



Harvest Scientific Services Pty Ltd
Geotechnical Environmental & Resource Consultants
ABN 43 132 363 289

ENVIRONMENTAL MANAGEMENT PLAN

SPRING FARM SAND AND SOIL EXTRACTION AND PROCESSING OPERATION (DA 75/256)

MACARTHUR ROAD, SPRING FARM

Prepared for:

M Collins and Sons Holdings Pty Ltd



**Project Reference: 75/256/4
6th May 2019**

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Environmental Management Representative (EMR)

The nominated Environmental Management Representative (EMR) is indicated in the table below. **The EMR must be familiar with this manual.** The current EMR is to be contacted in the event of any environmental related incident or suspected environmental related incident or any other environmental issues/questions associated with this site. An EMR must be available and contactable 24 hours a day, 7 days a week.

Name*	Date of appointment*	Contact numbers	Signature
Alan Seidenkamp (p)	19/2/2019	0401 142 687	

*Indicate whether position is permanent (p) or acting (a).

Revisions register

Date	Details
20/11/2009	Draft document (email) – sent to the Department of Planning & Environment
10/02/2010	Draft document (hard copy) – sent to the Department of Planning & Environment
17/11/2010	<p>Revisions as follows:</p> <ul style="list-style-type: none"> • Various typographical and formatting revisions. • Updated the Harvest Scientific Services Pty Ltd letterhead. • Added Water Management and Erosion and Sediment Control Plan as prepared by Harvest Scientific Services Pty Ltd dated 10 February 2010 as Appendix 1. • Added Landscape Management Plan as prepared by Harvest Scientific Services Pty Ltd dated 10 February 2010 as Appendix 2. • Added Air Quality Monitoring Program as prepared by Harvest Scientific Services Pty Ltd dated 10 February 2010 as Appendix 3. • Moved Complaints register from Appendix 1 to Appendix 10. Revised appendix numbers accordingly. • Updated Appendix 4 to include the updated Section 96(2) modification to development consent issued by the DPE dated 22 May 2009. • Added FOP 9 (Appendix 7) entitled ‘Receipt of ENM’. • Added FOP 10 (Appendix 7) entitled ‘Receipt of VENM’ • Added EMM 12 (Appendix 8) entitled ‘EMN register’ • Added EMM 13 (Appendix 8) entitled ‘VENM register’ • Added requirement that AEMR be provided to the Department of Planning & Environment (DPE). • Removed Environmental Auditor from Figure 2. • Added complaint response protocol (Section 12). • Updated EMP in response to an email request (dated 16 April 2010) from Mr Kane Winwood from The NSW Department of Planning & Environment. • Added detail to the actions to be taken in response to non-compliance and environmental emergencies.
28/08/2012	<p>Operational draft. Revised ‘<i>Emergency Management Plan</i>’ section to include ‘<i>Pollution Incident Response Management Plan</i>’. As per NSW EPA correspondence dated 5 March 2012.</p>
01/11/2013	<p>Revisions as follow:</p> <ul style="list-style-type: none"> • Various typographical and formatting revisions. • Billy Lewis added as acting EMR 22 November 2012 as per PIRMP Appendix 14. • Updated EMP Document Register. • EPA, PIRMP, SEE added to Abbreviations. • Updated Figure 1 to include Lot 32 DP635271 WME&SCMP 24 April 2013. • DECCW replaced with EPA. • Updated Table 2 to include revised 201279 Environmental Risk 240413. • Added impacts summary Section 6.3 from Table 2. • Updated references to Water Management and Erosion and Sediment Control Plan as prepared by Harvest Scientific Services Pty Ltd dated 24 April 2013 as Appendix 1. • Updated references to Landscape Management Plan as prepared by Harvest Scientific Services Pty Ltd dated 24 April 2013 as Appendix 2. • Updated DPIW Controlled Activity Approval – 10ERM2013/0830 8th October 2013 Appendix 6. • Added Environmental Risk 240413 Appendix 12. • Updated Appendix 4 to include updated NSW Department of Planning & Environment

and Environment Notice of Modification (DA 75/256 Mod 3) dated 25 October 2012 issued by DPE.

- Updated reference to NSW Procurement Department “Environmental Management Systems Guidelines Edition 3” dated August 2013.
- Added reference to Lot 32 DP635271 as approved by NSW Department of Planning & Environment and Environment Modification (DA 75/256 Mod 3) dated 25 October 2012.
- Consent and Approvals amended to include Camden Council (section 7.1.4)
- Updated Table 5 to include Groundwater guidance source.
- Updated Table 6 to include (Mod 3) 25 October 2012 and Groundwater guidance source.
- Added Camden Council Approval 10 September 2009 Appendix 13.
- Added PIRMP 22 November 2012 Appendix 14.
- Updated AEMR submission period and lodgement (section 10.5.3)
- PIRMP referenced within section 11 Emergency Preparedness and Response.
- Added PIRMP response actions to Table 7.
- Added EMR (a) to Table 8.
- Added Eye Wash to Emergency Equipment Table 9 as per PIRMP Table 5.
- Added AS444 reference to Fire Extinguishers Table 9.
- Added EPA Documentation requirement (FOP 9 Receipt of VENM, Detailed Requirements, Documentation)
- Updated Environmental Complaints Form (Appendix 10)

14/7/2016

Re-submitted to DPE for approval (Tertius Greyling, Chase Dingle, Lauren Evans, Howard Reed (Director General))

30/10/2016

Revisions as follows DPE ‘Post Approval Attachment A’ recommendations dated 31st August 2016 Appendix 16;

- Updated EMP with commitments rather than recommendations.
- Updated EMP Document Register
- Updated all references to outdated government agencies (DoP is now DPE, DECCW is now EPA, NOW is now DPIW)
- Updated references to PIRMP revised version 4 July 4th, 2016.
- Added AQMP to abbreviations
- Added DPE Table of Consent Conditions and references Table 3
- Added ‘Non Compliance Response’ to Table 7
- Update Table 7 to include Flood Emergency Response as per Appendix 1 Section 7.
- Updated Table 8 to include NSW Department of Industry
- Added First Aid Kit to Table 9
- Update FOP 8 & 9
- Amended typographical errors
- FOP 1 updated to include the EA accompanying Modification 3
- Sections 3.2 and 8.2.3 updated to include the EA accompanying Modification 3
- Added ECP6 and updated Section 9.3 to reference ECP6
- Updated Table 5 groundwater targets and electrical conductivity typo. Included water table depths
- Updated all referenced Management Plan with new revision dates; Appendix 14 PIRMP dated 4th July 2016, Appendix 3 AQMP, Appendix 2 LMP and Appendix 1 WM&ESCP 30th October 2016.
- Table 6 updated to include changed IEA date.

- Added Appendix 15 DPE IEA frequency approval letter dated 30th September 2016
- Amended Section 10.5.4 IEA dates.
- Added Appendix 16 DPE post approval recommendations correspondence dated 31st August 2016.
- Added ECP7 'Response to Non-Compliance'
- Added ECP8 'Cumulative Impact management'

31/10/2016	Submitted revisions to DPE Director General for Approval.
1/3/2017	Submitted revisions in response to DPE request dated 7/12/2016
11/12/2018	Revisions subject to Mod 4.
1/5/2019	Submitted revisions in response to DPE request dated 1/5/2019

Issue of Environmental Management Plan

This Environmental Management Plan (EMP) has been issued to the persons listed below. All persons to whom the EMP is issued are bound under a confidentiality requirement not to provide the EMP to any third party, except with the written permission of M Collins and Sons (Holdings) Pty Ltd (MCS) and Harvest Scientific Services Pty Ltd (HSS).

It is the responsibility of those persons to whom this EMP is issued to safeguard and have available the EMP as and when required, and to maintain the currency of the EMP by inclusion of inserts and amendments, as and when issued. Copies of the manual may be issued to additional persons and/or organisations, on the basis of need and relevance.

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DEFINITIONS

AEMR	Annual Environmental Management Report
AEP	Annual Exceedance Probability
AQMP	Air Quality Monitoring Program
CAA	Controlled Activity Approval
CC	Camden Council
CMA	Catchment Management Authority
CRZ	Core riparian zone
DEHWA	Department of Environment, Heritage, Water and the Arts
Department	Department of Planning and Environment
Dol	Department of Industry – Lands and Water
DPE	Department of Planning & Environment
DRG	Division of Resources and Geoscience within the Department
EA (Mod 4)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/56), Lot 22 (No. 186) DP 833317 and Part Lot 32 (No. 172) (DP 635271) Macarthur Road, Spring Farm, prepared by Pascoe Planning Solutions, dated February 2018, and the associated Response to Submissions titled Spring Farm Quarry (DA 75/256 MOD 4) Modification and dated 3 June 2018</i>
EECs	Endangered Ecological Communities
EMP	Environmental Management Plan
EP&BC Act	Environment Protection and Biodiversity Act 1999
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environmental Protection Authority
ESCP	Erosion and Sediment Control Plan
HSS	Harvest Scientific Services Pty Ltd
LGA	Local government area
LMP	Landscape Management Plan
MCS	M Collins and Sons (Holdings) Pty Ltd
Minister	NSW Minister for Planning, or delegate
NRAR	Natural Resources Access Regulator
NES	National environmental significance
OEH	Office of Environment and Heritage
PEO Act	Protection of the Environment Operations Act 2000
PIRMP	Pollution Incident Response Management Plan
PM ₁₀	Particulate Matter less than 10µm in size
PMF	Probable Maximum Flood
Secretary	Planning Secretary under the EP&A Act, or nominee
SEE	Statement of Environmental Effects
TSP	Total Suspended Particles
TSC Act	Threatened Species Conservation Act 1995
VB	Vegetated buffer
WM Act	Water Management Act 2000
WMP	Water Management Plan
WM & ESCP	Water Management and Erosion and Sediment Control Plan

1.0 INTRODUCTION

This Environmental Management Plan (EMP) has been compiled by Harvest Scientific Services Pty Ltd (HSS) for the benefit and use by M Collins and Sons Holdings Pty Ltd (MCS) with the objective of providing environmental protocols for the management of existing and cumulative environmental impacts and operational issues arising from the MCS Spring Farm sand and soil extraction and processing operation.

This EMP includes:

- A project overview
- Environmental and waste management policy;
- A risk assessment of the environmental aspects & impacts associated with this facility;
- An outline of development approvals and licensing;
- Environmental Control Protocols (ECPs);
- Facility Operating Procedures (FOPs);
- Environmental targets;
- Environmental Monitoring Records (EMRs);
- Environmental incident response protocols;
- Complaint response protocols; and
- Environmental reporting protocols.

The content and scope of this EMP broadly follows the guidelines outlined in “Environmental Management Systems Guidelines 3rd Edition” issued by NSW Government Procurement Department, August, 2013. These guidelines in turn are based on the international standard ISO 14000/14001.

2.0 USE AND RESTRICTION OF THE EMP

This EMP is issued under the authority of MCS which has been prepared by HSS. It is a controlled document, and is subject to a number of requirements which are set out in this document. Its use is limited to MCS and to those authorised persons listed at the beginning of this document. The EMP is subject to copyright and cannot be photocopied except with the written permission of HSS and MCS.

The purpose of the EMP is to set down the environmental performance standards of the operation and bind MCS, the employees, consultants and contractors working at Spring Farm operations.

The EMP will be reviewed annually and be updated as necessary as stated in section 14. The EMP will be stored electronically on the Collins Intranet and authorised persons will be advised of any changes. Any access can be sanctioned through the Managing Director or nominated person.

Any employee, consultant or contractor to MCS not abiding by the requirements of this document, will be subject to disciplinary action.

3.0 PROJECT OVERVIEW

3.1 Introduction and site location

MCS owns and operates the Spring Farm sand and soil quarry located at Lot 22 (DP833317), Lot 32 (DP653271) and Lot 1 DP 587631 at Spring Farm, in the Camden Local Government Area (LGA). These operations are accessed via Macarthur Road, Spring Farm (Figure 1) and Plan 1 outlines details of the existing extraction and operational areas.

Since the original grant, there have been a number of modifications applied to the project, the most recent of which (Modification No 4) was determined on 2nd August, 2018 (Appendix 4). Under Section 75W of the Environmental Planning and Assessment Act (1979) NSW, MCS was given approval to extend the current activities under Quarry consent (DA 75/256) Lot 22 (No. 186) DP 833317 and Part Lot 32 (No. 172) DP 635271. This consent enables the extension of the current activities from 30 June 2019 to 30 June 2021.

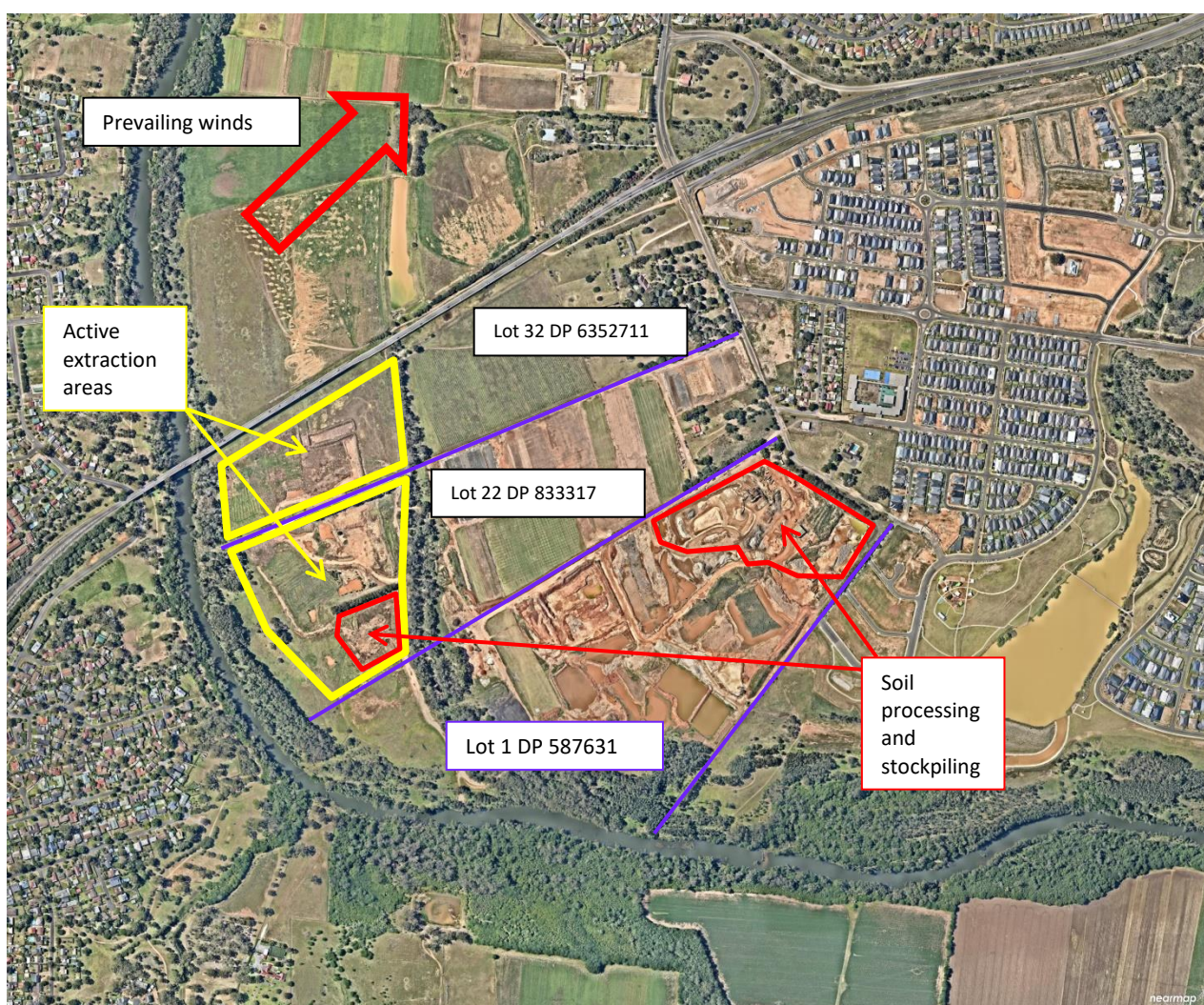


Figure 1. Plan of stockpiling, extraction and processing locations (December 2018)

3.2 Description of operations

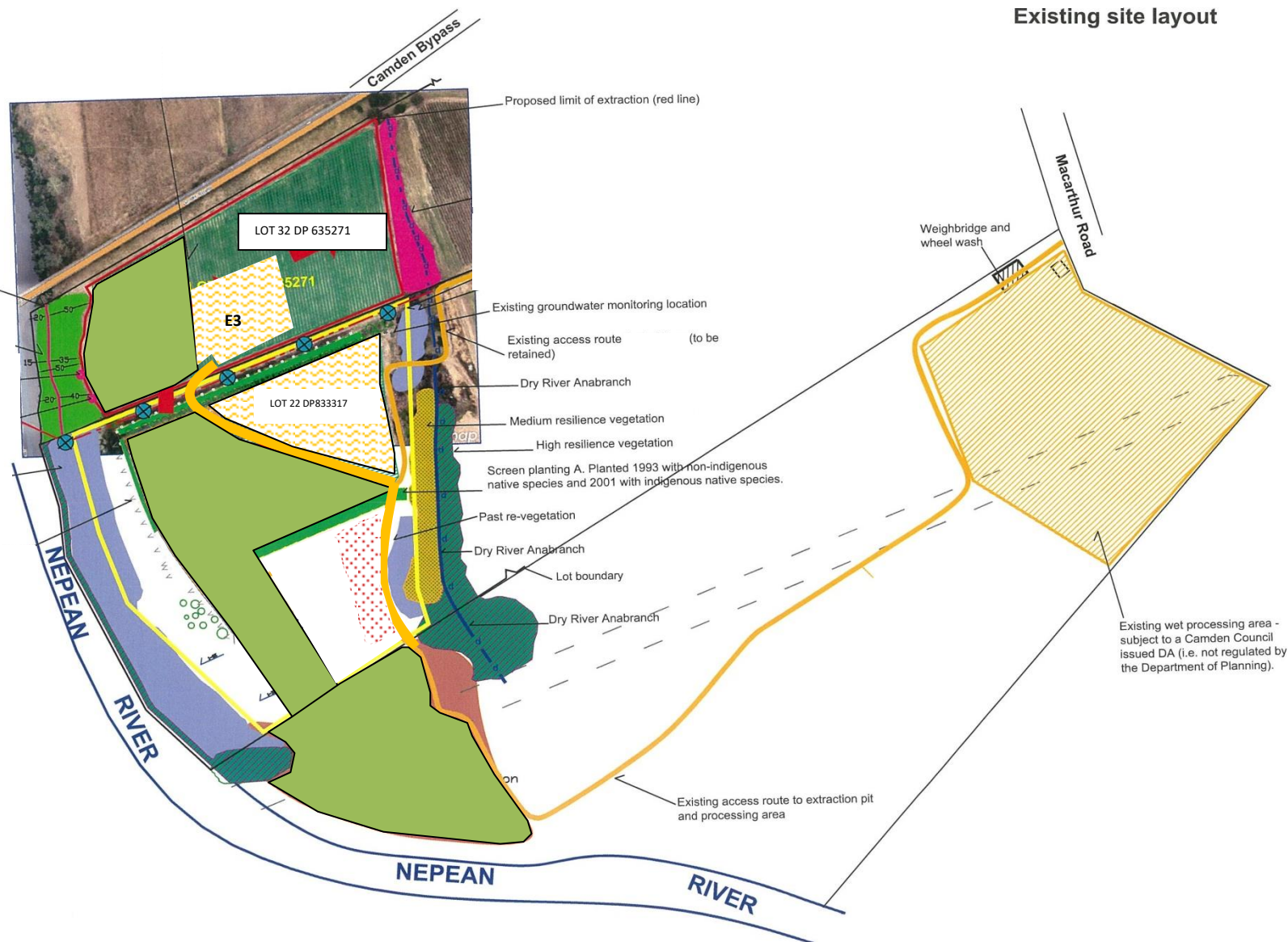
This operation is a major source of sand and soil products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry). The operation entails the extraction of sand and soil and its processing by way of wet screening and blending into a variety of high quality products suitable for use by a range of industries.

