triggered				
24	Within a month of completing the surveying, the Proponent shall submit a report to the Secretary containing the results of the survey and a detailed description of the surveying method undertaken and any recommended measures.		No pre-clearance surveys or clearance of vegetation had occurred at the date of this audit (June 2015)	Not triggered				
25	The Proponent shall undertake all reasonable and feasible measures to minimise potential impacts on any identified populations of Red-crowned Toadlet, to the satisfaction of the Secretary.		No disturbance of areas of potential habitat of the Red-crowned Toadlet had occurred at the date of this audit (June 2015).	Noted				
	Biodiversity Performance Measures							
26	The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 7, to the satisfaction of the Secretary. <i>Table 7: GDE impact performance measures</i>	<ul style="list-style-type: none">High Priority Groundwater Dependent Ecosystems, Bell, 2013	Mapping of Groundwater Dependent Ecosystems (GDE) occurred for Hanson by Bell (2013) and a map of High Priority GDE's was developed.	Noted				
	<table><tr><th>Feature</th><th>Measure</th></tr><tr><td>High priority GDEs located within 1 km of extraction operations</td><td>Minor environmental consequences<ul style="list-style-type: none">negligible erosion of the surface of the GDEs;negligible sedimentation within the GDEs;minor changes in the size of the GDEs;no significant change to the composition or distribution of species within the swamp.</td></tr></table>				Feature	Measure	High priority GDEs located within 1 km of extraction operations	Minor environmental consequences <ul style="list-style-type: none">negligible erosion of the surface of the GDEs;negligible sedimentation within the GDEs;minor changes in the size of the GDEs;no significant change to the composition or distribution of species within the swamp.
	Feature				Measure			
High priority GDEs located within 1 km of extraction operations	Minor environmental consequences <ul style="list-style-type: none">negligible erosion of the surface of the GDEs;negligible sedimentation within the GDEs;minor changes in the size of the GDEs;no significant change to the composition or distribution of species within the swamp.							
	Offsets							

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Condition No.	Project Approval Condition	Verification	Comments	Compliance				
27	<p>If the Proponent exceeds the performance measures in Table 7 and the Secretary determines that:</p> <p>(a) it is not reasonable or feasible to remediate the impact or environmental consequence; or</p> <p>(b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence;</p> <p>then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.</p> <p><i>Note: Any offset required under this condition must be proportionate with the significance of the impact or environmental consequence.</i></p>			Not triggered				
	Groundwater Dependent Ecosystem Monitoring and Management Program							
28	<p>The Proponent shall undertake additional studies on the high priority GDEs located within 1 kilometre of extraction operations under the approval and potentially impacted by the project. The studies shall be undertaken in consultation with NOW and include:</p> <p>(a) a description of the nature and extent of groundwater reliance for each GDE;</p> <p>(b) long-term monitoring of the condition of the GDEs;</p> <p>(c) performance indicators for project-related environmental consequences on GDEs and trigger levels to initiate mitigation/response measures; and</p> <p>(d) mitigation/response measures to ensure minor environmental consequences on the GDEs, to the satisfaction of the Secretary</p>	<ul style="list-style-type: none">High Priority Groundwater Dependent Ecosystems, Bell, 2013	<p>(a) Mapping of Groundwater Dependent Ecosystems (GDE) occurred for Hanson by Bell (2013) and a map of High Priority GDE's developed.</p> <p>(b) The development of the Groundwater Dependent Ecosystem Monitoring and Management Program will occur in consultation with NOW prior to commencement of quarrying of the Central Coast Sand Quarry extension area.</p>	Compliant				
				Ongoing				
	LANDSCAPE							
	Rehabilitation Objectives							
29	<p>The Proponent shall rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be generally consistent with the rehabilitation strategy in the EA, as shown on the plans in Appendix 6, and comply with the objectives in Table 8.</p> <p>Table 8: Rehabilitation objectives</p>		The rehabilitation objectives will be addressed and consistent with the Rehabilitation Strategy in the Environmental Assessment, when project rehabilitation is implemented at the end of extraction on the project site.	Noted				
	<table><tr><th>Feature</th><th>Objective</th></tr><tr><td>Site (as a whole)</td><td><ul style="list-style-type: none">Safe, stable and non-polluting;Final landforms drain to the natural environment; and</td></tr></table>				Feature	Objective	Site (as a whole)	<ul style="list-style-type: none">Safe, stable and non-polluting;Final landforms drain to the natural environment; and
	Feature				Objective			
Site (as a whole)	<ul style="list-style-type: none">Safe, stable and non-polluting;Final landforms drain to the natural environment; and							

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		<ul style="list-style-type: none"> Minimise the visual impact of final landforms as far as is reasonable and feasible 			
	Surface infrastructure	<ul style="list-style-type: none"> To be decommissioned and removed, unless the Secretary agrees otherwise 			
	Quarry benches	<ul style="list-style-type: none"> Suitably landscaped and revegetated using native species. 			
	Quarry pit floor	<ul style="list-style-type: none"> Suitably landscaped and revegetated land with at least 8 hectares of minimum Class 3 agricultural suitability land. 			
	Community	<ul style="list-style-type: none"> Ensure public safety. □ Minimise the adverse socio-economic effects associated with quarry closure 			
	Progressive Rehabilitation				
30	<p>The Proponent shall rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim stabilisation measures must be implemented where reasonable and feasible to control dust emissions in disturbed areas that are not active and which are not ready for final rehabilitation.</p> <p><i>Note: It is accepted that parts of the site that are progressively rehabilitated may be subject to further disturbance in future.</i></p>			<p>The rehabilitation of the site will occur as soon as reasonably practicable following disturbance of areas and completion of quarrying.</p> <p>Areas to the west of the existing quarry area (i.e. within Lot 118 and the in south-eastern corner of the quarry) have been stabilised and rehabilitation of the surface area has commenced.</p>	Compliant Ongoing
	Landscape and Rehabilitation Management Plan				
31	<p>The Proponent shall prepare and implement a Landscape and Rehabilitation Management Plan for the site to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared by suitably qualified person(s) whose appointment has been approved by the Secretary;</p> <p>(b) be prepared in consultation with OEH, DRE and Council, and submitted to the Secretary for approval by the end of July 2015;</p> <p>(c) describe the short, medium and long-term measures that would be implemented to:</p> <p>(i) manage the remnant vegetation and habitat on the site; and</p> <p>(ii) ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval;</p> <p>(d) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, including triggers for any necessary remedial action;</p>		<ul style="list-style-type: none"> Letter from DP&E re Approval of Suitably Qualified Person for Preparation of the Landscape and Rehabilitation Management Plan, 9 Jun 2015 Draft Landscape and Rehabilitation Management Plan, Jul 2015 	<p>The Landscape and Rehabilitation Management Plan was due for submission to the DP&E by end of July 2015. The Landscape and Rehabilitation Management Plan was prepared and submitted to the DP&E by the end of July 2015:</p> <p>(a) Landscape and Rehabilitation Management Plan prepared by suitably qualified person approved by the Secretary on 9 June 29;</p> <p>(b) be prepared in consultation with OEH, DRE and Council, and was submitted to the Secretary for approval by the end of July 2015;</p> <p>(c) section 5 describes the short, medium and long-term measures that would be</p>	Compliant

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	<p>(e) include a detailed description of the measures that would be implemented over the next 3 years (to be updated for each 3 year period following initial preparation of the plan), including the procedures to be implemented for:</p> <p>(i) enhancing the quality of remnant vegetation and fauna habitat;</p> <p>(ii) landscaping the site (including the acoustic barriers) and along public roads to minimise visual and lighting impacts; (iii) restoring native endemic vegetation and fauna habitat; (iv) maximising the salvage of environmental resources within the approved disturbance area – including tree hollows, vegetative and soil resources – for beneficial reuse;</p> <p>(v) ensuring minimal environmental consequences for threatened species, populations and habitats;</p> <p>(vi) minimising the impacts on native fauna;</p> <p>vii) controlling weeds and feral pests;</p> <p>(viii) controlling erosion;</p> <p>(ix) controlling access; and</p> <p>(x) bushfire management;</p> <p>(f) include a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;</p> <p>(g) identify the potential risks to rehabilitation of the site, and include a description of the contingency measures that would be implemented to mitigate these risks; and</p> <p>(h) include details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>		<p>implemented to manage the remnant vegetation and habitat on the site (section 5.1); and ensure compliance with the rehabilitation objectives and progressive rehabilitation obligations in this approval Section 5.2;</p> <p>(d) section 6 addresses performance and completion criteria for evaluating the performance of the rehabilitation of the site, including triggers for any necessary remedial action;</p> <p>(e) section 7 includes measures to be implemented over the next 3 years including:</p> <p>(i) enhancing the quality of remnant vegetation and fauna habitat (section 7.1);</p> <p>(ii) landscaping the site (including the acoustic barriers) and along public roads to minimise visual and lighting impacts (section 7.2);</p> <p>(iii) restoring native endemic vegetation and fauna habitat (section 7.3);</p> <p>(iv) maximising the salvage of environmental resources within the approved disturbance area for beneficial reuse (section 7.4);</p> <p>(v) ensuring minimal environmental consequences for threatened species, populations and habitats (section 7.5);</p> <p>(vi) minimising the impacts on native fauna (section 7.6);</p> <p>vii) controlling weeds and feral pests (section 7.7);</p> <p>(viii) controlling erosion (section 7.8;</p> <p>(ix) controlling access (section 7.9); and</p> <p>(x) bushfire management (section 7.10);</p> <p>(f) section 8 includes a monitoring program;</p> <p>(g) section 9 identifies potential risks to rehabilitation of the site,; and</p> <p>(h) section 10 includes roles and responsibility for monitoring, reviewing, and implementing the plan.</p>	
	Rehabilitation Bond			

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32	<p>The Proponent shall lodge a Rehabilitation Bond with the Department within 6 months of the approval of the Landscape and Rehabilitation Management Plan, to ensure that the rehabilitation of the site is implemented in accordance with the performance and completion criteria set out in the Plan. The sum of the bond shall be determined by: (a) calculating the cost of rehabilitating disturbed areas of the site, taking into account the likely surface disturbance over the next 3 years of quarrying operations; and (b) employing a suitably qualified quantity surveyor or other expert to verify the calculated costs, to the satisfaction of the Secretary.</p> <p><i>Notes: If capital and other expenditure required by the Landscape and Rehabilitation Management Plan is largely complete, the Secretary may waive the requirement for the lodgement of a bond in respect of the remaining expenditure.</i></p> <p><i>If the rehabilitation of the site area is completed to the satisfaction of the Secretary, then the Secretary will release the bond. If the rehabilitation of the site is not completed to the satisfaction of the Secretary, then the Secretary will call in all or part of the bond, and arrange for the completion of the relevant works.</i></p>		The Landscape and Rehabilitation Management Plan was submitted to the DP&E at the end of July 2015 and had not been approved by the Secretary at the date of this audit report. The Rehabilitation Bond with the Department is required to be calculated and submitted to the DP&E within 6 months of the approval of the Landscape and Rehabilitation Management Plan.	Not triggered
33	<p>Within 3 months of each Independent Environmental Audit (see condition 9 of Schedule 5), the Proponent shall review, and if necessary revise, the sum of the Rehabilitation Bond to the satisfaction of the Secretary. This review must:</p> <p>(a) consider the performance of the implementation of the rehabilitation of the site to date;</p> <p>(b) consider the effects of inflation; and</p> <p>(c) calculate the cost of rehabilitating the disturbed areas of the site (taking into account the likely surface disturbance over the next 3 years of quarrying operations).</p>			Noted
	VISUAL			
34	The Proponent shall implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project to the satisfaction of the Secretary.	<ul style="list-style-type: none"> Visual Impact Assessment, Jul 2010 	The quarry is visually enclosed, having a very small visual catchment and views are interrupted by existing mature hedge-row plantings, orchards and remnant vegetation stands.	Compliant
	WASTE			
35	<p>The Proponent shall:</p> <p>(a) minimise and monitor the waste generated by the project;</p> <p>(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of;</p>	<ul style="list-style-type: none"> Waste Management Plan, Sep 2009 Environmental Assessment (2013 section 8.17 – Waste Management, Nov 2014 	<p>A Waste Management Plan was prepared for the Central Coast Sand Quarry in September 2009 and included:</p> <p>(a) minimise and monitor the waste generated by the project;</p>	Compliant

