



Mr Stephen Shoesmith  
Energy and Resource Assessments  
Department of Planning and Environment  
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2nd December 2019

Dear Mr Shoesmith

**Peppertree Quarry Noise Management Plan  
Approval of Suitably Qualified Experts**

We refer to our recent Approval of Modification 5 for the construction and operation of the South Western Overburden Emplacement at Peppertree Quarry, Project Application 06\_0074.

Condition B9 of Part B Specific Environmental Conditions, requires that the Noise Management Plan;

*"Be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Secretary"*

Over the past 12 years, Environmental Resources Management (ERM) have undertaken the quarterly noise monitoring associated with the quarry operations and provided advice on noise related management.

Key ERM staff involved in Peppertree and nominated to prepare the plan are Nathan Lynch and Steven De Luzuriaga. CVs for both consultants are attached to this letter.

We believe that the ERM staff members have the knowledge and experience of the site, as well as the new Noise Policy for Industry and will bring this to the review and update of the Noise Management Plan, in line with the Modification 5 conditions.

We therefore seek the Secretary's Approval to utilise the expertise of Nathan Lynch and Steve De Luzuriaga of ERM staff to prepare the Noise Management Plan .

If you require any further information regarding the above, please contact Sharon Makin on 0401 894 185.

Yours sincerely

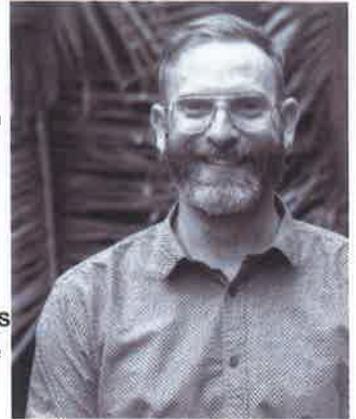
A handwritten signature in blue ink, appearing to read "AS" followed by a flourish, with the name "Angus" written below it.

Angus Shedden  
Peppertree Quarry Manager

# Nathan Lynch

Principal Consultant

Principal consultant, Nathan Lynch has more than ten years of experience in environmental impact assessment and planning. Specialising in acoustics (noise, vibration and blasting) he is an experienced Subject Matter Expert (SME), project manager and leads of our Impact Assessment and Planning (IAP) team in New South Wales (NSW). He has an extensive understanding of the measurement, assessment and control of noise and vibration emissions from a wide range of construction and operational land uses. Nathan has been responsible for establishing and implementing company policy, noise and vibration strategies and technical specifications regarding environmental, and occupational, noise and vibration management. He continues to work closely with developers, contractors, corporations and governments to provide solutions to project issues for various projects across the world.



**Experience:** more than ten years of experience in acoustics, six years in project management and four years in team leadership

**Email:** [nathan.lynch@erm.com](mailto:nathan.lynch@erm.com)

## Education

- Master of Design Science. (Audio & Acoustics)  
University of Sydney, Australia, 2007

## Professional Affiliations and Registrations

- Member, Australian Acoustical Society (MAAS)
- Associate Member, Planning Institute of Australia PIA (Assoc.)
- New South Wales – Justice of the Peace (JP)
- Team Leader – IAP NSW (South)

## Languages

- English, native speaker

## Fields of Competence

- Project management and co-ordination
- Liaising with regulatory authorities regarding approvals, consent conditions and compliance.
- Responding to public and community concerns and complaints.
- Environmental noise, vibration and blasting monitoring and measurement techniques.
- Environmental noise, vibration blasting impact assessment, including detailed 3D noise modelling.
- Occupational noise measurement, impact and risk assessment; including hierarchy of control noise management measure development.
- Road traffic noise monitoring and measurement techniques and impact assessment.
- Aircraft noise intrusion monitoring and impact assessment for new and existing developments.
- Concept and detailed design noise and vibration mitigation development.
- Development, review and maintenance of noise, vibration and blasting management plans for both construction and operational projects.
- Building acoustics design and specification, and compliance measurements.

## Key Industry Sectors

Power  
Infrastructure  
Mining / Extractive

## Key Project Experience

### **Boral Peppertree Quarry – Construction and Operational Noise Assessment and Monitoring (2008 to Current)**

ERM has supported Boral at the Peppertree Quarry since the original Environmental Assessment (EA) was prepared in 2007 and 2008. Following the EA works, a number of noise and blast impact assessments, and associated management plans were required, and following their initial preparation in 2010 and 2011 have been updated recently (2013) in consultation with Boral and the EPA to ensure impacts remain to be effectively managed. This work was undertaken and managed by Nathan since 2008.

