

PF FORMATION



HITCHCOCK ROAD SAND EXTRACTION AND REHABILITATION PROJECT, MAROOTA

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

2013 - 2014



PF Formation

HITCHCOCK ROAD
Sand Extraction and Rehabilitation Project Maroota

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT 2013-2014

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Hitchcock Road sand extraction and rehabilitation project

Annual Environmental Management Report 2013-2014

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Term	Abbreviation
AEMR	Annual Environmental Management Report
AHD	Australian Height Datum. The standard reference level used to express the relative elevation of various features. A height given in metres AHD is essentially the height above sea level.
Airshed	Lower atmosphere within a defined geographic area.
Ambient	The background level at a specific location, being a composite of all sources.
Annual Average Daily Traffic	Annual average daily traffic volume representing the total traffic in both directions at a specified location calculated from mechanically obtained axle counts.
Annual Exceedance Probability (AEP)	The probability of a flood event exceeding a nominated level in a year. A one percent AEP is the probability of an event exceeding a nominated level in 100 years.
Aquifer	Geologic formation, group of formations, or part of a formation capable of transmitting and yielding economic quantities of water.
Archaeology	The scientific study of human history, particularly the relics and cultural remains of the distant past.
ARI	Average Recurrence Interval-average or expected period between exceedance of a flood.
Background Noise Level	The ambient sound pressure noise level in the absence of the sound under investigation exceeded for 90 percent of the measurement period. Normally equated to the average minimum A-weighted sound pressure level.
Batter	The side slope of walls, embankments and cuttings or the degree of such slope, usually expressed as a ratio of horizontal distance to one vertical height.
Bore	A cylindrical drill hole sunk into the ground from which water is pumped for use or monitoring.
Buffer	A physical barrier, structure or width of land which encloses, partially encloses or defines a particular environment. It serves to minimise the impacts of non-desirable external influences on the adjoining environment.
Bund Wall	A wall erected to prevent the escape of various emissions into the environment (liquids, noise or views).
Catchment	The area drained by a stream or body of water or the area of land from which water is collected.
Clay	Very fine grained sediment, often defined as having a particle size less than 2 microns (0.002mm) in diameter.
Compaction	The process of compressing individual grains in a soil or sediment in response to pressure.
Conservation	The management of resources in a way that will benefit both present and future generations.

Term	Abbreviation
Contaminant	Any physical, chemical, biological or radiological substance or matter in water or soil that is not of natural origin.
Contamination	The degradation of the natural environment as a result of human activities.
Council	The Hills Shire Council.
Day	The period from 7.00am to 6.00pm on Monday to Saturday and 8.00am to 6.00pm on Sunday and public holidays.
dBA	Decibels using the A-weighted scale measured according to the frequency of the human ear.
Decibel	A scale unit used in the comparison of powers and levels of sound energy. The number of decibels is ten times the logarithm to the base of ten of the ratio of the powers.
Department	NSW Department of Planning and Environment.
Director-General	Director-General of the Department of Planning and Environment or delegate.
DPI	NSW Department of Primary Industries
DWE	NSW Department of Water
EA	Environmental Assessment of the project entitled <i>Hitchcock Road Sand Extraction and Rehabilitation Project Environmental Assessment and Appendices</i> (3 volumes) dated November 2007, prepared by DFA Consultants, including the response to submissions and Preferred Project Report.
Ecology	The relationship between living things and their environment.
Ecologically Sustainable Development	Using, conserving and enhancing the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased.
Ecosystem	A functional unit of energy transfer and nutrient cycling in a given place. It includes all relationships within the biotic community and between the biotic components of the system.
Emission	Discharge of a substance to the environment.
Environment	A term for all the conditions (physical, chemical, biological and social) in which an organism or group of organisms, including humans, exists.
Environmental Assessment (EA)	impact on the physical, social and economic environment. It includes an evaluation of alternatives and an overall justification of the project. The EA is used as a vehicle to facilitate public comment and as the basis for analysing the project with respect to granting approval under relevant legislation.

Term	Abbreviation
Environment Protection Licence	Licence monitored by the Environment Protection Authority
EPA	Environment Protection Authority
EMP	Environmental Management Plan
EP&A Act	<i>Environmental Planning and Assessment Act 1979.</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000.</i>
EPL	Environmental Protection Licence issued under the <i>Protection of the Environment Operations Act 1997.</i>
Equivalent Continuous Sound Level (LAeq)	The constant sound level which when operating over the same time interval as a fluctuating sound over an extended time, is equivalent to the same sound energy.
Erosion	The wearing away of the land surface by the action of water, wind and ice.
Evening	The period from 6.00pm to 10.00pm.
Excavate	Dig into natural material and remove using specialist machinery.
Extraction	A term referring to the removal of material from the earth synonymous with quarrying.
Extraction area	The land described as the extraction area in Appendix 1 of the Project Approval.
Evapotranspiration	Loss of water from a land mass through transpiration from plants and evaporation from the soil.
Fauna	All animals including birds, reptiles, marsupials and fish.
Flora	All plants
Frequency	Similar to the pitch of a musical note in sound pressure fluctuations of cycles per second (Hertz). Most sounds comprise a composite of frequencies of varying sound pressure levels in the range of 20 Hertz to 20,000 Hertz.
Friable	Easily crumbled.
Front-end loader	Machine used to lift and place soil, earth, rocks and other materials within an extraction site or to load products into trucks.
Gradient	Rate of change of a given variable with distance, such as temperature or elevation.
g/m²/month	grams per square metre per month

Term	Abbreviation
Greenhouse effect	Changes in climate that could occur due to increases in atmospheric concentrations of certain gases.
Groundwater	Subsurface water contained within the saturated zone.
Hawkesbury Sandstone	Prominent cliff-forming sandstone occurring across the Sydney basin.
Head (hydraulic head)	Energy contained in a water mass produced by elevation, pressure or velocity.
Heritage	Things of value which are inherited from the past.
Hydrocarbon	Any organic compound, gaseous, liquid or solid, consisting only of carbon and hydrogen.
Hydrogeology	The study of subsurface water in its geological context.
Impact	The effect of human-induced action on the environment.
Infiltration	The process of surface water soaking into the soil.
Infrastructure	Supporting installations and services supplying the needs of a project.
Introduced species	Plants and animals not native to Australia and known or thought to have been brought here by humans.
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 the approval.
Landform	A specific feature of the landscape or the general shape of the land.
µg/m³	micrograms per cubic metre
µs/cm	microsiemens per centimetre
micron	Unit of measure-one millionth of a metre.
mg/L	milligrams per litre
Mitigation measures	Measures put in place to reduce an impact.
Modelling	Use of mathematical equations to simulate and predict real events and processes.
Monitoring	Regular measurement of components of the environment to understand their condition and establish if necessary standards are being met.
Minister	NSW Minister for Planning and Environment or delegate.
Night	The period from 10.00pm to 7.00am on Monday to Saturday and 10.00pm to 8.00am on Sunday and public holidays/
Observation well	A well constructed or utilised for the purpose of observing

Term	Abbreviation
	groundwater parameters such as water levels, pressure changes and water quality.
Palaeochannel	An ancient river bed, often filled with more recent sediments.
Perched water	Unconfined groundwater separated from an underlying body of groundwater by an unsaturated zone.
pH	A measure of acidity or alkalinity of a solution, numerically equal to 7 for neutral solution, increasing with increasing alkalinity and decreasing with increasing acidity. Originally stood for the words potential of hydrogen.
Piezometer	A pipe in which the elevation of the water level or potentiometric surface can be determined.
Privately owned land	Land not owned by a public agency or the proponent or its related companies.
Preferred Project Report	The proponent's Preferred Project Report dated September 2008 prepared by DFA Consultants as modified in the Proponent's email to the Department of Planning on 18 November 2008.
Process plant	Equipment used to clean and separate sand into various sizes.
Project	The development as described in the EA.
Proponent	PF Formation or its successors in title.
Recharge	Addition of water to the zone of saturation; also the amount of water added.
Recovery	The difference between the observed water level during the recovery period after cessation of pumping and the water level measured immediately before pumping stopped.
Receptor	An environmental modelling term used to describe a map reference point where the impact is predicted. A sensitive receptor is a home, work place, school or other place where people spend some time. An elevated receptor is a point above ground level.
Rehabilitation	Preparation of a final landform following extraction and its stabilisation with vegetation.
Remnant vegetation	Native vegetation remaining after widespread clearing has taken place.
Resource	Potentially usable material in a defined area that can be economically extracted.
Response to Submissions	The proponent's response to issues raised in submissions dated March 2008 prepared by DFA Consultants and subsequent submissions to the Department of Planning dated 27 August 2008.

Term	Abbreviation
RL	Reduced level, usually in metres to an arbitrary datum.
RMS	NSW Roads and Maritime Services
Run-off	The proportion of precipitation discharged through surface water systems.
Sand	Sediment comprising particles ranging between 0.063mm and 2mm.
Sandstone	A fine grained rock of sedimentary origin composed primarily of sand-sized particles (0.06 to 2 mm).
Sedimentation basin	An area where runoff is ponded to allow sediment to be deposited. The longer the period that the runoff is held, the smaller the size of the sediment deposited. Such basins have to be regularly cleaned.
SHTW	Sydney Hinterland Transition Woodland
Silt	Sediment comprising most particles between 0.004mm and 0.063mm.
Species	Taxonomic grouping of organisms that are able to interbreed with each other but not with other species.
Stakeholder	An individual or group with an interest in the proposal.
Statement of Commitments	The proponent's commitments in Appendix 3 of the Project Approval.
Stockpile	Mound used to store material.
Stormwater	Rainwater which runs off catchments following rain events. The untreated water is carried into creeks, rivers and lakes.
Strategy A, Strategy B	The alternative rehabilitation proposals described in the Preferred Project Report.
Terrestrial	Relating to the land as distinct from air or water.
Tertiary	Geologic time at the beginning of the Cainozoic era, 65 to 2 million years ago, after the Cretaceous and before the Quaternary.
Topography	The physical relief and contours of the area.
Topsoil	The surface layer of a soil profile containing most of the organic material and viable life forms and seeds.
Total Dissolved Solids (TDS)	The dissolved mineral content of groundwater, commonly expressed in milligrams/Litre.
Total Suspended Solids	A measure of suspended solids concentrations in a water body and expressed in terms of mass per unit of volume.
Triassic	The earliest of the three periods that constitute the Mesozoic Era. Approximately between 230 and 180 million years before present.
TSC Act	NSW Threatened Species Conservation Act.