Plan 1 Existing site layout



LEGEND

- High bank of Nepean River
- Trees to be removed
- Powerpole
- Catch drain
- Intermittent drainage line
- Sediment basin
- Existing vegetation associated with the dry river anabranch located on Lot 32
- Riparian vegetation on Lot 32 associated with the Nepean River
- Past re-vegetation area/s
- Open Paddock Rehabilitation
- High resilience natural vegetation GCB (2008) (with weed infestation)
- Medium resilience natural vegetation GCB (2008) (with weed infestation)
- Sand wash plant
- Soil processing and handling area
- Scarcely vegetated area
- Screen plantings
- Future Extraction Lands on LOT32 & LOT22
- Active extraction area February 2018
- Property boundary
- Approved extraction boundary (Lot 32)
- Approved extraction boundary
- Aboveground powerlines



Notes:
1. The position of all features on this plan is approximate; and
2. Aerial photo is dated 23/02/2018

Scale 1:5000 at A3							
Designed by MR	Checked by MR	Date Drawn 27/02/2018	Job No 201279	Filename	Lot No		
Consultants HARVEST SCIENTIFIC SERVICES			Project Spring farm and Woodgrand Quarries				
			Client M Collins and Sons HOLDINGS PTY LTD		Council Camden		

3.3 Supporting documentation

This EMP has been prepared subject and with reference to the following supporting documentation:

- A Water Management and Erosion and Sediment Control Plan as prepared by Harvest Scientific Services Pty Ltd dated 11 December 2018 and attached as Appendix 1.
- A Landscape Management Plan as prepared by Harvest Scientific Services Pty Ltd dated 11 December 2018 and attached as Appendix 2.
- An Air Quality Monitoring Program as prepared by Harvest Scientific Services Pty Ltd dated 11 December 2018 and attached as Appendix 3.

Approvals for the above plans and programs have been included within each respective appendix as cover letters.

3.4 Hours of operation

As per Condition 7 (Schedule 3) of the Notice of Modification (Mod 4) (Appendix 4), the hours of operation are:

- Monday to Friday: 7:00am to 5:00pm
- Saturday: 8:00am to 1:00pm
- No operations at all on Sundays or Public Holidays

The above hour limits do not apply to:

- Maintenance which is inaudible at receiver locations; or
- For the delivery of material in circumstances required by Police or other relevant authorities for reasons of personnel and/or operational safety. In such circumstances, notification is to be provided to EPA and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

4.0 ENVIRONMENTAL POLICY

The management of MCS is committed to carrying out all extraction and processing of sand, soil and blending activities subject to a well-defined environmental policy. This policy is specific to operations located on Lot 22 DP833317, Lot 32 DP635271 and Lot 1 DP 587631, Macarthur Road, SPRING FARM.

The environmental policy, as set out below is the basis for the standards contained in this EMP. Accordingly, MCS is committed to:

- the extraction and processing of sand and soil in an environmentally sensitive manner and to supply a variety of products to a number of consumers in the landscaping and horticultural construction industries;
- the implementation of sound environmental management at all levels, incorporating environmental considerations into investment and corporate strategy and undertaking a regular review of environmental practices, including an extensive monitoring program;
- developing a high level of environmental awareness amongst employees, along with encouraging environmental excellence amongst its suppliers and contractors;
- meeting all of the requirements of relevant statutory consents, approvals, licences, etc issued to MCS and relating to the operations on the subject site;
- complying with all general and specific requirements of NSW environmental law covering pollution control, health and safety and environmental planning generally;
- meeting the reasonable requirements of the Department of Planning & Environment (DPE) and to work with the DPE in the furtherance of environmental standards on the site and the development of regional planning strategies for the long-term benefit of the Spring Farm area and the citizens of the Elderslie and Spring Farm community; and
- communicating with local community groups; and to do so in an open and frank manner, in order to facilitate harmonious relationships between the parties, and achieve an environmentally responsible outcome.

All employees and contractors are bound to observe this policy and the rules and requirements promulgated under this policy.

5.0 WASTE MANAGEMENT POLICY

MCS will ensure that all waste and waste products generated by the operation and its employees and contractors as a result of the on-site activities are reused or recycled, disposed of in a safe and efficient manner without harm to employees and the public, and in compliance with relevant environmental legislation and voluntary programs to which the organisation subscribes.

Accountability for the application of this policy rests with the Managing Director of MCS and all employees sharing waste management responsibilities. All personnel on the site are responsible for the implementation of this policy and MCS will commit the resources necessary to ensure efficient and environmentally friendly waste management practices.

The goals of this policy will be achieved by environmentally responsible:

- Avoidance practices
- Re-use and recovery practices;
- Recycling and disposal practices; and
- Waste management research and training.

In implementing this policy, MCS will consider:

- The environmental impact of waste treatment and disposal options;
- The nature and quantity of the wastes produced;
- Waste streams and their disposal when specifying plant and equipment;
- Waste minimisation through purchasing and procurement; and
- Employee health and safety

MCS waste management practices will be reviewed annually to ensure compliance with the policy and the legislative and regulatory framework. Re-use, recycling and disposal options will be reviewed annually to ensure the most efficient practices are being utilised.

6.0 ENVIRONMENTAL RISK AND PLANNING

6.1 Introduction

All organizations have some impact on the environment. With respect to environmental management, however, an Environmental Management Plan (EMP) is a structured system designed to help an organization to reduce these impacts through targeted continuous improvement in its management of the environment, leading to improvements in the operations overall environmental performance. As such, to effectively implement an EMP, potential impacts associated with each aspect of an activity must be identified through an environmental risk assessment process. This process is ongoing and aims at determining past, present and potential impacts.

An environmental risk assessment rating system adapted from Environment Australia (2007), which is outlined in Table 1, has been adopted for the assessment of risks associated with the operation. The results of this assessment will be included in the operational EMP for this facility.

Table 1: Environmental Risk Significance Rating Table*.						
Risk of Occurrence						
May be as a result of a continuously operated process, activity or occurrence.	Continuous	1	4	4	4	4
May be a result of a frequently used process, activity or occurrence.	Frequent	1	2	3	4	4
May be a result of a little used process, activity or occurrence.	Occasional	1	2	3	4	4
May be as a result of a chain of unusual events leading to an environmental incident	Remote	1	2	3	3	4
May be a result of a chain of extraordinary events leading to an environmental accident/disaster.	Improbable	1	2	3	3	4
		Positive	Minor	Critical	Major	Catastrophic
	Significance (Degree of Impact)	Positive impact on environment thus positive impact on business	Limited and/or localised impact on the environment and/or business	Medium scale impacts, wider implications to environment and/or business	Serious long term implications for environment and/or business	Serious permanent damage to business and/or environment (e.g. loss of licence, restriction of activity)

*From: Environment Australia, 2007. Model Environmental Management System for Commonwealth Agencies.

Key to Risk Significance Rating	1	Positive
	2	Low Risk
	3	Medium Risk
	4	High Risk

6.2 Review of potential environmental impacts and environmental risk rating

A review of potential environmental impacts at the premises was conducted by HSS. The review consisted of discussions with site management personnel about potential environmental impacts, a site walk-over (whilst the facility was in full operation), and a review of previously conducted Environmental Risk Assessments, previous EMPs, a Dust Management Plan and Conditions of Consent that were made available by site management.

A summary of the potential environmental impacts associated with this development and risk ratings based on Table 1 is presented in Table 2.

Table 2. Summary of possible environmental aspects and associated risk assessment rating (in brackets).			
Activity Number	Activity	Potential Aspects	Potential environmental impacts identified in initial review and risk assessment rating (in brackets)
1	Sand wash plant (including wet sand screening and settling ponds)	Dust emissions to air	Dust derived from stackers (2 – Frequent/Minor)
			Dust derived from use of loaders (2 – Frequent/Minor)
			Dust derived from sand stockpiles (2 – Frequent/Minor)
			Dust derived from bare soil in working areas (2 – Frequent/minor)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/minor)
		Emissions to water	Sediment and nutrient discharges from rain events to local water ways (2 – Remote/minor)
2	Dry sand extraction and dry sand screening area	Agricultural	Potential loss of ‘Class 1’ Agricultural Land. (2 – Remote/Minor)
		Contamination	Potential environmental and health risks associated with asbestos access pits. (3 – Remote/Major)
			Potential environmental and health risks associated existing soil contamination (2 – Improbably/minor)
		Dust emissions to air and surrounding properties	Dust derived from stackers (2 – Frequent/Minor)
			Dust derived from dry screening (2 – Frequent/Minor)
			Dust derived from use of loaders (2 – Frequent/ Minor)
			Dust derived from sand stockpiles (2 – Occasional/Minor)
			Dust derived from bare soil in working areas (3 – Frequent/Critical)
			Dust derived from excavation face (2 – Frequent/ Minor)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/minor)
		Emissions to water	Sediment and nutrient discharges from rain events to local water ways (2 – Remote/minor)
			Impact on groundwater (2 – Improbable/minor)
		Aboriginal heritage	Impact on aboriginal sites (2 – Remote/minor)

Table 2. Summary of possible environmental aspects and associated risk assessment rating (in brackets).

Activity Number	Activity	Potential Aspects	Potential environmental impacts identified in initial review and risk assessment rating (in brackets)
			Impact on artifacts (2 – Remote/minor)
		Ecological	Impact on threatened flora and vegetation communities (1 – Continuous/positive)
			Removal of Noxious weeds from the Nepean River and Dry River Anabranh riparian corridors (1 – Continuous/positive)
			Impact on habitat for native species (1 – Continuous/positive)
		Traffic	Impact on traffic volumes (2 – Remote/minor)
		Visual	Short-term visual landscape change (2 – Frequent/minor)
			Long-term visual impact. Improvement in long-term visual impact by planting local provenance vegetation along the Dry River Anabranh and rehabilitation of the Nepean River Riparian corridor. (1 – Continuous/positive)
		Social	Provision of employment (1 – Continuous/positive)
			Supply of sand and soil for local community (1 – Continuous/positive)
			Reduction of traffic impacts on local roads (and on local community) by the provision of a local source of sand and soil. The alternative is to import the sand and soil products that are required by the local community but from sources that are not locally produced and over much greater distances. (1 – Continuous/positive)
3	Exposed soil areas	Dust emissions to air and surrounding properties	Dust derived from exposed soil areas (3 – Occasional/Critical)
4	Soil extraction area (Lots 22 and 32)	Dust emissions to air and surrounding properties	Dust derived from stackers (2 – Frequent/Minor)
			Dust derived from dry screening (2 – Frequent/Minor)
			Dust derived from use of loaders (2 – Frequent/Minor)
			Dust derived from soil stockpiles (2 – Occasional/Critical)
			Dust derived from bare soil in working areas (3 – Frequent/Critical)
			Dust derived from excavation face (2 – Frequent/Minor)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/minor)
		Emissions to water	Sediment and nutrient discharges from rain events to local water ways (2 – Remote/minor)
5	Internal roadways and vehicular movements	Dust emissions to air and surrounding properties	Dust derived from internal roadways (3 – Frequent /Critical)
			Dust derived from loads (3 – Frequent/Critical)
			Dust derived from sediment on wheels and tyres (2 – Remote/Minor)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas

Table 2. Summary of possible environmental aspects and associated risk assessment rating (in brackets).

Activity Number	Activity	Potential Aspects	Potential environmental impacts identified in initial review and risk assessment rating (in brackets)
			(2 – Improbable/Minor)
		Emissions to water	Sediment and nutrient discharges from rain events to local water ways (2 – Remote/Minor)
6	Tailings emplacement	Dust	Derived from placement activities (3 – Remove/Critical)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/Minor)
		Water	Sediment discharges from rain events to local water ways (2 – Remote/Minor)

6.3 Summary of Environmental Risks

Based on Table 2, activities with the greatest degree of environmental risk are listed below in an approximate order of priority:

High Risk Activities (4)

- Nil.

Medium Risk Activities (3)

- Dust derived from exposed soil areas, the use of stackers and loaders in soil blending and extraction areas.
- Dust emissions from extraction areas and vehicle movements.
- Dust emissions from tailings emplacement.
- Generation of noise from vehicle movements, machinery in sand and soil processing and extraction areas.

Low Risk Activities (2)

- Dust derived from exposed sand and soil excavation faces; use of stackers in sand-wash plant.
- Sediment emissions to waterways from extraction areas and internal roads.
- Potential loss of Class 1 Agricultural land.
- Odour emissions.
- Impact of groundwater.
- Impacts of indigenous heritage.
- Traffic impacts.
- Short-term visual.

Positive impact activities (1)

- Positive ecological impacts by:
 - re-vegetation works along the Dry River Anabranh and the riparian corridor associated with the Nepean River
 - removal of Noxious weeds in the riparian corridor of the Nepean River and the Dry River Anabranh
- Long-term visual impacts as a result of rehabilitation works along the Nepean River and the Dry River Anabranh
- Positive social impacts by:
 - the provision of employment

- provision of sand and soil for the local market
- a reduction of traffic impacts on local roads (and on local community) by the provision of a local source of sand and soil. The alternative is to import sand and soil products that are required by the local community but from sources that are not locally produced and over much greater distances.

7.0 DEVELOPMENT PROGRAM AND APPROVALS

7.1 Agency approvals and licensing

7.1.1. Development Consent – NSW Department of Planning & Environment

Development consent for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life.

On the 22nd of May 2009 MCS was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning & Environment for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period.

On the 25th October 2012 MCS was granted a further Section 75W Northern Extension Modification for DA 75/256 Lot 22 DP 833317 and Lot 32 DP 635271.

On 2 August 2018, MCS was granted an extension to quarrying activities from 2019 to 2021 subject to a number of conditions. A copy of the DPE's consent (Mod 4) is attached as Appendix 4.

A list of the Department of Planning & Environmental Consent Conditions and EMP references is presented in Table 3.

Table 3: Consent Conditions issued by the Department of Planning		
Condition	Relevant details	Comments
Schedule 2: Administrative		
	Minimise Harm to the Environment	
S2.1	The Applicant must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the establishment, operation, or rehabilitation of the development.	EMP
S2.2	The applicant must carry out the development generally in accordance with: EIS,SEE (Mod1), EA (Mod 3) and EA (Mod4); and (a)Statement of Commitments (see Appendix 1)	Appendix 1
S2.2	2A – the applicant must carry out the development in accordance with the conditions of this consent	
S2.4	(a) Any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent; (b) Any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and (c) The implementation of any actions or measures contained in these documents	
	Limits on Approval	
S2.5	Extraction and processing operations may take place until 30 June 2021.	Appendix 4
	Operation of plant equipment	

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
S2.6	The Applicant must ensure that all plant and equipment used at the site is: (a) Maintained in a proper and efficient condition; (b) Operated in a proper and efficient condition.	FOP 5 Appendix 7 & 8
	Contributions	
S2.7	The Applicant must pay an annual contribution of \$6.500 (adjusted annually by reference to the Consumer Price Index) to Council for the maintenance of Macarthur Road, between the main site entrance and the intersection with Springs Road.	AEMR
	Inspection of site	
S2.8	The Applicant must permit access to the site to Council officers or any other public authority at reasonable times for the purposes of inspecting site operations and environmental monitoring.	Section 4
Schedule 3: Environmental Performance		
	Operating Conditions	
S3.1	The Applicant must not excavate outside the extraction areas or the limits of extraction	Section 4
S3.2	The Applicant must not open, excavate or work an area exceeding 2 hectares at any one time without the written consent of Council.	Section 7.1.4, Appendix 13
S3.3	The Applicant must not: (a) Stockpile extractive material on the site, with the exception of topsoil stockpiles and proposed noise and/or visual mitigation bunds; or (b) Process any extractive material on the site, with the exception of mobile screening.	LMP Section 1
S3.4	The Applicant must not import fill to the site for any purpose without written approval from Council.	Appendix 13
	Noise	
S3.5	The Applicant must ensure that site operations, including processing and transportation, are conducted in such a way as to minimise noise emissions from the site.	Table 6, Appendix 8 ECP, ECP4
S3.6	The Applicant must ensure that noise generated by the development does not exceed the noise impact assessment criteria as specified in the EPL.	Section 3.4 Table 6, Appendix 8 ECP4
	Operating hours	
S3.7	The Applicant must only operate the development: (a) Between the hours of 7:00am and 5:00pm Monday to Friday; (b) Between 8:00am and 1:00 pm Saturday; and (c) At no time on Sundays or Public Holidays	Section 3.4
	Air quality	
S3.8	The Applicant must ensure that dust generated by the development does not cause exceedances of the criteria listed in Tables 1, 2 and 3 at any residence or on more than 25 percent of any privately owned land.	Section 10: Air Quality and Section 13.3.1. Appendix 3
S3.9	The Applicant must ensure that any visible air pollution generated by the development is assessed regularly, and that quarrying operations are relocated, modified and/or stopped as required minimizing air quality impacts on privately-	Appendix 3

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	owned land.	
S3.10	<p>The Applicant must prepare an Air Quality Monitoring Program (AQMP) for the development to the satisfaction of the Secretary. This program must:</p> <p>(a) Be submitted to the Secretary for approval within 3 months of the date of this approval;</p> <p>(b) Be prepared in consultation with the EPA; and</p> <p>(c) Include details of how the air quality performance of the development would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval. The applicant must implement the Air Quality Monitoring Program as approved by the Secretary.</p>	Appendix 3
	Water	
S3.11	The Applicant must not discharge any water from the quarry or its associated operations except in accordance with an EPL.	WM&SECP
S3.12	<p>The Applicant must prepare a Water Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>(a) Be submitted to the Secretary within 3 months of the date of this approval;</p> <p>(b) Be prepared in consultation with Council, the EPA and DPIW; and</p> <p>(c) Include a:</p> <p>*Site Water Balance;</p> <p>*Erosion and Sediment Control Plan;</p> <p>*Groundwater Monitoring Program; and</p> <p>*Flood Emergency Procedures Plan.</p> <p>The applicant must implement the Water Management Plan as approved by the Secretary</p>	<p>WM&SECP</p> <p>Appendix x approval of WMP by DPI</p> <p>Appendix 5</p> <p>WM&SECP</p>
S3.13	<p>The Site Water Balance must:</p> <p>(a) Include details of:</p> <p>*Sources and security of water supply;</p> <p>*Water use on site;</p> <p>*Water management on site, including the location and capacity of water storages on site and the means of access;</p> <p>*Any off-site water transfers; and</p> <p>*Reporting procedures; and</p> <p>(b) Investigate and describe measures to minimise water use by the development.</p>	<p>Section 4.3</p> <p>Section 4.4</p> <p>Section 4.5 & 6.4</p> <p>Section 4.5</p> <p>Section 4.6</p> <p>Section 4.7</p> <p>Section 4.8</p>
S3.14	<p>The Erosion and Sediment Control Plan must:</p> <p>(a) be consistent with the requirements of <i>Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004</i> (Landcom);</p> <p>(b) Identify activities that could cause soil erosion and</p>	Section 6

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	<p>generate sediment;</p> <p>(c) Describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, including during flood <i>events</i>;</p> <p>(d) Describe the location, function, and capacity of erosion and sediment control structures;</p> <p>(e) Demonstrate that the design capacity of basins will not be compromised by storage of operational water; and</p> <p>(f) Describe what measures would be implemented to maintain (and if necessary decommission) the structures <i>over time</i>.</p>	<p>Table 8, Section 6.4</p> <p>Section 6.4, Figure 8</p> <p>ESC6</p> <p>Section 6.4.7</p>
S3.15	<p>The Groundwater Monitoring Program must include:</p> <p>(a) Baseline data on groundwater levels, flows and quality in the vicinity;</p> <p>(b) Groundwater assessment criteria, including trigger levels for investigating any potentially <i>adverse</i> groundwater impacts; and</p> <p>(c) A program to monitor any observed groundwater inflows to the quarry pit.</p>	<p>Section 5.1</p> <p>Section 5.2.5</p> <p>Section 5.2.5, Table 6</p>
S3.16	<p>The Flood Emergency Procedures Plan must be put in place for floods above the 1% AEP flood event up to the PMF and:</p> <p>(a) Address both the site and the adjacent stockpiling and blending site;</p> <p>(b) Include procedures to be carried out in advance of a major flood event to minimise damage to plant equipment, operating staff and the environment; and</p> <p>(c) Include procedures to be followed after a major flood event to repair any damage and return the site to productive operations, including reinstatement of all pollution control devices and rehabilitation to meet the maximum probable flood (MPF) condition. .</p>	<p>Section 7</p> <p>Section 7</p> <p>Section 7</p>
	Landscape Management	
S3.17	<p>The Applicant must prepare a detailed Landscape Management Plan for the development to the satisfaction of the Secretary. This Plan must:</p> <p>(a) Be prepared in consultation with Council and DPI (Agriculture NSW) and DRG by suitably qualified expert's whose appointments have been approved by the Secretary;</p> <p>(b) Be submitted to the Secretary for approval within 6</p>	<p>Appendix 4</p>

