



Dixon Sand (Penrith) Pty Ltd

December 2016

Independent Environmental Audit

Old Northern Road Quarry Project



Trevor
APPLIED ENVIRONMENTAL MANAGEMENT CONSULTANTS

REPORT: DS/ONR QUARRY/NOV 2016/REV1

Independent Environmental Audit 'Old Northern Road' Quarry November 2016

trevor brown & associates
applied environmental management consultants

Report ID: Dixon Sand/ONRQ/Nov2016/Rev1

Independent Audit Certification Form


| | |
|----------------------------|--|
| Development Name | Old Northern Road Quarry |
| Development Consent No. | Development Consent 250-09-01 Modification 4 |
| Description of Development | Sand Quarry |
| Development Address | 4610 Old Northern Road Maroota 2756 |
| Operator | Dixon Sand (Penrith) Pty Ltd |
| Operator Address | PO Box 4019 Pitt Town NSW 2756 |

Independent Audit

| | |
|----------------|--|
| Title of Audit | Independent Environmental Audit - Old Northern Road Quarry |
|----------------|--|

I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:

- The audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits*
- The findings of the audit are reported truthfully, accurately and completely;*
- I have exercised due diligence and professional judgement in conducting the audit;*
- I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit;*
- I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the audit, spouse, partner, sibling, parent, or child;*
- I do not have any pecuniary interest in the audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);*
- Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit; and*
- I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so. Note. a) The Independent Audit is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000. b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).*

| | |
|--------------------------------|---|
| Signature |  |
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| Auditor | MRACI Chartered Chemist 2428, approved by the Secretary of Department of Planning and Environment 8 November 2016 |
| Date: | 17 December 2016 |

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This document was prepared for the sole use of Dixon Sand (Penrith) Pty Ltd and the regulatory agencies that are directly involved in this project, as the only intended beneficiaries of our work. No other party should rely on the information contained herein without the prior written consent of **trevor brown & associates**.

by

trevor brown & associates

ABN: 65 850 181 279

136 Sanctuary Point Road, Sanctuary Point NSW 2540



17 December 2016

Trevor Brown
Principal Environmental Management Consultant/Auditor

Table of Contents

Glossary / Abbreviations

| | |
|--|----|
| Executive Summary | i |
| 1. Introduction | 1 |
| 1.1 Background | 1 |
| 1.2 Scope of Work | 1 |
| 1.3 Structure of the Report | 2 |
| 1.4 Compliance Tables | 2 |
| 1.5 Limitations of the Audit | 3 |
| 1.6 Opening and Closing Site Audit Meetings | 3 |
| 2. Old Northern Road Quarry Project | 4 |
| 2.1 Project Site Description | 4 |
| 2.1.1 Project Location | 4 |
| 2.1.2 Local Geology | 5 |
| 3. Approvals and Licenses | 6 |
| 3.1 Development Consent | 6 |
| 3.2 Environment Protection Licence 3916 | 7 |
| 3.4 Water Licences | 8 |
| 4. Department of Planning and Environment | 9 |
| 4.1 DP&E Compliance Audit | 9 |
| 5. Review of Environmental Management | 18 |
| 5.1 Site Environmental Management Plan | 18 |
| 5.1.2 Conclusion | 18 |
| 5.2 Air Quality | 19 |
| 5.2.1 Air Quality Management Plan | 19 |
| 5.2.2 Environmental Assessment – Air Quality | 19 |
| 5.2.3 Mitigation Measures | 19 |
| 5.2.4 Air Quality Criteria | 20 |
| 5.2.5 Air Quality Monitoring Program | 21 |
| 5.2.6 Air Quality Monitoring Results | 22 |
| 5.2.7 Conclusion | 24 |
| 5.3 Noise | 24 |
| 5.3.1 Noise Management Plan | 24 |
| 5.3.2 Environmental Assessment - Noise | 24 |
| 5.3.3 Mitigation Measures Noise | 25 |

| | | |
|---------|--|----|
| 5.3.4 | Noise Criteria | 26 |
| 5.3.5 | Noise Monitoring Program | 27 |
| 5.3.6 | Noise Monitoring Results..... | 27 |
| 5.3.7 | Conclusion..... | 27 |
| 5.4 | Water..... | 28 |
| 5.4.1 | Water Management Plan..... | 28 |
| 5.4.2 | Surface Water | 28 |
| 5.4.2.1 | Surface Water Mitigation and Management Measures..... | 28 |
| 5.4.2.2 | Surface Water Quality Criteria | 30 |
| 5.4.2.3 | Monitoring Program | 30 |
| 5.4.2.4 | Conclusion | 30 |
| 5.4.3 | Groundwater..... | 31 |
| 5.4.4 | Erosion and Sediment Control | 34 |
| 5.5 | Flora and Fauna | 35 |
| 5.5.1 | Flora and Fauna Management Plan | 35 |
| 5.5.2 | Environmental Assessment – Flora and Fauna | 36 |
| 5.5.3 | Conclusion..... | 38 |
| 5.6 | Biodiversity | 38 |
| 5.6.1 | Biodiversity Management Plan..... | 38 |
| 5.6.2 | Conservation Bond..... | 39 |
| 5.6.3 | Environmental Assessment – Biodiversity | 39 |
| 5.6.4 | Biodiversity Management..... | 40 |
| 5.6.5 | Biodiversity Offset Area Monitoring and Management | 40 |
| 5.6.6 | Conclusion..... | 42 |
| 5.7 | Rehabilitation | 42 |
| 5.7.1 | Rehabilitation and Landscape Plan | 42 |
| 5.7.2 | Environmental Assessment - Rehabilitation | 42 |
| 5.7.3 | Rehabilitation Bond | 43 |
| 5.7.4 | Rehabilitation Monitoring and Management | 43 |
| 5.7.5 | Conclusion – Rehabilitation | 44 |
| 5.8 | Traffic..... | 44 |
| 5.8.1 | Traffic Management Plan..... | 44 |
| 5.8.2 | Transport Code of Conduct..... | 44 |
| 5.8.3 | Environmental Assessment – Traffic and Transport | 45 |
| 5.8.4 | Traffic Management Procedures | 45 |
| 5.8.4 | Traffic Monitoring..... | 46 |

| | | |
|--------|---|----|
| 5.8.5 | Conclusion..... | 46 |
| 5.9 | Heritage | 47 |
| 5.9.1 | Heritage Management Plan | 47 |
| 5.9.2 | Environmental Assessment – Aboriginal Heritage..... | 47 |
| 5.9.3 | Conclusion..... | 47 |
| 5.10 | Bushfire..... | 48 |
| 5.10.1 | Bushfire Management Plan | 48 |
| 5.10.2 | Conclusion | 48 |
| 5.11 | Waste..... | 48 |
| 5.11.1 | Waste Management Plan | 48 |
| 5.11.2 | Conclusion | 49 |
| 5.12 | Community Consultation | 49 |
| | Community Consultation Committee (CCC) | 49 |
| 6. | Conclusions | 51 |
| | Attachments | 53 |
| | Attachment A Development Consent 250-09-01 MOD 4 Conditions | 53 |
| | Attachment B Environment Protection Licence 3916 Conditions | 53 |

Glossary / Abbreviations

| | |
|-----------------|---|
| AHD | Australian Height Datum |
| Annual Return | Annual Return required under EPL 3916 condition R1 |
| Annual Review | Review required under Development Consent 250-09-01 Schedule 2 condition 7.2 |
| BCA | Building Code of Australia |
| CCC | Community Consultative Committee |
| Council | The Hills Shire Council (previously Baulkham Hills Council) |
| Department | Department of Planning and Environment |
| DRE | Division of Resources and Energy, within the NSW Department of Primary Industry |
| DPI-Water | Department of Primary Industries - Water |
| EIS | Environmental Impact Statement prepared by Southern Environmental Pty Limited, dated 1 June 1999, lodged with Council on 30 August 1999 |
| | Environmental Impact Statement <i>Maroota Quarry Extension for Dixon Sand (Penrith) Pty Ltd</i> , August 2001 prepared by Environmental Resources Management Australia Pty Ltd (ERMA) |
| EA (MOD 1) | Statement of Environmental Effects (SEE) titled <i>Sand Quarry on Lots 29, 196, 1 & 2 Old Northern Road, Maroota, Section 96 Consent Modification</i> , July 2005 and prepared by ERMA; |
| EA (MOD 2) | Modification Application 250-09-01 MOD 2 and the accompanying Statement of Environmental Effects titled " <i>Section 96 Modification for Dixon Sand Pty Ltd</i> " August 2007; |
| EA (MOD 3) | Environmental Assessment <i>Section 75W Modification DA 250-09-01 Dixon Sand (Penrith) Old Northern Road Maroota</i> , Nexus Environmental Planning Pty Ltd dated 8 December 2011 |
| EA (MOD 4) | Environmental Assessment <i>Section 75W Modification (4) DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i> , Nexus and dated 25 October 2013; response |
| EP | Environmental Plan |
| EPA | Environment Protection Authority |
| EP&A Act | <i>Environmental Planning and Assessment Act 1979</i> |
| EP&A Regulation | <i>Environmental Planning and Assessment Regulation 2000</i> |
| EPL | Environment Protection Licence 3916 issued under the POEO Act |
| ERMA | Environmental Resources Management Australia Pty Ltd |
| INP | <i>NSW Industrial Noise Policy</i> (NSW EPA, 2000) |
| Minister | Minister for Planning, or delegate |
| Nexus | Nexus Environmental Planning Pty Ltd |
| OEH | Office of Environment and Heritage |
| POEO Act | <i>Protection of the Environment Operations Act 1997</i> |
| RMS | Roads and Maritime Services |
| Secretary | Secretary of the Department of Planning and Environment, or nominee |
| SEMP | Site Environmental Management Plan |
| Site | Includes Lot 1 and 2 DP547255, Lot 29 and 196 DP 752025 |

Executive Summary

An Independent Environmental Audit of the Dixon Sand (Penrith) Pty Ltd Old Northern Road Quarry Project was conducted by Trevor Brown & Associates in November 2016 to satisfy the requirement of Consolidated Development Consent DA 250-09-01 Schedule 2 condition 4.11.

The Old Northern Road Quarry is considered to be operating generally in compliance with the conditions of the Development Consent 250-09-01 Modification 4.

The Independent Environmental Audit assessed the status of the approval conditions on the date of the Old Northern Road Quarry site audit and also assessed the status of Dixon Sand response to the Department of Planning and Environment Compliance Audit reported in December 2015. This current Independent Environmental Audit, identified five (5) Administrative Non-Compliances and one (1) Low Risk Non-Compliance with Development Consent 250-09-01 MOD 4 conditions, at the date of this Independent Environmental Audit.

The Administrative Non-Compliances are related to truck movement records and time of arrival at the quarry, and the timing of lodgement of the conservation bond and arrangements to protect the Biodiversity Offset Area in perpetuity. The process of lodgement of the conservation bond and arrangements to protect the Biodiversity Offset Area in perpetuity were with the Dixon Sand solicitor for execution at the date of this audit.

A summary of the findings of the Independent Environmental Audit in relation to the operation of the Old Northern Road Quarry at the date of this audit, is provided below and conclusions are provided in Section 6 of this Report.

Site Environmental Management Plan

Status:

Compliant

The Site Environmental Management Plan provides a concise basis for the management of environmental aspects of the Old Northern Road Quarry with appended Environmental Plans developed for key environmental aspects. The Site Environmental Management Plan generally adopts the elements of ISO 14001 and the requirements of Development Consent 250-09-01 MOD 4.

Air Quality

Status

Compliant

The Site Environmental Management Plan Appendix A EP13 - Air Quality Management 2005, prepared to satisfy the requirements of Development Consent No.250-09-01 Schedule 2 condition 6.3(a) was approved by DIPNR on 15 January 2005. The majority of the dust deposition results for the gauges at Old Northern Road Quarry generally show compliance over the 2013 to 2016 monitoring period. Dust deposition results for EPA Monitoring Point 2 (dust deposition gauge D6) near the Maroota Public School have been generally compliant with the NSW EPA Amenity Based Criteria for Dust Fallout criteria between 2013 and 2016. The 24 hour average PM₁₀ was complied with during the 1 July 2012 to 30 June 2013. A number of 24 hour average exceedances were recorded during 1 July 2013 to 30 June 2014 of which most were attributed to bushfire events occurring in the Sydney and Blue Mountains region, and one 24 hour average exceedance occurred in 2014-2015 due to a dust storm that swept across the north-western Sydney region. None of the recorded 24-hour average exceedances of PM₁₀ were quarry related to the quarry operations and no dust related complaints were received by Dixon Sand between July 2013 and November 2016.

Noise

Status

Compliant

Noise emissions from the Old Northern Road Quarry site are managed under the Noise Management Plan (EP12). Noise monitoring conducted in June and December /January annually has indicated that the Old Northern Road Quarry operational noise at the sensitive receivers were intermittent and not significantly contributing to the ambient noise environment. The low levels of the noise recorded at the sensitive receiver locations were consistent the quarry-only noise levels predicted in the Environment Assessments and were less than the Development Consent and Environment Protection Licence criteria. Traffic on Old Northern Road was the dominant noise source during attended noise monitoring. No noise related complaints were received, and quarry operations have consistently indicated compliance with the noise criteria. It is concluded that noise mitigation measures implemented at the Old Northern Road Quarry site are adequate and the noise levels at sensitive receivers are compliant with the Development Consent 250-09-01 and Environment Protection Licence 3916 criteria.

Surface Water

Status

Compliant Ongoing

Surface water management at the Old Northern Road Quarry site has been designed to ensure that collection of surface runoff from disturbed areas of the quarry is directed to settlement basins or retained in the quarry pits to prevent the loss of any sediment laden water to the surrounding environment. The management and mitigation measures implemented at the Old Northern Road Quarry site, controls the flow of surface runoff and regular inspections and maintenance of site sediment controls, protect the surrounding environment from impact of water with high suspended solids.

Groundwater

Status

Compliant Ongoing

The monitoring of groundwater levels and groundwater quality have exhibited relatively stable results between 2013 and 2016 and indicate that minimal change has occurred in the groundwater levels and water quality as a result of quarrying activities at the Old Northern Road Quarry. The current operational management measures appear to be appropriate for the protection of groundwater on the site. No interception of groundwater has been recorded in the quarry extraction areas.

Erosion and Sediment Control

Status

Compliant Ongoing

All surface water runoff from disturbed areas of the Old Northern Road Quarry site are directed to settlement ponds and/or the extraction pits for collection and treatment prior to reuse on site. The erosion and sediment control management on the site occurs in accordance with the EP10 Erosion and Sediment Control Plan and the is generally consistent with requirements in *Managing Urban Stormwater: Soils and Construction (Volume 2E – Mines and Quarries) Manual* (EPA 2008) Appendix C.

Flora and Fauna Management

Status

Compliant Ongoing

The Site Environmental Management Plan Appendix B – EP14 – Flora and Fauna Management was approved by DIPNR in January 2005, and reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements in June 2016. The Flora and Fauna Monitoring Program was approved by DP&E on 1 November 2016. Threatened species monitoring has been conducted annually in accordance with the Flora and Fauna Monitoring Program (Cumberland Ecology, June 2016), targeting *Darwinia fascicularis* susp. *Oligantha*, *Melaleuca deanei*, *Kunzea rupestris* and *Tetratheca glandulosa*. The Annual Threatened Species Monitoring Reports - May 2014 and August 2015, reported no observable changes in the *Kunzea rupestris* population compared to previous monitoring periods and no evidence that quarry operations were impacting the surrounding vegetation.

Biodiversity Management

Status

Ongoing

The Biodiversity Management Plan for the Hearses Road Biodiversity Offset Area (to offset Old Northern Road Quarry disturbance in Lots 1 and 2 DP 755015) was prepared to satisfy the requirements of Development Consent 250-09-01 Schedule 2 condition 3.49B and approved by the DP&E on 4 April 2016. Monitoring of the Rehabilitation Offset Area at Old Northern Road Quarry has indicated that the buffer zones are being effectively maintained and continuous weed management has controlled weed occurrence in the Rehabilitation Offset Area. The supplementary planting of native vegetation at the Old Northern Road site is establishing well.

Rehabilitation Management

Status

Ongoing

The Rehabilitation and Landscape Management Plan (Site Environmental Management Plan Appendix E - EP15) was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016). The rehabilitation of the disturbed areas of the Old Northern Road Quarry site will occur progressively as sand extraction is completed in operational areas. Regeneration Works reports between 2013 and 2016 have concluded that the Old Northern Road Quarry site rehabilitation zones (zones 1 and 2) and plantings were continuing to develop strongly and native regeneration within the rehabilitation zones was progressing with the diversity and abundance of native species appearing to consistently increase.

Traffic and Transport

Status

Compliant Ongoing

The Site Environmental Management Plan Appendix E - EP5 – Traffic and Transport Management and EP6 Hours of Operations was approved by DIPNR in January 2005. The EP5 – Traffic and Transport Management was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November

2016). The truck movement and product tonnage data between 2013 and 2016 has exhibited compliance with the Development Consent 250-09-01 MOD 4 conditions.

Heritage

Status

Compliant Ongoing

The EP11 – Heritage Management Plan (Site Environmental Management Plan, Appendix A) was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E on the Site Environmental Management Plan at the date of this audit (November 2016). As no Aboriginal archaeological sites or areas of potential archaeological deposits were identified by the Environmental Assessments conducted for the Old Northern Road Quarry site, the operations on the site are managed in accordance with the procedure outlined in EP11 – Heritage Management.

Waste Management

Status

Compliant

Wastes generated at the Old Northern Road Quarry site are managed and segregated for recycling / reuse or disposal and collected by licenced waste contractors. No building or putrescible wastes are disposed on the site. No offsite waste is received at the quarry for storage, treatment or processing.

1. Introduction

1.1 Background

Dixon Sand (Penrith) Pty Ltd (Dixon Sand) operates sand quarries at Old Northern Road (Lots 29 and 196 DP 752025 and Lots 1 and 2 DP 547255) and Haerses Road (Lot 170 DP 664767, Lots A and B DP 407341, and Lots 176 and 177 DP 752039) Maroota, approximately 40 kilometres north of Parramatta, NSW.

This Independent Environmental Audit of the Dixon Sand Old Northern Road Quarry Project was conducted by Trevor Brown & Associates in November 2016 to satisfy the requirement of Consolidated Development Consent DA 250-09-01 Schedule 4 condition 4.11:

Independent Auditing

The Applicant shall commission an independent person(s) to undertake an Environmental Audit of the entire quarry at the following stages of the development:

- a) Before commencement of operations on strips 2, 3, 4, 5, and 6;*
- b) At the end of the period of approval set out in condition 1.5; and*
- c) At the completion of the Flora and Fauna Monitoring Program in condition 4.10, or as otherwise required by the Secretary.*

The independent person(s) shall be approved by the Secretary prior to the commencement of the Audit. An Environmental Audit Report shall be submitted to the Secretary, the OEHL, the EPA, the RMS and Council within one month of the completion of the Audit. The Audit shall:

- a) Be carried out in accordance with ISO 14010 – Guidelines and General Principles for Environmental Auditing and ISO 14011 – Procedures for Environmental Auditing;*
- b) Assess compliance with the requirements of this consent, and other licences and approvals that apply to the development;*
- c) Assess the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent;*
- d) Review the effectiveness of the environmental management of the development, including any environmental impact mitigation works; and*
- e) Independently review and validate monitoring systems and outcomes.*

Development Consent DA 250-09-01 was granted to Dixon Sand, by the Minister of Infrastructure and Planning on 21 September 2001 for the establishment and operation of a sand quarry project on Lots 1 and 2, DP 547255, and Lots 29 and 196, DP 752025, Old Northern Road, Maroota in the then Baulkham Hills Shire Local Government Area.

The Independent Environmental Audit site inspection and documentation assessment for compliance with Development Consent DA 250-09-01 and other environmental approvals for the Old Northern Road Quarry was carried out in November 2016, by Trevor Brown (the Independent Environmental Auditor) endorsed by the Secretary of the Department of Planning and Environment on 8 November 2016.

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* and the *Independent Audit Guideline*, DP&E October 2015. The scope of work for the independent environmental audit of the Old Northern Road Quarry operations included:

- review of compliance with Development Consent 250-09-01 MOD 4 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 Old Northern Road Quarry personnel;
- assessment of environmental performance of the development with the requirements in this Development Consent 250-09-01 MOD 4 and Environment Protection Licence (including assessments, plans or programs required under these consents/approvals);
- review of the adequacy of strategies, plans or programs prepared under Development Consent 250-09-01 MOD 4; 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 Independent Environmental Audit Report has been prepared to provide comment on each condition of approval in a tabulated form, with additional discussion where required on specific matters provided in the main text of the Report. The tabulated comments on the conditions of consent are in Attachments A and B to this Independent Environmental Audit Report. The Report sections are:

Glossary and Abbreviations

Executive Summary

| | |
|--------------|---|
| Section 1 | Introduction |
| Section 2 | Old Northern Road Quarry Project |
| Section 3 | Approvals and Licenses |
| Section 4 | Department of Planning and Environment Compliance Audit December 2015 |
| Section 5 | Review of Environmental Management |
| Section 6 | Conclusions |
| Attachment A | Development Consent 250-09-01 MOD 4 |
| Attachment B | Environment Protection Licence No. 3916 |

1.4 Compliance Tables

This audit assessed the activities for compliance with the intent of the Development Consent 250-09-01 MOD 4 and Environment Protection Licence 3916 conditions via site inspections, document review and verification of relevant documentation related to the conditions of consent. The compliance status for each condition at the date of this audit (i.e. November 2016), is expressed in the Attachments to this report as:

| Status | Description |
|---------------------------|--|
| Compliant | Where verifiable evidence has been collected to demonstrate that the intent of the elements of the requirements of the regulatory approval and appropriateness of implementation against the Development Consent 250-09-01 MOD4 has occurred. |
| Compliant COMPLETE | Where verifiable evidence demonstrates that the intent of the elements of the requirements of the regulatory approval and appropriateness of implementation against the Project Approval Condition has occurred, and the required activity has been completed for the project. |
| Compliant Ongoing | The intent and specific requirements of the condition have been met and the requirements are ongoing for the operation of project. |

| Status | Description |
|---------------------------------------|--|
| Administrative Non-compliance | A technical non-conformance with a condition of the consent that would not result in any risk or material harm to the environment (e.g. the submission of a report to government later than required under the approval conditions). |
| Non-Compliance – Low Risk | Non-compliance with the potential for moderate environmental consequences, but is unlikely to occur, or, potential for low environmental consequence but is likely to occur. |
| Non-Compliance – Moderate Risk | Non-compliance with the potential for serious environmental consequences but unlikely to occur, or, potential for moderate environmental consequence but likely to occur. |
| Non-Compliant – High Risk | Non-compliance with the potential for significant environmental consequences, regardless of the likelihood of occurrence. |
| Not active / Not triggered | A regulatory approval requirement / condition has an activation or timing that had not been triggered at the time of the audit, therefore a determination of compliance could not be made. |
| Noted | A statement or fact where no assessment of compliance is required. |

Any Non-compliance (if identified) will be subject to a risk assessment in accordance with the *Independent Audit Guideline*, DP&E October 2015 section 4.2 and reported in section 6 Conclusions of this Independent Environmental Audit Report.

1.5 Limitations of the Audit

The auditor received complete cooperation from Dixon Sand personnel during this Independent Environmental Audit. Any documentation that could not be located during the site visit / inspection and document review, was provided to the auditor subsequent to the site visit.

The findings of the audit are based upon visual observations on the site, interviews with site personnel and interpretation of records provided by Dixon Sand. Opinions presented within the audit apply to the site as observed at the date of the audit inspection (i.e. 17-29 November 2016) and information provided by Dixon Sand personnel. Any changes to this information of which the Trevor Brown & Associates is not aware and has not had the opportunity to evaluate, cannot be considered in this report. The auditor has taken due care to consider all reasonably available information provided during the audit and has taken this information to represent a fair and reasonable characterisation of the environmental status of the site.

The adequacy of strategy/ plans / programs required under the Development Consent were assessed by reference to the requirements of the conditions, where documentation from the relevant agency(s) to Dixon Sand had not been received confirming approval at the date of this audit (November 2016).

1.6 Opening and Closing Site Audit Meetings

Opening and closing meetings were held on 17 and 19 November 2016 at Dixon Sand site office, 4610 Old Northern Road Maroota. The audit opening meeting outlined the process and agenda for the audit. The closing meeting identified findings at the time of the meeting following the site inspection and document review. The meeting attendees were David Dixon General Management Dixon Sand, and Hunsamon Churcher Environmental Officer.

2. Old Northern Road Quarry Project

2.1 Project Site Description

The Maroota sand quarries started operations in the early 1980s with Dixon Sand taking ownership in 1992. The quarry supplies sand from two separate sites known as Old Northern Road and Haerses Road located in the rural area of Maroota, NSW. The Site is zoned Rural 1(b) pursuant to the Baulkham Hills Local Environmental Plan 2005.

The site was historically used for pasture and orchards with surrounding land use including agricultural, forestry, native conservation and other sand quarries. At present, material being extracted from Lots 1 and 2 from the west will continue sequentially eastward following a series of nominal 100m wide strips. The central processing plant and office are located on Lot 196 DP 752025. Material extracted from Lots 1 and 2 is transported to the existing processing plant located on Lot 196.

2.1.1 Project Location

The Old Northern Road Quarry site is within The Hills Shire Council local government area. The land to which Development Consent No.250-09-01 relates for the Old Northern Road Quarry at 4610 Old Northern Road Maroota, covers an area of approximately 58.4 ha on:

- Lot 29 DP 752025;
- Lot 196 DP 752025;
- Lot 1 DP 547255; and
- Lot 2 DP 547255.

The site is located on the western side of Old Northern Road, approximately 600 metres north of the intersection of Old Northern Road with Wisemans Ferry Road. Access to the site is via a sealed Crown Road from Old Northern Road.



Figure 2.1: Old Northern Road Quarry site

The excavated material is crushed and screened at the plant on Lot 196. Approximately 80% of the material is processed dry and the remaining 20% is washed to remove clay fines. The clay fines and silts are removed as tailings from the processing area and pumped to the tailings storage dam.

Processed material is stockpiled adjacent to the processing plant prior to sale.

2.1.2 Local Geology

The Maroota area is located on a relatively flat ridge. The site is located on the western side of this ridge, and is relatively flat with some sections sloping gradually to the west. The topography of the site has been modified, particularly in the western and northern areas but also where dams have been formed.

The local geology in the vicinity of the Old Northern Road Quarry is dominated by Hawkesbury Sandstone and has some areas of shale capping. The geological landscape of the site is largely Quartz-sandstone with some shale, with a small eastern portion of the site within a geological landscape of sand / silt / clay and gravel.

The site consists of two different soil profiles - the most widespread soil is Sydney Town, with the Colo Heights soil landscape occurring less frequently. Both are erosional soils characterised by undulating and rolling hills on Hawkesbury Sandstone. The areas where extraction is approved to occur until 2022 is predominately within Lots 1 and 2 DP547255. These areas contain significant hollow resources in remnant native vegetation of various conditions. Monitoring strategies in the Flora and Fauna Management Plan and Flora and Fauna Monitoring Program have been designed to determine the extent of use of these hollows and provide further guidance on the timing of the removal of vegetation utilised by fauna to avoid direct fauna mortality during clearing operations.

3. Approvals and Licenses

3.1 Development Consent

Development Application No. 796/00/HE was lodged with the Baulkham Hills Shire Council for sand extraction, processing, and rehabilitation within Lot 29 and Lot 196 of DP 75205, and Development Consent was issued by the Land and Environment Court on 7 July 2000. This Development Consent lapsed on the 22 March 2010. Continued extraction from Lot 29 and Lot 196 has been incorporated into Development Consent 250-09-01, with a single integrated consent now active for all activity within Lots 1 & 2, and Lots 29 and 196, including the use of the processing plant on Lot 196, transport of product from the site, water management, and rehabilitation and operations approved under Development Consent 250-09-01.

The sand quarry development is classified as State Significant Development under *Environmental Planning and Assessment Act*; section 76A and is an Integrated Development under *Environmental Planning and Assessment Act*; section 91 as it requires an additional approval from the Environment Protection Authority (EPA) under the *Protection of the Environmental Operations Act 1997*. The development also involves sand extraction and processing above the threshold in *Environmental Planning and Assessment Regulation 2000* Schedule 3.

Modifications to Consent No. 250-09-01 have been lodged and approved between 2006 and 2015. The project was the subject of a Land and Environment Court Proceedings No 10206 of 2003, with subsequent Modifications to the Development Consent granted in:

| Date of Consent | | Development Consent Decision |
|--|---|------------------------------|
| DA 796/00/HE | | |
| Land and Environment Court Decision 796/00/HE 7 July 2000 | Consent for sand extraction, processing, and rehabilitation within Lot 29 and Lot 196 of DP 752025 Old Northern Road, Maroota, subject to conditions. | |
| DA 250-09-01 Consent | | |
| Minister of Planning 21 Sep 2001 | Consent enabled sand extraction on Lots 1 and 2, continued use of the central processing plant on Lot 196, transport of product from the site, and water management and rehabilitation operations. | |
| Land and Environment Court Decision 10206/2003 24 May 2004 | | |
| DA 250-09-01 Modifications | | |
| Modification 1 14 February 2006 | Statement of Environmental Effects (SEE) titled <i>Sand Quarry on Lots 29, 196, 1 & 2 Old Northern Road, Maroota, Section 96 Consent Modification</i> , July 2005 prepared by Environmental Resource Management (Australia) Pty Limited. MOD 1 enables the existing processing plant on Lot 196 to receive, stockpile and process material from the Haerses Road site, to increase the number of inbound laden truck movements to Lot 196 to 32 per day, and to allow the disposal of tailings from the processing of sand from the Haerses Road site on Lots 29 and 196, DP 752025 and Lots 1 and 2 DP 547255. | |
| Modification 2 August 2008 | Modification Application 250-09-01 MOD 2 and the accompanying Statement of Environmental Effects titled <i>“Section 96 Modification for Dixon Sand Pty Ltd”</i> August 2007; to increase truck movements approved under 250-09-01, and letters regarding | |

| Date of Consent | Development Consent Decision |
|----------------------------------|--|
| | the modification application 250-09-01 MOD 2 from Environmental Resources Management Australia to the Department dated 1 April 2008 and 29 May 2008. |
| Modification 3 September 2012 | Modification Application 250-09-01 MOD 3 and the accompanying <i>Environmental Assessment Section 75W Modification DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i> , Nexus Environmental Planning Pty Ltd dated 8 December 2011; response to submissions from Nexus Environmental Planning Pty Ltd dated 17 July 2012; and the figure in Annexure E. MOD 3 addressed operation of an extractive industry on Lots 1 and 2, DP 547255, and Lots 29 and 196, DP 752025. Approved extraction of Lot 29 and Lot 196 ceased on 22 March 2010. This Modification proposed amendment to Development Consent No.250-09-01 to reactivate the extraction of Lot 29 and Lot 196; continued use of the existing central processing plant on Lot 196 DP 752025; and water management and rehabilitation operations over Lots 1 and 2, DP 547255, and Lots 29 and Lot 196, DP 752025, as described in Annexures "B" and "C". |
| Modification 4 6 July 2015 | Modification Application 250-09-01 MOD 4 and the accompanying <i>Environmental Assessment Section 75W Modification (4) DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i> , Nexus Environmental Planning Pty Ltd, dated 25 October 2013; response to submissions dated 13 March 2014; letter prepared by Australian Groundwater Technology dated 21 January 2015; and reports prepared by Cumberland Ecology, dated 10 June 2014 and 30 April 2015. |

3.2 Environment Protection Licence 3916

Environment Protection Licence 3916 was issued on 7 December 2000 to Dixon Sand (Penrith) Pty Ltd. The Environment Protection Licence 3916 recent Variations are listed below:

| Date | Variation No. | EPL 3916 Condition Variations |
|-------------|---------------|--|
| 27 Apr 2015 | 1527495 | The following variations have been made to the licence: <ul style="list-style-type: none"> Deleted all "Not Applicable" conditions along with their headings Added condition A2.2 with a site map showing location of the premise. Added condition M3.2 and a corresponding note on testing methods for determining concentration limits of air pollutants. Add condition O4.1 for preventing possible mud tracking by vehicles onto public roads. |
| 6 Apr 2010 | 1111760 | <ul style="list-style-type: none"> Delete condition M2.5 and M2.6 |
| 4 Sep 2006 | 1064871 | <ul style="list-style-type: none"> Amend M2.4 PM₁₀ rolling average |
| 3 Dec 2004 | 1041380 | <ul style="list-style-type: none"> Amend A2.1 Premises address Insert A5 Compliance with NSW Land and Environment Court Order Amend P1.1 Location of monitoring/discharge points Amend L6 Noise Limits Amend L7 Hours of Operation Amend o3.2 to O3.4 Dust Insert M1.5 and 1.5 Monitoring Records Amend M2.2 to M2.6 - Requirements to monitor concentration of pollutants |

| Date | Variation No. | EPL 3916 Condition Variations |
|-------------|---------------|--|
| | | <ul style="list-style-type: none"> • Amend R4.1 Monitoring Report |
| 11 Oct 2002 | 1014768 | <ul style="list-style-type: none"> • Amend Fee Based Activity to >100,000 to 500,000 T obtained • Amend P1.3 Monitoring Point 1 • Amend L5.1 Waste • Amend L6.1(a) and (b), and L6.2 Noise Limits • Insert L7 Hours of Operation • Delete O3.4 Dust Monitoring Report • Insert R4 Monitoring Report |
| 15 Mar 2001 | 1004327 | <ul style="list-style-type: none"> • Insert P1.2 and P1.3 Location of monitoring/discharge points • Insert L3.1 to L3.3 Concentration Limits • Insert L5.1 Waste • Insert L6 Noise Limits • Insert O3.2 to 3.4 Dust • Insert M2.1 Requirements to monitor concentration of pollutants discharged • Insert M3.2 Testing Methods • Insert M6 Requirement to monitor volume or mass |

3.4 Water Licences

Water Licences granted by DPI-Water (NOW) for the Maroota sand quarry Bore Licence 10WA109393 was granted on 1 July 2011 for bore construction within the Maroota Tertiary Sands groundwater resource within the Greater Metropolitan Region Groundwater Sources, for an authorised extraction not to exceed 30.0ML in any 12 month period commencing 1 July.

Water Access Licence WAL25956 granted on 1 July 2011 for water supply works, water use and aquifer interference within the Cattai Creek Management Zone, Hawkesbury and Lower Nepean Rivers water source, and Greater Metropolitan Region Unregulated River Water Sources, expires on 30 June 2024.

Water Access Licence WAL25941 granted on 1 July 2011 for water supply works, water use and aquifer interference within the Cattai Creek Management Zone, Hawkesbury and Lower Nepean Rivers water source, and Greater Metropolitan Region Unregulated River Water Sources expiring on 30 June 2024.

4. Department of Planning and Environment

4.1 DP&E Compliance Audit

A Compliance Audit was undertaken by officers of the DP&E as part of a strategic campaign of audits of NSW based operating sand quarries. The site component of the compliance audit was conducted on 4 August 2015 and the Compliance Audit Report was issued by DP&E in December 2015.

The Old Northern Road Sand Quarry was found to be operating generally in compliance with the conditions of the Development Consent 250-09-01. Twenty (20) administrative non-compliances, twelve (12) low risk non-compliances and three (3) moderate risk non-compliances with conditions of consent were identified where action is required to ensure compliance is achieved. A number of performance observations were also made.

The DP&E findings, and actions by Dixon Sand, were reviewed during this 2016 Independent Environmental Audit and the current status of compliance at the date of this audit (i.e. November 2016) were assessed. The majority of the DP&E findings have been addressed by Dixon Sand.