More recently (2012 to 2014), assessment works have dealt with potential construction and operational noise impacts associated with the quarry, and also included the detailed design of the quarry primary, secondary and tertiary processing areas. Work tasks have included review of construction and operational methodologies and associated noise sources; review of blasting plans and blast monitoring (overpressure and vibration); project specific data acquisition and detailed design noise modelling; occupational noise testing and assessment; development and revision of project specific management procedures, including the monitoring program and ongoing project support and consultation with EPA.

ERM continues to work at the quarry and currently (2010 to 2019) conducts quarterly noise monitoring at nearby receptors to assist demonstrate compliance with the conditions of approval provided by the State Authority.

### **SUEZ Raymond Terrace – Operational Noise and Blast Impact Assessment and Monitoring (2014)**

In 2013 ERM worked closely with SUEZ Raymond Terrace on a range of environmental issues. The acoustics team (lead by Nathan) supported SUEZ with two key assessments, one to provide technical support data and documentation for the SUEZ request to amend their existing Environment Protection License (EPL) and the second to assess

potential air-blast overpressure and ground-borne vibration impacts for their development application for blasting works. These assessments required the following works tasks:

- Review of operational methodologies and associated noise sources.
- Review of historic noise limits and background data.
- Review of blasting plans.
- Project specific data acquisition.
- Detailed noise modelling and blast predictions for various scenarios.
- Development of project specific management procedures, including the proposed monitoring program.
- Ongoing project support and consultation with EPA.

Nathan successfully assisted SUEZ to modify their EPL (refer EPL 7628 and variation notice 1534311) noise limits and measurement methodology for the landfill. These limits and monitoring features were established prior to his involvement and were the cause of significant constraint to the client's site.

He provided technical advice and justification to the EPA (in consultation with SUEZ) to enable the noise limits and measurement methodology to be modified. This resulted in a favourable reduction in noise constraints for the site, and noise compliance is now achieved on a regular basis. ERM conducts the annual noise compliance monitoring for SUEZ at this site, amongst other environmental support that is provided regularly to this client.

### **voestalpine VAE Railway Systems (VAERS) Bathurst – Operational Noise Impact Assessment (2015)**

ERM was engaged by voestalpine VAE Railway Systems (VAERS) to undertake a noise impact assessment of the existing VAERS Bathurst Facility (the site, formerly referred to as Bathurst Rail Fabrication Centre (BRFC)), located at 34 Alpha Street in Bathurst, NSW.

VAERS was required by Condition 13 of development consent 2014/0482, issued by Bathurst Regional Council (Council) on 11 February

2015, to prepare a noise management plan having regard to the relevant NSW noise policy if it wishes to operate at the site outside of certain specified hours.

This assessment was completed by Nathan to address existing and potential future operational impacts associated with the site operating 24 hours per day and seven days per week so that a noise management plan could be prepared. This noise assessment was completed with due regard to and in accordance with the INP and other relevant policy, standards and guidelines. It was documented in a stand-alone technical report summarised in the broader environmental assessment prepared by ERM for VAERS.

Based on the findings of the assessment, operational site noise levels were predicted to comply with the INP criteria however this was contingent on a number of recommendations for noise mitigation and management measures being implemented at the site prior to operating during the evening and night time periods.

These measures were expected to reduce noise levels to acceptable values and minimise impacts as far as is practicable, as such a Noise Management Plan was prepared and submitted to Council. VAERS subsequently received approval and began the extended 24/7 operations in 2016.

#### **BHP – Jansen Potash Project – Noise Monitoring and Compliance Assessment (2018 - 2019)**

BHP holds exploration permits and mining leases covering approximately 9,600 square kilometers in the province of Saskatchewan, Canada. The Jansen Potash Project is located approximately 140 kilometers east of Saskatoon. BHP currently owns 100 per cent of this Project and Jansen's large resource endowment provides the opportunity to develop it in stages, with anticipated initial capacity of 4 Mtpa.

The ERM monitoring and assessment scope includes unattended noise compliance monitoring at a range of on-site, boundary and receptor locations. This monitoring occurs year round to capture seasonal variations. The monitoring is being

conducted with due regard to the relevant project approvals, with a focus of determining site noise level contributions and assessing compliance.