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	<p>months of the date of this approval; and</p> <p>(c) Include a Rehabilitation Management Plan.</p> <p>The Applicant must implement the Landscape Management Plan as approved by the Secretary.</p>	<p>Appendix 4 -Approval letter by DPI</p> <p>Section 2.1</p>
S3.16A	The Applicant must ensure that, in order to limit potential scour and erosion during flood events, all topsoil stockpiles and earthen bunds which are to be in place for any period longer than 3 months are oriented parallel to potential flood flows and are promptly and effectively spray-seed hydro-mulched with an appropriate fast-growing native grass mix, to the satisfaction of the Secretary.	Completed
	Rehabilitation Management Plan	
S3.18	<p>The Applicant must prepare a Rehabilitation Plan for the development. This plan must include:</p> <p>(a) The rehabilitation objectives for the site;</p> <p>(b) A description of the short, medium, and long term measures that would be implemented to rehabilitate the site, including re-establishing high order agricultural land suitability and land use establishing healthy native vegetation and habitat for native fauna or other future land use acceptable to Council and proposed rehabilitation timeframes and timelines;</p> <p>(c) Performance and completion criteria for the rehabilitation of the site, including appropriate high order agricultural land suitability objectives with reference to the NSW Agricultural Land Suitability Classification system;</p> <p>(d) A detailed description of the measures that would be implemented including the procedures for:</p> <ul style="list-style-type: none"> ➤ Progressively rehabilitating disturbed areas; ➤ Protecting areas outside the disturbance areas; ➤ Protecting the Nepean River and drainage lines on the site to ensure no net loss of water, Quality and aquatic habitat; ➤ Managing impacts on fauna; ➤ Landscaping the site to minimise visual impacts; ➤ Conserving and reusing topsoil; ➤ Achieving a free draining final landform; ➤ Ensuring compatibility of the final land form with surrounding land uses; ➤ Erosion and sediment control; ➤ Identifying any proposed types and methods of agriculture; ➤ Collecting and propagating seed for rehabilitation works; ➤ Salvaging and reusing material from the site for habitat enhancement; ➤ Controlling weeds and feral pests; ➤ Controlling access; and 	<p>Section 1.1</p> <p>Figures 2-4</p> <p>Section 5.12 Section 6</p> <p>Section 1</p> <p>Section 5.5 and 5.6</p> <p>Section 5.6</p> <p>Section 5.10.1 Sections 2.1, 5.5.5</p> <p>Section 5.5.5</p> <p>Section 5.5.6</p> <p>Section 5.5.6</p> <p>Section 5.6 Appendix D</p> <p>Section 5.7.1, 5.7.2</p> <p>Section 5.10.1 Section 5.5.2, 5.10.2, 5.10.3 Section 5.5.1</p>

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	<p>➤ Bushfire management;</p> <p>(e) A program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);</p> <p>(f) A description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and</p> <p>(g) Details of who would be responsible for monitoring, reviewing, and implementing the plan.</p> <p>The Applicant must implement the Rehabilitation Management Plan as approved by the Secretary.</p>	<p>Section 5.5.4</p> <p>Section 5.12</p> <p>Section 5.7.5 Section 9</p> <p>Section 5.12</p>
	Heritage	
S3.19	Should the Applicant discover material suspected of being Aboriginal relics or skeletal remains, work in that area shall cease and the Applicant must advise the EPA and proceed in accordance with EPA instructions.	ECP5
	Visual	
S3.20	The Applicant must establish and maintain perimeter plantings in order to minimise the visual impacts of the development, to the satisfaction of Council.	Included in Landscape Management Plan for facility.
	Waste Management	
S3.21	The Applicant must minimise the amount of waste generated by the development to the satisfaction of Council.	FOP7
S3.22	The Applicant must store and manage waste and by-products generated by the development to the satisfaction of Council.	FOP7
S3.22A	<p>The Applicant must prepare a Waste Management Plan for the project in consultation with Council and to the satisfaction of the Secretary. The plan must:</p> <p>(a) Be prepared by a suitably qualified person/s with expertise in risk management;</p> <p>(b) Be submitted to the Secretary for approval prior to commencing earthworks on Lot 32; and</p> <p>(c) Include a:</p> <p>➤ Description of the measures and controls that would be implemented to manage waste risks within site;</p> <p>The Applicant must implement the Waste Management Plan as approved by the Secretary</p>	<p>Waste Management Plan dated 711 December 2018</p> <p>All asbestos on site has been removed and areas have been suitably treated. (Not applicable)</p>
	Emergency And Hazards Management	
S3.23	The Applicant must ensure that the storage, handling, and transport of dangerous goods are conducted in accordance	Condition of Consent– Section 5

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	with the relevant Australian Standards, particularly AS1940 and AS1596, and the <i>Dangerous Goods Code</i> .	
S3.24	The Applicant must secure the development to ensure public safety to the satisfaction of Council	LMP
S3.25	The Applicant must: (a) Ensure that the development is suitably equipped to respond to any fires on-site; and (b) Assist the Fire Service and emergency services as much as possible if there is a fire on site.	Section 11, Table 8
	Production Data	
S3.26	The Applicant must: (a) Provide annual production data to the DPI using the standard form for that purpose; and (b) Include a copy of this data in the AEMR.	Annual AEMR
Schedule 4: Additional Procedures		
	Notification to landowners	
S4.1	If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant must notify the Secretary and the affected landowners and tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.	ECP7
	Independent review	
S4.2	If a landowner of privately owned land considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Applicant in writing for an independent <i>review</i> of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Secretary advising that an independent <i>review</i> is warranted: (a) Consult with the landowner to determine his/her concerns; (b) Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to determine whether the development is complying with the relevant criteria in Schedule 3, and identify the source(s) and scale of any impact on the land. and the development's contribution to this impact; and (c) Give the Secretary and landowner a copy of the independent review.	
S4.3	If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the Secretary.	Noted.

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
S4.4	<p>If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Applicant must:</p> <p>(a) Implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and</p> <p>(b) Conduct further monitoring to determine whether these measures ensure compliance; or:</p> <p>(c) Secure a written agreement with the landowner to allow exceedances of the relevant criteria in</p> <p>Schedule 3, to the satisfaction of the Secretary.</p> <p>If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the Secretary.</p> <p>If the Applicant is unable to finalize an agreement with the landowner, then the Applicant or landowner may refer the matter to the Secretary for resolution. (See Appendix 3)</p>	Noted.
S4.5	If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Secretary for resolutionSee Appendix 3.	Noted.
Schedule 5: Environmental Management Plan		
S5.1	<p>The Applicant must prepare an updated Environmental Management Plan for the development to the satisfaction of the Secretary.. This planmust be submitted to the Secretary for approval 3 months after the date of this consent and:</p> <p>(a) Provide the overall environmental management approach for the development;</p> <p>(b) Identify the statutory requirements that apply to the development;</p> <p>(c) Describe in general how the environmental performance of the development would be monitored and managed;</p> <p>(d) Describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> ➤ keep the local community and relevant agencies informed about the construction, ➤ operation and environmental performance of the development; ➤ receive, handle, respond to, and record complaints; ➤ resolve any disputes that may arise during the life of the development; 	<p>EMP</p> <p>Section 4.0</p> <p>Section 7, Table 3, Appendix 4</p> <p>Section 9.3, 10 Appendix 8, 9</p>

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	<ul style="list-style-type: none"> ➤ respond to any non-compliance; ➤ manage cumulative impacts; ➤ respond to emergencies, including flood-related emergencies; and <p>(e) Describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.</p> <p>The Applicant must implement the Environmental Management Strategy as approved by the Secretary.</p>	<p>Appendix 14 (PIRMP Section 7)</p> <p>Section 10</p> <p>Section 12</p> <p>Section 12.2, Appendix 4</p> <p>Section 11</p> <p>Section 3.2, ESCP 6</p> <p>Section 11, Table 7</p> <p>WM&SCP (Appendix 1, Section 7)</p> <p>Section 8</p>
	Environmental Monitoring Program	
S5.2	The Applicant must prepare an Environmental Monitoring Program for the development to the satisfaction of the Secretary. This program must be submitted to the Secretary concurrently with the submission of the various monitoring programs and consolidate the various monitoring requirements in Schedule 3 of this consent into a single document	Table 5
	Incident Reporting	
S5.3	<p>Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Applicant must report the exceedance/incident to the Department and any relevant agencies. This report shall:</p> <p>(a) Describe the date, time, and nature of the exceedance/incident;</p> <p>(b) Identify the cause (or likely cause) of the exceedance/incident;</p> <p>(c) Describe what action has been taken to date; and</p> <p>(d) Describe the proposed measures to address the exceedance/incident.</p>	<p>PIRMP</p> <p>Section 11</p>
	Annual Review	
S5.4	<p>By the end of March each year, the Applicant must review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <p>(a) Describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>(b) Include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of</p>	<p>Section 10</p> <p>Annual AEMR</p>

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	<p>these results against:</p> <ul style="list-style-type: none"> ➤ The relevant statutory requirements, limits or performance measures/criteria; ➤ The monitoring results of previous years; and ➤ The relevant predictions in the documents listed in condition 2(a) of Schedule 2. <p>(c) Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) Identify any trends in the monitoring data over the life of the project;</p> <p>(e) Identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p> <p>(f) Describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.</p>	
	Independent Environmental Audit	
S5.5	<p>Within 12 months of the date of the consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:</p> <ul style="list-style-type: none"> (a) Be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the Secretary; (b) Include consultation with the relevant agencies; (c) Assess the environmental performance of the development, and its effects on the surrounding environment; (d) Assess whether the development is complying with the relevant standards, performance measures and statutory requirements; and (e) Review the adequacy of any strategy/plan/program required under this approval, and, if necessary, recommends measures or actions to improve the environmental performance of the development. and/or any strategy/plan/program required under this approval. 	Table 6
S5.6	Within 6 weeks of completion of each Independent Environmental Audit, the Applicant must submit a copy of the audit report to the Director-General, with a response to any of the recommendations in the audit report.	IEA completed and submitted to DPE June 2016
S5.7	<p>Within three months of:</p> <ul style="list-style-type: none"> (a) The submission of an incident report under Condition 3 	Section 10.5.3

Table 3: Consent Conditions issued by the Department of Planning

Condition	Relevant details	Comments
	<p>above;</p> <p>(b) The submission of an Annual Review under Condition 4 above;</p> <p>(c) The submission of an audit report under Condition 5 above, or</p> <p>(d) Any modification of the conditions of this approval (unless the conditions require otherwise),</p> <p>the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.</p>	Section 14
	Access to Information	
S5.8	<p>Within 1 month of the approval of any plan/strategy/program required under this consent (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or AEMR required under this approval, the Applicant must:</p> <p>(a) Provide a copy of the relevant document's to the relevant agencies and to members of the general public upon request; and</p> <p>(b) Ensure that a copy of the relevant documents is made publicly available on its website.</p>	Annual Environmental Management Reports are prepared and submitted every March to the NSW Department of Planning and Environment and Camden Council.
S5.9	<p>During the development, the Applicant shall:</p> <p>(a) Make a summary of monitoring results required under this approval publicly available on its website; and</p> <p>(b) Update these results on a regular basis (at least every 3 months).</p>	<p>All Monitoring data is available on the Collins and Sons website – http://www.mcollins.com.au/environmental/environmental-monitoring/</p>

7.1.2. Environmental Protection Licence (EPL)

This development is subject to EPL 4093, a copy of which is attached as Appendix 5.

7.1.3. Controlled Activity Approval (CAA)

This development is subject to a CAA, a copy of which is attached as Appendix 6.

7.1.4. Camden Council

Development Approval to import excavated natural material in accordance with the Protection of the Environment Operations (Waste) Regulations 2005 and open and work an area of land of five hectares at any one time was granted by Camden Council 10 on September 2009 – see Council advice attached as Appendix 13.

8.0 STRUCTURE AND RESPONSIBILITIES

8.1.1. Structural hierarchy

The structural hierarchy and responsibilities are summarized below in Figure 2.

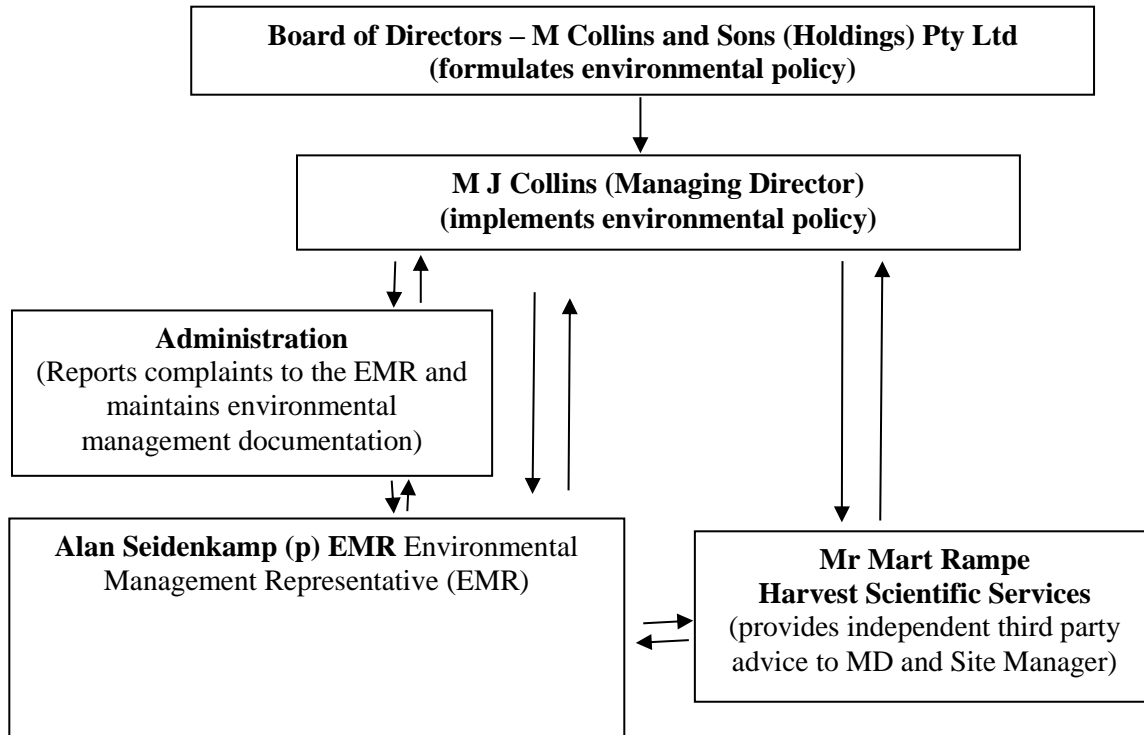


Figure 2: Structure and responsibility

8.2 Responsibilities of all employees and contractors to protect the environment

A copy of this EMP is available on the Collins Intranet directory at the site office computer. The EMP is freely available for all staff to peruse. It is the responsibility of all employees and contractors to comply with the EMP.

Responsibilities with regard to environmental management are defined, documented and communicated to all employees of MCS. Environmental responsibility applies to everybody in the organisation starting at the highest level. There is a firm commitment to facilitate effective environmental management.

8.2.1. Governing corporate body

The governing corporate body (i.e. the Company Directors of MSC in this case) define individual's roles and responsibilities in terms of environmental management and monitoring. The governing body ensure that:

- there are sufficient staff and company funding to allow compliance with the EMP objectives.
- staff have sufficient environmental training.
- individual's responsibilities are defined in writing.

8.2.2. Environmental Management Representative

The Environmental Management Representative (EMR) has been selected by the governing body and the governing body defines the EMR's responsibilities in writing. There are clear lines of communication between the individual and the governing corporate body. The representative has the authority to co-ordinate other individuals who also operate at the facility. The representative has a certain level of competence and experience to enable the implementation of this EMP, including the co-ordination &/or undertaking of maintenance tasks. The representative is aware of relevant environmental legislation and undertakes day-to-day monitoring of environmental factors on-site as described in the Monitoring and Review section (Section 10).

The EMR is the first point of contact for any concerns that employees may have with regard to impacts and controls. Any specialised environmental management such as the end-of-year evaluation and review/audit of monitoring data is undertaken by appropriately qualified personnel and/or appointed consultants.

8.2.3. Individuals

All individuals within the organisation who are directly associated with the Facility should have a knowledge of the Development Consent DA 75/256 Modification 4 and this EMP.

8.2.4. Administration

Administration within the organisation must make the EMR and the governing body aware of all relevant correspondence and conversations derived from statutory authorities. Administration must ensure that all deadlines are met with regard to annual reporting and other like procedures.

Administration are responsible for keeping secure copies of all environmental documentation including environmental licensing. Complaints regarding any environmental nuisance will be received by the administration and passed onto the EMR.

8.3 Training, awareness and competence

The management is obliged to keep all of its employees and contractors aware of their environmental obligations. Those parameters that require attention are listed below in Table 4.

Table 4: Training and Awareness				
Parameter	Personnel to be trained	Action to be taken	Time-frame	Outcome
Read and familiarise employees with EMP	All personnel	Presentation	At commencement of operations and thereafter as required.	An understanding of environmental requirements for the facility

9.0 IMPLEMENTATION AND OPERATION

9.1 Overview

Achievement of the environmental management objectives requires commitment on behalf of MCS management and staff on a day-to-day basis and procedures and protocols to be put in place (for all employees and contractors to follow) to ensure that these objects, and thus the environmental management objectives of this operation are met.

The procedures which apply to the sand and soil extraction and processing operations are outlined as Facility Operating Procedures (FOP's) attached as Appendix 7 and the protocols put in place are to be displayed as Environmental Control Protocol's (ECP's) attached as Appendix 8.

These procedures and protocols are to be easily accessible at the site office and it is the responsibility of the EMR (see structure outline in Figure 2) to ensure that all employees and contractors are aware of them.

9.2 Facility Operating Procedures

The operations at the facility are dictated by a number of Facility Operating Procedures (FOP's), which are outlined below and detailed in Appendix 7. These FOPs are summarised as follows:

- Extraction activities (FOP 1)
- Sand wash plant and wet sand-screening (FOP 2)
- Dry sand and soil screening (FOP 3)
- Management of exposed soil areas (FOP 4)
- Equipment maintenance (FOP 5)
- Refueling (FOP 6)
- Waste control (FOP 7)
- Receipt of VENM and ENM (FOP 8)
- Receipt of VENM and ENM (FOP 9)

9.3 Environmental Control Protocols

A number of environmental controls (in the form of Environmental Control Protocols – ECP's) have been initiated to manage the various environmental aspects identified in this EMP and their potential impacts. These ECP's are appended as Appendix 8 of this EMP and are summarised as follows:

- Erosion and sediment control (ECP 1)
- Landscaping and rehabilitation (ECP 2)
- Air quality management (ECP 3)
- Noise management (ECP 4)
- Aboriginal heritage (ECP 5)
- Traffic and Transportation (ECP 6)
- Respond to Non-Compliance (ECP 7)
- Cumulative Impacts Procedure (ECP 8)

10.0 MEASUREMENT, EVALUTION (TARGETS) AND REVIEW

An environmental monitoring program is an essential part of an EMP as it allows for environmental targets to be set and the recording of various environmental performance parameters to ensure with some certainty, that environmental targets are being met. This EMP section outlines the environmental targets for the facility and the environmental monitoring program to be undertaken.

10.1 Environmental targets

Environmental targets for this facility are outlined in Table 5.