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	(c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; and (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.		(b) all waste generated by the project is appropriately stored, handled and disposed of; (c) Ablutions waste is collected by a licenced contractor (Transpacific) for disposal in accordance with the requirements of Council; (d) waste management and minimisation will be reported in the Annual Review.	
	DANGEROUS GOODS			
36	The Proponent shall ensure that the storage, handling, and transport of dangerous goods are done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code		All dangerous goods for the are stored, handled and transported in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code	Compliant Ongoing
	BUSHFIRE			
37	The Proponent shall: (a) ensure that the project is suitably equipped to respond to any fires on site; and (b) assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.		(a) The Project Area is either subject of direct bushfire risk or included within the bushfire buffer as identified by bushfire mapping prepared by Gosford City. (b) The CCSQ would assist the Rural Fire Service and emergency services as much as possible if there is a fire in the vicinity of the site.	Compliant Ongoing
	SCHEDULE 4 ADDITIONAL PROCEDURES			
	NOTIFICATION OF LANDOWNERS			
1	As soon as practicable after obtaining monitoring results showing: (a) an exceedance of any relevant criteria in Schedule 3, the Proponent shall notify affected the landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and (b) an exceedance of any relevant air quality criteria in Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and current tenants of the land (including the tenants of land which is not privately-owned).			Noted
	INDEPENDENT REVIEW			
2	If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 3, then he/she may ask			Not triggered

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	<p>the Secretary in writing for an independent review of the impacts of the project on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: (i) consult with the landowner to determine his/her concerns; (ii) conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and (iii) if the project is not complying with these criteria then identify measures that could be implemented to ensure compliance with the relevant criteria; and</p> <p>(b) give the Secretary and landowner a copy of the independent review.</p>			
	SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING			
	ENVIRONMENTAL MANAGEMENT			
	Environmental Management Strategy			
1	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. The strategy must:</p> <p>(a) be submitted to the Secretary for approval by the end of November 2014;</p> <p>(b) provide the strategic framework for environmental management of the project;</p> <p>(c) identify the statutory approvals that apply to the project;</p> <p>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to: (i) keep the local community and relevant agencies informed about the operation and environmental performance of the project; (ii) receive, record, handle, and respond to complaints; (iii) resolve any disputes that may arise during the course of the project; (iv) respond to any non-compliance; (v) respond to emergencies; and</p> <p>(f) include: (i) copies of any strategies, plans and programs approved under the conditions of this approval; and (ii) a clear plan depicting all the monitoring to be carried out under the conditions of this approval.</p>	<ul style="list-style-type: none"> Environmental Management Strategy, Nov 2014 	<p>An Environmental Management Strategy was prepared for the Central Coast Sand Quarry:</p> <p>(a) submitted to the DP&E for approval 28 November 2014;</p> <p>(b) section 1.2 provides the strategic framework for environmental management of the project;</p> <p>(c) section 3 Legislative and External Requirements identifies the statutory approvals that apply to the project;</p> <p>(d) section 4.1 Personnel Structure and Responsibilities describes the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to:</p> <p>(i) section 4.3 Communication and Consultation addresses the process for local community and relevant agencies information on the operation and environmental performance of the project;</p>	Compliant

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			(ii) section 4.3.3 Community Complaints addresses receipt, recording, handling, and response to complaints; (iii) section 4.3.4 Conflict Resolution addresses resolving any disputes that may arise during the course of the project; (iv) section 5.1 outlines response to non-compliance; (v) section 4.4 Emergency Response; and (f) include: (i) copies of any strategies, plans and programs approved under the conditions of this approval are referenced in Section 2.1 and 5.0; and (ii) a clear plan depicting all the monitoring to be carried out under the conditions of this approval is outlined in Section 5.0.	
	Management Plan Requirements			
2	The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures/criteria; (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: (i) impacts and environmental performance of the project; (ii) effectiveness of any management measures (see c above); (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to	<ul style="list-style-type: none"> • Water Management Plan • Noise Management Plan • Air Quality Management Plan • Traffic Management Plan 	The management plans for the Central Coast Sand Quarry have generally been prepared in accordance with Schedule 5 condition 2 (Refer to Section 4.2 of this Report): (a) detailed baseline data is not included in all plans. (refer to section 4.2 Table 2 of this audit report); (b) identification of:	Administrative Non-compliance
			(i) statutory requirements (including approvals, licence or lease conditions); (ii) relevant limits or performance measures/criteria; and (iii) specific performance indicators;	Compliant
			are generally addressed in each plan; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance	Administrative Non-compliance

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	<p>levels below relevant impact assessment criteria as quickly as possible;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the project over time;</p> <p>(g) a protocol for managing and reporting any: (i) incidents; (ii) complaints; (iii) non-compliances with statutory requirements; and (iv) exceedances of the impact assessment criteria and/or performance criteria; and</p> <p>(h) a protocol for periodic review of the plan.</p> <p><i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans</i></p>		<p>measures/criteria are included in Plans <u>except for the Noise Management Plan</u>;</p> <p>(d) each Plan has a program to monitor and report on the:</p> <p>(i) impacts and environmental performance of the project;</p> <p>(ii) effectiveness of any management measures;</p> <p>(e) a contingency plan (where required) is included in each Plan as required;</p> <p>(f) each Plan has a program to investigate and implement ways to improve the environmental performance of the project over time;</p> <p>(g) each Plan has a protocol for managing and reporting any: (i) incidents; (ii) complaints; (iii) non-compliances with statutory requirements; and (iv) exceedances of the impact assessment criteria and/or performance criteria; and</p> <p>(h) each Plan has a protocol for periodic review of the plan <u>except for the Noise Management Plan</u>.</p> <p><i>Note: Where detailed baseline data is not included in the Plans, revision with inclusion should be considered, or a waiver obtained from the Secretary DP&E.</i></p>	<p>Compliant</p> <p>Administrative Non-compliance</p>
	Adaptive Management			
3	<p>The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity:</p> <p>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not reoccur;</p> <p>(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing</p>		<p>Not triggered at the date of this audit (June 2015).</p>	Noted

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	those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary			
	Annual Review			
4	<p>By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the:</p> <p>(i) relevant statutory requirements, limits or performance measures/criteria;</p> <p>(ii) requirements of any plan or program required under this approval;</p> <p>(iii) monitoring results of previous years; and (iv) relevant predictions in the EA;</p> <p>(c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the project;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p> <p>(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.</p>	<ul style="list-style-type: none"> Annual Review (draft), dated July 2015 	<p>The Annual Review for 2014 to March 2015 was being prepared at the date of this audit and was submitted to DP&E on 14 July 2015.</p> <p>The Annual Review addressed the elements of condition 4:</p> <p>(a) Section 2 Summary of Operations during the Reporting Period;</p> <p>(b) Section 3 Environmental Management, Monitoring and Performance</p> <p>(c) Section 3 Environmental Management and Performance</p> <p>(d) Section 3 Environmental Monitoring and Performance</p> <p>(e) Section 3 Environmental Management, Performance</p> <p>(f) Section 9 Activities Proposed for the Next Reporting Period</p>	<p>Administrative Non-compliance</p> <p>Compliant Ongoing</p>
	Revision of Strategies, Plans and Programs			
5	<p>Within 3 months of the submission of an:</p> <p>(a) annual review under condition 4 above;</p> <p>(b) incident report under condition 7 below;</p> <p>(c) audit report under condition 9 below; or</p> <p>(d) any modification to the conditions of this approval, the Proponent shall review the strategies, plans, and programs required under this approval, to the satisfaction of the Secretary.</p>			Noted

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	Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary. <i>Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the project.</i>			
	Community Consultative Committee			
6	If directed by the Secretary, the Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Secretary. Any such CCC must be operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and be operating by the end of November 2014. <i>Notes:</i> <ul style="list-style-type: none"> The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval. In accordance with the Department's guideline, the CCC should be comprised on an independent chair and appropriate representation from the Proponent, Council (if available) and the local community. This CCC can be combined with any other CCC established under conditions of consent or approval for State Significant quarry developments on the Somersby Plateau. 	<ul style="list-style-type: none"> Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects, Department of Planning, 2007 	Hanson had not been directed to establish a Community Consultative Committee at the date of this audit (June 2015).	Not triggered
	REPORTING			
	Incident Reporting			
7	The Proponent shall immediately notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	<ul style="list-style-type: none"> EPA Environment Line Reference C05778-2015, 24 May 2015 Letter to EPA re Discharge of Turbid Waters, 4 May 2015 	An incident of discharge of water with increased total suspended solids from LDP2 to an Unnamed Tributary during an extreme rainfall event on 24 April 2015 was notified to the EPA Environment Line on 24 April 2015 (Reference C05778-2015). A written report of the incident was submitted to the EPA on 4 May 2015. No notification occurred to the Sectary of DP&E.	Compliant Administrative Non-compliance
	Regular Reporting			
8	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the			

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	reporting arrangements in any plans or programs approved under the conditions of this approval.			
	INDEPENDENT ENVIRONMENTAL AUDIT			
9	<p>By 30 June 2015 and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <p>(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</p> <p>(b) include consultation with the relevant agencies;</p> <p>(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licences for the project (including any assessment, strategy, plan or program required under these approvals);</p> <p>(d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and</p> <p>(e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy, plan or program required under the abovementioned approvals.</p> <p><i>Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Secretary</i></p>	<ul style="list-style-type: none"> Letter from DP&E re Endorsement of the Independent Auditor, 29 May 2015 	<p>The Independent Environmental Audit of the Central Coast Sand Quarry was conducted in June 2015:</p> <p>(a) The Independent Environmental Audit was conducted by Trevor Brown of Trevor Brown & Associates, endorsed by DP&E on 9 May 2015;</p> <p>(b) consultation with DP&E, DRE, OEH, NOW, EPA and Gosford City Council;</p> <p>(c) Section 4 of the Independent Environmental Audit presents an assessment of the environmental performance of the project and compliance with the requirements in this approval and any relevant licences/lease for the project;</p> <p>(d) Section 4 presents a review and adequacy of strategies, plans or programs required for the project; and</p> <p>(e) Section 5 presents a conclusion and any recommended appropriate measures or actions to improve the environmental performance of the project</p>	Compliant
10	Within 6 weeks of completion of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report			Noted
	ACCESS TO INFORMATION			
11	<p>By the end of November 2014, the Proponent shall:</p> <p>(a) make copies of the following publicly available on its website:</p> <p>(i) the documents referred to in condition 2 of Schedule 2;</p> <p>(ii) all current statutory approvals for the project;</p> <p>(iii) all approved strategies, plans and programs required under the conditions of this approval;</p> <p>(iv) a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs;</p> <p>(v) a complaints register, updated monthly;</p>	www.hanson.com.au/TheCentralCoastSandQuarryProject/	<p>The Company website has been established and copies of the following were published at the date of this audit:</p> <p>(a) copies of the following documents are publicly available on the Central Coast Sands website:</p> <p>(i) Link to Environmental Assessment uploaded to the website;</p> <p>(ii) Project Approval 08_0173;</p> <p>(iii) Environmental Management Strategy, Water Management Plan, Noise Management</p>	Compliant Ongoing