The Canadian team resourced the majority of this work, whilst Nathan acted as the Subject Matter Expert (SME) providing remote guidance and technical governance. Nathan's SME role supported the following tasks:

- Comprehensive seasonal and on-going noise monitoring at a range of locations.
- Ongoing review of project works and methodologies, and associated noise sources.
- Data collection, conditioning and determination of site noise level contributions.
- Comparison of project noise levels to criteria and limits to assess compliance, and associated reporting.

#### **Other Relevant Project Experience**

**TMAC Resources – Hope Bay Mine Project (Canada) – Construction, Operational and Blasting Acoustics Assessment (2016)**

**Weda Bay Nickel Mine – Construction, Operational and Blasting Acoustics Impact Assessment (2013)**

**AuRico Metals Inc. - Kemess Underground Mine Project (Canada) – Construction, Operational and Blasting Acoustics Assessment (2015)**

**Rio Tinto – Simandou Mine – Operational Management Plan and Monitoring Program (2016)**

**Laing O'Rourke (Sydney Yard Access Bridge) – Construction Noise and Vibration Impact Statement, Management Plan and Monitoring (2017 to 2018)**

**Laing O'Rourke (Central Station Main Works) – Construction Noise and Vibration Impact Statement, Management Plan and Monitoring (2018 to Current)**

**Laing O'Rourke (Main North and North Shore Corridor Works) – Construction Noise and Vibration Impact Statement, Management Plan and Monitoring (2018 to Current)**

**TransGrid – Portfolio Noise Risk Assessment (2016)**

**TransGrid – Sydney North Substation – Operational Noise Impact Assessment (2017)**

**TransGrid – Molong Substation – Operational Noise Impact Assessment (2016)**

**Confidential Client – PNG Gas Developments – Baseline Noise Campaigns and Noise Impact Assessment (2014)**

**Confidential Client - Saudi Arabia Gas and Geothermal Power Plant - Noise Impact Assessment (2014)**

**Confidential Client – Sarulla Geothermal Plant – Noise Impact Assessment (2014)**

**TransGrid – Deer Park Terminal Station (DPTS) – Operational Noise Impact Assessment (2016)**

**CSIRO – CSIRO Ginninderra, Noise and Vibration Assessment (2015-2016)**

#### **Approved Independent Audits**

Nathan has conducted a number of independent environmental audits for noise, vibration and blasting and on behalf of the NSW Department of Planning, Industry and Environment (DPIE), as outlined below:

**Approved Independent Audit, Rocglen Coal Mine, Whitehaven Coal** – review and assessment of noise management plan, procedures and monitoring results against Conditions of Approval, Statement of Commitments, Environment Protection Licence.

**Approved Independent Audit, Canyon Mine, Whitehaven Coal** – review and assessment of noise management plan, procedures and monitoring results against Conditions of Approval, Statement of Commitments, Environment Protection Licence.

**Approved Independent Audit, Port Kembla Grinding Mill Project, Cement Australia** – review and assessment of noise management plan, procedures and monitoring results against Conditions of Approval, Statement of Commitments, Environment Protection Licence.

**Approved Independent Audit, Tomago Cable Manufacturing Project, Midal Aluminium** – review and assessment of noise and vibration management plans, procedures and monitoring results against Conditions of Approval, Statement of Commitments, Environment Protection Licence.

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#### **CONTACT DETAILS:**

**Nathan Lynch**

Principal Consultant

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Email: [nathan.lynch@erm.com](mailto:nathan.lynch@erm.com)

# Steven De Luzuriaga

Senior Acoustics Consultant

Steven De Luzuriaga is a senior acoustics consultant based in Sydney. He has nine years of experience in environmental assessment, specialising in noise and vibration environmental impact assessment, mitigation and management and compliance monitoring.

He is an experienced technical specialist and has a firm understanding of the measurement, assessment and control of noise and vibration emissions from a wide range of construction and operational land uses.

Steven has been responsible for detailed computer noise modelling, monitoring and fieldwork activities, as well as the analysis of results and reporting. Steven is competent in the use of specialist acoustics field equipment including: sound level meters, environmental noise loggers, noise dosimeters and ground-borne vibration meters. His technical skillset includes environmental and occupational attended measurements; unattended monitoring; noise modelling (for local and international developments); data interpretation and analysis undertaken in a baseline, assessment and/or compliance capacity.