Table 5: Environmental monitoring targets					
Environmental aspect	Component	Location	Target	Averaging period	Source
Air quality	Nuisance dust – deposited dust.	See Figure 3	< 4 g / m ² / month Maximum Increase in deposited dust level 2g/m ² / month	Annual	AQMP – Appendix 3 and DPE Conditions of Consent – Appendix 4.
	Long-term - Total Suspended Particles (TSP) Matter	See Figure 3	< 90 µg/m ³	Following legitimate dust related complaint	
	Long-term - Particulate Matter (PM ₁₀)	See Figure 3	< 30 µg/m ³	Following legitimate dust related complaint	
	Short-term - Particulate Matter (PM ₁₀)	See Figure 3	< 50 µg/m ³	Following legitimate dust related complaint	
Noise	LA10 (15 minute) at each sensitive receptor outlined on Plan 4.	See Figure 3	< 55 dB(A)	15 minutes	EPL 4093 – Appendix 5.
Groundwater	pH	See Figure 3	pH 4.00- 6.50	N/A	Historical Data, ANZECC 2000 guideline WM&ESCP – Appendix 1.
	Electrical conductivity	See Figure 3	< 800 uS/cm	N/A	
	Depth to water table (m)	See Figure 3	Depth 5.83-15.93	N/A	

10.2 Environmental monitoring locations

The position of all environmental monitoring stations are outlined on Figure 3.

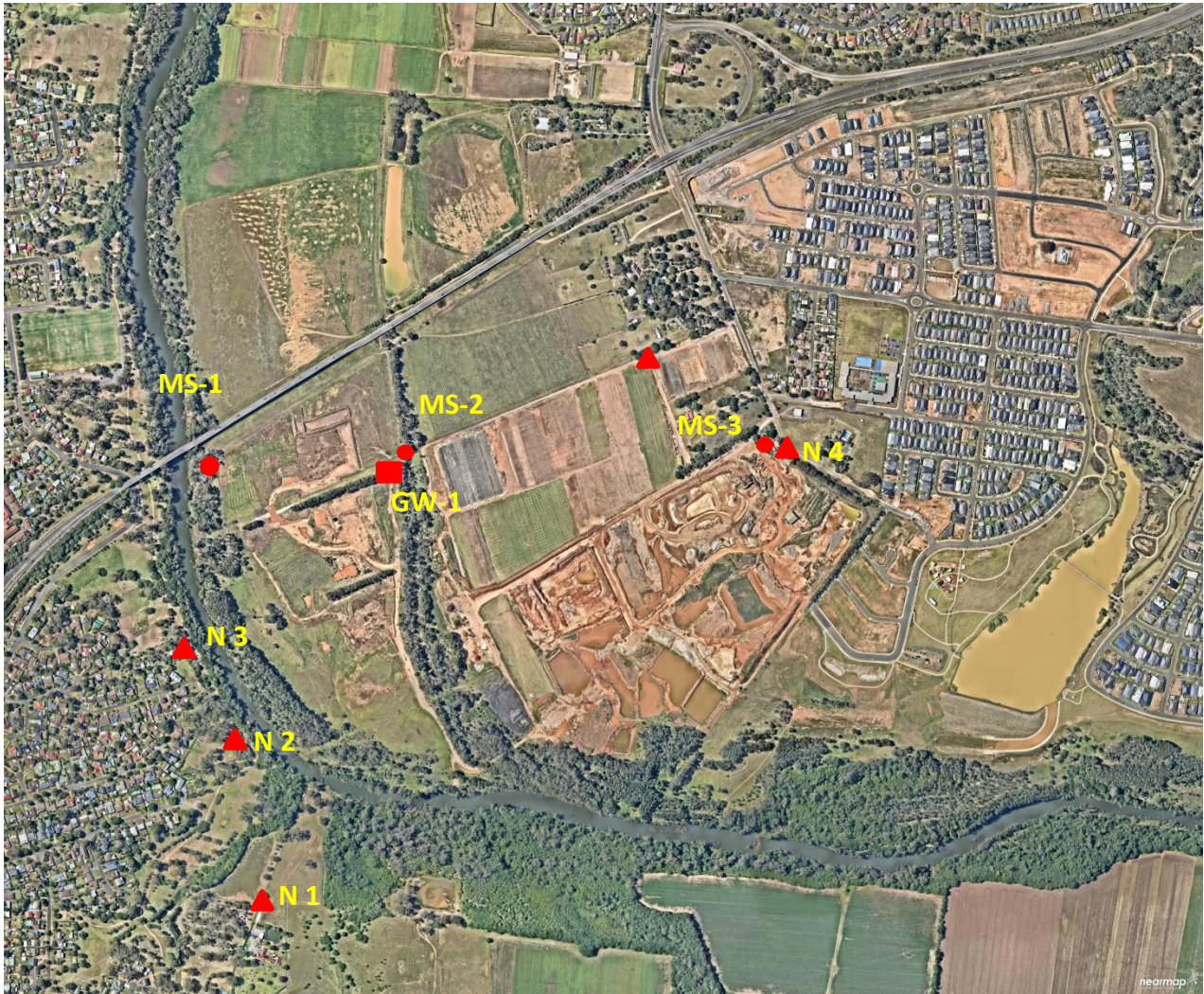


Figure 3: Recent aerial photograph (December, 2018) of the Spring Farm operations indicating the position of all environmental monitoring points, viz: Dust (MS1, MS2 and MS3), Groundwater (GW-1) and Noise (N1, N2, N3 and N4)

10.3 Monitoring parameters and frequency

Environmental parameters monitored and the frequency of recording are outlined in Table 6.

Table 6: Environmental monitoring parameters			
Monitoring parameter	Frequency	Parameters to be measured	Equipment needed
Water Quality			
Groundwater	Monthly	pH, EC, depth to groundwater (m)	Field pH and EC meters, water sampling device, tape measure.
Noise			
Ambient audible noise	Daily	Awareness of noise sources and controls. No routine parameters to be measured	EMR
After an investigated noise related complaint warrants monitoring.	If directed by DPE, EPA and/or Camden Council	LA10 (15 minute)	Appropriately qualified consultant.
Air quality			
Dust deposition	Monthly	Dust deposition. (g/m ² /month)	Dust monitoring station.
Particulate Matter	Twice per year and following legitimate dust related complaint thereafter.	TSP and PM ₁₀	Hi Vol sampler with TSP and PM ₁₀ head.
Sediment controls			
All sediment controls, including, bunds, straw bale filters and sedimentation basin/s	After each rain event	Visual inspection of sediment control devices by EMR.	EMR.
	Monthly monitoring	Visual inspection of sediment controls.	EMR
Rehabilitation Works			
Rehabilitation progress	Monthly monitoring	Visual inspection of re-vegetation progress. Notes on maintenance requirements, including spraying for weeds and replacement of trees / shrubs, as required.	Ecologist.
Weed management	Monthly	Visual inspection of weed infestations and control requirements	EMR / Ecologist
	When herbicides are used.	The following is to be recorded in EMM 2. <ul style="list-style-type: none"> • Date of chemical control; • Herbicide applied; Time applied; and • Wind direction (if any). 	EMR/Ecologist
Environmental Management Reporting			
Annual Environmental Management Report (AEMR)	Within 12 months of date of DPE approval of Modification 4 2/8/2018 and annually thereafter. Submitted to DPE, EPA and Camden Council and website by 31 st March every year.	As per s4 of Schedule 5 of Appendix 4.	Environmental consultant
Independent Environmental Audit	Before 30 th June 2019 and every three years thereafter.	As per s5 of Schedule 5 of Appendix 4. As per approved DPE correspondence letter dated 30 th September 2016 Appendix 15.	Environmental consultant
Report to DPI for annual production data.	Annually by 15 December.	Complete form.	Industry and Investment (DPI) form
EPA License	Annually, by 26 October.	Complete form	EPL licence annual form.

10.4 Environmental Monitoring Records

It is the responsibility of the EMR to undertake and/or co-ordinate individuals and/or specialised consultants so that the relevant Environmental Monitoring Records (EMRs - attached as Appendix 9) are completed. All completed EMRs must be kept for at least 4 years.

The Records are designed to be self-assessing, with the view to being available for audit if necessary. If environmental targets are not being met then corrective actions and procedures will need to be undertaken. Observations recorded in the EMRs will form the basis of the annual environmental evaluation and review.

10.5 Evaluation and review of monitoring data

To ensure that the development is progressing in an environmentally sustainable manner and in conformance with the EMP, an evaluation process is required. This is a continual process, in line with daily, weekly and monthly monitoring of the environmental management of the facility.

10.5.1. Daily environmental review

A daily visual environmental review is conducted by the EMR. This review considers, in particular, the condition of sediment management devices as well as all practices and controls outlined in the FOPs and ECPs.

Particular attention is given to the condition of sediment management devices after a storm event.

10.5.2. Monthly environmental audit

Inspection of operations are undertaken by the EMR on a monthly basis and a summary areas requiring action will be prepared as per EMM 1 (see Appendix 9).

10.5.3. Annual Environmental Management Report (AEMR)

All monitoring data will be communicated to the DPE and Camden Council annually in the form of an Annual Environmental Management Report (AEMR). The AEMR is to be submitted annually for the period ending 31st December and submitted by 31st March the following calendar year. The format of the AEMR is outlined in the Development Consent conditions attached as Appendix 4.

10.5.4. Independent Environmental Audit

An independent environmental audit is to be undertaken for the period ending June 2019 and every 3 years thereafter (see Appendix 15). The format of the IEA is outlined in the Development Consent conditions attached as Appendix 4.

Within 3 months of submitting a copy of the environmental audit report to the Secretary, MCS shall review and if necessary revise each of the environmental management and monitoring strategies, plans or programs as set out in the Development Consent conditions attached as Appendix 4.

11.0 EMERGENCY PREPAREDNESS AND RESPONSE

This EMP enables MCS to implement a comprehensive range of contingency plans which enable rapid response to environmental emergencies or incidents such as accidental discharges/spillage or fires. Response procedures involve definition of key personnel (chain of command), details of emergency services, clean-up procedures, and reporting followed by corrective and preventative actions as outlined in the site PIRMP attached as Appendix 14.

11.1 Environmental incident preventative actions and responses

Table 7 outlines the potential environmental incidents identified during the environmental review process to-date, the proposed preventative actions, the response actions to be under-taken and the person/s responsible for implementation of appropriate actions. Other potential environmental incidents which may be identified after the operation commences should be documented by the EMR and Table 7 should then be updated accordingly.

Table 7. Summary of potential environmental incidents, preventative actions and proposed response actions.			
Potential environmental incident/Non Compliance	Preventative actions	Responses actions to incident/Non Compliance	Responsible persons
Consent Conditions Non Compliance	<ul style="list-style-type: none"> Implement ECP7 	<ul style="list-style-type: none"> Contact EMR Review historical data and investigate Notify applicable regulatory authority if required Document on Environmental Non Compliance form following Non Compliance Procedure Identify cause Implement Controls using Risk Assessment approach Conduct additional monitoring if and as required Monitor controls effectiveness 	EMR
Excessive dust	<ul style="list-style-type: none"> Implement ECP 4. 	<ul style="list-style-type: none"> Contact EMR; Water down areas identified as the source of dust immediately; and Cease works if weather conditions are adverse. 	All personnel and EMR
Fuel / Chemical spill	<ul style="list-style-type: none"> No storage of chemicals onsite; Ensure adequate bunding if stored on site. Always take utmost care; and Refuel in bunded areas only. 	<ul style="list-style-type: none"> Contact EMR Follow MP22 PIRMP. Contain spill if safe to do so. All re-fuelling vehicles are to contain a spill kit Use spill kit to contain the spill Dispose of contaminated materials appropriately; and If discharge enters waterway and criteria outlined in Section 11.5 of this EMP is met ring EPA Pollution line 131 555. 	All personnel and EMR
Sediment losses to waterways	<ul style="list-style-type: none"> Implement ESCP (Plan 2 and Appendix 1) 	<ul style="list-style-type: none"> Contact EMR Where relevant, repair sediment controls; and Cease works if weather conditions are adverse. 	All personnel and EMR
Flood Emergency	<ul style="list-style-type: none"> Implement Flood Emergency Plan (Appendix 1 WM&ESCP Section 7) 	<ul style="list-style-type: none"> Cease all extraction and processing operations; Re-locate all portable machinery (including heavy and light equipment) to above the PMF level ; and Providing that there is sufficient time to do so and it is safe, manually drain all oils and fuels from any non-mobile equipment remaining within portions of 	EMR and all personnel

Plan 2

Erosion and sediment control plan

ESC 1. Perimeter bund.

A 'Perimeter Bund' will be constructed around the active extraction cell and tailings emplacement areas, thus forming an enclosed internal catchment around these disturbed areas. These bunds are to be dual purpose in that they will divert clean surface run-off waters around the active extraction pits and act as a catch drain to prevent the loss of surface waters without treatment.

Construction of the perimeter bund will be formed as the first activity to occur on the extraction cell and or tailings emplacement areas, and prior to any extraction or tailings emplacement taking place. The bund will be constructed from topsoil stripped from the subject extraction cell.

The topsoil perimeter bund will have a minimum height of 1m and base width of 4m with batter slope grades of 2H:1V. Stripped topsoil will include existing grass runners which will quickly stabilise the bund. Additional seeding with a mix of sterile grasses such as 'Wimmera Rye' and 'Japanese Millet' is to be undertaken if deemed necessary by the EMR.

ESC 2. Sediment basins.

Dirty surface waters from each active extraction cell, areas actively undergoing rehabilitation and the tailings emplacement area will be treated by a localised sediment basin. Each sediment basin is to have a volume of 588 cubic meters (500m3 sedimentation volume + 88 m3 storage volume - **Table 9**) for each hectare of up-slope surface water collected.

Sediment basins are to be managed subject to the following controls:

- Flocculants may be added if deemed necessary by the EMR and on an as-needed basis.
- Each basin is to be constructed as per the blue book - see **Appendix 2**.
- Basins are to be maintained so that the minimum required storage volume is achieved within 5 days of a storm event. This may be achieved by either over-sizing the basins and re-use of water onsite for irrigation and dust suppression measures.
- Sediment is to be removed as necessary to ensure that the minimum sediment storage volume is achieved at all times.

ESC 3. Sedimentation terminal pond.

All surface water from the development site is to be collected via a sedimentation terminal pond. The volume of the sedimentation pond is to be at 1,300m³. The terminal pond is to be located at the location depicted on **Figure 3** and is to be retained at the completion of works as a long-term water quality management structure. Water from the sedimentation terminal pond is to be discharged via a 5 metre wide grassed swale.

The sedimentation terminal pond is to be managed subject to the following controls:

- Flocculants may be added if deemed necessary by the EMR and on an as-needed basis.
- The terminal pond is to be constructed as per the blue book - see **Appendix 2**.

Sediment is to be removed as necessary to ensure that the minimum sediment storage volume is achieved at all times.

LEGEND

- | | | |
|--|---|---|
| | High bank of Nepean River | Drainage path
from Lot 32 to
Nepean River |
| | Proposed fence line | |
| | Proposed plantings | |
| | Powerpole | |
| | Catch drain | |
| | Intermittent drainage line | |
| | Sediment basin | |
| | Existing vegetation associated with the dry river anabranch located on Lot 32 | |
| | Riparian vegetation on Lot 32 associated with the Nepean River | |
| | Past re-vegetation area/s (with weed infestation) | |
| | High resilience natural vegetation GCB (2008) | |
| | Medium resilience natural vegetation GCB (2008) (with weed infestation) | |
| | Sand wash plant | |
| | Soil processing and handling area | |
| | Scarcely vegetated area | |
| | Screen plantings | |
| | Area used for turf farming (Lot 22) and former vineyard (Lot 32) | |
| | Active extraction area (November 2009) | |
| | Existing internal fence-line | |
| | Property boundary | |
| | Proposed extraction boundary (Lot 32) | |
| | Approved extraction boundary - NOM 22/05/2010 | |
| | Aboveground powerlines | |
| | Proposed progressive direction of extraction | |
| | Tailings emplacement area | |

Drainage pathway
from Lot 32 to Lot 22

ESC 4. Grass swales

All surface water from extraction areas are to be collected via a grass swale that drains direction into sedimentation terminal pond (ESC 3).

Discharge waters from **ESC 3** sedimentation terminal pond are to be discharged via a grass swale and directed around the embankment that is to host the existing electricity poles.

All surface water from the tailings emplacement areas are to be collected via a grass swale and diverted to the associated sediment basin (**ESC 2**).

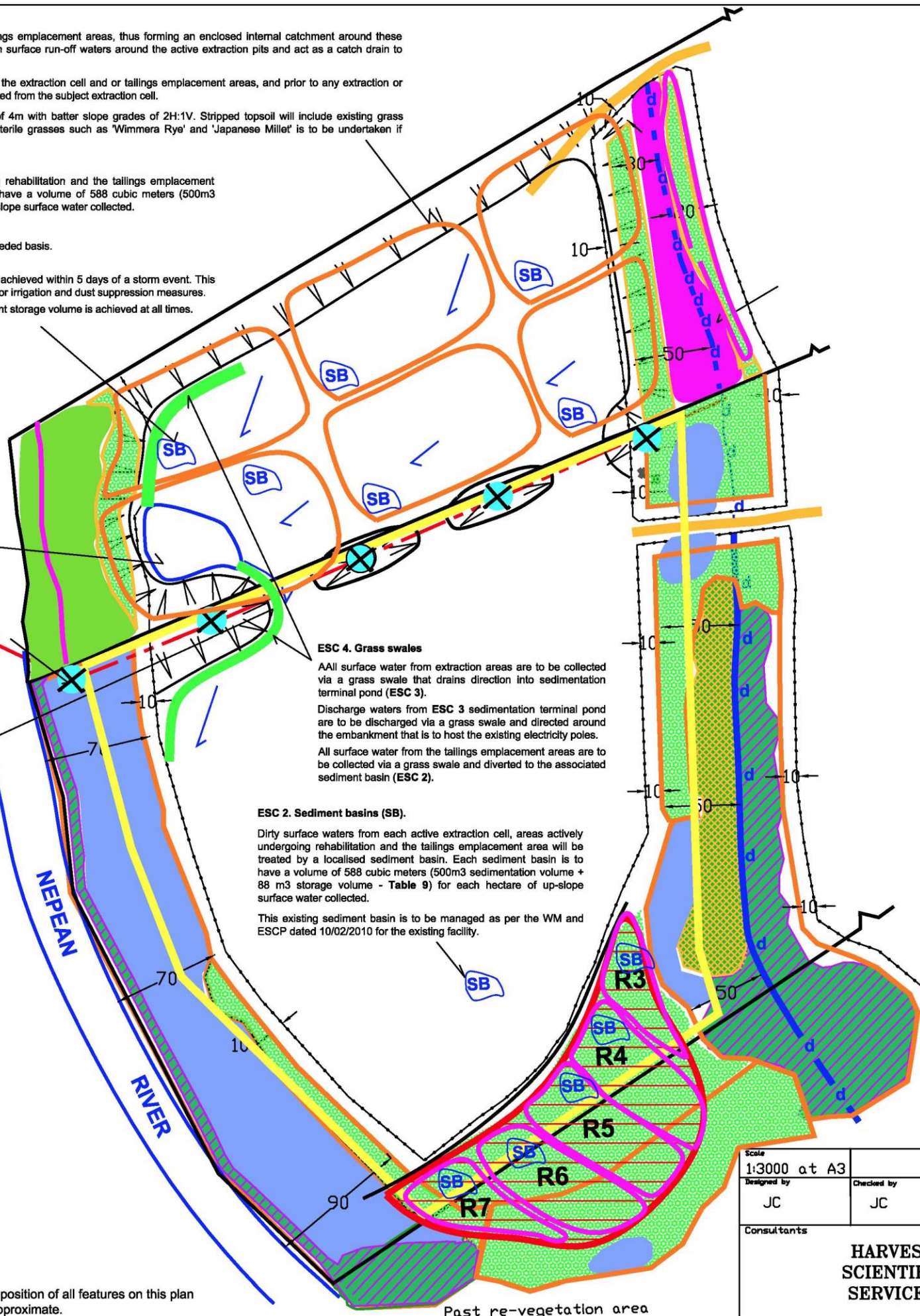
ESC 2. Sediment basins (SB).