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	(vi) the annual reviews of the project; (vii) any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit of the project; (viii) minutes of CCC meetings; (ix) any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.		Plan, Air Quality Management Plan, and Transport Management Plan uploaded; (iv) summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; (v) a complaints register updated monthly; (vi) the Annual Reviews for the project will be uploaded when prepared; (vii) Not triggered at the date of this audit (June 2015) - independent environmental audits of the project, and response to any recommendations will be uploaded; (viii) CCC not established at the date of this audit. (ix) Noted	

Attachment B Environmental Management and Statements of Commitment

	Statement of Commitment	Document Verification	Comments	Compliance
	Prior to Commencement of Extraction			
	<p>All relevant licenses and approvals will be obtained. The proponent will prepare a formal Extraction Management Plan to set out the processes of mining and to deal with ongoing operational matters and conditions of consent. The extent of the approved extraction area and surrounding bunding shall be clearly and permanently marked with survey posts by a licensed surveyor. Noise attenuation berms are to be provided prior to the commencement of the operation (as identified in Section 8.7 of this Environmental Assessment). Prior to any demolition or works being undertaken on the site, an accredited asbestos consultant will be engaged to conduct a formal asbestos site audit to;</p> <ul style="list-style-type: none"> Determine to the precise location/extend of asbestos in accordance with Australian Standard 4964 – ‘Method for the Qualitative Identification of Asbestos in Bulk Samples’ and; Where appropriate prepare a Hazardous Substances Management Plan (HSMP). 		<p>An Extraction Management Plan for the quarry extension will be prepared to set out the processes of mining and to deal with ongoing operational matters and conditions of consent. The approved extraction area and surrounding bunding has been surveyed by a licensed surveyor.</p> <p>The noise attenuation bund will be constructed prior to the commencement of the quarry extension operation.</p> <p>Hanson had not undertaken any demolition works or asbestos removal at the date of this audit (June 2015)</p>	In progress
	Extraction Operations			
	<p>All nearby residents will be provided with the contact details of a site management and relevant procedures for contact in the event of complaints.</p> <ul style="list-style-type: none"> Only 1 x Excavator, 1 x Loader, 1 x Haul Truck and 1 x Water Cart may operate in the proposed extension area once the 5m high earth bund is constructed. One dozer can operate once the proposed extension area ground level reaches a depth of 5m below the existing ground level. We note that if the dozer operates in the proposed extension area, only the water cart may operate at the same time. The excavation/loosening of resource will be by ripping only (i.e. no blasting). The total excavation depth of approximately 63 metres Below Ground Level (BGL) is considered to be likely to be able to be ripped based on the rock type, strength testing results, visual observations and current extraction methods within the quarry's existing extraction pit. The extraction from the quarry extension will occur down to a maximum level of 63 metres below natural ground level. 	<ul style="list-style-type: none"> Transport Management Plan, May 2014 	<p>Nearby residents have been provided with the contact details of a site management and relevant procedures for contact in the event of complaints.</p> <p>The use of equipment and vehicles for the quarry extension will occur in accordance with the Transport Management Plan and the requirements of this SoC..</p>	Compliant Ongoing

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	Ecology		<u>Refer to Project Approval Schedule 3 conditions 22 to 28</u>	
	<ul style="list-style-type: none"> Sediment and erosion control processes to be put in place, in accordance with the Sediment and Erosion Control Plan (Attachment 23), to assist in prevent <i>Lantana camara</i> (Lantana) seed dispersal. Pre-clearing inspections will be undertaken by an ecologist in wooded areas including during the removal of hollow bearing trees. Should the removal of hollow-bearing trees be required, then appropriate tree removal guidelines and certification should be implemented using a qualified ecologist onsite. This may involve the supervision of clearing and habitat augmentation. Retention of hollow-bearing trees with respect to the southern access (proposed easement), where practical, to provide continued habitat for fauna species. Where possible, the drainage line running east-west along the southern boundary of the proposed Quarry Extension Area will be protected from direct and indirect disturbance. Where any disturbance is required to occur it is recommended that an ecologist be present during works to ensure that and potential habitat for Red-crowned Toadlet (<i>Pseudophryne australis</i>) are relocated to appropriate adjoining suitable habitat. 	<ul style="list-style-type: none"> Environmental Assessment (2013) section 8.15 and Attachment 23 – Sediment and Erosion Control Plan, Martens Consulting Engineers, Jan 2010 Environmental Assessment (2013) section 8.1 and Attachment 5 – Ecological Assessment, RPS, Dec 2010 	<ul style="list-style-type: none"> Sediment and erosion control measures have been implemented in accordance with the Environmental Assessment - Sediment and Erosion Control Plan (Attachment 23). Pre-clearing inspections will be undertaken prior to clearing of the quarry extension area. Retention of hollow-bearing trees along the southern access will occur where practical, to provide continued habitat for fauna species. Where any disturbance of the drainage line running east-west along the southern boundary of the Quarry Extension Area is required to occur an ecologist will be present during works to ensure that and potential habitat for Red-rowned Toadlet (<i>Pseudophryne australis</i>) is protected where practicable and any <i>Pseudophryne australis</i> are relocated to appropriate adjoining suitable habitat. 	In progress
	Aboriginal Heritage			
	<ul style="list-style-type: none"> During the course of proposed construction work, if suspected Indigenous cultural heritage material is encountered, work will cease in that vicinity immediately and the Office of Environment & Heritage (OEHL, formerly DECCW) and a representative of the local Aboriginal Community (DLALC and GTLAC) will be immediately notified. Works will only recommence when an appropriate and approved management strategy has been agreed to by relevant stakeholders. □ In the event that skeletal remains are uncovered whilst operations are underway, work is to stop in the vicinity immediately, the NSW Coroner's Office and NSW Police will be contacted. If the remains are deemed to be of Aboriginal origin, a representative of the local Aboriginal Community (DLALC, and GTLAC) and the OEHL are also to be contacted 	<ul style="list-style-type: none"> Environmental Assessment section 8.2 and Attachment 13 Aboriginal Heritage, Feb 2013 	<p>The area for the proposed quarry extension at Lot 10 DP 1090880 Keighley Road is extremely disturbed with no intact topsoils. The field survey indicated the area is predominantly cleared land and past land use has greatly impacted on any evidence of past Aboriginal occupation. The likelihood of unearthing in situ and contextual Aboriginal archaeological deposits was extremely low.</p> <p>A search of the AHIMS database revealed that there were no listed sites inside the quarry extension area.</p>	Compliant Ongoing
	European Heritage			
	<p>If, during the course of clearing work unidentified 'relics' as defined by the NSW Heritage Act 1977 are uncovered, works will cease in that vicinity immediately and an appropriately qualified and experienced archaeologist is called out to assess the find. Works must not recommence until an appropriate and approved management strategy is instigated. The Proponent must notify the</p>	<ul style="list-style-type: none"> Environmental Assessment, section 8.3, Feb 2013 	<p>The Project is not expected to have any adverse impacts on any items of European heritage significance.</p> <p>If, during the course of clearing work, significant non-Indigenous cultural heritage material is</p>	Compliant Ongoing

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	Heritage Council of the discovery in accordance with Section 146 of the Heritage Act.		uncovered work will cease in that vicinity and the NSW Heritage Branch will be notified.	
	Visual Impacts		<u>Refer to Project Approval 08 0173 Schedule 3 condition 34</u>	
	<p>The following visual impact mitigation measures are recommended:</p> <ul style="list-style-type: none"> To the maximum extent possible, existing hedge-row plantings are to be maintained along the northern, southern and eastern portions of the proposed Quarry Extension Area. □ The earth bunding established prior to extraction will be planted with suitable species to protect visual amenity (and prevent erosion). An appropriately qualified landscape consultant will select species that are suited to the locality and consistent with hedgerows planted in other nearby locations. □ As an interim measure, fencing (of appropriate height and materials) will be established along the northern property boundary (adjacent to Keighley Road) to ensure that visual amenity is maintained for nearby residences during the demolition process and the construction of required earth bunds/planting. 	<ul style="list-style-type: none"> Environmental Assessment (2013) section 8.6 and Attachment 15 - Visual Impact Assessment, Jul 2010 	<p>The Quarry area is visually enclosed as a result of topography and existing vegetation in the locality (including mature hedge rows, orchards and remnant vegetation stands). There are limited properties and public places that have direct view of the land and these are limited to very small section of Keighley Road.</p> <p>Incorporation of other visual buffers (such as appropriate fencing) may be required along the northern boundary of the Quarry Extension Area until such times as a bund is created and vegetated.</p>	Compliant Ongoing
	Acoustics/Noise		<u>Refer to Project Approval Schedule 3 conditions 8 to 12</u>	
	<p>The 5 metre high earth bund will be constructed around the proposed extension area boundary (as shown in Figure 42). This bund will be a permanent fixture and will remain for the duration of quarry operations. All residents who will be potentially impacted by the short term construction of the required bund will need be informed in writing of the nature of works to be carried out, the expected noise levels and duration, as well as contact details for the site representative responsible for the construction works.</p> <p>The construction of the bund is predicted to create noise levels above 43dBA but below 75dBA at the residences identified in the NIA as A to G. According to the INP it is recommended that:</p> <ul style="list-style-type: none"> Standard hours Monday to Friday 7am to 6pm, Saturday 8am to 1pm, and no work Sundays or public Holidays be adopted. Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details. Hanson proposes to incorporate the above measures in a Construction Noise Management Plan (CNMP) for the noise bund as part of the modified Statement of 	<ul style="list-style-type: none"> Environmental Assessment (2013) section 8.7 and Attachment 16 – Noise Assessment, Feb 2013 	<p>Predicted noise levels in the Environmental Assessment (2013), indicated that quarry operations would comply with the Project Approval Operational Noise Impact Assessment Criteria LA_{eq(15 min)} under most weather conditions (i.e. calm and temperature inversion) at the nearest most affected residential locations to the quarry, when the 5 metre soil bund was constructed. The predicted noise levels also indicated that noise levels at all nearest affected residents would not exceed the sleep disturbance noise criteria.</p> <p>No noise complaints were recorded between August 2014 and June 2015.</p> <p>Hanson informs all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, and contact details for the site manager.</p>	Compliant Ongoing

