

Project Approval

Section 75J of the *Environmental Planning & Assessment Act 1979*

I approve the project referred to in schedule 1, subject to the conditions in schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the on-going environmental management of the project.

The Hon Kristina Keneally MP
Minister for Planning

Sydney

2009 **Signed 20 September 2009.**

SCHEDULE 1

Application No.:

08_0142

Proponent:

Mackas Sand Pty Limited

Approval Authority:

Minister for Planning

Land:

Extraction Areas	Lot 218 DP 1044608 Lot 220 DP 1049608, Salt Ash
Access Roads	Lot 227 DP 1097995 Lot 13 DP 753192 Lot 101 DP 753192 Lot 3 DP 739188 Lot 8 DP 833768 Lot 4 DP 1121457 Lot 1 DP 177679 Lot 810 DP 1008279 Lot 58 DP 753192 Lot 122 DP 753192 Lots 1-3 DP 118072

Project:

Mackas Sand Project

MOD 1, determined by the PAC on 30 September 2013 in red type

MOD 2, determined by the PAC on 15 March 2016 in blue type

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DEFINITIONS

Alternate access road	Alternate access road to Lot 218 as described in EA (MOD1), and depicted in the figure in Appendix 1
Annual Review	Annual Review of operations, as required under condition 4 of Schedule 5
BCA	Building Code of Australia
Biodiversity Offset Area	The biodiversity conservation and enhancement area described in the EA (MOD 1) and depicted in the figure in Appendix 6
CCC	Community Consultative Committee
Council	Port Stephens Council
Crown road	A public road that is declared to be a Crown road for the purposes of the <i>Roads Act 1993</i>
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Environment
DPI Water	Department of Primary Industries - Water
DRE	Division of Resources and Energy, within the NSW Department of Industry
DST	Daylight Saving Time
EA	Environmental Assessment titled <i>Environmental Assessment: Sand Extraction Operations from Lots 218 and 220, Salt Ash</i> (2 volumes), dated April 2009, including the response to submissions
EA (MOD 1)	Environmental Assessment titled <i>Environmental Assessment Modifications to Mackas Sand Extraction Operations on Lot 218 & Lot 220 Salt Ash NSW</i> , dated October 2012 and prepared by Umwelt Australia Pty Limited, including the Response to Submissions documents dated 4 December 2012, 6 December 2012, 10 December 2012, 16 January 2013, 8 February 2013, 19 March 2013 and 17 June 2013, prepared by Umwelt Australia Pty Limited
EA (MOD 2)	Environmental Assessment titled <i>Environmental Assessment Modifications to Mackas Sand Extraction Operations on Lot 218 Salt Ash NSW</i> , dated July 2015 and prepared by Umwelt Australia Pty Limited, including the Response to Submissions document dated 12 October 2015, and additional information letter dated 16 December 2015
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
EST	Eastern Standard Time
Evening	The period from 6pm to 10pm
Heritage Branch	Heritage Branch of OEH
HWC	Hunter Water Corporation
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Lavis Lane access road	Access road to Lot 218 described in the EA
Lot 218	Lot 218 DP 1044608, as shown in Appendix 1
Lot 220	Lot 220 DP 1049608, as shown in Appendix 1
Minister	Minister for Planning, or delegate
Night	The period from 10pm to 7am on Monday to Saturday and between 10 pm to 8 am on Sundays and Public Holidays, except during the Shoulder period
OEH	Office of Environment and Heritage
PAD	Potential Archaeological Deposit
Privately-owned land	Land that is not owned by a public agency or a quarry company (or its subsidiary), other than the Hufnagl property (Lot 43 DP 247593)
Project	The development described in the EA, EA (MOD 1) and EA (MOD 2)
Proponent	Mackas Sand Pty Limited, or its successors in title
Public road	A road that is opened or dedicated as a public road under the <i>Roads Act 1993</i> or any other Act or law, or a road that is declared to be a public road under the <i>Roads Act 1993</i>
Quarrying Operations	Includes all sand extraction, processing, and related transportation activities carried out on site
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build
Response to Submissions	The Proponent's response to issues raised in submissions titled <i>Response to Submissions, Environmental Assessment of Sand Extraction Operations from Lot 218 DP 1044608 and Lot 220 DP 1049608, Salt Ash</i> , dated July 2009
RMS	Roads and Maritime Services
Secretary	Secretary of the Department, or nominee
Shoulder	The period from 5 am to 7 am on Monday to Friday, but only for the use of the Alternate access road (see condition 4A of schedule 3)
Site	The land referred to in schedule 1

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all reasonable and feasible measures to prevent or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project:
 - (a) generally in accordance with the EA;
 - (b) generally in accordance with the EA (MOD 1);
 - (c) generally in accordance with the EA (MOD 2);
 - (d) in accordance with the statement of commitments; and
 - (e) in accordance with the conditions of this approval.

Notes:

- The general layout of the project is shown on the figures in Appendix 1.
- The statement of commitments is reproduced in Appendix 2.

3. If there is any inconsistency between the documents in conditions 2(a) to 2(c), the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Quarrying operations may take place on site until 31 December 2029.

Notes:

- Under this approval, the Proponent is required to rehabilitate the site to the satisfaction of the Secretary. Consequently this approval will continue to apply in all other respects other than the right to conduct quarrying operations until the site has been rehabilitated to a satisfactory standard;
- The Department acknowledges that additional sand resources may exist on the site at the end of this period. Any extension of quarrying operations after this time will be subject to further approval.

6. The Proponent shall not transport, or permit to be transported, more than:
 - (a) 1,000,000 tonnes of product in a calendar year from Lot 218; and
 - (b) 1,000,000 tonnes of product in a calendar year from Lot 220.
7. The Proponent shall not undertake any sand extraction:
 - (a) within 0.7 m of the maximum predicted groundwater level on Lot 220; and
 - (b) within 1.0 m of the maximum predicted groundwater level on Lot 218, unless the core sample testing program demonstrates that extraction to within 0.7 m of the maximum predicted groundwater level can be undertaken without disturbing acid sulphate soils.

Note: The core sample testing program is detailed in the Soil and Water Management Plan in condition 22 of Schedule 3.

- 7A. The Proponent shall ensure that the final rehabilitated ground surface level on Lot 218 and Lot 220 is at least 1.0 m above the maximum predicted groundwater level.

Updating and Staging Strategies, Plans or Programs

8. The Proponent must regularly review the strategies, plans and programs required under this consent and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the quarrying industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this consent on a staged basis.

With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this consent without undertaking consultation with all parties nominated under the applicable condition in this consent.

Notes:

- *While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

Structural Adequacy

9. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works;*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

Demolition

10. The Proponent shall ensure that all demolition work is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

Protection of Public Infrastructure

11. The Proponent shall:
- repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and
 - relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.

Note: This condition does not apply to any road maintenance works which are covered by the Section 94 contributions described below in condition 13.

Operation of Plant and Equipment

12. The Proponent shall ensure that all plant and equipment used at the site is:
- maintained in a proper and efficient condition; and
 - operated in a proper and efficient condition.

Section 94 Contributions

13. The Proponent shall pay Council contributions for roadworks in accordance with the *Port Stephens Section 94 Development Contributions Plan 2007*, as may be updated from time to time, to the satisfaction of the [Secretary](#).

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Identification of Boundaries

1. Prior to carrying out any development on site, or as otherwise agreed by the [Secretary](#), the Proponent shall:
 - (a) engage an independent registered surveyor to survey the boundaries of the approved limit of extraction;
 - (b) submit a survey plan of these boundaries to the [Secretary](#); and
 - (c) **make provision for the accurate identification of these boundaries by operational staff during extraction operations using a Global Positioning System.**

Notes: The limit of extraction is shown on the figures in Appendix 1.

Maximum Extraction Depth Map

2. The Proponent shall:
 - (a) establish the average year and highest predicted groundwater levels for the site based on all available (and at least 12 months) site specific and HWC groundwater monitoring data;
 - (b) engage a suitably qualified and experienced expert to establish the maximum extraction depths to which extraction can be undertaken on site, to comply with condition 7 of schedule 2;
 - (c) submit a Maximum Extraction Depth Map (contour map or similar) for the project to the [Secretary](#) within 6 months of the date of this approval; and
 - (d) comply with the extraction depths specified in the map, to the satisfaction of the [Secretary](#).
3. Within 3 months of the completion of the Independent Environmental Audit (see condition 5 of schedule 5), the Proponent shall review and update as required the Maximum Extraction Depth Map for the project to the satisfaction of the [Secretary](#).

NOISE

Impact Assessment Criteria

4. The Proponent shall ensure that the noise generated by the project, **except for noise generated by the use of the Alternate access road**, does not exceed the noise impact assessment criteria in Table 1.