Dirty surface waters from each active extraction cell, areas actively undergoing rehabilitation and the tailings emplacement area will be treated by a localised sediment basin. Each sediment basin is to have a volume of 588 cubic meters (500m3 sedimentation volume + 88 m3 storage volume - **Table 9**) for each hectare of up-slope surface water collected.

This existing sediment basin is to be managed as per the WM and ESCP dated 10/02/2010 for the existing facility.

Notes:

1. The position of all features on this plan is approximate.



ESC 5. Sequence of works.

Extraction is to be subject to the following controls:

- Before any work commences ensure plans are on hand and all equipment and materials likely to be required are available for use;
- Install sediment fencing where there is a risk of soil loss;
- Construct **ESC 3 Sedimentation Terminal Pond** at the first stage of construction. As extraction progresses, divert all surface water from the entire extraction area to **ESC 3** via constructed grassed swales (**ESC 4**).
- Construct sediment basins for the subject cell and perimeter bunds for the subject cell prior to extraction of the cell. Divert internal runoff to the sediment basin via construction of earth bunds;
- Ensure slopes of embankments (batters) are stable to prevent collapse of banks during operations; and
- Areas containing planted vegetation and grasses (such as bunds) are to be watered regularly and monitored until an effective cover has been properly established.

Tailings emplacement is to be subject to the following controls:

- Before any work commences ensure plans are on hand and all equipment and materials likely to be required are available for use;
- Install sediment fencing where there is a risk of soil loss;
- Construct **ESC 2 Sediment basin** at the first stage of construction. As tailings placement progresses, divert all surface water from the new emplacement area via a constructed grassed swale/s (**ESC 4**).
- Construct sediment basins for the subject cell and perimeter bunds for the subject cell prior to tailings emplacement with the cell. Divert internal runoff to the sediment basin via construction of earth bunds;
- Ensure slopes of embankments (batters) are stabilised; and

Areas containing planted vegetation and grasses (such as bunds) are to be watered regularly and monitored until an effective cover has been properly established.

ESC 6. Other controls

Details of the various controls required are outlined below.

- Sediment fencing will be installed at locations down-slope of disturbed areas where there is a risk of sediment losses;
- Install straw bale filters in areas of concentrated flows (i.e. within grassed swales).
- Access for contractor vehicles and equipment during construction of basins and bunds is to be restricted to a defined path;
- Vehicles will exit the site via a wheel wash; and

Grass Filter strips (preferably at least 5 metres wide) of retained vegetation are to be maintained where possible on the down-slope side sediment basins, bund construction activities and roads.

ESC 7. Site monitoring and maintenance

The Environmental Management Representative (EMR) or nominated person is expected to inspect the site each work day, paying particular attention to:

- Ensuring that bunds and basins are operating effectively (i.e. no breaching), and carry out any necessary repairs;
- Removal of trapped sediment from sediment basins, sediment fences, bunds and other structures. Remove sediment from basins when their capacity is reduced by 30% and spread this sediment over rehabilitating areas (upslope of basin). Flocculant can be used on basins if required, apply gypsum evenly over water surface at a rate of 0.32kg/cubic metre of water; and
- Any remedial works carried out on sedimentation control structures and any diminished sediment retention basin capacity will be noted by the EMR in the site diary.

Scale 1:3000 at A3	Date Drawn 20/04/2012		Job No 201279	File name	Lot No
Designed by JC	Checked by JC				
Consultants HARVEST SCIENTIFIC SERVICES			Project M Collins Sand and Soil EIA		
			Client M Collins and Sons Pty Ltd (Contractors)	Council Camden	

Plan 3
Extraction and
rehabilitation staging
plan

LEGEND

- Staging boundary
- Trees to be removed
- Powerpole
- Catch drain
- Intermittent drainage line
- Sediment basin
- Existing vegetation associated with the dry river anabranch located on Lot 32
- Riparian vegetation on Lot 32 associated with the Nepean River
- Past re-vegetation area/s
- High resilience natural vegetation GCB (2008) (with seed infestation)
- Medium resilience natural vegetation GCB (2008) (with seed infestation)
- Open Paddock Rehabilitation
- Soil processing and handling area
- Scarcely vegetated area
- Screen plantings
- Current Extraction Area – Lot 32
- Extraction Area – Lot 22
- Existing internal fence-line
- Property boundary
- Proposed extraction boundary (Lot 32)
- Approved extraction boundary - NDH 22/05/2009
- Aboveground powerlines
- Sediment Pond

Notes:
1. The position of all features on this plan is approximate: and
2. Aerial photo is from 23/02/2018

YEAR	REHABILITATION CELLS	EXTRACTION CELLS
2015	R1	E1
2016	R2	E2
2017	R3	E3
2018	R5	E5
2019	R7	E7 (extraction complete)
2019	R8 (rehabilitation complete)	
2020	Maintenance R6 and R7	
2021	Maintenance R6 and R7	

Scale 1:3000 at A3													
Designed by MR		Checked by MR		Date Drawn 26/02/2018		Job No 201279		Planner		Lot No			
Consultants HARVEST SCIENTIFIC SERVICES						Project M Collins Sand and Soil EIA							
						Client M Collins & Sons Holdings PtyLtd						Council Camden	

		<p>the site affected by flood.</p> <p>After a flood event the following procedures will occur:</p> <ul style="list-style-type: none"> • EMR is to check the integrity of all erosion and sediment control devices and ensure that any repairs are undertaken as soon as practical; • As soon as practical drain water from any permanent equipment affected by flood waters and then service equipment, as appropriate; and • Before commencement of operations; <ul style="list-style-type: none"> ○ Wait for flood waters to seep away from the extraction pits and processing areas; and ○ Remove sediment from sediment basins to ensure that the minimum required storage capacity is available. 	
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11.2 Emergency contact details

Table 8 outlines emergency contact details and is to be maintained by the EMR.

Table 8. Emergency contact details			
Service required	Company	Contact name	Phone number
EMR (p)	MCS	Mr alan seidenkamp	0401 142 687
Police			000
Fire Brigade			000
Ambulance			000
Report Environmental Incident	EPA Pollution Line		131 555
DOI Incident or Injury	NSW Department of Industry	Hotline	1300 814 609
Environmental Consultant	Harvest Scientific Services Pty Ltd	Mr Mart Rampe	02 4647 6177 0408 677709
WIRES			1800 641 188
Waste services	Thiess		02 46 771910
Sydney Water Service Centre			132 090
Energy Australia			131 388
AGL			131 003
Endeavour Energy			131 081
Telstra			132 203

11.3 Emergency equipment requirements and storage locations

Table 9 outlines the locations of emergency response equipment.

Table 9: Emergency equipment requirements		
Name of equipment	Storage location	Comment
Spill kit	On each refuelling unit.	Instructions for use must be provided with kit.
Fire extinguisher/s	On each piece of onsite equipment.	To be maintained in satisfactory working order to AS2444.
Eye Wash	At the mixing and storage site	Maintain in satisfactory working order to AS4775.
First Aid (Kits and personnel)	Mobile Plant, weighbridge and Maintenance Shed on site	First Aider on site with valid HLTAID003 qualification. Access to First Aid Supplies. Kits to be maintained to First Aid in the Workplace COP

11.4 Environmental incidents and response

A pollution incident is defined as:

‘an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur....’ (POEO Act).

The above definition has been adopted for the purposes of this EMP. The proposed response to an environmental incident is as outlined below:

- Follow on site Pollution Incident Response Management Plan (MP22 PIRMP) Appendix 14;
- EMR to ensure site safety, move people from immediate areas where safety is a concern;
- EMR to take any practical steps to contain the hazard and prevent it from spreading;
- EMR to notify the Production Manager, the Director of MCS and if necessary, the relevant authority;
- If necessary, the EMR is to decide in consultation with the Director of MCS and the relevant authority how to clean up and remediate the site; and
- The EMR is to complete an environmental incident report form (Appendix 11).

Once completed, if the environmental incident is deemed (by the EMR) to be a threat to the environment, then a copy of the incident report form must be forwarded to Camden Council and DPE.

11.5 Criteria for notifying EPA

The criteria to notify the EPA Regional Manager (or the EPA Pollution Line on telephone 131 555 outside normal business hours) of pollution incidents on or around the site are triggered when:

- The actual or potential harm to the health or safety of human beings or ecosystems is not trivial; and
- Actual or potential loss of property or property damage (including clean-up costs) associated with a pollution incident exceeds \$10,000.

The above criteria is based on s147 of the *Protection of the Environment Operations Act 1997* (NSW).

11.6 Incident reporting

As required by the conditions of consent outlined in Appendix 4, within 7 days of detecting an exceedance of goals/limits/performance criteria of this EMP or an environmental incident (as defined in Section 11.4), MCS shall report the exceedance to the DPE and Camden Council. The report shall:

- describe the date, time and nature of the exceedance/incident;
- identify the cause (or likely cause) of the exceedance/incident;
- describe what action has been taken to date; and
- describe the proposed measures to address the exceedance/incident.

11.7 Community awareness

Through its web site <https://www.mcollins.com.au>, MCS has established a prominent public presence regarding its Spring Farm operations. Furthermore, it has a Complaint Hot Line which is also available to the public. In addition, it has long supported the Camden Show as a sponsor and is therefore a highly visible local business.

Consideration has now been given to holding a public open day, where members of the public will be invited to attend the site and view directly the nature and scale of the operations.

12.0 COMPLAINTS

12.1 Complaints register

A telephone complaints line has been established to receive any complaints from members of the public in relation to this site. Details of the complaints line are detailed as follows:

COMPLAINTS TELEPHONE LINE:
Environmental Management Representative
Mr Alan Seidenkamp
4658-1666 or 0401 142 687

12.2 Complaints response protocol

If a complaint is received the following procedures are to be followed:

- Details of the complaint are to be recorded by the EMR in the complaints register (Appendix 10) and the complainant is to be advised verbally that the matter will be investigated by MCS in accordance with the Environmental Management Plan for the operation;
- The EMR is investigate the complaint and to liaise with the complainant to attempt to resolve the complaint. Where necessary, the EMR will make appropriate changes to onsite management practices/procedures to resolve the complaint;
- If, through a subsequent investigation, the EMR becomes aware of an environmental incident (as defined in Section 11.4 of this EMP), then Camden Council and DPE are to be notified in writing at the first available opportunity;
- If the criterion outlined in Section 11.5 of this EMP is met, then the EPA is to be notified at the first available opportunity;
- If the dispute is resolved, the agreed outcome is to be documented (in writing) and forwarded to the complainant, Camden Council, the EPA and the DPE;
- If the dispute is not resolved, the DPE, EPA and Camden Council are to be advised in writing and the complaints resolution process as outlined in Appendices 3 and 4 of this EMP are to be implemented;
- If directed by the DPE, EPA or Camden Council, MCS will contract the services of an independent consultant to review the specific details of the complaint and make appropriate commitments to resolve the matter; and
- At closure of the complaint resolution process, the following information will have been recorded:
 - a. Date of complaint;
 - b. Name of complainant;
 - c. Contact details of complaint (if supplied);
 - d. A record of notification of Camden Council, EPA and DPE;
 - e. A summary actions taken to address the subject matter of the complaint;
 - f. Investigation outcomes; and
 - g. A record of notification of the complainant of the investigation outcomes.

Records will be kept for at least 4 years after the complaint was registered.

13.0 OTHER MCS DOCUMENTS

This EMP is linked to other related documents held by MCS including:

- Work Health & Safety manuals; and
- Quality Control and Quality Assurance documentation.

14.0 REVIEW

This EMP is to be reviewed annually in conjunction with the AEMR and if necessary, the strategies, plans, and programs required under the consent approval are to be amended to the satisfaction of the Director General (DPE) or additionally within three months of:

- (a) The submission of an incident report under Condition 3 (Schedule 5);
- (b) The submission of an Audit Report under Condition 5 (Schedule 5); and
- (c) Any modification of the conditions of this approval; or
- (d) On an as needed basis under the approval process.

Updates of this EMP will be supplied to all persons listed in the document register at the beginning of this EMP.

Should MCS be made aware of any non-compliance issues related to the Spring Farm operations, it will act immediately to rectify said non-compliance and report the matter to the DPE.

15.0 LIMITATIONS OF THIS EMP

In preparing this EMP, HSS has relied upon certain verbal information and documentation provided by the client and/or third parties. HSS did not attempt to independently verify the accuracy or completeness of that information. To the extent that the conclusions and commitments in this report are based in whole or in part on such information, they are contingent on its validity. HSS assume no responsibility for any consequences arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to HSS.

The application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. The client agrees that such events are possible but nevertheless accepts the risk that they pose.

This EMP is limited on the basis that it has been prepared on behalf of MCS on a best endeavours basis. On acceptance of this EMP, MCS agrees to maintain and update this document on a continual basis and at the same time correct it for any deficiencies, whether they are related to technical, legislative or regulatory issues.

This report has been prepared by:



Mart Rampe BSc(Applied Geology)
Principal Environmental Consultant
6th May 2019

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This report was prepared in accordance with the scope of services set out in the contract between HSS and the client, or where no contract has been finalised, the proposal agreed to by the client. To the best of our knowledge the report presented herein accurately reflects the client’s intentions when it was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document.

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PLANS

APPENDIX 1

WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL PLAN (WM & ESCP)



**Planning &
Environment**

Planning Services

Resource Assessments

Contact: Jack Murphy

Phone: 8217 2016

Email: jack.murphy@planning.nsw.gov.au

Ms Emma Collins
M Collins and Sons Holdings Pty Ltd
1/49 Smeaton Grange Road
Smeaton Grange NSW 2567

Email: ecollins@mcollins.com.au

Dear Ms Collins,

**Spring Farm Quarry (DA 75/256)
Water Management Plan**

I refer to your email dated 27 February 2019, submitting the revised Water Management Plan for approval.

The Department has reviewed this plan and considers that it meets conditions 12 to 16 of Schedule 3 of DA 75/256. Consequently, the Secretary has approved this plan.

Please ensure a finalised copy of this plan is made available on the company's website.

Should you have any enquiries in relation to this matter, please contact Jack Murphy.

Yours sincerely,

Howard Reed *27.2.19*
Director
Resource Assessments
As nominee of the Secretary



Harvest Scientific Services Pty Ltd
Geotechnical Environmental & Resource Consultants
ABN 43 132 363 289

**WATER MANAGEMENT
(Incl. GROUNDWATER ASSESSMENT)

AND

EROSION AND SEDIMENT CONTROL PLAN**

**Lot 32 DP 635271 and Lot 22 DP 833317
Macarthur Road, Elderslie**

Prepared for:

M Collins and Sons Holdings Pty Ltd

Job Reference 75/256/4

11 December 2018

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Revisions register

Revision No	Date	Details
1	02/2010	Submitted to DPE February 2010
2	05/07/2011	Draft document.
3	13/07/2011	Draft document.
4	25/07/2011	<ul style="list-style-type: none"> Report finalised.
5	19/12/2011	Report revised. Revisions as follows: <ul style="list-style-type: none"> Site water balance section updated. Updated groundwater assessment section. Terminal sedimentation pond sizing adjusted to match Maximum Harvestable Right Dam Capacity (MHRDC), as outlined in Water Balance section.
6	16/02/2012	Revisions as follows: <ul style="list-style-type: none"> Various typographical changes Updated groundwater assessment section Various changes to Figure and Table numbering.
7	20/04/2012	Various typographic revisions Revisions to Figures 2, 3, 4, and 8.
8	24/04/2013	<ul style="list-style-type: none"> Updated Figure 3 as per EA (mod 3) Submitted final for approval to DPE, Camden Council and DPIW
	8/10/2013	<ul style="list-style-type: none"> Approval received from Camden Council and DPIW
9	12/07/2016	Report revised. Revisions as follows; <ul style="list-style-type: none"> Updated Table 1 to include rainfall source Updated 4.5 water management, storage and access section Updated 4.7 Reporting procedures Updated Table 4 historical data march 2009 – April 2016, figures adjusted accordingly to samples collected and duration period. pH triggers added Updated Table 6 Groundwater monitoring protocol to include pH monitoring Updated Table 7 to include pH Trigger values Updated 5.2.5 to include investigation process for triggered results
	14/7/2016	Submitted to DPE (Tertius Greyling, Chase Dingle, Lauren Evans) Howard Reed Director General for Approval
10	10/10/2016	Revisions as follows DPE Post Approval Attachment A recommendations dated 31 st August 2016; <ul style="list-style-type: none"> Updated Revision Register including consultation Added abbreviations DPE, DPIW, WA (2000) Updated all references to outdated government agencies Updated Table 1 Updated Section 4.3 removal of comments regarding licence transition Updated Section 4.6 – off site water transfer included Replaced illegible figures (Figures 2-7)

		<ul style="list-style-type: none"> • Section 6.3 updated to include activities that could cause soil erosion and generate sediment • Table 8 updated to include soil erosion in potential contaminant sources and source 5. River bank. • Section 5.2.5 updated to reflect implemented controls based on recommendations • Updated Figure 6 plan to include all three groundwater monitoring locations as the Mod 3 EA • Table 4 typographical error corrected – acidic • Table 7 investigation trigger range amended to <4 and >6.5 • Added monitoring program for inflows to Section 5.2.5 • Added inflows to Table 6 • Added 'no operational water storage to Section 6.4.6 • Added Appendix 5 • Added further details to Section 7 Flood Emergency
11	30/5/2018	Camden Council Consultation - Referral of Collins Spring Farm- Water management Plan to Camden Council - see Appendix 5.
12		DPI Consultation regarding Bore license– letters from John Galea and MJC – see Appendix 5.
13	11/12/2018	Updated to include Modification 4 Approval – Extension to quarry life to June 2021 – see Appendix 6.

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Abbreviations

DA	Development Application
ECP	Erosion Control Protocol
EMR	Environmental Management Representative
ESCP	Erosion and Sediment Control Plan
DPE	Department of Planning and Environment
DPIW	Department of Primary Industries Water
NorBE	Neutral or Beneficial Effect
PET	Potential Evapo-transpiration
SQMR	Stormwater Quality Modelling Report
SREP 20	State Regional Environmental Plan 20 – Hawkesbury Nepean River
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
WA (1912)	Water Act (NSW) 1912
WA (2000)	Water Act (NSW) 2000
WM & ESCP	Water Management (incl. groundwater) and Erosion and Sediment Control Plan
WSPs	Water Sharing Plans
WSPGMRGS	WSP's for the Greater Metropolitan Region Groundwater Sources (WSPGMRGS)
WSPGMRURWS	WSP's for the Greater Metropolitan Region Unregulated River Water Sources

1. INTRODUCTION

M Collins and Sons Holdings Pty Ltd (MCS) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The quarry is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 MCS was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

On the 25th October 2012 MCS Pty Ltd was granted a further modification under Section 75W of the Environmental Planning and Assessment Act (1979) (NSW) to extend sand and soil extraction activities onto an adjacent portion of land within Lot 32 DP 635271. The extension of extraction activities consist of the following features:

- Extraction of sand and soil within a 6.8 hectare (approximate) portion of land within Lot 32 DP 635271.
- Dry screening of sand and soil within the quarry floor on Lot 22 DP833317;
- Active extraction within Lot 32 DP635271 on one (1) hectare portion of land at a time and concurrent rehabilitation works within an additional 1 hectare portion of land.
- On Lot 22 DP833317 permission exists to open and work five hectares at one time;
- Extraction and rehabilitation works are proposed to occur in concert over an 8 year period from commencement of extraction (completion in 2019); and
- Rehabilitation maintenance activities are proposed to occur over an additional 2 year period.

On 2 August 2018 MCS was granted a further modification under Section 75W of the Environmental Planning and Assessment Act (1979) NSW to extend current approved activities under Quarry consent (DA 75/256) Lot 22 (No. 186) DP 833317 and Part Lot 32 (No. 172) DP 635271. This Approval enabled the extension of Quarry life from 30 June 2019 to 30 June 2021.

Harvest Scientific Services Pty Ltd (HSS) was engaged by MCS to review and update the Water Management and Erosion and Sediment Control Plan (WM & ESCP) following the Modification 4 Approval specific requirements are as follows;

- Site Water Balance;
- Erosion and Sediment Control Plan;
- Groundwater Monitoring Program; and,
- Flood Emergency Procedures Plan.