**Experience:** Over six years of experience in acoustics

**Email:** [steven.deluzuriaga@erm.com](mailto:steven.deluzuriaga@erm.com)

## Professional Affiliations & Registrations

- Member, Australian Acoustical Society (MAAS)

## Education

- Graduate Certificate of Architectural Science (Audio and Acoustics), University of Sydney.
- Master of Marine Science and Management, Southern Cross University (National Marine Science Centre), Coffs Harbour.
- Bachelor of Environmental Science, Southern Cross University, Lismore.
- Occupational Health and Safety Construction Induction (White Card)
- Apply First Aid (St John Ambulance Australia)

## Fields of Competence

- Environmental noise and vibration monitoring and measurement techniques
- Environmental and construction noise and vibration impact assessment, including detailed computer noise modelling
- Occupational noise measurement, impact and risk assessment; including hierarchy of control noise management measures
- Development of noise and vibration management plan for construction project sites.
- Data analysis and reporting
- GIS mapping
- Environmental sampling/monitoring

## Languages

- English, native speaker

## Key Projects

### **Boral (Peppertree) – Construction and Operational Noise Impact Assessment (2012 to Current)**

ERM has supported Boral at the Peppertree Quarry since the original Environmental Assessment (EA) was prepared. Following the EA works, a number of noise and blast impact assessments, and associated management plans were required, and have been updated recently in consultation with Boral at the EPA to ensure impacts remain to be effectively managed.

Recent assessment works also dealt with potential construction and operational noise impacts associated with a quarry, and also included the detailed design of the quarry primary, secondary and tertiary processing areas. Work tasks have included:

- Review of construction and operational methodologies and associated noise sources
- Quarterly noise monitoring
- Blast monitoring (overpressure and vibration)
- Occupational noise testing and assessment.

### **Laing O'Rourke – Sydney Metro (Northern Corridor Works) - Construction Noise and Vibration Management Plan (CNVMP) (2017 to Current)**

In 2017 ERM was engaged to prepare a Construction Noise and Vibration Management Plan (CNVMP) as a sub-plan of the NCW Construction Environmental Management Plan (CEMP). The CNVMP described the methods for mitigation and management of potential noise and vibration impacts associated with the Northern Corridor Works. Steven completed the Construction Noise and Vibration Impact Statement (CNVIS) and prepared the CNVMP for this Project.

This project has extended to include noise and vibration monitoring throughout construction. Work tasks include:

- Comprehensive noise and vibration monitoring and regular reporting
- Ongoing review of construction methodologies and associated noise and vibration sources

- Development and ongoing revision of noise management systems and procedures
- Meeting with various stakeholders
- Advise to both the contractor and the end client regarding the management and monitoring of potential impacts

### **TransGrid – Wagga Wagga 330kV Substation – Construction and Operational Noise Impact Assessment (2018)**

ERM was commissioned to conduct a construction and operational noise assessment for the TransGrid Wagga Wagga (330kV) Substation.

The purpose of this assessment was to predict and assess construction noise levels (associated with installation of new equipment) and operational noise levels from the site at nearby (existing and future) noise sensitive receptors. A technical report was prepared by Steven to document the findings of the assessment, identify potential mitigation measures and highlight any potential residual noise issues.

The assessment considered all TransGrid assets situated and operating within the operational site boundary. The assessment tasks included:

- Review of operational processes and associated emission sources
- Review of third party baseline and equipment noise data
- Development of NPI noise criteria
- Development of a calibrated noise model, noise modelling of various scenarios, including meteorological conditions and conceptual scenarios for increased substation load.
- NPI noise impact assessment and development of project specific mitigation to reduced noise to compliant levels.

### **TransGrid – Buronga Substation – Construction and Operational Noise Impact Assessment (2018)**

ERM was commissioned to conduct a construction and operational noise assessment for the TransGrid Buronga (220kV) Substation.

The purpose of this assessment was to predict and assess construction noise levels (associated with installation of new equipment) and operational noise levels from the site at nearby (existing and future) noise sensitive receptors. A technical report was prepared by Steven to document the findings of the assessment, identify potential mitigation measures and highlight any potential residual noise issues.

The assessment considered all TransGrid assets situated and operating within the operational site boundary. The assessment tasks included:

- Review of operational processes and associated emission sources
- Review of third party baseline and equipment noise data
- Development of NPI noise criteria
- Development of a calibrated noise model, noise modelling of various scenarios, including meteorological conditions and conceptual scenarios for increased substation load.
- NPI noise impact assessment and development of project specific mitigation to reduced noise to compliant levels.

### **Laing O'Rourke – Sydney Metro (Central Station Main-works) - Construction Noise and Vibration Management Plan (CNVMP) (2018 - 2019)**

In 2018 ERM was engaged to prepare a Construction Noise and Vibration Management Plan (CNVMP) as a sub-plan of the Central Station Main-works (CSM) Construction Environmental Management Plan (CEMP). The CNVMP described the methods for mitigation and management of potential noise and vibration impacts associated with the CSM project. Steven completed the Construction Noise and Vibration Impact Statement (CNVIS) and prepared the CNVMP for this Project.