Table 1: Noise impact assessment criteria dB(A) L_{Aeq} (15min)

Day	Evening	Night	Night (L_{A1} (1 min))	Location
39	39	40	45	R18 – 300 Nelson Bay Road
39	39	39	45	R1 – Lavis Lane residence
36	36	37	45	R19 – 316 Nelson Bay Road
36	36	35	45	R26 – Residence opp. Oakdale Farm
36	35	35	45	R27 – Hufnagl residence
35	35	36	45	R17 – 287 Nelson Bay Road
35	35	35	45	All other residences

Notes:

- *To interpret the locations referred to Table 1, see the figure in Appendix 3.*
- *Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.*
- *The noise limits do not apply if the Proponent has an agreement with the relevant owner/s of these residences/land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.*

Impact Assessment Criteria – Alternate Access Road to Lot 218

- 4A. **The Proponent shall ensure that the noise generated by the use of the Alternate access road does not exceed the noise criteria in Table 1A.**

Table 1A: Alternate access road noise impact assessment criteria dB(A) $L_{Aeq(15min)}$

Shoulder	Day	Evening	Location
38	40	40	2344 Nelson Bay Road
39	41	41	2353 Nelson Bay Road
36	38	38	2367 Nelson Bay Road
38	40	40	2368 Nelson Bay Road
35	35	35	All other residences

Notes:

- To interpret the locations referred to Table 1A, see the figure in Appendix 3.
- Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.
- The noise limits do not apply if the Proponent has an agreement with the relevant owner/s of these residences/land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

Operating conditions

- 4B. The Proponent shall ensure, for the use of the Alternate access road, that:
- a speed limit of 40 km/hour is applied and enforced for all vehicles;
 - trucks slowing to use the intersection of the access road and Nelson Bay Road do not use engine or compression braking systems;
 - laden truck movements exiting the site do not exceed 14 per hour during the period from 5 am to 6 am, Monday to Friday (except for Public Holidays);
 - laden truck movements exiting the site do not exceed 8 per hour during the period from 6 am to 9 am, Monday to Friday (except for Public Holidays);
 - laden truck movements exiting the site do not exceed 24 per hour during the period from 9 am to 10 pm, Monday to Friday (except for Public Holidays);
 - laden truck movements exiting the site do not exceed 5 per hour between 5 am and 6 am on Saturdays (except for Public Holidays);
 - laden truck movements exiting the site do not exceed 9 per hour between 6 am and 7 am on Saturdays (except for Public Holidays);
 - laden truck movements exiting the site do not exceed 24 per hour between 7 am and 4 pm on Saturdays (except for Public Holidays); and
 - combined laden truck movements exiting from Lots 218 and 220 do not exceed 10 per hour in total on Sundays and Public Holidays.

Note: In this condition, "per hour" means within any period of 60 minutes following the change of hour.

Land Acquisition Criteria

5. If the noise generated by the project exceeds the criteria in Table 2, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 6-8 of schedule 4.

Table 2: Land acquisition criteria dB(A) $L_{Aeq(15min)}$

Night	Land
42	R1 to R4
41	R20 to R23
40	All other residences

Note: The notes under Table 1 apply equally to Table 2.

Cumulative Noise Criteria

6. The Proponent shall take all reasonable and feasible measures to ensure that the noise generated by the quarrying operations combined with the noise generated by other extractive industries does not exceed the following amenity criteria on any privately owned land, to the satisfaction of the Secretary:
- $L_{Aeq(11\text{ hour})}$ 50 dB(A) – Day;
 - $L_{Aeq(4\text{ hour})}$ 45 dB(A) – Evening; and
 - $L_{Aeq(9\text{ hour})}$ 40 dB(A) – Night.

Note: Cumulative noise is to be measured in accordance with the relevant procedures in the NSW Industrial Noise Policy.

Traffic Noise Impact Assessment Criteria

7. The Proponent shall take all reasonable and feasible measures to ensure that the traffic noise generated by the project does not exceed the traffic noise impact assessment criteria in Table 3.

Table 3: Traffic noise impact assessment criteria dB(A)

Road	Day/Evening	Night - Shoulder
Lavis Lane, Oakvale Road	60 L_{Aeq} (1 hour)	55 L_{Aeq} (1 hour)
Nelson Bay Road	60 L_{Aeq} (15 hour)	55 L_{Aeq} (9 hour)

Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in EPA's Road Noise Policy.

Additional Noise Mitigation Measures

8. Upon receiving a written request from:
- the owner of residence R1, if the residence is habitable in the opinion of the [Secretary](#); or
 - the owner of any residence where operational noise monitoring shows the noise generated by the project at night is greater than or equal to:
 - 40 dB(A) $L_{Aeq}(15\text{ minute})$ for residences R1 to R4;
 - 39 dB(A) $L_{Aeq}(15\text{ minute})$ for residences R20 to R23; and
 - 38 dB(A) $L_{Aeq}(15\text{ minute})$ for all other privately-owned residences,
- the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at the residence in consultation with the landowner.

These additional mitigation measures must be reasonable and feasible.

If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the [Secretary](#) for resolution.

Notes:

- To interpret the locations referred to in this condition, see the figure in Appendix 3.
- The noise limits do not apply if the Proponent has an agreement with the relevant owner/s of these residences/land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

Operating Hours

9. The Proponent shall comply with the operating hours in Table 4:

Table 4: Operating hours

Activity	Day	Time
Quarrying Operations (other than transportation)	Any day	Any time
Quarrying Operations on Lot 220 (other than transportation), when operating less than 250 metres from residence R27	Monday to Friday	7.00am to 6.00pm
	Weekends and Public Holidays	None
Transportation	Monday to Friday	6.00am to 6.00pm (EST)
		6.00am to 7.00pm (DST)
	Saturday	7.00am to 4.00pm
	Sundays and Public Holidays	None

However, the Proponent may undertake:

- (a) quarrying operations within 250 metres of residence R27 if the Proponent has an agreement with the owner of the residence to extend the hours of operation; and/or
- (b) transportation outside the hours in Table 4, to a maximum of 5.00am to 10.00pm Monday to Saturday, and 8.00am to 12.00pm on Sundays and Public Holidays, if the Proponent has agreements to extend the hours of transportation with the following:
 - all owners of privately-owned land with frontage to Lavis Lane (between the site and Nelson Bay Road), for transportation from Lot 218 using the Lavis Lane access road; and/or
 - all owners of 2344, 2353 and 2368 Nelson Bay Road, for transportation from Lot 218 using the Alternate access road; and/or
 - all owners of privately-owned land with frontage to Oakvale Road (between the site and Nelson Bay Road), for transportation from Lot 220;

and the Proponent has advised the Department in writing of the terms of these agreements.

Notes:

- To interpret the residence location referred to in this condition, see the figure in Appendix 3.
- For the purposes of this condition, transportation includes all laden truck movements on site access roads, Lavis Lane, the **Alternate access road** and Oakvale Road.
- Transportation is further restricted under condition 32 below.
- Maintenance activities may be conducted outside the hours in Table 4 provided that the activities are not audible at any privately-owned residence.
- This condition does not apply to delivery of material if that delivery is required by police or other authorities for safety reasons, and/or the operation or personnel or equipment are endangered. In such circumstances, notification is to be provided to EPA and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise Monitoring

10. The Proponent shall prepare a Noise Management Plan for the project to the satisfaction of the **Secretary**. This plan must:
- be prepared in consultation with **EPA**, and be submitted to the **Secretary** for approval within 3 months of the date of this approval;
 - include:
 - a description of the measures that would be implemented to minimise noise emissions from the project, with particular focus on:
 - quarrying operations within 250 metres of residences on privately-owned land;
 - transportation activities; and
 - continual improvement of noise performance;
 - a noise monitoring protocol for evaluating compliance with the relevant noise limits in this approval (including traffic noise);
 - a protocol for the investigation, notification and mitigation of identified exceedances of the relevant noise limits; and
 - a continual improvement program for investigating, implementing and reporting on reasonable and feasible measures to reduce noise generated by the project.

The Proponent shall implement the approved management plan as approved from time to time by the **Secretary**.

AIR QUALITY

Impact Assessment Criteria

11. The Proponent shall ensure that the dust emissions generated by the project do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 5, 6 and 7 at any residence on privately owned land, or on more than 25 percent of any privately owned land.

Table 5: Long term impact assessment criteria for particulate matter

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

Table 6: Short term impact assessment criterion for particulate matter

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

Table 7: Long term impact assessment criteria for deposited dust

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

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

Operating Conditions

12. The Proponent shall ensure any visible air pollution generated by the project is assessed regularly, and that quarrying operations are relocated, modified, and/or stopped as required to minimise air quality impacts on privately-owned land, to the satisfaction of the [Secretary](#).

Air Quality Monitoring

13. The Proponent shall prepare an Air Quality Monitoring Program for the project to the satisfaction of the [Secretary](#). This program must:
 - (a) be prepared in consultation with [EPA](#), and be submitted to the [Secretary](#) for approval within 3 months of the date of this approval; and
 - (b) include details of how the air quality performance of the project will be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval.

Note: Initially, this program should concentrate on monitoring the dust deposition impacts of the project. However, in time, it may be expanded to include other pollutants.

[The Proponent shall implement the approved monitoring program as approved from time to time by the Secretary.](#)

METEOROLOGICAL MONITORING

14. During the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

SOIL AND WATER

Water Supply

15. The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations to match its water supply.

Note: The Proponent is required to obtain necessary water licences for the project under the Water Management Act 2000.

Pollution of Waters

16. Except as may be expressly provided for by an EPL, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* during the carrying out of the project.

Wastewater Treatment

17. The Proponent shall manage on-site sewage to the satisfaction of Council and [EPA](#). The facility must comply with the requirements of the *Environment and Health Protection Guidelines – On-site Sewage Management for Single Households (1998)*.

Soil and Water Management

18. The Proponent shall prepare a Soil and Water Management Plan for the project to the satisfaction of the [Secretary](#). This plan must:
 - (a) be prepared in consultation with [EPA](#), [DPI Water](#) and HWC, and be submitted to the [Secretary](#) for approval within 3 months of the date of this approval; and
 - (b) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Surface Water Monitoring Program; and
 - Ground Water Monitoring Program.

[The Proponent shall implement the approved management plan as approved from time to time by the Secretary.](#)

Note: The Department accepts that the initial Soil and Water Management Plan may not include a detailed Site Water Balance. However, the detailed Site Water Balance must be approved prior to the commencement of any sand washing or groundwater extraction activities for the project.