Term	Abbreviation
Turbidity	A measure of light penetration through a water column containing particles of matter in suspension.
Underflow	The volume of groundwater that flows through a cross sectional area of an aquifer. It depends on permeability and the prevailing gradient.
Unsaturated zone	That part of an aquifer between the land surface and water table.
Vegetation Offset	The conservation and enhancement program described in the Preferred Project Report to occur on the land shown on the plan in Appendix 5 of the Project Approval.
VENM	Virgin Excavated Natural Material as defined in the <i>Protection of the Environment Operations Act 1997</i> .
Wash plant	Equipment designed to wash unwanted sized materials from the product.
Water quality	Degree or lack of contamination.
Water table	The surface of saturation in an unconfined aquifer at which the pressure of the water is equal to that of the atmosphere.
Well	A hole sunk into the ground and completed for the abstraction or injection of water or for water observation purposes. Generally synonymous with bore.
1 in 100 Year Flood Level	The flood which occurs on average once every 100 years. Also known as the 100 year Average Recurrence Interval of a flood.

Chapter One

INTRODUCTION

Following the lodgement of a Development Application ('DA') and associated Environmental Assessment ('EA') under Part 3A of the Environmental Planning and Assessment Act, the present development was approved by the Minister for Planning on 3 February 2009. The conditions attached to the approval required, among other things, the preparation of five management plans/monitoring programs:

- Environmental Strategy – results in Chapter 3
- Noise Management Plan – results in Chapter 4
- Air Quality Monitoring Program – results in Chapter 5
- Water Management Plan – results in Chapter 6
- Landscape Management Plan – results in Chapter 7

The first revision of these Plans occurred in 2011 and the Department of Planning and Environment (DoP) approved the revised Plans on 15 November 2011. The Plans have since been updated in 2014 and are awaiting approval by the DoP.

Each of these documents sets out the various monitoring programs required to comply with the requirements of the approval conditions. The monitoring results are summarised in an annual report known as the Annual Environmental Management Report (AEMR). This is submitted 12 months from the date of approval and every year thereafter to the Director-General, relevant agencies and the Community Consultative Committee (CCC).

This AEMR will:

- identify the standards and performance measures that apply to the project
- describe the works that will be carried out in the next 12 months
- include a summary of the complaints received during the past year and compare this to complaints received in previous years
- include a summary of the monitoring results for the project during the past year to 30 June
- include an analysis of these results against the relevant
 - Ø impact assessment criteria/limits
 - Ø monitoring results from previous years
 - Ø predictions in the EA
- identify any trends in the monitoring results over the life of the project
- identify any non-compliance during the previous year; and
- describe what actions were, or are being, taken to ensure compliance.

The Approval requires the project to have an Independent Environmental Audit within 12 months of the date of approval and every three years thereafter. The audit will:

- be conducted by a suitably qualified, experienced and independent person(s) whose appointment has been approved by the Director-General;
- include consultation with the relevant agencies;
- assess the environmental performance of the project and its effects on the surrounding environment;
- assess whether the project is complying with the relevant standards, performance measures and statutory requirements; and
- review the adequacy of any strategy/program required under this approval and, if necessary, recommend measures or actions to improve the environmental performance of the project and/or any strategy/plan/program required under this approval.

2014 Independent Environmental Audit

The most recent 3 yearly Independent Environmental Audit Report of the Hitchcock Road Sand Project audit was received in April 2014. A copy of the Report is appended in **Attachment 9A** and the Audit Conclusions were:

Full cooperation was obtained from PF Formation staff during the audit with full access granted to records and copies made of records if requested. No obstacles were encountered during the audit and subsequent queries. Based on the audit findings the audit conclusions are as follows.

Based on completion of the environmental audit tasks (section 3), audit evidence and environmental monitoring results (section 4), consultation with agencies (section 5) and assessment of the compliance tables and audit findings (section 6) the environmental performance of the sand project is satisfactory with some non-conformances. The project is generally complying with the relevant standards, performance measures and statutory requirements including project approval conditions, project approval commitments and Environment Protection Licence conditions with some non-conformances that can be rectified. There is a need to improve on some environmental commitments and record keeping.

The effects of the Hitchcock Road sand project on the surrounding environment appear to be relatively minor and generally acceptable and manageable with some improvements and corrective actions needed. This assumes that the environmental management measures continue to be implemented by PF Formation.

All strategies/plans/programs required under the project approval to date are adequate with some corrective actions proposed.

Independent Audit Recommendations

Audit recommendations were outlined in Section 8 of the Audit Report and the PF Formation response to each of the matters raised was reported to the Department of Planning in the letter dated 12 June 2014 as per **Attachment 9B**. All matters referred to in PF Formation 'Comments on Independent Environment Report' dated 12 June 2014 have now been completed.

Points 1 of the Audit Recommendations refer to changes/updates to be made to the Environmental Strategies. These Plans have been updated and forwarded to the DoP on 12 September 2014 and are awaiting approval by DoP.

The next independent audit will be conducted in 2017.

Chapter Two

STATUS OF THE PROJECT

The site survey plan attached as **Attachment 2A** shows the current status of the development. The location of the various lots that make up the site is shown on Figure 2 at **Attachment 2B**.

The total amount of processed material derived from the Hitchcock Road site over the 12 months to June 2014 was within the limit of 400,000 tonnes of processed material allowed under Condition 7 of Schedule 2 for the Hitchcock Road Project Approval.

Works Carried Out in Last 12 Months and Planning for Next 12 months

- Limited extraction has continued in Lot 214 DP752039 in 2014. The majority of the sand from this site has now been extracted and extraction will be completed in 2015. Construction of tailing ponds has occurred in 2014 (Pond 12) and they will be operational by 2015. **(Attachment 2C – Photo 1)**
- Extraction on the north-western side of the site on Lot 2 DP570966 continued in 2014 but will be the secondary extraction area in 2015 **(Attachment 2C – Photo 2)**
- Removal of significant overburden heading north through Lot 1 DP1091018 to Lot 2 DP570966 to prepare for long-term extraction of this area. This area includes the clearing of the Sydney Hinterland Transitional Woodland (SHTW) in the middle of the site. This will be the main long-term extraction area. **(Attachment 2C – Photo 3)**
- Capping of Tailings Pond 5 is nearly complete. Water must still flow through this pond to get to the Clean Water Dam **(Attachment 2C – Photo 9)** whilst Ponds 9 and 10 are being used. **(Attachment 2C – Photo 4)**
- Tailings Ponds 9 and 10 will discontinued as the main ponds in use in the system during 2015. **(Attachment 2C – Photo 7&8)**. A new Pond 12 (Lot 214 DP 752039) will be the primary tailings pond in the 2015 period.
- Former tailings Pond 7 and 8 are used as overburden stockpile area. **(Attachment 2C – Photo 5)**
- Continued monitoring and supplemental planting of revegetation in the completed areas of Lot 2 DP233818 **(Attachment 2C – Photo 10, 11, 12 &13)**. More than 4 hectares of SHTW has been planted on the site at that stage.
- Planting of vegetation has occurred along the northern end of Old Northern Road. Continued monitoring and supplemental planting of revegetation in this area will continue in 2015. **(Attachment 2C – Photos 14 & 15)**

These activities will be initiated or continued over the next 12 months.

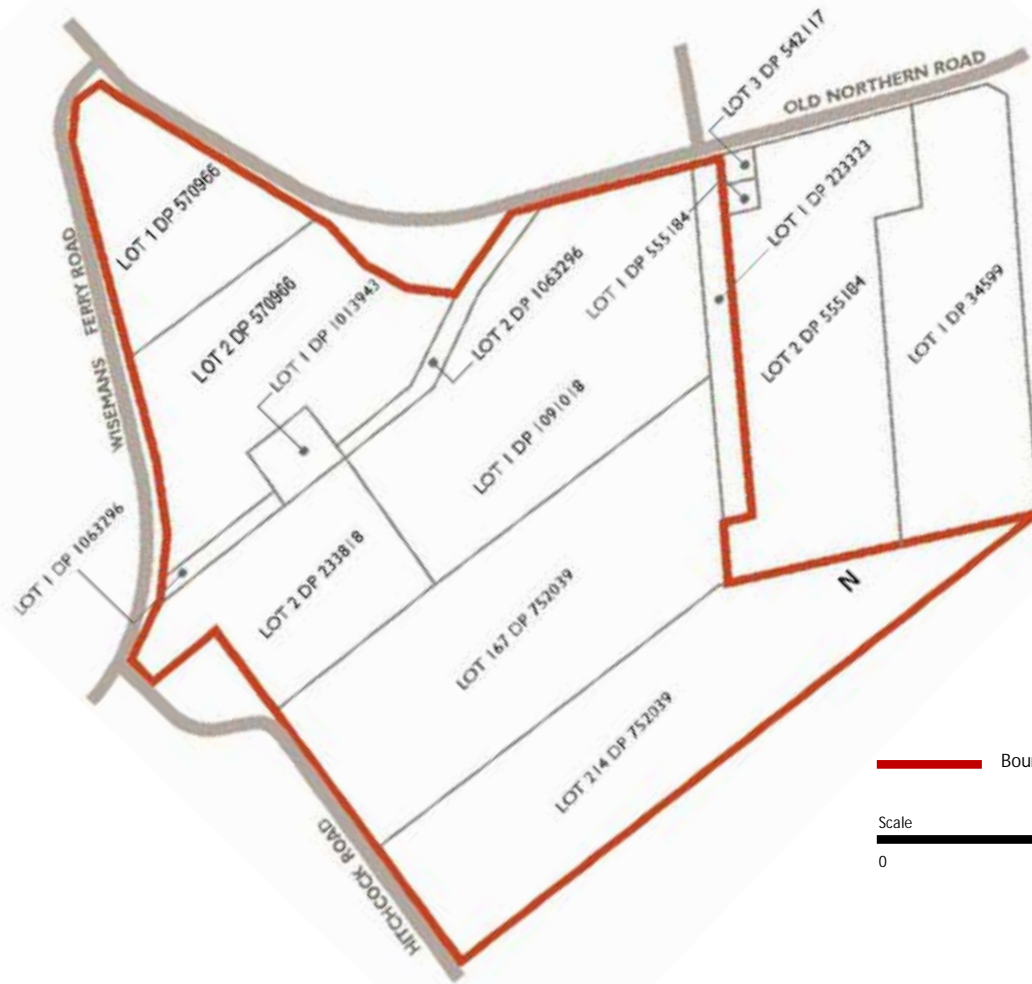
There have been no complaints during the year.

Other Matters

The weighbridge is required to be verified under the Fair Trading Rules every two years. The last verification was done on 10 June 2014 and a copy of the verification is in **Appendix 2D**.

Annual production data is forwarded to the Department of Primary Industries in aggregate for all material produced and sold at Maroota. The figures provided include material from Hornsby Shire Council and Hills Shire Council and from several Approvals/Consents. The information in these forms is commercially sensitive and in any case it does not break down the material from this Approval or others. The throughput for the year from this Approval was less than 400,000 tonnes and detail of this AEMR not available for publication.