Table 4.1: DP&E Audit Non-Compliance Findings and IEA Findings on the Current Status

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|---------------------------------------|---|--|--|
| Non-Compliance (Moderate Risk) | | | Status November 2016 |
| Schedule 2 Condition 3.1 | Original survey was undertaken by Matthew and Peter Freeburn on 23/08/04 and submitted to the Department. The new survey is being organised and survey plan will be updated and provided to the Department. It was noted on the site inspection that all buffer zones are not adequately fenced to prevent access by vehicles or unauthorised persons. | Complete revised survey and submit revised plan. Install permanent fencing around buffer zones to prevent unauthorised access. Implement an inspection and maintenance regime to ensure that the fence is maintained at all times. | Compliant Survey of boundaries and buffer zones completed and provided to DP&E on 29 September 2015. Buffer zone boundaries have been delineated with pickets and yellow tape. |
| Schedule 2 Condition 3.30b | It was noted that the site has always operated where trucks are permitted to enter the site after 5.45 am, however they would not be allowed to leave the site until 6 am (which is evident from weighbridge logs). Condition 3.42 states that the hours of operation are between 6 am and 6 pm Monday to Saturday. This includes truck movements on site, and therefore does not permit truck movements on site before 6 am. | SEMP (EP 5) and other relevant documentation to be updated to reflect consent conditions, or alternatively discuss options with the DP&E Assessment Team. Until resolved, truck movements are not permitted on the site until 6 am. | Administrative Issue Schedule 2 condition 3.34 and the approved Traffic Management Plan permit trucks to enter the site after 5.45 am. The inconsistency between Schedule 2 condition 3.34 and Schedule 2 condition 3.42 is to be addressed in a Modification Application. |
| Schedule 2 Condition 3.42 | Records for June 2015 were viewed. No trucks were loaded on the public holiday or Sundays. It is noted that loading of trucks is only permitted between 6am and 6 pm and records from the AEMR and viewed on site indicate trucks are leaving site at 6 am, which means that the trucks are being loaded prior to 6 am and truck movements are occurring before 6 am. This was confirmed by the proponent. | | Administrative Issue See above |
| Non-Compliance (Low Risk) | | | Status November 2016 |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|------------------------------|--|--|--|
| Schedule 2 Condition 1.1 | <p>On the site inspection, it was noted that old oil tanks had been relocated to the pump house as they had been decommissioned, and hydrocarbon spillage to ground was noted around them which was observed to have stained the sand in the drain (Photograph 11).</p> <p>Extensive stands of Castor Oil plant (<i>Ricinus communis</i>) were noted on the eastern side of the quarry. This weed is classed as a weed of regional significance.</p> | <p>Contaminated soil to be removed and old oil tanks banded or removed from site.</p> <p>Weed control program for Castor Oil Plant to be considered.</p> | <p>Compliant</p> <p>Old fuel/oil tanks and contaminated soil have been removed with clean-up completed in November 2015.</p> <p>Compliant Ongoing</p> <p>Mechanical removal of Castor Oil plants and disposal occurred prior to seed dispersing season in Spring 2016. Monitoring of the site and removal will continue to prevent further spreading.</p> |
| Schedule 2 Condition 3.11 | <p>A topsoil stockpile is available, however it was constructed in 1994, prior to the issue of this consent. This stockpile is greater than 3 metres in height, which is non-compliant with this condition. It is vegetated. Topsoil that is stripped is used in bunds around the site.</p> | | <p>Compliant</p> <p>Recent topsoil stockpiles established under the consent were reshaped to <3m in June 2016.</p> <p>The stockpile established in 1994 (i.e. prior to this consent) has not been reshaped and has been included as an exclusion item in a Modification Application submitted 7 October 2016.</p> |
| Schedule 2 Condition 3.12 | <p>Limited revegetation has been undertaken on the site of quarried areas. Stage 1 was to be extracted to a defined level however approval has been provided to extend this. Cell 1 is now being filled up. Strip 3 is currently being extracted. It was noted that this requirement has been superseded with Haerses Road Consent and requirement for offset areas.</p> | <p>Implement progressive rehabilitation as areas become available.</p> | <p>Compliant Ongoing</p> <p>Rehabilitation on Lot 196 has commenced. Establishment of a natural vegetation corridor on Lot 29 has commenced near <i>Kunzea</i> Conservation Area.</p> |
| Schedule 2 Condition 3.23 | <p>Two water discharge events occurred in 2015. Event 1 - 29/01/15 and Event 2 - 23/04/15 due to prolonged rainfall periods. Water samples taken for laboratory analysis. Results indicate TSS of 64 mg/L and 32 mg/L respectively. The EPA limit for TSS is 50 mg/L.</p> <p>The EPA was notified of these events. It was noted that the events were larger than the sediment control design and no further action was taken by the EPA.</p> | <p>Continue to monitor the water level in the sediment pond and undertake maintenance accordingly.</p> | <p>Compliant Ongoing</p> <p>All current quarry extraction areas are used as holding ponds for runoff water until the water meets criteria for discharge.</p> <p>The main dam receives water from Cons Hill, Lot 196 and Sediment Ponds 1 and 2 on Lot 29. Incoming water into the main dam is manually controlled via pumps to ensure the water levels are maintained to design levels.</p> |
| Schedule 2 Condition 3.29 | <p>The diesel fuel storage facility was inspected. It was noted that there is a sump in the base of the bund in which a pump is located, attached</p> | <p>Implement measures to prevent contaminated material being pumped out of the bund and</p> | <p>Compliant</p> <p>A new refuelling area and fuel system was installed in 2015, in</p> |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|--------------------------------------|--|---|--|
| | to a lay flat hose over the side of the bund. Controls need to be in place to ensure that spilled material is not discharged from the bund without authorisation (following confirmation that the material being pumped is not contaminated). In addition, the diesel fuel dispenser is located immediately adjacent to the bund wall, with a long refuelling hose attached. If the nozzle or hose was damaged, fuel would spill on to the ground. | implement controls to prevent spillage from the bowser occurring on to unsealed ground. | accordance with the EPA requirements. EPA inspection occurred in 2015 and no issues were raised. Automatic shut off valves installed to prevent spill. All operators are trained and spill kits readily available in the refuelling area and main workshop, in the case of a spill. |
| Schedule 2 Condition 3.43 a | Noise Bunds have been constructed along the northern side of the quarry extension site, and some bunding is available on the eastern side of the site. The bund height varies and observations would indicate that it is not at least 5 metres above ground level as required by this condition. It is noted that noise monitoring undertaken in 2015 indicates compliance with noise criteria. | | Compliant The heights of the Northern and Eastern bunds were rectified to 5m in March 2016. |
| Administrative Non-Compliance | | | Status November 2016 |
| Schedule 2 Condition 1.9 | Documents are only submitted in an electronic format (noted that the Department requests that all documents are submitted electronically). Hard copies are required under this condition. | Consider modification to this condition of consent. | Noted Modification to the condition to lodge documents in electronic format will be requested when the next Modification is lodged. |
| Schedule 2 Condition 1.11 a and b | Not all documents listed in Condition 1.2 have been uploaded to the website. The applicant's response to the 2012 IEA was not developed and is therefore not available. A complaints register is not available on the website. | It is noted that this has been corrected since the audit. | Compliant Update the complaints register when new complaints are received. Complaints Register uploaded and maintained on website. |
| Schedule 2 Condition 1.15 A(a) | An additional bond of \$327,000 was lodged. This was dated 8/4/2013 (and was therefore not lodged by 31/12/2012 as required by this condition). | | No further action required. |
| Schedule 2 Condition 3.15 | Dixon Sands meets with the school six (6) monthly and has discussions with neighbours on a regular basis. Records of these discussions are not all included in Annual Review for 2013-2014. | Records of discussions with adjoining property owners regarding property management issues to be included in future Annual Reviews. | Compliant Ongoing Communications Liaison Register has been set up to record correspondence / discussions. |
| Schedule 2 Condition 3.30A(c) | Records of truck movements are provided in the FY14 Annual Review. Records are only for trucks exiting the site during the 5.45 - 7 am period. There are no records provided of trucks entering or exiting the site for the remainder of the day. | Include detailed records of truck movements as detailed in Condition 3.30. | Compliant Ongoing Records of all truck movement on site are recorded and reported in the Annual Review. |
| Schedule 2 Condition 3.34 | Weighbridge dockets were viewed which were printed with the logo and name of the company (although not certified under | New weighbridge dockets to be provided which have the provision to record the time. | Compliant Ongoing Truck drivers advised not to arrive prior to 5.45 am on any |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|---|---|---|--|
| | company seal). Departure times of vehicles were not being recorded, however commenced following identification during the audit. Data is summarised in Table 5.1 of 2013-2014 AEMR. | Times to be recorded on daily truck log sheet. Clarify requirements for weigh bridge dockets to be certified under company seal. | day in accordance with condition 3.34. Time of all truck departures are recorded on weighbridge dockets. |
| Schedule 2 Condition 4.1d | All details as required for this condition are not recorded for all monitoring results e.g. time of sample collection. | Implement a system where the details as required under this condition are recorded with all samples. | Compliant Time of sample collection and sampler's name included in the monitoring record following this DP&E Audit. |
| Schedule 2 Condition 4.3A | Documentation, including the AEMR, states that the trigger level for PM ₁₀ is 42 ug/m ³ . Condition 4.3A of Consent and O 3.3 of EPL require the trigger level to be 37 ug/m ³ . It was confirmed on site that the alarm is set for 37 ug/m ³ and a text message gets sent to Dixon Sands and Onsite EM personnel. | Update documentation to ensure that it accurately reflects the trigger level for PM ₁₀ . | Compliant The trigger value for PM ₁₀ of 37ug/m ³ is reflected in the 2016 Annual Review and Site Environmental Management Plan June 2016 -EP 12 Air Quality Management. |
| Schedule 2 Condition 4.6 and 4.6 A | The road traffic noise monitoring study was not undertaken within 6 months of the date of the consent. Approval from DIPNR to postpone the traffic noise monitoring due to delayed commencement date of Lots 1 and 2 works. ERM undertook the monitoring (at least 3 consecutive months from 12/02/2009 to 29/05/2009). The Truck Noise Impact Assessment (ERM, November 2009) details the results of the monitoring. It was noted that the report did not state any actions to be taken. There are no records that a copy of the report was provided to the school. | | Compliant A copy of the Truck Noise Impact Assessment Report (ERM, Nov 2009) was emailed to the Maroota Public School on 29/01/16. |
| Schedule 2 Condition 4.9 | Flora and Fauna Management Plan included in SEMP (EB 14 - Jan 2005 and Annex B - Nov 2004). There is no specific reference to <i>Melaleuca deanei</i> as required under MOD 4. Annual survey of threatened species undertaken in May 2014 and reported in AEMR 2013-2014. | Update Flora and Fauna Monitoring Program to incorporate requirements from MOD 4. | Compliant The revised Flora and Fauna Management Plan and Flora and Fauna Monitoring Program includes the revised conditions and monitoring for <i>M. deanei</i> . |
| Schedule 2 Condition 4.11 | First IEA was undertaken by OSEM, April 2010 and submitted to the DoP, prior to OSEM being engaged by Dixon Quarry as the Environmental Officer. The DoP rejected the IEA (2010) due to potential conflict of interest. The second IEA was undertaken by SMEC (2012) which included both ONR and Haerses Rd development consents. The next IEA is scheduled for April 2015 and approval granted | Confirm date for undertaking next IEA with the Department. Ensure audit reports are distributed as required. | Compliant Approval sought from DPE to postpone IEA until end of 2016 (Email - DP&E on 6 May 2016) to provide Dixon Sand the opportunity to review all the management strategies and documentation. Request to postpone IEA approved by DPE and the current IEA has been |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|--|--|---|--|
| | by DoP (Elle Donnelly) to postpone the IEA until the new DA 250-09-01 Mod 4 finalised. 2015 IEA in the process of liaison with DP&E regarding suitable auditor. No evidence was provided that the report was submitted to the various agencies as listed. There is no evidence of the assessment of the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent in the report. | | undertaken prior 31 December 2016. |
| Schedule 2 Condition 4.12 | No report has been provided to the Secretary regarding the implementation of recommendations identified in the Independent Environmental Audit. | Ensure future compliance reports are submitted to the Secretary detailing the implementation of recommendations of the Environmental Audit Report and ensure it is available for public inspection. | Noted Compliance reports will be developed for future IEA and made available on the website. Noted for the 2016 IEA report. |
| Schedule 2 Condition 5.3a | While some letters are available to indicate approval of some members of the CCC, the letters do not cover all current members of the CCC. | Seek approval of all current members of the CCC from the Secretary. | Compliant Ongoing Approval of current CCC members provided by DP&E (refer to letter 4 April 2016). |
| Schedule 2 Condition 5.5g and i | Council confirms it does not publish the CCC minutes and indicates that the minutes are available on the company's website. Email provided 28/7/15 provided copies of communications regarding distribution of the CCC Meeting minutes. While there have been minutes distributed, it does not appear to be consistent and not all minutes were distributed to the Secretary (Nov. 2014 in records provided). There have been occasions where this was not done within 14 days of the meeting. | Ensure that the verified minutes of the CCC are provided to the Secretary within 14 days. | Compliant Ongoing The May and November 2016 CCC Minutes were submitted to the DP&E within 14 days. |
| Schedule 2 Condition 6.1 | Onsite Environmental Management is available on a full-time basis however is not employed full-time. Notification to DPE on 23 July 2015 that Hunny Churcher replaced Tim Mouton as the EO. Letter sent 11/08/15 to Department seeking approval for Hunny Churcher as EO and two stand-in EOs, and to seek clarification on full-time basis requirements. Advised that other agencies will be notified of the change of Environmental Officer when approval has been provided by the Department. | | Compliant DP&E approved Hunny Churcher as the full-time Environmental Officer for Dixon Sand. Chris Churcher and Brooke Weber were approved as the stand-in Environmental Officer's if Hunny Churcher is unavailable (DP&E letter 27 August 2015). |
| Schedule 2 Condition 6.2a and i | The SEMP has not been modified to account for changes associated with the Modification to Consent in July 2015. | SEMP to be reviewed and resubmitted to reflect current operational practices, | Compliant SEMP review was in progress at the date of this audit (November 2016). |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|---|--|--|---|
| | The Biodiversity Management Plan has not yet been developed. | modifications to consent and issues raised during this audit. Develop the Biodiversity Management Plan. | The Biodiversity Management Plan was prepared by Cumberland Ecology, submitted to DP&E on 31 March 2016 and approved by DP&E on 20 July 2016. |
| Schedule 2 Condition 6.3b i), iii), v) | An Erosion and Sedimentation Control Plan is provided in EP10 in SEMP. No evidence provided of consultation with the EPA and Council. Results of investigations into soil erosion not provided. Procedures for removal of farm dams not included. | Include the results of investigations, procedures for the removal of farm dams and design specifications for diversionary works, banks and sediment basins in the next revision of the Erosion and Sedimentation Control Plan. Ensure consultation with EPA and Council is undertaken. | Compliant SEMP and associated management plans review was in progress at the date of this audit (November 2016). Results of investigations into soil erosion are provided in EP10 Erosion and Sediment Control -Soil Conditions and Erodibility. Procedures for removal of farm dams is included in EP9 Water Management Procedures point 8. |
| Schedule 2 Condition 6.3 d, i), iii), viii), ix) | A Water Management Plan was provided in EP9. No evidence was provided that the plan meets the requirements of the EPA, NOW and Council. Sources of water pollution have not been identified, particularly for groundwater. Measures to rehabilitate erosion-affected areas and areas the subject of excavation, including tree, shrub and/or cover crop species and implementation not provided in this Environment Plan, however provided in EP 15. Measures to ensure a sustainable water management system are not provided. Strategy for the decommissioning of water management structures, including storage, and sedimentation dams once extraction is complete has not been included. | Ensure consultation with the relevant agencies is undertaken for the next revision of the Water Management Plan. Ensure all elements as required by this condition are identified in revisions to the Water Management Plan. | Compliant SEMP and associated management plans review was in progress at the date of this audit (November 2016). Sources of water pollution have been identified in EP 9 Water Management -Potential Sources of Surface Water and Groundwater Pollution. Measures to rehabilitate erosion-affected areas and areas the subject of excavation included in EP10 Erosion and Sediment Control Procedures point 6, & EP15 Rehabilitation. Strategy for decommissioning water management structures, including storage, and sedimentation dams once extraction is complete is addressed in EP9 Water Management Procedures points 12 and 13. |
| Schedule 2 Condition 6.3e, iii), iv), v), xi) and xii) | EP 15 - Rehabilitation and Final Landscape included in SEMP and Annex B contains Rehabilitation and Landscape Plan. No evidence provided that this plan addressed the requirements of Council, OEH, EPA and DRE. | Ensure consultation with the relevant agencies is undertaken for the next revision of the Rehabilitation and Landscape Management Plan. | Compliant SEMP and associated management plans review was in progress at the date of this audit (November 2016). |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|--|---|--|--|
| | <p>A specific program to translocate, propagate, and revegetate and monitor threatened plant species on the site is included in Rehabilitation and Landscape Plan, however no specific mention of <i>Melaleuca deanei</i> Plans and cross-sections to scale, showing the proposed final landform (as shown conceptually in Annexure H) demonstrating that it integrates with the surrounding terrain are not included in the plan.</p> <p>Site analysis used to determine compatible contours, shape, form, landscape features and quality of the final landform are not included in the plan.</p> <p>It is not clear that details of all backfilling works, including source of materials and the grades and stability of all batters has been included in the document.</p> <p>Details including a soil drainage plan sufficient for growing crops that require free drainage do not appear to be included in the document.</p> | <p>Revise Rehabilitation and Landscape Plan to include <i>Melaleuca deanei</i>.</p> <p>Provide copies of plans and cross-sections to scale, showing the proposed final landform (as shown conceptually in Annexure H) demonstrating that it integrates with the surrounding terrain in the next revision of the Rehabilitation and Landscape Plan.</p> <p>Provide site analysis used to determine compatible contours, shape, form, landscape features and quality of the final landform in the next revision of the Rehabilitation & Landscape Plan.</p> <p>Include details of all backfilling works, including source of materials and the grades and stability of all batters in the Rehabilitation & Landscape Plan.</p> <p>Include details including a soil drainage plan sufficient for growing crops that require free drainage in the Rehabilitation and Landscape Plan.</p> | <p>Rehabilitation and Landscape Plan revised to include <i>Melaleuca deanei</i> section 4.2.1.</p> <p>Plans and cross-sections (to scale) have been included in the revised Rehabilitation and Landscape Plan Appendix A and B, showing the proposed final landform.</p> |
| Schedule 2 Condition 6.3g | Traffic Management Plan is provided as EP 5 - Traffic and Transport Management and EP 6 - Hours of Operation. Truck movements are not permitted prior to 6 am. | Revise Traffic Management Plan to reflect consent conditions, or alternatively discuss options with the DP&E Assessment Team. | <p>Compliant</p> <p>Traffic Management Plan review was in progress at the date of this audit (November 2016).</p> <p>Note: Truck movements are permitted prior to 6 am in Schedule 2 condition 3.34 and the approved Site Traffic Management Plan (point 1).</p> |
| Schedule 2 Condition 6.3(h), (iii) and (iv) | <p>No evidence provided that the Transport Code of Conduct meets the requirements of the Council and RMS.</p> <p>States that entry to site is permitted prior to 6 am.</p> <p>Minimum requirements for vehicle maintenance to address noise and exhaust emissions requirements not included in document.</p> | <p>Ensure future versions of this document are approved by the Council and RMS.</p> <p>Revise Traffic Management Plan to be updated to reflect consent conditions, or alternatively submit an application to seek to modify existing consent conditions.</p> <p>Revise Traffic Management Plan to include maintenance requirements for vehicles to</p> | <p>Administrative Non-Compliance</p> <p>Traffic Management Plan review was in progress at the date of this audit (November 2016).</p> <p>The trucks/vehicles that transport the product from the Old Northern Road Quarry site are owned and operated by Dixon Sand clients/contractors. Maintenance of the vehicles is</p> |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|---|--|---|--|
| | | address noise and exhaust emissions. | not under the management control of Dixon Sand, but the clients/contractors have a responsibility to comply with the requirements of Dixon Sand environmental approval conditions while on the site as informed in the Site Induction and Site Traffic Management Plan. |
| Schedule 2 Condition 6.3(i) | Flora and Fauna Management Plan provided in Annex B. No record of consultation with OEH and Council provided. No map illustrating the Plan is provided. Details of strategies for the exclusion of grazing stock on areas of native bushland reconstruction are not specifically mentioned in document. | Ensure consultation with the relevant agencies is undertaken for the next revision of the Flora and Fauna Management Plan. Map to be included in Flora and Fauna Management Plan which illustrates the plan. Revise Flora and Fauna Management Plan to provide details of strategies for the exclusion of grazing stock on areas of native bushland reconstruction. | Compliant Ongoing The Flora and Fauna Management Plan and Monitoring Program developed by Cumberland Ecology were forwarded to OEH and Council for consultation. Figures 1.1 and 1.2 illustrates the Flora and Fauna Management Plan. Section 3.7.1 addresses strategies for the exclusion of grazing stock on areas of native bushland reconstruction. The Flora and Fauna Management Plan and Monitoring Program were submitted to DPE in July 2016 for review, DP&E comments were addressed and the documents resubmitted to DP&E. Additional comment on the Flora and Fauna Management Plan was provided by DP&E on 1 November 2016. The Flora and Fauna Monitoring Program was approved on 1 November 2016. |
| Schedule 2 Condition 6.3 i) ii), x) and xii) | Consideration of Aboriginal heritage management to ensure that activities under the Plan do not impact on Aboriginal heritage values are not included in document. | Revise Flora and Fauna Management Plan to consider Aboriginal heritage management to ensure that activities under the Plan do not impact on Aboriginal heritage values. | Compliant Flora and Fauna Management Plan section 3.7.2 addresses Aboriginal heritage. |
| Schedule 2 Condition 6.4 | No updates of documents required under this consent have been submitted since the submission of the original documentation submitted. | Revise all documents as required under this Consent and resubmit to the Department for review. | Compliant Ongoing Review of SEMP and associated management plans in progress with DP&E (November 2016). |

| DA condition | D&E - Details of Non-Compliance | DP&E Recommendation | Dixon Sand Action and Findings of this IEA |
|--|--|---|---|
| Schedule 2 Condition 7.1 | Notifications of incidents have been made to the EPA (records of notifications provided) however no notifications have been made to the Department for these incidents. | Provide notification to the Department for any environmental incidents notified to the EPA or otherwise required under the consent. It has been advised that the Pollution Incident Response Management Plan has been revised since the audit to include notification to the Department. | Ongoing The Pollution Incident Response Management Plan has been revised to include notification to the DP&E in the event of an incident. |
| Schedule 2 Condition 7.2, b and c | Noted that the Annual Review has not always been submitted by the end of September each year. Complaints have not been included in Annual Review. Air quality results are not compared with previous years' results. | Implement processes to ensure that all regulatory document submission dates are met. Ensure that any complaints (including truck related complaints) are included in the next and future Annual Reviews. Ensure that all monitoring results are compared with at least the last three previous years' monitoring results. | Compliant Ongoing The 2016 Annual Review (AEMR) was submitted to the DP&E on 30 September 2016. Complaints summary included in section 7.2 and Appendix H. Air quality (dust) results for 2015-2016 are commented on historically in section 2.4. |

Responses to the findings of the DP&E Compliance Audit have been actioned by Dixon Sands and the only outstanding actions are Administrative Non-Compliances related to revision of documents / management plans, which was occurring at the date of this Independent Environmental Audit.

5. Review of Environmental Management

5.1 Site Environmental Management Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.2]

A Site Environmental Management Plan (SEMP) was prepared by ERMA to satisfy the requirements of Development Consent 250-09-01 Schedule 2 condition 6.2 dated May 2004, for Dixon Sand Quarry – Lots 1, 2, 29 and 196, 4610 Old Northern Road, Maroota. The SEMP provides a structured management approach to environmental issues for the operation of the quarry and the attached Environmental Plans (EP) provide an environmental management framework, practices and procedures for the operation of the Old Northern Road Quarry. The Site Environmental Management Plan was approved by DIPNR on 15 January 2005.

The Site Environmental Management Plan has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and was submitted to DP&E for approval in June 2016. DP&E has provided comments on the Site Environmental Management Plan and Dixon Sand was addressing the comments from DP&E at the date of this audit (November 2016).

The Site Environmental Management Plan and Environmental Plans generally address the elements of ISO 14001 as listed in Table 5.1.

Table 5.1.1 Environmental Management Strategy vs AS/NZS ISO14001 Elements

| ISO 14001 Element | Construction Environmental Management Plan section |
|---|--|
| 4.3.1 Environmental Aspects | Section 3 - Quarry Operations and Environmental Interactions |
| 4.3.2 Legal and Other Requirements | Section 2 - Approvals and Consent |
| 4.3.3 Objectives and Targets | Section 1.2 - Objectives of the Site Environmental Management Plan |
| 4.3.4 Environmental Management Programs | Section 4 - Environmental Management Plans |
| 4.4.1 Structure and Responsibility | Section 5 - Environmental Responsibilities |
| 4.4.2 Training Awareness and Competence | Section 7 – Training and EP1 Induction and Training |
| 4.4.3 Communication | Section 2.2 – Consultation and EP17 Community Relations |
| 4.4.7 Emergency Preparedness and Response | EP2 Incident Management |
| 4.5.1 Monitoring and Measurement | Section 8 – Inspection Monitoring and Reporting |
| 4.5.2 Non-conformance, Corrective Action | Section 7 Non-Compliance |

5.1.2 Conclusion

| | | |
|---|----------------|------------------|
| Site Environmental Management Plan | Status: | Compliant |
|---|----------------|------------------|

The Site Environmental Management Plan provides a concise basis for the management of environmental aspects of the Old Northern Road Quarry with appended Environmental Plans developed for key environmental aspects. The Site Environmental Management Plan generally adopts the elements of ISO 14001 and the current revision addresses the requirements of Development Consent 250-09-01 MOD 4.

5.2 Air Quality

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 3.8]

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 4.2 to 4.4]

5.2.1 Air Quality Management Plan

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 6.3(a)]

The Site Environmental Management Plan (SEMP) Appendix A EP13 - Air Quality Management 2005, prepared to satisfy the requirements of Development Consent No.250-09-01 Schedule 2 condition 6.3(a) was approved by DIPNR on 15 January 2005. Air Quality Management Plan outlines measures to minimise impacts from the Old Northern Road Quarry on local and regional air quality and included the monitoring requirements in Development Consent No.250-09-01 Schedule 2 condition 3.2 and 3.3, and Environment Protection Licence 3916 condition P1.1, M2.2 and M2.4.

EP13 Air Quality Management has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and was submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

5.2.2 Environmental Assessment – Air Quality

5.2.2.1 Environmental Impact Assessment - 2001

The 2001 Environmental Impact Assessment prepared for the extension of the quarry on Old Northern Road Lots 1 and 2 (ERMA 2001) predicted dust deposition at the nearest receptors to be between 2.2 and 2.9g/m²/month.

5.2.2.2 Environmental Assessment - 2003

The 2002 Environmental Assessment predicted a 6th highest PM₁₀ 24hour average of 42 µg/m³ and PM₁₀ annual average of 7 µg/m³ (maximum values for 7 discrete receptors modelled). The air quality statement of evidence presented in the Land and Environment Court of NSW for Lots 1 and 2 (ERMA 2003) predicted that the highest 24 hour PM₁₀ ground level concentration would be 37 µg/m³ at receptor 3.

5.2.2.3 Environmental Assessment - 2013

A review of the annual environmental monitoring reports for the Dixon Sand extractive operations at Maroota revealed that, generally, dust emissions from the extractive industry had been within the criteria referred to in the conditions of consent.

5.2.3 Mitigation Measures

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 3.4 to 3.8]

Measures to mitigate dust from the Old North Road Quarry operations (outlined in the EP13-Air Quality Management) are shown in Table 5.2.3:

Table 5.2.3: Air Quality Mitigation Measures

| Mitigation Measure | Mitigation Measure Implementation | Status |
|---|--|-----------|
| Minimise the area of disturbance by only clearing areas immediately prior to extraction | The area disturbed for quarry extraction operations in Lots 1 and 2 DP 547255 has been limited to the current extraction operation requirements. Lots 29 and Lot 196 of DP 752025 were cleared for the initial quarrying works prior to granting of Development Consent 250-09-01. | Compliant |

| | | |
|--|--|------------------------------|
| Progressive rehabilitation. | Some rehabilitation had commenced on Lot 196. The other disturbed areas on the site were still subject to quarry operations so rehabilitation works had not commenced. | Compliant Ongoing |
| Maintenance of all dust suppression equipment to all processing plant. | Water sprays and dust suppression on the processing plant is maintained to reduce dust generation. | Compliant |
| Manual sprinkler systems including fine sprays on the conveyors of the dry processing plant, overhead sprinklers and a conical jet stockpile sprinkler are maintained. | There is adequate water supply available on site for operation of the dust suppression equipment. | Compliant |
| Stabilise topsoil stockpiles by planting with a cover crop of non-invasive cereal or legumes. | Topsoil stockpiles observed on site had a cover crop of non-invasive grasses to stabilise the surface from wind or water runoff erosion. | Compliant |
| Use a water cart to suppress dust on unsealed roads, during dry conditions on days of operation. | Two water carts are available for use on site for dust management on unsealed internal roads/tracks, to reduce dust generation from truck and equipment movements. | Compliant |
| Limit vehicle speed to 20 km/hr on internal unsealed access tracks. | Site Traffic Management Plan and Truck Driver Inductions include speed limit restrictions on the site. Prescribed speed limits on the site were observed to be followed by all vehicles during the audit inspection (November 2016). | Compliant |
| Ensure all loads leaving the site are covered. | Site Traffic Management Plan and Truck Driver Inductions include the requirements for covering loads prior to leaving the site. All trucks observed during the audit had their loads covered. | Compliant |
| Regular maintaining of onsite mobile and fixed equipment to minimise exhaust emissions. | Mobile and fixed equipment is maintained in the on-site workshop to ensure the equipment operation is consistent with supplier's specifications. | Compliant |

The implementation of the air quality mitigation measures at the Old Northern Road Quarry were observed to have minimised the dispersion of dust from the site operations. No dust related complaints were received between 2013 and 2016.

5.2.4 Air Quality Criteria

[Development Consent 20-09-01 MOD 4 Schedule 2 condition 3.3 and 4.3]

Dust emissions from the Old Northern Road Quarry are not to exceed the ambient air quality standards/goals in Development Consent 20-09-01 MOD 4 Schedule 2 condition 3.3, at affected residences or the Maroota Public School. The air quality monitoring program conducted for the Old Northern Road Quarry complies with the Environment Protection Licence 3916 conditions M2.2, M2.4 and M3.

Development Consent 20-09-01 MOD 4 Schedule 2 condition 3.3 and 4.3A - Particulate Matter Criteria

| Pollutant | Standard /Goal | Frequency | Sampling Method | Agency |
|---|-----------------------------------|-----------|-----------------|--------|
| Total Suspended Particulate Matter (TSP) | 90ug/m ³ (annual mean) | - | - | NHMRC |

| Pollutant | Standard /Goal | Frequency | Sampling Method | Agency |
|--|-------------------------------------|---|--------------------------|---------|
| Particulate Matter <10µm (PM₁₀) | 30 µg/m ³ (annual mean) | 1 day in 6 or continuous, or as approved by EPA | AM-18 or AS3580.9.8–2001 | NSW EPA |
| | 50µg/m ³ (24 hr average) | | | NSW EPA |

NSW EPA Amenity Based Criteria for Dust Fallout

| Pollutant | Averaging Period | Max. increase in Deposited Dust | Max. Total Deposited Dust Level | Sampling Method |
|-----------------------|------------------|---------------------------------|---------------------------------|-----------------|
| Deposited Dust | Annual | 2 g/m ² /month | 4 g/m ² /month | AM-19 |

The Environmental Impact Statement 2001 predicted PM₁₀ 24hour average of 42 µg/m³ and PM₁₀ annual average of 7 µg/m³. The air quality statement of evidence presented in the Land and Environment Court of NSW for Lots 1 and 2 (ERMA 2003) predicted that the highest 24 hour PM₁₀ ground level concentration would be 37 µg/m³ at receptor 3. Development Consent DA250-09-01 and Environment Protection Licence 3916 subsequently set a maximum rolling 24-hour average of 42 µg/m³ for the Old Northern Road Quarry site.

Environment Protection Licence 3916 condition M2.4:

If any rolling 24-hour average PM₁₀ result measured at Point 2 in licence condition M2.2 is found to be greater than 42µg/m³ and the prevailing wind at the site is north-westerly, i.e. between 2700 and 3150 as measured at Point 3:

- a) the licensee must take immediate action to reduce its PM₁₀ emissions;*
- b) the licensee must immediately notify the EPA Manager Sydney Industry;*
- c) all dust generating activity on lot 1 and 2 must cease immediately, except for activity solely for the purpose of reducing dust impact, such as watering roads, exposed areas and stockpiles or dust monitoring;*
- d) if the dust level does not return to below 42µg/m³ within 1 hour of ceasing all operations at lot 1 & 2, then: all dust generating activity on lot 29 must also stop; and operations must stay restricted to precincts 1, 2, 3, 4, 5, 6, 8 and 9 of lot 196 (shown in the map faxed to DEC on 25/11/04) only; and*
- e) dust generating activity may only recommence when the rolling 24-hour average PM₁₀ result measured at Point 2 is less than 42µg/m³ for 4 consecutive 15 minute periods.*

5.2.5 Air Quality Monitoring Program

[Development Consent 20-09-01 MOD 4 Schedule 2 condition 3.2, 4.3 and 4.3A]

[Environment Protection Licence No. 3916 condition P1.1, M2.2, and M4]

Environment Protection Licence No. 3916 identified monitoring point 2 Ambient air monitoring site located near the Maroota Public School as marked in "Figure 1.3 - Existing and Proposed Development", provided to the DEC on 30 November 2004. The dust deposition gauge and TEOM monitoring at EPA Monitoring Point 2 is being conducted in accordance with EPL 3916 condition P1.1 and M2.2.

Additional dust deposition gauges established for the Old Northern Road Quarry site by Dixon Sand as part of the management measures for dust control of the quarrying activities are shown in Figure 5.2.5.

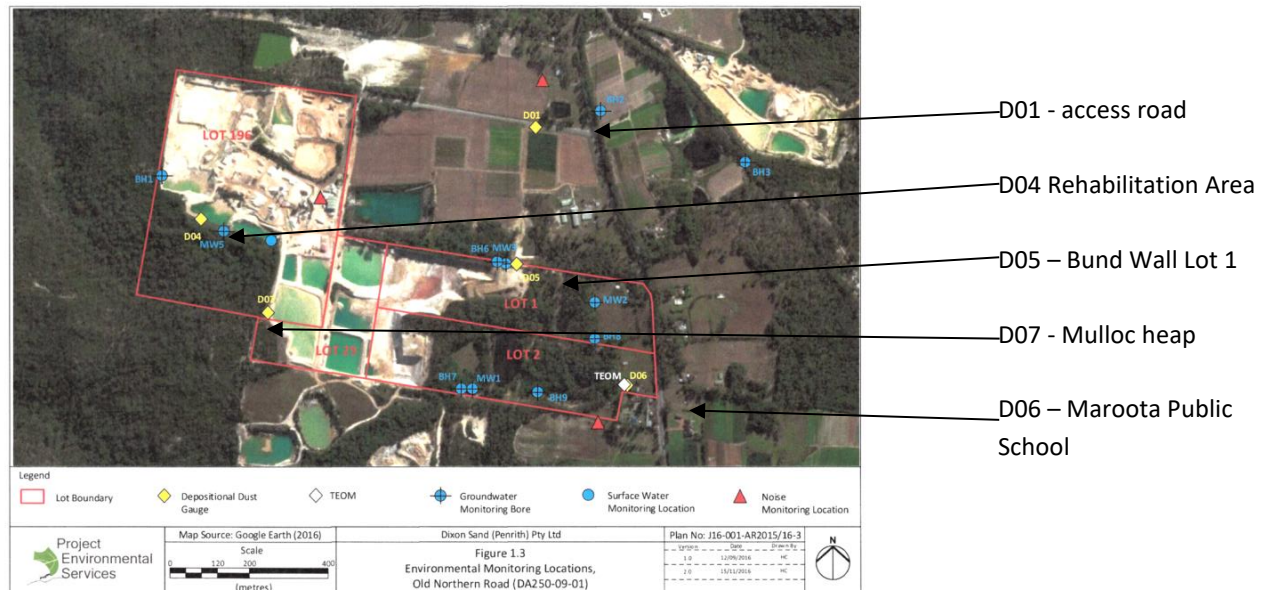


Figure 5.2.5: Dust Deposition Gauges Location at Old Northern Road Quarry

Air quality monitoring under Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.2, 4.3 and 4.3A and Environment Protection Licence No. 3916 condition P1.1, M2.2, and M4, is only required at EPA approved Monitoring Point 2 near the Maroota Public School.

Environment Protection Licence No. 3916 identified Monitoring Point 3 as a meteorological station located near the Maroota Public School as marked in "Figure 1.3 - Existing and Proposed Development", provided to the DEC on 30 November 2004. The meteorological station is operated in accordance with Environment Protection Licence No. 3916 condition M4 and is located adjacent to the TEOM and dust deposition gauge D06.

The dust deposition monitoring additional locations within the Old Northern Road Quarry site, have been established by Dixon Sand for operations management and implementation of mitigation measures if dust generation occurs and could result in dispersion from the quarry site.

Dust deposition samples are collected and analysed monthly from EPA Monitoring Point 2 by VGT Environmental Compliance Solutions (a NATA accredited laboratory). VGT also collect and analyse the additional dust deposition gauge samples for Dixon Sand site management.

5.2.6 Air Quality Monitoring Results

5.2.6.1 Dust Deposition Gauge Results

The dust deposition results for the gauges at Old Northern Road Quarry generally show compliance over the 2013 to 2016 monitoring period.

Dust deposition results for EPA Monitoring Point 2 (dust deposition gauge D6) near the Maroota Public School have been generally compliant with the NSW EPA Amenity Based Criteria for Dust Fallout criteria between 2013 and 2016. High monthly readings were recorded for dust deposition gauge D6 during February 2015 that was attributed to fence construction and vegetation slashing within the school grounds, and in May 2015 when the increased deposition levels coincided with the exceedance of TEOM PM₁₀ (55.4µg/m³), attributed to a dust storm event and fires at nearby residences.

Additional dust deposition monitoring conducted by Dixon Sand (not required under the Development Consent 250-09-01 or Environment Protection Licence condition), has provided information for the management of the Old Northern Road Quarry when dust results exceeded the EPA criteria:

- depositional dust gauge results between 2012 and 2015 exceeded the $4\text{g}/\text{m}^2/\text{month}$ at D01 due to direct impact of haulage traffic resulting from the closeness of the gauge to the front gate and impact of machines operating in the rehabilitation area at the front gate access road in 2015. The gauge D01 was suspended in September 2015 and relocated in September 2016 to along the access road to the quarry from Old Northern Road. The original location of dust gauge D01 was directly affected by the rehabilitation activities on the adjacent stockpile area resulting in direct deposition of material into the dust gauge.
- A high monthly deposited dust reading of $14.0\text{g}/\text{m}^2/\text{month}$ was recorded at D04 during December 2015, as a result of rehabilitation works occurring directly adjacent to the gauge. D04 registered no other annual average exceedances.
- D05 (bund wall) recorded high results during the reporting periods 2012-2013 and 2013-2014 which were due to excavation and stripping operations in Lot 1 and material haulage adjacent to D05.
- Annual average dust deposition results for D05 (Mulloc Heap), D06 (School) and D07 (Bund) for the monthly monitoring periods between 2013 and June 2016 were all compliant with the EPA criteria.

5.2.6.2 Tapered Element Oscillating Microbalance (TEOM) PM₁₀ Results

In accordance with of DA250-09-01 MOD 4 Schedule 2 condition 4.3, PM₁₀ is monitored with a Tapered Element Oscillating Microbalance (TEOM) near Maroota Public School. The TEOM records data for the whole 360° arc, of which 270°-315° (north-westerly), indicate potential contributions from the Old Northern Road site.

The annual average PM₁₀ results recorded at the TEOM location (EPA Monitoring Point 2), have been less than the annual average PM₁₀ criteria of $30\mu\text{g}/\text{m}^3$ over the 2013 to 2016 period.

Exceedances of 24 hour PM₁₀ average recorded between 2013 and 2016 that exceeded the EPL criteria level of $42\mu\text{g}/\text{m}^3$ and/or the NEPM short term criteria level of $50\mu\text{g}/\text{m}^3$ were:

- 10 days were recorded in September, November, December 2013 and January 2014 where 24hour average PM₁₀ levels exceeded the EPL maximum rolling 24-hour average level of $42\mu\text{g}/\text{m}^3$, with 6 days exceeding the NEPM short term criteria level of $50\mu\text{g}/\text{m}^3$. These exceedances were a result of bush fire events in the area.
- 6 May 2015 - $55.4\mu\text{g}/\text{m}^3$ due to a dust storm event and fires at nearby residences
- 26 November 2015 – $42.6\mu\text{g}/\text{m}^3$ Strong dry and hot westerly winds across the region.
- 29 April 2016 – $68.2\mu\text{g}/\text{m}^3$ Scheduled hazard reduction burns in the Hawkesbury and Singleton areas.
- 8 May 2016 – $44.9\mu\text{g}/\text{m}^3$ Scheduled hazard reduction burns in the Western Sydney and Blue Mountains areas.

The 24-hour average exceedances of PM₁₀ were not non-quarry related.

Table 5.2.6.2: Annual Average PM₁₀ Results

| 1 July to 30 June | PM ₁₀ Results | Comment |
|-------------------|---|---|
| 2012-2013 | The annual PM ₁₀ average for the 2015-2016 reporting period was $12.3\mu\text{g}/\text{m}^3$. | The PM ₁₀ annual average results were less than the EPA long term criteria of $30\mu\text{g}/\text{m}^3$ and the 24 hour EPL management level of $42\mu\text{g}/\text{m}^3$ and the 24 hour NEPM short term criteria level of $50\mu\text{g}/\text{m}^3$. |
| 2013-2014 | The rolling 24 hour PM ₁₀ mean values was $15.4\mu\text{g}/\text{m}^3$. | |
| 2014-2015 | The rolling 24 hour PM ₁₀ mean values was $13.4\mu\text{g}/\text{m}^3$. | |
| 2015-2016 | The annual PM ₁₀ average for the 2015-2016 reporting period was $11.6\mu\text{g}/\text{m}^3$, | |

The 2015-2016 PM₁₀ annual average of 11.6µg/m³ is higher than predicted in the Environmental Impact Statement 2001. The exceedances in November 2015, April 2016 and May 2016 were attributed to dry and hot westerly winds and scheduled RFS hazard reduction burns. In comparison to the previous four years of monitoring, it was concluded that quarry operations at the Old Northern Road did not contribute to the 2015-2016 PM₁₀ annual average exceedance and the quarry operations are not contributing more dust to the environment than historic trends.