This Project has extended to include, ancillary facility impact statements and advice regarding noise and vibration monitoring and ad-hoc training being provided to LOR.

### **Laing O'Rourke – Sydney Metro (Sydney Yard Access Bridge) - Construction Environmental Management Plan (CEMP) (2017)**

In 2017 ERM prepared the Construction Environmental Management Plan (CEMP) for the Sydney Metro – Sydney Yard Access Bridge (SYAB) Project. A Construction Noise and Vibration Management Plan (CNVMP) was prepared as a sub-plan of the SYAB CEMP. The CNVMP described the methods for mitigation and management of potential noise and vibration impacts associated with the construction of the SYAB. Steven completed the Construction Noise and Vibration Impact Statement (CNVIS) and prepared the CNVMP for this Project.

### **Barangaroo Ferry Hub – Noise and Vibration Monitoring – MCD (and TfNSW) (2016 to 2017)**

The construction of the Barangaroo Ferry Hub was undertaken by McConnell Dowell Constructors Pty Ltd (MCD) who has engaged ERM to undertake environmental noise and vibration monitoring during select works.

ERM's monitoring scope included attended noise measurements, attended vibration measurements, unattended noise monitoring and unattended vibration monitoring. The monitoring was conducted with due regard to and in accordance with the Barangaroo Ferry Hub – Construction Noise and Vibration Management Plan (CNVMP) and other relevant noise policy, guidelines and standards.

This project involved noise and vibration compliance monitoring, advice regarding occupational noise and ad-hoc training provided to MCD and to TfNSW.

### **TAP Ashfield Commuter Carpark – Noise and Vibration Impact Assessment – TfNSW (2016)**

ERM was engaged by TfNSW to complete a noise and vibration impact assessment for construction and operational aspects of the TAP Ashfield Commuter Car Park Upgrade. ERM quantified existing ambient and background noise levels in the areas via measurement and developed construction noise and vibration criteria in accordance with recognised NSW standards and guidelines as applicable to the project activities.

Noise management goals were established for works within standard hours of construction and for works that may be required outside the standard recommended hours.

The focus of the assessment was the potential construction noise and vibration impacts, and suitable mitigation and management measures.

ERM also modelled and assessed operational noise to ensure that general car park usage and any impulsive noise events were managed as part of the project design. A qualitative assessment of potential impacts associated with construction road traffic and operational vibration.

### **KBL Mining - Mineral Hill - Construction and Operational Noise Impact Assessment (2016)**

In 2016 ERM undertook an assessment of potential construction and operational noise impacts associated with a new open cut mining pit and associated infrastructure for a mine in NSW. Steven's work tasks included:

- Review of mining processes and associated emission sources.
- Development of noise criteria in accordance with NSW guidelines.
- Detailed noise modelling of various construction and operational scenarios.
- Noise impact assessment and development of project specific control mitigation and management procedures.

### **Ital-Thai – (Mozambique) Rail and Port Development - Baseline Noise Campaign and Noise Impact Assessment (2016)**

In 2016 ERM undertook an assessment of potential construction and operational noise impacts associated with a proposed railway, port facility and associated infrastructure for a mine in Mozambique. Steven's work tasks included:

- Review of the railway transportation and port processes and associated emission sources.
- Development of noise criteria in accordance with IFC guidelines.
- Detailed noise modelling of various construction and operational scenarios.
- Noise impact assessment and development of project specific control mitigation and management procedures

### **CSIRO – CSIRO Ginninderra, Noise and Vibration Assessment (2015-2016)**

The CSIRO Ginninderra site is a 701 hectare (ha) area of land that CSIRO owns in the north western suburbs of Canberra, in the northern area of the ACT. CSIRO is exploring future possibilities for the site with Ginninderra being one of 53 sites it occupies across Australia.

This project involved the assessment of potential construction and operational noise impacts (include. road traffic impacts to and from the development) at sensitive receptors in the vicinity of the project site. Work tasks included a comprehensive baseline noise monitoring campaign, detailed 3D noise modelling and assessment to applicable guidelines to determine suitable mitigation options and future design work.

The assessment work focused relevant ACT legislation and policy with NSW guidelines adapted to provide for a robust and comprehensive assessment.

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#### **Steven De Luzuriaga**

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