Annual EPA Licence – we are required to lodge an annual return with the EPA. A copy is enclosed in **Appendix 2E** for the year ended 29 September 2013.



Boundary of the proposed extraction area

Scale
0 500 Metres



Photo 1: New Silt Pond



Photo 2: Main Extraction Area



Photo 3: Overburden Removal



Photo 4: Tailings Pond 4



Photo 5: Overburden Stockpile



Photo 6: Overburden Stockpile



Photo 7: Tailings Pond 9



Photo 8: Tailings Pond 10



Photo 9: Clean Water Dam



Photo 10: Rehabilitation Area 2011 Planting



Photo 11: Rehabilitation Area 2011 Planting



Photo 12: Rehabilitation Area



Photo 13: Rehabilitation Area Older Planting



Photo 14: Planting on Old Northern Road



Photo 15: Planting Old Northern Road & Wisemans Ferry Road

Test report reference number: 0005276

Calibration Sticker Reference: F4-16576

Verification: Y

In-Service Test:
Date of Test: 10/06/14

For in-service inspection record the verification/certification mark: F4-16576

Name of owner/user: PF FORMATION-test and verify w/bridge

Contact: DIANNA REA

Address of owner/user: 1774 WISEMAN FERRY RD

Phone: 02 4566 8314

Report Emailed from Site? N

DESCRIPTION OF INSTRUMENT:
Serial No: IN00542/7

Make / Model: TOLEDO 7560/5000

NSC No: 6/10B/46

Capacity: 60t

Min: 0.40t

VSI e=d= 0.02t

Class III

DESCRIPTION	Y/N		Y/N
Instrument complies with NMI certificate?	Y	The data plate is fixed on instrument?	Y
Instrument is being used appropriately?	Y	Is the instrument clean?	N
Is the instrument complete?	Y	Level-ind device fitted & Operates?	NA
Is the Instrument Operational?	Y	Mounted on a firm base?	Y
Is the instrument level?	Y	Mandatory marks are clear & permanent?	Y
Any apparent obstructions to Inst?	N		
Does the operator &/OR customer, have a clear and unobstructed view of the indicator & the weighing operation?			Y
Add indicating devices: Do the repeat the primary indication. Does price computation and/or, ticket/label comply with S1/0/A?			Y
If applicable, does the steelyard, tare bar or proportional weight comply with the mandatory requirements in respect to design and marking?			NA
Is the instrument adequately protected against abnormal dust, air movement, vibrations, atmospheric conditions and any other influence likely to affect its performance?			N
Suspended weighing instruments: does it hang freely & are all transparent covers in good repair?			NA

Repeatability Test: Pass or Fail? PASS		Zero Settings Pass or Fail? PASS		1. 41.16		2. 41.16		3. 41.14	
Eccentricity Reading 1 - 12:				Difference: 0.02					
1. 8.14	2. 8.14	3. 8.14	4. 8.14	5. 8.14	6. 8.14	Mass Used			
7.	8.	9.	10.	11.	12.	8.14			

Eccentricity Test Pass or Fail? P

No. of Supports? 6

Comments: Corners read the same

Weighing performance using substitution load (clause 5.4.2)

Substitution Load 1:	AWS WBTU
Substitution Load 2:	
Substitution Load 3:	

Method Used: Method A? A Method B?

MPE change points: 10.00t ; 40.00t

Available weights: 18.00t

WEIGHBRIDGE WEIGHT TEST:

Up:	Load	Make up of load:	MPE:	1:	1/2 e:	DL:	E:	Lsub:	(rounded)	P or F?
1.	2.00t	MASSES	0.01	2.00	0.01		1kg			PASS
2.	10.00t	MASSES	0.02	10.00	0.01		2kg			PASS
3.	18.00t	MASSES	0.02	18.00	0.01		4kg			PASS
4.	23.16t	SUB 1	0.02	23.16	0.01	23.16	3kg	23.157	3kg	PASS
5.	41.16t	MASSES + SUB	0.03	41.16	0.01	23.16	4kg	23.157	3kg	PASS

Over range blanking Pass or Fail? P

Down:	Load	Make up of load:	MPE:	1:	P or F?
1.	41.16	MASSES + SUB	0.03	41.16	P
2.	23.16	SUB 1	0.02	23.16	P
3.	18.00	MASSES	0.02	18.00	P
4.	10.00	MASSES	0.02	10.00	P
5.	2.00	MASSES	0.01	2.00	P

Discrimination (clause 5.5): P

Accuracy of tare setting (clause 5.7): P

Test Required:

Weight test Pass or Fail?: P

Sensitivity (clause 5.6): P

Test Required:

OVERALL RESULT?
Technicians Name:
ID No:



CERTIFICATE OF VERIFICATION OR NOTICE OF NON VERIFICATION OF A MEASURING INSTRUMENT

[illegible]

Annual Return

ETRA PTY LTD



ANNUAL RETURN

LICENCE NO	3407
LICENCE HOLDER	ETRA PTY LTD
REPORTING PERIOD	30-Sep-2012 to 29-Sep-2013

If your licence has been transferred, suspended, surrendered or revoked by the EPA during this reporting period, cross out the dates above and specify the new dates to which this Annual Return relates below:

REVISED REPORTING PERIOD ____ / ____ / ____ to ____ / ____ / ____

(Note: the revised reporting period also needs to be entered in Section E)

THIS ANNUAL RETURN MUST BE RECEIVED BY THE EPA BEFORE 29-Nov-2013

Your Annual Return must be completed, including certification in Section E, and submitted to the EPA no later than 60 Days after the end of the reporting period for your licence.

Failure to submit this Annual Return within 60 days after the reporting period ends may result in:

- the issue of a Penalty Notice for \$750 (individuals) or \$1500 (corporations);
- OR
- prosecution.

Please send your completed Annual Return by **Registered Post** to:

**Regulatory and Compliance Support Unit
Environment Protection Authority
PO Box A290
SYDNEY SOUTH NSW 1232**

It is an offence to supply any information in this form to the EPA that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect.

THERE IS A MAXIMUM PENALTY OF \$250,000 FOR A CORPORATION OR \$120,000 FOR AN INDIVIDUAL.

Details provided in this Annual Return will be available on the EPA's Public Register in accordance with section 308 of the *Protection of the Environment Operations Act 1997*.

Annual Return

ETRA PTY LTD



Use the checklist below to ensure that you have completed your Annual Return correctly.

(✓ the boxes)

CHECKLIST		
<input type="checkbox"/>	Section A:	All licence details are correct
<input type="checkbox"/>	Section B1:	You have entered the correct number in the complaints table
<input type="checkbox"/>	Section B2 – B3:	If there are tables, you have provided the required details
<input type="checkbox"/>	Section C:	You have answered question 1, and 2 if applicable
<input type="checkbox"/>	Section D:	If applicable, you have completed all load calculation worksheets
<input type="checkbox"/>	Section E:	You have answered question 1, 2, 3, 4, 5 and 6 if applicable
<input type="checkbox"/>	Section F:	You have answered question 1, 2 and 3 if applicable
<input type="checkbox"/>	Section G:	The Annual Return has been signed by appropriate person(s) and, if applicable, the revised reporting period entered
<input type="checkbox"/>	Make a copy of the completed Annual Return and keep it with your licence records	
<input type="checkbox"/>	Attach a cheque (unless you have paid separately) for the payment of the administrative fee for the next licence fee period	

Please send your completed Annual Return by **Registered Post** to:

**Regulatory and Compliance Support Unit
Environment Protection Authority
PO Box A290
SYDNEY SOUTH NSW 1232**

Annual Return

ETRA PTY LTD



A Statement of Compliance - Licence Details

ALL licence holders must check that the licence details in Section A are correct

If there are changes to any of these details you must advise the EPA and apply as soon as possible for a variation to your licence or for a licence transfer.

Licence variation and transfer application forms are available on the EPA website at: <http://www.epa.nsw.gov.au/licensing>, or from regional offices of the EPA, or by contacting us on telephone 02 9995 5700.

If you are applying to vary or transfer your licence you must still complete this Annual Return.

A1 Licence Holder

Licence Number 3407
 Licence Holder ETRA PTY LTD
 Trading Name (if applicable) PF FORMATION

ABN

A2 Premises to which Licence Applies (if applicable)

Common Name (if any) ETRA PTY LTD
 Premises WISEMANS FERRY ROAD MAROOTA NSW 2756

A3 Activities to which Licence Applies

Extractive Activities

A4 Other Activities (if applicable)

Concrete Works

A5 Fee-Based Activity Classifications

Note that the fee based activity classification is used to calculate the administrative fee.

Fee-based activity	Activity scale	Unit of measure
Land-based extractive activity	> 100,000.00 - 500,000.00	T extracted, processed or stored

A6 Assessable Pollutants (Not Applicable)

Annual Return

ETRA PTY LTD



B Monitoring and Complaints Summary

B1 Number of Pollution Complaints

Number of complaints recorded by the licensee during the reporting period. If no complaints were received enter nil in the attached box, otherwise complete the table below.	nil
---	-----

Pollution Complaint Category	Number of Complaints
Air	
Water	
Noise	
Waste	
Other	

B2 Concentration Monitoring Summary

For each monitoring point identified in your licence complete all the details for each pollutant listed in the tables provided below.

If concentration monitoring is **not** required by your licence, **no tables** will appear below.

Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

Monitoring Point 1

Dust monitoring, Dust gauge labelled "1- School" on the Map faxed to the EPA on 5 August 2002

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	0.85	2.17	3.37

Annual Return

ETRA PTY LTD



Monitoring Point 2

Dust monitoring, Dust gauge labelled 2 - intersection of Hitchcock and Wisemans Ferry Road

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	0.97	2.45	3.39

Monitoring Point 3

Dust monitoring, Dust gauge labelled as "Jurds Paddock - 3 Por168" on the map faxed to the EPA on 5 August 2002

Pollutant	Unit of measure	No. of samples required by licence	No. of samples you collected and analysed	Lowest sample value	Mean of sample	Highest sample value
Particulates - Deposited Matter	grams per square metre per month	12	12	1.09	2.64	4.43

B3 Volume or Mass Monitoring Summary

For each monitoring point identified in your licence complete the details of the volume or mass monitoring indicated in the tables provided below.

If volume or mass monitoring is not required by your licence, **no tables** will appear below.

Note that this does not exclude the need to conduct appropriate concentration monitoring of assessable pollutants as required by load-based licensing (if applicable).

Annual Return

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C Statement of Compliance - Licence Conditions

C1 Compliance with Licence Conditions

(☒ the boxes)

- 1 Were all conditions of the licence complied with (including monitoring and reporting requirements)? ☒ Yes ☐ No

(✓ a box)

- 2 If you answered 'No' to question 1, please supply the following details for each non-compliance in the format, or similar format, provided on the following page.

Please use a separate page for each licence condition that has not been complied with.