5.2.7 Conclusion

The Site Environmental Management Plan Appendix A EP13 - Air Quality Management 2005, prepared to satisfy the requirements of Development Consent No.250-09-01 Schedule 2 condition 6.3(a) was approved by DIPNR on 15 January 2005.

The majority of the dust deposition results for the gauges at Old Northern Road Quarry generally show compliance over the 2013 to 2016 monitoring period. Dust deposition results for EPA Monitoring Point 2 (dust deposition gauge D6) near the Maroota Public School have been generally compliant with the NSW EPA Amenity Based Criteria for Dust Fallout criteria between 2013 and 2016.

The 24 hour average PM₁₀ was complied with during the 1 July 2012 to 30 June 2013. A number of 24 hour average exceedances were recorded during 1 July 2013 to 30 June 2014 of which most were attributed to bushfire events occurring in the Sydney and Blue Mountains region, and one 24 hour average exceedance occurred in 2014-2015 due to a dust storm that swept across the north-western Sydney region. None of the recorded 24-hour average exceedances of PM₁₀ were quarry related to the quarry operations and no dust related complaints were received by Dixon Sand between July 2013 and November 2016.

5.3 Noise

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 3.35 to 3.48, 4.5, 4.6 6.3(c)]

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition L4 and L5]

5.3.1 Noise Management Plan

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 6.3(c)]

The Site Environmental Management Plan (SEMP) Appendix A EP12 – Noise and Vibration June 2005, prepared to satisfy the requirements of Development Consent No.250-09-01 Schedule 2 condition 6.3(c) was approved by DIPNR on 15 January 2005. The Noise and Vibration Plan outlines measures to minimise noise impacts during the operation of the Old Northern Road Quarry and included the requirements for monitoring described in Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.39 and 4.5, and Environment Protection Licence 3916 condition L4.

EP12 Noise Management has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

5.3.2 Environmental Assessment - Noise

5.3.2.1 Environmental Impact Statement - August 2001

Predicted noise from proposed representative extraction areas at the Old Northern Road Quarry was modelled and found that during calm and adverse weather conditions noise levels did not exceed the required conditions for the Maroota Public School and nearest residences (imposed under Development Consent 796/00/HE). During adverse wind conditions some exceedances were predicted at nearby residences. Noise impact has been minimised by the construction of noise bunds and reduction of operations during adverse weather conditions.

5.3.2.2 Environmental Assessment - 2011

The approved extraction of sand from Lots 29 and 196 DP 752025 was subject to conditions of consent relating to acoustic impact and the monitoring of that impact. The proposed Modification 3 would bring any continued extraction on Lots 29 and 196 under the umbrella of these acoustic impact conditions to ensure that an acceptable acoustic environment is maintained.

Noise levels calculated for strip 2 during calm weather were below criteria at all residential and school receivers. Levels at several residential receivers exceeded recommended criteria during adverse weather conditions. Ceasing extraction in Lots 1 and 2 during wind speeds greater than 2 metres per second from 236 to 304 degrees results in receivers meeting criteria with the exception of R1 which was 3dB greater than the relevant criterion.

Dixon Sand, as part of its fulfilment of the conditions of consent for its Maroota operations, has conducted attended noise monitoring the results of which have indicated that sand extraction on the Old Northern Road Quarry site is operating within the acoustic criteria contained in the conditions of consent. The reports note that no complaints have been received relating to acoustic impacts from the operations.

5.2.3.3 Environmental Assessment - 2013

The proposed additional extraction area is further away from all sensitive receivers than the majority of the area already approved for extraction, and as the Modification does not propose any increase in the intensity of quarrying operations, the acoustic impacts from additional extraction would be less than that assessed for the original development.

The proposed Modification would bring any additional extraction on the Old Northern Road Quarry site under the umbrella of the existing acoustic impact conditions to ensure that the continued extraction is undertaken and an acceptable acoustic environment is maintained. note that no complaints have been received relating to acoustic impacts from the Dixon Sand operations at Maroota.

5.3.3 Mitigation Measures Noise

Measures to mitigate noise and vibration impact from the Old North Road Quarry operations (outlined in the EP12 – Noise and Vibration Management are shown in Table 5.3.3.

Table 5.3.3: Noise and Vibration Mitigation Measures

| Mitigation Measure | Mitigation Measure Implementation | Status |
|--|--|----------------------|
| Construct bunds on the eastern and northern sides of Lots 1 & 2 to at least 5 metres above existing ground level (EGL). | Bunds on the eastern and northern sides of Lots 1 & 2 have been constructed to 5 metres above existing ground level. | Compliant |
| Bulldozer not to be used concurrently with any other plant on strips 4, 5, and 6 of Lots 1 & 2 at depths between EGL and 6m below EGL. | No extraction works had occurred in Strips 4, 5 or 6 at the date of this audit. | Not triggered |
| Between 0-6m depth below EGL, dozer-dump truck combination to be replaced by excavator-dump truck combination to strip overburden on Strips 2-6 inclusive. | | Noted |
| Construct and rehabilitate of eastern high-wall of quarry within 250 metres of Maroota Public School in school holiday periods only. | Rehabilitation of eastern high-wall of quarry within 250 metres of Maroota Public School in school will only occur in holiday periods. | Noted |
| Hours of operation in DA250-09-01 and EPL to be complied with. | The hours of operation specified in Development Consent250-09-01, | Compliant |

| Mitigation Measure | Mitigation Measure Implementation | Status |
|--|---|--------------------------|
| | EPL 3916 and EP6 Hours of Operation, are enforced for the Old Northern Road Quarry activities. | |
| EP1.1 Site Induction for Drivers to note required truck speeds and limited use of exhaust brakes in residential areas and outside the MPS. | All truck drivers are required to be inducted and sign the Site Induction for Drivers form before operating to or from the site. | Compliant |
| Residual noise management measures to be implemented if noise exceeds EPA noise criteria. Measures may include: (a) quarrying at ground level to cease during southwest to northwest winds; (b) addition of controls or treatments on individual sources such as ceasing the operation of the dozer during adverse weather to reduce noise generation; (c) actively investigate for long-term strategies to eliminate noise levels including fitting of new exhausts and replacement of older machinery with newer models with more superior noise performance. (d) Undertake plant maintenance as per schedule and only engage qualified contractors to perform the service. (e) Switch off engines when equipment/plant is not in use for extended periods (i.e. 30 minutes). | The noise management measures described in EP12 Noise and Vibration Management Procedures are implemented when required, by the General Manager, Site Foreman and/or Environment Officer. | Compliant Ongoing |

The implementation of the noise and vibration mitigation measures at the Old Northern Road Quarry were observed to have restricted the noise emissions from the site operations. No noise or vibration related complaints were received between 2013 and 2016.

5.3.4 Noise Criteria

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.39 and 3.40]

[Environment Protection Licence 3916 condition L4]

Criteria for the assessment of noise from the Old Northern Road Quarry are specified in Development Consent 250-09-01 Schedule 2 condition 3.39 and 3.40 and Environment Protection Licence 3916 condition L4.1 and L4.2. The noise criteria not to be exceeded are:

- LAeq(15 minute) noise emission criterion of 44 dB(A) between 7am and 6pm Monday to Saturday; and
- LAeq(15 minute) noise emission criterion of 37 dB(A) between 6am and 7am Monday to Saturday at any residence not owned by the Dixon Sand; and
- Noise from the premises must not exceed an LAeq(1 hour) noise emission criterion of 45 dB(A) at the most affected classroom of Maroota Public School.

5.3.5 Noise Monitoring Program

[Development Consent No.250-09-01 Schedule 2 condition 3.35 4.5 to 4.6A]

A Road Traffic Noise Monitoring Report required under Development Consent 250-09-01 Schedule 2 condition 4.6 at the Maroota Public School, indicated that noise levels for all traffic including trucks entering and leaving Lot 196 were below the predicted 53.6dB(A) made in the Environmental Impact Statement (2001) prepared for Development Application 796/00/HE.

The Truck Noise Assessment Report required under Development Consent 250-09-01 Schedule 2 condition 4.6A, was conducted over 3 months and reported on 29 January 2009. At the Maroota Public School the Truck Noise Assessment Report indicated that traffic contribution along Old Northern Road from Dixon Sand Maroota Quarry was below the relevant RTA Environmental Criteria of Road Traffic Noise (ECRTN) criteria.

Six monthly attended operational noise compliance monitoring at sensitive residential locations (corner of Old Northern Road and Quarry Access Road) and Maroota Public School has been conducted between 2013 and 2016.

5.3.6 Noise Monitoring Results

Noise monitoring conducted in June and December /January annually has indicated that the Old Northern Road Quarry operational noise levels were intermittently audible at sensitive receivers and did not significantly contribute to the ambient noise environment.

The noise levels recorded at the sensitive receiver locations were less than the Development Consent and Environment Protection Licence criteria and were consistent with the quarry-only noise levels predicted in the Environment Assessments. Traffic on Old Northern Road was the dominant noise source during monitoring.

Based on the noise monitoring results the Old Northern Road Quarry is operating in compliance with Development Consent 250-09-01 Schedule 2 condition 3.39 and 3.40 and Environment Protection Licence 3916 condition L4 criteria.

5.3.7 Conclusion

Noise emissions from the Old Northern Road Quarry site are managed under EP12 - Noise Management Plan. Noise monitoring conducted in June and December /January annually has indicated that the Old Northern Road quarry operational noise levels at sensitive receivers were intermittent and did not significantly contribute to the ambient noise environment.

The low levels of the noise recorded at the sensitive receiver locations were consistent the quarry only noise levels predicted in the Environment Assessments and were less than the Development Consent and Environment Protection Licence criteria. Traffic on Old Northern Road was the dominant noise source during monitoring. No noise related complaints have been received, and quarry operations have consistently indicated compliance with the noise criteria.

It is concluded that noise mitigation measures implemented at the Old Northern Road Quarry site are adequate and the noise levels at sensitive receivers are compliant with the Development Consent 250-09-01 and Environment Protection Licence 3916 criteria.

5.4 Water

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 3.17 to 3.27]

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 4.7 to 4.8]

[Development Consent No.250-09-01 MOD 4 Schedule 2 condition 6.3(d)]

[EPL 3916 Conditions L1.1, L2.2, L2.3, M2.1, M2.2, and M3.1]

5.4.1 Water Management Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(d)]

The Site Environmental Management Plan (SEMP) Appendix A EP9 - Water Management, prepared to satisfy the requirements of Development Consent 250-09-01 Schedule 2 condition 6.3(d) was approved by DIPNR on 15 January 2005. EP9 - Water Management Plan outlines measures to control and manage surface water, stormwater and groundwater on the site to ensure any discharge from the site is compliant with the discharge criteria of Total Suspended Solids <50 mg/l and pH between 4.5 and 6.5. The Water Management Plan also outlines a base flow to the downstream creek and protection of downstream ecosystems, and maximises on-site re-use of water. The EP9 - Water Management includes the monitoring requirements in Development Consent 250-09-01 Schedule 2 condition 3.2 and 3.3, and Environment Protection Licence 3916 condition P1.1, M2.2 and M2.4.

EP9 - Water Management has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

5.4.2 Surface Water

[Development Consent 250-09-01 MOD 4 Schedule 3 condition 3.18 to 3.23]

[Development Consent 250-09-01 MOD 4 Schedule 4 condition 4.7]

5.4.2.1 Surface Water Mitigation and Management Measures

Measures to manage surface water from the Old North Road Quarry operations (outlined in the EP9 - Water Management) are shown in Table 5.4.3.1.

Table 5.4.3.1: Surface Water management and Mitigation Measures

| Mitigation Measure | Mitigation Measure Implementation | Status |
|---|--|----------------------|
| The voids within Lot 29 to act as a sedimentation pond for stormwater runoff from the Lot 1 & 2 excavation areas (refer to EP9.3). The volume of the initial void shall not be reduced beyond 2,500m ³ during excavation of this lot - refer EIS Section 2.5 Surface Water Management (ERMA, 2001). Construct overflow pipe beneath Crown Road for overflows from Lot 29 sediment ponds to overflow dam, as shown in EP9.1 | The voids within Lot 29 act as settlement ponds for stormwater runoff from the Lot 1 & 2 excavation areas. | Compliant Ongoing |
| No discharge from the main storage pond on Lot 196 permitted if TSS >50mg/L and pH 4.5 and 6.5, or as per the EPL 3916. | Water quality discharge has complied with the criteria in EPL 3916 condition L2.4. | Compliant Ongoing |

| Mitigation Measure | Mitigation Measure Implementation | Status |
|--|---|------------------------------|
| Water in main storage dam within Lot 196 must be treated to comply with EPA licence conditions and discharged to freeboard level, where required. | Monitoring of water in Lot 196 storage dam has confirmed compliance with EPL 3916 condition L2.4 criteria. | Compliant Ongoing |
| Erosion and sediment control works to be implemented in accordance with EP10. | Erosion and sediment control works have been implemented in accordance with EP10 – Erosion and Sediment Control and <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom, 2004) and Volume E - Mines and Quarries (EPA 2008). | Compliant Ongoing |
| Minimise the area of disturbance by only clearing areas immediately prior to extraction and undertaking progressive rehabilitation. | Only areas required for the extraction of sand and processing / stockpiles /access /infrastructure have been cleared on site. Progressive rehabilitation has commenced in Lot 196 and will progress as areas become available where quarrying activities have been completed. | Compliant Ongoing |
| Prior to commencement of strips 4 and 5 on Lots 1 & 2, existing farm dams to be de-commissioned using the following methodology: <ul style="list-style-type: none"> • test water quality of dam storage to determine its suitability for discharge; • place erosion & sedimentation controls downstream of dam (refer EP10); • dewater dams to site water management system; and • excavate dam wall, remove deposited silt, and dispose of in accordance with EP10 Erosion and Sediment Control | No works had commenced in Lot 1 DP 547255 strips 4 or 5. | Not yet triggered |
| During rehabilitation of strip 6 on Lot 1, constructed channel and silt traps on Lots 1 and 29 to be levelled to approved final landform on EP 15.2, topsoiled and revegetated. | No works had commenced in Lot 1 DP 547255 strip 6 or rehabilitation of Lot 29 DP 75025. | Not yet triggered |
| Rehabilitation of strips 4 & 5 on Lots 1&2 to include the reinstatement of the ephemeral watercourse through Lot 2. Stabilisation of channel bed and banks using vegetation planting, rock gabions, and rock boulders placed and anchored if necessary, to reduce channel flow velocity, provide stilling ponds, and protect channel from erosion. | No works had commenced in Lot 1 DP 547255 strips 4 or 5. | Not yet triggered |

| Mitigation Measure | Mitigation Measure Implementation | Status |
|---|--|------------------------------|
| Stormwater management on site will be undertaken in a manner than maximises ecological sustainability and the social and economic benefits of sound storm water management practices, as outlined in the <i>Draft Managing Urban Stormwater: Council Handbook (EPA, 1997)</i> . | Stormwater management on site ensures collection and reuse is maximised and water quality is maintained. | Compliant Ongoing |

5.4.2.2 Surface Water Quality Criteria

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.17 and 3.23]

[Environment Protection Licence 3916 condition L2.4]

Daily measurement at the Main Storage Dam Weir at the Old Northern Road Quarry, occurs with the volume discharged in litres measured by with a flow meter and surface water quality monitoring for pH, turbidity (NTU) and TSS (mg/l) in accordance with the EPL 3916 condition M2.3.

The daily water release is manually calculated using the flow meter readings from the EPA approved discharge point 1. A continuous logger has not been installed as required under EPL 3916 condition M7.1, but it is considered that the manual calculation is adequate and has the advantage that the release from EPA approved Monitoring Point 1 (Main storage dam weir labelled as "2 Water" on map titled 'Figure 1 Location & Discharge Points - Dixon Sand Maroota' received by the EPA on 9/1/01 in EPL 3916 condition P1.1) is checked when the flow meter readings are taken.

5.4.2.3 Monitoring Program

[Environment Protection Licence 3916 condition P1.3 and M2.3]

A daily grab sample of any discharge to waters from EPA Monitoring Point 1 (Main storage dam weir labelled as "2 Water" on map titled 'Figure 1 Location & Discharge Points - Dixon Sand Maroota' received by the EPA on 9/1/01 with Licence Application Form) must be monitored for pH and turbidity during discharge.

During discharge, daily measurement of volume discharged at the weir is also to be recorded.

The surface water discharge monitoring has demonstrated compliance with the TSS and pH criteria and the discharge volumes are recorded daily during discharge.

5.4.2.4 Conclusion

Surface water management at the Old Northern Road Quarry site has been designed to ensure that collection of surface runoff from disturbed areas of the quarry is directed to settlement basins or retained in the quarry pits to prevent the loss of sediment to the surrounding environment. The management and mitigation measures implemented at the Old Northern Road Quarry site control the flow of surface runoff and regular inspections and maintenance of sediment controls protect the surrounding environment from impact of water with high suspended solids.

5.4.3 Groundwater

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.24 to 3.27]

[Development Consent 250-09-01 MOD 4 Schedule 4 condition 4.8]

5.4.3.1 Environmental Assessment

5.4.3.1.1 Environmental Impact Assessment 2001

Monitoring wells were installed on the Old Northern Road Quarry site to determine groundwater levels and quality. These wells will continue to be monitored and a two metre buffer zone will be maintained above the highest recorded groundwater level to prevent any contamination or interruption of the existing groundwater flow or quality. The 2001 Environmental Impact Statement found that groundwater levels across Lots 1 and 2 varied from 175.29 to 194.07 metres AHD, with movement in a west-south-westerly direction. Average bore depths recorded across Lots 1 and 2 during the monitoring period ranged between 172.26m to 199.64m.

5.4.3.1.2 Environmental Assessment 2011

The proposed Modification would not alter the previously approved depth of extraction on Lot 29. Any additional depth of extraction on Lot 196 would not proceed below RL 127.5 metres which is significantly above the requirement that extraction not proceed within 2 metres above the wet weather groundwater level and would not affect the water table or potential acid sulphate soils. The proposed additional extraction of sand in the north western corner of Lot 196 would be monitored such that there would be no adverse impact to the groundwater of the Site.

The Aquaterra Groundwater Assessment Report appended to the Environmental Assessment 2011 concluded:

Following a review of the information made available and from the findings made in this assessment the following conclusions have been drawn:

- Lot 196 and the remainder of the site is underlain by a series of shallow and limited extent zones of non-water-bearing unconsolidated horizons of weathered clays, sandstones and shales. These low permeability layers permit temporary storage of groundwater at various shallow depths. These temporary perched storages have limited resource value because, like the Maroota Sand, they are discontinuous and of limited extent and low storage.*
- Seasonal groundwater fluctuations observed from BH1 show seasonal ranges of about 1m. These fluctuations could range up to 3m over the longer term. Therefore, the 'wet weather high groundwater level' beneath Lot 196 would be at a minimum elevation of about 109 to 111m AHD. This is 18.5 to 16.5m below the proposed extraction depth of 127.5m AHD.*
- The total or partial removal of the shallow perched groundwater zones is unlikely to have any major impacts to the local hydrogeological regime, or to the regional aquifer system, other than potentially increasing the rate of rainfall recharge to the regional aquifer system. However, this potential increase in recharge is negligible when compared to the larger scale recharge mechanisms associated with the Hawkesbury sandstone.*
- There are nine registered groundwater abstraction bores within 1km of Lot 196. All of the bores listed were terminated at depths well below the extent of the low permeability layers. Therefore, none of these production bores would significantly rely on or abstract from groundwater stored above these layers and would therefore not be significantly impacted by an extension of the quarrying activity.*
- Continued observations from the borehole network will be required to monitor general groundwater behaviour as part of the ongoing operations licensing requirements.*

5.4.3.1.3 Environmental Assessment 2013

The proposed Modification seeks to clarify the depth of extraction on the Old Northern Road Quarry site such that there would be no impact to the regional groundwater table. The proposed Modification would provide certainty with regard to the depth of extraction which could occur which is no closer than 2 metres above the wet weather groundwater level. To determine the wet weather high groundwater level on the Old Northern Road Quarry site, RPS Aquaterra prepared a report titled "Groundwater Assessment for Dixon Sands Operations, Lot 1 and 2 DP 547255, Maroota NSW".

The RPS Aquaterra investigations concluded:

- *Lots 1 and Lot 2, DP 547255 and the remainder of the Dixon Sand land, is underlain by a series of shallow and limited extent zones of non-water-bearing unconsolidated horizons of weathered clays, sandstones and shales. These low permeability layers permit temporary storage of groundwater at various shallow depths. These temporary perched storages have limited resource value because, like the Maroota Sand, they are discontinuous and of limited extent and low storage.*
- *Based on the inferred groundwater contouring the "wet weather high groundwater level" would be at a minimum elevation of about 171 metres AHD towards the east and 151 metres AHD in the west of the Site. Sand extraction on Lots 1 and 2, DP 547255 could, therefore, occur to an elevation of 173 metres AHD in the east grading to 153 metres AHD in the west, leaving a 2 metre distance of separation and, therefore, limiting potential interference with the regional water table.*
- *The total or partial removal of the shallow perched groundwater zones is unlikely to have any major impacts to the local hydrogeological regime, or to the regional aquifer system, other than potentially increasing the rate of rainfall recharge to the regional aquifer system. This potential increase in recharge is negligible when compared to the larger scale recharge mechanisms associated with the Hawkesbury sandstone.*
- *There are nine registered groundwater abstraction bores within approximately 1km of the Site. All of the bores listed were terminated at depths well below the extent of the low permeability layers. As such, none of these production bores would significantly rely on or abstract from groundwater stored above these layers and would, therefore, not be significantly impacted by an extension of the quarrying activity.*
- *Continued observations from the borehole network would be required to monitor general groundwater behaviour as part of the ongoing operations licensing requirements.*

5.4.3.2 Groundwater Monitoring Program

Groundwater levels are monitored monthly and groundwater quality monitoring within each bore on Lots 1, 2 and 196 is undertaken every six months.

The groundwater monitoring bores are located on the Old Northern Road Quarry site:

- MW1 (Lot 2 near creek)
- MW2 (Lot 1 near house)
- MW3 (DS2) (northern edge of Lot 1)
- MW4 (DS3) (western edge of Lot 2) Borehole MW4 can no longer be accessed for monitoring
- MW5 (Lot 196 down on the bank of Main Dam)
- BH1 (Western Boundary of Lot 196 DP752025)
- BH2 (East on Lot 1 DP204159)
- BH3 (East on Lot 1 DP204159)
- BH6 (Northern boundary of Lot 1)
- BH7 (Southern boundary of Lot 2)
- BH8 (within the 100m buffer zone for Maroota Tertiary Sands Groundwater Source – targeting shallow groundwater) installed to satisfy the requirements of MOD 4
- BH9 (within the 100m buffer zone for Maroota Tertiary Sands Groundwater Source – targeting deeper groundwater) installed to satisfy the requirements of MOD 4.

No groundwater extraction from licenced supply bores (pumping and non- pumping) has occurred between 2013 and 2016.

5.4.3.3 Groundwater Monitoring Results

5.4.3.3.1 Groundwater Levels

Monthly groundwater level monitoring has been undertaken at the Old Northern Road Quarry site and the levels have remained stable. Monitoring has continued since 2003 under the quarry approval, with 5 new boreholes installed and monitored since June 2011.

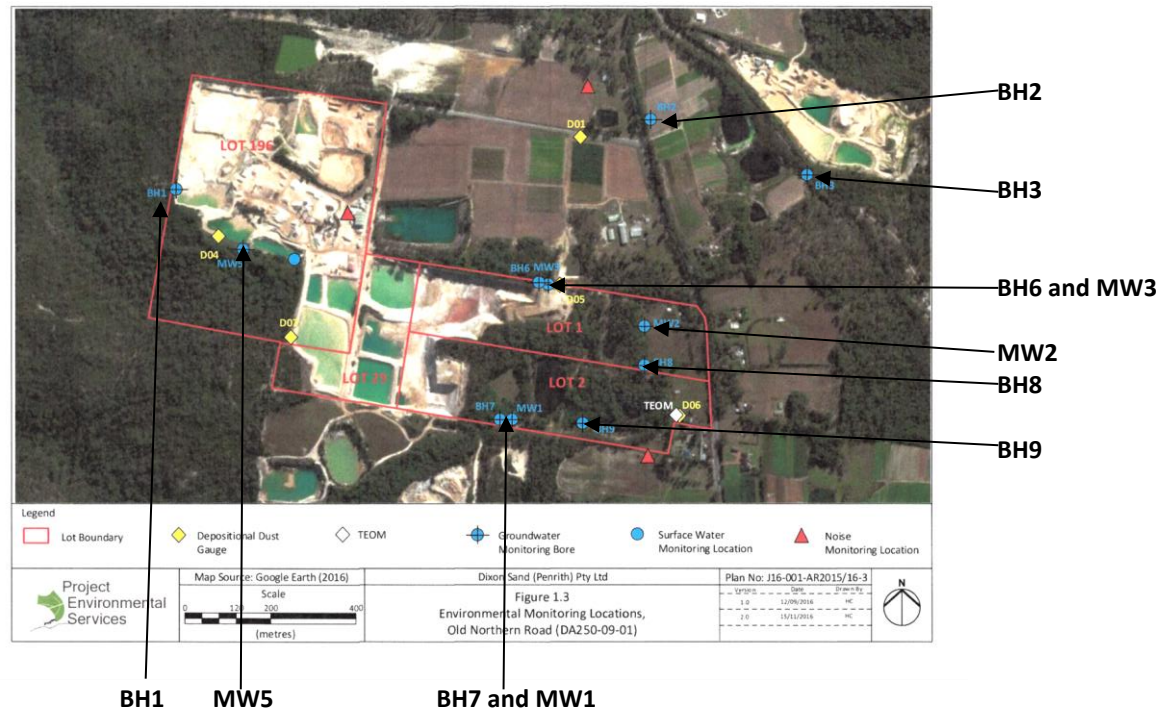


Figure 5.4.3.3: Groundwater Monitoring Bores Location at Old Northern Road Quarry

Dixon Sand commissioned a geotechnical investigation to confirm the depth of the regional groundwater aquifer at the Old Northern Rd site during the 2009-2010. Findings of the geotechnical investigation suggested that the regional groundwater level is considerably lower at Old Northern Rd sites than previously indicated from water level depth monitoring at the existing bores on site.

Sand extraction at the Old Northern Road Quarry is required to remain more than two metres above the wet weather high groundwater level across the site in accordance with Development Consent 250-09-01 condition 3.25.

The 2001 Environmental Impact Statement for the Old Northern Road sand quarry found that groundwater levels across Lots 1 and 2 varied from 175.29 to 194.07 metres AHD, with movement in a west-south-westerly direction. Average bore depths recorded across Lots 1 and 2 during the monitoring period ranged between 172.26m to 199.64m. The new bores installed in 2010 averaged depths between 160.07m to 164.22m, indicating the regional water table is significantly deeper than determined in the 2001 Environmental Impact Statement.

Dixon Sand is operating in compliance with Development Consent 250-09-01 condition 3.25, given that the quarry is currently operating to the depths specified in the EIS, which are significantly shallower than the regional water table.

Long-term groundwater levels for Old Northern Road Quarry site show that groundwater levels are remaining predominantly stable with very little fluctuation over the period 2003 to 2016. Based on these results, there is no indication of impacts on groundwater levels from quarry activities.

5.4.3.3.2 Groundwater Quality

Groundwater quality within bores on Lots 1 and 2 at Old Northern Rd site is monitored every 6 months. From June 2014, the field pH has been recorded for comparison with laboratory pH results. Field pH and laboratory pH were comparable for most bores when checked (note that only field pH is reported in the Annual Review because pH in water only has a holding time of 6 hours. The time between collection of water samples and arrival to the laboratory for analysis does not always occur within the 6 hours holding time limit).

The Development Consent for Old Northern Rd site require a groundwater quality monitoring program to determine baseline conditions, and to monitor for any potential adverse impacts of the quarry on groundwater quality. The results to date show that water quality parameters have remained relatively stable or slightly improved from baseline conditions, particularly since monitoring of the new bores began in 2010.

Sediment in the original bores installed prior to 2010 continue to be an issue, which is most likely a result of these bores being installed into a perched aquifer and not the regional water table. The groundwater quality has indicated comparatively low TSS and NTU results from the new bores. The original existing bores continue to be monitored alongside the new bores.

In terms of pH and EC for the Old Northern Road site, results from 2010 to 2016 show that groundwater quality results have remained relatively stable. The results do not indicate any anomalies or distinct changes to trends that would indicate impact from quarry operations.

5.4.3.4 Conclusion

The monitoring of groundwater levels and quality have exhibited relatively stable results between 2003 and 2016 and indicate that minimal change has occurred in the groundwater levels and water quality. The current operational management measures appear to be appropriate for the protection of groundwater on the site.

No interception of groundwater has been recorded in the Old Northern Road Quarry extraction areas.

5.4.4 Erosion and Sediment Control

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(b)]

5.4.4.1 Erosion and Sediment Control Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(b)]

The Site Environmental Management Plan Appendix A includes EP10 - Erosion and Sedimentation Control, prepared to satisfy the requirements of Development Consent 250-09-01 Schedule 2 condition 6.3(b), was approved by DIPNR on 15 January 2005. The Erosion and Sedimentation Control Plan outlines measures to minimise erosion during site preparation and operation.

EP10 - Erosion and Sedimentation Control has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

5.4.4.2 Environmental Assessment

5.4.4.2.1 Environmental Assessment 2013

The Environmental Assessment 2013 indicated that some erosion was occurring at the interface between the existing extraction areas and the boundary of the Old Northern Road Quarry site. Under the existing approval (MOD 3), an extension of extraction into the remainder of the site may result in increased erosion along all sides of the proposed Modification area. The removal of vegetation from the proposed Modification area would not result in any significant erosion or sedimentation on adjoining lands additional to those impacts already occurring under the existing approval.

5.4.4.3 Erosion and Sediment Control Monitoring

The Old Northern Road Quarry site is checked for potential erosion and/or sediment issues during the Monthly Site Condition inspections. The Monthly Site Condition Checklist identifies matters of concern and determines action required – examples of the findings on the Monthly Site Condition Checklist are:

| Sediment Control Check | Monthly Checklist Comment | Action |
|--|--|--|
| Site checked for potential erosion issues or transport of sediment from batters, vehicle access points, excavations, haul roads, vegetation clearing etc | Transport of material observed downslope of dam walls due to scouring, particularly the southwestern corner of Lot 29. Minor sediment tracking outside the front gate and in the vicinity of the PF Formation. Potholes developing outside the front gate. | Ensure earth bund top of the wall is graded and compacted to minimise sediment movement. Investigate options for progressive rehabilitation as the bund wall height is raised and target height reached. Sweeper to remove sediment off Crown Road at the front gate of Old Northern Road Quarry site. Fill potholes. |
| Effectiveness and capacity of Erosion and Sediment controls checked (drains, basins, filters etc.) | Sediment fences and sediment control measures in place. Maintenance required for hay bales and silt fence. | New sediment control measures installed on the eastern boundary of Stage 2. Hay bales and sediment fence replaced. |
| Stockpiles located and maintained correctly | DP&E Audit identified a number of non-compliances regarding stockpile sizes. | Rectify as per the conditions of approval and management plans. |

5.4.4.4 Conclusion

All surface water runoff from disturbed areas of the Old Northern Road Quarry site is directed to settlement ponds and/or the extraction pits for collection and treatment prior to reuse on site. The erosion and sediment control management on the site occurs in accordance with the EP10 Erosion and Sediment Control Plan and the is generally consistent with requirements in *Managing Urban Stormwater: Soils and Construction (Volume 2E – Mines and Quarries) Manual* (EPA 2008) Appendix C.

5.5 Flora and Fauna

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49 to 3.51]

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 4.9 and 4.10]

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(i)]

5.5.1 Flora and Fauna Management Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(i)]

The Site Environmental Management Plan Appendix B – EP14 – Flora and Fauna Management, prepared to satisfy the requirements of condition 6.3(i) was approved by DIPNR in January 2005. The Flora and Fauna Management Plan outlines measures to minimise impacts on flora and fauna on the Old Northern Road Quarry site during operations.

EP14 – Flora and Fauna Management was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand addressed comments from DP&E and the Flora and Fauna Monitoring Program was approved on 1 November 2016. The Flora and Fauna Management Plan is still under review.

5.5.2 Environmental Assessment – Flora and Fauna

5.5.2.1 Environmental Impact Statement - 2001

The 2001 Environmental Impact Statement (2001) identified that the proposed quarry area would be confined to mainly cleared areas to maintain natural links to Maroota State Forest. The EIS concluded that impacts on wildlife movement to adjoining areas would be minimal and the proposed extraction was not expected to place a viable local population of any identified threatened species at risk of extinction. The quarry has maintained links between the conservation areas and adjoining areas of native vegetation, and known populations of threatened species would be protected from potential impacts of the quarry.

5.5.2.2 Environmental Assessment - 2011

The protection of the flora and fauna species identified as being worthy of retention is reflected in conditions of Development Consent No.250-09-01. Cumberland Ecology was commissioned to undertake an assessment of the flora and fauna within the *Exclusion Area* relevant to this Modification.

On the basis of the conclusions of the Cumberland Ecology report, Dixon Sand proposes to pursue the most appropriate means by which the *Exclusion Area* can now be extracted in conjunction with the approved extraction of the `` area of the Old Northern Road Quarry site. This proposed Modification would not increase the previously approved lateral extent of extraction and, as such, no impact is expected to the flora and fauna of the area or any environmentally sensitive areas.

5.5.2.3 Environmental Assessment - 2013

The primary impact resulting from the proposed Modification 4 is the loss of vegetation and associated habitat. All vegetation present within the proposed Modification area will be removed. The total footprint of the proposed Modification is approximately 4.35 ha, of which 3.68 ha comprises native vegetation communities. The remaining area supports exotic grassland (0.62ha) and cleared land (0.05 ha).

The native vegetation communities present are well represented and well conserved in the wider locality. Removal of this vegetation under the proposed Modification will not, therefore, result in a significant reduction in any of these vegetation communities in the locality.

No EECs listed under the EPBC Act and/or the TSC Act will be removed under the proposed Modification.

5.5.2.3.1 Habitat fragmentation

The site consists of land which has been approved for sand extraction, and which has previously been disturbed. Under the approval for the Site, the surrounding areas will first be extracted, and then rehabilitated to a final landscape of farming land. As a result, removal of vegetation within the proposed Modification area is not considered to significantly exacerbate habitat fragmentation.

5.5.2.3.2 Edge effects

Edge effects will occur at the interface between the approved extraction area and the proposed Modification area. Impacts from edge effects can reduce the quality and integrity of the retained communities. Habitat within the proposed Modification area does not lie at the edge of any vegetation which will remain under the existing approval, however, the removal of vegetation within the proposed Modification area has the potential to increase edge effects to vegetation occurring along the southern boundary.

Threatened flora species within the proposed Modification area are:

- *Melaleuca deanei* (Deane's Paperbark) is listed as Vulnerable under both the TSC Act and EPBC Act. This species was recorded at one location within the proposed Modification area. Removal of the known occurrence of 18 clumps of *Melaleuca deanei* is not considered likely to result in the extinction of the species in the locality. Within the locality, *Melaleuca deanei* is conserved within Marramarra National Park and Dharug National Park, and occurs in other bushland areas in the locality (e.g. near Wisemans Ferry).

- Approximately 1.15 ha of suitable habitat, comprising *Angophora costata* - *Corymbia gummifera* Woodland is proposed to be cleared from the proposed Modification area. The loss of this vegetation would only result in a very small decrease in the amount of suitable habitat available to this species and the habitat to be removed within the proposed Modification area is not considered important for the long-term survival of the species.
- *Tetratheca glandulosa* is listed as Vulnerable under both the TSC Act and EPBC Act. This species was not recorded within the proposed Modification area during current surveys, however, *Tetratheca glandulosa* was recorded within the proposed Modification area during surveys by Gunninah Environmental Consultants (Fanning et al. 1998) and Trevor Hawkeswood (2010). *Tetratheca glandulosa* is conserved within Marramarra National Park and Dharug National Park, and Atlas of NSW Wildlife records indicate that this species is well represented in the locality. Given the abundant records for this species in the locality, removal of *Tetratheca glandulosa* within the proposed Modification area is not considered important for the long term survival of the species.

5.5.2.3.3 Impacts to Threatened Fauna Species

Threatened fauna species recorded within the proposed Modification area during the current surveys were:

- Glossy Black-cockatoo (*Calyptorhynchus lathami*) is listed as Vulnerable under the TSC Act. Evidence of feeding by Glossy Black-cockatoo was recorded during current surveys indicating that the proposed Modification area and surrounding site currently provide forage habitat for this species. Approximately 1.82 ha of woodland and 1.86 ha of heath providing forage habitat for the Glossy Black-cockatoo will be removed under the proposed Modification, however, habitat assessment indicates that the proposed Modification area does not provide suitable breeding habitat for the Glossy Black-cockatoo. The Glossy Black-cockatoo has been recorded from Marramarra National Park, Dharug National Park, Parr State Conservation Area and Berowra Valley National Park. Forage and breeding habitat for this species is well conserved in the locality within these protected lands. The removal of a small area of forage habitat from within the proposed Modification area is not considered important for the long-term survival of the Glossy Black-cockatoo.
- *Microchiropteran Bats* recorded within or adjacent to the proposed Modification area during the current surveys were:
 - Large-eared Pied Bat (*Chalinolobus dwyeri*) - listed as Vulnerable under both the EPBC Act and the TSC Act;
 - East-coast Freetail-bat (*Mormopterus norfolkensis*) listed as Vulnerable under the TSC Act;
 - Little Bentwing-bat (*Miniopterus australis*) listed as Vulnerable under the TSC Act; and
 - Eastern Bentwing-bat (*Miniopterus orianae oceanensis*) listed as Vulnerable under the TSC Act.

It should be noted that three of the four threatened bat species recorded are cave-roosting species. As the Site does not provide suitable roosting habitat for these species, it is highly likely that these bats travel to the proposed Modification area to forage, from other areas in the locality. There is no suitable breeding habitat for any threatened microbats within the proposed Modification area.

The four threatened microbats recorded within the proposed Modification area have been recorded from conservation areas in the locality, including Marramarra National Park, Dharug National Park, Parr State Conservation Area, Berowra Valley National Park and Cattai National Park. These conservation areas provide extensive forage, roosting and breeding habitat for all of the species recorded within the proposed Modification area.

Approximately 4.3 ha of suitable forage habitat for threatened microbats (including 1.82 ha of woodland providing suitable roosting habitat for the East-coast Freetail-bat) will be removed under the proposed Modification. It is unlikely that the small area of habitat within the proposed Modification area is important for the long-term survival of any threatened microbats.

5.5.2.3.4 Wildlife Corridors

The wildlife corridor values of the proposed Modification area are limited due to historical land and vegetation clearing and extraction in the surrounding lands. The proposed Modification area currently forms a component of a corridor from south-west to north-east passing through the Old Northern Road Quarry site.

This corridor is not large enough to provide significant habitat for threatened species, but may be utilised by mobile species such as birds and bats between larger areas of intact habitat. Wildlife corridor values for small terrestrial and arboreal species are limited due to clearing, extraction and roads in surrounding lands which provide substantial barriers to these species.

The proposed Modification will remove approximately 4.3 ha of habitat which currently provides limited wildlife corridor values, mostly for birds and bats. More substantial wildlife corridors exist within the locality to the north and south of the Site, connecting large areas of bushland in the west to Marramarra National Park in the east. These important wildlife areas will not be significantly impacted by clearing of vegetation within the proposed Modification area.