19. The Site Water Balance must:
 - (a) include details of:
 - sources and security of water supply;
 - water use on site;

- water management on site;
 - any off-site water transfers;
 - reporting procedures; and
- (b) investigate and describe measures to minimise water use by the project.
20. The Erosion and Sediment Control Plan must:
- (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for the transport of sediment off site;
 - (d) describe the location, function, and capacity of erosion and sediment control structures; and
 - (e) describe what measures would be implemented to maintain the structures over time.
21. The Surface Water Monitoring Program must include:
- (a) baseline data on surface water quality, where available;
 - (b) surface water impact assessment criteria;
 - (c) a program to monitor surface water quality (particularly in project sediment basins); and
 - (d) a protocol for the investigation, notification and mitigation of identified exceedances of the surface water impact assessment criteria.
22. The Ground Water Monitoring Program must include:
- (a) detailed baseline data on ground water levels and quality, based on statistical analysis (including available HWC data);
 - (b) groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts;
 - (c) a program to monitor groundwater levels and quality, including a groundwater core sample testing program to monitor changes in metallic species above the maximum predicted groundwater level at Lot 218, that:
 - (i) is developed in consultation with EPA;
 - (ii) samples to a depth at least 2 m below the proposed extraction depth of 0.7 m above the maximum predicted groundwater level, from at least two locations within the area proposed to be extracted within the first 3 years; and
 - (iii) includes testing for acid forming minerals at regular depth and time intervals;
 - (d) a protocol for further groundwater modelling to confirm the limits to excavation depth across the site permitted in accordance with condition 7 of schedule 2; and
 - (e) a protocol for the investigation, notification and mitigation of identified exceedances of the ground water impact assessment criteria.

Unexploded Ordnance

23. The Proponent shall prepare and implement an Unexploded Ordnance Management Plan for the project to the satisfaction of the [Secretary](#). This plan must:
- (a) be prepared by a suitable qualified ordnance expert whose appointment has been approved by the [Secretary](#), and be submitted to the [Secretary](#) for approval prior to the commencement of quarrying operations on Lot 218; and
 - (b) include:
 - a protocol for managing unexploded ordnance risk on Lot 218 during quarrying operations; and
 - a description of the measures that would be undertaken if any unexploded ordnance is discovered during the project.

REHABILITATION AND LANDSCAPE MANAGEMENT

Rehabilitation

24. The Proponent shall progressively rehabilitate the site in a manner that is generally consistent with the final landform in the EA (as reproduced in Appendix 4), to the satisfaction of the [Secretary](#).

Note: The Department acknowledges that rehabilitation activities on Lot 218 may be limited given the planned ongoing extraction on this lot. However, the long-term/final landform for Lot 218 must be addressed as part of the Landscape Management Plan (see below).

Landscape Management Plan

25. The Proponent shall prepare a Landscape Management Plan for the project to the satisfaction of the [Secretary](#). This plan must:
- (a) be prepared in consultation with [OEH](#), [DPI Water](#) and Council, and be submitted to the [Secretary](#) within 6 months of the date of this approval, or prior to any vegetation clearing on Lot 220, whichever is sooner;
 - (b) include a:
 - Rehabilitation Management Plan; and

- Long Term Management Strategy.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

Note: The Department accepts that the initial Landscape Management Plan may not include the detailed Long Term Management Strategy. However, a conceptual strategy must be included in the initial plan, along with a timetable for augmentation of the strategy with each subsequent review of the plan.

26. The Rehabilitation Management Plan must include:
- the objectives for the site rehabilitation and site landscaping;
 - a description of the short, medium, and long term measures that would be implemented to rehabilitate and landscape the site;
 - detailed performance and completion criteria for the site rehabilitation and site landscaping;
 - a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for:
 - progressively rehabilitating disturbed areas;
 - landscaping the site to minimise visual impacts;
 - protecting vegetation and soil outside the disturbance areas;
 - preventing and/or minimising the accretion of sand dunes outside the project disturbance areas;
 - undertaking pre-clearance surveys;
 - salvaging and reusing material from the site for habitat enhancement;
 - managing impacts on fauna;
 - maintaining koala habitat linkages;
 - conserving and reusing topsoil;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement;
 - controlling weeds and feral pests;
 - controlling access; and
 - bushfire management;
 - a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria;
 - a description of the potential risks to successful rehabilitation, and a description of the contingency measures that would be implemented to mitigate these risks; and
 - details of who would be responsible for monitoring, reviewing, and implementing the plan.
27. The Long Term Management Strategy must:
- define the objectives and criteria for quarry closure and post-extraction management;
 - investigate and/or describe options for the future use of the site;
 - describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the project; and
 - describe how the performance of these measures would be monitored over time.

Rehabilitation Bond

28. Within 3 months of the approval of the Landscape Management Plan, the Proponent shall lodge a rehabilitation bond for the project with the Secretary to ensure that the site rehabilitation is implemented in accordance with the performance and completion criteria of the Landscape Management Plan. The sum of the bond shall be determined by:
- calculating the full cost of rehabilitating the site in each 3 year review period (see condition 7 of schedule 5); and
 - employing a suitably qualified expert to verify the calculated costs, to the satisfaction of the Secretary.

Notes:

- *If the rehabilitation is completed to the satisfaction of the Secretary, the Secretary will release the bond.*
- *If the rehabilitation is not completed to the satisfaction of the Secretary, the Secretary will call in all or part of the bond, and arrange for the satisfactory completion of the relevant works.*

Biodiversity Offset Strategy

- 28A The Proponent shall prepare a Biodiversity Offset Strategy for the Biodiversity Offset Area, in consultation with OEH and to the satisfaction of the Secretary. The strategy must include:
- performance criteria for the offset area;
 - a description of the proposed short-term and long-term management measures for the offset area, including to:
 - protect, conserve and enhance the vegetation within the offset area;
 - control access to the offset area;
 - control weeds and feral pests; and

- (c) a program to measure and monitor the effectiveness of the Strategy against the performance criteria.

The Proponent shall implement the approved strategy as approved from time to time by the Secretary.

Long Term Security of Biodiversity Offset

- 28B. Prior to the end of December 2014, or as otherwise agreed by the Secretary, the Proponent shall make suitable arrangements to provide appropriate long-term security for the Biodiversity Offset Area, to the satisfaction of the Secretary.

Note: Mechanisms to provide appropriate long term security to the land within the Biodiversity Offset Strategy include a Biobanking Agreement under Part 7A Division 2 of the Threatened Species Conservation Act 1995, a Voluntary Conservation Agreement under section 69B of the National Parks and Wildlife Act 1974, or any alternative mechanism that results in similar conservation outcomes. Any mechanism used to secure the land must remain in force in perpetuity.

HERITAGE

Aboriginal Cultural Heritage Management Plan

29. The Proponent shall prepare an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with OEH and the Aboriginal community, and be submitted to the Secretary for approval prior to the disturbance of any Aboriginal object or site; and
 - (b) include a:
 - detailed salvage program and management plan for all identified Aboriginal sites within the project disturbance area;
 - detailed description of the measures that would be implemented to protect Aboriginal sites and PAD outside the project disturbance area;
 - protocol for monitoring operations and vegetation removal on the site;
 - protocol for undertaking additional archaeological investigation, and where warranted excavation and/or salvage, on:
 - any identified stabilised soil surfaces on Lot 218 that are proposed to be disturbed; or
 - any area of the identified PAD on Lot 220 that is proposed to be disturbed;
 - protocol for monitoring of reject material;
 - description of the measures that would be implemented if any new Aboriginal objects or skeletal remains are discovered during the project; and
 - protocol for the ongoing consultation and involvement of the Aboriginal community in the conservation and management of Aboriginal cultural heritage on the site, including the establishment of a management group comprising Aboriginal stakeholders and a suitably qualified archaeologist.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

Non-Indigenous Heritage Management Plan

30. The Proponent shall prepare a non-indigenous Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:
- (a) be prepared in consultation with the Heritage Branch and Council, and be submitted to the Secretary for approval prior to the disturbance of any heritage item, including the identified tank traps;
 - (b) include:
 - archival recording of the tank traps, in accordance with the requirements and guidelines of the Heritage Branch;
 - a protocol for the investigation, removal and storage of the tank traps, and for their reinstallation following quarrying operations; and
 - a description of the measures that would be implemented if any new heritage objects or items are discovered during the project.

The Proponent shall implement the approved management plan as approved from time to time by the Secretary.

TRAFFIC AND TRANSPORT

Road Upgrades

31. The Proponent shall upgrade Lavis Lane (including the eastern section leading to the private haul road) to provide a minimum 6 metre sealed carriageway, to the satisfaction of Council, prior to the commencement of transportation using the Lavis Lane access road, unless otherwise agreed by the Secretary.

Alternate Access Road to Lot 218

- 31A. If the Proponent intends to use the Alternate access road, the Proponent shall:
- (a) arrange for an independent Road Safety Audit to be undertaken based on the existing concept design plan for the intersection on Nelson Bay Road and the proposed alternate access road . The Road Safety audit should assess the impact of construction of the proposed acceleration lane and the safety of vehicles turning into the existing driveways of the properties located on the northern side of Nelson Bay Road and into Sansom Road/Nelson Bay Road. The Road Safety Audit should also identify appropriate safety measures to make right turn manoeuvres from Nelson Bay Road safer. The Road Safety Audit is to be conducted prior to construction and to the satisfaction of RMS.
 - (b) construct the Alternate access road, in consultation with, and to the satisfaction of, Council;
 - (c) tar seal and maintain the first 200 m of the Alternate access road south from Nelson Bay Road, to the satisfaction of Council;
 - (d) construct a left-in, left-out intersection from Nelson Bay Road to the Alternate access road, with appropriate acceleration and deceleration lanes, advance "Trucks Entering" warning signage and road markings in accordance with relevant Austroads standards, in consultation with RMS and Council, and to the satisfaction of RMS;
 - (e) upgrade the access point to 2344 Nelson Bay Road, in consultation with the landowner and to the satisfaction of RMS;
 - (f) not use the Alternate access road to transport sand until all RMS requirements regarding the intersection have been fully met; and
 - (g) use its best endeavours to obtain an agreement from local bus operators to not make unscheduled stops in, or immediately adjacent to, the proposed acceleration and deceleration lanes.