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	<p>Commitments. The CNMP will be drafted in consultation with the affected residences.</p> <p>All mobile plant onsite be fitted with broadband 'quacker' type reversing alarms.</p>			
	Air Quality		<u>Refer to Project Approval 08_0173 Schedule 3 conditions 13 to 16</u>	
	<p>The extraction management plan will provide for appropriate dust suppression, including:</p> <ul style="list-style-type: none"> □ Employing watering at a rate of 2 litres/m²/application to all internal haul roads; □ Periodic water application to other exposed areas; □ Minimising exposed area to the maximum extent possible; and □ Progressive rehabilitation / stabilisation of available areas of disturbance. Ongoing monitoring will be undertaken for dust deposition at a minimum of three (3) locations to provide further indication of likely compliance with project air quality goals. Monitoring will be conducted in accordance with Australian Standard 3580.10.12003 "Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method". <p>Stage 6 - The area identified as Stage 6 is significantly further away from receptors A to P. As such the impacts of air emissions from the quarry operations associated with the pit extraction activities would be reduced for these residences. In regards to receptors Q to T, the extraction of Stage 6 is likely to vary the outcomes of the Air Quality Impact Assessment (AQIA) for two reasons:</p> <ol style="list-style-type: none"> 1. The processing plant will be relocated a further 200m to the west of its current location. 2. The extraction activities are only temporarily at ground level and will be by large below the current surface level. <p>Notwithstanding this the proponent suggests that the impacts of Stages 1 & 6 could be assessed as part of the Project's Air Quality Management Plan. The Plan would demonstrate compliance with the Project's Air Emissions criteria to the satisfaction of the Director General prior to Stage 6 commencing.</p>	<ul style="list-style-type: none"> • Environmental Assessment (2013) section 8.8 and Attachment 17 – Air Quality Assessment, Feb 2013 	<p>Management of emissions to atmosphere from the quarry operations are outlined in the Air Quality Management Plan:</p> <ul style="list-style-type: none"> • Water sprays used to control dust generation. • Watering of all internal haul roads at 2 litres/m²/application rate and addition of dust control suppressants on access/haul roads if required to reduce dust generation by haul truck movements. • Spraying of the shovel / bucket for excavators / front-end loaders when loading trucks. • Spraying the bucket of trucks before loading and direct water spraying of trucks. • Sprays / atomisers to moisten ambient air during operations with the potential to generate high volumes of dust. • Truck washing to prevent the tracking of dusty materials onto sealed roadways Wheel-wash / shaker grids and visual inspection of trucks prior to exiting the site onto public roads. • Ceasing operations such as bulk storage, loading and unloading, and surface grading during strong wind conditions (wind speed of 15 m/s is commonly used as the trigger for stopping certain operations). • Covering loads of material transported from the site. 	Compliant Ongoing
	Energy Use and Greenhouse Gas Emissions		<u>Refer to Project Approval 08_0173 Schedule 3 conditions 14</u>	
	<p>The project will install appropriately sized, high efficiency motors which will be used on pumps & equipment. Variable speed drives (VSD's) will be provided on electric motors in order to ensure energy savings and to deal with the results of varying loads on equipment.</p> <p>Timer switches will be provided for relevant electrical appliances across the site and sensor lights installed to reduce energy use.</p>	<ul style="list-style-type: none"> • Environmental Assessment (2013) section 8.9 and Attachment 17 – Air Quality Assessment, Feb 2013 	<p>A quantitative Greenhouse Gas Assessment for the project indicates that emissions of substances with significant global warming potential will be negligible.</p> <p>Appropriate day-to-day management of quarrying activities will ensure that double handling of materials is minimised and fuel economy of</p>	Compliant Ongoing

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	<p>The fuel economy of vehicles will be considered when sourcing new vehicles for the operation. Idling time for vehicles shall be minimised by ensuring that vehicles are turned off during breaks in their use.</p> <p>Regular servicing of vehicles will be undertaken, including maintaining optimum tyre pressures, to optimise fuel economy for vehicles. Driver training will be undertaken to ensure that vehicles are operated at maximum efficiently.</p> <p>Appropriate day-to-day management of quarrying activities will ensure that double handling of materials is minimised.</p> <p>Use of alternative fuels (such as biodiesel) and fuel additives will be investigated for the Major Project Application proposal</p>		<p>vehicles will be considered when sourcing new vehicles for the operation. Idling time for vehicles shall be minimised by ensuring that vehicles are turned off during breaks in their use.</p>	
	Geotechnical			
	<p>Soil Excavation - Soil overburden may be excavated without structural supports with a permanent batter slope of 1 (vertical): 2 (horizontal). Alternatively an appropriately designed retaining structure will be used.</p> <p>Fill Placement – Fill is to be placed as part of the proposed site remediation. As it is understood that final uses shall not include construction of structures on the fill,</p> <p>Noise Bund - The proponent will submit geotechnical design by a suitably qualified geotechnical engineer of the proposed noise earth mound to the Department of Planning & Infrastructure for approval prior to commencement of construction.</p> <p>Rock Excavation - Based on slope stability modelling within the geotechnical assessment (Attachment 20) excavation batter slopes should not exceed 2V:1H.</p> <p>Retaining Structures - Any retaining structures to be constructed as part of site works will be backfilled with suitable free draining materials and include suitable drainage measures, such as a geotextile enclosed 100 mm agricultural pipe, to redirect water that may collect behind the retaining walls.</p> <p>Contingency Plan - In the event that the proposal works cause an adverse impact on overall site stability or on neighbouring properties, works will cease immediately. The nature of the impact shall be documented and the reason(s) for the adverse impact investigated.</p>	<ul style="list-style-type: none"> Environmental Assessment (2013) Attachment 20 Geotechnical Report, Martens Consulting Engineers, Feb 2013 	<p>Based on the depth of clay the site is classified as class M in accordance with AS 2870 (1996).</p> <p>Fill placement, rock excavation, and retaining structures are addressed in section 4.5 Table 4 of the Geotechnical Report, Martens Consulting Engineers Attachment 20 to the Environmental Assessment (2013).</p> <p>Contingency Plan is described in section 4.6 of the Geotechnical Report, Martens Consulting Engineers Attachment 20 to the Environmental Assessment (2013).</p>	Noted Ongoing
	Contamination			
	<p>Prior to any works occurring on the site, the recommendations of the Stage 2 Contamination Scoping Report (Attachment 19) will be implemented and the testing regime completed. All recommendations from any subsequent report and the required works will be undertaken to ensure that all potential contamination issues are appropriately managed.</p>	<ul style="list-style-type: none"> Environmental Assessment section 8.11 and Attachment 19 – Contamination Report, Feb 2013 		Noted

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	Hydrogeological		<u>Refer to Project Approval 08 0173 Schedule 4 condition 7(c)(iii)</u>	
	<p>Hanson proposes to prepare a groundwater management plan that includes:</p> <ol style="list-style-type: none"> 1. Installation of monitoring bores to assess any impacts on existing groundwater licence holders and high priority GDEs. 2. Establishment of groundwater level triggers and proposed make good provisions for impacted license holders. 3. Studies on the high priority GDEs to identify their reliance and long term monitoring of their condition. 4. A process for validating the numerical groundwater model and amending as required. <p>Hanson will secure sufficient water access licenses to account for any increase in groundwater take as a result of the lateral expansion of the quarry.</p> <p>Hanson will commit to ongoing consultation and liaison with the NSW Office of Water to resolve issues relating to the existing groundwater and surface water take of the current operations and how best to regularise existing take under WSPs. Hanson will also provide further information about surface water harvesting on site, and the constructed storages in consultation with NOW. Hanson will endeavour to secure sufficient water access licenses to account for any net surface water take in excess of the Harvestable Right for the site</p>	<ul style="list-style-type: none"> • Environmental Assessment Attachment 21 – Hydrogeological Assessment, Feb 2013 • Water Management Plan, 28 Nov 2015 	<p>Installation of monitoring bores to assess any impacts on existing groundwater licence holders and high priority GDEs will occur prior to the commencement of the quarry extension.</p> <p>Groundwater level triggers and proposed make good provisions for impacted license holders are described in Water Management Plan section 7 Table 8.</p> <p>Identification of the high priority GDEs within 1km of the quarry has occurred (Bell 2013) and their reliance and long term monitoring of condition is described in Water Management Plan section 5.6. A process for validating the numerical groundwater model is outlined in Water Management Plan section 5.3.1.</p> <p>Hanson will secure sufficient water access licenses to account for any increase in groundwater take as a result of the lateral expansion of the quarry.</p> <p>Hanson advised that no Water Access Licences were held at the date of this audit (June 2015).</p> <p>It is recommended that Hanson commission a water licensing review for the Central Coast Sand Quarry operations to determine if the water use on the site requires any Water Access Licence(s) under the Water Management Act 2000.</p>	<p>Compliant Ongoing</p> <p>Non-compliance and Recommendation</p>
	Surface Water Hydrology		<u>Refer to Project Approval 08 0173 Schedule 4 condition 1 to 7</u>	
	<p>As part of the extraction management plan, the current water cycle management be formalised to provide a well-structured and effective means of treating process water prior to its discharge to downstream receiving environments.</p> <p>Water Quantity Treatment – the existing rip rap at the discharge point will be maintained as to prevent erosion and scour of tributaries of Mooney Mooney Creek.</p> <p>Water Quality Treatment – A sedimentation basin will be incorporated into the water management plan to allow fines (to a size of 75 µm) to settle out prior to discharge. See the formal Surface Water Hydrology Assessment and Management report (Attachment 22) for further, more specific details.</p> <p>Based on the Surface Water Hydrology Assessment and Management report, and the Constructed Wetlands Manual, a sedimentation basin with a surface area of 1335m²</p>	<ul style="list-style-type: none"> • Environmental Assessment Attachment 22 – Surface Water Hydrology,, Feb 2013 • Surface Water Audit and Water Management Improvement Report, 28 Nov 2014 	<p>The water cycle management improvement options presented in the Surface Water Audit and Water Management Improvement Report, provide a structured means of managing and treating process water prior to its discharge to downstream receiving environments.</p> <p>Water Discharge Management includes:</p> <p>Settlement basins are incorporated in the water management plan for settlement of fines (to a size of 75 µm) prior to discharge. This within the make-up dam.</p> <p>To enhance the removal of colloidal clays and other sub 75µm material, the construction of a macrophyte zone at the outlet of the to extend 50m from the outlet pipes provides a water depth</p>	<p>Compliant Ongoing</p>