5.5.3 Conclusion

The Site Environmental Management Plan Appendix B – EP14 – Flora and Fauna Management, prepared to satisfy the requirements of condition 6.3(i) was approved by DIPNR in January 2005, and reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements in June 2016. The Flora and Fauna Monitoring Program was approved on 1 November 2016. Dixon Sand is still addressing comments in the Flora and Fauna Management Plan.

Threatened species monitoring has been conducted annually in accordance with the Flora and Fauna Monitoring Program (Cumberland Ecology, June 2016), targeting *Darwinia fascicularis* susp. *Oligantha*, *Melaleuca deanei*, *Kunzea rupestris* and *Tetratheca glandulosa*.

The OSEM Annual Threatened Species Monitoring Reports - May 2014 and August 2015, reported no observable changes in the *Kunzea rupestris* population compared to previous monitoring periods and no evidence that quarry operations were impacting species or surrounding vegetation.

5.6 Biodiversity

5.6.1 Biodiversity Management Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49B]

The Biodiversity Management Plan for the Hearses Road Biodiversity Offset Area (to offset Old Northern Road Quarry disturbance in Lots 1 and 2 DP 755015) was prepared to satisfy the requirements of Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49B and approved by the DP&E on 4 April 2016.

The Biodiversity Management Plan outlines the management actions, reporting and persons responsible for the management of biodiversity within the Haerses Road Offset Area.

The Biodiversity Management Plan aims to make provisions to:

- Maintain existing areas of high quality forest and woodland vegetation;
- Implement assisted natural regeneration methods to increase the ecological integrity of the Haerses Road Offset Area and to enhance the native vegetation it contains;
- Introduce additional fauna habitat features, where required, to improve the availability of fauna habitat;
- Secure land to create and improve wildlife corridors and link to existing conservation reserves;
- Manage potential conflicts between proposed measures and any Aboriginal heritage values;

- Reduce weed species and feral animal distribution and abundance;
- Reduce areas of erosion;
- Minimise the risk of bushfires; and
- Create a substantial area of high quality habitat for native fauna that will be protected for conservation in the long-term.

5.6.2 Conservation Bond

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49C]

The Conservation Bond required under Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49C had not been lodged at the date of this audit (November 2016). The calculation of the cost of implementing the Biodiversity Management Plan is to be prepared by a specialist ecologist consultant. Dixon Sand corresponded with DP&E in relation to the requirement for a 'quantity surveyor' to be employed 'to verify the calculated costs' and was advised that a 'quantity surveyor' must be commissioned in accordance with the condition. If any proposed change (such as to use an experienced Senior Ecologist), Dixon Sand should address the matter through a Modification to the Development Consent.

5.6.3 Environmental Assessment – Biodiversity

5.6.3.1 Environmental Impact Statement 2001

The 2001 Environmental Impact Statement identified that the proposed quarry area would be confined to mainly cleared areas to maintain natural links to Maroota State Forest. Potential impacts to flora and fauna of the Old Northern Road Quarry site, could occur through the removal of approximately 6ha of vegetation, including foraging habitat and approximately 40 trees with potential roosting habitat. The Environmental Impact Statement concluded that impacts on wildlife movement to adjoining areas would be minimal and the proposed extraction was not expected to place a viable local population of any identified threatened species at risk of extinction. The quarry has maintained links between the conservation areas and adjoining areas of native vegetation, and known populations of threatened species would be protected from potential impacts of the quarry.

5.6.3.2 Environment Assessment 2011

The proposed Modification would not result in any disturbance to the Old Northern Road Quarry site which has not already been approved. The issue of impact to the biodiversity of the locality was canvassed in the assessment of the previous development applications.

5.6.3.3 Environment Assessment 2013

The Environmental Impact Statement (2001) that accompanied the initial development application for extraction at the Old Northern Road Quarry site, identified certain areas that contain flora species which were determined as warranting protection, those areas being Shale Sandstone Transition Forest and *Tetratheca glandulosa* populations.

Cumberland Ecology was commissioned to undertake an investigation of the areas excluded from extraction titled *Advice Regarding the Presence of Shale Sandstone Transition Forest in the Extraction Exclusion Area at Dixon Sand Quarry, Part Lots 1 & 2, DP 547255, Old Northern Road, Maroota*, dated 30 June 2011.

The Cumberland Ecology report provides an analysis and discussion relating to the presence of Shale-Sandstone Transition Forest (SSTF) within the current extraction exclusion area. SSTF is an Endangered Ecological Community listed under the *Threatened Species Conservation Act 1995* (TSC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The presence of SSTF was first claimed to have been detected in the extraction exclusion area during ecological studies conducted for the Environmental Impact Statement for the initial extraction proposal for Lots 1 and 2, DP 547255.

The Cumberland Ecology report concluded:

- The vegetation on the Old Northern Road Quarry site is not SSTF as listed under the Final Determination of the TSC Act.
- The vegetation on the Old Northern Road Quarry site lacks the typical geology and soils to support SSTF, and the species present on the site are typical of sandstone vegetation rather than SSTF. In particular, the typical tree species which dominate this community are essentially absent from the Site.
- The vegetation on the Old Northern Road Quarry site:
 - (i) Does not conform to the Final Determination for SSTF;
 - (ii) Does not conform to or pass the test prescribed in Tozer et al. (2010) for SSTF;
 - (iii) Does not occur on geology suitable for the development of SSTF, and
 - (iv) Conforms best to non-listed sandstone dominated vegetation.
- The vegetation on the Old Northern Road Quarry site is Coastal Sandstone Ridgetop Woodland as described in Tozer et al. (2010); and
- The zone to protect the Old Northern Road Quarry site on the basis that it is SSTF is flawed and unwarranted.

Furthermore, the vegetation is now relatively isolated from other occurrences of native vegetation by surrounding quarrying (i.e. quarries other than Dixon Sand operations). The long term viability of such vegetation would be difficult to maintain and the maintenance of such vegetation would not provide a substantial positive conservation outcome. Based on the findings of the Cumberland Ecology report, it is proposed that the 'exclusion area' and associated buffers identified in the Development Consent be removed to allow extraction of sand from this section of the Old Northern Road Quarry site.

5.6.4 Biodiversity Management

The clearing of native vegetation within the Development Consent 250-09-01 MOD 4 area has resulted in the need to ameliorate and manage the project impacts to biodiversity and to address residual impacts through the provision of biodiversity offsets. The Biodiversity Offset Strategy for the Old Northern Road Quarry comprises the Old Northern Road Rehabilitation Offset Area within the quarry boundary (see Figure 1.2 of the Flora and Fauna Management Plan) and the Haerses Road Offset Area, located at Haerses Road, Maroota (see Figure 1.1 of the Biodiversity Management Plan).

The Biodiversity Management Plan developed to satisfy the requirements of Development Consent 250-09-01 MOD 4 condition 3.49B, outlines the management actions, reporting and persons responsible for the management of biodiversity within the Haerses Road Offset Area.

Management of the Old Northern Road Rehabilitation Offset Area is detailed in the Flora and Fauna Management Plan developed by Cumberland Ecology (2015) in accordance with Development Consent 250-09-01 MOD 4 condition 6.3(i).

To ensure the effective management of vegetation within the Haerses Road Offset Area will involve conservation and management of existing forest and woodland. Key performance indicators for the general maintenance of the Haerses Road Offset Area for erosion, site access and bushfire include:

- Measurable increase in the condition of vegetation;
- Observable reduction of signs of erosion (if any);
- Evidence of restrictions to site access; and
- Observable decrease in bushfire risk.

5.6.5 Biodiversity Offset Area Monitoring and Management

The monitoring program for the Haerses Road Offset Area includes:

- Collection of baseline data within the vegetation communities;
- Monitoring of native vegetation communities within the site to monitor the condition of native vegetation and to ensure vegetation communities are being maintained by reference to baseline data;
- Monitoring of fauna habitat;
- Monitoring of weed species; and
- Monitoring of feral animals.

| Description of Works | Management Objective | Key Performance Indicators | Status |
|--|--|--|---|
| Native Vegetation | | | |
| Management and monitoring of retained Vegetation - To be collected in baseline surveys (i.e. first year of monitoring). | Aim to maintain or increase vegetation condition from baseline condition identified during surveys. | % Native over storey cover (NOS) | Ongoing Threatened flora and fauna monitoring and surveys commenced in September 2016 |
| | | % Native mid-storey cover (NMS) | |
| | | % Native groundcover (NGC) | |
| | | Mosses/lichen cover (%) | |
| | | Organic litter cover (%) | |
| | | Rock/bare ground cover (%) | |
| | | Total native species richness (NPS) | |
| | | Native species richness (canopy) | |
| | | Native species richness (mid-storey) | |
| | | Native species richness (groundcover) | |
| | | % Canopy recruitment (REG) | |
| | | Total length (m) of fallen logs (FL) | |
| Weeds | | | |
| Control and monitoring of weed species and their diversity and abundance - Species and extent of weed infestations identified during baseline surveys (i.e. first year of monitoring). | Decrease and control weed diversity, density and abundance. | Decline in weed diversity, density and abundance. Limited recruitment of weed species. | Compliant Ongoing Bush-It conduct regular weed control and management |
| Feral Animals | | | |
| Control and monitoring of feral animal activity. | Decrease and control feral animal activity and impacts on vegetation and fauna habitat. | Decline in signs of feral animal activity. | Ongoing Feral animal surveys are conducted with the flora and fauna monitoring program |
| General Maintenance for Erosion, Site Access and Bushfire | | | |
| Management and monitoring of erosion, fences, controlled activities and bushfire risk. | Monitor and control of Erosion. Maintain fences. Monitor and control unauthorized site access. Reduce the risk of bushfires. | Degradation of vegetation, signs of erosion, visible signs of uncontrolled activities and unauthorized site access and increased risk of bushfire. | Ongoing |

Works undertaken at Haerses Road offset area 2013-2016 have involved:

- Weed maintenance of the offset area, involving hand weeding, brushcutting and herbicide application, targeting Whiskey Grass, Lantana, Crofton Weed, Paspalum, African Lovegrass, Blackberry and Couch;
- Scattering of logs and soil for habitat formation in the offset area;
- Brush-matting with selected native species at zone 1 has resulted in improvement in the variety and health of native plants;
- Transplanting *Imperata cylindrica* (Blady grass) and *Pellaea falcata* (Sickle fern) in 2014-2015;
- Planting of 100 trees and shrubs including *Angophora costata*, *Eucalyptus piperita*, *Acacia parramattensis* in 2013-2014;
- Direct seeding via leaf litter and topsoil translocation from adjacent bush in 2013-2014

5.6.6 Conclusion

The Biodiversity Management Plan for the Hearses Road Biodiversity Offset Area (to offset Old Northern Road Quarry disturbance in Lots 1 and 2 DP 755015) was prepared to satisfy the requirements of Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49B and approved by the DP&E on 4 April 2016. Monitoring of the

Monitoring of the Rehabilitation Offset Area at Old Northern Road Quarry has indicated that the buffer zones are being effectively maintained. Continuous weed management has controlled weed occurrence in the Rehabilitation Offset Area, and supplementary planting of native vegetation at the Old Northern Road site is establishing well.

5.7 Rehabilitation

[Development Consent 250-09-01 Schedule 2 condition 3.8]

5.7.1 Rehabilitation and Landscape Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(e)]

The Site Environmental Management Plan Appendix E - EP15 – Rehabilitation and Landscape Management, prepared to satisfy the requirements of condition 6.3(e) was approved by DIPNR in January 2005. The Rehabilitation and Landscape Management Plan was prepared to describe the proposed rehabilitation works and final land use and landform for the site, and measures to be undertaken to create that landform and vegetation cover.

EP15 Rehabilitation and Landscape Management Plan has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

5.7.2 Environmental Assessment - Rehabilitation

5.7.2.1 Environmental Assessment - 2011

The proposed Modification would be subject of a Rehabilitation and Landscape Plan. The Site Environmental Management Plan contains, as its Figure EP15.2, a plan of the approved final landform for Lots 196 and 29, DP 752025 and Lots 1 & 2, DP 547255.

Dixon Sand, as part of the review process for this Modification application, ascertained that a more appropriate and suitable final landform could be achieved on the site following completion of the extraction of Lots 29 and 196 is now proposed such that the final landform shown in Figure 3-3 of the Environmental Assessment is substituted for that which is currently approved under Development Consent 250-09-01.

5.7.3 Rehabilitation Bond

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 1.15]

Dixon Sand, as part of its fulfilment of the conditions of consent No.796/00/HE, paid a rehabilitation bond to The Hills Shire Council for rehabilitation of the Old Northern Road site. As part of the Modification that included the surrender of consent No.796/00/HE, Dixon Sand proposed to recover the bond from The Hills Shire Council and transfer that bond money to the Department as part of Condition 1.15 of Development Consent No.250-09-01. A Bank Guarantee for the Rehabilitation Bond was submitted to DIPNR for \$255,000 on 1 September 2004.

Following approval of Development Consent 250-09-01 MOD 3 the rehabilitation bond for an additional \$327,000.00 was lodged on 8 April 2013. A further rehabilitation bond lodgement of \$130,500.00 occurred on 27 August 2015 to supplement the bond under conditions 1.15 and 1.15A(a).

5.7.4 Rehabilitation Monitoring and Management

Bush regeneration works have been undertaken by Bush-It who have been providing ecological restoration and bush regeneration works for Dixon Sand and have been responsible for the rehabilitation of areas of the Old Northern Road Quarry site.

The Bush-It Bush Regeneration Works Annual Report 2015-2016 concluded that the main mine site rehabilitation zones (zones 1 and 2) and plantings were developing strongly and native regeneration within the rehabilitation zones was progressing in a positive manner with the diversity and abundance of native species appearing to consistently increase. All the plantings in this area have a strong survival rate and some of the earlier plantings are reaching a height of 5-6m. *Ageratina adenophora* (Crofton) Weed present in the Main Old Northern Road Quarry Site had been controlled and as a result, the adjacent bushland is free of Crofton. However, the persistent seed bank of the weed present in certain sections of the area will require Monthly maintenance visits to continue to target *Eragrostis curvula* (African Love-Grass), *Lantana camara* and *Ricinus communis*. It was recommended that regular checks also need to be made into the bushland adjacent to the rehabilitation offset area to ensure that the good bush remains free of these weeds.

The Bush-It Bush Regeneration Works Annual Report 2014-2015 concluded that the Old Northern Road Quarry site rehabilitation zones (zones 1 and 2) and plantings were continuing to develop strongly and native regeneration within the rehabilitation zones was progressing in a positive manner with the diversity and abundance of native species appearing to consistently increase. All the plantings in this area have a strong survival rate and some of the earlier plantings are reaching a height of 4-5 metres.

Threatened species monitoring has been conducted annually by OnSite Environmental Management in accordance with the Flora and Fauna Monitoring Program (Cumberland Ecology, June 2016), targeting *Darwinia fascicularis* susp. *Oligantha*, *Melaleuca deanei*, *Kunzea rupestris* and *Tetratheca glandulosa*.

The OSEM Annual Threatened Species Monitoring Reports - May 2014 and August 2015, describe the annual flora survey conducted to assess potential quarry impacts and the success of regeneration works within two separate conservation areas at the Old Northern Road site:

- Area 1 contains the threatened species *Kunzea rupestris*, and an Endangered Population of *Darwinia fascicularis* subsp. *oligantha*; and
- Area 2 the Endangered Ecological Community Shale Sandstone Transition Forest (SSTF EEC) and threatened species *Tetratheca glandulosa*.

No observable changes in the *Kunzea rupestris* population was obvious compared to previous monitoring periods. No evidence was observed that quarry operations were impacting this species or surrounding vegetation. Overall the vegetation structure within the buffer zone is undisturbed by quarry operations and weed levels remain low. No evidence was observed that quarry operations were significantly contributing to the existing weed distribution within the SSTF buffer zone. The minimal occurrence of weeds within the EEC buffer

zone shows the effectiveness of weed control undertaken by Bush-It during the annual monitoring period. It is recommended that maintenance weeding continues within the buffer zone.

5.7.5 Conclusion – Rehabilitation

The Rehabilitation and Landscape Management Plan (Site Environmental Management Plan Appendix E - EP15) was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016). The rehabilitation of the disturbed areas of the Old Northern Road Quarry site will occur progressively as sand extraction is completed in operational areas.

Regeneration Works reports between 2013 and 2016 have concluded that the Old Northern Road Quarry site rehabilitation zones (zones 1 and 2) and plantings were continuing to develop strongly and native regeneration within the rehabilitation zones was progressing in a positive manner with the diversity and abundance of native species appearing to consistently increase. All the plantings in this area have a strong survival rate.

5.8 Traffic

[Development Consent 250-09-01 Schedule 2 condition 3.30 to 3.35C]

[Development Consent 250-09-01 Schedule 2 condition 6.3(g) and 6.3(h)]

5.8.1 Traffic Management Plan

[Development Consent 250-09-01 Schedule 2 condition 6.3(g)]

The Site Environmental Management Plan Appendix E - EP5 – Traffic and Transport Management and EP6 Hours of Operations, prepared to satisfy the requirements of The SEMP Appendix E - EP5 – Traffic and Transport Management and EP6 Hours of Operations, prepared to satisfy the requirements of condition 6.3(e) was approved by DIPNR in January 2005. EP5 - Traffic and Transport Management Plan outlines measures to minimise traffic impacts associated with the development and includes specific measures to minimise the impact of heavy vehicles, including restrictions on routes and times (particularly in relation to peak hours, holiday periods and times immediately before and after school hours, i.e. 8.30 am – 9.00am and 3.00pm – 3.30pm).

EP5 – Traffic and Transport Management has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

5.8.2 Transport Code of Conduct

[Development Consent 250-09-01 Schedule 2 condition 6.3(h)]

The Site Transport Management Plan: Maroota, forms the Code of Conduct for all drivers of trucks operating to and from the Old Northern Road Quarry site. All drivers undergo a Site Induction that includes the Site Transport Management Plan: Maroota and sign the Dixon Sand (Penrith) Pty Ltd Site Induction for Drivers form:

The development consent outlines specific requirements for quarry activities. It is in the interests of both the customers and Dixon Sand, that these requirements are met to allow the quarry to maintain operational compliance as well as a good and safe working environment.

RESPONSIBILITIES

I have read and understood Dixon Sands Site Traffic Management Plan (and attached Map).

Specifically:

- I am fully aware of my responsibilities as laid out in Dixon Sands Site Traffic Management Plan.*
- I agree to follow all site rules at Dixon Sands Maroota Quarry.*

- *I am fully aware of my responsibilities to notify Dixons of any hazards as addressed in point 19 of the Traffic Management Plan.*

In addition;

- *I have read and understood Dixon Sands Health and Safety Policy.*
- *I have read and understood Dixon Sands Alcohol and Drug Policy.*

I understand that this document may be used to provide information to the Department of Resource and Energy (DRE) and the Office of Environment and Heritage (OEH).

DECLARATION: I have read the above summary of responsibilities and have received a copy of all mentioned documents.

5.8.3 Environmental Assessment – Traffic and Transport

5.8.3.1 Environmental Assessment 2013

Apart from the Modification to Development Consent 250-09-01 Schedule 2 condition 3.30 to remove reference to Development Consent No.796/00/HE which is to be surrendered, no modification is proposed to the already approved truck movements to and from the Old Northern Road Quarry site and the approved conditions that applied to the extraction from Lots 29 and 196 remains unaltered.

Dixon Sand has monitored the number of trucks entering and leaving the Old Northern Road Quarry site and there were no exceedances of the approved truck numbers recorded between 2008 and 2013.

The annual environmental monitoring reports report a small number of complaints related to the conduct of truck drivers in the Maroota area and Dixon Sand has reprimanded the driver concerned and reiterated the truck management plan which applies to trucks entering and leaving the Old Northern Road site.

5.8.4 Traffic Management Procedures

The Traffic Management Procedures in the EP1 – Induction and Training and EP6 – Traffic and Transport Management are shown in Table 5.8.4.

Table 5.8.4: Traffic Management Procedures

| Management Measure | Management Measure Implementation | Status |
|---|---|------------------|
| Truck movements to and from the site not to exceed 180 per day. | Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.30(a). The maximum number of loaded truck movements recorded at the weighbridge per day was less than 180, between 2013 and 2016. | Compliant |
| Between 6:00am and 7:00am only 40 laden trucks allowed to enter or leave the site, and none prior to 5:45am at the front gate. | Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.30(b). The maximum number of loaded truck movements recorded at the weighbridge between 6.00am-7.00am each day was less than 40, between 2013 and 2016. | Compliant |
| All new truck drivers to be provided with <i>Site Induction for Drivers</i> form at the weighbridge and provided with the Site Traffic Management Plan and <i>Maroota Local Traffic Management Policy</i> . | Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.35A and Site Transport Management Plan: Maroota. All drivers undergo a Site Induction that includes the Site Transport Management | Compliant |

| Management Measure | Management Measure Implementation | Status |
|---|--|------------------------------|
| | Plan: Maroota, and sign the Site Induction for Drivers form. | |
| All loads must be fully tarped prior to final weighing, before leaving site | Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.5 and Site Traffic Management Plan: Maroota point 10. All loaded trucks observed during this audit had the loads covered. | Compliant Ongoing |
| 20 km/hr speed limit on internal haul roads | Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.35C and Site Transport Management Plan: Maroota point 7. Speed signs were present on the site and speed limits enforced. | Compliant Ongoing |
| All vehicles are to enter and leave the site in a forward direction. | Site Transport Management Plan: Maroota point 19 and Site Layout Plan. All trucks follow the directional signs (point 6) for loading and weighbridge access and exit from the site. | Compliant Ongoing |

5.8.4 Traffic Monitoring

[Development Consent 250-09-01 MOD 4 conditions 1.6, 3.5, 3.30 to 3.35C]

Truck movement data from the Old Northern Road Quarry site is recorded at the weighbridge with a record of the time of daily vehicle movements and volume of material entering and leaving the site. The truck movement and product tonnage data between 2013 and 2016 have been reported in the AEMR/Annual Returns and have exhibited compliance with the Development Consent 250-09-01 MOD 4 conditions 1.6, 3.5, 3.30 to 3.35C.

5.8.5 Conclusion

The Site Environmental Management Plan Appendix E - EP5 – Traffic and Transport Management and EP6 Hours of Operations prepared to satisfy the requirements of Development Consent 250-09-01 Schedule 2 condition 6.3(e) was approved by DIPNR in January 2005. The EP5 – Traffic and Transport Management was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016). The truck movement and product tonnage data between 2013 and 2016 has exhibited compliance with the Development Consent 250-09-01 MOD 4 conditions.

5.9 Heritage

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.52, 6.2(g) and 6.3(i)]

5.9.1 Heritage Management Plan

[EP11 - Heritage Management, Dixon Sand Site Environmental Management Plan]

The Site Environmental Management Plan prepared by ERM to satisfy the requirements of Development Consent 250-09-01 Schedule 2 condition 6.2 was approved by DIPNR on 15 January 2005. The Site Environmental Management Plan provides an environmental management framework, practices and procedures to for the operation of the Old Northern Road Quarry, including an environmental plan EP11 - Heritage Management.

The Site Environmental Management Plan was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E on the Site Environmental Management Plan at the date of this audit (November 2016).

EP11 - Heritage Management, June 2016 has also been reviewed and revised to address Development Consent 250-09-01 MOD 4 conditions to protect and manage any unexpected heritage items and archaeological material found on site. If any unidentified heritage or archaeological sites are found during operation:

- work likely to affect the unidentified heritage or archaeological sites is to cease;
- NSW Office of Environment & Heritage (OEH) is to be contacted on (02) 9995 5000 and OEH Email: info@environment.nsw.gov.au ; and
- necessary permits or consents are to be obtained prior to recommencement of work.

5.9.2 Environmental Assessment – Aboriginal Heritage

5.9.2.1 Environmental Assessment -2011 and 2013

The proposed Modifications MOD 3 and MOD 4 did not seek approval to extract material on Lots 29 and 196 outside the area previously approved in Development Consent 796/00/HE. That area has already been disturbed and it is unlikely that heritage items or archaeological sites would be encountered should the Modification be approved. Notwithstanding, condition 3.52 would ensure that appropriate measures are employed to protect the integrity of any such items of heritage or archaeological sites.

5.9.3 Conclusion

The EP11 – Heritage Management Plan, in Site Environmental Management Plan, Appendix A June 2016 was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments from DP&E on the Site Environmental Management Plan at the date of this audit (November 2016).

As no Aboriginal archaeological sites or areas of potential archaeological deposits were identified by the Environmental Assessments conducted for the Old Northern Road Quarry site, the operations on the site are managed in accordance with the procedure outlined in EP11 – Heritage Management, in Appendix A of the Site Environmental Management Plan, June 2016.

5.10 Bushfire

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(f)]

5.10.1 Bushfire Management Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(f)]

The Bushfire Management Plan, EP16 in Appendix A and the detailed Bushfire Management Plan in Appendix F of the Site Environmental Management Plan, was developed in consultation with Council and relevant emergency services to satisfy Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(f) and approved by DP&E on 1 November 2016.

The Bushfire Management Plan outlines mitigation measures to prevent the occurrence of unplanned bushfire and to minimise the danger of the spread of bushfires on or from Dixon Sand owned land.

The objectives of the Bushfire Management Plan are:

- Quarry activities on the Old Northern Road Quarry site are managed in the way that risk of human-induced fire outbreak is minimised;
- In the event of a bushfire outbreak, mitigation measures are in place to contain and prevent the fire from spreading;
- Liaise with and provide support to the RFS should a fire outbreak occurs on the quarry site; and
- Undertake appropriate investigation for any outbreak of fire to determine the cause and measures to prevent similar events from occurring.

The EP16 - Bushfire Management Plan is consistent with any bushfire management measures for State Forests and National Parks in the region to minimise the risk of damage to life, asset, properties, and the environment in the event of a bush fire.

5.10.2 Conclusion

The Bushfire Management Plan developed in consultation with The Hills Shire Council and relevant emergency services (RFS and SES) for the Old Northern Road Quarry, provides a clear and detailed strategy for the management of any outbreak of fire on the quarry site.

5.11 Waste

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.53 to 3.55]

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(j)]

5.11.1 Waste Management Plan

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 6.3(j)]

The Site Environmental Management Plan Appendix B – EP18 – Waste Management, prepared to satisfy the requirements of Development Consent No.250-09-01 Schedule 2 condition 6.3(j) was approved by DIPNR in January 2005. EP18 – Waste Management has been developed to minimise waste generated on the site, maximise reuse and recycling and ensure wastes are managed effectively, and minimise waste disposal, to reduce impact on the environment.

EP18 – Waste Management has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).

Waste management on site is recorded in a Waste Tracking Register that provides the waste type, amount, and waste contractors with a record of waste recycled and was disposal. In general, the segregated wastes are:

- waste oil was removed from the site by a licensed contractor (Australian Waste Oil) for refining and recycling;
- scrap metals were stored on-site in a scrap metal bin then transported by a licensed waste transporter and recycled at a licensed metal recycling facility (SIMS Metal);
- glass, paper, cardboard and plastic (general solid waste – non putrescible) were recycled via The Hills Shire Council fortnightly scheduled bin collection service;
- food waste and other general solid waste (putrescible) were disposed of and collected via The Hills Shire Council weekly scheduled bin collection;
- other bulky waste associated with workshop activities were disposed of in skip bins and transported offsite by a licensed waste transporter (Asquith Mini Skips);
- ablutions waste is treated in an onsite sewage treatment plant;
- used printer ink cartridges were disposed of at the designated drop off bin at the local Post Office;
- contaminated waste (e.g. spill material) is collected and transported by a licensed waste transporter (Asquith Mini Skips) and disposed of at the licensed waste facility which receives contaminated waste (SUEZ Environmental – Elizabeth Drive, Kemps Creek).

5.11.2 Conclusion

Wastes generated at the Old Northern Road Quarry site are managed and segregated for recycling / reuse or disposal and collected by licenced waste contractors. No building or putrescible wastes are disposed on the site. No offsite waste is received at the quarry for storage, treatment or processing.

5.12 Community Consultation

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 5.3 to 5.8]

Community Consultation Committee (CCC)

[Development Consent 250-09-01 MOD 4 Schedule 2 condition 5.3]

The Community Consultative Committee (CCC) was established to encompass the liaison requirements for both DA 796/00/HE, and the DA 250-09-01 and serves for both Old Northern Road Quarry and Haerses Road Quarry. The last official Liaison and Review Committee meeting and the first CCC Meeting in relation to the Old Northern Road Quarry, was held in November 2004. The CCC holds bi-annual meetings in May and November each year.

The appointments to the initial CCC were approved by DIPNR on 9 August 2004. The Secretary of the DP&E approved the current members of the CCC on 4 April 2016.

The CCC members comprise:

- An independent chairperson;
- Two representatives from Dixon Sand, including the Environmental Officer;
- A representative of The Hills Shire Council;
- A representative from the Maroota Public School;
- Two representatives from the local community; and

- Representatives from relevant government agencies, local community, local Aboriginal community, or other individuals who may be invited to attend (two representatives of DP&E attended the May 2016 meeting).

Matters covered and discussed in the CCC Meetings between 2013 and 2016 include:

- Works Accomplished at the Old Northern Road and Haerses Road Quarries in the Previous Six Months
- Monitoring Results for TEOM, static dust gauges, groundwater bores, sensitive receivers and noise.
- Bush Regeneration Works
- Site inspection of Haerses Road Old Northern Road Quarries.

6. Conclusions and Recommendations

The Independent Environmental Audit of the Dixon Sand Old Northern Road Quarry project at Maroota was conducted in November 2016 in accordance with Development Consent 250-09-01 MOD 4 Schedule 2 condition 4.11.

The Independent Environmental Audit assessed the status of the approval conditions on the date of the Old Northern Road Quarry site audit (i.e. November 2016) and also assessed the status of the Dixon Sand response to the Department of Planning and Environment Compliance Audit reported in December 2015. The Old Northern Road Quarry is considered to be operating generally in compliance with the conditions of the Development Consent 250-09-01 Modification 4.

The current Independent Environmental Audit identified five (5) Administrative Non-compliances and one (1) low risk non-compliance with a Development Consent 250-09-01 condition, at the date of this Independent Environmental Audit.

Administrative Non-Compliance

Technical non-conformances with Development Consent 250-09-01 condition that would not result in any risk or material harm to the environment.

| | | |
|---|---|---|
| <p>Schedule 2 condition 3.34</p> | <p><u>The Applicant shall advise its drivers and its clients not to arrive at the site prior to 5.45 am on any day.</u> Certified (under company seal) weighbridge dockets and a log book or equivalent <u>computer records are to be kept to verify the arrival and departure times of vehicles.</u> Copies of these records shall be summarized in the Annual Review.</p> | <p>Drivers and its clients are advised not to arrive at the Old Northern Road Quarry site prior to 5.45 am on any day in accordance with the approved Traffic Management Plan.</p> <p>Truck Movement Data for July 2015 to June 2016 have recorded the time-in of each truck arriving at the Old Northern Road Quarry site between 6.00am and 7.00am, and these records indicated that trucks had not arrived at site prior to 5.45am.</p> <p><u>Arrival time-in between 6.00am and 7.00 Monday to Friday is recorded for all trucks entering the site.</u></p> <p><u>Arrival time-in after 7.00am Monday to Friday is not recorded.</u> Weighbridge dockets record <u>departure time for every loaded truck that leaves the Old Northern Road Quarry site.</u></p> |
| <p>Schedule 2 condition 3.42</p> | <p>Loading of trucks and truck movements at the site must only be carried out between 6am and 6pm Monday to Saturday, and at no time on Sundays and Public Holidays.</p> <p>All other activities at the premises must only be carried out between 7am and 6pm Monday to Saturday, and at no times on Sundays and Public Holidays.</p> | <p>Refer to condition 3.34.</p> <p>Loading of trucks and truck movements at the site do not commence until 6.00am Monday to Saturday. <u>Drivers and its clients are advised not to arrive at the Old Northern Road Quarry site prior to 5.45 am on any day in accordance with the Development Consent 250-09-01 Schedule 2 condition 3.34 and approved EP5-Traffic Management Plan.</u></p> <p>Arrival times of vehicles at the Old Northern Road Quarry site are recorded on the Truck Movement Data Sheets recorded for each load at the weighbridge.</p> |

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| | Long Term Security of Offset | |
| Schedule 2 condition 3.49A | <u>By the end of June 2016, unless the Secretary agrees to extend this date, the Applicant shall make suitable arrangements to protect the Haerses Road Biodiversity Offset Area in perpetuity to the satisfaction of the Secretary.</u> | Arrangements to protect the Haerses Road Biodiversity Offset Area in perpetuity were in the process of execution with the Dixon Sand solicitor at the date of this audit (November 2016). |
| | Conservation Bond | |
| Schedule 2 condition 3.49C | <u>By the end of June 2016, unless the Secretary agrees to extend this date, the Applicant shall lodge a Conservation Bond with the Department to ensure that the Biodiversity Management Plan is implemented.....</u> | The Conservation Bond had not been lodged at the date of this audit (November 2016). The calculation of the cost of implementing the Biodiversity Management Plan is to be prepared by a specialist ecological consultant. Dixon Sand corresponded with DP&E in relation to the requirement for a 'quantity surveyor' to be employed 'to verify the calculated costs' and was advised that a 'quantity surveyor' must be commissioned in accordance with the condition, or to include any proposed change to use a Senior Ecologist should be addressed through a Modification to the Development Consent. |
| Schedule 2 condition 6.3(e) | A Rehabilitation and Landscape Plan to detail the proposed final land use and landform for the site and measures to be undertaken to create that landform and vegetation cover..... | xi. details of all backfilling works, including source of materials and the grades and stability of all batters. Batter design should be in accordance with the provisions of DCP No 500 – Extractive Industries, and certification is to be provided by appropriately qualified engineers regarding the stability of all designed batters. <u>Details of backfilling works were not available at the date of this audit.</u> |

Non-Compliance (Low Risk)

Development Consent 250-09-01 condition Low Risk - Non-compliance (i.e. Non-compliance with the potential for moderate environmental consequences, but is unlikely to occur, or, potential for low environmental consequence but is likely to occur)

| | | |
|--------------------------------------|---|--|
| Schedule 2 condition 3.11 | Any topsoil removed during operations must be stockpiled for use in the rehabilitation of the site. Topsoil should not be mixed with other overburden products. The topsoil stockpile location should have easy access and be protected from erosion. The topsoil stockpiles shall be sown with appropriate vegetation to stabilise the soil if they are to be stored for longer than six months. Topsoil stockpiles must have a maximum depth of 1.5 metres. | The approved EP15 - Rehabilitation and Final Landscape Management specifies that stockpiles are to be kept to less than 3m high, left for less than 12months and revegetated with non-invasive, sterile species. <u>A topsoil stockpile established in 1994, prior to the issue of Development Consent 796/00/HE is greater than 3m in height. This matter will be addressed in the next Modification to 250-09-01 when lodged.</u> |
|--------------------------------------|---|--|

Attachments

Attachment A **Development Consent 250-09-01 MOD 4 Conditions**

Attachment B **Environment Protection Licence 3916 Conditions**

Independent Environmental Audit – Old Northern Road Quarry, November 2016

Assessment of compliance at the date of this audit (i.e. November 2016) with the Development Consent 250-09-01 and Environment Protection Licence 3916 conditions, is expressed in these Attachments to the Independent Environmental Audit as:

| Status | Description |
|---------------------------------------|--|
| Compliant | Where verifiable evidence has been collected to demonstrate that the intent of the elements of the requirements of the regulatory approval and appropriateness of implementation against the Project Approval Condition has occurred. |
| Compliant COMPLETE | Where verifiable evidence demonstrates that the intent of the elements of the requirements of the regulatory approval and appropriateness of implementation against the Project Approval Condition has occurred, and the required activity has been completed for the project. |
| Compliant Ongoing | The intent and specific requirements of the condition have been met and the requirements are ongoing for the operation of project. |
| Administrative Non-compliance | A technical non-conformance with a condition of the consent that would not result in any risk or material harm to the environment (e.g. the submission of a report to government later than required under the approval conditions). |
| Non-Compliance – Low Risk | Non-compliance with the potential for moderate environmental consequences, but is unlikely to occur, or, potential for low environmental consequence but is likely to occur. |
| Non-Compliance – Moderate Risk | Non-compliance with the potential for serious environmental consequences but unlikely to occur, or, potential for moderate environmental consequence but likely to occur. |
| Non-Compliant – High Risk | Non-compliance with the potential for significant environmental consequences, regardless of the likelihood of occurrence. |
| Not active / Not triggered | A regulatory approval requirement / condition has an activation or timing that had not been triggered at the time of the audit, therefore a determination of compliance could not be made. |
| Noted | A statement or fact where no assessment of compliance is required. |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

Attachment A

Development Consent No. 250-09-01

DA 250-09-01 Mod 1 in February 2006 (marked in blue)

DA 250-09-01 Mod 2 in August 2008 (marked in red)

DA 250-09-01 Mod 3 in September 2012 (marked in green)

DA 250-09-01 Mod 4 in July 2015 (marked in purple)