Note: The conceptual alignment of the alternate access road is shown in Appendix 1.

- 31B The Proponent shall not restrict public access to any Crown road or public road located along the alignment of the Alternate access road, whenever the roads remain Crown roads or public roads.

Traffic Restrictions

32. The Proponent shall restrict truck movements (in plus out) on Lavis Lane and Oakvale Road to a maximum of 10 per hour during the night time period and on Sundays and public holidays, unless otherwise approved by the [Secretary](#).

Note: The [Secretary](#) may consider allowing additional truck movements if the Proponent has agreements with residents on Lavis Lane and Oakvale Road, as described in condition 9 above.

Road Haulage

33. The Proponent shall ensure that:
- (a) all loaded vehicles entering or leaving the site are covered; and
 - (b) all loaded vehicles leaving the site are cleaned of materials that may fall on the road, before they leave the site.

Drivers' Code of Conduct

- 33A. Prior to 14 April 2016, the Proponent shall prepare a Drivers' Code of Conduct applicable to drivers of all project-related vehicles, including trucks that haul sand from Mackas Sand's operations on Lots 218 and 220. This Code of Conduct must:
- (a) be prepared in consultation with Council and RMS and be submitted to the Secretary for approval;
 - (b) describe the measures that would be implemented to ensure that drivers of all project-related vehicles, including sand haulage trucks:
 - comply with this Drivers' Code of Conduct;
 - are made aware of potential safety issues both on site and on the public road haulage routes;
 - are informed of when heavy traffic volumes are likely to be encountered on Nelson Bay Road, including the 6 am to 9 am peak and the summer holiday period;
 - are informed of usual school bus travel times on Nelson Bay Road and Cabbage Tree Road as well as the location of all bus stops on these roads;
 - are made aware of potential interactions with general traffic on Nelson Bay Road whilst merging from the acceleration lane of the access road intersection;
 - are provided with contact details in case of emergencies or accidents;
 - are provided with details of potential environmental hazards, such as potential for fauna to cross the access road, particularly at dawn and dusk;
 - are provided with a detailed protocol that sets out what drivers are required to do to arrange for the care of any injured fauna and that they must immediately report all fauna strikes on the site to Mackas Sand's management;

- provided with updates on local road conditions;
 - minimise truck noise impacts at residences; and
 - minimise travel to the site prior to 5 am on weekdays;
- (c) include a monitoring program of the measures in (b).

The Proponent shall implement the approved Drivers' Code of Conduct as approved from time to time by the Secretary.

Vehicle Monitoring

- 33B. The Proponent shall assess the effectiveness of the measures contained within the Drivers' Code of Conduct, to the satisfaction of the Secretary.
- 33C. The Proponent shall provide, in each Annual Review, a report on condition 33B above and which includes details of all fauna injured or killed by vehicle strikes, time and date of any such strike, species involved, action taken immediately following the strike and any consequent measures put in place to prevent or minimise a recurrence of fauna strikes.
- 33D. The Proponent shall install and operate video cameras adjacent to the Alternate access road approximately 100 metres from its intersection with Nelson Bay Road to monitor the time and direction of travel of vehicles as they enter and leave the Lot 218 sand quarry, to the satisfaction of the Secretary. These cameras must be located in a fixed position with a field of view that only incorporates lands owned by the Proponent. Recordings from these cameras must be securely stored for at least 30 days and made available to the Department on request.
- 33E. The Proponent shall, by the use of its weighbridge on the Alternate access road to Lot 218, make, and retain for 12 months, records of the time of arrival, time of dispatch, weight of load and vehicle identification for each laden truck dispatched via the Alternate access road. These records shall be made available to the Department on request.

Parking

34. The Proponent shall provide sufficient parking on-site for all project-related traffic, in accordance with Council's parking codes, and to the satisfaction of the Secretary.

VISUAL

Visual Amenity

35. The Proponent shall minimise the visual impacts of the project to the satisfaction of the Secretary.

Lighting Emissions

36. The Proponent shall:
- (a) take all practicable measures to mitigate off-site lighting impacts from the project; and
 - (b) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*, to the satisfaction of the Secretary.

Advertising

37. The Proponent shall not erect or display any advertising structure(s) or signs on the site without the written approval of the Secretary.

Note: This does not include traffic management and safety or environmental signs.

WASTE MANAGEMENT

Waste Minimisation

38. The Proponent shall minimise the amount of waste generated by the project to the satisfaction of the Secretary.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

39. The Proponent shall ensure that the storage, handling, and transport of fuels and dangerous goods are conducted in accordance with the relevant *Australian Standards*, particularly AS1940 and AS1596, and the *Dangerous Goods Code*.

Safety

40. The Proponent shall secure the project to ensure public safety to the satisfaction of the [Secretary](#).

Bushfire Management

41. The Proponent shall:
- (a) ensure that the project is suitably equipped to respond to any fires on-site; and
 - (b) assist the rural fire service and emergency services as much as possible if there is a fire on-site.

PRODUCTION DATA

42. The Proponent shall:
- (a) provide annual production data to the [DRE](#) using the standard form for that purpose; and
 - (b) include a copy of this data in the [Annual Review](#).
-

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. Within 1 month of the date of this approval, the Proponent shall notify the landowner of residence R1 in writing that they have the right to require the Proponent to undertake additional noise mitigation measures on their residence in accordance with condition 8 of schedule 3 at any stage during the project, if the residence is habitable in the opinion of the [Secretary](#).
2. If the results of the monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria, except where a negotiated agreement has been entered into in relation to that impact, then the Proponent shall, within 2 weeks of obtaining the monitoring results, notify the [Secretary](#), the affected landowners and tenants (including tenants of quarry-owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3.

INDEPENDENT REVIEW

3. If a landowner of privately-owned land considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the [Secretary](#) in writing for an independent review of the impacts of the project on his/her land.
4. If the [Secretary](#) is satisfied that an independent review is warranted, the Proponent shall within 2 months of the [Secretary's](#) decision:
 - (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the [Secretary](#), to conduct monitoring on the land, to:
 - determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
 - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
 - (c) give the [Secretary](#) and landowner a copy of the independent review.
5. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).

If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, then the Proponent shall:

- (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria, and conduct further monitoring to determine whether these measures ensure compliance; or
- (b) secure a written agreement with the landowner to allow exceedances of the relevant impact assessment criteria, to the satisfaction of the [Secretary](#).

If the further monitoring referred to under paragraph (a) above determines that the project is complying with the relevant impact assessment criteria, then the Proponent may discontinue the independent review with the approval of the [Secretary](#).

LAND ACQUISITION

6. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:
 - (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project the subject of the project application, having regard to the:
 - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
 - presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in condition 8 of schedule 3;
 - (b) the reasonable costs associated with:
 - relocating within the Port Stephens local government area, or to any other local government area determined by the [Secretary](#);
 - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and

- (c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if following this period, the Proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the [Secretary](#) for resolution.

Upon receiving such a request, the [Secretary](#) shall request the President of the NSW Division of the Australian Property Institute (the API) to appoint a qualified independent valuer to:

- (a) consider submissions from both parties;
- (b) determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
- (c) prepare a detailed report setting out the reasons for any determination; and
- (d) provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the [Secretary](#) for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the [Secretary](#) shall determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above and the independent valuer's report. Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the [Secretary's](#) determination.

If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the [Secretary](#) determines otherwise.

7. The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 6 above.
8. If the Proponent and landowner agree that only part of the land shall be acquired, then the Proponent shall also pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT AND MONITORING CONDITIONS

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare an Environmental Management Strategy for the project to the satisfaction of the [Secretary](#). This strategy must:
 - (a) be submitted to the [Secretary](#) for approval within 3 months of the date of this approval;
 - (b) provide the strategic framework for environmental management of the project;
 - (c) identify the statutory approvals that apply to the project;
 - (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project;
 - respond to any non-compliance; and
 - respond to emergencies; and
 - (f) include:
 - copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and
 - a clear plan depicting all the monitoring currently being carried out within the project area.

[The Proponent shall implement the approved strategy as approved from time to time by the Secretary.](#)

INCIDENT REPORTING

2. Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.
3. Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that must:
 - (a) describe the date, time, and nature of the exceedance/incident;
 - (b) identify the cause (or likely cause) of the exceedance/incident;
 - (c) describe what action has been taken to date; and
 - (d) describe the proposed measures to address the exceedance/incident.

ANNUAL REVIEW

4. [By the end of March each year, or other timing agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:](#)
 - (a) [describe the development \(including any rehabilitation\) that was carried out in the past calendar year, and the development that is proposed to be carried out over the next year;](#)
 - (b) [include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the:](#)
 - [relevant statutory requirements, limits or performance measures/criteria;](#)
 - [requirements of any plan, program or strategy required under this approval;](#)
 - [monitoring results of previous years; and](#)
 - [relevant predictions in the EA and EA \(MOD 1\);](#)
 - (c) [identify any non-compliance over the past calendar year, and describe what actions were \(or are being\) taken to ensure compliance;](#)
 - (d) [identify any trends in the monitoring data over the life of the project;](#)
 - (e) [identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and](#)
 - (f) [describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.](#)

REVISION OF STRATEGIES, PLANS AND PROGRAMS

- 4A. [Within 3 months of:](#)
 - (a) [the submission of an incident report under conditions 2 or 3 above;](#)
 - (b) [the submission of an annual review under condition 4 above;](#)
 - (c) [the submission of an audit report under condition 6 below; or](#)
 - (d) [any modification to the conditions of this approval, \(unless the conditions require otherwise\), the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary.](#)

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 development.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Within 2 years of the date of the commencement of quarrying operations, and every 3 years thereafter, unless the **Secretary** directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
 - (a) be conducted by a suitably qualified, experienced, and independent team of experts whose appointment has been approved by the **Secretary**;
 - (b) assess the environmental performance of the project, and its effects on the surrounding environment;
 - (c) assess whether the project is complying with the relevant standards, performance measures and statutory requirements;
 - (d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval.
6. Within 1 month of completion of each Independent Environmental Audit, the Proponent shall submit a copy of the audit report to the **Secretary** and relevant agencies, with a response to any of the recommendations in the audit report.
7. Within 3 months of submitting a copy of the audit report to the **Secretary**, the Proponent shall review and if necessary revise the:
 - (a) strategies/plans/programs required under this approval; and
 - (b) rehabilitation bond, to consider the:
 - effects of inflation;
 - changes to the total area of disturbance; and
 - performance of the rehabilitation against the completion criteria of the Landscape Management Plan,to the satisfaction of the **Secretary**.