- a) What was the specific licence condition that was not complied with?
 - b) What were the particulars of the non-compliance?
 - c) What were the date(s) when the non-compliance occurred, if applicable?
 - d) If relevant, what was the precise location where the non-compliance occurred?
- Attach a map or diagram to the Statement to show the precise location.
- e) What were the registration numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance?
 - f) What was the cause of the non-compliance?
 - g) What action has been, or will be, taken to mitigate any adverse effects of the non-compliance?
 - h) What action has been, or will be, taken to prevent a recurrence of the non-compliance?

3. How many pages have you attached?

Each attached page must be initialised by the person(s) who signs Section G of this Annual Return

Annual Return

ETRA PTY LTD



C2 Details of Non-Compliance with Licence

Licence condition number not complied with
Summary of particulars of the non-compliance (NO MORE THAN 50 WORDS)
If required, further details on particulars of non-compliance
Date(s) when the non-compliance occurred, if applicable
If relevant, precise location where the non-compliance occurred (attach a map or diagram)
If applicable, registration numbers of any vehicles or the chassis number of any mobile plant involved in the non-compliance
Cause of non-compliance
Action taken or that will be taken to mitigate any adverse effects of the non-compliance
Action taken or that will be taken to prevent a recurrence of the non-compliance

Annual Return

ETRA PTY LTD



D Statement of Compliance - Load-Based Fee Calculation Worksheets

If you are not required to monitor assessable pollutants by your licence, no worksheets will appear below. Please go to Section E.

If assessable pollutants have been identified on your licence (see licence condition L2), complete the following worksheets for each assessable pollutant to determine your load-based fee for the licence fee period to which this Annual Return relates.

Loads of assessable pollutants must be calculated using any of the methods provided in the EPA's Load Calculation Protocol for the relevant activity. A Load Calculation Protocol would have been sent to you with your licence. If you require additional copies you can download the Protocol from the EPA's website or you can contact us on telephone 02 9995 5700.

You are required to keep all records used to calculate licence fees for four years after the licence fee was paid or became payable, whichever is the later date.

PENALTIES APPLY FOR SUPPLYING FALSE OR MISLEADING INFORMATION

D1 - D8 (Not Applicable)



Annual Return

ETRA PTY LTD

Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan (PIRMP) Under Section 153A of the POEO Act 1997

1 Have you prepared a PIRMP as required under s153A of the Protection of the Environment Operations Act 1997?

(✓ a box)

☒ Yes☐ No

If you answered 'Yes' to question 1, please tick the appropriate box to indicate the following:

2 Is the PIRMP available at the premises?

(✓ a box)

☒ Yes☐ No

3 Is the PIRMP available in a prominent position on a publicly accessible web site?

(✓ a box)

☒ Yes☐ No

If the PIRMP is available on a publicly accessible web site please indicate clearly below the address of the web site where the PIRMP can be accessed:

Web site Address

www.pfformation.com.au

4 Has the PIRMP been tested?

(✓ a box)

☒ Yes☐ No

If you answered 'Yes' to question 4 please indicate clearly below the date that the PIRMP was last tested:

The PIRMP was last tested on

5/11/13

5 Has the PIRMP been updated?

(✓ a box)

☒ Yes☐ No

If you answered 'Yes' to question 5 please indicate clearly below the date that the PIRMP was last updated:

The PIRMP was last updated on

5/11/13

6 How many times has the PIRMP been activated in this reporting period?

nil

If the PIRMP has been activated, please indicate clearly below the date/s when the PIRMP was activated:

The PIRMP was activated on

The EPA's guidelines for preparation of pollution incident response management plans are available at

<http://www.epa.nsw.gov.au/legislation/20120227egpreppirmp.htm>

Annual Return

ETRA PTY LTD



F Statement of Compliance - Requirement to Publish Pollution Monitoring Data Under Section 66(6) of the POEO Act 1997

1 Are there any conditions attached to your licence that require pollution monitoring to be undertaken?

(✓ a box)

☒ Yes☐ No

If you answered 'Yes' to question 1, please tick the appropriate box to indicate the following:

2 Do you operate a web site?

(✓ a box)

☒ Yes☐ No

3 Is the pollution monitoring data published on your web site in accordance with the EPA's written requirements for publishing pollution monitoring data?

(✓ a box)

☒ Yes☐ No

If you publish pollution monitoring data on a web site please indicate clearly below the address of the web site where the pollution monitoring data can be accessed:

Web site address

www.pfformation.com.au

The EPA's written requirements for publishing pollution monitoring data are available at <http://www.epa.nsw.gov.au/legislation/20120263reqpubpmdata.htm>

-included in the
Annual Report.

Note - if you do not maintain a web site, you must provide a copy of any monitoring data that relates to pollution, to any person requests a copy of the data at no charge to the person requesting the data.



Annual Return

ETRA PTY LTD

G Signature and Certification

This Annual Return may only be signed by a person(s) with legal authority to sign it as set out in the categories below. Please tick (✓) the box next to the category that describes how this Annual Return is being signed.

If you are uncertain about who is entitled to sign or which category to tick, please contact us on telephone 02 9995 5700.

If the licence holder is:	the Annual Return must be signed and certified:
an individual	<input type="checkbox"/> by the individual licence holder, or <input type="checkbox"/> by a person approved in writing by the EPA to sign on the licence holder's behalf
a company	<input type="checkbox"/> by affixing the common seal in accordance with Corporations Act 2001, or <input checked="" type="checkbox"/> by 2 directors, or <input type="checkbox"/> by a director and a company secretary, or <input type="checkbox"/> if a proprietary company that has a sole director who is also the sole company secretary – by that director, or <input type="checkbox"/> by a person delegated to sign on the company's behalf in accordance with the Corporations Act 2001 and approved in writing by the EPA to sign on the company's behalf.
a public authority (other than a council)	<input type="checkbox"/> by the Chief Executive Officer of the public authority, or <input type="checkbox"/> by a person delegated to sign on the public authority's behalf in accordance with its legislation and approved in writing by the EPA to sign on the public authority's behalf.
a local council	<input type="checkbox"/> by the General Manager in accordance with s.377 of the Local Government Act 1993, or <input type="checkbox"/> by affixing the seal of the council in a manner authorised under that Act.

It is an offence to supply any information in this form that is false or misleading in a material respect, or to certify a statement that is false or misleading in a material respect. There is a maximum penalty of \$250,000 for a corporation or \$120,000 for an individual.

I/We

- declare that the information in the Monitoring and Complaints Summary in section B of this Annual Return is correct and not false or misleading in a material respect, and
- certify that the information in the Statement of Compliance in sections A, C, D, E and F and any pages attached to Section C is correct and not false or misleading in a material respect.

If your licence has been transferred, suspended, surrendered or revoked by the EPA during this reporting period, cross out the dates below and specify the new dates to which this Annual Return relates below:

For the reporting period 30-Sep-2012 to 29-Sep-2013 or ___/___/___ to ___/___/___

SIGNATURE: NAME: (printed) Joshua GrahamPOSITION: DirectorDATE: 18 / 10 / 2013SIGNATURE: NAME: (printed) JOHN GRAHAMPOSITION: DIRECTORDATE: 11 / 11 / 2013

SEAL(if signing under seal)

PLEASE ENSURE THAT ALL APPROPRIATE BOXES HAVE BEEN COMPLETED AND THAT THE CHECKLIST ON PAGE 2 OF THE ANNUAL RETURN HAS BEEN COMPLETED

Chapter Three

ENVIRONMENTAL MONITORING PROGRAM & RESULTS

Operational Monitoring Program

Based on all the Management Plans and Environmental Strategy the Environmental Operational Procedures have been determined and set out in the appendix to the Environmental Strategy. A Summary of the Monitoring Results is in **Attachment 3A**.

The Environmental Operational Procedures detail actions and responsibilities, performance indicators, monitoring and reporting requirements.

To document the adherence to this environmental monitoring from an operational viewpoint:

- Monthly, the Environmental Manager has a checklist that is reviewed and signed, see **Attachment 3B**
- Annually, the actions required by the Environmental Operational Procedures are reviewed and signed, see **Attachment 3C**.
- The specific monitoring of Noise Management is detailed in **Chapter 4**, Air Quality in **Chapter 5**, Water Management in **Chapter 6** and Landscape Management in **Chapter 7**

Analysis of Monitoring Results

All monitoring indicated that quarry operations were within any defined limits and no indicators of new potential issues were identified.

From the procedures conducted there are no trends identified as yet and no areas of non-compliance.

Summary of Monitoring Results

Noise Monitoring	2014	2013	2012	2011	2010	2009
→ Noise from operational activities exceed guidelines	NIL	NIL	NIL	NIL	NIL	NIL
→ Complaints received	NIL	NIL	NIL	NIL	NIL	NIL
Air Quality						
Monthly dust deposit - average g/m ² /month (from all sources)						
→ Location 1 - behind Maroota Primary School	2.26	3.35	1.9	3.22	2.27	4.05
→ Location 2 - Hitchcock & Wisemans Ferry Roads	2.71	2.74	1.66	2.38	2.18	6.04
→ Location 3 - Jurd's Residence	2.87	2.95	2.43	2.56	2.55	3.14
• results impacted by back burning in September 2008 (10.66, 12.60 respectively)						
• results impacted by ploughing in July 2008 (21.97)						
• result impacted by reading of 10.5 in October 2010						
• result impacted by reading of 11.01 in August 2012 Maroota Muster at School						
→ Complaints received	NIL	NIL	NIL	NIL	NIL	NIL
→ Plant exhaust deficiency when vehicles serviced	NIL	NIL	NIL	NIL	NIL	NIL
Access & Traffic						
→ Traffic movements within limits	YES	YES	YES	YES	YES	YES
Erosion & Sediment Control						
→ Sediment leaving site	NIL	NIL	NIL	1	NIL	NIL
Water Management						
→ Evidence of issue with groundwater quality	NIL	NIL	NIL	NIL	NIL	NIL
Rehabilitation						
→ Area vegetated	> 4 hectares	> 4 hectares	> 4 hectares	> 4 hectares	2.4 hectares	2.4 hectares
Overall number of complaints received	NIL	NIL	NIL	1	NIL	NIL

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

July 2013

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	Noise monitoring was carried out throughout the month at 4 locations. Results from testing were consistent with previous results. The results will be forward to an Acoustic consultant for analysis and will be in next years AEMR.
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for June 2013 have been received and show low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 9/07/13. A total of 11 truck movements were recorded between the hour of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	URS Report for 2012 – 2013 completed and attached to AEMR.
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 ✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:

Palan

Date: 31st July 2013

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
 EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

August 2013

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for July 2013 have been received and show low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 30/08/13. A total of 8 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 ✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)


Signed:

Date: 30th August 2013

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

September 2013

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for August 2013 have been received and show low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 27/09/13. A total of 6 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	Water samples were collected downstream from Lot 198 and sent to a laboratory for analysis. Results will be included in the next AEMR.
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	More planting was carried out in the northern setback areas of the Hitchcock Rd site. An irrigation system was installed to improve the survival rate, as extremely hot and dry conditions were experienced throughout the month.
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	
				Completed by Environmental Manager (Josh Graham)	
Key: ✓= Satisfactory ✗= Unsatisfactory				Signed: 	Date: 30 th September 2013

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

October 2013

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	Noise monitoring was carried out throughout the month. Results from testing will be summarised by an acoustic consultant and included in the next AEMR.
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for September 2013 have been received and show low levels at Site's 1 and 2 and marginally higher levels at Site 3. It is noted that lawn mowing had been carried in the vicinity of the Site 3 dust bottle.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 25/10/13. A total of 6 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:


Date: 31st October 2013

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

November 2013

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results were marginally higher than usual due to extreme weather conditions experienced in the area. The annual average is expected to remain within the requirements of the EPA Licence.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 14/11/13. A total of 7 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	Community Consultative Committee meeting was held on 12/11/13. The minutes from the meeting will be attached to the next AEMR.
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:


Date: 29th November 2013

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
 EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

December 2013

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for November 2013 showed low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 20/12/13. A total of 4 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	Selga Harrington from Parsons Brinkerhoff attended the site to inspect the SHTW rehabilitation areas. A report will be prepared following the site inspection and will be included in the next AEMR.
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 ✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:

Date: 24th December 2013

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

January 2014

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or x	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	Noise readings were carried out at four locations during night and daytime hours. Quarry noise was either audible but not measurable or not audible at all. Cicada noise and road traffic were dominant noise sources.
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for December 2013 showed low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 28/01/14. A total of 6 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	Sediment retention basins along the main haul road into the quarry were cleaned out.
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	The Parsons Brinkerhoff report on the SHTW rehabilitation areas has been received. The report showed good results where most targets were met and very little action is required at the site.
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 x = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:


Date: 31st January 2014

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

February 2014

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for January 2014 showed low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 27/02/14. A total of 8 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	Water samples were collected downstream from Lot 198. Samples showed low levels of suspended solids and turbidity. Results will be included in the next AEMR.
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:


Date: 28th February 2014

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

March 2014

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for February 2014 showed low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 26/03/14. A total of 8 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	Sediment traps were cleaned out following a significant rainfall event experienced throughout the month.
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 ✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed:


Date: 29th March 2014

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

April 2014

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	Noise monitoring was carried out throughout the month. Results from testing showed that quarry noise was either inaudible or audible but not measurable at 4 locations. The annual Noise Management Plan will include a summary of the results and will be attached to the next AEMR.
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for March 2014 showed low levels at Sites 1 and 3 and higher levels at Site 2. It is noted that recent slashing of grass around the olive trees at the site was evident at the time of the exchange.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 10/04/14. A total of 6 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 ✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

Signed: Date: 30th April 2014

PF FORMATION

HITCHCOCK ROAD MAROOTA - Sand Extraction and Rehabilitation Project
EMP MANAGEMENT CONTROLS OPERATIONAL CHECKLIST - ENVIRONMENTAL MANAGER

May 2014

STRATEGY POINT	PAGE NO	DESCRIPTION	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
A2	A3-A5	Noise	✓	Nil	
A3	A6-A10	Air Quality	✓	Nil	Deposited dust results for April 2014 showed low levels at all locations.
A4	A11-A12	Access and Traffic	✓	Nil	An audit of early morning truck movements was carried out on 27/05/14. A total of 8 truck movements were recorded between the hours of 6:00 and 7:00am.
A5	A13-A16	Erosion & Sediment Control	✓	Nil	
A6	A17-A20	Water	✓	Nil	Dino Parisotto from Earth 2 Water attended the site throughout the month. Dino will be preparing the annual ground water management plans from now on.
A7	A21-A25	Rehabilitation & Vegetation offset	✓	Nil	
A8	A26-A27	Social Impact	✓	Nil	
A9	A28-A29	Heritage	✓	Nil	
A10	A30-A32	Visual Amenity	✓	Nil	
A11	A33-A35	Waste Management	✓	Nil	
A12	A36-A37	Emergency Response	✓	Nil	
A13	A38-A41	Hazard, Risk and Safety	✓	Nil	

Key:

✓ = Satisfactory
 ✗ = Unsatisfactory

Completed by Environmental Manager (Josh Graham)

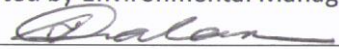
Signed:

Date: 30th May 2014

PF FORMATION – ENVIRONMENTAL OPERATIONAL PROCEDURES

Hitchcock Road Sand Extraction and Rehabilitation Project, Maroota

The chapter, page number and strategy point number are references to the approved Environmental Strategy Appendix A – Environmental Operational Procedures.










CHAPTER Page No.	STRATEGY Point No.	MANAGEMENT CONTROLS	STATUS ✓ or ✗	COMPLAINTS RECEIVED	COMMENTS
<u>A2</u> A3-A5	2.1	Noise Management	✓	Nil	
<u>A3</u> A6-A9	3.1, 3.2	Air Quality Management	✓	Nil	Deposited dust results for May 2014 showed low levels at all locations.
<u>A4</u> A10-A11	4.1	Access and Traffic	✓	Nil	
<u>A5</u> A12-A15	5.1, 5.2, 5.3	Erosion & Sediment Control	✓	Nil	Water samples were collected downstream from Lot 198 and sent away for analysis. Results showed low levels of Suspended Solids.
<u>A6</u> A16-A19	6.1	Water Management	✓	Nil	A Groundwater Management Plan will be prepared for the reporting period and attached to the 2013 – 2014 AEMR.
<u>A7</u> A20-A24	7.1, 7.2	Rehabilitation & Vegetation Offset Management	✓	Nil	
<u>A8</u> A25-A26	8.1	Social Impact Management	✓	Nil	
<u>A9</u> A27-A28	9.1	Heritage Management	✓	Nil	
<u>A10</u> A29-A31	10.1	Visual Amenity Management	✓	Nil	
<u>A11</u> A32-A34	11.1	Waste Management	✓	Nil	
<u>A12</u> A35-A36	12.1	Emergency Response Management	✓	Nil	
<u>A13</u> A37-A40	13.1, 13.2	Hazard, Risk and Safety Management	✓	Nil	
				Completed by Environmental Manager (Josh Graham) Signed:  Date: 30 th June 2014	

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

A2.3 Management controls

OPERATIONAL PHASE

Strategy 2.1: Ensure that the site operations are undertaken in a manner that minimises the impacts of noise and vibration.

Actions	Responsibility
2.1.1 Manage site activities so that any necessary high noise and vibration levels occur at times of least impact.	Quarry Manager 
2.1.2 Advise neighbouring properties at least 24 hours in advance of the extent and expected duration of especially noisy activities.	Quarry Manager/ Environmental Manager 
2.1.3 Undertake all site activities incorporating noise attenuation measures such as restricting working hours for certain works required close to sensitive receptors	Quarry Manager 
2.1.4 Ensure that panels and covers of silenced plant are kept shut and plant and equipment switched off when not in use.	Quarry Manager 
2.1.5 Ensure that mechanical equipment is silenced by the best practical means using current technology, prior to use. Noise suppression devices should be fitted according to manufacturer's instructions. Residential class mufflers should be used where possible. Noise control kits should be fitted to noisy mobile equipment and shrouds provided around stationary equipment where necessary.	Quarry Manager 
2.1.6 Working hours will be limited to 7.00am to 6.00pm, Monday to Saturday and at no time on Sundays and public holidays. A maximum of ten laden vehicles will be permitted to enter and leave the site between the hours of 6.00am and 7.00am, Monday to Saturday, excluding Sundays and public holidays.	Quarry Manager 
2.1.7 Arrange for all plant and equipment to be inspected regularly to ensure that it is well maintained to minimise noise emissions.	Quarry Manager 
2.1.8 Conduct compliance monitoring of noise levels at the defined locations and keep records of measurements.	Environmental Manager 
Performance indicator	Noise from operational activities does not exceed the guideline limits. <i>Noise limits were not exceeded throughout the reporting period</i> Number of complaints received Nil 

Monitoring	Long term monitoring of noise levels during site operations at nominated receptors. Monitoring periods should be planned to occur during predicted noisy activities and at random. Results will be measured against baseline and OEH criteria and any exceedances noted.
Reporting	Annual reporting of noise levels, exceedances and complaints in the appropriate AEMR. Reports will include measures adopted to ensure that future exceedances/complaints do not occur. Monitoring results will be suitably summarised for posting on the PF Formation website.

A2.4 Monitoring and reporting











The Environmental Manager will be responsible for conducting and arranging noise monitoring for the assessment of impacts and determination of compliance. The Environmental Manager will compile the results and findings of the monitoring together with all complaints, responses and remedial action in relation to noise and vibration emissions from the site for inclusion in the AEMR.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

A3.3 Management controls

OPERATIONAL PHASE

Strategy 3.1: Ensure that the site operations are undertaken in a manner that minimises and controls dust and vehicle emissions.

Actions	Responsibility
3.1.1 Conduct ambient air quality monitoring at identified sites	Environmental Manager 
3.1.2 Fit dust suppression equipment to all processing plant on site as required. This is to be regularly inspected and maintained in good working order at all times.	Quarry Manager/ Environmental Manager
3.1.3 Define haul road areas to prevent unnecessary vehicle movement into others	Quarry Manager 
3.1.4 Keep all unsealed trafficable areas and working areas damp to minimise dust emissions by spraying regularly with a water cart, water sprays or sprinklers. Frequency of spraying to be determined based on weather conditions, soil erodibility and the observation of any visible dust.	Quarry Manager/ Environmental Manager 
3.1.5 Apply speed controls to all unsealed areas (maximum speed of 20 km/h) and signpost accordingly.	Quarry Manager 
3.1.6 Vegetate all semi-permanent stockpiles with suitable groundcover and water where necessary until the vegetation is well established.	Quarry Manager 
3.1.7 Cease work on any extraction activity producing dust due to high winds that cannot be controlled by watering or other means. Work will not resume until the wind velocity decreases and any dust generation can be controlled by normal means.	Quarry Manager 
3.1.8 Ensure that all loaded trucks leaving the site on Lot 198 DP595538 have their payloads fully covered by a suitable material to prevent spillage.	Quarry Manager 
3.1.9 Construct dust screens such as earth bunds and vegetated barriers.	Quarry Manager 
3.1.10 A mechanical road sweeping unit and water cart will be maintained for use as required to keep all roads including the intersection of the haul road and Wisemans Ferry Road free from deposited material.	Quarry Manager 
3.1.11 No fires to be permitted on-site.	Quarry Manager 

Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures

Performance indicator	Ambient air quality data compiled. Dust generated from site activities to comply at all times with EPA specified air quality criteria. <i>Dust results show compliance with EPA Lic conditions/limits</i> <i>Palen</i>
Monitoring	Dust monitoring at identified locations. <i>Palen</i> (12 samples collected) Compilation of a complaints register. <i>No complaints</i> <i>Palen</i>
Reporting	Annual reporting in the AEMR. Monitoring results will be suitably summarised for posting on the PF Formation website. <i>Dust results in 2014 AEMR</i> <i>Palen</i>

Strategy 3.2: Minimise and control vehicle and plant exhaust emissions.