2. RELEVANT LEGISLATION

The two key pieces of legislation for the management of water in NSW are the *Water Management Act 2000* and the *Water Act 1912*. Both of these pieces of legislations are administered in NSW by the NSW Department of Industries (DPIW).

2.1. Water Management Act 2000 (WMA 2000)

After an extensive period of public consultation, the *Water Management Act 2000* was passed by the NSW Parliament in December 2000, establishing a complete new statutory framework for managing water in NSW.

The *Water Management Act 2000* is based on the concept of ecologically sustainable development which requires that development today that will not threaten the ability of future generations to meet their needs. The NSW Office of Water (NSW Government, 2012a) states that the Act recognises that:

- the fundamental health of our rivers and groundwater systems and associated wetlands, floodplains, estuaries has to be protected
- the management of water must be integrated with other natural resources such as vegetation, soils and land

- to be properly effective, water management must be a shared responsibility between the government and the community
- water management decisions must involve consideration of environmental, social, economic, cultural and heritage aspects
- social and economic benefits to the state will result from the sustainable and efficient use of water

The objectives of the Water Management Act 2000 (WMA 2000), as stated by the Act, are to *'provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations and, in particular:*

- *to apply the principles of ecologically sustainable development, and*
- *to protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality, and*
- *to recognise and foster the significant social and economic benefits to the State that result from the sustainable and efficient use of water, including:*
 - *benefits to the environment, and*
 - *benefits to urban communities, agriculture, fisheries, industry and recreation, and*
 - *benefits to culture and heritage, and*
 - *benefits to the Aboriginal people in relation to their spiritual, social, customary and economic use of land and water,*
- *to recognise the role of the community, as a partner with government, in resolving issues relating to the management of water sources,*
- *to provide for the orderly, efficient and equitable sharing of water from water sources,*
- *to integrate the management of water sources with the management of other aspects of the environment, including the land, its soil, its native vegetation and its native fauna,*
- *to encourage the sharing of responsibility for the sustainable and efficient use of water between the Government and water users,*
- *to encourage best practice in the management and use of water.'*

The principles as set out in s5 of the WMA (2000) are as follows:

'(2) Generally:

- (a) water sources, floodplain and dependent ecosystems (including groundwater and wetlands) should be protected and restored and, where possible, land should not be degraded, and*
- (b) habitats, animals and plants that benefit from water or are potentially affected by managed activities should be protected and (in the case of habitats) restored, and*
- (c) the water quality of all water sources should be protected and, wherever possible, enhanced, and*
- (d) the cumulative impacts of water management licences and approvals and other activities on water sources and their dependent ecosystems, should be considered and minimised, and*
- (e) geographical and other features of indigenous significance should be protected, and*
- (f) geographical and other features of major cultural, heritage or spiritual significance should be protected, and*
- (g) the social and economic benefits to the community should be maximised, and*
- (h) the principles of adaptive management should be applied, which should be responsive to monitoring and improvements in understanding of ecological water requirements.*

(3) In relation to water sharing:

- (a) sharing of water from a water source must protect the water source and its dependent ecosystems, and*
- (b) sharing of water from a water source must protect basic landholder rights, and*
- (c) sharing or extraction of water under any other right must not prejudice the principles set out in paragraphs (a) and (b).*

(4) In relation to water use:

- (a) water use should avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land should be rehabilitated, and*

- (b) *water use should be consistent with the maintenance of productivity of land in the long term and should maximise the social and economic benefits to the community, and*
- (c) *the impacts of water use on other water users should be avoided or minimised.*
- (5) *In relation to drainage management:*
 - (a) *drainage activities should avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land should be rehabilitated, and*
 - (b) *the impacts of drainage activities on other water users should be avoided or minimised.*
- (6) *In relation to floodplain management:*
 - (a) *floodplain management must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and*
 - (b) *the impacts of flood works on other water users should be avoided or minimised, and*
 - (c) *the existing and future risk to human life and property arising from occupation of floodplains must be minimised.*
- (7) *In relation to controlled activities:*
 - (a) *the carrying out of controlled activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and*
 - (b) *the impacts of the carrying out of controlled activities on other water users must be avoided or minimised.*
- (8) *In relation to aquifer interference activities:*
 - (a) *the carrying out of aquifer interference activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and*
 - (b) *the impacts of the carrying out of aquifer interference activities on other water users must be avoided or minimised.*

Because of the major changes required by the legislation, the Act has been progressively implemented. Since 1 July 2004 the new licensing and approvals system has been in effect in those areas of NSW covered by operational water sharing plans – these areas cover most of the State's major regulated river systems and therefore the largest areas of water extraction. As water sharing plans are finalised and commenced for the rest of the state, the licensing provisions of the Act are introduced extending the benefits for the environment of defined environmental rules and for licence holders of perpetual water licences and greater opportunities for water trading. Since the legislation was passed in 2000, some amendments have been necessary to better implement the new arrangements and also give effect to the National Water Initiative signed on 25 June 2004, including creation of perpetual or open-ended water licences. The Act was also amended in 2008 to strengthen compliance and enforcement powers in response to water theft. The latest copy of the Water Management Act (NSW Government, 2012b) is available from the NSW government legislation site.

2.2 Water sharing plans the Greater Metropolitan Region Groundwater Sources (WSPGMRGS) and the Greater Metropolitan Region Unregulated River Water Sources (WSPGMRURWS)

The *Water Management Act 2000* was driven by the need for NSW to secure a sustainable basis for water management for several reasons:

- NSW was at the limits of its available water resources – new licences for commercial purposes could no longer be issued across most of NSW and a limit had been placed on the total volume of water that can be extracted across the inland of NSW under the Murray–Darling Basin Cap
- The decline in the health of our rivers, groundwater, floodplains and estuaries was being seen through increasing water quality problems, loss of species, wetland decline and habitat loss.

As a result the *Water Management Act 2000* recognises the need to allocate and provide water for the environmental health of our rivers and groundwater systems, while also providing licence holders with more secure access to water and greater opportunities to trade water through the separation of water licences from land. The main tool the Act provides for managing the State's water resources are water sharing plans. These are used to set out the rules for the sharing of water in a particular water source between water users and the environment and rules for the trading of water in a particular water source.

On 01 July 2011, the Water Sharing Plans (WSP's) for the Greater Metropolitan Region Groundwater Sources (WASPGMRGS) and the Greater Metropolitan Region Unregulated River Water Sources (WSPGMRURWS) commenced, giving effect to the licensing provisions of the Water Management Act 2000 (NSW) (WMA, 2000) in the plan area.

2.2. Water Act 1912 NSW

The *Water Act 1912* came into force at the turn of the last century and represented a different era in water management in NSW. This Act has been progressively phased out and replaced by the *Water Management Act 2000*, but some provisions are still in force (NSW Government, 2012b).

A copy of the *Water Act 1912* is available from the NSW's Government legislation website (NSW Government, 2012).

3. SITE CHARACTERISTICS AND CONSTRAINTS

3.1. Site location

MCS owns and operate the Spring Farm sand and soil quarry located at Lot 22 (DP833317) and Lot 32 (DP653271) at Spring Farm, in the Camden Local Government Area (LGA). These operations are accessed via Macarthur Road, Spring Farm (see Figures 1 and 2).

The proposed final landform and extraction and rehabilitation staging are depicted on Figures 3 and 4 respectively.

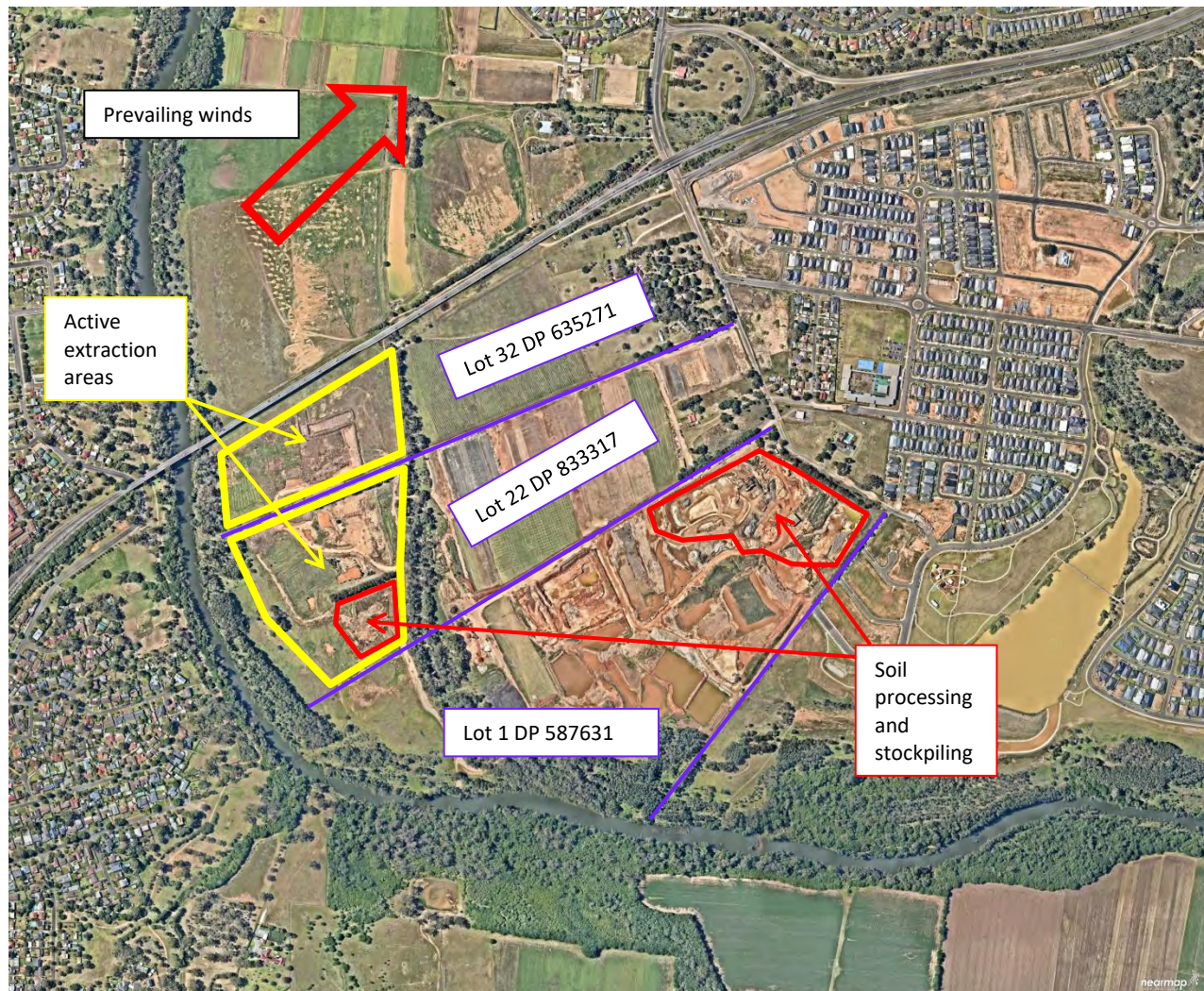


Figure 1. Location of Sand and Soil Extraction and Processing Operations

3.2. Drainage patterns

Surface water run-off within the extraction area predominantly drains to the west directly into the Nepean River. A minor portion of the subject land drains to the east toward a Dry River Anabranch, which in turn drains into the Nepean River.

3.3. Slope

The slope of the existing land surface within the major portion of the proposed extraction area is gently undulating and generally slopes within the range of 0 to 5 per cent.

Active extraction cells will have a slight slope on the quarry floor of approximately 1 to 2 per cent and working batters of approximately 30 per cent (i.e. 1V: 3H). Vegetation cover will vary subject to the stage of rehabilitation.

Post extraction, the landform in all open paddock areas is to be relatively flat, with a gentle slope of 1 to 5 per cent draining generally toward the south-west.

3.4. Soil landscape group

Based on the 1:100,000 Soil Landscapes of the Wollongong to Port Hacking map sheet (Hazelton and Tille, **1990**), the area where extraction is proposed belongs to the 'Theresa Park' Soil Landscape group.

Hazelton and Tille (1990) describe the Theresa Park Soil Landscape Group as a fluvial Soil Landscape Group occurring on floodplains with levees, meander scrolls and terraces with local relief up to 60m. Slopes are generally less than 5 per cent, except on edges of terraces where some slopes may exceed 10 per cent. Red earths and red podzolic soils occur on terraces and minimal prairie soils on current floodplain. Alluvial bedding is sometimes evident with alluvial soils. In drainage lines solodic soils occur. These soils are highly variable and include poorly structured orange to red silty loams, brown loams and sandy loams.

Hazelton and Tille (1990) define the main limitations of the 'Theresa Park' Soil Landscape Group to include localised flooding, seasonal water-logging and very high soil erosion hazard for concentrated flows.

Figure 2
Existing site layout

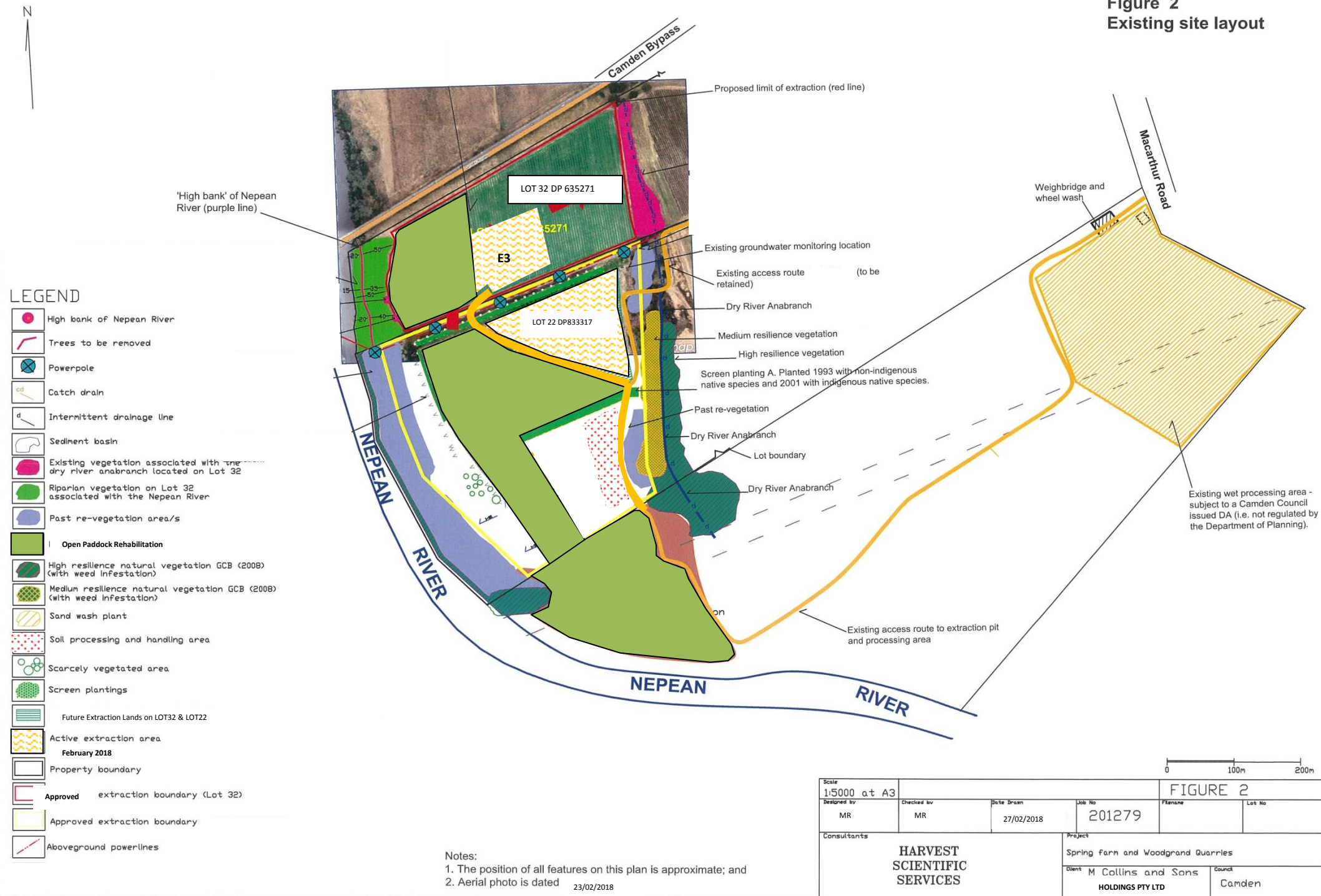


Figure 3
Final landform and
rehabilitation
management plan

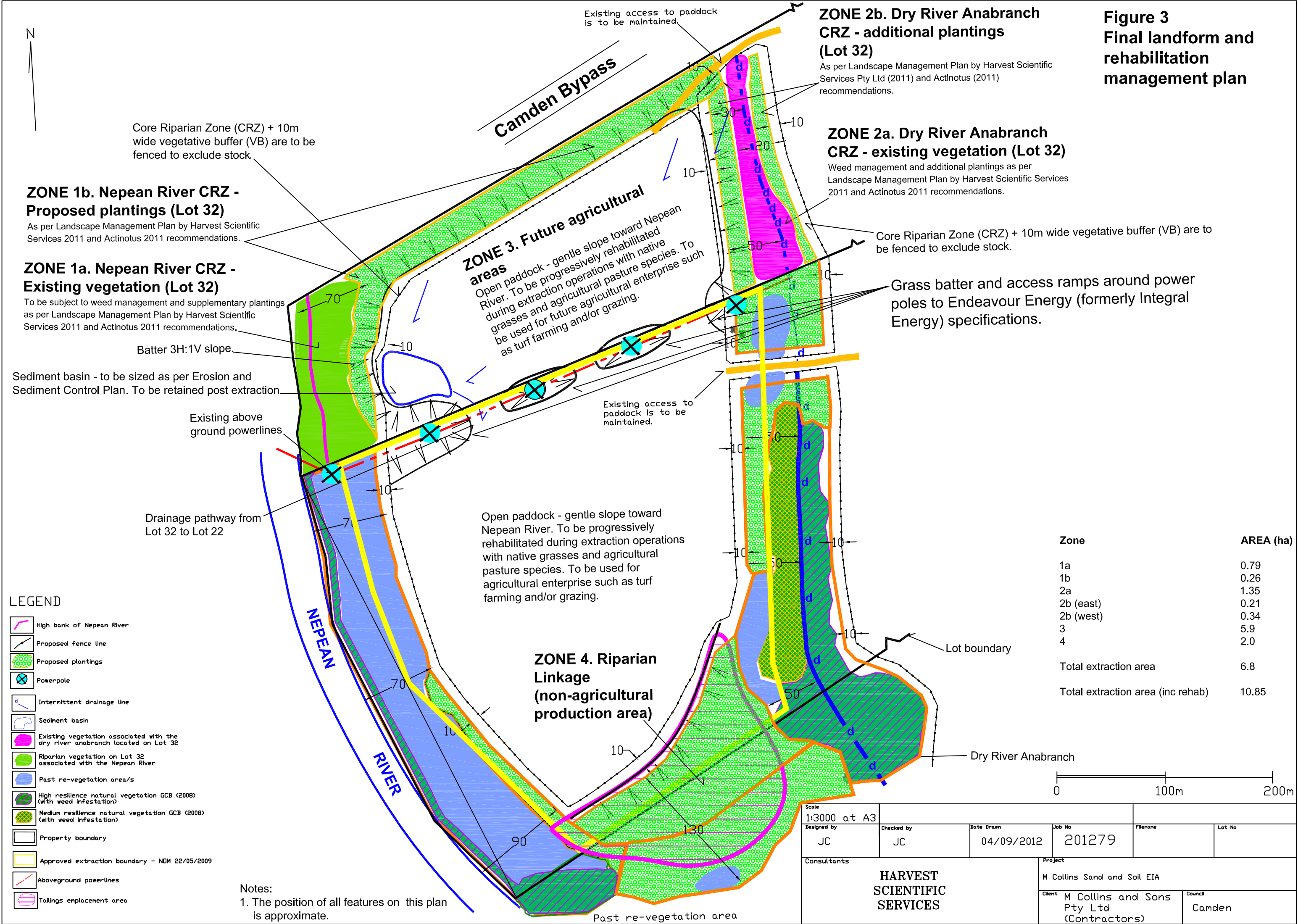


Figure 4: Extraction and Rehabilitation Staging Plan



4. SITE WATER BALANCE

4.1. Water sharing plans the Greater Metropolitan Region Groundwater Sources (WSPGMRGS) and the Greater Metropolitan Region Unregulated River Water Sources (WSPGMRURWS)

On 01 July 2011, the Water Sharing Plans (WSP's) for the Greater Metropolitan Region Groundwater Sources (WSPGMRGS) and the Greater Metropolitan Region Unregulated River Water Sources (WSPGMRURWS) commenced, giving effect to the licensing provisions of the Water Management Act 2000 (NSW) (Water Management Act NSW 2000) in the plan area.