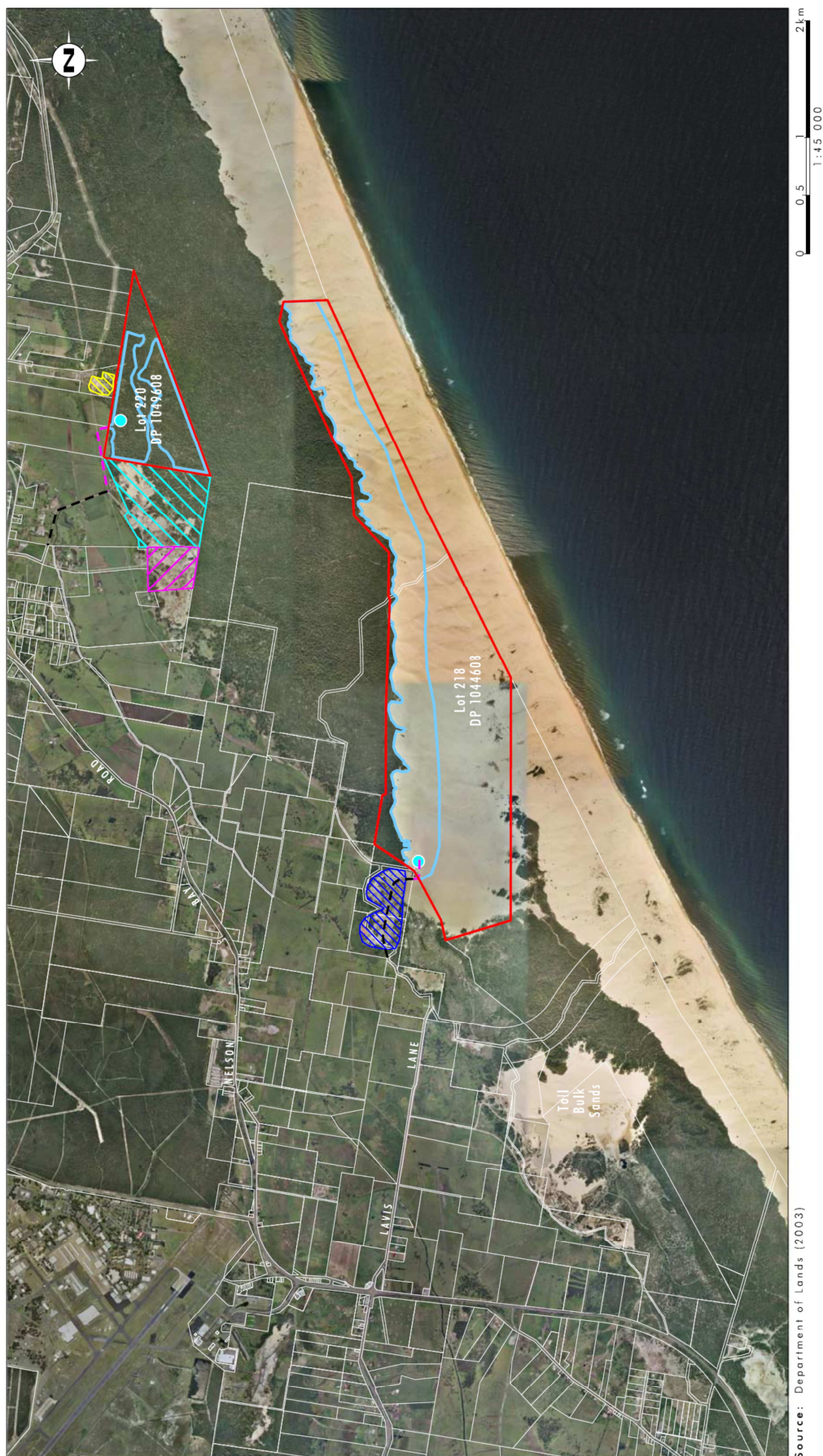
COMMUNITY CONSULTATIVE COMMITTEE

8. Within 3 months of the commencement of quarrying operations, the Proponent shall establish a Community Consultative Committee (CCC) for the project to the satisfaction of the **Secretary**, in accordance with the Department's *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects*.

ACCESS TO INFORMATION

9. Within 1 month of the approval of any strategies/plans/programs required under this approval (or any subsequent revision of these strategies/plans/programs), or the completion of the audits or **Annual Review** required under this approval, the Proponent shall:
 - (a) provide a copy of the relevant document/s to the relevant agencies and to members of the general public upon request; and
 - (b) ensure that a copy of the relevant document/s is made publicly available on its website and at the site.
 10. During the project, the Proponent shall:
 - (a) make a summary of monitoring results required under this approval publicly available on its website and at the site; and
 - (b) update these results on a regular basis (at least every 3 months).
-

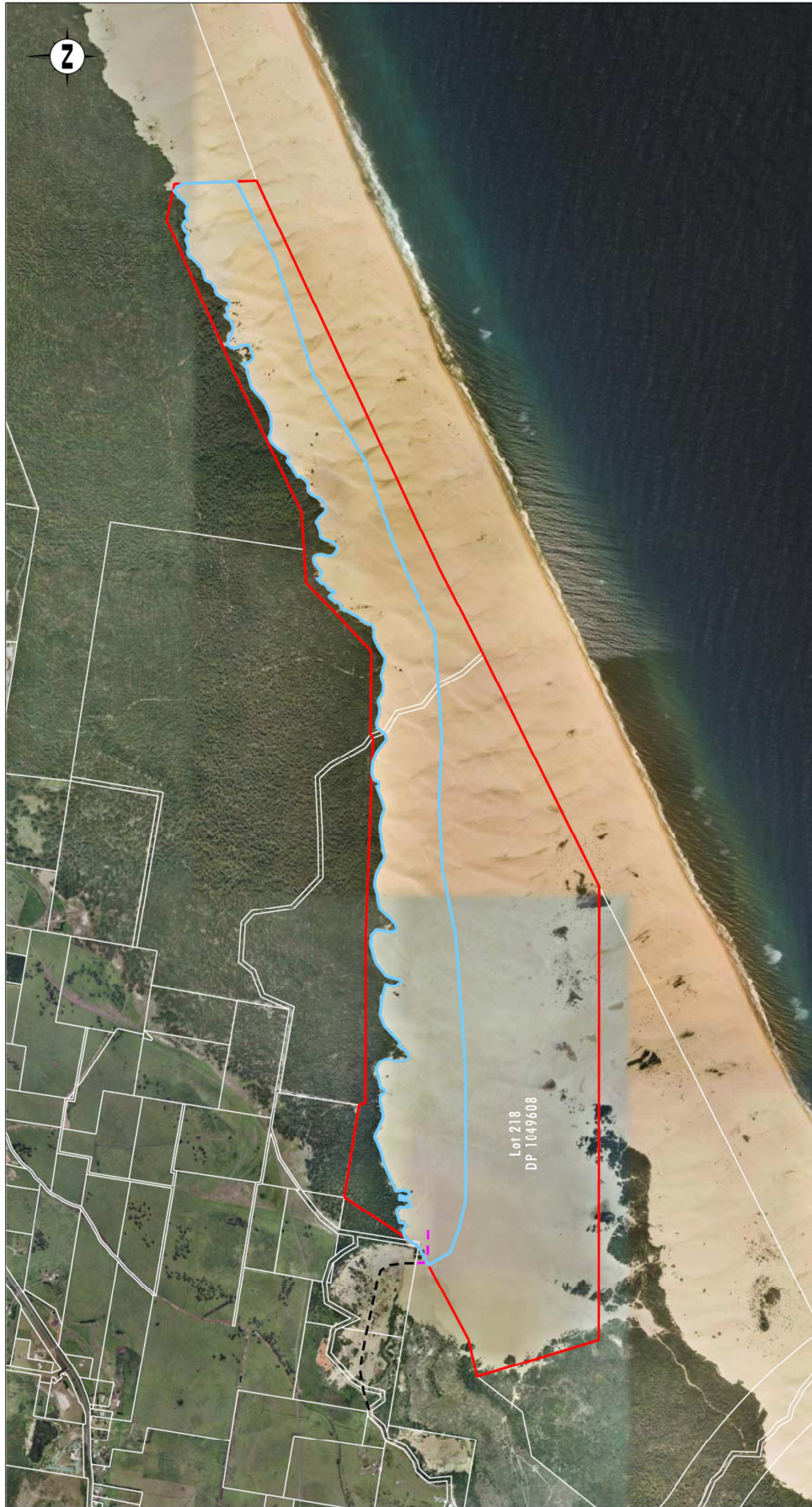
APPENDIX 1 PROJECT LAYOUT PLANS



Source: Department of Lands (2003)