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|--|-------------------|
| 1 | General | | | |
| | Obligation to Minimise Harm to the Environment | | | |
| 1.1 | In addition to meeting the specific performance criteria established under this consent, the Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the development. | | | Noted |
| | Scope of Development | | | |
| 1.2 | <p>Incorporates EPA General Term of Approval. The Applicant shall carry out the development generally in accordance with:</p> <p>aa) Environmental Impact Statement prepared by Southern Environmental Pty Limited, dated 1 June 1999, lodged with Council on 30 August 1999, and supplementary information received by Council on 22 November 1999, 4 January 2000 and 21 January 2000;</p> <p>a) development application No.250-09-01, lodged with the then Department of Urban Affairs and Planning on 21 September 2001;</p> <p>b) The extract from Chapter 2 and Chapter 5 of the <i>Maroota Quarry Extension – Environmental Impact Statement for Dixon Sand (Penrith) Pty Ltd</i> (one volume), dated August 2001 and prepared by Environmental Resources Management Australia Pty Ltd (ERM) forming Annexure "B" to this consent.</p> <p>c) Statement of Environmental Effects (SEE) titled <i>Sand Quarry on Lots 29, 196, 1 & 2 Old Northern Road, Maroota, Section 96 Consent Modification</i>, dated July 2005 and prepared by ERM;</p> <p>d) the material contained in Annexure "C" being:</p> <p>(i) ERM Figures 1-4 in relation to the staging of rehabilitation works;</p> <p>(ii) ERM Figures 5 and 6 in relation to the final landform; and</p> <p>(iii) SEE Figure 1.3 in relation to the final landform;</p> | <ul style="list-style-type: none"> Environmental Impact Statement prepared by Southern Environmental Pty Limited, dated 1 Jun 1999; <i>Maroota Quarry Extension – Environmental Impact Statement for Dixon Sand (Penrith) Pty Ltd</i>, ERM, Aug 2001 <i>Sand Quarry on Lots 29, 196, 1 & 2 Old Northern Road, Maroota, Section 96 Consent Modification</i>, ERM, Jul 2005 <i>Environmental Assessment Section 75W Modification DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i>, Nexus Environmental Planning Pty Ltd 8 Dec 2011 <i>Environmental Assessment Section 75W Modification DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i>, Nexus Environmental Planning 25 Oct 2013 | <p>The Old Northern Road Quarry is being developed generally in accordance with:</p> <ul style="list-style-type: none"> Environmental Impact Statement prepared by Southern Environmental Pty Limited, dated 1 June 1999; <i>Maroota Quarry Extension – Environmental Impact Statement for Dixon Sand (Penrith) Pty Ltd</i> (one volume), August 2001 (ERM) <i>Sand Quarry on Lots 29, 196, 1 & 2 Old Northern Road, Maroota, Section 96 Consent Modification</i>, July 2005 ERM; <i>Environmental Assessment Section 75W Modification DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i>, Nexus Environmental Planning Pty Ltd 8 December 2011; <i>Environmental Assessment Section 75W Modification (4) DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i>, Nexus Environmental Planning Pty Ltd 25 October 2013; | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|---|---------------|
| | <p>e) Modification Application 250-09-01 Mod 2 and the accompanying Statement of Environmental Effects titled “<i>Section 96 Modification for Dixon Sand Pty Ltd</i>” and dated August 2007;</p> <p>f) letters regarding the modification application 250-09-01 Mod 2 from ERM to the Department dated 1 April 2008 and 29 May 2008;</p> <p>g) Modification Application 250-09-01 Mod 3 and the accompanying Environmental Assessment titled <i>Environmental Assessment Section 75W Modification DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i> (2 volumes), prepared by Nexus Environmental Planning Pty Ltd (Nexus) and dated 8 December 2011; response to submissions prepared by from Nexus Environmental Planning Pty Ltd dated 17 July 2012; and the figure in Annexure E;</p> <p>h) Modification Application 250-09-01 Mod 4 and the accompanying Environmental Assessment titled <i>Environmental Assessment Section 75W Modification (4) DA 250-09-01 Dixon Sand (Penrith) Pty Ltd Old Northern Road Maroota</i> (2 volumes), prepared by Nexus and dated 25 October 2013; response to submissions prepared by Nexus dated 13 March 2014; letter prepared by Australian Groundwater Technology dated 21 January 2015; and reports prepared by Cumberland Ecology and dated 10 June 2014 and 30 April 2015, and i) conditions of this consent.</p> | <ul style="list-style-type: none"> Development Consent 250-09-01, MOD 4 | | |
| 1.3 | If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail over all other documents to the extent of any inconsistency. | | No significant inconsistencies were noted between the various environmental assessment documents approved under the Development Consent 250-09-01. | Not triggered |
| 1.3A | Extraction beneath 15.24 m below original ground level on Lot 196 DP 752025 is restricted to within the hatched area shown in the figure in Annexure E and to a depth not greater than 127.5 m Australian Height Datum. | | No extraction has occurred beneath 15.24 m below original ground level on Lot 196 DP 752025 within the hatched area shown in Development Consent 250-09-01 Annexure E, or to a depth greater than 127.5 m Australian Height Datum. | Compliant |
| 1.3B | Extraction on Lot 29 DP 752025 is limited to a depth not greater than 15.24 m below original ground level | <ul style="list-style-type: none"> Site Environmental Management Plan, EP9 Water Management, 2005 | Extraction was completed in Lot 29 DP 75205 in 2002, to a depth not greater than 15.24 m below original ground level (verified by survey). The resulting pits are currently used as settlement basins as part of the surface water management system for the Old Northern Road Quarry. Rehabilitation commenced on Lot 29 (i.e. reinstatement of Natural Vegetation Corridor) as required in Mod 4. | Compliant |
| 1.3C | Extraction on Lots 1 and 2 DP 547255, with the exception of the MTSGS buffer zone, is limited to a depth not greater than 170 m AHD in the east, grading to 153 m AHD in the west, and as shown conceptually in Annexure F. | | Extraction has only occurred on the western boundary of Lot 1 and Lot 2, adjacent to Lot 29 (where extraction was completed in 2001). | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance | | | | | | | | | | |
|--------------------------|--|--|--|-------------------|-----------------------|--------------------------|---------|--------------------------|------------|------------------|------------|------------------|------------|-----------|
| 1.3D | The Applicant shall ensure that no extraction occurs with 2 metres of the highest recorded wet weather groundwater level within the MTSGS buffer. | | No extraction had occurred within 2 metres of the highest recorded wet weather groundwater level within the MTSGS buffer at the date of this audit (November 2016). | Compliant | | | | | | | | | | |
| | Surrender of Development Consent 796/00/HE | | | | | | | | | | | | | |
| 1.4 | (deleted) | | | | | | | | | | | | | |
| | Period of Approval | | | | | | | | | | | | | |
| 1.5 | This consent provides approval for quarry operations on the site until 24 May 2022 and for the: a) continued use of processing facilities, haul roads, water management, weighbridge, offices, and associated infrastructure on site; b) transport of extracted sand and concrete product to the site, and sand product from the site; and c) decommissioning of equipment, rehabilitation and revegetation of the site, for a period of twenty-five (25) years from the commencement of the development consent for the Haerses Road quarry (DA 165-7-2005). | | This Development Consent provides approval for quarry operations on the Old Northern Road Quarry site until 24 May 2022. | Compliant Ongoing | | | | | | | | | | |
| | Limits of Production | | | | | | | | | | | | | |
| 1.6 | The combined production of quarry products from the site (Lots 196 and 29 DP752025, and Lots 1 and 2 DP 547255, Old Northern Road, Maroota) and from the Haerses Road sand quarry shall not exceed 495,000 tonnes per annum. | | <table><tr><th>Year</th><th>Total Product Tonnage</th></tr><tr><td>Financial Year 2012-2013</td><td>392,049</td></tr><tr><td>Financial Year 2013-2014</td><td>440,657.15</td></tr><tr><td>Fiscal Year 2015</td><td>464,557.57</td></tr><tr><td>Fiscal Year 2016</td><td>492,257.75</td></tr></table> | Year | Total Product Tonnage | Financial Year 2012-2013 | 392,049 | Financial Year 2013-2014 | 440,657.15 | Fiscal Year 2015 | 464,557.57 | Fiscal Year 2016 | 492,257.75 | Compliant |
| Year | Total Product Tonnage | | | | | | | | | | | | | |
| Financial Year 2012-2013 | 392,049 | | | | | | | | | | | | | |
| Financial Year 2013-2014 | 440,657.15 | | | | | | | | | | | | | |
| Fiscal Year 2015 | 464,557.57 | | | | | | | | | | | | | |
| Fiscal Year 2016 | 492,257.75 | | | | | | | | | | | | | |
| 1.7 | Processing of extracted sandstone on the site shall not exceed 1750 tonnes per day. | | Processing of extracted sandstone on the site has not exceeded 1750 tonnes per day. The rated throughput of the processing plant is a maximum of 130 tonnes per hour. | Compliant | | | | | | | | | | |
| 1.8 | The Applicant shall provide annual production data to the DRE using the standard form for the purpose | <ul style="list-style-type: none">Form S1 Return for Extractive Materials, Year End 30 June 2016 | Annual production data has been provided to DRE on the standard Form S1 for each year production. | Compliant | | | | | | | | | | |
| | Provision of Documents | | | | | | | | | | | | | |
| 1.9 | Where practicable, the Applicant shall provide all draft documents and reports required to be submitted to the Secretary under this | | All draft documents and reports developed for the Dixon Sand quarries to satisfy Development Consent 250-09- | Compliant Ongoing | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|---|-------------------|
| | consent in an appropriate electronic format. Final approved documents shall be provided in hard copy format. Provision of documents and reports to other parties, as required under this consent, shall be in a format acceptable to those parties and shall aim to minimise resource consumption. | | 01 MOD 4, that were required to be submitted to the Secretary of DP&E under this consent have been provided in an electronic format (pdf). Final approved documents will be provided in a format agreed with the Secretary. <i>Noted: In the DP&E Audit (December 2015) this was ranked an Administrative Non-Compliance as the "Final approved documents had not been provided in hard copy format". Dixon Sands will address this matter in a Modification to the Development Consent.</i> | |
| 1.10 | Nothing in this consent prevents the Applicant from combining reporting requirements under this consent with identical or similar reporting requirements for submission to another relevant party. | | | Noted |
| | Access to Information | | | |
| 1.11 | <p>The Applicant shall:</p> <p>(a) make the following information publicly available on its website:</p> <ul style="list-style-type: none"> all documents listed in condition 1.2; current statutory approvals for the project; approved strategies, plans or programs; a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; a complaints register, updated on a quarterly basis; minutes of CCC meetings; copies of Annual Reviews for the past 5 years; any independent environmental audit, and the Applicant's response to the recommendations in any audit; any other matter required by the Secretary; and <p>(b) keep this information up-to-date, to the satisfaction of the Secretary.</p> | <ul style="list-style-type: none"> www.dixonsand.com.au | <p>The Dixon Sand website provides access to the documentation listed in condition 1.11.</p> <ul style="list-style-type: none"> Documents listed in condition 1.2 are available through a link to www.planning.nsw.gov.au/; Consolidate Development Consent 250-09-01 MOD 4 and Environment Protection Licence 3916; Approved Site Environmental Management Plans; Monitoring results for air quality, noise, water quality 2013 to 2016; Complaints register 2010 to 2016; Minutes of CCC Meetings 2010 to 2016; Annual Environmental Management Reports / Annual Reviews for 2010-2011 to 2014-2015; Independent Environmental Audit, 2012. | Compliant Ongoing |
| | Dispute Resolution | | | |
| 1.12 | In the event that a dispute arises between the Applicant and a public authority other than the Department, in relation to a specification or requirement applicable under this consent, the Applicant shall refer the matter to the Secretary, and if not resolved, to the Minister, whose determination of the dispute shall be final and binding on all parties. For the purpose of this condition, "public authority" has the same meaning as provided under section 4 of the Act. | | No disputes between Dixon Sand and public authorities have occurred, requiring reference to the DP&E for resolution. | Not triggered |
| | Participation in Cumulative and Regional Studies | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|---|---------------|
| 1.13 | The Applicant shall provide all existing relevant information to assist the Secretary in any cumulative/regional studies related to extractive industry activities | | No requests for information in relation to cumulative / regional studies have been received from the DP&E. | Not triggered |
| | Fit and Proper Person | | | |
| 1.14 | The Applicant must, in the opinion of the EPA , be a fit and proper person to hold a licence under the Protection of the Environment Operations Act 1997, having regard to the matters in s.83 of that Act. | <ul style="list-style-type: none"> <i>Protection of the Environment Operations Act 1997</i> | The EPA granted Environment Protection Licence No. 3916 to David Dixon of Dixon Sand (Penrith) Pty Ltd on 6 September 1999 in accordance with the <i>Protection of the Environment Operations Act 1997</i> section 55 and 83. | Noted |
| | Rehabilitation Bond | | | |
| 1.15 | <p>Prior to commencement of operations on Lots 1 and 2 DP 547255, the Applicant shall provide a Rehabilitation Bond in the sum of \$255,000 in the form of an insurance bond or bank guarantee acceptable to the Secretary from any bank licensed pursuant to the <i>Banking Act 1959 (Cth)</i>. The Rehabilitation Bond shall be made in favour of the Minister administering the <i>Environmental Planning and Assessment Act 1979</i> to ensure completion of the rehabilitation and landscaping works at the site. The sum of the Rehabilitation Bond is calculated based on \$3.00 per square metre for a maximum exposed area of 8.5 ha. Should progressive Annual Reviews or Independent Environmental Audits determine that the exposed, non-rehabilitated, area on the site is greater than 8.5 ha, the Secretary may direct the Applicant to increase the value of the Rehabilitation Bond at the rate of \$3.00 per square metre in excess of 8.5 ha.</p> <p>The Secretary may at any time, and without notice to the Applicant, demand all or part of the monies available under the Rehabilitation Bond if, in the Secretary's opinion, the Applicant has failed to make satisfactory progress on the Rehabilitation and landscaping of the site. The Secretary shall apply the monies to ensure that the actions specified in the documents listed in condition 1.2 and/or any approved Site Environmental Management Plan are achieved. The Rehabilitation Bond will be released when the Applicant submits documentation prepared by a qualified landscape and rehabilitation consultant certifying that the final rehabilitation has been completed in accordance with the conditions of this consent and/or any approved Site Environmental Management Plan to satisfaction of the Secretary.</p> | <ul style="list-style-type: none"> Bank Guarantee - Rehabilitation Bond \$255,000 to DIPNR, 1 Sep 2004. | A Bank Guarantee for the Rehabilitation Bond was submitted to DIPNR for \$255,000 on 1 September 2004. | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|---|
| 1.15A | <p>The Applicant shall:</p> <p>(a) by 31 December 2012, lodge with the Department an additional Rehabilitation Bond in a form suitable to the Department, for the amount of \$327,000, to supplement the bond provided under condition 1.15; and</p> <p>(b) prior to any vegetation clearing associated with Mod 4, lodge with the Department an additional Rehabilitation Bond in a form suitable to the Department, for the amount of \$130,500, to supplement the bond under conditions 1.15 and 1.15A(a).</p> <p><i>Note: The provisions of condition 1.15 relating to the release of the Rehabilitation Bond and the demand of monies available under the Rehabilitation Bond shall also apply to the Rehabilitation Bond required under this condition.</i></p> | <ul style="list-style-type: none"> Email re from Dixon Sand re Rehabilitation Bond for MOD 4, 8 April 2013 Email re from Dixon Sand re Rehabilitation Bond for MOD 4, 22 Jul 2015 | <p>(a) Following approval of Development Consent 250-09-01 MOD 3 the rehabilitation bond for an additional \$327,000.00 was lodged on 8 April 2013. (The lodgement of the rehabilitation bond on 8 April 2013 was not compliant with the requirement of condition 1.15(a) that required to the bond to lodged by 31 December 2012).</p> <p>(b) A further rehabilitation bond lodgement of \$130,500.00 occurred on 27 August 2015 to supplement the bond under conditions 1.15 and 1.15A(a).</p> | <div>Administrative Non-Compliance</div> <div>Compliant</div> |
| 2 | Compliance | | | |
| 2.1 | The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities | <ul style="list-style-type: none"> Dixon Sand (Penrith) Pty Ltd Site Induction Checklist, section 22 | Employee and contractor Inductions provide sections on environmental commitments and compliance with conditions of consent for site activities. | Compliant |
| 2.2 | Prior to commencement of operations on Lots 1 and 2, DP 547255, the Applicant shall commission an independent person(s) or organization(s), approved by the Secretary , to certify in writing to the satisfaction of the Secretary , that the Applicant has complied with all conditions of this consent applicable prior to that event. | <ul style="list-style-type: none"> Letter from DP&I re Approval of Auditor by Director-General, Dec 2004 Sand Quarry Lots 1 & 2, DP547255 Pre-commencement Compliance Audit, Onsite Environmental Management, Jan 2005 Letter to DIPNR re Submission of Compliance Audit, 28 Jan 2005 | <p>Onsite Environmental Management (David Bone) was approved by DIPNR to conduct the Compliance Audit of Old Northern Road Quarry prior to commencement of operations on Lots 1 and 2, DP 547255.</p> <p>The audit concluded that the site was in full compliance with the conditions of consent and EPL requirements for Lots 1 and 2, DP 547255.</p> | Compliant COMPLETE |
| 2.3 | Notwithstanding condition 2.2 of this consent, the Secretary may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Secretary and be submitted within such reasonable period as the Secretary may agree. | | No update to the report on compliance was required by the Director-General. | Noted |
| 2.4 | Any compliance report or compliance update required under condition 2.2 or 2.3 of this consent shall be made available for public inspection on request. | | The Compliance Audit Report by Onsite Environmental Management is available at the Dixon Quarry office. | Noted |
| 2.5 | <p>The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:</p> <p>(a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this consent; and</p> <p>(b) the implementation of any actions or measures contained in these documents.</p> | <ul style="list-style-type: none"> Letter from DP&E re Comments on Management Plans, 20 Jul 2016 Letter from DP&E re Comments on Revised Management Plans, 1 Nov 2016 | <p>(a) Responses from the DP&E in relation to the Department's assessment of the environmental management plans prepared/revised for MOD 4 were received and responded to by Dixon Sand during 2016.</p> <p>(b) See (a) - the implementation of actions and measures contained in these documents</p> | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|--|
| 3 | ENVIRONMENTAL PERFORMANCE | | | |
| | Setbacks and Buffer Zones | | | |
| 3.1 | <p>Prior to commencement of operations on Lots 1 and 2, DP 547255, the Applicant shall engage a registered surveyor to mark out buffer zones and setbacks generally in accordance with the provisions of Baulkham Hills Development Control Plan 500 relating to extractive activities at the date of this consent. In this regard, a buffer zone shall be established which excludes areas from extraction between the quarry and nearby land uses or sensitive environmental areas. The boundary of the buffer zone(s) shall be located:</p> <p>a) Not less than 250 m from the boundary of Maroota Public School (Lot 78 DP 752025);</p> <p>b) Not less than 10 m from the boundary of Lot 117 DP 752025;</p> <p>c) Not less than 50 m from the existing house on Lot 1 DP 547255;</p> <p>d) Not less than 50 m from the <i>Kunzea rupestris</i> plant species on Lot 29 DP 752025;</p> <p>e) Not less than 10 m from the western boundary of Lot 196 DP 752025; and</p> <p>f) Not less than 100 m from the mapped extent of the MTSGS, with the exception of the area shown in thick grey edging in the figure in Annexure F in the north of Lot 1 DP 547255.</p> <p>A survey plan of the buffer zone and setback boundary shall be submitted to the Secretary for approval at least one month prior to the commencement of operations on Lots 1 and 2, DP 547255. Once approved, the surveyed boundary and buffer zone shall be fenced to prevent vehicles and unauthorized persons entering the area(s). No works or operations on Lots 1 and 2, DP 547255 shall occur on the site until the approved boundary has been fenced.</p> | <ul style="list-style-type: none"> Survey Plan No. 26706LL / DWG267GW, Matthew & Peter Freeburn, Registered Surveyors, 23 Aug 2004 Letter from DIPNR re Approval of the Survey Plan for Setbacks and Buffer Zones, 11 Nov 2004 Survey Plan – Old Northern Road Quarry, McKinlay Morgan & Associates Pty Ltd, Sep 2015 Letter to DP&E re DA 250-09-01 Schedule 2 Condition 3.1 Setbacks and Buffer Zones, 29 Sep 2015 | <p>The initial Survey Plan No. 26706LL/DWG267GW, prepared by Matthew & Peter Freeburn, Registered Surveyors, dated 23 August 2004 was submitted to DIPNR and approved on 11 November 2004.</p> <p>McKinlay Morgan & Associates Pty Ltd Consulting Surveyors were commissioned to prepare a Survey Plan of Old Northern Road Quarry Lots 1 and 2, DP 547255 showing marks placed for extraction buffer zones around the proposed quarrying activities on Lots 1 and 2, DP 547255. The Survey Plan was submitted to DP&E on 29 September 2016.</p> <p>The buffer zones have been set in accordance with condition 3.1(a) to (g) and the boundaries identified on site with pickets and yellow tape. The boundary marker has been installed to minimise disturbance to natural vegetation along the alignment of the buffer boundaries.</p> <p>The installation of a boundary fence along the alignment of the buffer zone had not occurred at the date of this audit (November 2016) as it was considered that disturbance of vegetation that would occur from the erection of the fence would result in destruction of the natural vegetation communities and surface disturbance, and would not necessarily prevent entry of any unauthorised persons or vehicles.</p> <p>The non-disturbance of the vegetation along the approved boundary is considered a positive protection measure for the natural vegetation and would not 'invite' community interest in the fenced off area.</p> <p>Although not compliant with Development Consent condition 3.1 it is recommended that the condition be reviewed and the requirement for fencing of the whole area be revised and a plan for the protection of the vegetation and quarry operations be developed to meet the intent of the condition without requiring the approved boundary to be fully fenced.</p> | <div>Compliant</div> <div>Non-Compliant (Low Risk)</div> |
| | Air Quality Impacts | | | |
| | Location of monitoring/discharge points | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|-------------------------|--|-----------------------------------|---|--|---|-----------|-------------------------------------|---------|-----------|------------------|---------------------------------|---------------------------------|----------------|--------|---------------------------|---------------------------|---|--|-----------|
| 3.2 | <p>Incorporates an EPA General Term of Approval. The following points referred to in the table below are identified for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.</p> <table><tr><th>ID No.</th><th>Type of Monitoring Point</th><th>Description of Location</th></tr><tr><td>1</td><td>Ambient Air Monitoring</td><td>To be determined between EPA and the Applicant</td></tr></table> | ID No. | Type of Monitoring Point | Description of Location | 1 | Ambient Air Monitoring | To be determined between EPA and the Applicant | <ul style="list-style-type: none">Environment Protection Licence No. 3916, dated 27 April 2015 | <p>Environment Protection Licence No. 3916 identified EPA monitoring point 2 Ambient air monitoring site located near the Maroota Public School as marked in "Figure 1.3 - Existing and Proposed Development", provided to the DEC on 30 November 2004. The dust deposition gauge and TEOM monitoring is being conducted in accordance with EPL 3916 condition P1.1 and M2.2. Monitoring locations are shown on Figure 1.3 of the AEMR / Annual Review.</p> | Compliant | | | | | | | | | | | | | |
| ID No. | Type of Monitoring Point | Description of Location | | | | | | | | | | | | | | | | | | | | | |
| 1 | Ambient Air Monitoring | To be determined between EPA and the Applicant | | | | | | | | | | | | | | | | | | | | | |
| | Air Quality Standards/Goals and Performance Criteria | | | | | | | | | | | | | | | | | | | | | | |
| 3.3 | <p>The Applicant shall ensure that dust emissions from the development do not cause exceedances of the following ambient air quality standards/goals at affected residences and Maroota Public School:</p> <p>Table 1 Particulate Matter Criteria</p> <table><tr><th>Pollutant</th><th>Standard /Goal</th><th>Agency</th></tr><tr><td>Total Suspended Particulate Matter (TSP)</td><td>90ug/m³ (annual mean)</td><td>NHMRC</td></tr><tr><td rowspan="2">Particulate Matter < 10um (PM₁₀)</td><td>30 ug/m³ (annual mean)</td><td>NSW EPA</td></tr><tr><td>50ug/m³ (24 hr average)</td><td>NSW EPA</td></tr></table> <p>Table 2 NSW EPA Amenity Based Criteria for Dust Fallout</p> <table><tr><th>Pollutant</th><th>Averaging Period</th><th>Max. increase in Deposited Dust</th><th>Max. 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> | Pollutant | Standard /Goal | Agency | Total Suspended Particulate Matter (TSP) | 90ug/m ³ (annual mean) | NHMRC | Particulate Matter < 10um (PM ₁₀) | 30 ug/m ³ (annual mean) | NSW EPA | 50ug/m ³ (24 hr average) | NSW EPA | Pollutant | Averaging Period | Max. increase in Deposited Dust | Max. Total Deposited Dust Level | Deposited Dust | Annual | 2 g/m ² /month | 4 g/m ² /month | <ul style="list-style-type: none">Annual Review 2014 – 2015Annual Review 2015 – 2016Environmental Monitoring Locations Figure 1.3, Old Northern Road AD 250-09-01 | <p>Air quality monitoring is conducted in accordance with the requirements in Environment Protection Licence 3916 for PM₁₀ and dust deposition and at additional environmental monitoring locations for dust deposition shown on Figure 1.3 Environmental Monitoring Locations in the Annual Reviews. Deposited dust results were generally compliant during 2013 and 2016.</p> <p>The annual PM₁₀ average for the 2015-2016 reporting period was 11.6µg/m³, well below the EPA criterion of 30µg/m³. This annual average is lower than the previous monitoring periods where the annual PM₁₀ averages were recorded at 13.4 µg/m³ (2014-2015), 15.4 µg/m³ (2013-2014) and 12.3 µg/m³ (2012-2013). The 24 hour PM₁₀ dust levels on the site have largely been satisfactory during the reporting period. The exceedances in November 2015, April 2016 and May 2016 were attributed to dry and hot westerly winds and scheduled RFS hazard reduction burns and a dust storm that passed through the Maroota area.</p> | Compliant |
| Pollutant | Standard /Goal | Agency | | | | | | | | | | | | | | | | | | | | | |
| Total Suspended Particulate Matter (TSP) | 90ug/m ³ (annual mean) | NHMRC | | | | | | | | | | | | | | | | | | | | | |
| Particulate Matter < 10um (PM ₁₀) | 30 ug/m ³ (annual mean) | NSW EPA | | | | | | | | | | | | | | | | | | | | | |
| | 50ug/m ³ (24 hr average) | NSW EPA | | | | | | | | | | | | | | | | | | | | | |
| Pollutant | Averaging Period | Max. increase in Deposited Dust | Max. Total Deposited Dust Level | | | | | | | | | | | | | | | | | | | | |
| Deposited Dust | Annual | 2 g/m ² /month | 4 g/m ² /month | | | | | | | | | | | | | | | | | | | | |
| | Dust Emissions | | | | | | | | | | | | | | | | | | | | | | |
| 3.4 | <p>Incorporates an EPA General Term of Approval. The site must be maintained in a condition which minimizes or prevents the emission of dust from the site, including the prompt and effective rehabilitation of all disturbed areas.</p> | <ul style="list-style-type: none">Site Environmental Management Plan, Jan 2005Site Environmental Management Plan, Jun 2016EP13 Air Quality Management | <p>The management of dust generation from the site occurs in accordance with the Site Environmental Management Plan EP13 - Air Quality Management, and demonstrate that site management of dust generation has been effective. Two water carts are available on site and sprinklers are available on stockpiles. A road sweeper is available for use on the paved public roads as required.</p> | Compliant | | | | | | | | | | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|--------------------------|
| 3.5 | To prevent dust emissions from vehicles the Applicant shall ensure that all vehicles entering or leaving the site, carrying a load that may generate dust, are covered to prevent dust emissions at all times, except during loading and unloading. Vehicles leaving the site carrying a load that may generate dust, are to be covered prior to final weighing. | <ul style="list-style-type: none"> Site Traffic Management Plan Maroota – EP1.3 | <p>All trucks leaving the site were observed to have the loads covered in accordance with the Site Traffic Management Plan item 12.</p> <p>The weighbridge operator checks trucks leaving the site at the time of final weighing of the load.</p> | Compliant |
| 3.6 | The Applicant shall install, operate, and maintain dust control measures and/or equipment on the following areas at the site: <ul style="list-style-type: none"> a) All processing equipment; b) Internal haul roads and disturbed areas; c) Truck loading areas; and d) All stockpiles including raw material, product, topsoil, and overburden | | Dust control measures at the site are present on all processing equipment, with sprinklers available on stockpiles and water tankers used as required internal haul roads and disturbed areas, truck loading areas, and stockpile areas. | Compliant |
| 3.7 | A mobile water tanker equipped with a pump and sprays must be provided to suppress dust from unsealed roads when in use. | | Two mobile water tankers are available on site as required to suppress dust from unsealed roads when in use. | Compliant |
| 3.8 | Haul roads must be surfaced in selected hard, non-friable material. Soft mudstone, claystone and shale must not be used. | | Internal haul roads are surfaced with hard materials to reduce potential for dust generation. | Compliant |
| | Soil and Land Management | | | |
| 3.9 | <i>(deleted)</i> | | | |
| 3.10 | The Applicant shall minimise the removal of trees and other vegetation from the project site, and restrict any clearance to the areas occupied by quarrying activities, processing plant, and those areas necessary for fire control | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Site Environmental Management Plan, Jun 2016 EP14 Flora and Fauna Management | Removal / clearance of trees and other vegetation from the site has been restricted to the areas required for quarrying activities, processing plant area, and any areas necessary for fire control. | Compliant |
| 3.11 | Any topsoil removed during operations must be stockpiled for use in the rehabilitation of the site. Topsoil should not be mixed with other overburden products. The topsoil stockpile location should have easy access and be protected from erosion. The topsoil stockpiles shall be sown with appropriate vegetation to stabilise the soil if they are to be stored for longer than six months. Topsoil stockpiles must have a maximum depth of 1.5 metres. | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Site Environmental Management Plan, Jun 2016 EP15 Rehabilitation and Final Landscape Management | EP15 - Rehabilitation and Final Landscape Management specifies that stockpiles are to be kept to less than 3m high, left for less than 12months and revegetated with non-invasive, sterile species. A topsoil stockpile established under Development Consent 250-09-01 that was greater than 3m in height has been reshaped to less than 3m (after the DP&E Audit). | Compliant |
| | | | A topsoil stockpile established in 1994, prior to the issue of Development Consent 796/00/HE is greater than 3m in height. This matter is being addressed in the next Modification to 250-09-01. | Non-Compliant (Low Risk) |
| 3.12 | The Applicant shall complete rehabilitation and revegetation works of extracted strips to a point requiring only ongoing monitoring and management before commencement of works on the extraction strip following the next strip in the extraction sequence. Strips 5 | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 | Limited revegetation has been undertaken on the quarried areas of the site as extraction continues to occur on much of the disturbed areas. Extension of the | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance | | | | | | | | | | | | | | |
|---------------------------|---|---|---|-------------------|---------------------------------------|---|---------------------------------------|---|---------------------------------------|---|---------------------------------------|---|---|---|---|--|---|--|
| | <p>and 6 shall be rehabilitated before the end of the period of approval for extraction under condition 1.5. In this regard, strips shall be rehabilitated in the following sequence:</p> <table><tr><th>Strip to be rehabilitated</th><th>Before event</th></tr><tr><td>1</td><td>Commencement of operations on strip 3</td></tr><tr><td>2</td><td>Commencement of operations on strip 4</td></tr><tr><td>3</td><td>Commencement of operations on strip 5</td></tr><tr><td>4</td><td>Commencement of operations on strip 6</td></tr><tr><td>5</td><td>End of period of approval (condition 1.5)</td></tr><tr><td>6</td><td>End of period of approval (condition 1.5)</td></tr></table> | Strip to be rehabilitated | Before event | 1 | Commencement of operations on strip 3 | 2 | Commencement of operations on strip 4 | 3 | Commencement of operations on strip 5 | 4 | Commencement of operations on strip 6 | 5 | End of period of approval (condition 1.5) | 6 | End of period of approval (condition 1.5) | <ul style="list-style-type: none">Site Environmental Management Plan, Jun 2016EP8 Buffer Zones and Protection of Adjoining LandsEP15 Rehabilitation and Final Landscape Management | Stage 1 area was granted under Development Consent 250-09-01 MOD 3. Progressive rehabilitation has commenced on Lot 196 and the natural vegetation corridor has commenced on Lot 29 near the <i>Kunzea rupestris</i> Conservation Area. | |
| Strip to be rehabilitated | Before event | | | | | | | | | | | | | | | | | |
| 1 | Commencement of operations on strip 3 | | | | | | | | | | | | | | | | | |
| 2 | Commencement of operations on strip 4 | | | | | | | | | | | | | | | | | |
| 3 | Commencement of operations on strip 5 | | | | | | | | | | | | | | | | | |
| 4 | Commencement of operations on strip 6 | | | | | | | | | | | | | | | | | |
| 5 | End of period of approval (condition 1.5) | | | | | | | | | | | | | | | | | |
| 6 | End of period of approval (condition 1.5) | | | | | | | | | | | | | | | | | |
| 3.13 | The Applicant shall undertake all rehabilitation works and construction of the final landform of the eastern highwall of the quarry within 250m of Maroota Public School in school holiday periods only. | | | Not yet triggered | | | | | | | | | | | | | | |
| 3.14 | The Applicant shall implement appropriate measures, in consultation with DRE and Maroota Public School, to ensure public safety and restrict unsupervised access of school children to the quarry site. Those measures may include the erection of safety fencing around the high-wall of the quarry or at the school boundary as well as the fencing referred to in condition 3.1. | <ul style="list-style-type: none">Summary of Meeting with Principal of Maroota School,1 Dec 2004 | Fencing of the boundary of the Maroota School and Dixon Sand property is in place with Warning / Keep Out signs posted each 10 metres along the fence alignment. | Compliant | | | | | | | | | | | | | | |
| 3.15 | The Applicant shall regularly consult with adjoining property owners to ensure property management issues including maintenance of common fences, weed control measures, and bushfire management are coordinated. Details of consultation are to be reported in the Annual Review. | <ul style="list-style-type: none">Dixon Sand Community / Stakeholder Liaison RegisterAnnual Review 2015-2016 section 7 | Regular meetings / consultation has occurred with the local community and Maroota Public School. A summary of the Stakeholder / Community meetings is recorded in the Community / Stakeholder Liaison Register and outlined in the Annual Review 2016 section 7. | Compliant | | | | | | | | | | | | | | |
| 3.16 | The Applicant shall establish a riparian zone, revegetated with local native species, along the entire length of the reconstructed ephemeral waterway on the quarry extension site. The riparian zone shall be no less than 20m wide measured horizontally and at right angles to the flow from the top of both banks. No exotic plant species, other than sterile cover crops, are to be planted in the riparian zone. | <ul style="list-style-type: none">Rehabilitation and Landscape Management Plan, Dec 2007Rehabilitation and Landscape Management Plan, Oct 2016 | The establishment of a riparian zone revegetated with local native species is outlined in the Rehabilitation and Landscape Management Plan. The establishment of this riparian zone will occur as the quarry development allows (I.e. when the reconstruction of the ephemeral waterway occurs). | Not yet triggered | | | | | | | | | | | | | | |
| | Water Quality Impacts | | | | | | | | | | | | | | | | | |
| | Pollution of waters | | | | | | | | | | | | | | | | | |
| 3.17 | Except as may be expressly provided by a licence under the Protection of the Environment Operations Act 1997 in relation of the development, section 120 of the Protection of the Environment | Protection of the Environment Operations Act 1997 | Water discharged from the Old North Road Quarry site occurs from the main storage dam weir discharge point 1 labelled as "2 Water" on map titled 'Figure 1 Location & Discharge Points - Dixon Sand Maroota'. Discharge | Compliant Ongoing | | | | | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|---|--------------------------|
| | <i>Operations Act 1997</i> must be complied with in connection with the carrying out of the development. | | water quality is monitored as a grab sample daily during discharge. A discharge of 0.5ML occurred on 27 August 2016. Monitoring results confirmed compliance with EPL condition M2.3 (pH 5.33; Total Suspended Solids 5mg/l; Turbidity 4.6 NTU). | |
| | Surface Water | | | |
| 3.18 | The stormwater system must be designed and installed in accordance with <i>Managing Urban Stormwater: Soil and Conservation</i> , Department of Housing 1998, to contain and treat all rainfall and runoff at the site resulting from a 90 percentile, 5day rainfall event ("the design event"). | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Site Environmental Management Plan, Jun 2016 EP9 Water Management | The original design for Lots 29 and 196 soil conservation, surface water runoff and stormwater management system was submitted DIPNR in 1999. Soil conservation, surface water runoff and stormwater management system for Lots 1 and 2 DP 547255 were prepared by ERMA in 2002 and implemented at the site. | Compliant Ongoing |
| 3.19 | The Applicant must maintain stormwater basins with the capacity to contain all rainfall and runoff generated from the "design event" specified in condition 3.18. | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Site Environmental Management Plan, Jun 2016 EP9 Water Management | Rainfall on the site is captured in sediment ponds or extraction areas that have the capacity to contain all rainfall and runoff generated from the "design event" and the water is reused on site for dust control and processing of product. | Compliant Ongoing |
| 3.20 | The Applicant must take all practical measures to avoid or minimise total suspended solids contained in wet weather discharges from the site. | | All surface water runoff on the site and the stormwater management system retains water for settlement of suspended solids and the supernatant is reused on site when practicable. Release of water from the site only occurs during extreme rainfall events in excess of the design event specified in condition 3.18. Two discharge events in 2015 (29 January and 23 April) and one event during 2016 (27 August) have occurred due to prolonged rainfall periods. Water monitoring occurred, and the EPA notified of the TSS results in accordance with EPL 3916 condition R3. | Ongoing |
| 3.21 | The Applicant shall undertake appropriate measures to ensure that any vehicles which leave the site do not track materials onto public roads. | | Vehicles that leave the Old Northern Road Quarry site do not track materials onto the Wisemans Ferry Road. The access road to the quarry from Old Northern Road is cleaned as required at the quarry entrance gate to reduce potential for materials to be tracked onto the public roads. (There was no evidence of material being tracked onto Old Northern Road on the days of the audit inspection in November 2016). | Noted |
| 3.22 | The Applicant shall consult with NOW prior to commencement of operations in strip 4 (as described in the EIS) on Lots 1 and 2, DP 547255 and, if required, obtain a permit under the <i>Fisheries Management Act 1994</i> for works to be carried out on the site. | | No extraction works had commenced in Strip 4 at the date of this audit (November 2016). | Not triggered |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|--|-------------------|
| 3.23 | Discharge of stormwater from the site is to be clear of sediment and pollution in accordance with the provisions of the <i>Protection of the Environment Operations Act, 1997</i> , and the EPL for the quarry, and to the satisfaction of the EPA. | <ul style="list-style-type: none"> Environment Protection Licence 3916 | <p>Water discharged from the Old North Road Quarry site is monitored as a grab sample daily, during discharge in accordance with EPL 3916 condition M2.3.</p> <p>Two discharge events in 2015 (29 January and 23 April) and one event during 2016 (27 August) occurred due to prolonged rainfall periods. Water monitoring was conducted and the EPA notified of the TSS results in accordance with EPL 3916 condition R3. The TSS result on 29 January 2015 was 64mg/L that exceeded the EPA criteria of 50mg/L for TSS. As the event was larger than the sediment control design and no further action was taken by the EPA.</p> | Compliant Ongoing |
| | Groundwater | | | |
| 3.24 | <p>The Applicant shall ensure that all bores and associated groundwater monitoring equipment on or associated with the site are maintained, and/or replaced if necessary, throughout the life of the development, to the satisfaction of NOW.</p> <p><i>Note: MW4 may be removed immediately prior to quarrying in that area.</i></p> | | Groundwater bores and groundwater monitoring equipment associated with the Old Northern Road Quarry site have been maintained, or replaced if required, to retain the integrity of the groundwater monitoring program. Groundwater bore MW4 was decommissioned in 2014 when quarrying commenced in Lot 2. | Compliant Ongoing |
| 3.25 | Prior to commencing works associated with Mod 4, the Applicant shall enhance the existing groundwater monitoring network by installing additional monitoring bores within the MTSGS buffer zone within Lot 2 (south of MW2), including at least one deep monitoring bore that targets the regional groundwater table and at least one shallow groundwater monitoring bore. | <ul style="list-style-type: none"> Rig Job Card – Driller, Terrates, 3-6 Aug 2015 | <p>Piezometers BH8 and BH9 were installed in Lot 1 and Lot 2 respectively in August 2015 to address the additional groundwater monitoring suggested in condition 3.25.</p> <p>No extraction works had commenced in Strip 4 at the date of this audit (i.e. November 2016).</p> | Compliant |
| 3.25A | Seepage of groundwater from the MTSGS buffer into the quarry pit must be measured and recorded (if there is sufficient water volume to pump and measure). | | No seepage of groundwater from the MTSGS buffer into the quarry pit was recorded between 2013 and 2016. | Not triggered |
| 3.26 | <p>The Applicant is to ensure that groundwater in the regional groundwater table managed under the <i>Water Sharing Plan for the Greater Metropolitan Groundwater Sources 2011</i> is not intercepted or contaminated by its operations. In the event of this groundwater being intercepted or contaminated, operations are to cease within the vicinity of the affected area and the Applicant shall consult with the Secretary and NOW to determine the basis upon which extraction may recommence.</p> <p><i>Note: Perched groundwater lenses that are not below the regional groundwater table outside the MTSGS buffer zone may be intercepted however Water Access Licences must be held to account for all groundwater taken.</i></p> | | <p>No evidence of interception or contamination of groundwater was noted during the site inspection (November 2016) and the proponent advised that the quarrying activities were currently operating approximately 15m above the groundwater table.</p> <p>Groundwater monitoring results have not indicated any contamination of groundwater quality.</p> | Compliant |
| 3.27 | The Applicant shall carry out remedial works to protect the groundwater system, to the satisfaction of the Secretary, if it is | | | Not triggered |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|---|-------------------|
| | determined that any of the existing dams on the site breach the groundwater table. | | | |
| 3.28 | Maintenance and equipment refuelling operations shall only be carried out in the designated workshop and refuelling areas on the site. | | All vehicle and equipment maintenance is undertaken in the new site workshop that has a concrete floor. Refuelling only occurs from the diesel fuel storage tank in a bunded area located on a concrete pad at the rear of the workshop. | Compliant |
| | Bunding and Spill Management | | | |
| 3.29 | The Applicant shall store and handle all hazardous chemicals, dangerous goods, fuels and oils, strictly in accordance with: a) All relevant Australian Standards; b) A minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and c) The EPA's Environment Protection Manual Technical Bulletin <i>Bunding and Spill Management</i> . In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency. | <ul style="list-style-type: none"> Liquid Chemical Storage, Handling and Spill Management Part B, DEC, Nov 2005 Storing and Handling Liquids – Environmental Protection, DECC, May 2007 | Fuel is stored in an aboveground storage tank housed in a bunded area that complies with AS 1940. The fuel system was installed in accordance with the EPA guidelines and inspected by the EPA in 2015 (no issues raised by the EPA inspection). The fuel facility has an automatic shut-off valve to prevent spills. Chemicals in drums are stored in the new workshop on bunded pallets in accordance with Australian Standards and health and safety criteria. Spill kits are available in the workshop in areas where the fuel/oils/chemicals are stored. | Compliant |
| | Traffic and Transport Impacts | | | |
| 3.30 | Truck movements at the site, including those provided for under this consent and DA 165-7-2005, shall not exceed: a) a total of 180 per day (ie inbound combined with outbound); b) 40 between the hours of 6.00am and 7.00am (inbound combined with outbound); and c) 118 laden per day, of which no more than 28 may be inbound. | <ul style="list-style-type: none"> Truck Movement Data Sheets | (a) Truck movements have not exceeded a total of 180 per day (i.e. inbound combined with outbound); (b) less than 40 truck movements occur between 6.00am and 7.00am; and (c) less than 118 laden trucks movements per day occur to and from the Old Northern Road site. | Compliant |
| 3.30A | The Applicant shall: a) keep daily records of the amount of sand transported from the site; b) keep daily records of all traffic movements in and out of the site (including records of movements approved under condition 3.30); and c) include detailed reports on these records in the Annual Review. | <ul style="list-style-type: none"> Truck Movement Data Sheets Weighbridge Spreadsheets Monthly Product Tonnage Registers Annual Review 2015-2016 Annual Review 2014-2015 | The truck movement and weighbridge data sheets record: a) daily records of the amount of sand transported from the site; b) daily records of all traffic movements in and out of the site (including records of movements approved under condition 3.30); and c) reports on these records are provided in the AEMR / Annual Reviews. | Compliant Ongoing |
| 3.31 | (deleted) | | | |
| 3.32 | All vehicles are to enter and leave the site in a forward direction and prominent and permanent signposting to this effect is to be provided and maintained at all times. | <ul style="list-style-type: none"> Traffic Management Plan – EP1.3 | Traffic Management Plan points 8, 20 and 21 address traffic directions. The Site Plan shows directions and signage. | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
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| 3.33 | The Applicant is to ensure that the Old Northern Road pavement in the vicinity of the intersection with the Crown Access Road is regularly maintained and kept free of sand, clay and soil at all times. All costs of these works are to be borne by the Applicant. | | The surface of Old Northern Road pavement in the vicinity of the intersection with the Crown Access Road is regularly maintained with a street sweeper if required to kept the surface free of sand, clay and soil. | Compliant Ongoing |
| 3.34 | The Applicant shall advise its drivers and its clients not to arrive at the site prior to 5.45 am on any day. Certified (under company seal) weighbridge dockets and a log book or equivalent computer records are to be kept to verify the arrival and departure times of vehicles. Copies of these records shall be summarized in the Annual Review . | <ul style="list-style-type: none"> Dixon Sand Maroota Truck Movement Data, July 2015 to June 2016 Traffic Management Plan, Nov 2016 Site Induction for Drivers, Dixon Sand and Transport Code of Conduct, Nov 2016 | <p>Drivers and its clients are advised not to arrive at the Old Northern Road Quarry site prior to 5.45 am on any day during the site Induction and in accordance with the approved Traffic Management Plan.</p> <p>Truck Movement Data for July 2015 to June 2016 have recorded the time-in of each truck arriving at the Old Northern Road Quarry site between 6.00am and 7.00am, and these records indicated that trucks had not arrived at the site prior to 5.45am.</p> <p>Weighbridge dockets record departure time for every loaded truck that leaves the Old Northern Road Quarry site.</p> <p>Arrival time-in after 7.00am Monday to Friday is not recorded.</p> | <div>Compliant</div> <div>Administrative Non-Compliance</div> |
| 3.35A | The Applicant shall ensure all new truck drivers are provided with Site Induction for Drivers outlining site requirements, including the requirements of the Transport Code of Conduct referred to in condition 6.3 of this consent, and expected driver behaviour such as observing all speed limits (including school zone speed limits around Maroota Public School or other such speed limits as may be imposed from time to time) , and not using exhaust brakes, especially during morning periods . | <ul style="list-style-type: none"> Traffic Management Plan, Nov 2016 Site Induction for Drivers, Dixon Sand Transport Code of Conduct | Site Induction for Drivers outlining site requirements, including the requirements of the Transport Code of Conduct are provided to all new truck drivers entering the Old Northern Road Quarry site. | Compliant |
| 3.35B | The Applicant shall liaise with representatives of Maroota Public School as required, but no less than annually, to discuss the effectiveness of traffic management procedures. | | <p>CCC Meetings are held bi-annually and a representative of the Maroota Public School is present.</p> <p>A questionnaire is provided to the School for comment to obtain any issues affecting the school.</p> | Compliant |
| 3.35C | The Applicant shall impose a 20 km/hr speed limit on internal haul roads and shall ensure that all vehicles using internal haul roads do not exceed this speed limit | <ul style="list-style-type: none"> Traffic Management Plan Point 9, Nov 2016 | Traffic Management Plan point 9 states – “ <i>All trucks are to observe and obey the 20km/hr speed limit on site at all times. This speed limit will be enforced.</i> ” | Compliant |
| | Noise Impacts | | | |
| | Noise limit Interpretation and Measurement | | | |
| 3.35 | All noise limits specified as part of this consent apply under: a) Wind speeds up to 3 ms ⁻¹ at 10 metres above ground level; and b) Temperature inversion conditions up to 3oC per 100 metres. | | | Noted |
| 3.36 | For the purpose of assessment of noise levels specified in this consent, noise from the development shall be: | <ul style="list-style-type: none"> <i>New South Wales Industrial Noise Policy (EPA, 2000).</i> | Noise monitoring conducted in close proximity to the school and nearest residence to north of site. These locations have been approved by the EPA. | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|---|------------|
| | <p>a) Measured at the most affected point on or within the receptor site boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary to determine compliance with LAeq(15minute) noise limits in condition 3.39;</p> <p>b) Measured at 1 metre from the dwelling façade of the most affected classroom to determine compliance with LAeq(1 hour) noise limits in condition 3.40; and</p> <p>c) Subject to the modification factors provided in Section 4 of the <i>New South Wales Industrial Noise Policy</i> (EPA, 2000).</p> | | <p>(a) Monitoring is conducted at the residence at the junction of Old Northern Road and the quarry access road. Dixon Sand has a noise agreement with the owner of the dwelling (see condition 3.38 – Mr and Mrs G&M Accurso).</p> <p>(b) The noise monitoring location although not within 1m of the façade of the most affected classroom, is considered to be representative of noise emissions received from the quarry site as the monitoring location is closer to quarry operations, so if anything the location would over-estimate the noise received by the classroom.</p> | |
| 3.37 | Notwithstanding condition 3.36 of this consent, should direct measurement of noise from the site be impractical, the Applicant may employ an alternative noise assessment method deemed acceptable by the EPA (refer to Section 11 of the <i>New South Wales Industrial Noise Policy</i> (EPA, 2000)). Details of such an alternative noise assessment method accepted by the EPA shall be submitted to the Secretary prior to the implementation of the assessment method. | <ul style="list-style-type: none"> <i>New South Wales Industrial Noise Policy</i> (EPA, 2000) Site Environmental Management Plan, EP 12 Noise and Vibration Management, Jun 2016 | Attended noise monitoring has been conducted in close proximity to the school and nearest residence to north of site, at locations approved by the EPA. The monitoring program is described in EP 12 -Noise and Vibration Management. | Compliant |
| 3.38 | Noise limits identified in condition 3.39 do not apply for residential premises where there is a negotiated agreement between the Applicant and the Landowner of the premises. | <ul style="list-style-type: none"> Development Consent 250-09-01 Annexure D <i>Letter of Agreement between Mr and Mrs G&M Accurso and Dixon Sand (Penrith) Pty Ltd</i> | A Noise Agreement has been established with Mr and Mrs G&M Accurso for the residence on the access road to the quarry site. | Compliant |
| | Noise Limits | | | |
| 3.39 | <p>Noise from the premises must not exceed:</p> <ul style="list-style-type: none"> An LAeq(15 minute) noise emission criterion of 44 dB(A) between 7am and 6pm Monday to Saturday; and An LAeq(15 minute) noise emission criterion of 37 dB(A) between 6am and 7am Monday to Saturday at any residence not owned by the Applicant. | <ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-2014 AEMR 2014-2015 Annual Review 2015-2016 | Attended noise monitoring undertaken between 2013 to 2016 indicated compliance with day time noise assessment limits. The attended noise monitoring at the receivers indicated that traffic on Old Northern Road was the dominant noise source measured at the receivers. | Compliant |
| 3.40 | Noise from the premises must not exceed an LAeq(1 hour) noise emission criterion of 45 dB(A) at the most affected classroom of Maroota Public School. | <ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-2014 AEMR 2014-2015 Annual Review 2015-2016 | Noise from the Old Northern Road Quarry operations did not exceed the 45dB(A) LAeq(1 hour) noise emission criterion at the most affected classroom of Maroota Public School (Noise Monitoring Site 1), between 2013 and 2016. The attended noise monitoring at Site N1 indicated that traffic on Old Northern Road was the dominant noise source measured at the Maroota Public School. | Compliant |
| | Hours of Operation | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|-------------------|
| 3.41 | Construction of earth bunds around the Maroota Public School setback perimeter, required for the mitigation of noise and dust, must only be carried out between 7am and 6pm Monday to Friday during school holiday periods unless otherwise approved in writing by the EPA. | | Quarry activities had not progressed to the stage that construction of earth bunds around the Maroota Public School setback perimeter had not commenced at the date of this audit (November 2016). | Not yet triggered |
| 3.42 | <p>Loading of trucks and truck movements at the site must only be carried out between 6am and 6pm Monday to Saturday, and at no time on Sundays and Public Holidays.</p> <p>All other activities at the premises must only be carried out between 7am and 6pm Monday to Saturday, and at no times on Sundays and Public Holidays.</p> | <ul style="list-style-type: none"> Dixon Sand Maroota Truck Movement Data, July 2015 to June 2016 Traffic Management Plan, Nov 2016 Site Induction for Drivers, Dixon Sand Transport Code of Conduct, Nov 2016 | <p><i>Refer to condition 3.34.</i></p> <p>Loading of trucks and truck movements at the site, do not commence until 6.00am Monday to Saturday. Drivers and its clients are advised not to arrive at the Old Northern Road Quarry site prior to 5.45 am on any day in accordance with the Development Consent 250-09-01 Schedule 2 condition 3.34 and approved EP5-Traffic Management Plan.</p> <p>Arrival times of vehicles at the Old Northern Road Quarry site between 6.00 am and 7.00am are recorded on the Truck Movement Data Sheets recorded for each load at the weighbridge.</p> | Compliant |
| | Operational Noise – Management of Operations | | | |
| 3.43 | <p>The Applicant shall design and implement a management system that ensures operations at the quarry site meet the criteria in conditions 3.39 and 3.40. In this regard, the Applicant shall:</p> <p>a) Construct all bunds on the eastern, south eastern and northern sides of the quarry extension site to at least 5 m above the existing ground level;</p> <p>b) Not use the bulldozer concurrently with any other plant on strips 4, 5 and 6 of the quarry extension site for any operations at quarry depths between existing ground level and six metres below the existing ground level; and</p> <p>c) Only use the bulldozer for clearing, stripping and bund construction on the quarry extension site in calm wind conditions. The Applicant shall report on monitoring results from the on-site weather monitoring station, and corresponding operations and noise impacts in adverse weather conditions, in the Annual Review and compliance reports required under condition 3.45. The Secretary, in consultation with EPA, may approve variations to the operating restrictions in this condition based on actual noise monitoring conducted by the Applicant on the site and/or the results of compliance reports required in condition 3.45</p> | <ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-2014 AEMR 2014-2015 AEMR 2015-2016 | <p>(a) Construction of bunds the eastern and northern sides of the quarry extension site were rectified to 5m above the existing ground level in March 2016, following the DP&E Audit (December 2015).</p> <p>(b) Not yet applicable as no operations or other activities have not occurred on strips 4, 5 or 6.</p> <p>(c) Noted</p> <p>Monitoring results from the on-site weather station, quarry operations and noise emissions and compliance assessment are reported in the AEMR / Annual Reviews.</p> | Compliant |
| 3.44 | The Applicant shall design quarry operations to minimise the need for reversing of trucks and machinery where reversing beepers may contribute to noise impacts exceeding the criteria in conditions 3.39 and 3.40. | | Traffic direction within the quarry site is one-way eliminating the requirement for trucks to reverse (with the accompanying reversing beepers). | Compliant Ongoing |
| | Operation Noise – Compliance Report | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|---------------|
| 3.45 | The Applicant must undertake noise monitoring after noise mitigation earth bunds at strips 4, 5 and 6 are completed. The results of the noise monitoring must be submitted to the EPA and the Secretary in a report within 3 months of completion of the earth bund construction. The report must include a statement of whether compliance has been achieved with noise limits specified in the Environment Protection Licence and this consent | | Not yet applicable as no operations or other activities have occurred on strips 4, 5 or 6 at the date of this audit (November 2016). | Not triggered |
| | Operational Noise – Negotiated Agreement with G&M Accurso | | | |
| 3.46 | The Applicant is to implement the noise mitigation measures contained in the agreement with Mr and Mrs G&M Accurso dated 5 April 2004 titled <i>Letter of Agreement between Mr and Mrs G&M Accurso and Dixon Sand (Penrith) Pty Ltd</i> , forming Annexure “D” to this Consent. Noise limits contained in condition 3.39 do not apply to the Accurso residence (Lot 117, DP 752025) while the agreement is in Force. | <ul style="list-style-type: none"> Development Consent 250-09-01 Annexure D <i>Letter of Agreement between Mr and Mrs G&M Accurso and Dixon Sand (Penrith) Pty Ltd</i>, 5 Apr 2004 | A Noise Agreement was established with Mr and Mrs G&M Accurso on 5 April 2004 for the residence on Lot 117, DP 752025 adjacent to the access road to the quarry site and at the intersection with Old Northern Road. | Compliant |
| 3.47 | Should the agreement referred to in condition 3.46 be terminated for any reason the Applicant shall comply with noise criteria in condition 3.39 | | The Noise Agreement established with Mr and Mrs G&M Accurso is current. | Noted |
| | Operation Noise – Residential Noise Management | | | |
| 3.48 | In the event that noise from the site exceeds noise criterion in condition 3.38 or condition 3.40, or the negotiated agreement in condition 3.46 is terminated for any reason, then the Applicant shall actively manage residual noise (ie noise in excess of the criteria) at the affected receptor. Residual noise shall be managed in accordance with the residual noise management measures detailed in the approved Site Environmental Management Plan. As a minimum to ensure compliance, the Applicant shall undertake the following measures: a) Implement a reactive management system where site operations are modified in adverse weather conditions identified through meteorological monitoring; b) Implement additional controls of treatments on individual sources on the site or on site operations, or otherwise modify operations to ensure compliance; or c) Provide other forms of benefit or amelioration of impacts of noise agreed between the Applicant and the affected party, as providing acceptable compensation for noise levels experienced; and d) Identify long term strategies to eliminate noise levels that exceed the noise criteria in condition 3.39 or 3.40. | <ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-2014 AEMR 2014-2015 AEMR 2015-2016 | No exceedance of noise assessment criteria from the Old Northern Road Quarry operations was recorded during attended noise monitoring between 2013 and 2016. Attended noise monitoring indicated that noise associated with traffic on Old Northern Road, local fauna and other surrounding quarries, significantly contributed to the noise experienced by at the receiver monitoring locations. | Not triggered |
| | Impacts on Flora and Fauna | | | |
| | Biodiversity Offset Strategy | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance | | | | | | | | | |
|-----------------------|---|---|---|-------------------------------|---------------------|--------------|---------|-----------------------|--|---------|--|---|-----------|
| 3.49 | <p>The Applicant shall implement the biodiversity offset strategy as outlined in the Table below, to the satisfaction of the Secretary.</p> <table><tr><th>Offset Type</th><th>Offset Area</th><th>Minimum Area</th></tr><tr><td>Biodiversity Offset</td><td>Haerses Road</td><td>8.70 ha</td></tr><tr><td>Rehabilitation Offset</td><td>Native Vegetation Corridor (as shown conceptually in Annexure G)</td><td>6.83 ha</td></tr></table> <p>Prior to 30 September 2015, the Applicant must confirm the boundary of the Haerses Road Biodiversity Offset Area to the satisfaction of the Secretary. No vegetation clearing is to occur within the expanded extraction area within Lot 2 DP547255 approved under Mod 4 until the Secretary's approval for the boundary of the Haerses Road Biodiversity Offset Area is obtained.</p> | Offset Type | Offset Area | Minimum Area | Biodiversity Offset | Haerses Road | 8.70 ha | Rehabilitation Offset | Native Vegetation Corridor (as shown conceptually in Annexure G) | 6.83 ha | <ul style="list-style-type: none">Biodiversity and Rehabilitation Offset Area Survey, McKinley Morgan & Associates, Sep 2015Letter to DP&E re Survey of Offset Area Boundary, 29 Sep 2015 | <p>A biodiversity offset strategy to offset the impacts of vegetation clearing in Lots 1 and 2 DP547255 includes a Biodiversity Offset of 8.70 hectares at the Haerses Road and a Rehabilitation Offset (native vegetation corridor - 6.83 hectares) at the Old Northern Road site. The surveys of the Haerses Road Biodiversity Offset Area and Old Northern Road Rehabilitation Offset Area were conducted by McKinley Morgan & Associates in September 2015 and the survey plans submitted to DP&E on 29 September 2015.</p> | Compliant |
| Offset Type | Offset Area | Minimum Area | | | | | | | | | | | |
| Biodiversity Offset | Haerses Road | 8.70 ha | | | | | | | | | | | |
| Rehabilitation Offset | Native Vegetation Corridor (as shown conceptually in Annexure G) | 6.83 ha | | | | | | | | | | | |
| | Long Term Security of Offset | | | | | | | | | | | | |
| 3.49A | <p>By the end of June 2016, unless the Secretary agrees to extend this date, the Applicant shall make suitable arrangements to protect the Haerses Road Biodiversity Offset Area in perpetuity to the satisfaction of the Secretary.</p> <p><i>Note: For the purposes of this consent suitable arrangements may include the use of Public Positive Covenants in combination with Restrictions in Use of Land on the land titles of the Offset Area. Other arrangements such as dedication of land under the National Parks and Wildlife Act 1974, Trust Agreements under the Nature Conservation Trust Act 2001 or a Property Vegetation Plan registered on title under the Native Vegetation Act 2003 would be considered for their suitability by the Secretary</i></p> | | <p>Arrangements to protect the Haerses Road Biodiversity Offset Area in perpetuity were in the process of execution with the Dixon Sand solicitor at the date of this audit (November 2016).</p> | Administrative Non-Compliance | | | | | | | | | |
| | Biodiversity Management Plan | | | | | | | | | | | | |
| 3.49B | <p>The Applicant shall prepare and implement a Biodiversity Management Plan for the Hearses Road Biodiversity Offset Area to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with OEH, and be submitted to the Secretary for approval by the end of March 2016;</p> <p>(b) include a detailed description of the short, medium, and long-term measures that would be implemented over the next 3 years for:</p> <ul style="list-style-type: none">enhancing the quality of existing native vegetation and fauna habitat;establishing additional native vegetation and fauna habitat through focusing on assisted natural regeneration, targeted | <ul style="list-style-type: none">Biodiversity Management Plan, Jun 2016Letter from DP&E re Approval of the Biodiversity Management Plan, 4 April 2016Letter from DP&E re Biodiversity Management Plan, 20 Jul 2016 | <p>The Biodiversity Management Plan for the Hearses Road Biodiversity Offset Area was prepared to satisfy the requirements of Development Consent 250-09-01 MOD 4 Schedule 2 condition 3.49B and approved by the DP&E on 4 April 2016. The Biodiversity Management Plan:</p> <p>(a) was prepared by Cumberland Ecology in consultation with OEH in March 2016, and submitted to DP&E for approval by the end of March 2016;</p> <p>(b) section 4 describes the short, medium, and long-term measures that would be implemented over the next 3 years for:</p> | Compliant | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--------------------------|---|--------------------------------------|
| | <p>vegetation establishment and the introduction of naturally scarce fauna habitat features;</p> <ul style="list-style-type: none"> managing any potential conflicts between the proposed measures and any Aboriginal heritage values (both cultural and archaeological) that may be present; controlling weeds and feral pests; controlling erosion; controlling access; and managing bushfire risk; <p>(c) include detailed performance and completion criteria for evaluating the performance of these measures, and triggering any necessary remedial actions;</p> <p>(d) include a program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;</p> <p>(e) identify the potential risks to the successful implementation of the plan, and include a description of the contingency measures that would be implemented to mitigate against these risks;</p> <p>(f) include details of who would be responsible for monitoring, reviewing, and implementing the plan; and</p> <p>(g) be reviewed, and if necessary revised, and be re-submitted to the Secretary for re-approval every 3 years following its initial approval, for the life of this consent.</p> <p><i>Note: With the approval of the Secretary, the Biodiversity Management Plan may be integrated with the Flora and Fauna Management Plan required by condition 6.3 i) for achieving biodiversity objectives for the rehabilitated quarry site and the management of the 2 hectare revegetation area required by the Haerses Road Quarry development consent (DA 165-7-2005).</i></p> | | <ul style="list-style-type: none"> enhancing the quality of existing native vegetation and fauna habitat; establishing additional native vegetation and fauna habitat through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features; managing any potential conflicts between the proposed measures and any Aboriginal heritage values (both cultural and archaeological) that may be present; controlling weeds and feral pests; controlling erosion; controlling access; and managing bushfire risk; <p>(c) section 5 provides performance and completion criteria for evaluating the performance of these measures, and triggering any necessary remedial actions;</p> <p>(d) section 6 provides the program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;</p> <p>(e) section 5 identifies potential risks to the successful implementation of the plan, and includes contingency measures to be implemented to mitigate against these risks;</p> <p>(f) section 7 includes who would be responsible for monitoring, reviewing, and implementing the plan; and</p> <p>(g) section 8.2 addresses review and if necessary revision, for re-submission to the DP&E for re-approval every 3 years following its initial approval, for the life of this consent.</p> | |
| | Conservation Bond | | | |
| 3.49C | <p>By the end of June 2016, unless the Secretary agrees to extend this date, the Applicant shall lodge a Conservation Bond with the Department to ensure that the Biodiversity Management Plan is implemented. The sum of the bond shall be determined by:</p> <p>(a) calculating the full cost of implementing the Biodiversity Management Plan (other than land acquisition costs); and</p> <p>(b) employing a suitably qualified quantity surveyor to verify the calculated costs.</p> | | <p>The Conservation Bond required under Development Consent No.250-09-01 Schedule 2 condition 3.49C had not been lodged at the date of this audit (November 2016). The calculation of the cost of implementing the Biodiversity Management Plan is to be prepared by a specialist ecological consultant. Dixon Sand corresponded with DP&E in relation to the requirement for a 'quantity surveyor' to be employed 'to verify the calculated costs' and was advised that a 'quantity surveyor' must be commissioned in accordance with the</p> | Administrative Non-Compliance |


Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|---|-------------------|
| | <p>If the completion criteria set out in the Biodiversity Management Plan are achieved, to the satisfaction of the Secretary, the Secretary will release the bond.</p> <p>If the completion criteria set out in the Biodiversity Management Plan are not achieved, then the Secretary will call in all, or part of, the conservation bond, and arrange for the satisfactory completion of the relevant works.</p> <p>Notes:</p> <ul style="list-style-type: none"> Alternative funding arrangements for long-term management of the Hearses Road Biodiversity Offset Area, such as provision of capital and management funding as agreed by OEH as part of a Biobanking Agreement or transfer to conservation reserve estate, can be used to reduce the liability of the conservation and biodiversity bond. The sum of the bond may be reviewed in conjunction with any revision to the Biodiversity Management Plan. | | condition or to include any proposed change to use a Senior Ecologist, the matter should be addressed through a Modification to the Development Consent. | |
| 3.50 | The Applicant shall ensure that all natural bushland directly adjoining the site and bushland to be conserved within the development site, is not damaged or disturbed by its operations. | | The boundary of the biodiversity protection area has been pegged to define the environmental protection area. No damage or disturbance to the adjacent bushland resulting from the quarry operations was observed during the audit site inspection (November 2016). | Compliant Ongoing |
| 3.51 | Native bush regeneration and habitat reconstruction techniques shall be used to rehabilitate and regenerate the Haerses Road biodiversity offset, the native vegetation corridor, extraction areas, tailings ponds, and disturbed areas, and stabilize environmental bunds on the site in accordance with the SEMP. Bush regeneration shall include a specific program to translocate, propagate, and revegetate threatened plant species on the site including <i>Melaleuca deanei</i> , <i>Darwinia Fascicularis</i> ssp. <i>oligantha</i> , and <i>Kunzea rupestris</i> . The specialised techniques shall be carried out under the direction of a qualified Plant Ecologist and shall include the re-use of stored topsoil that has not been contaminated with exotic grasses or weed species and the collection and propagation of species from the site. | <ul style="list-style-type: none"> Rehabilitation and Landscape Management Plan, Jun 2016 Biodiversity Management Plan for Hearses Road Biodiversity Offset Area, Jun 2016 Dixon Sand Bush Regeneration Works 2014-2015 Annual Report, Bush-it Dixon Sand Bush Regeneration Works 2015-2016 Annual Report, Bush-it | Native bush regeneration contractor 'Bush-It' is used for site rehabilitation and bushland restoration. Bush-it has performed ecological restoration and bush regeneration works at Dixon Sand Quarries for many years and has been responsible for the rehabilitation of areas of the sites and the ecological restoration of the Haerses Rd vegetation offset area. Ecological restoration strategies used by Bush-it at Dixon Sands include, endangered plant preservation, herbicide spraying, brush-cutting, revegetation, sandstone capping, ecological community and soil translocation, sedimentation and erosion control, weed surveying, assisted natural regeneration, brush-matting, direct seeding, and target weeding | Compliant Ongoing |
| | Indigenous Heritage | | | |
| 3.52 | If, during the course of any activities conducted under this consent, the Applicant becomes aware of any heritage or archaeological sites not previously identified, all work likely to affect the site shall cease immediately. The Applicant shall then consult with relevant authorities and decide on an appropriate course of action prior to recommencement of work. The relevant authorities may include OEH, the NSW Heritage Office, and the relevant local Aboriginal | <ul style="list-style-type: none"> SEMP, EP11 - Heritage Management, Jun 2016 SEMP – EP14 Flora and Fauna Management Dixon Sand Monthly Inspection Checklists | <p>Refer to SEMP EP11</p> <p>No aboriginal heritage was identified in the Environmental Impact Statement (2001) and there have been no unexpected finds during the quarry operations between 2013 and 2016.</p> | No triggered |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|-------------------|
| | community. Any necessary permits or consents shall be obtained and complied with prior to recommencement of work. | | | |
| | Waste Management Impacts | | | |
| 3.53 | The Applicant shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing or disposal, or any waste generated at the site to be disposed of at the site, except as expressly permitted by a licence under the <i>Protection of the Environment Operations Act 1997</i> . This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the site if it requires an Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> . | <ul style="list-style-type: none"> • <i>Protection of the Environment Operations Act 1997 clause 55</i> • Environment Protection Licence 3916 | <p><u>Refer to SEMP EP18</u></p> <p>No waste generated outside the Old Northern Road site has been received at the Old Northern Road Quarry for storage, treatment, processing, reprocessing or disposal.</p> <p>Sand product quarried at Haerses Road Quarry is processed at the Old Northern Road Quarry plant and any tailings generated are managed from the sand washing plant in concert with the Old Northern Road Quarry tailings under the Development Consent 250-09-01 MOD 1 2006.</p> | Compliant |
| 3.54 | All liquid and non-liquid wastes generated at the development shall be assessed, classified and managed in accordance with the EPA Environmental Guidelines Assessment, Classification and Management of Liquid and Non-Liquid Wastes (EPA, 1999). | <ul style="list-style-type: none"> • Dixon Sand Monthly Site Condition Checklist | <p><u>Refer to SEMP EP18</u></p> <p>Waste management practices checked and recorded on the Monthly Site Condition Checklist.</p> | Noted |
| 3.55 | Any waste generated at the development shall only be transported to an EPA approved waste management facility for treatment, recycling and/or disposal, where relevant | <ul style="list-style-type: none"> • 2013-2014 AEMR section 8 • 2014-2015 AEMR section 8 • 2015-2016 AEMR section 8 | <p><u>Refer to SEMP EP18</u></p> <p>Putrescible waste generated at the Old Northern Road Quarry is removed regularly to an approved waste disposal facility. Recyclables are segregated for collection and removal by a licenced waste contractor.</p> | Compliant |
| | Section 94 Contributions | | | |
| 3.56 | The Applicant shall pay or procure payment to the Council of a contribution under Section 94 of the <i>Environmental Planning and Assessment Act 1979</i> at a rate in accordance with Baulkham Hills Shire Council's <i>Contributions Plan No: 6 – Extractive Industries</i> . The said contribution will be calculated and paid monthly from the date on which development consent became effective. The said contribution will be indexed and adjusted annually in accordance with <i>Contributions Plan No: 6 – Extractive Industries</i> . On or before the fourteenth day of each month for the duration of the consent, the applicant shall deliver or procure delivery to the Council of true certified copy weighbridge or other returns or records showing the true quantities of extracted/processed material transported from the property during the immediately preceding month and the Council will then, as soon as it can conveniently do so, issue an invoice to the applicant or its consenting assignee, who will pay to the Council within fourteen (14) days of the date thereof. The Council and the consent authority has the right to inspect and have the original records relation to any of the extracted/processed | <ul style="list-style-type: none"> • <i>Contributions Plan No: 6 – Extractive Industries</i>, Baulkham Hills Shire Council • Section 94 Contributions – Monthly to The Hills Shire Council, Dixon Sand 2015-2016 • Letter from The Hills Shire Council re Contribution Rate, 3 Aug 2016 | <p>Vehicle movement and product tonnage transport records are sent to The Hills Shire Council on a monthly basis and Section 94 Contribution payments made.</p> <p>The Section 94 Contributions are calculated and paid monthly to The Hills Shire Council at a current rate of 0.99c (dated 3 August 2016) for extracted / processed material transported from the property.</p> | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | material, including numbers and types of laden trucks, trailers and load quantities transported from the property audited by any person nominated by its internal accountant any time when he may be written request so require. The Council will pay all of the said contribution payments into a specially identified account for payments towards the rehabilitation, restoration, repair and/or maintenance of Old Northern and Wisemans Ferry Roads from the intersection of the Crown Road access and the Hills Shire boundary at Cattai Creek and other projects identified in the Plan of Management for Extractive Industries adopted by Council. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | ENVIRONMENTAL MONITORING AND AUDITING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | General Monitoring Requirements | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.1 | <p>The results of all monitoring required under this consent shall be:</p> <p>a) In a legible form, or in a form that can be readily reduced to a legible form;</p> <p>b) Kept for at least four years after the monitoring or event to which the results relate took place; and</p> <p>c) Produced in a legible form to any authorized officer of the EPA or the Secretary, upon request; and</p> <p>d) Kept with the following details for each sample required to be collected:</p> <p>i) the date(s) on which the sample was collected;</p> <p>ii) the time(s) at which the sample was collected;</p> <p>iii) the point at which the sample was collected; and</p> <p>iv) the name of the person who collected the sample</p> | | <p>Monitoring results are received via email from the NATA Registered Laboratories and are entered into the Dixon Sand environmental monitoring database. The monitoring results are:</p> <p>a) in a legible form;</p> <p>b) retained on the monitoring database; and</p> <p>c) able to be produced to any authorized officer of the EPA or the Secretary, upon request; and</p> <p>d) details for each sample collected include the date / time on which the sample was collected; the monitoring point at which the sample was collected; and the name of the person who collected the sample. The sample collection details are entered on the Chain-of-Custody form provide to the laboratory.</p> | Compliant | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 | <p>Incorporates an EPA General Term of Approval. The Applicant shall monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The Applicant must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns:</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Units</th><th>Averaging Period</th><th>Frequency</th><th>Method</th></tr> </thead> <tbody> <tr> <td>Siting</td><td>-</td><td>-</td><td>-</td><td>AM-1</td></tr> <tr> <td>Rainfall</td><td>mm/hr</td><td rowspan="5">1 hour</td><td rowspan="5">Continuous</td><td>AM-4</td></tr> <tr> <td>Temperature@2m</td><td>K</td><td>AM-2</td></tr> <tr> <td>Sigma Theta@10m</td><td></td><td></td></tr> <tr> <td>Wind speed@10m</td><td>m/s</td><td>AM-4</td></tr> <tr> <td>Wind direction@10m</td><td>degrees</td><td>AM-2</td></tr> </tbody> </table> | Parameter | Units | Averaging Period | Frequency | Method | Siting | - | - | - | AM-1 | Rainfall | mm/hr | 1 hour | Continuous | AM-4 | Temperature@2m | K | AM-2 | Sigma Theta@10m | | | Wind speed@10m | m/s | AM-4 | Wind direction@10m | degrees | AM-2 | <ul style="list-style-type: none"> Environment Protection Licence 3916 condition P1.1 and M4 Environmental Monitoring – Air Quality - TEOM and Weather Reports, CBased Environmental, 2015-2016 | <p>The Weather Station and TEOM are located adjacent to the Maroota Public School in accordance with Environment Protection licence 3916 condition P1.1 for EPA Monitoring Point 3.</p>  <p>TEOM (Point 2) and weather station (Point 3) adjacent to Maroota Public School</p> | Compliant |
| Parameter | Units | Averaging Period | Frequency | Method | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Siting | - | - | - | AM-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rainfall | mm/hr | 1 hour | Continuous | AM-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature@2m | K | | | AM-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sigma Theta@10m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wind speed@10m | m/s | | | AM-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wind direction@10m | degrees | | | AM-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance | | | | | | | | | | | | | | | | |
|---------------------------------------|---|--|---|------------|-----------------|---------------------------------------|-------------------|---|--------------------------|--------------------------------|-------------------------|------------|-------|--------|---|---|------|---|---|-----------|
| | Air Quality Monitoring | | | | | | | | | | | | | | | | | | | |
| 4.3 | <p>For each monitoring point or utilisation area specified in condition 3.2, the Applicant must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1 of the table below. The Applicant must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</p> <p>Air</p> <table><tr><th>Pollutant</th><th>Units</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Particulate Matter – PM₁₀</td><td>ug/m³</td><td>1 day in 6 or continuous, or as otherwise approved by EPA</td><td>AM-18 or AS3580.9.8–2001</td></tr><tr><td>Particulate Matter (deposited)</td><td>g/m²/month</td><td>Continuous</td><td>AM-19</td></tr><tr><td>Siting</td><td>-</td><td>-</td><td>AM-1</td></tr></table> | Pollutant | Units | Frequency | Sampling Method | Particulate Matter – PM ₁₀ | ug/m ³ | 1 day in 6 or continuous, or as otherwise approved by EPA | AM-18 or AS3580.9.8–2001 | Particulate Matter (deposited) | g/m ² /month | Continuous | AM-19 | Siting | - | - | AM-1 | <ul style="list-style-type: none">Environment Protection Licence 3916 condition P1.1SEMP – EP13 Air Quality ManagementDust Deposition Analysis Reports, VGT Environmental Compliance Solutions, 2015 – 2016 | <p>Air quality monitoring is conducted in accordance with the requirements of Development Consent 250-09-01 Schedule 2 condition 4.3 and EPL 3916 conditions M2.2 and M2.4.</p> <p>A TEOM (EPA approved monitoring point 2) and dust deposition gauge DG06 are located adjacent to the Maroota Public School in accordance with EPL 3916 condition P.1.1 approved Monitoring Point 2 and the nominated Sampling Methods in Development Consent 250-09-01 Schedule 2 condition 4.3.</p> <p>Dust deposition gauges also established for the Old Northern Road Quarry site are:</p> <p>D01 – Access Road to the quarry D04 – Rehabilitation Area D05 – Bund Wall Lot 1 D06 – Maroota Public School (EPL 3916 condition P1.1 Point 2) D07 - Mulloc heap</p> <p>Analysis of dust deposition samples is conducted by VGT Environmental Compliance Solutions</p> | Compliant |
| Pollutant | Units | Frequency | Sampling Method | | | | | | | | | | | | | | | | | |
| Particulate Matter – PM ₁₀ | ug/m ³ | 1 day in 6 or continuous, or as otherwise approved by EPA | AM-18 or AS3580.9.8–2001 | | | | | | | | | | | | | | | | | |
| Particulate Matter (deposited) | g/m ² /month | Continuous | AM-19 | | | | | | | | | | | | | | | | | |
| Siting | - | - | AM-1 | | | | | | | | | | | | | | | | | |
| 4.3A | <p>The Applicant shall install a continuous monitoring device approved by the EPA and connected to an alarm system by electronic link at a central point in the operations area at sensitive sites such as Maroota school with a trigger level set at the maximum predicted level which respectively contributed to setting of the overall levels of 24 hour PM₁₀ at 37.0 ug/m³ annual PM₁₀ at 16.4 ug/m³ annual TSP at 37.0 ug/m³ and TSP at 2.5 g/m²/month tabulated by ERM Australia in its Air Quality Assessment for Proposed Maroota Quarry Extension September 2003 or such other level prescribed by the EPA from time to time. If the measured concentration of PM₁₀ reaches the trigger level, then the operations shall cease or be modified immediately such that the trigger level is not reached. The trigger level and period for averaging that level shall be certified by the EPA.</p> | | <p>All TEOM PM₁₀ average results were below the short term NEPM 24 hour criteria, PM₁₀ annual average and the EPL 3916 condition M2.4 criteria of 42µg/m³.</p> <p>An alarm system with a trigger level is 37µg/m³ in accordance with EPL 3916 condition O3.3 and an electronic link at a central point in the operations area, is managed by Carbon Based consultants.</p> <p>Automatic alarms are sent via SMS to the Quarry Manager and Environmental Officer if the PM10 level exceeds 37µg/m³.</p> | Compliant | | | | | | | | | | | | | | | | |
| 4.4 | <p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted under this consent, or a licence under the Protection of the Environment Operations Act 1997, must be carried out in accordance with Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA 2001) or latest document.</p> | <ul style="list-style-type: none">Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, EPA, 2010Environment Protection Licence No. 3916 | <p>Monitoring of pollutants emitted to the air is carried out generally in accordance with Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA 2010).</p> | Compliant | | | | | | | | | | | | | | | | |
| | Noise Monitoring | | | | | | | | | | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|---|--|-----------------------|
| 4.5 | The Applicant shall engage an independent person(s) to conduct noise monitoring at sensitive residential locations and Maroota Public School every six months, or as otherwise approved by the Secretary , during the operation of the development to determine compliance with the noise criteria in conditions 3.39 and 3.40. Noise monitoring shall seek to coincide with worst case operating scenarios for noise generation and adverse weather conditions. | <ul style="list-style-type: none"> Noise Monitoring Reports, Onsite Environmental Management, 2012 to 2016 Annual Review 2015-2016 Annual Review 2014-2015 | Six-monthly attended noise monitoring is conducted by OnSite Environmental Management (OSEM) in accordance with the EPL 3916 condition L4. | Compliant |
| 4.6 | Within six months of the date of this consent, the Applicant shall engage an independent person(s) to conduct road traffic noise monitoring at Maroota Public School to determine the actual impact of truck movements on existing traffic noise levels compared to predictions made in the EIS for the existing development consent (796/00/HE). In the event that monitoring indicates that the relevant criteria in EPA's <i>Environmental Criteria for Road Traffic Noise</i> is exceeded, the Applicant shall implement noise mitigation measures at the School in consultation with Maroota Public School, Council, RMS , and EPA and as directed by the consent authority and in accordance with a specification approved by the consent authority. | <ul style="list-style-type: none"> Letter to DIPNR re Road Traffic Noise Monitoring, 15 Dec 2004 Road Traffic Noise Monitoring Report, ERM, Aug 2005 | <p>DIPNR approved this monitoring to be undertaken six months after extraction had begun on Lots 1 and 2 rather than six months after the consent had been issued due to delayed commencement dates for works in Lots 1 and 2.</p> <p>The Road Traffic Noise Monitoring survey was conducted by ERM at the Maroota Public School by ERM on 18 August 2005. The noise levels recorded for all traffic including trucks entering and leaving Lot 196 were below the prediction of 53.6dB(A) made in the EIS for consent 796/00/HE.</p> | Compliant COMPLETE |
| 4.6A | The Applicant shall engage an independent person(s) to conduct road traffic noise monitoring at Maroota Public School for 1 day per week (being the peak product dispatch day) for a period of 3 months within the 6 months following the commencement of truck movements in accordance with the approval of DA 250-09-01 Mod 2, or as directed by the Secretary . The monitoring shall be undertaken to determine compliance with the predicted noise levels in the SEE for DA 250-09-01 Mod 2 and comply with levels prescribed in condition 3.39. A copy of the monitoring results shall be provided to the Department and Maroota Public School. In the event that monitoring indicates noise level exceedances, the Applicant shall implement reasonable and feasible noise mitigation measures at the Maroota Public School in consultation with the Maroota Public School, Council, RMS and EPA , and to the satisfaction of the Secretary . | <ul style="list-style-type: none"> Truck Noise Assessment Report, ERM, Nov 2009 Environmental Criteria of Road Traffic Noise (ECRTN), RTA, 2001 Email to Maroota Public School re Truck Noise Assessment Report, 29 Jan 2016 | <p>Three months of continuous monitoring data at the closest representative classroom within the Maroota Public School indicated that traffic contribution along Old Northern Road from Dixon Sand Maroota Quarry was below the relevant ECRTN criteria.</p> <p>No additional noise mitigation measures were considered to be required.</p> <p>A copy of the Truck Noise Assessment Report was provided to the Maroota Public School on 29 January 2016</p> | Compliant COMPLETE |
| | Water Quality Monitoring | | | |
| | Surface Water | | | |
| 4.7 | The Applicant shall undertake surface water monitoring and discharge monitoring in accordance with the EPL for the quarry. | <ul style="list-style-type: none"> Environment Protection Licence No. 3916 | Surface water monitoring and discharge monitoring has been conducted at EPA approved discharge point 1 in accordance with the EPL 3916 condition M2.3. | Compliant |
| | Groundwater | | | |
| 4.8 | The Applicant shall monitor groundwater levels in the four monitoring bores on Lots 1 and 2, DP 547255 and the two monitoring bores on Lot 196 DP 752025, monthly and following | | Six-monthly groundwater monitoring of bores BH 1 and MW5 on Lot 196 DP 752025, and bores BH6, BH7, BH8 and BH9 on Lots 1 and 2 DP 547255 has occurred. | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|---|------------------|
| | any periods of extreme wet weather. Water quality monitoring of groundwater shall be undertaken every six months. Results of groundwater monitoring shall be reported in the Annual Review . | | Results of groundwater monitoring has been reported in the AEMRs (Annual Review2). | |
| | Flora and Fauna Monitoring | | | |
| 4.9 | The Applicant shall prepare and implement a Flora and Fauna Monitoring Program to monitor the effects of the development on flora and fauna including known populations of <i>Tetratheca glandulosa</i> , <i>Melaleuca deanei</i> , <i>Darwinia fascicularis subsp. oligantha</i> , and <i>Kunzea Rupestris</i> on the site. The Program shall also monitor the success of revegetation works on the site. The Program shall be developed in consultation with OEH and Council. The Program shall include annual surveys for threatened species during quarry operations. The Applicant shall include the Flora and Fauna Monitoring Program in the SEMP (condition 6.3(i)). | <ul style="list-style-type: none"> Site Environment Management Plan EP14 – Flora and Fauna Management, Jun 2016 Flora and Fauna Monitoring Program, Cumberland Ecology, Jun 2016 Letter from DP&E re Approval of Flora and Fauna Monitoring Program, 1 November 2016 | The Flora and Fauna Monitoring Program prepared by Cumberland Ecology to satisfy Development Consent 250-09-01 MOD 4 Schedule 2 condition 4.9, was approved by DP&E on 1 November 2016. Reference to the known populations of <i>Tetratheca glandulosa</i> , <i>Melaleuca deanei</i> , <i>Darwinia fascicularis subsp. oligantha</i> , and <i>Kunzea Rupestris</i> on the site, is included in EP14 -Flora and Fauna Management and the Flora and Fauna Monitoring Program. | Compliant |
| 4.10 | The Flora and Fauna Monitoring Program shall begin before commencement of operations on the quarry site and continue until at least two years beyond the period of approval in condition 1.5. | <ul style="list-style-type: none"> 2013-2014 AEMR section 8 2014-2015 AEMR section 8 2015-2016 AEMR section 8 | Flora and fauna monitoring has been conducted and reported in the AEMR / Annual Reviews and the annual monitoring reports appended to the AEMR / Annual Reviews. | Compliant |
| | Independent Auditing | | | |
| 4.11 | <p>The Applicant shall commission an independent person(s) to undertake an Environmental Audit of the entire quarry at the following stages of the development:</p> <p>a) Before commencement of operations on strips 2, 3, 4, 5, and 6;</p> <p>b) At the end of the period of approval set out in condition 1.5; and</p> <p>c) At the completion of the Flora and Fauna Monitoring Program in condition 4.10, or as otherwise required by the Secretary.</p> <p>The independent person(s) shall be approved by the Secretary prior to the commencement of the Audit. An Environmental Audit Report shall be submitted to the Secretary, the OEH, the EPA, the RMS and Council within one month of the completion of the Audit. The Audit shall:</p> <p>a) Be carried out in accordance with <i>ISO 14010 – Guidelines and General Principles for Environmental Auditing</i> and <i>ISO 14011 – Procedures for Environmental Auditing</i>;</p> <p>b) Assess compliance with the requirements of this consent, and other licences and approvals that apply to the development;</p> <p>c) Assess the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent;</p> <p>d) Review the effectiveness of the environmental management of the development, including any environmental impact mitigation works; and</p> | <ul style="list-style-type: none"> Letter from DP&E re Extension of Time for Independent Environmental Audit to July 2016, 13 May 2016 Letter from DP&E re Approval of Independent Auditor, 8 Nov 2016 | <p>An Independent Environmental Audit (IEA) was conducted by SMEC in December 2012. The postponement of the current IEA was granted by the DP&E until DA 250-09-01 MOD 4 was finalised. This current IEA has been conducted by Trevor Brown (approved by the DP&E on 8 November 2016) and the audit carried out with a site inspection between 17 and 19 November 2016. The audit:</p> <p>a) was carried out generally in accordance with <i>ISO 14010 – Guidelines and General Principles for Environmental Auditing</i> and <i>ISO 14011 – Procedures for Environmental Auditing</i>;</p> <p>b) assessed compliance with the requirements of this consent, and other licences and approvals that apply to the development;</p> <p>c) assessed the development against predictions made and conclusions drawn in the Environmental Assessment documents referred to in condition 1.2 of this consent;</p> <p>d) reviewed the effectiveness of the environmental management of the development, including any environmental impact mitigation works; and</p> <p>e) independently reviewed monitoring programs and outcomes.</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|---|------------|
| | e) Independently review and validate monitoring systems and outcomes. The Secretary may, having considered any submission made by the OEHL/ EPA , the RMS or Council in response to the Environmental Audit Report, require the Applicant to undertake works to address the findings or recommendations presented in the Report. Any such works shall be completed within such time as the Secretary may require. The Applicant shall make the Environmental Audit Report available for public inspection on request. The Secretary may make the Environmental Audit Report available on the Department's internet site. | | The IEA Report is due for submission to the Secretary of DP&E by 30 December 2016. | |
| 4.12 | The Applicant shall provide a compliance report(s) to the Secretary detailing the implementation of the recommendations of the Environmental Audit Report (refer to condition 4.11). The compliance report(s) shall be submitted to the Secretary within such time, and at such frequency, as the Secretary may require. The Applicant shall make the compliance report(s) available for public inspection. | | | Noted |
| 5 | COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT | | | |
| | Complaints Procedure | | | |
| 5.1 | Throughout the life of the development, the Applicant shall ensure that the following are available for community complaints: a) A telephone number on which complaints about the development may be registered; b) a postal address to which written complaints may be sent; and c) an email address to which electronic complaints may be transmitted. The telephone number, the postal address and the email address shall be advertised in at least one appropriate local newspaper prior to the commencement of operations on Lots 1 and 2, DP 547255. These details shall also be provided on the Applicant's internet site. | <ul style="list-style-type: none"> www.dixonsand.com.au Complaints Register Form – Dixon Sand Site Environmental Management Plan, EP3 – Complaints Management, Jun 2016 | <p>The Dixon Sand (Penrith) Pty Ltd website provides the contact information to lodge a complaint regarding the Old Northern Road Quarry operations:</p> <ul style="list-style-type: none"> Email to feedback@dixonsand.com.au, or Phone Maroota office, or Fill in a Contact form via our Website, or Fax our Maroota office 02 4566 8348, or Send a letter to the Maroota office: 4610 Old Northern Rd Maroota NSW 2765 <p>Original contact details were published in 'Living Heritage' in 2004 (a local newsletter developed by a community group at the Maroota Public School). Complaints forms are available at the school.</p> | Compliant |
| 5.2 | The Applicant shall record details of all complaints received through the means listed under condition 5.1 of this consent in a Complaints Register. The Register shall record, but not necessarily be limited to: a) The date and time, where relevant, of the complaint; b) The means by which the complaint was made (telephone, mail or email); c) Any personal details of the complainant that were provided, or if no details were provided, a note to that effect; | <ul style="list-style-type: none"> Complaints Register Form – Dixon Sand Site Environmental Management Plan, EP3 – Complaints Management, Jun 2016 Environment Protection Licence 3916 conditions M5 and M6. | Complaints received at Old Northern Road Quarry are recorded in a Dixon Sand Complaints Register with: a) date and time of the complaint; b) means by which the complaint was made; c) details of the complainant that were provided; d) nature of the complaint; e) action(s) taken by the Old North Road Quarry personnel in relation to the complaint; and | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|--|------------------|
| | <p>d) The nature of the complaint;</p> <p>e) Any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and</p> <p>f) If no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.</p> <p>The Complaints Register shall be made available for inspection by the EPA or the Secretary upon request. The Applicant shall also make summaries of the Register, without details of the complainants, available for public inspection.</p> | | <p>f) If no action was taken comment on why no action was taken.</p> <p>A summary of complaints is provided in the AEMR / Annual Reviews and the Complaints Register can be made available for inspection by the EPA or the Secretary upon request</p> | |
| | Community Consultative Committee | | | |
| 5.3 | <p>The Applicant shall establish a Community Consultative Committee (CCC) to oversee the environmental performance of the development. The Applicant shall ensure that one committee is established for the entire site which meets the requirements of both this consent and the existing consent for the site while that consent operates. This committee shall:</p> <p>a) Be comprised of:</p> <ul style="list-style-type: none"> 1 independent chairperson nominated by the Secretary in consultation with the Council, and agreed to by the Applicant; 2 representatives from the Applicant, including the Environmental Officer; 1 representative from the Council; 1 representative from the Maroota Public School; and 2 representatives from the local community; <p>whose appointment has been approved by the Secretary in consultation with the Council;</p> <p>b) Meet at least once every six months; and</p> <p>c) Review and provide advice on the environmental performance of the development, including the Site Environmental Management Plan, monitoring results, audit reports, compliance reports, Annual Reviews or complaints.</p> | <ul style="list-style-type: none"> Letter from DIPNR re Community Consultative Committee Appointments, 9 Aug 2004 Letter from DP&E re Approval of Current Members of the CCC, 4 Apr 2016 CCC Minutes <ul style="list-style-type: none"> 13 Nov 2012 7 May 2013 20 Nov 2013 13 MAY 2014 18 Nov 2014 12 May 2015 17 Nov 2015 10 May 2016 15 Nov 2016 | <p>A Community Consultative Committee (CCC) was established and has held bi-annual meetings in May and November each year.</p> <p>The appointments to the initial CCC were approved by DIPNR on 9 August 2004.</p> <p>The first CCC Meeting in relation to the Old Northern Road Quarry DA 250-09-01, was held in November 2004.</p> <p>The Secretary of the DP&E approved the current members of the CCC on 4 April 2016.</p> | Compliant |
| 5.4 | Representatives from the Department may attend committee meetings. Representatives from relevant government agencies, the local community, the local Aboriginal community, or other individuals may be invited to attend meetings as required by the Chairperson. | <ul style="list-style-type: none"> CCC Minutes 10 May 2016 | Two officers from DP&E attended the CCC Meeting on 10 May 2016. | Noted |
| 5.5 | <p>The Applicant shall, at its own expense:</p> <p>a) Ensure that 2 of its representatives attend all the Committee's meetings;</p> <p>b) Provide the Committee with regular information on the environmental performance and management of the development;</p> <p>c) Provide meeting facilities for the Committee;</p> | <ul style="list-style-type: none"> CCC Minutes <ul style="list-style-type: none"> 13 Nov 2012 7 May 2013 20 Nov 2013 13 MAY 2014 18 Nov 2014 12 May 2015 | <p>Dixon Sand:</p> <p>a) ensures that two (2) of its representatives attend each CCC meeting;</p> <p>b) provides the CCC with regular information on the environmental performance and management of the development;</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|--|------------|
| | d) Meet all reasonable costs associated with operating the Committee; e) Allow the Committee to inspect the site, if necessary; f) Take minutes of the Committee's meetings; g) Make these minutes available for public inspection at the Council within 14 days of the Committee meeting, or as agreed by the Committee; h) Respond to any recommendations the Committee may have in relation to the environmental performance of the development; i) Forward a copy of the minutes of each Committee meeting verified by the independent chairperson, and any responses to the Committee's recommendations to the Secretary within 14 days of the Committee meeting. | <ul style="list-style-type: none"> o 17 Nov 2015 o 10 May 2016 o 15 Nov 2016 | c) CCC Meeting facilities are provided at the Old Northern Road Quarry office; d) meets all reasonable costs associated with operating the CCC; e) enables the CCC to inspect the Old Northern Road Quarry site; f) provides a Minute-taker for the CCC meetings; g) makes CCC Minutes available for public inspection within 14 days of the CCC Meeting, or as agreed by the Committee; and h) Dixon Sand responds to the CCC in relation to the environmental performance of the development; i) A copy of the CCC Minutes of each CCC Meeting is verified by the independent chairperson within 14 days of the Committee meeting. | |
| 5.6 | The Applicant shall ensure that the Committee has its first meeting prior to the submission of the Site Environmental Management Plan. | | The CCC Meeting in relation to the Old Northern Road Quarry, was held in November 2004. The Site Environmental Management Plan was submitted in January 2005. | Compliant |
| 5.7 | The Applicant shall prepare and implement a Community Relations Plan (CRP) to improve communications with the local community and Maroota Public School. The Plan shall be developed in consultation with Council, the CCC, and MPS. The Plan shall include, but not be limited to: a) Identification of stakeholders potentially affected by the development; b) Details of strategies to ensure open communication between the Applicant and the community and Maroota Public School; c) Details of strategies to monitor and evaluate social impacts of the development on the local community and Maroota Public School; d) Measures to improve community relations including: i. Quarry open days and education sessions to promote better understanding of quarry operations in the wider community; ii. Participation in community activities; iii. Strategies involving in-kind exchanges of expertise and resources for activities such as bush regeneration, Landcare, Streamwatch, and other community-based environmental programs. The CRP shall be included in the SEMP. | <ul style="list-style-type: none"> • SEMP Appendix A - EP 17 Environment Plan, ERM 2005 • SEMP Appendix A - EP 17 Environment Plan, Jun 2016 | A Community Relations Plan EP17, is outlined in the Site Environmental Management Plan, as approved by the DIPNR in January 2005, and identifies key stakeholders, the provision of quarry open days and participation in of the proponent in community activities. EP17 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and was submitted to DP&E for approval. DP&E approved the Community Relations Plan on 20 July 2016. | Compliant |
| 6 | ENVIRONMENTAL MANAGEMENT | | | |
| | Environmental Officer | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|---|--|------------|
| 6.1 | <p>Within 3 months of the operation of this consent, the Applicant shall nominate a suitably qualified and experienced Environmental Officer(s), approved by the Secretary. The Applicant shall employ an Environmental Officer(s) on a full-time basis throughout the life of the development. The Environmental Officer(s) shall be:</p> <p>a) The primary contact point for the Department, the OEH, the EPA, the RMS, Council and the community, as applicable, in relation to the environmental performance of the development;</p> <p>b) Responsible for all Management Plans and Monitoring Programs required under this consent;</p> <p>c) Responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development; d) Responsible for receiving and responding to complaints in accordance with condition 5.2 of this consent; and</p> <p>e) Given the authority and independence to require reasonable steps be taken to avoid or minimize unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.</p> <p>The Applicant shall notify the Secretary, the OEH, EPA, the RMS, and Council of the name and contact details of the Environmental Officer upon appointment, and any changes to that appointment that may occur from time to time.</p> | <ul style="list-style-type: none"> Letter to DIPNR re Appointment of Environmental Officer, 7 May 2004 Letter from DIPNR re Approval of Environment Officer, 9 Aug 2004 Letter to RTA re Appointment of Environment Officer, 7 Jan 2005 Letter to NPWS re Appointment of Environment Officer, 7 Jan 2005 Letter to DP&E re Appointment of Environment Officer, 10 Aug 2015 Letter from DP&E re Approval of Environment Officer, 27 Aug 2015 | <p>Dixon Sand appointed and had approved by the Director-General / Secretary, suitably qualified and experienced Environmental Officer(s) between 2004 and 2016.</p> <p>The Environment Officers have been responsible for:</p> <p>a) primary contact point for the DP&E, OEH, EPA, RMS, Council and the community in relation to the environmental performance of the development;</p> <p>b) development and implementation of Management Plans and Monitoring Programs required under this consent;</p> <p>c) considering and advising on matters specified in the conditions of Development Consent, and other licences and approvals related to the environmental performance of the development;</p> <p>d) receiving and responding to complaints in accordance with condition 5.2 of this consent; and</p> <p>e) authority and independence to require reasonable steps be taken to avoid or minimize unintended or adverse environmental impacts, and to direct that relevant actions be ceased should an adverse impact on the environment be likely to occur.</p> | Compliant |