The subject land falls within Sydney Basin Central Groundwater Source, for the WSPGMRGS, and the Camden Weir Management Zone and Mid Nepean River Catchment Management Zone, for the WSPGMRURWS.

Guidance information on the proposed controls within each of these management zones is appended as Appendix 2.

4.2. Maximum Harvestable Right Dam Capacity (MHRDC) and proposed sedimentation terminal pond

Based on the Maximum Harvestable Right Dam Capacity (MHRDC) calculator located on the Department of Primary Industries Water website (NSW DPIW, 2011), the project site has a MHRDC of 0.075 ML/ha, which equates to 1.32 ML for the approximate 17.7 hectare lot size.

The proposed terminal pond (Figure 3) is to be limited to the MHRDC size of 1.32 ML. As the terminal sedimentation pond is less than the MHRDC a Water Access Licence (WAL) is not required for this structure. This feature is proposed to be retained post extraction as a sediment trap for the post-extraction agricultural production areas.

Water is to be pumped from the terminal sedimentation pond and used for dust suppression purposes during the life of the extraction proposal and irrigation purposes post-extraction.

4.3. Sources and security of water supply

An annual total of 390.3 ML will be available for site operations from sources including river water from the Nepean River, bore water and surface water from the proposed terminal sedimentation pond. A breakdown of the various water sources is outlined in **Table 1**.

Table 1: Summary of available water sources and volumes.

Source	WAL WMA 2000	WMA 2000 Approval	Available Volume (ML)	Notes
Nepean River	10AL117216	10WA117217	41	River pump
	10AL117214	10CA117215	230	River pump
Groundwater	10AL117186	10CA117187	20	Bore pump (Lot 22 DP 833317)
	10AL109570	10CA109571	98	Bore pump (Lot 1 DP 587631)
Onsite terminal sediment basin	Exempt.	Exempt.	1.3	Based on MHRDC
Total			390.3	

The total available volume of water from the Nepean River is 271 ML per annum which is to be sourced from two existing licences under the Water Act 2000 (NSW) (WA, 2000). The Water Access Licences (WAL's) are administered by the NSW Department of Primary Industries Water (DPIW) under the Water Management Act NSW 2000 (WMA).

The total available volume of water from groundwater sources is 118 ML per annum which is to be sourced from two existing licences under the Water Act 2000 (NSW) (WA, 2000). The Water Access Licences (WAL's) are administered by the NSW Department of Primary Industries Water (DPIW) under the WMA (2000).

Approximately 1.3ML of surface water from the proposed onsite terminal sedimentation pond will also be available to supplement site water needs. As this volume is less than the Maximum Harvestable Right (MHR) for the site, a Water Access Licence is not required to utilise this water.

4.4. Site water use

MCS Pty Ltd currently utilise an annual total of 271 ML and a breakdown of the various water uses is outlined in **Table 2**. Industrial extraction uses include the water required by the sand wash-plant and for dust suppression purposes. Environmental uses include water utilised for establishment of re-vegetated areas. Agricultural use water was formerly utilised by turf farming operations which has been discontinued and replaced by agricultural activities.

Table 2. Summary of annual water uses and volumes.

Aspect	Available Volume (ML/annum)
Industrial (extraction) usage	139
Environmental and rehabilitation usage	16
Agriculture	116
Total	271

** Included for completeness for all approved activities to permissible extent. It is noted that (as at April 2017), whilst still approved, agricultural activities are not currently undertaken. Subsequently, 116ML of potential water source is not currently employed, effectively providing further conservative redundancy to the site water balance.*

The annual average usage is not anticipated to change as part of the extraction as the scale of the overall operation is not proposed to change. Water currently utilised on the existing MCS Pty Ltd site for a specific purpose (such as rehabilitation establishment) will be diverted to the adjacent site when it is no longer needed (such as when rehabilitation works are complete).

Given that a total of 390.3 ML per annum of water is available (**Table 1**) and the annual requirement is 271 ML (**Table 2**), ample water sources are therefore available for the proposed operations.

4.5. Water management, storage and access

Water is pumped directly from the Nepean River with two centrifugal pumps directly to the relevant area for use. Water from groundwater bores will be pumped directly to the relevant area for use via a standard bore pump that is to be installed on each bore.

Water may also be pumped from sediment basins with a fire-fighter pump and recycled onsite site on an as needed basis, such as for dust suppression purposes. Typically water is transported in a water cart but may be pumped locally via sprinklers.

4.6. Offsite water transfers.

The offsite water transfers are by evaporation, groundwater seepage, water loss in silt, river discharges. Annual site water balance (including location and capacity of water storage on site, pumped water consumption from the Nepean River, rainfall and evaporation, water usage, surface water) using analytical and numerical calculations, is recorded and reported within the AEMR to reflect annual operational change and off site water transfers. Water May only be discharged in accordance with the EPL.

4.7. Reporting procedures.

Water use records for water pumped from the Nepean River and groundwater are maintained onsite and are made available to the NSW Department of Industries, as requested, as per the water licence conditions.

4.8. Measures to minimise water use by the development

Water use is to be minimised by the following measures:

- Avoid over-application of water;
- Monitoring of the application of water to minimise run-off;
- Minimise the area of exposed surfaces; and
- Apply water on an as-needed basis.

4.9. Conclusion

With regard to site water balance it is concluded that:

- Ample water is available the proposed operations
- Provision of the water for this facility is consistent with the objectives of the Water Management Act (2000).

5. GROUNDWATER ASSESSMENT AND MANAGEMENT

5.1. Literature review

5.1.1. Regional groundwater regime

Douglas Partners (2004) performed a groundwater assessment for the Menangle Park Urban Release area, located in the Camden South area and Harvest Scientific Services Pty Ltd (2010) performed a groundwater assessment for a proposed sand and soil extraction operation located at Menangle Park (approximately 2-3 kilometres up-stream from the project site). Both study areas were located within a similar hydro-geological setting to the project site and both studies identified two distinct groundwater settings in the local area, which may be described as follows:

- Groundwater within unconsolidated Quaternary deposits of the Nepean River flood plain; and
- Groundwater within Wianamatta Group shales.

5.1.2. Unconsolidated sediments

The extraction is located within Quaternary Alluvium sediments associated with the Nepean River (**Sherwin and Holmes, 1982**). Groundwater flow in these sediments is dominated by porous flow in sandy horizons (**Douglas Partners, 2004**) and this groundwater regime may be further categorised based upon the following two groundwater regimes:

- **Permanent sediment hosted groundwater.** This is the deeper sediment hosted groundwater regime that is directly connected to the Nepean River. This groundwater regime is bound at its base by relatively impermeable clay and shale associated with underlying bedrock. Groundwater within this regime is free flowing and cannot be drained.

This groundwater regime is not proposed to be intercepted during the extraction proposal. This groundwater regime is protected by the provision of an appropriate buffer distance between extraction activities and the groundwater.

- **Perched sediment hosted groundwater.** This is shallower and intermittently sediment hosted groundwater. Groundwater within this regime may be derived from either accumulation above minor layers of relatively impermeable sediments and/or seepage from recent infiltration of rainwater. This groundwater regime is typically characterised minor seepage when intercepted rather than free flowing groundwater. This groundwater regime is typically contains a low salinity content.

The potential for this groundwater regime to exist within the investigation area was further assessed in the form of a field assessment (refer to Section 4.2 of this report for further details) and no evidence of perched or intermittent sediment hosted groundwater was identified within the investigation area.

5.1.3. Shale landscape groundwater regime

McNally (2005) describes some general features of the hydrogeology of Western Sydney which are relevant to the site. The shale terrain of much of Western Sydney is known for saline groundwater, resulting either from the release of connate salt in shales of marine origin or from the accumulation of windblown sea salt. This salt is concentrated by evapo-transpiration and often reaches highest concentrations in the B-horizon of residual soils.

McNally (2005) identified groundwater in the shale system to have the following general features:

- Shales are likely to have a very low intrinsic permeability and groundwater flow is likely to be dominated by fractured flow with a resultant low yield (typically < 1 L/s);
- Seasonal groundwater level changes of 1-2 m can occur in a shallow regolith aquifer or a deeper shale aquifer due to natural influences;
- Groundwater is likely to be hard saline water, with Total Dissolved Solids (TDS) typically in the range 4000–5000 mg/L, but with some cases of TDS up to 31750 mg/L have been reported; and
- The dominant ions are typically sodium and chloride and the water is generally unsuitable for livestock or irrigation.

Shales were identified to have a low intrinsic permeability and groundwater flow is likely to be dominated by fractured flow. Given that only quaternary sediments are proposed to be extracted as part of the extraction proposal, the deeper shale groundwater regime will not be impacted upon by the extraction proposal.

5.1.4. Nearby groundwater bores

Based on a review of records held by the NSW DPIW, the location of the nearby groundwater bores is presented on Figure 5. Details of each bore is summarised in Table 3.

Bores GW110586 and GW110587 are the closest bores to the extraction area and both are under the control of MCS. The standing water level in GW110587 is at 10.9 metres below ground level and will not be impacted upon by the extraction activities.

GW110586 is located in alluvial sediments approximately 1 kilometre away from the extraction area and is located sufficiently far away to not be impacted upon by the extraction proposal.

Table 3. Summary of nearby groundwater bores. Data supplied by the NSW DPIW.

Groundwater ID	Authorised purpose	Property	Standing water level (m)	Water bearing zones (m)
GW110586	Industrial – Sand and gravel, Irrigation	M Collins and Sons (Holdings) Pty Ltd	4.13	4.13 - 20.0
GW110587	Industrial – Sand and gravel, Irrigation	Spring Farm	10.90	10.90 - 24.0
GW026239	Irrigation	N/A	-	14.6 - 22.80
GW026523	Irrigation	N/A	-	17.3 - 21.20
GW108624	Domestic	Moushigian	22.0	120 - 120.25
GW026533	Irrigation / stock	N/A	-	17.3 - 21.20
GW100329	Domestic stock	Clinton	-	9.0 - 10.0 29.0 - 31.0
GW106446	Domestic	Neich	21	109 - 109.15 132 - 132.25

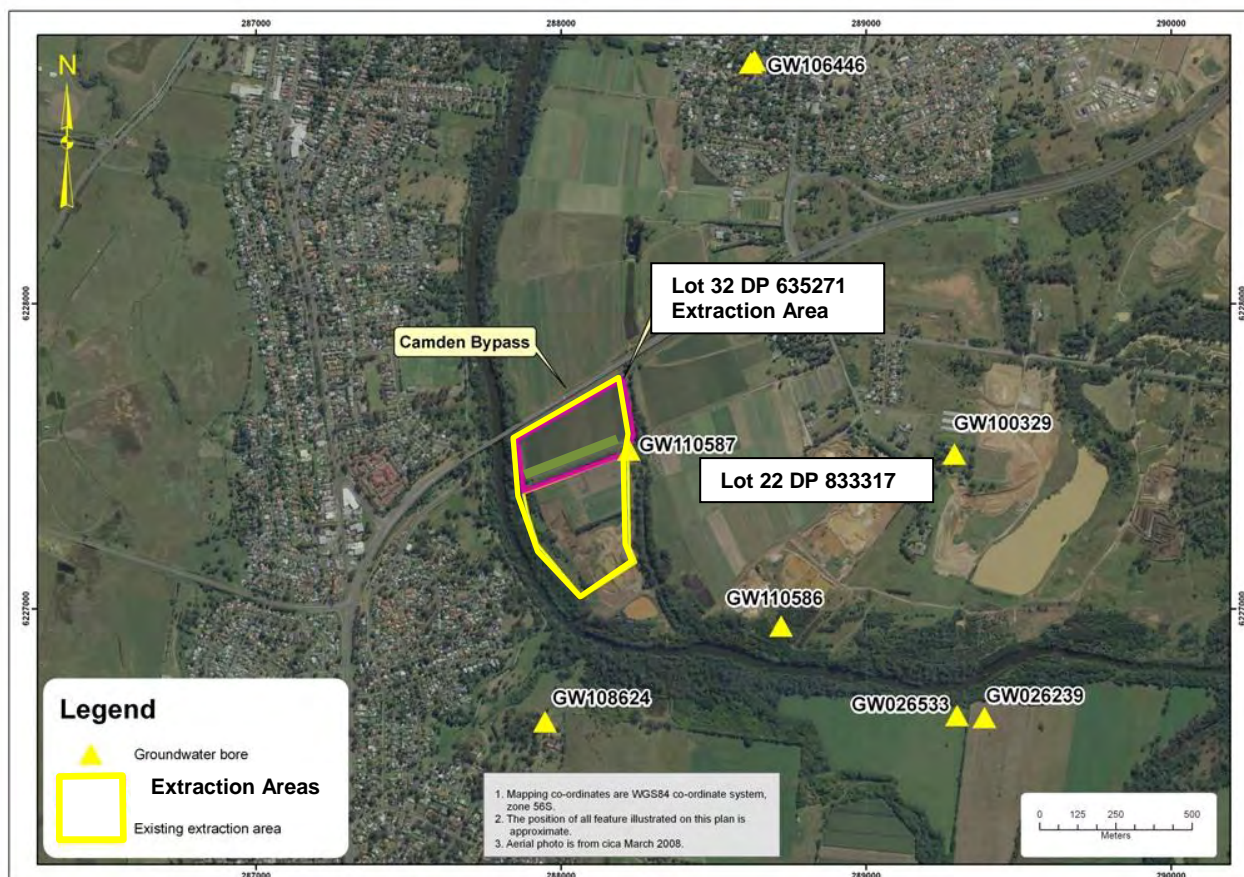


Figure 5. Nearby groundwater bores. Source NSW DPIW (2012)

5.1.5. Review of local groundwater regime and monitoring

M.P.A. Williams and Associated (1995) consulting geotechnical engineers prepared a detailed groundwater assessment for the adjacent soil pit located on Lot 22 DP 833317 in 1995. That assessment included a review of a separate groundwater assessment by **Johnstone Environmental Technology Pty Ltd (1995)** and historical test-pit and groundwater logs by **Longworth and McKenzies (1977)**.

With regard to groundwater conditions of the site, the assessment found the following:

- Boreholes within the proposed extraction pit but close to the Nepean River penetrated to a depth of up to 18 metres and at this depth fine to medium grained silty sand was present. These results suggest that close to the Nepean River, Quaternary deposits occur at a depth at least equal to the present river bed levels.
- Water is held in the Anabranh by low permeability underlying clays. As a result of the clays, shallow groundwater (~6 to 7 metres below ground level at the time of that assessment) occurs in the near vicinity to the Anabranh. Seepage losses through the clays associated with the Anabranh is likely to be very low, and it is probable that the major mechanism for water loss from the Anabranh is evaporation.
- The localised water table associated with the Anabranh falls away sharply to the west of the Anabranh (i.e. toward the Nepean River) and did not influence the area containing sands and silty clays where extraction was proposed and is now currently in progress.
- In the area where extraction was proposed (i.e. the sands and silty clays in the area between the Anabranh and the Nepean River), the watertable is likely to be a reflection of the river level. This is due to the likely connectivity of the Quaternary deposits with the present day river bed levels.

5.2. Groundwater assessment

In 2011, a further groundwater assessment was conducted by HSS. The area of investigation was located immediately adjacent to the study area of M.P.A. Williams and Associates (1995) – as described above. Local geological mapping indicated that the geological environment within both study areas was similar. The purpose of this groundwater assessment was to investigate the local groundwater regime in the context of the interpretation by M.P.A. Williams and Associated (1995).

5.2.1. Objectives

The objectives of this investigation were to:

- identify the likely groundwater impacts of the proposal;
- provide a schematic representation of the local sediment hosted groundwater regime in the context of the extraction proposal; and
- provide groundwater management recommendations to mitigate any potential groundwater impacts.

5.2.2. Methodology

This assessment consisted of the following:

- Testing pitting at 6 locations within the investigation area. Soil profile logs are appended as Appendix 1 and test-pit locations are depicted on Figure 6;
- Installation of 3 paired piezometers (by SMEC 2011) to a total depth of 9.5 meters along the northern boundary of the proposed extraction area. Measurement of groundwater depth by Harvest Scientific Services Pty Ltd. These piezometers are depicted as Location 1 (BH1 and BH2), Location 2 (BH3 and BH4) and Location 3 (BH5 and BH6) on Figure 6. Profile logs are appended as Appendix 1;
- A visual inspection of the existing operational quarry pit on Lot 22 DP 833317; and
- Interpretation of the field observations in the context of the existing literature relevant to the local groundwater and geological regime.

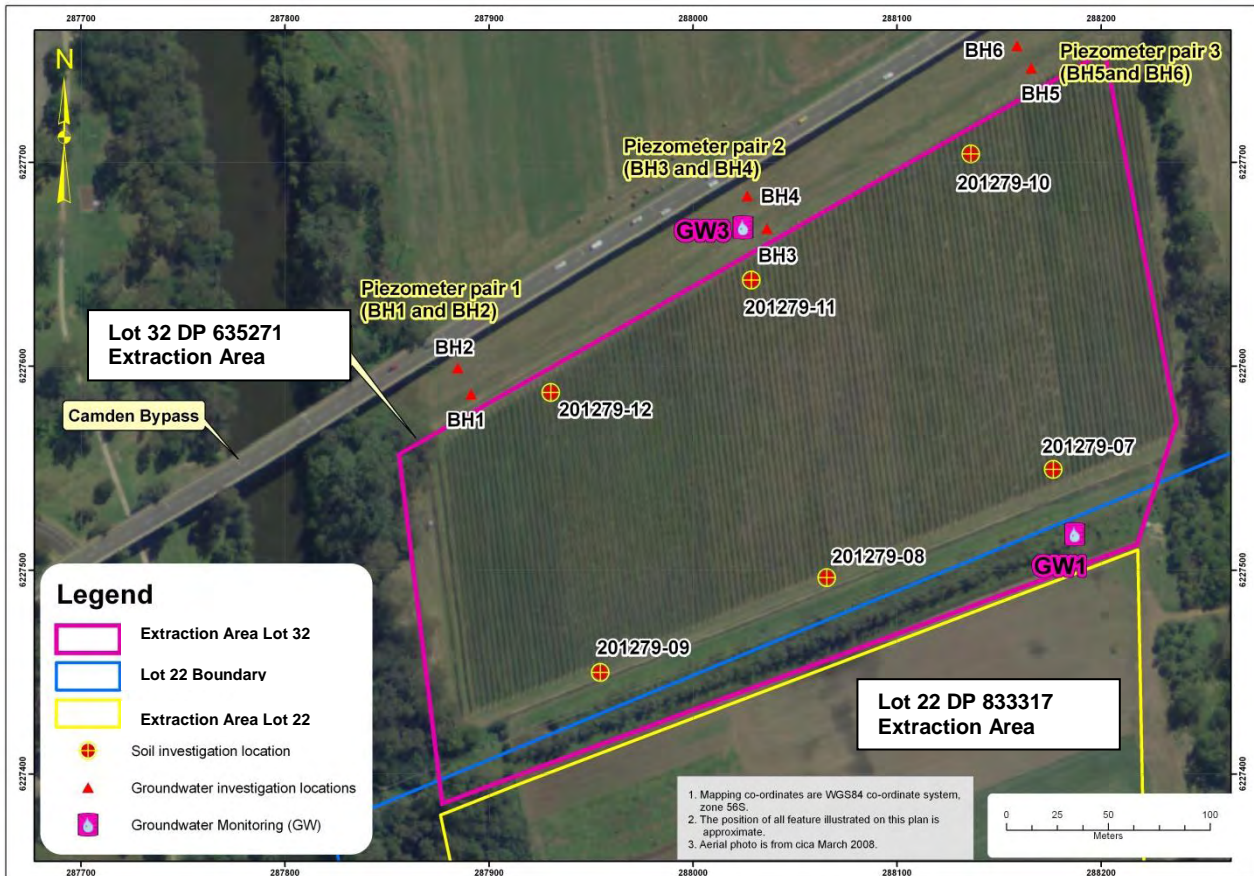


Figure 6. Groundwater investigation locations

5.2.3. Results

This assessment found the following:

Test-pitting

- Groundwater was not identified within any of the 6 soil test-pits that were excavated to approximately 5.5 to 6 metres below ground level (See soil profiles in Appendix 1). Some moisture was noted at location 201279-10 but this moisture was not free flowing or seepage.