- Legend**
- Lot Boundaries (218 & 220)
 - Mackas Sand (existing operations)
 - Unimin
 - Hunter Quarries
 - Quality Sands and Ceramics
 - Proposed Operational Area
 - Proposed Weighbridge
 - Site Access
 - Proposed Site Access

FIGURE 2.1
The Study Area



Source: Aerial: Google Earth, 2008

Legend

- ▭ Lot 218 Boundary
- ▭ Proposed Lot 218 Operational Area
- - - Site Access
- - - Proposed Site Access

FIGURE 1.2
Proposed Disturbance Area Lot 218

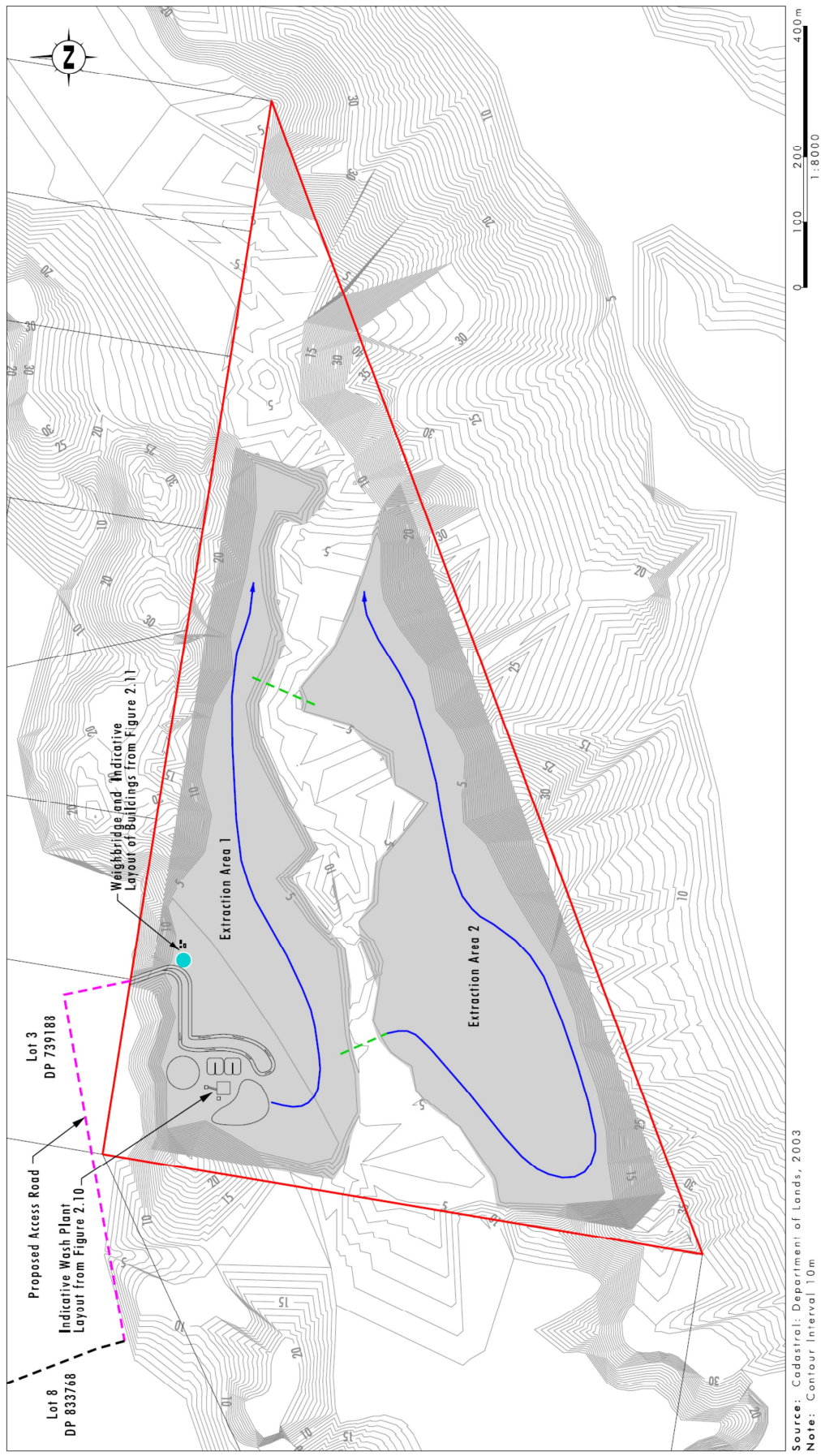


FIGURE 2.9
Extraction Plan for Lot 220

- Legend**
- ▭ Lot 220 Boundary
 - - - Internal Access Roads
 - - - Proposed Access Road
 - - - Existing Access Road
 - Direction of Extraction



Legend

- Lot Boundary (218)
- Approved Operational Area
- - - Proposed Alternate Access Route
- Approved Access Route
- Proposed Intersection Location

FIGURE 1.2

Proposed Alternate Access Route to Nelson Bay Road

APPENDIX 2 STATEMENT OF COMMITMENTS

1.1 Operational Controls

- 1.1.1 All activities will be undertaken in accordance with the EA, EA (MOD 1) and EA (MOD 2).
- 1.1.2 Sand extraction and processing activities at Lot 218 and Lot 220 may be undertaken 24 hours per day, seven days per week. No sand extraction operations will be undertaken within 250 metres of R27 (Hufnagl residence) between the hours of 6.00 pm and 7.00 am unless an agreement with the owner of R27 for extraction activities within these hours is obtained.
- 1.1.3 Transport of product from Lot 218 will be undertaken between 5.00 am and 10.00 pm, Monday to Saturday and 8.00 am to 12.00 pm on Sundays and Public Holidays. Transport of product from Lot 220 will be undertaken between 5.00 am and 10.00 pm, Monday to Saturday and 8.00 am to 12.00 pm on Sundays and Public Holidays.
- 1.1.4 A maximum of 1,000,000 tonnes per year of sand products will be extracted from Lot 218 and a maximum of 1,000,000 tonnes per year will be extracted from Lot 220. Annual sand production information will be provided to the Department and DRE.
- 1.1.5 The interim landform during extraction on Lot 218 and Lot 220 will be no lower than 0.7 metres above the maximum predicted groundwater level as shown on Figure 2.1 of EA (MOD 1). The final landform will be at least 1 metre above the maximum predicted groundwater level as shown on Figure 4.9 of the EA. The height of the final landform will be verified by topographic survey.

1.2 Ecology

- 1.2.1 A Vegetation Clearance Management Plan will be developed prior to any vegetation clearing occurring for the proposal. This plan will be implemented for all vegetation clearing required as part of the proposal.
- 1.2.2 A comprehensive Biodiversity Monitoring Program will be developed prior to any vegetation clearing being undertaken for the proposal.
- 1.2.3 Clearing operations will be timed so that potential impacts on breeding species, particularly the squirrel glider and threatened micro-bats are avoided. Where possible, clearing will be avoided in winter months when micro-bats and the eastern pygmy possum are in a state of torpor and squirrel gliders begin to breed.
- 1.2.4 A Feral Animal Control Management Plan will be developed and implemented prior to any clearing activities being undertaken for the proposal.
- 1.2.5 A Weed Management Plan will be developed and implemented prior to any clearing activities being undertaken for the proposal.
- 1.2.6 A comprehensive Rehabilitation and Decommissioning Plan will be prepared to ensure rehabilitation objectives are achieved to a reasonable extent. The Plan will include:
- the rehabilitation program;
 - native vegetation and fauna habitat management including provision of artificial hollows and nest boxes and fauna translocation procedures;
 - feral animal control;
 - fire management;
 - weed management;
 - minimisation of edge effects;
 - stormwater control;
 - fauna displacement measures including nest boxes and tree hollows;
 - control of public access;
 - monitoring; and
 - funding.
- 1.2.7 The feasibility of establishing native vegetation at the western end of Lot 218 to create a link between adjoining vegetated areas following the completion of sand extraction in this area will be investigated within 5 years of operations and if feasible the Rehabilitation and Decommissioning Plan will be revised to include vegetation of this area.

1.3 Aboriginal Heritage

- 1.3.1 An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed in consultation with the relevant Aboriginal stakeholders and OEHL prior to the commencement of any clearing activities. The ACHMP will include:
- a protocol to assess significance of Aboriginal objects;
 - appropriate remedial actions etc. at end of life of operations. These will be drawn from the Rehabilitation and Decommissioning Plan;