| 6.2 | <p>The Applicant shall prepare and implement a Site Environmental Management Plan (SEMP) to detail an environmental management framework, practices and procedures to be followed during the operation of the development. The SEMF shall cover operations on both the existing quarry site and the quarry extension. The Plan shall include, but not necessarily be limited to:</p> <p>a) Demonstration of consistency with commitments made in documents listed in condition 1.2 and compliance with the conditions of this consent;</p> <p>b) Identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the development, including all consents, licenses, approvals and consultations;</p> <p>c) A description of the roles and responsibilities for all relevant employees involved in the operation of the development;</p> <p>d) Overall environmental policies and principles to be applied to the operation of the development;</p> <p>e) Standards and performance measures to be applied to the development, and a means by which environmental performance can be periodically reviewed and improved;</p> | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Letter from DIPNR re Approval of SEMF, 15 Jan 2005 Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMF, Jan 2005 Site Environmental Management Plan, Jun 2016 Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>A Site Environmental Management Plan (SEMP) was prepared by ERMA to satisfy the requirements of condition 6.2 and was approved by DIPNR on 15 January 2005.</p> <p>The SEMF has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> <p>The SEMF provides an environmental management framework, practices and procedures to for the operation of the Old Northern Road Quarry. The Plan includes:</p> <p>a) consistency with commitments made in the Environmental Assessments listed in condition 1.2 and compliance with the conditions of this consent;</p> <p>b) section 2.1 identifies statutory and other obligations in relation to operation of the Old Northern Road Quarry, including all consents, licenses, approvals and consultations;</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|------------|
| | <p>f) Management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent;</p> <p>g) Procedures to be followed to ensure the protection and conservation of Aboriginal cultural heritage;</p> <p>h) The CRP required in condition 5.7;</p> <p>i) The Management Plans listed under condition 6.3 of this consent; and</p> <p>j) The environmental monitoring requirements outlined under conditions 4.1 to 4.12 of this consent, inclusive.</p> <p>The SEMP shall be submitted for the approval of the Secretary no later than one month prior to the commencement of operation of the development, or within such period otherwise agreed by the Secretary. Operation shall not commence until written approval has been received from the Secretary. Upon receipt of the Secretary's approval, the Applicant shall supply a copy of the SEMP to Council, the OEHS, the EPA, the RMS as soon as practicable. The Applicant shall make the SEMP available for public inspection on request.</p> | | <p>c) section 5 outlines roles and responsibilities for relevant employees involved in the operation of the development;</p> <p>d) section 2 identifies environmental policies and principles to be applied to the operation of the Old Northern Road Quarry;</p> <p>e) section 4 identifies Environmental Plans (EP) that outline standards and performance measures to be applied to the Old Northern Road Quarry, and periodic review of environmental performance and improvement;</p> <p>f) section 4 identifies Environmental Plans (EP) that outline management policies to ensure that environmental performance goals are met, to comply with the conditions of this consent;</p> <p>g) EP 11 provides procedures to ensure the protection and conservation of Aboriginal cultural heritage;</p> <p>h) EP17 provides the Community Relations Program required in condition 5.7;</p> <p>i) Appendix A provides the Management Plans listed under condition 6.3 of this consent; and</p> <p>j) The EP documents in Appendix A provide the environmental monitoring requirements outlined under conditions 4.1 to 4.12 of this consent.</p> <p>The SEMP is available on the Dixon Sands website.</p> | |
| 6.3(a) | <p>As part of the SEMP for the development, required under condition 6.2 of this consent, the Applicant shall prepare and implement the following Management Plans:</p> <p>a) An Air Quality Management Plan to outline measures to minimise impacts from the development on local and regional air quality. The Plan shall address the requirements of the EPA and Council. The Plan shall include, but not necessarily be limited to:</p> <p>i. identification of all sources of dust emissions from the development and potentially affected properties;</p> <p>ii. detailed procedures for management and minimisation of dust emissions during operations on site;</p> <p>iii. procedures and schedules for rehabilitation of disturbed areas to minimise dust emissions; iv. a protocol for handling dust complaints;</p> <p>v. air quality monitoring, consistent with the requirements of this consent and any relevant Environment Protection Licence for the site; and</p> <p>vi. a contingency plan should an incident or weather event lead to air quality impacts above environmental performance goals/limits.</p> | <ul style="list-style-type: none"> • Site Environmental Management Plan, Jan 2005 • Letter from DIPNR re Approval of SEMP, 15 Jan 2005 • Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 • Site Environmental Management Plan, Jun 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>An Site Environmental Management Plan Appendix A includes EP13 - Air Quality Management Plan, prepared to satisfy the requirements of condition 6.3(a) was approved by DIPNR on 15 January 2005.</p> <p>EP13 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> <p>The Air Quality Management Plan outlines measures to minimise impacts from the Old Northern Road Quarry on local and regional air quality. The 2016 draft EP13 includes:</p> <p>i. identification of sources of dust emissions from the development;</p> <p>ii. procedures for management and minimisation of dust emissions during operations on site;</p> <p>iii. procedures and schedules for rehabilitation of disturbed areas to minimise dust emissions is included in EP15 – Rehabilitation and Landscape Management;</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|--|--|------------|
| | | | iv. a protocol for handling dust complaints isw included in EP 3 – Complaints Management; v. air quality monitoring, consistent with the requirements of this consent and any relevant Environment Protection Licence for the site; and vi. a contingency plan should an incident or weather event lead to air quality impacts above environmental performance goals/limits. | |
| 6.3(b) | <p>An Erosion and Sedimentation Control Plan to detail measures to minimise erosion during site preparation and operation. The Plan shall address the requirements of the Secretary, the EPA, and Council. The Plan shall include, but not necessarily be limited to:</p> <p>i. results of investigations into soils associated with the site, in particular the stability of the soil and its susceptibility to erosion; ii. details of erosion, sediment and pollution control measures and practices to be implemented; iii. procedures for removal of farm dams on site to ensure that large volumes of water and sediment are not released to natural waterways; iv. demonstration that erosion and sediment control measures will conform with, or exceed, the relevant requirements and guidelines provided in the former Department of Land and Water Conservation's publication <i>Urban Erosion and Sedimentation Handbook</i>, the EPA's publication <i>Managing Urban Stormwater: Soils and Construction</i>; v. design specifications for diversionary works, banks and sediment basins; vi. an erosion monitoring program during site preparation works and construction of the development; and vii. measures to address erosion, should it occur, and to rehabilitate/stabilise disturbed areas of the site.</p> | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Letter from DIPNR re Approval of SEMP, 15 Jan 2005 Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 <i>Managing Urban Stormwater: Soils and Construction</i>, Landcom, 2004 <i>Managing Urban Stormwater: Soils and Construction (Volume 2E – Mines and Quarries) Manual</i> (EPA 2008) Site Environmental Management Plan, Jun 2016 Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>The Site Environmental Management Plan Appendix A includes EP10 - Erosion and Sedimentation Control, prepared to satisfy the requirements of condition 6.3(b) was approved by DIPNR on 15 January 2005. EP10 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> <p>The Erosion and Sedimentation Control Plan details measures to minimise erosion during site preparation and operation. The 2016 draft EP 10 includes:</p> <p>i. results of investigations into soils associated with the site, in particular the stability of the soil and its susceptibility to erosion is addressed under EP10 Soil Conditions and Erodibility; ii. details of erosion, sediment and pollution control measures and practices to be implemented under EP10 Procedures; iii. procedures for removal of farm dams on site to ensure that large volumes of water and sediment are not released to natural waterways outlined in EP9 Water Management point 8; iv. demonstration that erosion and sediment control measures will conform with, or exceed, the relevant requirements and guidelines provided in the former Department of Land and Water Conservation's publication <i>Urban Erosion and Sedimentation Handbook</i>, the EPA publication <i>Managing Urban Stormwater: Soils and Construction</i>; v. design specifications for diversionary works, banks and sediment basins in EP10 Design Specifications; vi. an erosion monitoring program during site preparation works and construction of the development is addressed in EP10 Monitoring; and vii. measures to address erosion, should it occur, and to rehabilitate/stabilise disturbed areas of the site is</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|---|------------------|
| | | | addressed on EP15 Rehabilitation and Landscape Management. | |
| 6.3(c) | <p>A Noise Management Plan to detail measures to minimise noise impacts during the operation of the development and to manage residual noise (refer to condition 3.48 of this consent). The Plan shall be developed in consultation with Council and the EPA. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of a noise sources associated with the proposed development; ii. program to investigate and monitor noise levels from the development on periodic basis; iii. a protocol for handling noise complaints; iv. a program to investigate additional noise mitigation measures for the development if it is determined that noise criteria in this consent are being exceeded; v. a specific program to identify and implement, where appropriate, noise mitigation measures on the site, or at the receptor, to reduce residual noise impacts at the receptors including requirements of condition 3.48 of this consent; and vi. a program to identify other forms of benefit or amelioration that may be applied, upon agreement of the Applicant and the affected party, at receptors the subject of condition 3.48 of this consent. | <ul style="list-style-type: none"> • Site Environmental Management Plan, Jan 2005 • Letter from DIPNR re Approval of SEMP, 15 Jan 2005 • Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 • Site Environmental Management Plan, Jun 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>The Site Environmental Management Plan Appendix A includes EP12 – Noise and Vibration, prepared to satisfy the requirements of condition 6.3(c) was approved by DIPNR on 15 January 2005. EP12 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> <p>The Noise and Vibration Management Plan details measures to minimise noise impacts during the operation of the Old Northern Road Quarry. The 2016 draft EP12 Plan includes:</p> <ul style="list-style-type: none"> i. identification of a noise sources associated with the proposed development is outlined in EP12 Noise Sources; ii. program to investigate and monitor noise levels from the development on periodic basis is outlined in EP12 Monitoring; iii. a protocol for handling noise complaints is provided in EP3 Compliant Management; iv. a program to investigate additional noise mitigation measures for the development if it is determined that noise criteria in this consent are being exceeded; v. a specific program to identify and implement, where appropriate, noise mitigation measures on the site, or at the receptor, to reduce residual noise impacts at the receptors including requirements of condition 3.48 of this consent provided in EP12 Procedures point 16; and vi. a program to identify other forms of benefit or amelioration that may be applied, upon agreement of the Applicant and the affected party, at receptors the subject of condition 3.48 of this consent provided in EP12 Procedures point 17. | Compliant |
| 6.3(d) | <p>A Water Management Plan to outline measures to control and manage surface water, stormwater and groundwater on the site. The Plan shall address the requirements of the Secretary, the EPA, NOW and Council. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of all potential sources of surface water and groundwater pollution; ii. management measures to ensure separation of clean and dirty water on site; | <ul style="list-style-type: none"> • Site Environmental Management Plan, Jan 2005 • Letter from DIPNR re Approval of SEMP, 15 Jan 2005 • Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 • Site Environmental Management Plan, Jun 2016 | <p>The Site Environmental Management Plan Appendix A includes EP9 – Water Management, prepared to satisfy the requirements of condition 6.3(d) was approved by DIPNR on 15 January 2005. EP9 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|---|------------|
| | <p>iii. measures to rehabilitate erosion-affected areas and areas the subject of excavation, including tree, shrub and/or cover crop species and implementation; iv. management procedures for all surface water collection and storage structures on the site, including a maintenance program for associated infrastructure (e.g. pumps, pipes, dam walls etc) and a program for desilting of those structures, where relevant;</p> <p>v. a demonstration of consistency with the surface water management plan for the catchment, should one exist, or with the EPA's publication <i>Managing Urban Stormwater: Council Handbook</i> should a stormwater management plan for the catchment not exist;</p> <p>vi. management measures to ensure that quarrying operations, other than monitoring bores, do not intercept the wet weather groundwater table within the MTSGS buffer and/or the regional groundwater table within the Sydney Basin Central Groundwater Source;</p> <p>vii. details of a program for monitoring surface water and groundwater quality and quantity at the site;</p> <p>viii. details of measures to ensure a sustainable water management system is created in the final landform on the site; and</p> <p>ix. a strategy for the decommissioning of water management structures, including storage, and sedimentation dams once extraction is complete.</p> | <ul style="list-style-type: none"> Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>The Water Management Plan outlines measures to control and manage surface water, stormwater and groundwater on the site The 2016 draft EP9 includes:</p> <p>i. identification of all potential sources of surface water and groundwater pollution provided in EP9 Potential Sources of Surface Water and Groundwater Pollution;</p> <p>ii. management measures to ensure separation of clean and dirty water on site;</p> <p>iii. measures to rehabilitate erosion-affected areas and areas the subject of excavation, including tree, shrub and/or cover crop species and implementation provided in EP15 Rehabilitation and Landscape Management;</p> <p>iv. management procedures for all surface water collection and storage structures on the site, including a maintenance program for associated infrastructure (e.g. pumps, pipes, dam walls etc) and a program for desilting of those structures, where relevant is addressed in EP9 Surface Water Procedures;</p> <p>v. a demonstration of consistency with the surface water management plan for the catchment, should one exist, or with the EPA's publication <i>Managing Urban Stormwater: Council Handbook</i> should a stormwater management plan for the catchment not exist. Reference to the <i>Hawkesbury Lower Nepean Catchment Blueprint</i> DLWC, 2003;</p> <p>vi. management measures to ensure that quarrying operations, other than monitoring bores, do not intercept the wet weather groundwater table within the MTSGS buffer and/or the regional groundwater table within the Sydney Basin Central Groundwater Source EP9 Groundwater points 12 to 15;</p> <p>vii. details of a program for monitoring surface water and groundwater quality and quantity at the site is included in EP9 Monitoring;</p> <p>viii. details of measures to ensure a sustainable water management system is created in the final landform on the site is outlined in EP9 Procedures point 14; and</p> <p>ix. a strategy for the decommissioning of water management structures, including storage, and sedimentation dams once extraction is complete.</p> | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|--|---|
| 6.3(e) | <p>A Rehabilitation and Landscape Plan to detail the proposed final land use and landform for the site and measures to be undertaken to create that landform and vegetation cover. The Plan shall address the requirements of the Secretary, Council, OEH, the EPA and DRE. The Plan shall include, but not necessarily be limited to:</p> <ol style="list-style-type: none"> details of all landscaping to be undertaken on the site; maximisation of flora species endemic to the locality in land scaping the site; a specific program to translocate, propagate, and revegetate and monitor threatened plant species on the site including <i>Tetradlea glandulosa</i>, <i>Melaleuca deanei</i>, <i>Darwinia Fascicularis susp. oligantha</i>, and <i>Kunzea rupestris</i>; Plans and cross-sections to scale, showing the proposed final landform (as shown conceptually in Annexure H) demonstrating that it integrates with the surrounding terrain. The final landform shall be integrated across the entire site and adjoining land; Site analysis used to determine compatible contours, shape, form, landscape features and quality of the final landform; Deleted; Details of the progressive rehabilitation of both extraction areas, environmental bunds, and setback/buffer zones; Details of stream restoration works including: <ul style="list-style-type: none"> Methods to stabilise the bed and banks of the waterway; Establishment of riparian zones using local native vegetation; Vegetation monitoring, maintenance, and performance criteria; and Use of an environmentally sympathetic, soft-engineering approach; a schedule of works and associated time period for the rehabilitation of each disturbed and/or exposed extraction area or strip with the aim to restore vegetative covers and habitat at the earliest possible opportunity; procedures for weed control and feral animal control; details of all backfilling works, including source of materials and the grades and stability of all batters. Batter design should be in accordance with the provisions of DCP No 500 – Extractive Industries, and certification is to be provided by appropriately qualified engineers regarding the stability of all designed batters; details including a soil drainage plan sufficient for growing crops that require free drainage. | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Letter from DIPNR re Approval of SEMP, 15 Jan 2005 Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 Site Environmental Management Plan, Jun 2016 Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>The Site Environmental Management Plan Appendix E - EP15 – Rehabilitation and Landscape Management, prepared to satisfy the requirements of condition 6.3(e) was approved by DIPNR in January 2005. EP15 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> <p>The Rehabilitation and Landscape Management Plan was prepared to describe the proposed final land use and landform for the site and measures to be undertaken to create that landform and vegetation cover. The 2016 draft EP15 includes:</p> <ol style="list-style-type: none"> section 4 - Rehabilitation Staging details landscaping to be undertaken on the site; section 3 describes Revegetation Strategy with flora species endemic to the locality in land scaping the site; section 4.2 - Threatened Flora Species outlines the specific program to translocate, propagate, and revegetate and monitor threatened plant species on the site including <i>Tetradlea glandulosa</i>, <i>Melaleuca deanei</i>, <i>Darwinia Fascicularis susp. oligantha</i>, and <i>Kunzea rupestris</i>; Plans and cross-sections to scale, showing the proposed final landform (as shown conceptually in Annexure H) demonstrating that it integrates with the surrounding terrain. The final landform shall be integrated across the entire site and adjoining land; Site analysis used to determine compatible contours, shape, form, landscape features and quality of the final landform; Deleted; section 4 provides details of the progressive rehabilitation of both extraction areas, environmental bunds, and setback/buffer zones; section 4.4 outlines stream restoration works including: <ul style="list-style-type: none"> Methods to stabilise the bed and banks of the waterway; Establishment of riparian zones using local native vegetation; Vegetation monitoring, maintenance, and performance criteria; and | <p style="text-align: center;">Compliant</p> <p style="text-align: center;">Compliant</p> |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|---|---|--|--|
| | | | <ul style="list-style-type: none"> Use of an environmentally sympathetic, soft-engineering approach; ix. section 4.1 provides the proposed schedule of works and associated time period for the rehabilitation of each disturbed and/or exposed extraction area or strip with the aim to restore vegetative covers and habitat at the earliest possible opportunity; x. sections 3.4 (Weed Control) and 3.5 (Feral Animal Control) outline procedures for weed control and feral animal control; xi. details of all backfilling works, including source of materials and the grades and stability of all batters. Batter design should be in accordance with the provisions of DCP No 500 – Extractive Industries, and certification is to be provided by appropriately qualified engineers regarding the stability of all designed batters. Details of backfilling works not available at the date of this audit; xii. section 2.4 and 4.1 include a soil drainage plan sufficient for growing crops that require free drainage. | <div>Compliant</div> <div>Administrative Non-Compliance</div> <div>Compliant</div> |
| 6.3(f) | A Bushfire Management Plan for the site, developed in consultation with Council and relevant emergency services. The Plan shall be consistent with any bushfire management measures for State Forests and National Parks in the region; | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Letter from DIPNR re Approval of SEMP, 15 Jan 2005 Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 Site Environmental Management Plan, Jun 2016 Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Approval of Bushfire Management Plan, 1 Nov 2016 | SEMP Appendix A EP16 - Bushfire Management was developed in consultation with Council and relevant emergency services and approved by DP&E on 1 November 2016. The Plan is consistent with any bushfire management measures for State Forests and National Parks in the region. | Compliant |
| 6.3(g) | A Traffic Management Plan to outline measures to minimise traffic impacts associated with the development. The Plan shall address the requirements of Council and the RMS. The Plan shall include specific measures to minimise the impact of heavy vehicles, including restrictions on routes and times (particularly in relation to peak hours, holiday periods and times immediately before and after school hours, i.e. 8.30 am – 9.00am and 3.00pm – 3.30pm); | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Letter from DIPNR re Approval of SEMP, 15 Jan 2005 Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 | The Site Environmental Management Plan Appendix E - EP5 – Traffic and Transport Management and EP6 Hours of Operations, prepared to satisfy the requirements of condition 6.3(e) was approved by DIPNR in January 2005. EP6 has been reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval. Dixon Sand was | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|---|------------|
| | | <ul style="list-style-type: none"> Site Environmental Management Plan, Jun 2016 Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | addressing comments from DP&E at the date of this audit (November 2016). EP5 - Traffic and Transport Management Plan outlines measures to minimise traffic impacts associated with the development and includes specific measures to minimise the impact of heavy vehicles, including restrictions on routes and times (particularly in relation to peak hours, holiday periods and times immediately before and after school hours, i.e. 8.30 am – 9.00am and 3.00pm – 3.30pm). | |
| 6.3(h) | A Transport Code of Conduct to outline minimum requirements for the movement of heavy vehicles to and from the site. The Code shall meet the requirements of Council and the RMS. The Code shall include, but not necessarily be limited to: i. restrictions to routes (consistent with the Transport Management Plan required under g) above, where relevant); ii. speed limits to be observed within certain periods along routes to and from the site; iii. restrictions to the hours of transport operations under this consent; iv. minimum requirements for vehicle maintenance to address noise and exhaust emissions; v. behavioural requirements for drivers; and vi. load coverage requirements. | <ul style="list-style-type: none"> SEMP, EP5 – Traffic and Transport Management SEMP, EP1.2 - Site Traffic Management Plan: Maroota SEMP, EP6 Hours of Operations | A Site Traffic Management Plan: Maroota (included in the Site Environmental Management Plan EP5 Traffic and Transport Management) includes: (i). restrictions to routes within the Old Northern Road Quarry site (consistent with the EP5 - Transport Management Plan); (ii). speed limits to be observed within certain periods along routes to and from the site (EP1.2 points 3 and 7); (iii). restrictions to the hours of transport operations under this consent (EP1.2 points 1, 2, 15 and 17); (iv). minimum requirements for vehicle maintenance to address noise and exhaust emissions (EP1.2 point 4); (v). behavioural requirements for drivers (EP1.2 points 8, 21 to 24); and (vi). load coverage requirements (EP1.2 point 10). | Compliant |
| 6.3(i) | A Flora and Fauna Management Plan to detail measures to minimise impacts on flora and fauna, particularly populations of threatened plants, on the site during the operation of the development. The Plan shall be developed in consultation with OEH and Council and include: i. details of the creation, landscaping and management of on-site vegetation to provide habitat for fauna species likely to occur on the site; ii. details of strategic vegetation management, outlining timeframes for clearing and re-vegetation activities and a map illustrating the Plan. The Plan should aim to maximise scope for new vegetation to establish and restore ecological integrity; iii. details of the schedule for clearing activities incorporating seasonal habitat requirements for species such as bats and other mammals, with the objective of avoiding incidents during sensitive hibernation and breeding periods. iv. details of pre-clearance inspections, including the identification and inspection of trees containing tree hollows, including stags, prior to clearing of any vegetation; | <ul style="list-style-type: none"> Site Environmental Management Plan, Jan 2005 Letter from DIPNR re Approval of SEMP, 15 Jan 2005 Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Site Environmental Management Plan, Jun 2016 Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 Letter from DP&E re Approval of Flora and Fauna Management Plan, 1 Nov 2016 | The Site Environmental Management Plan Appendix B – EP14 – Flora and Fauna Management, prepared to satisfy the requirements of condition 6.3(i) was approved by DIPNR in January 2005. EP14 was reviewed and revised to address Development Consent 250-09-01 MOD 4 requirements and submitted to DP&E for approval in June 2016. Dixon Sand was addressing comments on the Flora and Fauna Management Plan from DP&E at the date of this audit (November 2016). Dixon Sand addressed comments from DP&E on the Flora and Fauna Monitoring Program and received approval on 1 November 2016. The Flora and Fauna Management Plan outlines measures to minimise impacts on flora and fauna on the Old Northern Road Quarry site during operations. The Flora and Fauna Management Plan includes: | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
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| | <p>v. details of how micro habitats including dead trees, stags, stumps and hollow branches will, where practical, be salvaged and relocated to areas depauperate of tree hollow habitat and in the recreation of habitat areas;</p> <p>vi. details of measures to care for any animals injured or found during clearing activities, including the use of WIRES to attend to fauna as necessary, and the methods for their relocation if appropriate. This shall include measures for harbouring and releasing nocturnal animals at night;</p> <p>vii. measures to re-instate or relocate plants and vegetation communities and to use local endemic species and local provenance seed for revegetation;</p> <p>viii. details of the methods for strategically placing felled trees between cleared and remnant bushland to provide runways of ground cover for dispersion of animals;</p> <p>ix. strategies for the establishment of wildlife corridor links to adjoining habitat areas and integration of rehabilitation works with nearby mines;</p> <p>x. details of strategies for the exclusion of grazing stock on areas of native bushland reconstruction;</p> <p>xi. measures to monitor the success of revegetated areas, and plant additional species where necessary;</p> <p>xii. consideration of Aboriginal heritage management to ensure that activities under the Plan do not impact on Aboriginal heritage values; and</p> <p>xiii. details of the flora and fauna monitoring required under this consent.</p> | | <p>i. sections 3.5 and 3.7 address the creation, landscaping and management of on-site vegetation to provide habitat for fauna species likely to occur on the site;</p> <p>ii. sections 3.4 and 3.7 detail strategic vegetation management, outlining timeframes for clearing, re-vegetation activities and a map illustrating the Plan.</p> <p>iii. section 3.4 provides the schedule for clearing activities incorporating seasonal habitat requirements for species such as bats and other mammals, with the objective of avoiding incidents during sensitive hibernation and breeding periods.</p> <p>iv. section 3.3 addresses pre-clearance inspections, including the identification and inspection of trees containing tree hollows, including stags, prior to clearing of any vegetation;</p> <p>v. section 3.5 describes how micro habitats including dead trees, stags, stumps and hollow branches will, where practical, be salvaged and relocated to areas depauperate of tree hollow habitat and the recreation of habitat areas;</p> <p>vi. section 3.4 outlines measures to care for any animals injured or found during clearing activities, including the use of WIRES to attend to fauna as necessary, and the methods for their relocation if appropriate;</p> <p>vii. section 3.7 measures to re-instate or relocate plants and vegetation communities and to use local endemic species and local provenance seed for revegetation;</p> <p>viii. section 3.5 provides methods for strategically placing felled trees between cleared and remnant bushland to provide runways of ground cover for dispersion of animals;</p> <p>ix. section 3.8 outlines strategies for the establishment of wildlife corridor links to adjoining habitat areas and integration of rehabilitation works with nearby mines;</p> <p>x. section 3.7 details of strategies for the exclusion of grazing stock on areas of native bushland reconstruction;</p> <p>xi. section 3.9 provides measures to monitor the success of revegetated areas, and plant additional species where necessary;</p> <p>xii. section 3.7 outlines consideration of Aboriginal heritage management to ensure that activities under the Plan do not impact on Aboriginal heritage values; xiii. section 3.9 provides the flora and fauna monitoring required under this consent.</p> | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--|--|--------------------------|
| 6.3(j) | <p>A Waste Management Plan to outline measures to minimise the production and impact of waste produced at the development during operation, through the implementation of waste reduction, reuse and recycling principles. The Plan shall meet the requirements of the EPA and Council. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of the types and quantities of waste materials produced on the site during operation of the development; ii. programs aimed at minimising the production of waste at the site through the implementation of operational and management measures; iii. details of potential reuse and recycling avenues for waste materials produced on the site, including collection and handling procedures; iv. details of appropriate disposal routes in the event that reuse and recycling avenues are not available or are not practicable. | <ul style="list-style-type: none"> • Site Environmental Management Plan, Jan 2005 • Letter from DIPNR re Approval of SEMP, 15 Jan 2005 • Letters to NPWS, EPA, RTA and Baulkham Hill Council re SEMP, Jan 2005 • Site Environmental Management Plan, Jun 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>The Site Environmental Management Plan Appendix B – EP18 – Waste Management, prepared to satisfy the requirements of condition 6.3(j) was approved by DIPNR in January 2005.</p> <p>EP18 has been reviewed and revised to address Development Consent 250-09-01 Mod 4 requirements and submitted to DP&E for approval. Dixon Sand was addressing comments from DP&E at the date of this audit (November 2016).</p> <p>The Waste Management Plan outlines measures to minimise the production and impact of waste produced at the Old Northern Road Quarry during operation, through the implementation of waste reduction, reuse and recycling principles. The 2016 draft EP18 includes:</p> <ul style="list-style-type: none"> i. EP18 – Types and Quantities of Waste identifies of the types and quantities of waste materials produced on the site during operation of the Old Northern Road Quarry; ii. EP18 Procedures points 6 to 9 outline programs aimed at minimising the production of waste at the site through the implementation of operational and management measures; iii. EP18 Procedures points 6 to 9 outline reuse and recycling avenues for waste materials produced on the site, including collection and handling procedures; iv. EP18 Procedures points 1 to 3 outline appropriate disposal routes in the event that reuse and recycling avenues are not available or are not practicable. | Compliant |
| | Revision of Strategies, Plans and Programs | | | |
| 6.4 | <p>Within 3 months of the submission of an:</p> <ul style="list-style-type: none"> (a) Annual Review under condition 7.2 below; (b) incident report under condition 7.1 below; (c) audit report under condition 4.11 above; or (d) any modifications to this consent, <p>the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</i></p> | <ul style="list-style-type: none"> • Letter to DP&E re Review of Strategies, Plans, and Programs, 6 Oct 2015 • Letter from DP&E re Comments on Management Plans and Strategies, 20 Jul 2016 • Letter from DP&E re Comments on Management Plans and Strategies, 1 Nov 2016 | <p>A review, and if necessary revision of the strategies, plans, and programs required under Development Consent 250-09-01 MOD 4 following the 2015-2016 Annual Review, was commenced in October 2015 for:</p> <ul style="list-style-type: none"> • Site Environmental Management Plan and Environmental Plans EP1 to EP18; • Flora and Fauna Management Plan; • Flora and Fauna Monitoring Plan; • Rehabilitation and Landscape Management Plan; • Biodiversity Management Plan <p>The reviews and revisions where required to address Development Consent 250-09-01 MOD 4 requirements have been submitted to DP&E for approval. Comments were received from DP&E and Dixon Sand was</p> | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|---|--|------------------|
| | | | addressing comments at the date of this audit (November 2016). | |
| 7 | ENVIRONMENTAL REPORTING | | | |
| | Incident Reporting | | | |
| 7.1 | The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant 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"> Protection of the Environment Operations Act 1997 Part 5.7 Environment Protection Licence 3916 Pollution Incident Response Management Plan, 25 Jul 2016 | <p>Notifications of incidents have been made to the EPA in accordance with the requirements the <i>Protection of the Environment Operations Act 1997</i> Part 5.7, and Environment Protection Licence conditions R2/R3, but no notifications were made to the Department for these incidents.</p> <p>The Pollution Incident Response Management Plan was revised in July 2016 (December 2015) to include notification of the DP&E in the event of an incident.</p> | Compliant |
| | Annual Review | | | |
| 7.2 | <p>By the end of September each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development (including rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous financial year, which includes a comparison of these results against:</p> <ul style="list-style-type: none"> the monitoring results of previous years; and the relevant predictions in the EIS; <p>(d) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(e) identify any trends in the monitoring data over the life of the development;</p> <p>(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</p> <p>(g) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.</p> | <ul style="list-style-type: none"> Letter to DIPNR re AEMR Submission, 14 Jun 2005 Annual Review 2013-2014 Annual Review 2014-2015 Letter to DP&E re submission of AEMR, 30 Sep 2016 Annual Review 2015-2016 Letter from D&E re AEMR, 30 Sep 2016 | <p>An Annual Reviews have been prepared for the Old Northern Road Quarry (and include the Haerses Road Quarry) for the period 1 July to 30 June each year, and submitted to the DP&E. The Annual Reviews included:</p> <p>(a) describe the development (including rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;</p> <p>(b) sections 2 to 8 include a comprehensive review of the monitoring results and complaints records of the Old Northern Road Quarry operations over the previous financial year;</p> <p>(c) each section 2 to 8 identifies the relevant statutory requirements, limits or performance measures/criteria and where available monitoring results of previous years and relevant predictions in the EIS;</p> <p>(d) non-compliances identified over the last year are described and actions taken to ensure compliance;</p> <p>(e) trends in the monitoring data over the life of the development have been commented on in sections 2 to 8 where data was available;</p> <p>(f) any discrepancies between the predicted and actual impacts are identified in sections 2 to 8 and the potential cause of any significant discrepancies discussed; and</p> <p>(g) Each section of the Annual Review describes any measures proposed to be implemented over the current</p> | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| DA Condition No. | Development Approval 250-09-01 Condition | Verification Document(s) | Comments | Compliance |
|------------------|--|--------------------------|--|------------|
| | | | calendar year to improve the environmental performance of the development. | |