Actions		Responsibility
3.2.1	Inspect all exhausts from vehicles and plant/equipment to ensure that they are maintained at an acceptable level.	Quarry Manager <i>h</i>
3.2.2	Regularly service all vehicles to ensure that exhaust emissions comply with the regulations. Maintain appropriate service records.	Quarry Manager <i>h</i>
3.2.3	Identify any opportunities to minimise machinery use and ensure that all equipment used on the site is energy efficient.	Quarry Manager <i>h</i>






Performance Indicator	Vehicle and plant emissions comply with the regulations.
Monitoring	Regular vehicle and plant inspections.
Reporting	Annual reporting of inspection results in the AEMR.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

A4.3 Management controls

OPERATIONAL PHASE

Strategy 4.1: Minimise the impact of operational traffic on the local community.

Actions	Responsibility
4.1.1 Ensure that the number of laden vehicle movements does not exceed a combined total of two hundred per day via the intersection of the haulage road and Wisemans Ferry Road. This is the total of laden vehicle movements allowed for PF Formation's combined extractive industry operations in The Hills Shire.	Quarry Manager/ Environmental Manager 
4.1.2 Undertake operations involving the transportation of material on the site only between 6.00am and 6.00pm, Monday to Saturday.	Quarry Manager/ Environmental Manager 
4.1.3 Allow a maximum of ten laden vehicles to enter and leave the site between 6.00am and 7.00am, Monday to Saturday only. Ensure that vehicles do not arrive at the site prior to 5.45am on any day.	Quarry Manager/ Environmental Manager 
4.1.4 Ensure that all vehicle loads leaving the site are suitably covered.	Quarry Manager/ Environmental Manager 
Performance Indicator	Minimum of complaints from the community. <i>No complaints.</i> 
Monitoring	Number and type of complaints received.
	Weighbridge records of arrival and departure times.
Reporting	Annual report on complaints received.

A4.4 Monitoring and reporting





The Environmental Manager will be responsible for the monitoring of complaints on traffic issues from the community. Annual reports will be compiled on community complaints and reported in the AEMR.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**


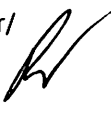
A5.3 Management controls

OPERATIONAL PHASE





Strategy 5.1: Provide for treatment of stormwater runoff from extraction areas, stockpiles and access roads.

Actions	Responsibility
5.1.1 Construct temporary erosion and sedimentation control structures such as detention basins and catch drains as appropriate to collect runoff from cleared land including extraction areas and access roads.	Quarry Manager/ Environmental Manager 
5.1.2 Erect silt traps and erosion control fencing as appropriate along extraction area boundaries and drainage lines.	Quarry Manager/ Environmental Manager 
5.1.3 Design sediment basins with a minimum storage capacity of 400 m ³ per hectare of catchment. Spillway capacity and stability will be designed as follows: <ul style="list-style-type: none"> • life of less than 5 years, adopt the 20 year t_c event • life between 5 and 10 years, adopt the 50 year t_c event • life greater than 10 years, adopt the 100 year t_c event. 	Quarry Manager 
5.1.4 Undertake regular inspections to assess stormwater control measures and conduct routine inspections to ensure that compliance with best practice guidelines and relevant legislation is achieved.	Quarry Manager/ Environmental Manager 
Performance indicator	Stormwater control measures are in place prior to commencement of extraction in the particular phase of development and are effective in reducing sedimentation to acceptable levels.
Monitoring	Review effectiveness of the stormwater basins and treatment methods during and following major rainfall events.
Reporting	Report on effectiveness of control measures once sedimentation works completed and then on an annual basis.







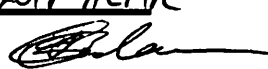
Strategy 5.2: Plan site operations to minimise opportunities for soil erosion and sedimentation.

Actions		Responsibility
5.2.1	Select locations for topsoil and material stockpiles on level ground and away from drainage lines. Install diversion drains up slope and sediment filter fences as appropriate	Quarry Manager/ Environmental Manager 
5.2.2	Provide training to operational personnel on the importance of erosion control measures and inform drivers of the damage that can be caused by to the environment by heavy vehicles	Quarry Manager/ Environmental Manager 
Performance indicator		Soil erosion control measures are incorporated in the operational activities on the site and are effective in reducing soil erosion.
Monitoring		Monitor suspended solid concentrations in stormwater runoff from the undisturbed parts of the site.
Reporting		Report on the effectiveness of soil erosion control measures prior to extraction.

Strategy 5.3: Ensure that suspended solid levels in stormwater discharging from the site meets the guidelines for the protection of aquatic ecosystems (ANZECC 2000)

Actions		Responsibility
5.3.1	Keep areas of exposed land to a minimum compatible with operational requirements.	Quarry Manager 
5.3.2	Where practicable, provide silt fences to minimise erosion and sedimentation from exposed areas.	Quarry Manager/ Environmental Manager 
5.3.3	Stabilise exposed areas that are not in use with an appropriate cover crop and water until well established.	Quarry Manager/ Environmental Manager 
5.3.4	Construct sediment retention basins with a capacity of at least 300m³ per hectare of catchment, which will necessitate regular cleaning out, and a minimum freeboard of one metre.	Quarry Manager 

Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures

5.3.5	Monitor erosion and sediment controls regularly and immediately following a rainfall event. Clear sediment when the traps have collected 60% of the capacity of the basin or where sediment build-up is less than 300mm below the spillway crest. Remove sediment to a location where further pollution to downslope lands and waterways will not occur.	Quarry Manager/ Environmental Manager 
5.3.6	Undertake maintenance of erosion and sediment controls when any deterioration is identified or when replacement is necessary.	Quarry Manager/ Environmental Manager 
5.3.7	Reuse stored stormwater for dust control and the watering of site vegetation.	Quarry Manager/ Environmental Manager 
5.3.8	Seed material stockpiles where these are to remain unused for a period in excess of four weeks. Water the area when required until the vegetation is well established.	Quarry Manager/ Environmental Manager
5.3.9	Control vehicle movement on the site by the identification of the haul road and current working areas.	Quarry Manager 
<hr/>		
Performance indicator	Acceptable control of sedimentation and erosion is achieved so that suspended solids levels in any stormwater leaving the site does not exceed ANZECC guidelines or other regulatory requirements.	
<hr/>		
Monitoring	Monitor suspended solids levels in stormwater following rainfall events. Compare results with other appropriate locations. <i>Downstream water samples collected quarterly</i>	
<hr/>		
Reporting	Report on suspended solid levels and performance of erosion and sedimentation control measures for inclusion in the relevant AEMR. <i>Water quality test results in 2018 AEMR</i>	






A5.4 Monitoring and reporting


The Environmental Manager will be responsible for the monitoring of the effectiveness of the sediment and soil erosion control measures installed on-site, suspended solids levels in stormwater runoff and any off-site discharges. An annual report will be included in the AEMR.

A6.3 Management controls


OPERATIONAL PHASE

Strategy 6.1: Plan site operations to minimise potential impacts on groundwater

Actions		Responsibility
6.1.1	Restrict maximum depth of extraction to 2 metres above the wet weather high groundwater level as determined following at least 12 months site specific groundwater monitoring data.	Quarry Manager 
6.1.2	Ensure that the groundwater is not breached or contaminated. In the event that either should occur, operations are to cease and the Department of Water and the Department of Planning consulted to determine the basis on which extraction may recommence.	Quarry Manager 
6.1.3	<p>The sediment retention basins are to accommodate the 100-year t_c event with the minimum basin capacities as follows:</p> <ul style="list-style-type: none">• Southern catchment (Basin 1) 19,400 m³• Northern catchment (Basin 2) 7,800 m³ <p>The volume of these basins can be varied depending on the extent of the area exposed for extraction within each catchment.</p>	Quarry Manager 
6.1.4	Arrange for regular inspection of the capacity and stability of all retention basins and report on their effectiveness. <i>VISUAL INSPECTIONS.</i>	Quarry Manager/ Environmental Manager 
6.1.5	Install a minimum of two groundwater monitoring bores. One should be located within or near the extraction area and another at some location within the site beyond the area of any direct extraction influence. The location of these bores is to meet the requirements of the Department of Water and the Department of Planning.	Quarry Manager/ Environmental Manager 

Performance indicator	Maintenance of groundwater quality. Existing water levels and groundwater quality will be determined from data derived from the bores on the site. 
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Monitoring	Regular monitoring of water levels and water quality data from the on-site bores.
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Groundwater report in 2017 AEMR


**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures****Reporting**

Annual reporting of groundwater quality issues and assessment of impacts of site operations for inclusion in the AEMR.

A6.4 Monitoring and reporting








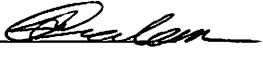
The Environmental Manager will be responsible for the monitoring of the effectiveness of the water management measures installed on-site. Annual reports will be prepared by consultants using information gathered throughout the reporting period by the Environmental manager. This report will be included in the AEMR.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

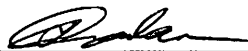

A7.3 Management controls

OPERATIONAL PHASE




Strategy 7.1: Implement measures to ensure the protection of native vegetation, including threatened species.

Actions	Responsibility
7.1.1 Clearly identify and mark out all areas which are not to be disturbed.	Quarry Manager/ Environmental Manager 
7.1.2 Assess areas where trees are to be removed to determine the commercial value of any which are too large to mulch. Any with commercial value are to be marked and arrangements made for removal.	Environmental Manager 
7.1.3 Prepare an assessment of the species mix of the Sydney Hinterland Transition Woodland and arrange for purchase or collection of seeds. Mulch vegetation removed from the area and stockpile for later use. This will initially be used on the peripheral bunds followed by other areas of the site where the regrowth of the species mix is to be undertaken. Protect young plants from predation by feral pests.	Environmental Manager 
7.1.5 Restrict access to bushland to minimise the potential for damage. Suitably identify and mark out these areas to ensure that this prohibition is made clear.	Quarry Manager/ Environmental Manager 
7.1.6 Separate topsoil for use in rehabilitation works.	Quarry Manager/ Environmental Manager 
7.1.7 Incorporate flora and fauna issues (to the extent it is relevant) in the education program so that the site operatives are aware of the requirements of this EMP.	Environmental Manager 
7.1.8 Once each extraction phase is complete, initiate the rehabilitation and revegetation program as set out in the Landscape management Plan.	Quarry Manager/ Environmental Manager 
Performance indicator All areas of significant flora and fauna habitat are protected prior to the start of extraction.	


Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures

Monitoring	<p>Ensure that the above are implemented prior to the commencement of extraction activities in the area.</p> <p>Monitor condition of flora and fauna habitats on a regular basis.</p> 
Reporting	<p>A report with appropriate maps identifying the areas under rehabilitation and extraction activity is to be prepared.</p> <p>Prepare an annual report on the status of the flora of the site for inclusion in the AEMR.</p> 

Strategy 7.2: Undertake the rehabilitation of the site to achieve an agreed and acceptable landform with appropriate planting.

Actions	Responsibility
<p>7.2.1 Mulch all suitable plant material for reuse on the site as a seed and planting medium. Store all topsoil in appropriately marked low stockpiles for reuse in locations as close as possible to their source. Care should be taken to ensure that this does not become contaminated with the seeds of exotic species and weeds.</p>	<p>Environmental Manager</p> 
<p>7.2.2 Rehabilitate the site in stages leaving areas exposed for as short a time as possible. This should be undertaken in conformity with the approved Rehabilitation Plan with maximum final batter grades of 4(H):1(V) on north and west facing slopes and 3(H):1(V) on those facing south and east. Final slopes should be as gentle as possible depending on the availability of fill material.</p>	<p>Quarry Manager/ Environmental Manager</p> 
<p>7.2.3 Sow all stockpiles and exposed areas where no activity is to take place for more than four weeks with an appropriate vegetation cover.</p>	<p>Quarry Manager/ Environmental Manager</p> 

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

7.2.4	Undertake revegetation of the site on the following basis:	Environmental Manager
	<ul style="list-style-type: none"> • re-establish the Sydney Hinterland Transition Woodland using seed and mulch collected from the area • rehabilitate other areas to native species with a light sowing of cereal and allowing natural regeneration • lime, fertilise and sow areas where improved grass cover is required • suitably turf surfaces expected to experience high surface flows leaving the site 	
7.2.5	Establish a maintenance program aimed at promoting and protecting the growth of the rehabilitated areas.	Quarry Manager/ Environmental Manager

Performance Indicator	Completion of site rehabilitation in conformity with the approved Landscape Management Plan.
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Monitoring	<p>Regular site inspections to ensure that the following is achieved:</p> <ul style="list-style-type: none"> • rate of rehabilitation is in conformity with the staging program • conservation zones and rehabilitated areas are being appropriately maintained • vegetative covers are being established • site works such as bunding and the establishment of re-vegetated areas are progressing in accordance with the Landscape Management Plan • all sensitive flora and fauna habitat is being adequately protected from damage
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Reporting	Reports of site inspections and annual reviews in the AEMR.
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A7.4 Monitoring and reporting





The Environmental Manager will be responsible for monitoring the effectiveness of the measures included for the protection of native vegetation on the site and the progress of site rehabilitation. Annual reports will be prepared by the Environmental Manager for inclusion in the AEMR.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

A8.3 Management controls

OPERATIONAL PHASE

Strategy 8.1: Consider community feedback in determining operating procedures to minimise negative impacts.

Actions		Responsibility
8.1.1	Maintain an open door policy . Widely publish contact phone number and provide an early response to all queries, comments and requests for information.	Quarry Manager/ Environmental Manager 
8.1.2	Provide access to all relevant environmental management documentation and monitoring results on the PF Formation web site.	Environmental Manager 
8.1.3	Organise and manage bi-annual meetings of the Community Consultative Committee to discuss issues in relation to environmental management of sand extraction on the site.	Environmental Manager 
8.1.4	Establish a complaints register incorporating date and time, type of communication, contact details of the complainant, nature of the complaint and response taken.	Quarry Manager/ Environmental Manager 

Performance indicator	Minimal complaints from the community.
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Monitoring	Number and type of responses and complaints raised by the community and improved performance.
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Reporting	Annual reporting of community responses and complaints together with an assessment of any changes put in place to minimise any future difficulties for inclusion in the AEMR.
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A8.4 Monitoring and reporting


The Environmental Manager will be responsible for the monitoring of the effectiveness of the measures included in response to community concerns. Annual reports will be prepared by the Environmental Manager for the AEMR.

A9.3 Management controls

OPERATIONAL PHASE

Strategy 9.1: Protect items of heritage value during site operations.

Actions		Responsibility
9.1.1	Cease all work if an archaeological or heritage item is identified during extraction operations and consult the National Parks and Wildlife Service, the Deerubbin Aboriginal Land Council or the Heritage Office to determine any appropriate course of action prior to recommencement of the work. Obtain any required permits and submit together with supporting information. Notify the Hills Shire Council to ensure compliance with the conditions of approval.	Quarry Manager/ Environmental Manager 
9.1.2	Undertake additional survey work required for submittal of application to destroy artefact scatters located in the later stages of the development. Comply with the reasonable requirements of the National Parks and Wildlife Service, the Deerubbin Aboriginal Land Council and the Heritage Office arising out of any additional studies and notify the Hills Shire Council to ensure compliance with the conditions of the approval.	Environmental Manager 

Performance Indicator	Any item of heritage significance is protected during site operations.
Monitoring	The protection of any heritage items identified during site operations is to be monitored.
Reporting	Any heritage item identified during site operations is to be documented. <i>No heritage items were identified.</i> 

A9.4 Monitoring and reporting











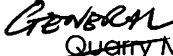

The Environmental Manager will be responsible for the reporting of any heritage items identified during the course of site activities. Annual reports will be prepared by the Environmental Manager.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**


A10.3 Management controls

OPERATIONAL PHASE

Strategy 10.1: Ensure that impacts on visual amenity are minimised during site activities and following completion.

Actions	Responsibility
10.1.1 Clearly mark all vegetation to be retained.	Quarry Manager/ Environmental Manager 
10.1.2 Construct peripheral bunding within the established setbacks. These should be a minimum of three metres high with slopes ranging from 3(H):1(V) to 6(H):1(V) depending on the location using overburden stripped from the site	Quarry Manager/ Environmental Manager 
10.1.3 Undertake screen planting works to the peripheral areas to an agreed specification using mulch to allow for native plant regeneration. Reinforce this species mix using appropriate plantings at specified intervals.	Environmental Manager 
10.1.4 Undertake a tree planting program within areas defined in the Landscape Management Plan to establish a dense plantation using an appropriate mix of species reflecting that of the existing community.	Environmental Manager 
10.1.5 Re-establish the landform of the extraction areas to that shown in the Landscape Management Plan.	Quarry Manager 
10.1.6 Complete the rehabilitation of the site in conformity with the proposals set out in the Landscape Management Plan.	Quarry Manager 
10.1.7 Remove all temporary fencing when no longer required.	Quarry Manager 
10.1.8 Re-establish vegetation in areas suitable for agricultural/horticultural uses.	Quarry Manager 
10.1.9 Remove all site infrastructure including the slurry plant and its associated pipelines. Restore those areas affected by the plant and rehabilitate.	Quarry Manager 
10.1.10 Remove all waste materials and dispose of in an appropriate manner.	Quarry Manager 
10.1.11 Review Quarry Closure Plan and prepare proposals for future use of the area.	 Quarry Manager 

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

Performance Indicator	<p>No complaints received regarding visual amenity during site operations and following completion.</p> <p>Completion of the development in conformity with the requirements of the Rehabilitation Plan.</p> <p style="text-align: right;"><i>No complaints</i> </p>
Monitoring	<p>Ensure that the above actions are undertaken.</p>
Reporting	<p>Complaints from the community regarding visual amenity.</p> <p>Compliance with the requirements of the Landscape Management Plan.</p>

A10.4 Monitoring and reporting










The Quarry Manager and the Environmental Manager will be responsible for ensuring that the various environmental protection measures are installed and maintained in good condition. Annual reports will be prepared by the Quarry Manager on progress with the completion of their installation. The Environmental Manager is responsible for monitoring and reporting complaints regarding aesthetics and amenity received from the local community.

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A11.3 Management controls

OPERATIONAL PHASE

Strategy 11.1: Appropriate management and disposal of wastes generated during site operations.

Actions		Responsibility
11.1.1	Clearly delineate waste handling areas.	Quarry Manager 
11.1.2	Define specific areas for the collection of materials for reuse and recycling and clearly label.	Quarry Manager 
11.1.3	Process cleared vegetation on site for use as mulch within the landscape program.	Environmental Manager 
11.1.4	Store all topsoil in stockpiles for later use in site rehabilitation.	Environmental Manager 
11.1.5	Provide bins or skips for the collection and storage of recyclable material and waste. General construction waste will be stored in a skip located at the workshop on Lot 198 DP595538. Waste food will be removed on a daily basis and stored in a vermin proof bin for collection by waste contractor. Paper waste generated from site offices, plastics and glass are to be collected separately for recycling.	Quarry Manager 
11.1.6	Separate hazardous wastes (including empty drums, rags, soil contaminated with oil) from non-hazardous wastes and manage in accordance with the relevant legislation.	Quarry Manager 
11.1.7	Temporarily store liquid wastes (chemicals, oils and greases) in an appropriately bunded area and dispose of via a licensed contractor. Direct washdown water to an appropriate settlement basin if quality is acceptable. Otherwise, store and dispose as a liquid waste.	Quarry Manager 
11.1.8	Retain copies of current licences of all waste removal contractors on site.	Quarry Manager
11.1.9	Keep all documentation relating to waste removal and disposal on file at the site. This documentation includes dockets for the removal and disposal of waste at a licensed facility.	Quarry Manager 
11.1.10	Progressively separate and stockpile waste material in designated areas for collection. Adequately secure waste disposal areas to prevent access by wildlife.	Quarry Manager 

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11.1.11	Review all waste licences and monitor terms and conditions for compliance.	Environmental Manager 
11.1.12	Recycle or dispose of any materials and waste remaining on the site following completion of extraction operations. All should be disposed of in an appropriate manner.	Environmental Manager 
<hr/>		
Performance Indicator	Effective use of waste recycling area and maximisation of material reuse. Appropriate removal of all waste from the site on completion.	
<hr/>		
Monitoring	Regular review of recycling opportunities, quantities and cost savings.	
<hr/>		
Reporting	Annual report on waste management, reuse and recycling on the site. 2019 AEMR 	

A11.4 Monitoring and reporting









The Quarry Manager will be responsible for conducting regular waste audits, monitoring the currency of any waste disposal contracts and documentation relating to transport and disposal of wastes. The Quarry Manager will also monitor the quantities and costs/savings associated with the effective management of waste materials.