- identification of an 'in perpetuity' a keeping place with the requirement for 'in perpetuity' being resolved with the Aboriginal community;
 - establishment of a Management Group that includes an invitation to all stakeholders and an archaeologist;
 - a commitment to lodging site cards for any Aboriginal objects identified;
 - a skeletal material protocol. Relevant legislation requires that if Aboriginal skeletal material is found, the proponent will need to obtain an OK in writing from **OEH** and Police before work resumes;
 - development of an Aboriginal Cultural Education program for use as part of the induction for workers; and
 - protocols for extraction of sand on Lot 218 from below the 1945 land surface including test pitting procedures as set out in the EA and survey and clearance of unexploded ordnance (UXO) should UXO be identified in the extraction area.
- 1.3.2 An Aboriginal Cultural Heritage Management Group will be established prior to commencement of the proposal to managed matters relating to Aboriginal cultural heritage within the study area.
- 1.3.3 The Aboriginal Cultural Heritage Management Group will conduct a monitoring visit to the Lot 218 proposal area on a monthly basis for the first 12 months of operation, with subsequent inspection intervals to be determined as part of the ACHMP.
- 1.3.4 The Aboriginal Cultural Heritage Management Group will conduct a monitoring visit to the Lot 220 operational area on a biannual basis for 12 months, with subsequent inspection intervals to be determined as part of the ACHMP.
- 1.3.5 A sample of reject material from the screening operations on Lot 220 will be taken each day, where sufficient material is present. The samples will be provided to the Aboriginal Cultural Heritage Management Group on a monthly basis.
- 1.4 Historic Heritage**
- 1.4.1 Prior to disturbance of any tanks traps at either Lot 218 or Lot 220, the location of the tank traps will be surveyed and a photographic record made in accordance with Heritage Council of NSW requirements for archival recording. The survey data and photographic recording will be forwarded to the Heritage Branch of the Department of Planning.
- 1.4.2 Any disturbed tank traps will be replaced along the original alignment of the Northern Defence Line.
- 1.5 Traffic and Access**
- 1.5.1 In accordance with the requirements of Section 4.5 of the Port Stephens Section 94 Development Contributions Plan 2007, Mackas Sand will make a road maintenance contribution of 1.20 cents per tonne.kilometre for product transported on Port Stephens Council roads.
- 1.5.2 Within 6 months of the commencement of haulage of product from Lot 218 along Lavis Lane, the proponent will contribute to the sealing of the 700 metre unsealed section of Lavis Lane.
- 1.5.3 **Mackas Sand will meet all costs of designing and constructing the proposed new intersection on Nelson Bay Road including any works required to provide safe access from driveways that access Nelson Bay Road within the construction zone for the proposed new intersection.**
- 1.5.4 **Mackas Sand undertakes to not restrict the public's right of access to the public roads that are located along the alignment of the proposed haul road between Lot 122 and Nelson Bay Road reserve whenever these roads are public roads.**
- 1.6 Noise**
- 1.6.1 An Operational Noise Management Plan will be developed for the proposal and implemented prior to sand extraction commencing. The plan will incorporate a noise monitoring program to monitor noise emissions and determine compliance with the project specific noise goals. The plan will include specific measures to monitor and address potential noise impacts at residential receiver R27 (Hufnagl Residence).
- 1.6.2 No sand extraction will be undertaken within 250 metres of receiver R27 during evening and night periods unless agreement is reached with the landholder.
- 1.6.3 A Traffic Noise Management Plan will be developed and implemented for truck movements on the private haul road from Lot 220. The Plan will focus on but not be limited to truck movements between the hours of 5.00 am and 7.00 pm.
- 1.7 Air Quality**
- 1.7.1 Dust suppression activities, such as spraying a suitable dust suppressant, will be undertaken on all unsealed access roads used to transport product from Lot 218 and Lot 220 so that at least a 75 percent reduction in dust generation is achieved.

1.8 Groundwater

- 1.8.1 A Groundwater Management Plan will be developed prior to any sand extraction activities to the satisfaction of the Department in consultation with EPA. The Plan will include a groundwater monitoring program that includes quarterly monitoring of groundwater level and quality (electrical conductivity, pH, turbidity, arsenic, manganese and iron) at groundwater monitoring bores SP 1 to SP 6 as shown on Figure 4.7 of the EA. The results of the monitoring are to be commented on and compiled into an annual report.
- 1.8.2 Any refuelling of equipment used for the proposal will be undertaken by a registered contractor to remove the need for on-site storage of fuels. No maintenance of equipment or storage of chemicals will occur at either site.
- 1.8.3 Prior to sand washing being undertaken on-site access to a suitable water supply will be obtained and evidence of this will be provided to the Department. Prior to sand washing commencing a detailed Water Management Plan for the sand washing operation will be prepared and provided to the Department.

1.9 Surface Water

- 1.9.1 Table drains and flow dissipation structures will be installed along on-site access roads as required in accordance with the Erosion and Sediment Control Regional Policy (Port Stephens Council 2002) and the Code of Practice for Managing Urban Stormwater – Soils and Construction (Landcom 2004).
- 1.9.2 Site Water Management Plans for operations on Lot 218 and Lot 220 will be submitted for approval to the Department in consultation with EPA prior to the commencement of sand extraction activities. The Plan will include details on the storage and handling of chemicals on the sites including refuelling of mobile equipment.
- 1.9.3 Access roads will be constructed so as to not impede flood flows on Tilligerry Creek floodplain. The alternate access road will be sealed between Nelson Bay Road and the southern edge of the Tilligerry Creek crossing to minimise sediment generation and transport adjacent to Tilligerry Creek.

1.10 Public Safety

- 1.10.1 High visibility fencing with appropriate set back from the extraction face and signage will be erected on the seaward side of the Lot 218 operational area.
- 1.10.2 Any access tracks leading into either Lot 218 or Lot 220 other than those used for product haulage will be blocked from recreational vehicle use with boulders or other suitable methods.
- 1.10.3 Inspections of high visibility fencing and any structures built to control public access to the sites will be undertaken every week. Maintenance or repair of any fences and structures will occur within this timeframe, as required.

1.11 Visual

- 1.11.1 A 30 metre vegetated buffer will be maintained along the northern boundary of Lot 220, except where the proposed access road will be constructed into the site. Buffer areas of 20 metres will be maintained along the other boundaries of the site. In-fill planting will be undertaken in buffer areas as required to ensure a sufficient visual screening is in place around the site.
- 1.11.2 Extensive supplementary planting of suitable screening species will be undertaken in the Lot 220 northern boundary buffer area within 50 metres of the Hufnagl residence.

1.12 Greenhouse Gases

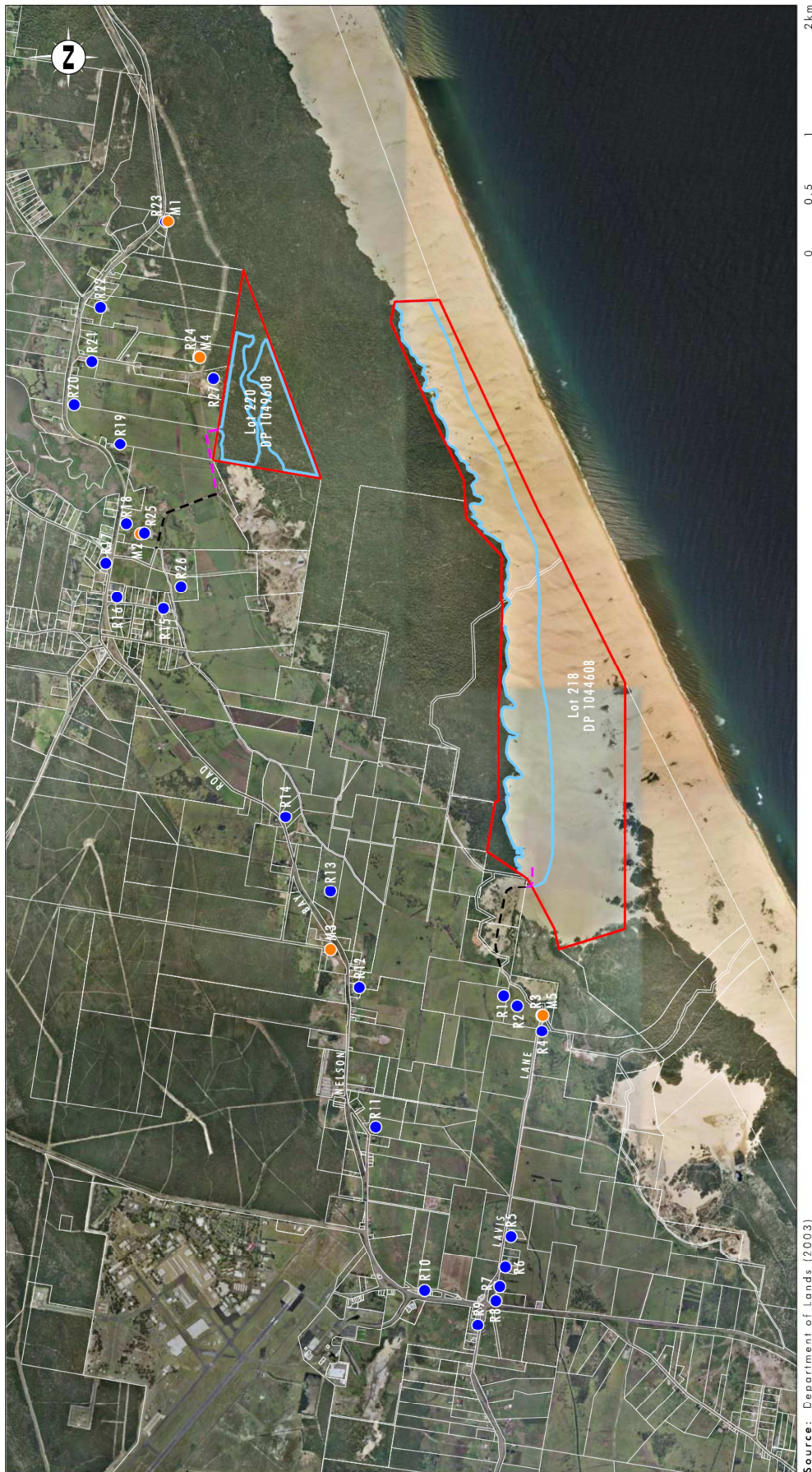
- 1.12.1 Mackas Sand will seek to achieve continuous improvement in energy efficiency in sand extraction and processing operations.

1.13 Environmental Management, Monitoring and Auditing

- 1.13.1 Mackas Sand will obtain an Environmental Protection Licence for the proposal in accordance with the *Protection of the Environment Operations Act 1997*.
- 1.13.2 Three years after the commencement of the proposal, and every four years thereafter, Mackas Sand will commission and pay the full cost of an Independent Environmental Audit of the proposal.
- 1.13.3 Within 7 days of detecting an exceedance of the limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, Mackas Sand shall report the exceedance/incident to EPA and any relevant agency. The report will:
- describe the date, time and nature of the exceedance/incident;
 - identify the cause (or likely cause) of the exceedance/incident;
 - describe what action has been taken to date; and
 - describe the proposed measures to address the exceedance/incident.
- 1.13.4 Prior to the commencement of any operations, Mackas Sand will implement, publicise and list with a telephone company a contact phone number, which will enable the general public to reach a person who can arrange appropriate response action to the enquiry. Mackas Sand will maintain a register to

record details of all enquiries received and actions undertaken in response. Mackas Sand will supply the EPA with a copy of the enquiries register on an annual basis.