Attachment C

Environment Protection Licence – 3916 Old Northern Road

| EPL 3916 | EPL 3916 Condition | | Verification | Comments | Compliance | | | | | | |
|-----------------------|---|----------------------------------|--------------------|---|------------|-----------------------|-----------------------------|----------------------------------|--|---|-----------|
| 1 | Administrative Conditions | | | | | | | | | | |
| A1 | What the licence authorises and regulates | | | | | | | | | | |
| A1.1 | <div>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.</div> <table><tr><th>Scheduled Activity</th><th>Fee Based Activity</th><th>Scale</th></tr><tr><td>Extractive Activities</td><td>Other Land Based Activities</td><td>>1,000,000 – 5,000,000T obtained</td></tr></table> | | Scheduled Activity | Fee Based Activity | Scale | Extractive Activities | Other Land Based Activities | >1,000,000 – 5,000,000T obtained | | The Old Northern Road Quarry operations have been carried out in compliance with the scale of production specified in the Schedule Activity / Fee Based Activity. | Compliant |
| Scheduled Activity | Fee Based Activity | Scale | | | | | | | | | |
| Extractive Activities | Other Land Based Activities | >1,000,000 – 5,000,000T obtained | | | | | | | | | |
| A2 | Premises or plant to which this licence applies | | | | | | | | | | |
| A2.1 | The licence applies to the following premises: Dixon Sand (Penrith) Pty Ltd 4610 Old Northern Road, Maroota NSW 2756 Lot 1 DP 547255, Lot 2 DP547255, Lot 29 DP 752025, Lot 196 DP 752025 | | | The Old Northern Road Quarry operations occur at the premises identified in condition A2.1. | Compliant | | | | | | |
| 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 <i>Protection of the Environment Operations (Savings and Transitional) Regulation 1998</i> ; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence. | | | | Noted | | | | | | |
| A4 | Other administrative conditions | | | | | | | | | | |
| A41. | The licensee must comply with the conditions of consent of the NSW Land and Environment Court (LEC), for all activities on the premises permitted by this licence, mentioned in the citation No. (2004) NSWLEC254 of the judgement delivered on the court proceedings No.10206 of 2003 on 24 May 2004. | | | | Noted | | | | | | |
| 2 | Discharges to Air and Water and Applications to Land | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | | Verification | Comments | Compliance | |
|----------|---|--|--|---|------------|--|
| P1 | Location of monitoring/discharge points and areas | | | | | |
| P1.1 | The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point. Air | | | The ambient air quality monitoring program for the Old Northern Road Quarry has been conducted at Monitoring Point 2 in accordance with Condition P1.1. The meteorological station was installed near the Maroota Public School EPA Monitoring Point 3, adjacent to the ambient air monitoring location Point 2. | Compliant | |
| | EPA ID No. | Type of Monitoring Point | | | | Location Description |
| | 2 | Ambient Air Monitoring | | | | Ambient air monitoring site located near the Maroota Public School as marked in "Figure 1.3 - Existing and Proposed Development" provided to the DEC (by Fax) on 30 November 2004 |
| | 3 | Meteorological Station | | | | Meteorological station near Maroota Public School as marked in "Figure 1.3 - Existing and Proposed Development" provided to the DEC (by fax) on 30 November 2004 |
| P1.2 | 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. | | | | | |
| P1.3 | 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. Water and Land | | | Monitoring of discharge from the Old Northern Road Quarry has occurred from EPA approved Monitoring and Discharge Point 1 in accordance with condition P1.3, L2.4 and M2.3. | Compliant | |
| | EPA ID No. | Type of Monitoring / Discharge Point | | | | Location Description |
| | 1 | Discharge to waters. Effluent volume and quality monitoring. | | | | Main storage dam weir labelled as "2 Water" on map titled 'Figure 1 Location & Discharge Points - Dixon Sand Maroota' received by the EPA on 9/1/01 with Licence Application Form. |
| 3 | Limit Conditions | | | | | |
| L1 | Pollution of Waters | | | | | |
| L1.1 | Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> . | | <ul style="list-style-type: none"><i>Protection of the Environment Operations Act 1997</i> | | 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 | | | | Noted | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | | | Verification | Comments | Compliance |
|----------|--|----------|---------------------|--|---|------------|
| | point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table. | | | | | |
| 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 | | | | Monitoring of discharge from the Old Northern Road Quarry would occur in accordance EPL condition M2.3 for the parameters in L2.4, from EPA approved Monitoring and Discharge Point 1 (identified in EPL 3916 condition P1.3). | Compliant |
| | Point 1 | | | | | |
| | Pollutant | Units | 100%ile Conc. limit | | | |
| | pH | pH units | 4.5 - 6.5 | | | |
| | TSS | mg/L | 50 | | | |
| 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 Old Northern Road Quarry premises has been received for storage, treatment, processing, reprocessing or disposal, and no waste generated at the premises is disposed of on site. | Compliant |
| L4 | Noise Limits | | | | | |
| L4.1 | Noise from the premises must not exceed: a) An LAeq(15 minute) noise emission criterion of 44 dB(A) between 7.00am to 6.00pm Monday to Saturday; and, b) An LAeq(15 minute) noise emission criterion of 37 dB(A) between 6am and 7am Monday to Saturday; at any nearby residence not owned by the licensee. | | | <ul style="list-style-type: none">• AEMR 2012-2013• AEMR 2013-2014• AEMR 2014-2015• Annual Review 2015-2016 | Attended noise monitoring undertaken between 2014 to 2016 indicated compliance with day time noise assessment limits. The attended noise monitoring at the receivers indicated that traffic on Old Northern Road was the dominant noise source measured at the receivers. | Compliant |
| L4.2 | Noise from the premises must not exceed an LAeq (1 hour) noise emission criterion of 45dB(A) at the most affected classroom of Maroota Public School. | | | <ul style="list-style-type: none">• AEMR 2012-2013• AEMR 2013-2014• AEMR 2014-2015• Annual Review 2015-2016 | Noise from the Old Northern Road Quarry operations did not exceed the 45dB(A) LAeq(1 hour) noise emission criterion at the most affected classroom of Maroota Public School (Noise Monitoring Site 1), between 2013 and 2016. The attended noise monitoring at Site 1 indicated that traffic on Old Northern Road was the dominant noise source measured at the Maroota Public School. | Compliant |
| L4.3 | The noise limits identified in conditions L4.1 & L4.2 apply under meteorological conditions of: a) wind speeds up to 3 meters per second at 10 meters above ground level; and b) temperature inversion conditions up to 30C per 100 metres. | | | | | Noted |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance |
|-------------|--|--|--|------------------|
| L4.4 | For the purpose of assessment of noise levels specified in this licence, noise from the premises shall be measured at: a) the most affected point on or within the receptor site boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary to determine compliance with LAeq(15 minute) noise limits in condition L4.1; and b) 1 metre from the dwelling façade of the most affected classroom to determine compliance with LAeq(1 hour) noise limit in condition L4.2; subject to the modification factors provided in Section 4 of the NSW Industrial Noise Policy (EPA, 2000). | <ul style="list-style-type: none"> Noise Compliance Monitoring Reports, OSEM, 5 Nov 2015 and 4 Jul 2016 | | Noted |
| L4.5 | Notwithstanding condition L4.4, should direct noise measurement from the site be impractical, the licensee may employ alternative noise assessment method deemed acceptable by the EPA (refer to Section 11 of the <i>NSW Industrial Noise Policy</i> (EPA, 2000). | <i>NSW Industrial Noise Policy</i> , EPA, 2000 | | Noted |
| L4.5 | Noise limits identified in condition L4.1 do not apply for residential premises where there is a negotiated agreement between the licensee and the landowner of the premises. | <ul style="list-style-type: none"> Development Consent 250-09-01 Annexure D <i>Letter of Agreement between Mr and Mrs G&M Accurso and Dixon Sand (Penrith) Pty Ltd</i> | A Noise Agreement was established with Mr and Mrs G&M Accurso on 5 April 2004 for the residence on Lot 117, DP 752025 adjacent to the access road to the quarry site. | Compliant |
| L5 | Hours of Operation | | | |
| L5.1 | Unless otherwise approved in writing by the EPA, construction of proposed earth bunds around the Maroota Public School setback perimeter, required for the mitigation of noise and dust, must only be carried out between 7am and 6pm Monday to Friday during school holiday periods. | | | Noted |
| L5.2 | Loading of trucks and truck movements at the site must only be carried out between 6am and 6pm Monday to Saturday, and at no time on Sundays and Public Holidays. All other activities at the premises covered by this licence must only be carried out between the 7am and 6pm Monday to Saturday, and at no time on Sundays and Public Holidays. | <ul style="list-style-type: none"> Development Consent 250-09-01 Schedule 2 condition 3.34 Truck Movement Data Sheets | <p>Drivers and clients are advised not to arrive at the Old Northern Road Quarry site prior to 5.45 am on any day in accordance with the Development Consent 250-09-01 Schedule 2 condition 3.34.</p> <p>Arrival times of vehicles at the site are recorded on the Truck Movement Data Sheets recorded for each truck arriving between 6.00am and 7.00 am.</p> <p>All truck movements from the site are recorded at the weighbridge after loading, from 7.00am to 6.00pm Monday to Saturday.</p> | Compliant |
| 4 | Operating Conditions | | | |
| O1 | Activities must be carried out in a competent manner | | | |
| O1.1 | Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and | | Activities carried out on the Old Northern Road Quarry site are undertaken in a competent manner for the processing, handling, movement and storage of quarry materials and the treatment, storage, | Compliant |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance |
|-------------|--|--|---|--------------------------|
| | b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity. | | processing, reprocessing, transport and disposal of waste generated by the activity. | |
| O2 | Maintenance of plant and equipment | | | |
| 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 installed at the premises or used in connection with the Old Northern Road Quarry activities were observed to be operated and maintained 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. | <ul style="list-style-type: none"> Site Environmental Management Plan, Jun 2016 EP13 Air Quality Management, Jun 2016 | The generation of dust from the Old Northern Road Quarry operations is managed under the Site Environmental Management Plan Appendix A -EP13 Air Quality Management to minimise dust emissions from the site. | Compliant |
| O3.2 | All dust deposition gauges installed at the site must be operated and maintained in accordance with Australian Standard 2724.1 (1984) for deposition gauges. | <ul style="list-style-type: none"> Australian Standard 2724.1-1984, Ambient Air - Particulate Matter | The dust deposition gauges installed at the Old Northern Road Quarry site are operated and maintained in accordance with Australian Standard 2724.1-1984. | Compliant |
| O3.3 | The licensee must install and operate a continuous dust monitoring device, of the type mentioned in the letter of ERM Consultant sent to the EPA on 11 August 2004, at Point 2 identified in condition P1.1 of this licence, before commencing any activity permitted by this licence on Lot 1 & 2 of the premises. The continuous dust monitoring device must be fitted with an automatic alarm system alerting the quarry staff once the trigger value for PM10 (37 µg/m ³) is reached. | | The TEOM PM ₁₀ continuous dust monitoring device installed at EPA Monitoring Point 2 (identified in EPL 3916 condition P1.1) is fitted with an alarm system that is triggered if the PM10 level 37µg/m ³ is reached. Automatic alarms are sent via SMS to the Quarry Manager and Environmental Officer if the PM ₁₀ level exceeds 37µg/m ³ . | Compliant |
| O3.4 | The licensee must install and operate a continuous automatic meteorological station at monitoring Point 3 , identified in condition P1.1 of this licence, as per requirements of AS 2923 - 1987. This wind monitoring components of the meteorological station must be interfaced with the continuous dust monitoring device, identified in the above condition O3.3 . | <ul style="list-style-type: none"> AS 2923-1987 Ambient Air – Guide for measurement of horizontal wind and air quality applications | A continuous automatic meteorological station has been installed at EPA Monitoring Point 3, (identified in condition P1.1 of EPL 3916), as per requirements of AS 2923 - 1987. The wind monitoring components of the meteorological station are interfaced with the TEOM continuous dust monitoring device. | Compliant |
| O4 | Other operating conditions | | | |
| O4.1 | The licensee must prevent any tracking of mud on to public roads by vehicles leaving the premises. | | Vehicles leaving the site are cleaned if necessary to prevent tracking material from the quarry onto Wisemans Ferry Road. | Compliant |
| 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 |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance | |
|----------|--|--|---|---------------|-----------------|
| 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. | | All records required kept for EPL 3916 are: a) in a legible form, electronically; b) kept for at least 4 years after the monitoring or event; and c) can be produced any authorised officer of the EPA who asks to see them. | Noted | |
| 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; c) the point at which the sample was taken; and d) the name of the person who collected the sample | | Chain-of-Custody / Sampling records include the date / time on which the sample was taken; the sample monitoring point at which the sample was taken; and the name of the person who collected the sample. | Noted | |
| M1.4 | The following records for monitoring Point 2 identified in licence condition P1.1 , must be kept electronically: a) each 15 minute PM ₁₀ result; b) each rolling 24-hour average PM10 results (each 15 minutes); and c) each daily 24-hour average PM10 result (midnight to midnight). | <ul style="list-style-type: none">Environmental Monitoring Air Quality TEOM and Meteorological Data Reports, Nov 2015, Apr 2016 & May 2016, Carbon Based Environmental Pty Ltd | PM ₁₀ records for Monitoring Point 2 (identified in EPL 3916 condition P1.1) are kept for: a) 15 minute PM ₁₀ results; b) rolling 24-hour average PM ₁₀ results (each 15 minutes); and c) daily 24-hour average PM ₁₀ result (midnight to midnight). | Compliant | |
| M1.5 | The following records for Point 3 identified in licence condition P1.1 , must be kept electronically: each 15minute, 1 hour and 24hour result as indicated in the table at condition M4.1 . | | Meteorological records identified in licence condition P1.1, Point 3 are kept electronically, for each 15minute, 1 hour and 24hour period as required in EPL 3916 condition M4.1. | Compliant | |
| 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: | | A TEOM for the monitoring of PM ₁₀ has been installed at EPA approved Monitoring Point 1 (in accordance with EPL 3916 condition P1.1). | Compliant | |
| M2.2 | Air Monitoring Requirements Point 2 | | | Compliant | |
| | Pollutant | Units | | Frequency | Sampling Method |
| | PM ₁₀ | µg/m ³ | Continuous | AS3580.8-2001 | |
| M2.3 | Water and/ or Land Monitoring Requirements Point 1 | | | Noted | |
| | Pollutant | Units | Frequency | | Sampling Method |
| | pH | pH units | Daily during any discharge | | Grab sample |
| | TSS | mg/L | | | |
| | Turbidity | NTU | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance |
|-------------|--|--|--|--------------------------|
| M2.4 | <p>If any rolling 24-hour average PM₁₀ result measured at Point 2 in licence condition M2.2 is found to be greater than 42µg/m³ and the prevailing wind at the site is north-westerly (i.e. between 270° and 315° as measured at Point 3:</p> <p>a) the licensee must take immediate action to reduce its PM₁₀ emissions;</p> <p>b) the licensee must immediately notify the EPA Manager Sydney Industry;</p> <p>c) all dust generating activity on lot 1 and 2 must cease immediately, except for activity solely for the purpose of reducing dust impact, such as watering roads, exposed areas and stockpiles or dust monitoring;</p> <p>d) if the dust level does not return to below 42µg/m³ within 1 hour of ceasing all operations at lot 1 & 2, then: all dust generating activity on lot 29 must also stop; and operations must stay restricted to precincts 1, 2, 3, 4, 5, 6, 8 and 9 of lot 196 (shown in the map faxed to DEC on 25/11/04) only; and</p> <p>e) dust generating activity may only recommence when the rolling 24-hour average PM₁₀ result measured at Point 2 is less than 42µg/m³ for 4 consecutive 15 minute periods.</p> | <ul style="list-style-type: none"> Site Environmental Management Plan, Jun 2016 EP 13 – Air Quality Management | <p>Continuous monitoring with TEOM near Maroota Public School is connected to an alarm system within the operations area of Old Northern Road Quarry triggered by a maximum PM₁₀ level of 37.0µg/m³ as a rolling 24hour average. If this trigger level is reached during a prevailing north-westerly wind:</p> <ul style="list-style-type: none"> Alarm is received by Quarry Managers and Environmental Officer (via SMS message). General manager and Production Manager authorised to issue directive to relevant personnel to cease operations as per EPA licence condition M2.4. Management to evaluate conditions and employ the use of dust suppression measures immediately. Environmental Officer to notify EPA Environment Hotline 131 500 if the 24 hour average PM₁₀ result exceeds the 42ug/m³ and the prevailing wind at the site is north-westerly (i.e. between 270° and 315°); Environmental Officer to closely monitor and communicate PM₁₀ levels to management. Operations on Lots 1 and 2 may only recommence upon approval from General Manager and Production Manager when the rolling 24hr average PM₁₀ is less than 42ug/m³ for 4 consecutive 15 minute periods as informed by Environmental Officer. If the dust level does not return to below the allowable limit within 1 hour of ceasing all operations on Lots 1 & 2, then all dust generating activity on Lot 29 must also stop. | Compliant Ongoing |
| M3 | Testing methods - concentration limits | | | |
| 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 unless another method has been approved by the EPA in writing before any tests are conducted. | | | Noted |
| M3.2 | Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: | <ul style="list-style-type: none"> <i>Approved Methods for the Sampling and Analysis of Air</i> | The air quality monitoring is conducted generally in accordance with the <i>Approved</i> | Compliant Ongoing |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|--|--|--------------------------|------------------|-----------|-----------------|------|---------|--------|------------|--------------------|-------------|-----|---------|----------------|---------|-------------|---------|----------|----------|--|---|------------------|
| | <p>a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</p> <p>c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</p> <p><i>Note: The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".</i></p> | <p><i>Pollutants in NSW, EPA 1997</i></p> <ul style="list-style-type: none"> AS 3580.10.1-2003 Method for sampling and analysis of ambient air: Determination of Particulate Matter-Deposited Dust Test Reports – Dust Deposition, VGT Environmental Compliance Solutions, 2015-2016 | <p><i>Methods for the Sampling and Analysis of Air Pollutants in NSW, EPA 1997.</i></p> <p>VGT Environmental Compliance Solutions specify the method of sampling for deposited dust is in accordance with AS 358010.1.</p> | | | | | | | | | | | | | | | | | | | | | |
| M4 | Weather Monitoring | | | | | | | | | | | | | | | | | | | | | | | |
| M4.1 | <p>At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.</p> <p>Point 3</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Sampling Method</th><th>Units</th><th>Averaging Period</th><th>Frequency</th></tr> </thead> <tbody> <tr> <td>Temperature@10m</td><td>AM-4</td><td>Degrees</td><td>1 hour</td><td rowspan="5">Continuous</td></tr> <tr> <td>Wind Direction 10m</td><td rowspan="4">AM-2 & AM-4</td><td rowspan="4">m/s</td><td>15 mins</td></tr> <tr> <td>Wind Speed@10m</td><td>15 mins</td></tr> <tr> <td>Sigma Theta</td><td>15 mins</td></tr> <tr> <td>Rainfall</td><td>24 hours</td></tr> </tbody> </table> | Parameter | Sampling Method | Units | Averaging Period | Frequency | Temperature@10m | AM-4 | Degrees | 1 hour | Continuous | Wind Direction 10m | AM-2 & AM-4 | m/s | 15 mins | Wind Speed@10m | 15 mins | Sigma Theta | 15 mins | Rainfall | 24 hours | <ul style="list-style-type: none"> AS 2923-1987 Ambient Air – Guide for measurement of horizontal wind and air quality applications | <p>A continuous automatic meteorological station has been installed at EPA Monitoring Point 3, (identified in condition P1.1 of EPL 3916), as per requirements of AS 2923 - 1987.</p> | Compliant |
| Parameter | Sampling Method | Units | Averaging Period | Frequency | | | | | | | | | | | | | | | | | | | | |
| Temperature@10m | AM-4 | Degrees | 1 hour | Continuous | | | | | | | | | | | | | | | | | | | | |
| Wind Direction 10m | AM-2 & AM-4 | m/s | 15 mins | | | | | | | | | | | | | | | | | | | | | |
| Wind Speed@10m | | | 15 mins | | | | | | | | | | | | | | | | | | | | | |
| Sigma Theta | | | 15 mins | | | | | | | | | | | | | | | | | | | | | |
| Rainfall | | | 24 hours | | | | | | | | | | | | | | | | | | | | | |
| M5 | Recording of pollution complaints | | | | | | | | | | | | | | | | | | | | | | | |
| M5.1 | 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. | | | Noted | | | | | | | | | | | | | | | | | | | | |
| M5.2 | <p>The record must include details of the following:</p> <p>a) the date and time of the complaint;</p> <p>b) the method by which the complaint was made;</p> <p>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;</p> <p>d) the nature of the complaint;</p> <p>e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and</p> <p>f) if no action was taken by the licensee, the reasons why no action was taken</p> | <ul style="list-style-type: none"> Complaints Register Form – Dixon Sand Site Environmental Management Plan, EP3 – Complaints Management, Jun 2016 | <p>Complaints received at the Old Northern Road Quarry are recorded in a Dixon Sand Complaints Register with:</p> <p>a) date and time of the complaint;</p> <p>b) means by which the complaint was made;</p> <p>c) details of the complainant that were provided;</p> <p>d) nature of the complaint;</p> <p>e) action(s) taken by the Old North Road Quarry personnel in relation to the complaint;</p> <p>f) if no action was taken comment on why no action was taken.</p> <p>A summary of complaints is provided in the Annual Review submitted to the DP&E and the Complaints Register can be made</p> | Compliant Ongoing | | | | | | | | | | | | | | | | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance | | | | | |
|-----------|---|--|--|-----------------|-------|--------|----------------------------------|--|-------|
| | | | available for inspection by the EPA or the Secretary upon request | | | | | | |
| M5.3 | The record of a complaint must be kept for at least 4 years after the complaint was made. | | | Noted | | | | | |
| M5.4 | The record must be produced to any authorised officer of the EPA who asks to see them. | | | Noted | | | | | |
| M6 | Telephone complaints line | | | | | | | | |
| M6.1 | 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. | | The Dixon Sand (Penrith) Pty Ltd website provides the contact information to lodge a complaint regarding the Old Northern Road Quarry operations: <ul style="list-style-type: none">Email to feedback@dixonsand.com.au, orPhone Maroota office 02 4566 8348, orFill in a Contact form via the Dixon Sand Website | Compliant | | | | | |
| M6.2 | 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. | | | | | | | | |
| M6.3 | The preceding two conditions do not apply until 3 months after: the date of the issue of this licence. | | | Noted | | | | | |
| M7 | Requirement to monitor volume or mass | | | | | | | | |
| M7.1 | For each discharge point or utilisation area specified below, the licensee must monitor: a) the volume of liquids discharged to water or applied to the area; b) the mass of solids applied to the area; c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below. Point 1 <table><tr><th>Frequency</th><th>Units</th><th>Sampling Method</th></tr><tr><td>Daily</td><td>Litres</td><td>Flow meter and continuous logger</td></tr></table> | Frequency | Units | Sampling Method | Daily | Litres | Flow meter and continuous logger | | Noted |
| Frequency | Units | Sampling Method | | | | | | | |
| Daily | Litres | Flow meter and continuous logger | | | | | | | |
| 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">Annual Return 7 Sep 2015 to 6 Sep 2016 | Annual Returns have been prepared for EPL 3916 with a Statement of Compliance and Monitoring and Complaints Summary completed for the end of each reporting period, on the standard EPA Annual Return reporting form, and submitted to the EPA by the 5 November each year. | Compliant | | | | | |
| R1.2 | An Annual Return must be prepared in respect of each reporting period, except as provided below. | | | Noted | | | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance |
|-------------|---|--|--|--------------------------|
| 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. <i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i> | | | Not applicable |
| 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. | | | Not applicable |
| 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"> Annual Return 7 Sep 2015 to 6 Sep 2016 | Annual Returns have been prepared for EPL 3916 on the standard EPA Annual Return reporting form, and submitted to the EPA by the 5 November each year. | Compliant Ongoing |
| 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"> Annual Return 7 Sep 2015 to 6 Sep 2016 | A copy of the complete Annual Return has been kept by Dixon Sand in the Old Northern Road Quarry Office. | Compliant |
| | 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. <i>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</i> | <ul style="list-style-type: none"> Annual Return 7 Sep 2015 to 6 Sep 2016 | The Statement of Compliance has been certified and the Monitoring and Complaints Summary signed by the Directors of Dixon Sand Pty Ltd. | Compliant |
| R2 | Notification of environmental harm | | | |
| R2.1 | Notifications must be made by telephoning the Environment Line service on 131 555. | | | Noted |
| 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. <i>Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.</i> | | | Noted |
| R3 | Written Report | | | |
| R3.1 | Where an authorised officer of the EPA suspects on reasonable grounds that: | | | Noted |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance |
|-------------|--|---|--|------------------|
| | 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. | | | |
| 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 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. | | | Noted |
| 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 |
| R3.5 | The licensee must submit an air and dust monitoring report to the EPA annually for all dust monitoring gauges installed at the site (identified as D1– Front gate, D4–Western boundary Lot 196, D5–Northern boundary Lot 1, D6– Adjacent Maroota Public School and D7–Adjacent Kunzea conservation area Lot 29), other than the continuous dust gauge installed at Point 2 for activity related to DA 250-09-01 and monitored as per requirements of condition M2.2 , containing the air quality monitoring results in the reporting period together with an evaluation of the results, including a comparison with the following ambient dust goal: a) the total dust deposition in the nearest residential area of 4g per square metre per month expressed as an annual monthly average. | <ul style="list-style-type: none"> Environmental Monitoring Air Quality TEOM and Meteorological Data Reports, Nov 2015, Apr 2016 & May 2016, Carbon Based Environmental Pty Ltd Test Reports – Dust Deposition, VGT Environmental Compliance Solutions, 2015-2016 | An Air and dust monitoring report prepared by Carbon Based Environmental Pty Limited, prepared for Dixon Sand (Penrith) Pty Ltd were attached to the EPA Annual Return providing TEOM results, Meteorological Data, and Summary of fire events in the vicinity of Maroota (obtained from NSW Rural Fire Service). Dust deposition results are collated and reported Dixon Sand by VGT Environmental Compliance Solutions. This data is appended to the Annual Review prepared for DP&E. | Compliant |
| 7 | General Conditions | | | |

Independent Environmental Audit – Old Northern Road Quarry, November 2016

| EPL 3916 | EPL 3916 Condition | Verification | Comments | Compliance |
|-------------|--|--------------|---|------------------|
| 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 EPL 3916 is kept at the Old Northern Road Quarry premises. | Compliant |
| G1.2 | The licence must be produced to any authorised officer of the EPA who asks to see it. | | The licence can be produced to any authorised officer of the EPA if requested. | Compliant |
| G1.3 | The licence must be available for inspection by any employee or agent of the licensee working at the premises. | | The licence is available for inspection by any employee or agent of the licensee working at the premises. | Compliant |