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	(approximately 21.1m wide x 63.3m long) and depth of 2.0m is required to capture fines to a size of 75µm. This can be accommodated within the existing make up dam. To enhance the removal of colloidal clays and other sub 75µm material, the construction of a macrophyte zone at the outlet of the dam is proposed. The macrophyte zone is to extend 50m from the outlet pipes as shown on the attached plans in the Surface Water Hydrology Assessment and Management report. The macrophyte zone is to be regraded to provide a water depth of approximately 500mm and have an area of approximately 2500m ² .		of approximately 500mm and an area of approximately 2500m ² . Rip rap at the discharge point (LDP1 and 2) will be maintained as to prevent erosion and scour of tributaries of Mooney Mooney Creek. The water improvement program will be progressively implemented as the quarry extension works are established.	
	Sediment & Erosion Control		<u>Refer to Project Approval Schedule 3 condition 7(c)(ii)</u>	
	All recommendations from the completed erosion & sediment control plan to be employed. The following procedures will take place to ensure the proper operation and maintenance of the sediment basin: <ul style="list-style-type: none"> The basin will be inspected weekly and following a rain events of greater than 20mm. The accumulated sediment depth will be checked to ensure remaining storage capacity is adequate for storm water and sediment deposition. Sediment shall be removed and the basin restored to its original dimensions when the sediment has accumulated to ½ the design depth of the basin. The removed sediment shall be deposited on the site outside of concentrated flow paths, be allowed to dewater and then be used in site rehabilitation works. Jute Matting/Vegetation Maintenance- The recommended area of Jute Matting/vegetation should be inspected monthly or following heavy rainfall. Vegetation should be replaced as required. <p>If NSW EPA Environment Protection License conditions are not met with the revised Sediment & Erosion Control Plan measures then sediment and erosion control management at the site is to be reviewed and changes are to be made to ensure license conditions are met.</p>	<ul style="list-style-type: none"> Environmental Assessment (2013) Attachment 23 - Sediment & Erosion Control Plan, Marten's Consulting Engineers, Jan 2010 	The sediment and erosion control structures established within the quarry disturbed areas are operated and maintained including: <ul style="list-style-type: none"> The basin(s) are inspected weekly and following a rain events of greater than 20 mm. Accumulated sediment is checked and removed if necessary to ensure remaining storage capacity is adequate for storm water and sediment deposition. The removed sediment is deposited on site outside of surface water flow paths, allowed to dewater and used in site rehabilitation works. 	Compliant Ongoing
	Waste		<u>Refer to Project Approval 08_0173 Schedule 3 condition 35</u>	
	All wastes from the site are to be managed in accordance with the completed Waste Management Plan. All hazardous wastes (including asbestos) to be handled and disposed of in the appropriate manner, in accordance with all relevant requirements.	<ul style="list-style-type: none"> Environmental Assessment Attachment 25 - Waste, Feb 2013 Waste Management Plan, Sep 2009 	The primary sources of waste from the Central Coast Sand Quarry and management are: <ul style="list-style-type: none"> Office general waste (placed in bins on site and collected by a waste contractor (Veolia)); Ablutions waste (collected from the septic tank by contractor (Transpacific); Workshop waste (general waste placed in an onsite bin collected by Veolia; steel waste – placed in an onsite bin collected by One 	Compliant Ongoing

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			Steel Recycling; oil and other liquid oily waste collected by Southern Oil Recycling; and oil filters collected by Bullbeck Environmental Solutions);	
	Demolition Conditions-Asbestos			
	<p>Prior to any demolition or works being undertaken on the site, an accredited asbestos consultant will be engaged to conduct a formal asbestos site audit to:</p> <ul style="list-style-type: none"> • Determine to the precise location/extend of asbestos in accordance with Australian Standard 4964 – 'Method For the Qualitative Identification of Asbestos in Bulk Samples'. And, where appropriate; and • Prepare a Hazardous Substances Management Plan (HSMP). The asbestos waste consultant will be appropriately experienced and accredited with suitable licensing from WorkCover NSW. All works will be undertaken by a suitably qualified consultant. <p>The following conditions would be adopted to ensure the demolition associated with the proposed development is carried out having regard to relevant legislation and does not unreasonably impact on the amenity of the locality or environment.</p>		<p>Hanson have not been involved in the removal of asbestos materials from the demolition of the buildings on the quarry extension site.</p> <p>The landowner has managed the demolition and disposal of material from the poultry sheds.</p>	Not applicable (at the time of the audit).
	<p>1. Demolition of buildings where asbestos is determined to be present should only occur 7am – 5pm Monday to Saturdays, and must not occur on Sundays or Public Holidays, to ensure that the persons carrying out the work have access to WorkCover professionals if required. 2. All asbestos removal shall be undertaken in accordance with the occupational hygienists report submitted with the development application and in compliance with the requirements of WorkCover's 'Your Guide to Working with Asbestos' and Council's Asbestos Policy. 3. Written notice must be provided to Gosford Council five (5) working days (excluding public holidays) prior to commencement of any works. Written notice is to include the following details:</p> <p>Date the demolition will commence</p> <p>Name, address, contact details (including after hours) and licence number of the demolisher and asbestos removalist (if different)</p> <p>Work must not commence prior to the nominated demolition date.</p> <p>Note: it is the responsibility of the persons undertaking demolition work to obtain the relevant WorkCover licences and permits.</p>			
	<p>4. The applicant is to notify all owners and occupiers of premises on either side, opposite and at the rear of the development site five (5) working days prior to demolition. Such notification is to be clearly written on A4 size paper stating the date the demolition will commence and is to be placed in the letterbox of every property</p>			

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	<p>(including every residential flat or unit, if any). The demolition must not commence prior to the date and time stated in the notification.</p> <p>5. A demolition or asbestos removal contractor licensed under the Occupational Health and Safety Regulation 2001 must undertake removal of more than 10m² of bonded asbestos (or otherwise specified by WorkCover or relevant legislation). Removal of friable asbestos material must only be undertaken by a contractor that holds a current AS1 Friable Asbestos Removal Licence.</p> <p>6. Demolition sites that involve the removal of asbestos must display a standard commercially manufactured sign containing the words 'DANGER ASBESTOS REMOVAL IN PROGRESS' measuring not less than 400mm x 300mm is to be erected in a prominent visible position on the site to the satisfaction of Council's officers. The sign is to be erected prior to demolition work commencing and is to remain in place until such time as all asbestos has been removed from the site to an approved waste facility. This ensures compliance with Clause 259(2)c of the Occupational Health and Safety Regulation 2001.</p>			
	Social & Economic			
	<p>The operator of the quarry will continue to keep neighbours informed of the proposed works, including a regular newsletter to advise of any construction works, particularly those relating to demolition of existing buildings, construction of the earth bund or other works near to the boundary of the new extraction area. Prior to any works commencing, all adjoining neighbours will be provided with the contact details of the quarry management who will act as the initial point of contact for any complaints. Hanson will provide contact details to Council staff in the event that any complaints are made directly to Council.</p>	<ul style="list-style-type: none"> Environmental Assessment (2013) section 8.16 and Attachment 24 – Social and Economic Impact Assessment, Feb 2013 	Hanson communicate with the owners of the neighbouring properties about any proposed works.	Compliant Ongoing
	Rehabilitation		<u>Refer to Project Approval 08 0173 Schedule 3 conditions 29 to 37</u>	
	<p>The proponent is proposing to incorporate the measures identified in EA Section 8.1.4, 8.1.5, 9 and 10 into ongoing site management plans as part of the project approval. In addition to contributing to soil structure and stabilising the battered slopes, native plants attract a diverse array of fauna. Selection criteria for plant species included minimal maintenance self-sustaining, locally indigenous to the area and low water requirement. The site should be rehabilitated back to an agricultural grazing final landform to enable the opportunity to use the land for agricultural investment once extraction ceases. This can be achieved via the following recommendations:</p> <ul style="list-style-type: none"> Topsoil stockpiling is not recommended as seed bank and genetic diversity will be lost over the 35 year mining lease life; 	<ul style="list-style-type: none"> Environmental Assessment (2013) section 9, Feb 2013 	<p>The Landscape and Rehabilitation Management Plan that is to be prepared by Hanson to satisfy Project Approval Schedule 3 conditions 31 will address the matters outlined in this SoC.</p> <p>Direct seeding of grasses has several advantages over the use of tube-stock. Plants are able to "self-select" suitable establishment sites within the revegetation area, particularly if a mixture of species is seeded.</p> <p>Topsoil stockpiling is not planned for long periods due to the deterioration of the soil characteristics when stockpiles are established and left for extended periods of time.</p>	Compliant Ongoing

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	<ul style="list-style-type: none"> • Topsoil used for rehabilitation of the site should be sourced from a commercial wholesaler with the intent to grow mainly native grasses and legumes; • Topsoil preparation outlined in Section 9.1.1 of the EA, should be followed to assist in the success of the rehabilitation of plants on site; • It is recommended that revegetation takes place via direct seeding and the spreading of vegetation mulch containing seed; • Planting should include coloniser and soil stabilizing grass species that will establish quickly; • Watering of seedlings should be continued as required until all plants are established; • Seeding should take place at the beginning of summer when rain periods are more likely to take place; <input type="checkbox"/> If woody vegetation is desired, then use of locally occurring species is recommended. Their placement should enhance habitat connectivity and reduce detrimental visual impact; and • Monitoring for a period of 5 years should be undertaken to ensure success of revegetation, stability of soils, whether weed invasion is apparent, that the landscape is retaining water and nutrients and is free draining 		To achieve stability of the quarry rehabilitated landscape, and avoid issues with topsoil loss and erosion, a grass/herb-land is planned to be established on areas of the site where no further disturbance by quarrying is to occur.	
	Lot 118			
	<p>Upon the abandonment or completion of operations the Holder of ML6309 (Hanson) will:</p> <ul style="list-style-type: none"> • Fill in or protect any excavation or shaft opened up or used by the Holder as the Minister may direct; • Rehabilitate or complete the rehabilitation of the Land within such time as the Minister may allow; and • Leave the premises in a clean and tidy condition clear and free from rubbish and debris to the satisfaction of the Minister. The Proponent will consult with Crown Lands regarding the acquisition or rehabilitation of the land. 		<p>No operations have occurred in Lot 118 under Mining Lease 6309 since June 2013 when the ML expired and was not renewed.</p> <p>The southwest corner of Lot 118 area is being rehabilitated with some vegetative cover established and surface water managed in a series of ponds.</p> <p>The area has been cleared of materials associated with the previous mining activities and is being progressively rehabilitated for relinquishment.</p>	In progress

Attachment C

Environment Protection Licence No. 3751

EPL 3751	Environment Protection Licence No. 3751 Conditions			Verification	Comments	Compliance
1	Administrative Conditions					
A1	What the licence authorises and regulates					
A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.				The Central Coast Sand Quarry operation and activities are compliant with the approved Scheduled Activities and Fee based Activities approved in this Licence.	Compliant
	Scheduled Activity	Fee Based Activity	Scale			
	Crushing, Grinding or Separating	Crushing, Grinding or Separating	> 100000 - 500000 T processed			
	Extractive Activities	Land based extractive activities	>100000 - 500000 T extracted, processed or stored			
A2	Premises or plant to which this licence applies					
A2.1	The licence applies to the following premises: Hanson Construction Material Pty Ltd Reservoir Road Somersby NSW 2250 Lot 33 DP 755246					Noted
A3	Information supplied to the EPA					
A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to					Noted

Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions			Verification	Comments	Compliance
	the EPA to assist the EPA in connection with the issuing of this licence.					
2	Discharges to Air and Water and Applications to Land					
P1	Location of monitoring/discharge points and areas					
	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.					Noted
	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.					Noted
	EPA ID No.	Type of Monitoring / Discharge Point	Location Description		The only discharge points from the Central Coast Sand Quarry site to the surrounding environment are stormwater overflow discharge waters from EPA Points 1 and 2 (referred to as LPD1 and LPD2).	Compliant
	1	Stormwater Overflow Discharge to Waters	Overflow spillway from Process Water Dam to Unnamed Creek as shown as "EPA Monitoring Point 1" on drawing titled "Central Coast Sands: Pioneer: Development Management Plan", received by the EPA on 29/08/02.			
	2	Stormwater Overflow Discharge to Waters	Overflow spillway from Make-up Water Dam to Unnamed Creek as shown as "EPA Monitoring Point 2" on drawing titled "Central Coast Sands: Pioneer: Development Management Plan" received by the EPA on 29/08/02			
3	Limit Conditions					
L1	Pollution of waters					

Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance												
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	<ul style="list-style-type: none">Protection of the Environment Operations Act 1997 section 120		Noted												
L2	Concentration limits															
L2.1	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.			Noted												
L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges			Noted												
L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s			Noted												
L2.4	Water and/or Land Concentration Limits Points 1 and 2		The water monitoring program for the Central Coast Sand Quarry is conducted in accordance with the Water Management Plan (November 2014) and samples are collected in compliance with the requirements of EPL condition M2.2. The water discharged from Point LDP2 has been compliant with the Total Suspended Solids and Oil and Grease criteria. The pH values of discharge water have exhibited exceedance of the criteria on numerous occasions as a result of the lime treatment process. It is recommended that modification to the lime addition method to provide better mixing of the lime with the incoming water being treated should be introduced to reduce the potential for pH exceedance in the discharge water.													
	<table><tr><th>Pollutant</th><th>Unit of Measure</th><th>100%ile Limit</th></tr><tr><td>Oil and Grease</td><td>mg/L</td><td>10 or nil visible</td></tr><tr><td>pH</td><td>pH units</td><td>6.5-8.5</td></tr><tr><td>Total Suspended Solids</td><td>mg/L</td><td>50</td></tr></table>			Pollutant	Unit of Measure	100%ile Limit	Oil and Grease	mg/L	10 or nil visible	pH	pH units	6.5-8.5	Total Suspended Solids	mg/L	50	
	Pollutant			Unit of Measure	100%ile Limit											
	Oil and Grease			mg/L	10 or nil visible											
	pH			pH units	6.5-8.5											
Total Suspended Solids	mg/L	50														
L2.5	Background: The EPA and licensee have agreed it is acceptable to monitor daily for turbidity in lieu of total suspended solids, provided a correlation table/graph is established for the premises that clearly shows the turbidity level corresponding to a total suspended solids limit of 50 mg/L. Deliverables: a) The licensee must establish and use a correlation table/graph developed specifically for the premises, which shows the turbidity level corresponding to a total suspended solids limit of 50 mg/L. This correlation table/graph must be		The correlation of turbidity and total suspended solids was being undertaken at the date of this audit. The correlation table/graph will be provided to the EPA when sufficient data has been collected and the correlation established.	Noted Ongoing												


Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
	<p>reviewed routinely and updated to ensure it is current and builds in any necessary safety factor.</p> <p>b) The current turbidity:total suspended solids correlation table/graph must be provided to the EPA within seven days of it being developed or updated.</p> <p>c) It is deemed a non-compliance with the total suspended solids limit shown above if the turbidity level obtained exceeds the value shown in the current turbidity:total suspended solids correlation table/graph in use at the premises</p>			
L3	Waste			
L3.1	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.		No waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal.	Compliant Ongoing
L4	Noise limits			
L4.1	Where a noise limit has not been prescribed, all operations and activities occurring on the premises must be conducted in a manner that will not cause offensive noise.		Refer to Project Approval Schedule 3 condition 10.	Noted
L5	Potentially offensive odour			
L5.1	The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.		No offensive odour has been emitted beyond the quarry boundary. No odour complaints have been received by the Central Coast Sand Quarry.	Compliant Ongoing
L5.2	No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997.			Noted
4	Operating Conditions			
O1	Activities must be carried out in a competent manner			
O1.1	<p>Licensed activities must be carried out in a competent manner. This includes:</p> <p>a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and</p> <p>b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.</p>		The processing, handling, movement and storage of quarry materials and substances used to carry out the licensed activities and the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity are carried out in a competent manner.	Compliant Ongoing
O2	Maintenance of plant and equipment			

Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.		All plant and equipment operated at the Central Coast Sand Quarry is maintained and operated in a proper and efficient manner.	Compliant Ongoing
O3	Dust			
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.			Compliant Ongoing
O4	Processes and management			
O4.1	All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.		The fuel tank on site at the rear of the Maintenance Workshop is a double "skinned" aboveground storage tank on a pad, where any spillage would not reach a natural waterway and could be cleaned up without loss to the environment.	Compliant Ongoing
O4.2	Bunds must: a) have walls and floors constructed of impervious materials; b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed); c) have walls not less than 250 millimetres high; d) have floors graded to a collection sump; and e) not have a drain valve incorporated in the bund structure, or be constructed and operated in a manner that achieves the same environmental outcome.			
5	Monitoring and Recording Conditions			
M1	Monitoring records			
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.			Noted
M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.	<ul style="list-style-type: none"> RCA Laboratories Certificate of Analysis, August 2014 to March 2015 vgt Environmental Compliance Solutions – Sample Reports, August 2014 to March 2015 	All monitoring records for the Central Coast Sand Quarry are in a legible form, retained and maybe produced to any authorised officer of the EPA if requested.	Compliant Ongoing
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected;	<ul style="list-style-type: none"> RCA Laboratories Certificate of Analysis, August 2014 to March 2015 	Records of any samples collected for the purposes of this licence are subject to a Chain-of-Custody procedure that provides the date/time, sample point, sample type and name of the person who collected the sample.	Compliant Ongoing

Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
	c) the point at which the sample was taken; and d) the name of the person who collected the sample	<ul style="list-style-type: none"> vgt Environmental Compliance Solutions – Sample Reports, August 2014 to March 2015 		
M2	Requirement to monitor concentration of pollutants discharged			
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:			Noted
M2.2	<i>Water and/ or Land Monitoring Requirements</i>			
	Pollutant	Unit of Measure	Frequency	Sampling Method
	Oil and Grease	mg/L	Special Frequency 2	Representative sample
	pH	pH units	Special Frequency 1	Representative sample
	Total Suspended Solids	mg/L	Weekly during discharge	Representative sample
	Turbidity	NTU	Daily during discharge	Representative sample
M2.3	<i>Monitoring Frequency</i> <i>Special Frequency 1: Testing for pH means;</i> <i>Testing pH daily during any discharges using a suitably calibrated meter and weekly during any discharge by obtaining a representative sample and forwarding it to a NATA Accredited Laboratory for analysis.</i> <i>Special Frequency 2: Testing for Oil and Grease means;</i> <i>Testing daily during any discharges by visual inspection and weekly during any discharges by obtaining a representative sample and forwarding it to a NATA Accredited Laboratory for analysis.</i>			Noted
M3	Testing Methods			
M3.1	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication		Samples collected from the monitoring programs are analysed by NATA registered laboratories (i.e. RCA Laboratories – water analysis and VGT Laboratories – dust analysis) using approved standard methods.	Compliant Ongoing

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Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
	unless another method has been approved by the EPA in writing before any tests are conducted			
M4	Recording of pollution complaints			
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.		Central Coast Sand Quarry / Hanson have Complaints Register established and any complaints are placed on the website on a monthly basis.	Compliant Ongoing
M4.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	<ul style="list-style-type: none"> Central Coast Sands Quarry Complaints Register www.hanson.com.au/TheCentralCoastSandQuarry/ 	<p>If any complaints are received they will be recorded in the Complaints Register with the date and time of the complaint; method by which the complaint was made; nature of the complaint; and action taken by Hanson.</p> <p>No community complaints were registered between August 2014 and June 2015.</p>	Not triggered
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made.			Noted
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them			Noted
M5	Telephone complaints line			
M5.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.		A telephone complaints line for the purpose of receiving any complaints from members of the public is available during operating hours at the quarry. The Complaint Line number is 02 4372 1238.	Compliant Ongoing
M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.		The Complaints Line number is available on the Company website, on the Complaints Register on the website and through the Hanson Construction Materials Pty Ltd main site and office.	Compliant Ongoing
M5.3	The preceding two conditions do not apply until 3 months after: a) the date of the issue of this licence or b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation			Not applicable

Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
6	Reporting Conditions			
R1	Annual return documents			
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: a) a Statement of Compliance; and b) a Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	<ul style="list-style-type: none"> EPL No. 3751 Annual Return, 15 Jun 2013 to 14 Jun 2014 	The Annual Return for EPL No. 3751 for the Central Coast Sand Quarry Reservoir Road Somersby has been submitted to the EPA for the period 15 June to 14 June and included a Statement of Compliance; and Monitoring and Complaints Summary.	Compliant
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below.			Noted
R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.			Noted
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.			Noted
R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	<ul style="list-style-type: none"> EPL No. 3751 Annual Return, 15 Jun 2013 to 14 Jun 2014 	The Annual Return for EPL No. 3751 for the Central Coast Sand Quarry Reservoir Road Somersby was signed and submitted to the EPA on 7 August 2014	Compliant
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	<ul style="list-style-type: none"> EPL No. 3751 Annual Return, 15 Jun 2013 to 14 Jun 2014 	The Annual Return for EPL No. 3751 for the Central Coast Sand Quarry Reservoir Road Somersby is retained by Hanson.	Compliant
R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder	<ul style="list-style-type: none"> EPL No. 3751 Annual Return, 15 Jun 2013 to 14 Jun 2014 	The Annual Return for EPL No. 3751 for the Central Coast Sand Quarry Reservoir Road Somersby was signed by a person approved in writing by the EPA to sign on behalf of the licence holder (Hanson Risk Manager).	Compliant

Independent Environmental Audit June 2015

Central Coast Sand Quarry

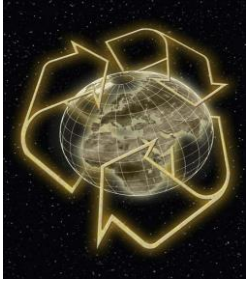
EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
R1.8	A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.			Noted
R2	Notification of environmental harm			
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	<ul style="list-style-type: none"> EPA Environment Line Reference C05778-2015, 24 May 2015 	An incident of discharge of water with increased total suspended solids from LDP2 to an Unnamed Tributary during an extreme rainfall event on 24 April 2015 was notified to the EPA Environment Line on 24 April 2015 (Reference C05778-2015).	Compliant
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	<ul style="list-style-type: none"> Letter to EPA re Discharge of Turbid Waters, 4 May 2015 	A written report of the incident of discharge of water with increased total suspended solids from LDP2 to an Unnamed Tributary during an extreme rainfall event on 24 April 2015, was submitted to the EPA on 4 May 2015.	Compliant
R3	Written report			
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event			Noted
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request			Noted
R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who			Noted

Independent Environmental Audit June 2015

Central Coast Sand Quarry

EPL 3751	Environment Protection Licence No. 3751 Conditions	Verification	Comments	Compliance
	witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.			
R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request			Noted
7	General Conditions			
G1	Copy of licence kept at the premises or plant			
G1.1	A copy of this licence must be kept at the premises to which the licence applies.		A copy of this licence must be kept at the Central Coast Sand Quarry site office.	Compliant
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it			Noted
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.			Noted

Appendix 1 Agency Consultation Letters



TREVOR BROWN & ASSOCIATES

Applied Environmental Management Consultants

TBA Ref : Hanson/15/06

9 June 2015

Environmental Management

ISO14000 EMS development

EMP preparation

EMS Implementation

Environmental audits

Due Diligence Audits

Compliance Audits

*Environmental Risk
Assessment*

Environmental Training

Environmental Workshops

*Environmental Project
Management*

for

Mining

Construction

Industry

Government

Small-Medium Enterprises

Department of Planning and Environment

Attention: Howard Reed / Brendan Liew

Dear Howard / Brendan

Independent Environmental Audit – Central Coast Sand Quarry Project

I have been endorsed as Auditor by the Department of Planning and Environment (DP&E) in accordance with Project Approval 08_0173 Schedule 5 Condition 9, for the conduct of an Independent Environmental Audit of Central Coast Sand Quarry Project as determined by the DP&E 29 May 2015.