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A12.3 Management controls

OPERATIONAL PHASE

Strategy 12.1: Ensure that procedures and controls are implemented to prevent, or if necessary, control any potential environmental emergency

Actions	Responsibility
12.1.1 Ensure that all personnel on site during operations have been trained in appropriate procedures including site induction, materials handling and response procedures.	Quarry Manager 
12.1.2 Develop and put in place emergency response procedures. Appoint appropriate individuals as emergency services liaison officers.	Quarry Manager 
12.1.3 Establish an emergency response table listing contact details of all relevant parties required in an environmental emergency.	Quarry Manager 
12.1.4 Establish a Register of Environmentally Hazardous Materials to be stored and used on site.	Quarry Manager 
12.1.5 Ensure that appropriate safety and spill response equipment has been made available.	Quarry Manager 
12.1.6 Clearly label all materials to be used and stored on site.	Quarry Manager 
12.1.7 Review and update emergency response procedures bi-annually.	Quarry Manager 
12.1.8 Ensure that appropriate safety and response equipment is available at all times.	Quarry Manager 
Performance indicator	Emergency response procedures, controls and training adequate for potential emergencies.
Monitoring	Regular monitoring of response procedures and equipment.
Reporting	Annual report on incidents.

A12.4 Monitoring and reporting

The Quarry Manager will be responsible for maintaining the currency of the emergency procedures and reporting on incidents.

**Hitchcock Road sand extraction and rehabilitation project
Environmental operational procedures**

A13.3 Management controls

OPERATIONAL PHASE

Strategy 13.1: Minimise the risks associated with the storage and handling of hazardous materials.

Actions		Responsibility
13.1.1	Obtain a licence to keep dangerous goods from WorkCover NSW for all materials stored on site which require licensing	Quarry Manager <i>None.</i>
13.1.2	Establish a Register of Hazardous Materials setting out details of quantities, storage and specific handling requirements for all relevant materials stored on site.	Quarry Manager/MSMP & Environmental Manager <i>PIRMP</i> <i>[Signature]</i>
13.1.3	Obtain Material Safety Data Sheets for all hazardous materials stored on site.	Quarry Manager/Environmental Manager <i>[Signature]</i>
13.1.4	Provide appropriate storage and secondary containment facilities for all hazardous materials stored on site. All bunded areas must be designed to contain at least 110% of the volume of materials permanently stored within the area. Temporary facilities should have drip trays.	Quarry Manager <i>[Signature]</i>
13.1.5	Appoint a Safety Officer for the development.	Quarry Manager <i>Environmental Manager.</i>
13.1.6	Locate all flammable material storage areas at least ten metres from possible ignition sources.	Quarry Manager/Environmental Manager <i>[Signature]</i>
14.1.7	Clearly label the contents of all above ground storage areas.	Quarry Manager/Environmental Manager <i>[Signature]</i>
13.1.8	Secure all hazardous and dangerous goods storage areas and display appropriate signage. Segregate all incompatible material.	Quarry Manager/Environmental Manager <i>[Signature]</i>
13.1.9	Train all personnel in the handling and safety procedures required for the hazardous materials stored and used on site during Staff Safety Meetings.	Quarry Manager/Environmental Manager <i>[Signature]</i>
Performance Indicator		Storage and handling of hazardous materials complies with legislative requirements and demonstrates due diligence.

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Monitoring	Regular review of compliance with legislative requirements for the storage and handling of hazardous materials.
Reporting	AEMR.

Strategy 13.2: Ensure that procedures are implemented and facilities made available for clean up in the event of a pollution incident.

Actions		Responsibility
13.2.1	Emergency Response Plan in place (see Chapter 12).	Quarry Manager
13.2.2	Provide a mobile spill control kit containing appropriate absorbent materials, neutralising chemicals and other spill containment equipment.	Quarry Manager
13.2.3	Provide personal protective equipment and instruct personnel on its use.	Quarry Manager
13.2.4	Clean up any spills beyond the bunded area immediately and dispose of the contaminated material in an appropriate manner.	Quarry Manager
13.2.5	Contact the relevant authorities in the event of a leak or spill. Follow any instructions provided. Remediate any contamination to the satisfaction of the regulatory authorities.	Quarry Manager
13.2.6	Collect any spills or hazardous wastes that cannot be recycled and arrange for disposal by a licensed waste contractor. Maintain all records of waste removal on site.	Quarry Manager

Performance Indicator	All pollution incidents contained and cleaned up without impact on the environment or injury to personnel. All incidents recorded.
Monitoring	Stormwater and soil contamination monitoring undertaken following any spill and subsequent clean up.
Reporting	Report on all pollution events and the results of any clean up.

Chapter Four NOISE MANAGEMENT

Introduction

The Project Approval (**Schedule 3 Condition 8**) for the Hitchcock Road development requires the preparation and implementation of a Noise Management Plan in order to demonstrate that compliance with the relevant noise impact assessment listed in the approval has been achieved. The objectives of the Annual Environmental Management Report on noise issues are therefore;

- identify the environmental noise emission criteria nominated in the relevant approval documents
- document the results of environmental noise monitoring conducted in the 12 months ended June
- assess the measured noise emissions levels against the relevant criteria; and
- nominate existing noise emission monitoring methodology and establish routine measurement procedures.

Noise emission criteria

The Noise Management Plan requires the noise criteria set out in **Table 4.1** to be applied to the impact assessment. These assessment locations as shown on **Attachment 4A** were selected because they are representative or closer to the quarry than the Noise Assessment Locations identified in Table 1 of Schedule 3 to the Notice of Project Approval.

Table 4.1 Noise impact assessment monitoring locations

Noise assessment location	Other locations covered	Day	Night ¹	
		LAeq (15 minute)	LAeq (15 minute)	LA1 (1 minute)
1. R9 – Young, Hitchcock Road	R10- Tornatola	39	35	45
2. R5 - Pignataro	R6 Camilleri	42	35	45
3. R3 – Firestation/Jurd	R1 Hammond & R2 Hitchcock	40	35	45
4. R7 – Maroota Public School	R6 Camilleri & R8 Portelli	36(LAeq(1 hour))	N/A	N/A

Note 1: Night time is defined as the period between 10.00pm and 7.00am. Activities on the site start at 6.00am and are completed by 6.00pm. There is no activity on the site during the evening period

The following noise parameters are measured at the nominated monitoring locations.

- LAeq(15 minute) noise level measured at an appropriate free-field location close to the façade of the relevant residence or other building during day time and evening hours.
- LAeq(1 minute) noise level measured at an appropriate free-field location close to the façade of the relevant residence during night time hours.

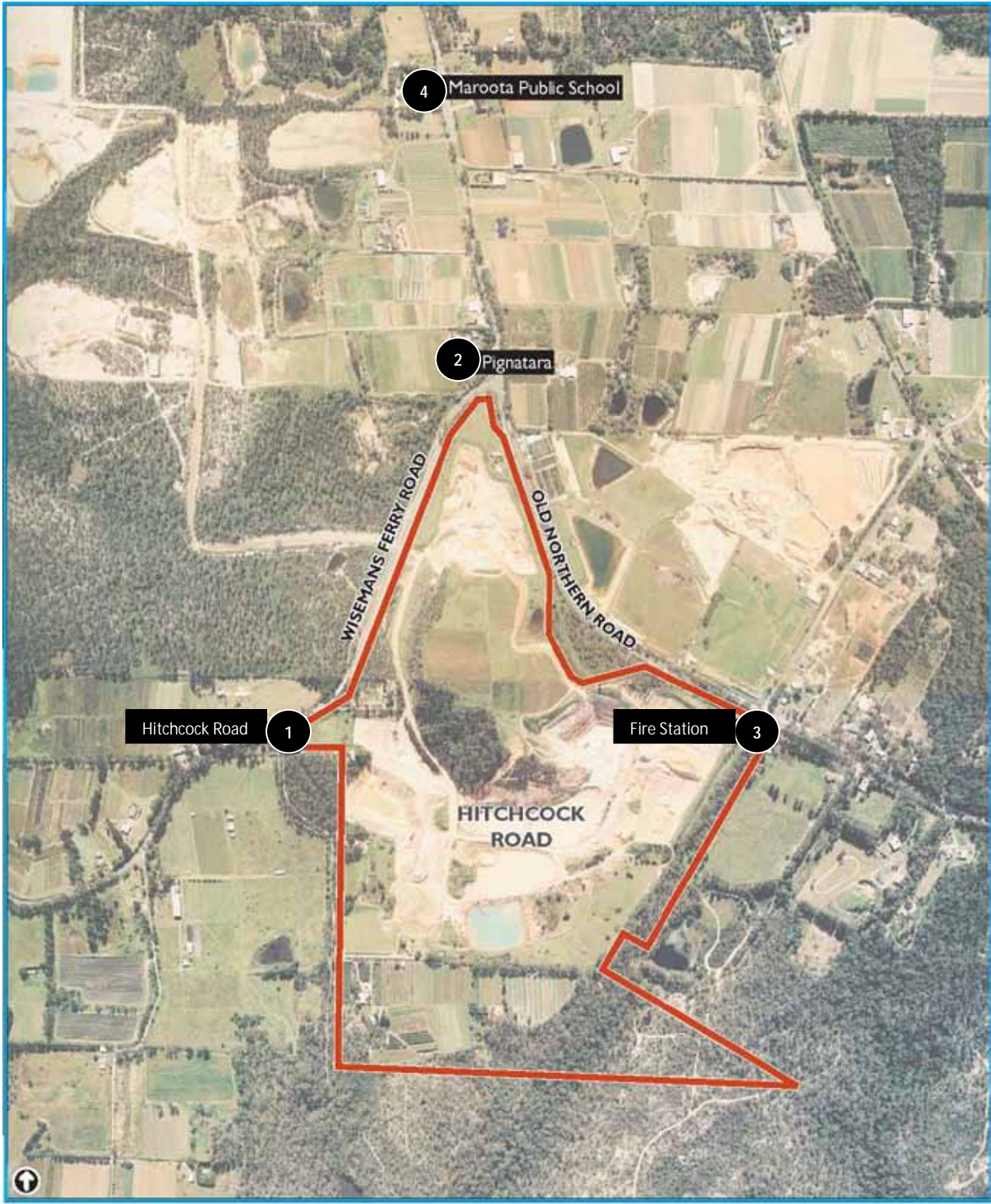
Operator-attended noise survey results

In accordance with the Noise Management Plan PF Formation conducted its quarterly operator attended daytime noise surveys at each of the four test locations. An external Noise Consultant was employed to prepare a report to assess and review the results against the noise criteria. The report prepared by Koikas Acoustics Pty Ltd is attached as **Attachment 4B**.

The locations used by Koikas Acoustics correspond to the locations in **Attachment 4A**.

Conclusion

Koikas Acoustics concluded that at most sites the quarry noise was either just audible or inaudible. The site complies with the nominated noise criteria.



NOISE IMPACT ASSESSMENT MONITORING LOCATIONS

Site boundary

4

Monitoring locations

Attachment 4B

Noise Survey Results

(Please refer to attached PDF File)