APPENDIX 3 RECEIVER LOCATION PLAN



Source: Department of Lands (2003)

- Legend**
- Lot Boundaries (218 & 220)
 - Proposed Operational Area
 - Residential Receivers
 - Noise Logger Location
 - Site Access
 - Proposed Site Access

FIGURE 4.4
Residential Receivers and
Noise Logger Locations

**APPENDIX 4
FINAL LANDFORM PLAN – LOT 220**

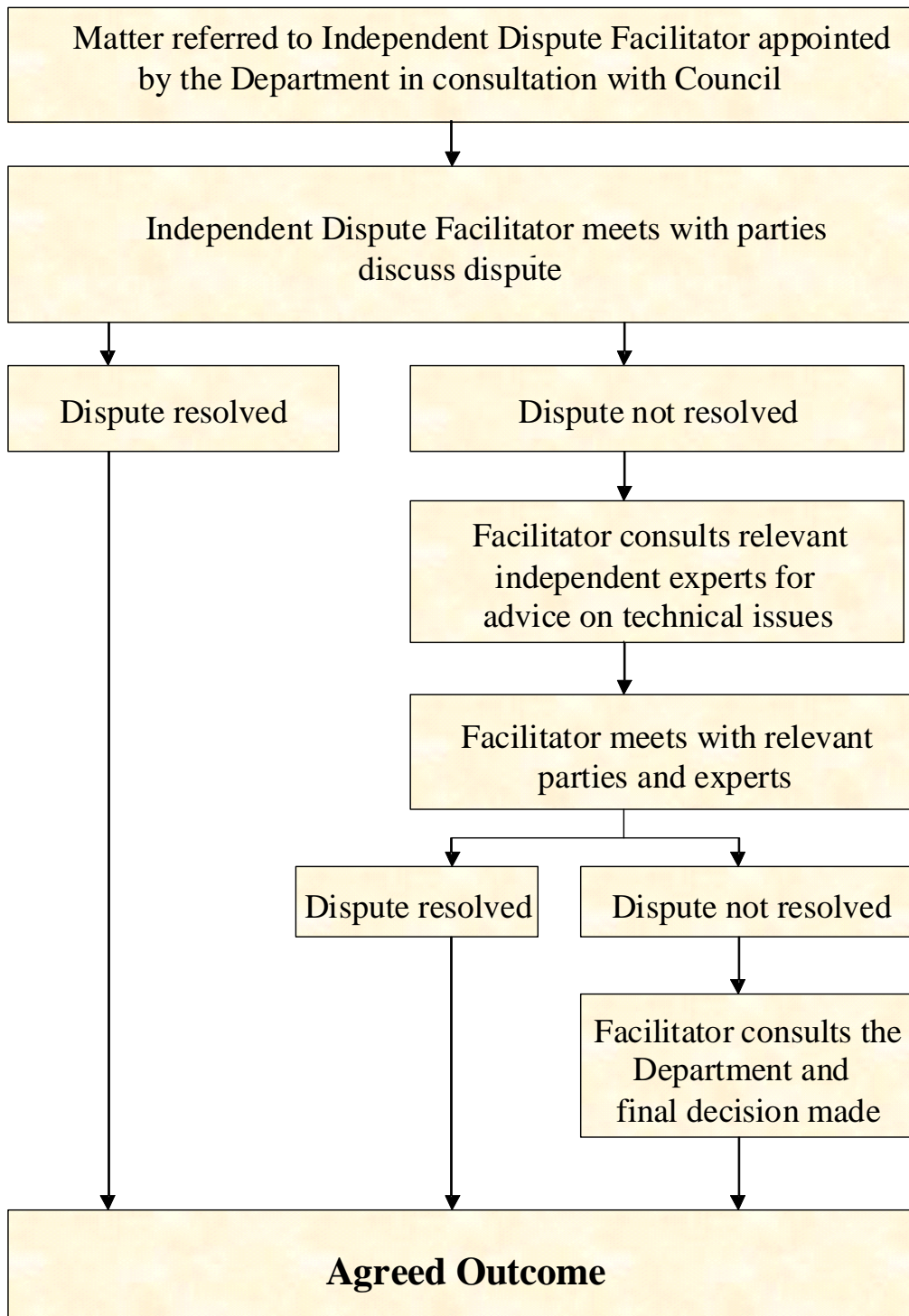


FIGURE 2.12
Rehabilitation Plan for Lot 220

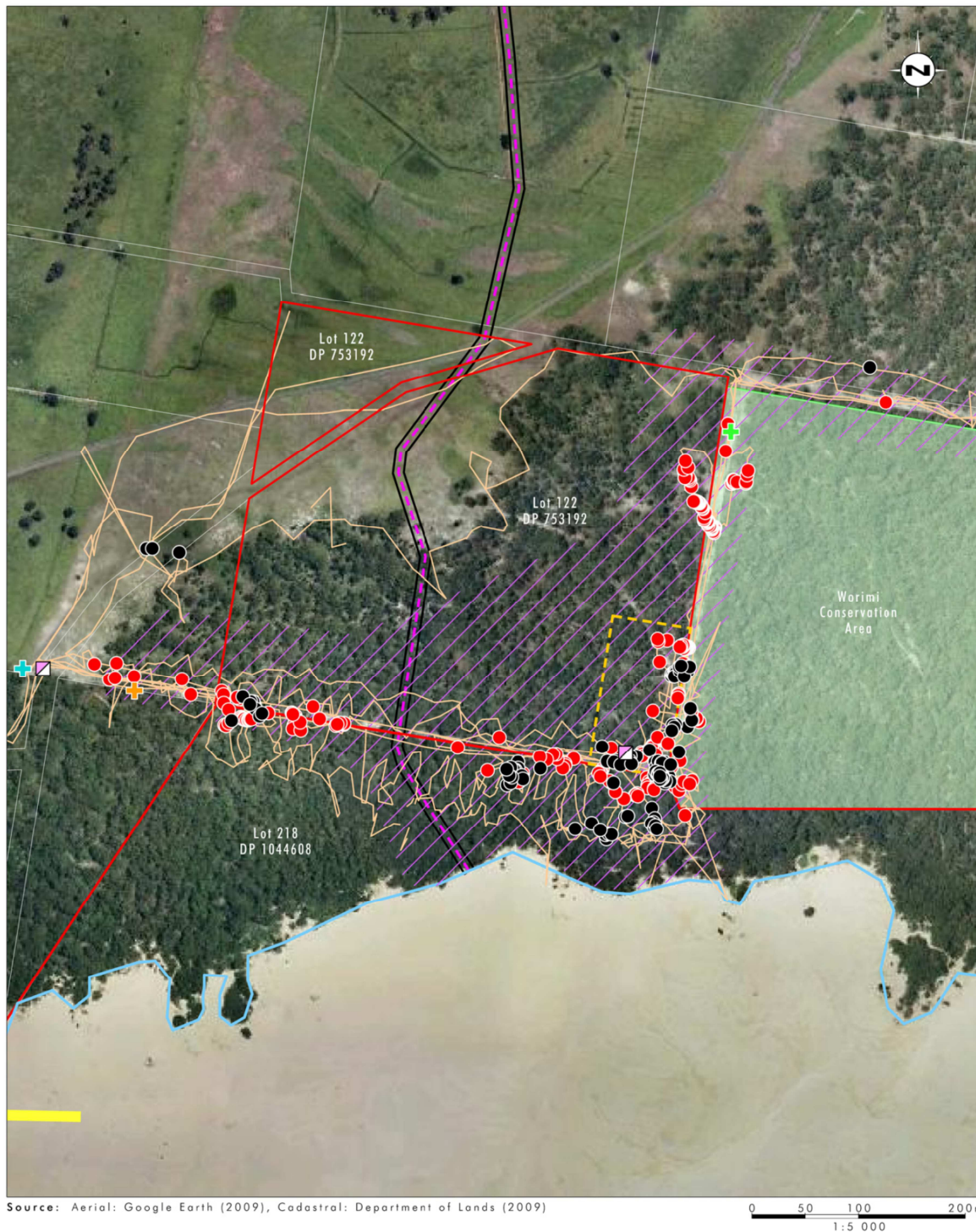
- Legend**
- ▭ Lot 220 Boundary Planted
 - ▭ Final Landform (Native Vegetation) - Coastal Sand Apple - Blackbutt Forest
 - ▭ Existing Native Vegetation - Coastal Sand Apple - Blackbutt Forest
 - Batter Reshaped

APPENDIX 5
INDEPENDENT DISPUTE RESOLUTION PROCESS

**Independent Dispute Resolution Process
(Indicative only)**



**APPENDIX 6
BIODIVERSITY OFFSET AREA**



Legend

- | | | |
|---|----------------------------------|-----------------------|
| Lot Boundary | 2011 General Survey Area | <i>Diuris praecox</i> |
| Approved Operational Area | 2011 Targeted Orchid Survey Area | |
| Worimi Conservation | Grey-headed Flying-fox | |
| Proposed Biodiversity Offset Area | Little Bentwing-bat | |
| Proposed Alternate Haul Route Footprint | Grey-crowned Babbler | |
| Proposed Alternate Haul Route | Greater Broad-nosed Bat | |
| Approved Access Route | <i>Diuris arenaria</i> | |

FIGURE 2
Proposed Biodiversity Offset Area and Targeted Orchid Survey Locations