The independent audit will assess the current environmental status of the development of the **Central Coast Sand Quarry Project** and compliance with the requirements of Project Approval 08_0173 Environmental Protection Licence 3751, and the environmental management plans prepared to satisfy the conditions of the Project Approval. The audit will also involve a review of the adequacy of strategies, plans and programs prepared under the abovementioned approvals and, where necessary, recommend appropriate measures or actions to improve the environmental performance of the project.

The audit will be comprehensive however, if there are any particular environmental aspects that you would like the audit to take into consideration, please contact me via email by the 15 June 2015.

Yours sincerely

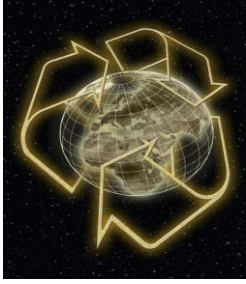
9 June 2015

Trevor Brown
Principal Environmental Management Auditor

Trevor Brown & Associates

42 Skiff Street Vincentia NSW 2540
Mobile 0409 053 031

Email: tebrown@bigpond.com



TREVOR BROWN & ASSOCIATES

Applied Environmental Management Consultants

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Management*

for

Mining

Construction

Industry

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Small-Medium Enterprises

Office of Environment and Heritage

Attention: Diane Crossdale

Manager – Planning and Aboriginal Heritage – Regional Operations

Dear Diane

Independent Environmental Audit – Central Coast Sand Quarry Project

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Yours sincerely

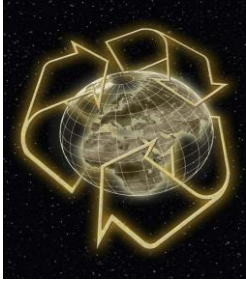
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Trevor Brown
Principal Environmental Management Auditor

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*Environmental Project
Management*

for

Mining

Construction

Industry

Government

Small-Medium Enterprises

Office of Environment and Heritage

Attention: Peter Jamieson
Head Regional Operations Unit - Hunter

Dear Peter

Independent Environmental Audit – Central Coast Sand Quarry Project

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The audit will be comprehensive however, if there are any particular environmental aspects that you would like the audit to take into consideration, please contact me via email by the 15 June 2015.

Yours sincerely

9 June 2015

Trevor Brown
Principal Environmental Management Auditor

Trevor Brown & Associates

42 Skiff Street Vincentia NSW 2540
Mobile 0409 053 031

Email: tebrown@bigpond.com



TREVOR BROWN & ASSOCIATES

Applied Environmental Management Consultants

TBA Ref : Hanson/15/06

9 June 2015

Environmental Management
ISO14000 EMS development
EMP preparation
EMS Implementation
Environmental audits
Due Diligence Audits
Compliance Audits
Environmental Risk Assessment
Environmental Training
Environmental Workshops
Environmental Project Management
for
Mining
Construction
Industry
Government
Small-Medium Enterprises

Gosford Council

Attention: Diane Spithill
Acting Advisor Planning

Dear Diane

Independent Environmental Audit – Central Coast Sand Quarry Project

I have been endorsed as Auditor by the Department of Planning and Environment (DP&E) in accordance with Project Approval 08_0173 Schedule 5 Condition 9, for the conduct of an Independent Environmental Audit of Central Coast Sand Quarry Project as determined by the DP&E 29 May 2015.

The independent audit will assess the current environmental status of the development of the Central Coast Sand Quarry Project and compliance with the requirements of Project Approval 08_0173 Environmental Protection Licence 3751, and the environmental management plans prepared to satisfy the conditions of the Project Approval. The audit will also involve a review of the adequacy of strategies, plans and programs prepared under the abovementioned approvals and, where necessary, recommend appropriate measures or actions to improve the environmental performance of the project.

The audit will be comprehensive however, if there are any particular environmental aspects that you would like the audit to take into consideration, please contact me via email by the 15 June 2015.

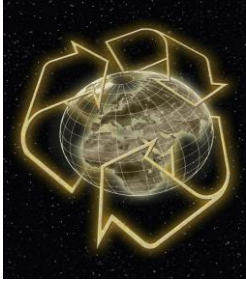
Yours sincerely

9 June 2015

Trevor Brown
Principal Environmental Management Auditor

Trevor Brown & Associates

42 Skiff Street Vincentia NSW 2540
Mobile 0409 053 031
Email: tebrown@bigpond.com



TREVOR BROWN & ASSOCIATES

Applied Environmental Management Consultants

TBA Ref : Hanson/15/06

9 June 2015

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Roads and Maritime Services

Attention: Dave Young
Manager Land Use – Hunter Region

Dear Dave

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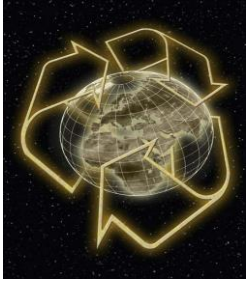
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NSW Office of Water

Attention: Mitchell Isaacs

Dear Mitchell

Independent Environmental Audit – Central Coast Sand Quarry Project

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The independent audit will assess the current environmental status of the development of the Central Coast Sand Quarry Project and compliance with the requirements of Project Approval 08_0173 Environmental Protection Licence 3751, and the environmental management plans prepared to satisfy the conditions of the Project Approval. The audit will also involve a review of the adequacy of strategies, plans and programs prepared under the abovementioned approvals and, where necessary, recommend appropriate measures or actions to improve the environmental performance of the project.

The audit will be comprehensive however, if there are any particular environmental aspects that you would like the audit to take into consideration, please contact me via email by the 15 June 2015.

Yours sincerely

9 June 2015

Trevor Brown
Principal Environmental Management Auditor

Trevor Brown & Associates

42 Skiff Street Vincentia NSW 2540
Mobile 0409 053 031

Email: tebrown@bigpond.com



Trevor Brown & Associates
42 Skiff Street
VINCENTIA, NSW 2540

Attn: Mr Trevor E Brown

Contact Alison Collaros
Phone (02) 4904 2527
Fax (02) 4904 2501
Email Alison.Collaros@dpi.nsw.gov.au
Our ref ER20276
Your ref Hanson/15/06

Dear Mr Brown

Independent Environmental Audit of Central Coast Sand Quarry (MP08_0173)

Thank you for the opportunity to comment on the planned independent environmental audit of the Central Coast Sands Quarry.

The Office of Water notes that the scope of the audit includes “*the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licenses for the project*”.

The Office of Water understands that this extends at least to:

- Compliance with conditions of consent;
- Compliance with statement of commitments at Appendix 3 of the consent;
- Assessment of whether the project holds the required water entitlements, approvals and licenses;
- Compliance with the conditions of any water licenses/approvals held;
- Compliance with any reporting or management requirements within any relevant management plans.

Due to the early stage of this project as authorized by this consent, it may be difficult to assess compliance with reporting or management requirements of the various management plans, however there may be utility in ensuring that all management plans adhere to the relevant requirements of condition 2 of Schedule 5, such that they may be effectively audited during subsequent audits.

Requirements of Condition 3 (Schedule 3)

Condition 3 of Schedule 3 requires the proponent to submit the Surface Water Audit Report within 6 months of commissioning of the audit. Office of Water understands that the proponent engaged a consultant to undertake the works in November 2014. To date, the Audit Report has not been provided to the Office of Water, therefore It is recommended that the audit investigate compliance with this condition.

Requirements of Condition 7 (Schedule 3)

Office of Water notes that Condition 7 (Schedule 3) includes detailed requirements for the development of a Water Management Plan, to be developed in consultation with the Office of Water.

The Office of Water does not have any record of consultation taking place in regards to the development of the Water Management Plan, therefore it is recommended that a detailed audit of all requirements under Condition 7 of Schedule 3 be undertaken. Further, the water management plan should provide sufficient detail to understand the ground and surface water licensing requirements.

It is further recommended that the audit seek evidence of consultation with Grants Road Sand Quarry in relation to 7(c)(iii) dot point 5.

Groundwater Considerations and Licensing

The Office of Water recommends that the audit consider compliance with the relevant water licensing requirements, given that:

- This formed a central part of the Office of Water's submissions on this project;
- There are no records of water licenses applied for or held by the proponent in relation to the Central Coast Sands Quarry site; and
- There is no record of any communication from the proponent in relation to either existing or future water licensing requirements.

To this end, the Office of Water recommends that the following questions may aid in understanding the groundwater licensing requirements of this audit:

- Is the quarry taking (or proposing to take) groundwater (including passively, such as through inflows)?
- Does the proponent have sufficient information to provide a reasonable estimate of groundwater take on an annual basis?
- Does the proponent hold groundwater Water Access Licenses (WALs) in the correct water sources under the relevant water sharing plan, and do they hold sufficient quantity of these licenses?

I note that the EIS for the project includes a Hydrogeological Assessment which provides estimates of groundwater take, as well as of significant local groundwater drawdown (which indicates the take of groundwater), as such this information should be readily available from the proponent.

Surface Water considerations and Licensing

The following questions may aid in understanding the surface water licensing requirements of this audit:


- Is the quarry capturing and/or harvesting any clean water?
- Has the proponent calculated its maximum harvestable right under the *Water Management Act 2000*?

- Is the capture of water in excess of the harvestable right, ie are surface water access licenses required?
- If necessary, does the proponent hold surface water access licenses in the correct water sources under the relevant water sharing plan, and do they hold sufficient quantity of these licenses?

Where the proponent does hold water licenses, it is recommended that compliance with the conditions of these licenses be audited.

If you have further enquiries please contact Alison Collaros, Senior Water Regulation Officer (Newcastle) on (02) 4904 2527 or Alison.Collaros@dpi.nsw.gov.au .

Yours sincerely



Mitchell Isaacs

Manager, Strategic Stakeholder Liaison
12 June 2015

Response to Matters Raised by NSW Office of Water (consultation in accordance with Project Approval 08_0173 Schedule 5 condition 9)

The Office of Water notes that the scope of the audit includes “the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licenses for the project”.

Due to the early stage of this project as authorized by this consent, it may be difficult to assess compliance with reporting or management requirements of the various management plans, however there may be utility in ensuring that all management plans adhere to the relevant requirements of condition 2 of Schedule 5, such that they may be effectively audited during subsequent audits.

Audit Response:

The Independent Environmental Audit has assessed the adequacy of the management plans and reported the status in accordance with the requirements of Project Approval 08_0173 Schedule 5 condition 2.

Requirements of Condition 3 of Schedule 3 requires the proponent to submit the Surface Water Audit Report within 6 months of commissioning of the audit. Office of Water understands that the proponent engaged a consultant to undertake the works in November 2014.

Audit Response:

The Surface Water Audit was prepared following consultation with the NSW Office of Water in accordance with Project Approval 08_0173 Schedule 3 conditions 2:

Project Approval Schedule 3 condition 2	Audit Finding
Within three months of the date of this approval, the Proponent shall commission independent surface water expert/s, approved by the Secretary, to undertake an audit of current and proposed surface water management practices and infrastructure on the site. The audit shall: <u>(a) be undertaken in consultation with NOW;</u>	The Project Approval 08_010173, was granted on 1 August 2014 and the Surface Water Audit and Water Management Improvement Program prepared by SLR (commissioned within 3 months of the date of this Project Approval), for submission to the Secretary. The Surface Water Audit was undertaken of current and proposed surface water management practices and infrastructure on the site.

Requirements of Condition 7 (Schedule 3) Office of Water notes that Condition 7 (Schedule 3) includes detailed requirements for the development of a Water Management Plan, to be developed in consultation with the Office of Water.

The Office of Water does not have any record of consultation taking place in regards to the development of the Water Management Plan, therefore it is recommended that a detailed audit of all requirements under Condition 7 of Schedule 3 be undertaken. (Refer to the emails below dated November 2014).

Audit Response:

Email Correspondence with Office of Water – November 2014

>>> William Legg <wlegg@slrconsulting.com> 6/11/2014 10:51 AM >>>

Dear Sir / Madam,

Hanson Construction Materials Pty Ltd (Hanson) received project approval under Section 75J of the Environment Planning and Assessment Act 1979 to adjust the boundary and expand the resource extraction operations of the existing Somersby Quarry (Central Cost Sands) on Reservoir Road, Somersby (the Site).

SLR Consulting (SLR) was engaged by Hanson on 30th October 2014 to satisfy Schedule 3, Environmental Performance Conditions (conditions) 2 to 4 and 7. In order to satisfy the conditions, SLR will undertake an audit of surface water management practices at the Site and prepare a report to document the findings of the audit including a Water Management Improvement Program.

The conditions state that the surface water audit be undertaken in consultation with the Office of Water. We understand that the Newcastle office is dealing with this project, therefore please could this email be forwarded to the relevant person at the Newcastle office.

Please could you review the scope of work for the audit detailed below and confirm that it is adequate to meet your requirements or provide comment where additional requirements are required.

We have a very tight timeframe to complete the work as the EPA require the report by the end of November. We are intending to go to site on Tuesday 11th November, therefore please could you at least provide initial comments by close of business on Monday 10th November.

Objectives

The main objectives of the Surface Water Audit (the Audit) and Water Management Improvement Program (WMIP) are:

- to confirm whether the current surface water management practices comply with current surface water management documentation for the Site and relevant licence conditions;
- to assess the effectiveness of the current and proposed surface water management practices onsite; and
- to provide a program for improvement of water management onsite.

Scope of Work

The following scope of work will be undertaken:

- Review all available current water management system documentation and describe current water management practices onsite;
- Review the proposed water management system for the Site as outlined within the Surface Water Hydrology Assessment and Management (Martens, 2010);
- Undertake a subjective visual site inspection / investigation in order to check that water management practices are currently being undertaken in accordance with the relevant documentation and Environment Protection Licence (EPL);
- Review two (2) years of water quality data for the two (2) discharge points at the Site to assess conformance with the existing EPL conditions and effectiveness of existing water quality management practices;
- Review the design parameters adopted in Martens (2010) for the proposed water management system at the Site and confirm appropriateness or recommended alternative parameters where required;
- Undertake a desktop options assessment of all reasonable and feasible measures to improve surface water management on the existing site and Quarry Extension Area with particular reference to opportunities to divert clean water away from the site;
- Report on the findings of the Audit;

Based upon the findings of the Audit and desktop surface water management improvement options assessment, SLR will prepare a Water Management Improvement Program including a program of proposed timeframes for implementation.

Kind Regards
Will

William Legg

Senior Consultant

SLR Consulting Australia Pty Ltd

From: Mitchell Isaacs [<mailto:mitchell.isaacs@dpi.nsw.gov.au>]
Sent: Monday, 10 November 2014 5:44 PM
To: William Legg
Cc: Alison Collaros; vanessa.hornsby@dpi.nsw.gov.au
Subject: Re: Project Application - MP 08_0173 - Surface Water Audit Consultation - For NSW Office of Water Newcastle Office response

Hi Will

Thank you for providing Office of Water with the proposed scope of work for the surface water audit to be undertaken to satisfy conditions 2-4 and 7 of the approval for the Somersby Quarry expansion. NSW Office of Water considers that the proposed objectives and scope of work is acceptable in relation to Conditions 2 and 3 and will facilitate the development of the Water Management Improvement Program required by conditions 3 and 4.

NSW Office of Water notes that the current scope of works does not include the production and implementation of a Water Management Plan as required by Condition 7.

If you have any queries regarding the above please contact Alison Collaros in the Newcastle Office on [4904 2527](tel:49042527) or alison.collaros@dpi.nsw.gov.au

Kind Regards
Mitchell

From: William Legg
Sent: Friday, 14 November 2014 12:47 PM
To: Alison Collaros
Cc: vanessa.hornsby@dpi.nsw.gov.au; Mitchell Isaacs
Subject: RE: Project Application - MP 08_0173 - Water Management Plan

Hi Alison

We are currently undertaking the Water Management Plan component of the project.

Please could surface water and groundwater data as listed be below be provided to meet the following approval requirements:

Schedule 3 – Item 7c (ii): - detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the project

Schedule 3 – Item 7c (iii): - detailed baseline data on groundwater level, yield and quality in local sandstone aquifers, privately owned bores and high priority GDEs

1. Any available daily flow data for Mooney Mooney Creek at the nearest station from the sites licenced discharge point. The discharge point of the site is located at (Zone 56H, 338632mE, 6305451mS).

2. Any available groundwater level, yield and quality data for licenced groundwater bores within 2km of the centre of the site. The approximate centre of the site is located at (Zone 56H, 338793mE, 6305279mS).

Kind Regards

Will

Senior Consultant

SLR Consulting Australia Pty Ltd

To date, the Audit Report has not been provided to the Office of Water, therefore it is recommended that the audit investigate compliance with this condition.

Audit Response:

The Surface Water Audit dated 28 November 2014 was prepared and submitted to the DP&E with the Water Management Improvement Program within six (6) months of commissioning the audit. The document was uploaded to the website - [www.hanson.com.au /TheCentralCoastSandQuarry/](http://www.hanson.com.au/TheCentralCoastSandQuarry/). Project Approval 08_0173 Schedule 3 conditions 2 and 3 required the documents to be submitted to the Secretary but did not require Hanson to submit the Surface Water Audit or Water Management Improvement Program to NOW directly.

Conclusion:

The Independent Environmental Audit considers that Hanson have complied with the requirements of Project Approval 08_0173 Schedule 3 conditions 2 and 3.

It is further recommended that the audit seek evidence of consultation with Grants Road Sand Quarry in relation to 7(c)(iii) dot point 5.

Audit Response:

To comply with Project Approval 08_0189 Schedule 3 condition 7(c)(iii) dot point 5, Hanson will consult with Grants Road Sand Quarry *"for any potential impacts to privately-owned groundwater bores and/or high priority GDEs"* when the Central Coast Sand Quarry commences operation.

Further, the water management plan should provide sufficient detail to understand the ground and surface water licensing requirements.

Audit Response:

Central Coast Sand Quarry Statement of Commitment – Hydrogeological states that *"Hanson will secure sufficient water access licenses to account for any increase in groundwater take as a result of the lateral expansion of the quarry. Hanson will commit to ongoing consultation and liaison with the NSW Office of Water to resolve issues relating to the existing groundwater and surface water take of the current operations and how best to regularise existing take under WSPs. Hanson will also provide further information about surface water harvesting on site, and the constructed storages in consultation with NOW."*

The Independent Environmental Audit will make the observation that consultation with NOW should occur as necessary in relation to water access licenses, when works on the quarry extension commence.

Groundwater Considerations and Licensing

The Office of Water recommends that the audit consider compliance with the relevant water licensing requirements, given that:

- This formed a central part of the Office of Water's submissions on this project;
- There are no records of water licenses applied for or held by the proponent in relation to the Central Coast Sands Quarry site; and
- There is no record of any communication from the proponent in relation to either existing or future water licensing requirements.

Audit Response:

The scope of work for the Surface Water Audit was forwarded to the NOW on 6 November 2014 and a response from NOW on 10 November 2014 stated – *"Thank you for providing Office of Water with the proposed scope of work for the surface water audit to be undertaken to satisfy conditions 2-4 and 7 of the approval for the Somersby Quarry expansion. NSW Office of Water considers that the proposed objectives and scope of work is acceptable in relation to Conditions 2 and 3 and will facilitate the development of the Water Management Improvement Program required by conditions 3 and 4."* (Refer to email from Mitchell Isaacs dated 10 November 2014).

Conclusion:

Given that the Surface Water Audit scope of work was agreed to by NOW on 10 November 2014, the Surface Water Audit conducted and the document prepared by 28 November 2014 did not specifically include the Groundwater Considerations and Licensing comments mentioned in this letter from NOW as the matters were not received at the time the audit was conducted by SLR.

To this end, the Office of Water recommends that the following questions may aid in understanding the groundwater licensing requirements of this audit:

- Is the quarry taking (or proposing to take) groundwater (including passively, such as through inflows)?

From Secretary's report: "The final assessment predicts that groundwater interception would rise from the current 74 ML/year to 160 ML/year. However, the project would ensure that the maximum extraction depth of the quarry would not exceed 190 mAHD, resulting in a significantly lower amount of intercepted groundwater when compared to amounts that would be generated if the quarry were to extract below that level under Hanson's existing consent and continuing use rights."

- Does the proponent have sufficient information to provide a reasonable estimate of groundwater take on an annual basis?

Audit Response:

Hanson is monitoring groundwater and water discharge from the site in accordance with the approved Water Management Plan.

- Does the proponent hold groundwater Water Access Licenses (WALs) in the correct water sources under the relevant water sharing plan, and do they hold sufficient quantity of these licenses?

Audit Response:

Hanson is investigating WAL's available for purchase.

I note that the EIS for the project includes a Hydrogeological Assessment which provides estimates of groundwater take, as well as of significant local groundwater drawdown (which indicates the take of groundwater), as such this information should be readily available from the proponent.

Audit Response:

The Environmental Assessment (2009) Attachment 21 - Hydrogeological Assessment provides estimates of groundwater drawdown and the current groundwater level monitoring in accordance with the Water Management Plan could provide data for comparison with the model predictions and for use to recalibrate the model if required.

Surface Water considerations and Licensing

The following questions may aid in understanding the surface water licensing requirements of this audit:

- Is the quarry capturing and/or harvesting any clean water?

Audit Response:

Stormwater runoff from the site is directed to the active pit area.

- Has the proponent calculated its maximum harvestable right under the Water Management Act 2000?

Audit Response:

Maximum harvestable rights have not yet been calculated for the quarry extension project as the no quarry activities have yet commenced in the extension area.

- Is the capture of water in excess of the harvestable right, ie are surface water access licenses required?

Audit Response:

Hanson is investigating WAL's available for purchase.

- If necessary, does the proponent hold surface water access licenses in the correct water sources under the relevant water sharing plan, and do they hold sufficient quantity of these licenses?

Audit Response:

Hanson does not currently hold any WAL's, and is investigating WAL's available for purchase.