Piezometers BH1, BH2, BH3, BH4, BH5 and BH6 (Figure 6)

- Groundwater depth within the 3 paired piezometers is summarised in Table 4. Measurements recorded on 23 November 2011 were after an extended period of heavy rain and no irrigation in the adjacent Lucerne paddock. At location 1 (BH1, BH2) and BH6 groundwater was greater than 9.1 metres. At locations BH3 and BH4 groundwater was at approximately 9 metres below ground level during both measurements. Groundwater levels within BH5 were at 6.7 metres on 18 November 2011 and had dropped to 6.9 metres on 23 November 2011, indicating that the groundwater was draining away. The second reading on the 23 November also followed an extended period of heavy rain. The observation of groundwater draining away is inconsistent with the typical process of groundwater recharge from rain. It is also inconsistent with the observed groundwater depth in the adjacent piezometer at location BH5 being greater than 9.1m below ground level. It is considered that the likely source of the groundwater in BH6 is a leaking pipe within the Lucerne paddock and the observed drop in groundwater levels is a direct result of the irrigation pump being turned off during the extended period of heavy rain and is not a result of a natural process.

Table 4: Summary of groundwater depth at locations BH1 to BH6.

Location	Piezometer	Depth to groundwater (m)	
		18/11/2011	23/11/2011
1	BH1	>9.1	>9.1
	BH2	>9.1	>9.1
2	BH3	>9.1	~8.9
	BH4	~8.9	~8.9
3	BH5	~6.7	~6.9
	BH6	>9.1	>9.1

Visual observations in the quarry pit

- No seepage was observed within the walls of the quarry pit.
- No significant seepage has been encountered within the walls of the adjacent quarry pit during extraction operations to-date.
- The quarry floor is firm and vehicles are able to move freely within the quarry floor.

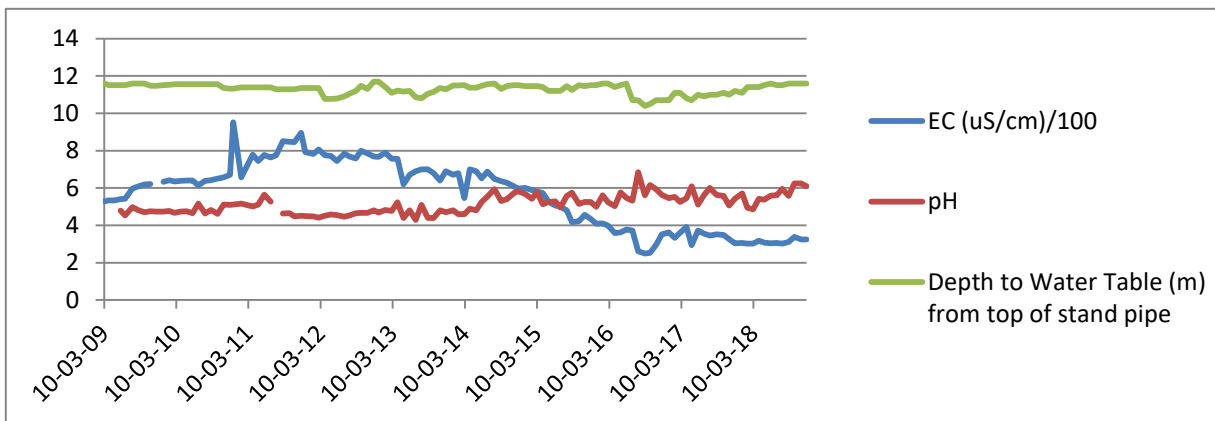
5.2.4. Continuous groundwater monitoring

Groundwater has been monitored continuously at an existing groundwater monitoring bore (GW 1 - Figure 5) on a monthly basis by HSC since March 2009. The groundwater bore is located immediately to the west of the Anabran and on the southern border of the extraction area.

Groundwater monitoring results to date are summarised in Table 5.

Table 5. Summary of historical (since March 2009) groundwater monitoring data

Parameter	Depth to water table ¹ (m)	EC ¹ (uS/cm)	pH (4.0 – 6.5) Moderately Acidic	Salinity category ²
Minimum	10.77	261	4.30	Medium salinity (280-800 uS/cm)
Maximum	11.69	952	6.84	
Average	11.31	558	4.96	

**Notes:**

1) EC, pH and groundwater depth values presented in this table represent a summary of over 115 samples collected on a monthly basis from March 2009 until December 2018

Notes (continued):

2) Medium salinity (280-800 uS/cm). This water can be used for irrigation purposes if moderate leaching occurs. Plants with medium salt tolerance can be grown, usually without special measures for salinity control. Sprinkler irrigation with the more-saline waters in this group may cause leaf scorch on salt sensitive crops, especially at high temperatures in the daytime and with low application rates (Based on Table 5.6 of the Australian and New Zealand Environment and Conservation Council (ANZECC) 1992 Australian Water Quality Guidelines for Fresh and Marine Waters).

The long term trends from Table 5 indicate:

- Groundwater levels are more or less static
- pH has increased slightly (becoming less acidic); and
- Salinity has decreased

5.2.5. Summary of findings

The findings of this assessment are interpreted schematically on Figure 7. In summary, groundwater levels are found to be approximately 4 to 6 metres below the proposed final landform and are therefore not considered to pose a constraint to the extraction proposal. This projected buffer distance to groundwater is considered to be adequate for the protection of ground water. It is considered that:

- The extraction proposal will not have an adverse impact on the local groundwater regime;
- Licensing/approval from the NSW Department of Primary Industries (DPI) is not required for the draining of groundwater as it is not anticipated that groundwater will be drained as part of the extraction proposal; and
- The extraction proposal is consistent with the objectives of the Water Management Act (2000).

5.2.6. Management Commitments

MCS has committed to the following actions with regard to groundwater controls. These are outlined as follows:

- **Maintenance of 1m vertical buffer distance.** During active extraction, a buffer distance of 1 metre is maintained between the base of the quarry floor and the permanent groundwater horizon. The purpose of the buffer is to ensure adequate protection of groundwater. This buffer is based upon accepted practice on adjacent operations.
If, during active extraction, the permanent groundwater is inadvertently intercepted (as indicated by free flowing groundwater), the quarry floor is back-filled to provide a 1 metre buffer between the operational surface and groundwater.
In the unlikely event that the permanent groundwater is inadvertently intercepted or trigger levels are exceeded, the EMR will contact DPI Water and advise accordingly.
- **Monitoring.** Inspection of extraction holes in association with monthly site inspections are conducted to monitor and report for seepages/inflows within the quarry pit. Groundwater depth and salinity levels continue to be monitored as per the protocol outlined in Table 6 of this report.

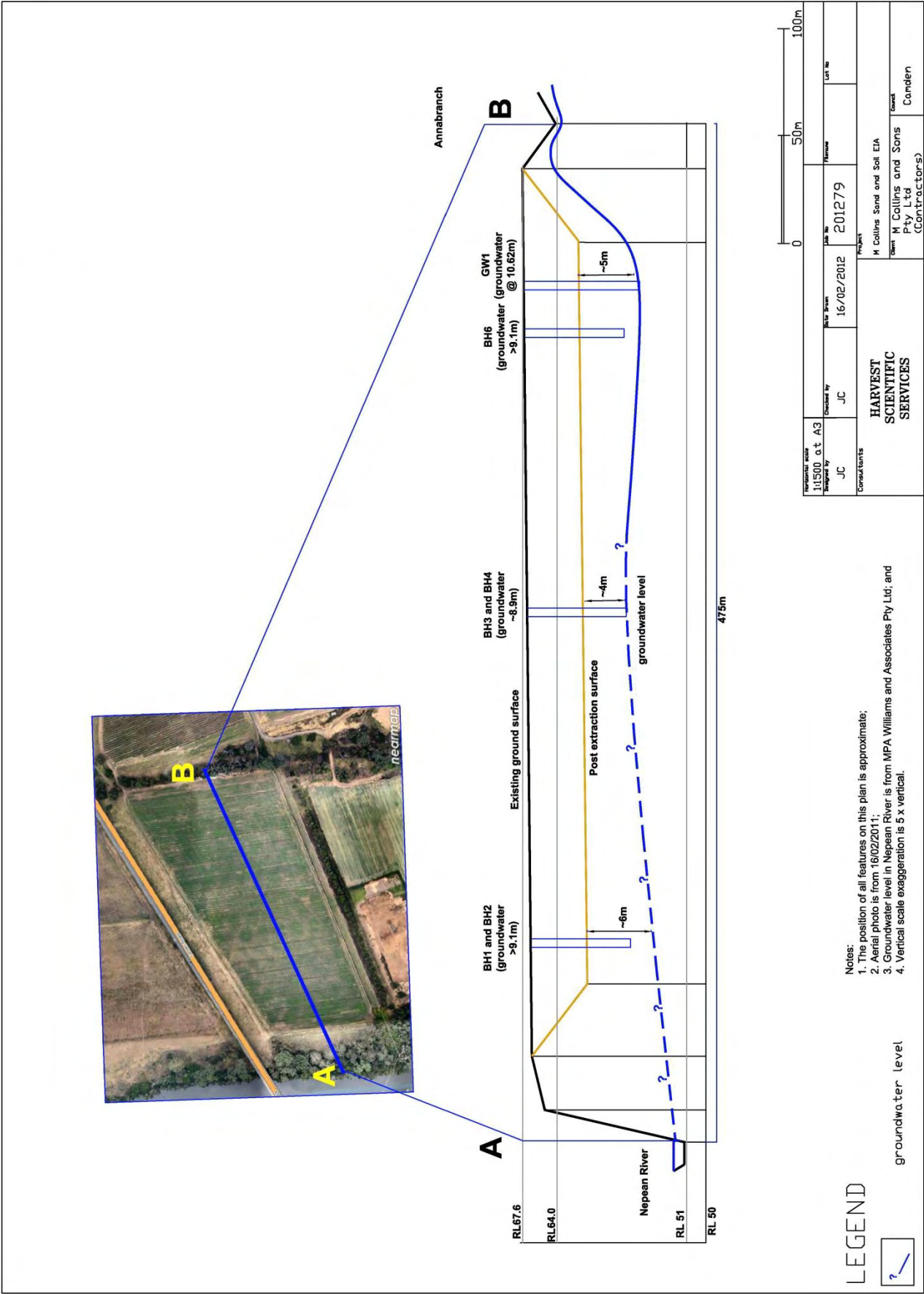


Figure 7: Schematic site long section and projected groundwater levels

Table 6. Summary groundwater monitoring protocol.

Aspect (Location)	Parameters measured	Method	Frequency
Groundwater (GW 1 – Figure 6)	Electrical conductivity Groundwater level (cm) below ground level (bgl). pH range of acids	Laboratory assessment	Monthly
Quarry pit floor	Water Seepage / Inflow Volume, flow seepage rate, source	Visual inspection Investigate water inflow source and irrigation main lines Investigate water main lines on adjoining property	Daily Daily, Report Monthly

The existing Water Licence for location GW1 permits both environmental monitoring and pumping for irrigation and industrial purposes. If in the event that GW1 (Figure 6) is to be utilised for irrigation purposes and industrial purposes and a bore pump is installed, groundwater monitoring should be transferred to a location as indicated by GW3. A permit issued by DPIW will be required for this purpose. Trigger values to be used for further investigation groundwater monitoring results are outlined in Table 7.

Table 7. Trigger values for further investigation

Location	EC (uS/cm)	pH	Depth to water table (m)
Groundwater bore	> 800 uS/cm	<4.0 – >6.5	Depth < 5.83 Depth > 15.93

Notes:

- Trigger values for EC represents a change in the salinity class from 'Medium Salinity' to 'High Salinity', as defined by the Australian Water Quality Guidelines for Fresh and Marine Waters;
- Trigger values for depth to groundwater represent a nominal 5m variation; and
- It is noted that if the trigger values are achieved, then causal factors will be investigated, it does not necessarily mean that the quarry operation has had a negative impact as the variation may be a natural occurrence or caused by other factors.
- Trigger values for pH represents a change from acidic to neutral to basic.
- Investigations will be implemented for all exceedance outside of the trigger ranges of potential adverse groundwater impacts including;
 - Review of existing results for possible factors or gradual changes,
 - Review of site practices and weather conditions for possible impact,
 - Request results from neighbouring local Nepean River bore and conduct tests from additional site bore GW3 (Figure 6) / Bore Pump Lot 1 (GW 110586 –Figure 5),
 - Additional external monitoring frequency,
 - Ongoing monitoring as per management plan for pattern,
 - External consultants engaged if required,
 - Review of existing trigger values and management plan if required.

6. EROSION AND SEDIMENT CONTROL PLAN (ESCP)

6.1. Erosion and sediment control guidelines

This ESCP has also been prepared with reference to the following documents:

- Managing Urban Stormwater, Soils and Construction (the 'Blue Book'), 4th Edition. NSW Department of Housing 2004 (Landcom); and
- Managing Urban Stormwater, Soils and Construction, Volume 2E Mines and quarries. Department of Environment and Climate Change (DECC) 2008.

6.2. Objectives of this ESCP

The principle objectives of the ESCP are set out below.

- To minimise erosion and sedimentation from all active and rehabilitated areas, thereby minimising sediment ingress into surrounding surface waters;
- To ensure the segregation of 'dirty' water from 'clean' water, and maximise the retention time of 'dirty' water such that any discharge from the project site meets the relevant water-quality limits, including limits contained in relevant guidelines and any limits imposed by specific project approvals. 'Dirty' water is defined as surface runoff from disturbed catchments (e.g. active areas of disturbance, sand and soil stockpiles and rehabilitated areas (until stabilised)). 'Clean' water is defined as surface runoff from catchments that are undisturbed or relatively undisturbed by project-related activities and rehabilitated catchments;
- To minimise the volume of water discharged from the project site, however, should the discharge of water prove necessary, ensure sufficient settlement time is provided prior to discharge such that suspended sediment within the water meets the objectives of this ESCP;
- To ensure sustainable long-term surface water features are established following rehabilitation of the site, including implementation of an effective revegetation and maintenance program; and
- To monitor the effectiveness of surface water and sediment controls and to ensure all relevant surface-water quality criteria are met.

The principle design aspect of the project is the prevention of 'clean' water in surface water sheet flows entering the active disturbance area. This will be achieved through the use of perimeter bunding (earth mounds), as well as the containment of 'dirty' water in sediment control structures within the active areas of the project to minimise any uncontrolled runoff.

6.3. Potential sources of contaminated surface waters ('dirty water') during extraction

Sources of potentially contaminated water ('dirty water') are summarised in **Table 8** and the location of these features is depicted on **Figures 2, 3 and 4**. These potential contaminant sources are proposed to be managed by the 'Erosion and Sediment Controls (ECPs) outlined in this ESCP.

Table 8. Summary of potential contaminant sources.

Source	Comments
1. Active extraction pit	Potential soil erosion and sediment losses during rain events. Assumed maximum exposed area = 5 hectare
2. Rehabilitation area/s	Potential soil erosion and sediment losses during rain events until rehabilitated.
3. Internal haul road/s	Potential sediment losses during rain events.
4. Tailings emplacement area.	Potential sediment losses during rain events until rehabilitated.
5. River bank	Potential Soil erosion during flooding and rain events.
6. Water Supply line breakage	Potential soil erosion and generation of sediment

6.4. Erosion and sediment controls – operational safeguards

The Erosion and Sediment Controls (ESCs) implemented onsite are summarised in the following sections of this report. The location of these ESC's is depicted on Figure 8.

6.4.1. ESC 1 - Perimeter bund – all extraction cells

A 'Perimeter Bund' is constructed around the active extraction cell and tailings emplacement areas, thus forming an enclosed internal catchment around these disturbed areas. These bunds are dual purpose in that they will divert clean surface run-off waters around the active extraction pits and act as a catch drain to prevent the loss of surface waters without treatment.

Construction of the perimeter bund is formed as the first activity to occur on the extraction cell and or tailings emplacement areas, and prior to any extraction or tailings emplacement taking place. The bund is constructed from topsoil stripped from the subject extraction cell.

The topsoil perimeter bund have a minimum height of 1m and base width of 4m with batter slope grades of 2H:1V. Stripped topsoil includes existing grass runners which will quickly stabilise the bund. Additional seeding with a mix of sterile grasses such as 'Wimmera Rye' and 'Japanese Millet' is to be undertaken if deemed necessary by the EMR.

6.4.2. ESC 2 - Sediment basins

Dirty surface waters from each active extraction cell and areas actively undergoing rehabilitation will be treated by a localised sediment basin. Each sediment basin is to have a volume of 588 cubic meters (500m³ sedimentation volume + 88 m³ storage volume – Table 9) for each hectare of up-slope surface water collected.

Sediment basins sizes are based on the calculations outlined Appendix 3 of this report.

Table 9. Summary of sediment basin properties – refer to Figure 8 for location details.

Site component	Minimum sediment basin volume (m ³) per ha of disturbed land (inc. sediment storage).	Minimum sediment storage volume (m ³)	Comments
Active extraction area (1 ha)	500	88	To be constructed in accordance with Appendix 4 . Overflow from sediment basin is to be discharged to the ground surface via a level spreader.
Areas subject to rehabilitation.	500	88	To be constructed in accordance with Appendix 4 . Overflow from sediment basin is to be discharged to the ground surface via a level spreader.
Tailings emplacement area	500	88	Existing sediment basin is to be utilized. To be constructed in accordance with Appendix 4 . Overflow from sediment basin is to be discharged to the ground surface via a level spreader.

Sediment basins are to be managed subject to the following controls:

- Flocculants may be added if deemed necessary by the EMR and on an as-needed basis.
- Each basin is to be constructed as per the blue book – see Appendix 4.

- Basins are to be maintained so that the minimum required storage volume is achieved within 5 days of a storm event. This may be achieved by either over-sizing the basins and re-use of water onsite for irrigation and dust suppression measures.
- Sediment is to be removed as necessary to ensure that the minimum sediment storage volume is achieved at all times.

6.4.3. ESC 3 – Sedimentation terminal pond

All surface water from the development site is to be collected via a sedimentation terminal pond. The volume of the sedimentation pond is to be at least 1,300m³. The terminal pond is to be located at the location depicted on **Figure 8** and is to be retained at the completion of works as a long-term water quality management structure. Water from the sedimentation terminal pond is to be discharged via a 5 metre wide grassed swale.

The sedimentation terminal pond is to be managed subject to the following controls:

- Flocculants may be added if deemed necessary by the EMR and on an as-needed basis.
- The terminal pond is to be constructed as per the blue book – see **Appendix 4**.
- The terminal pond to be maintained so that the minimum required storage volume is achieved within 5 days of a storm event. This may be achieved by either over-sizing the pond or re-use of water onsite for irrigation and dust suppression measures.
- Sediment is to be removed as necessary to ensure that the minimum sediment storage volume is achieved at all times.

6.4.4. ESC 4 – Grassed swales

All surface water from the development site is to be collected via a grass swale that drains direction into sedimentation terminal pond (**ESC 3**).

Discharge waters from **ESC 3** sedimentation terminal pond are to be discharged via a grass swale and directed around the embankment that is to host the existing electricity poles.

6.4.5. ESC 5 – Sequence of works

Extraction is to be subject to the following controls:

- Before any work commences ensure plans are on hand and all equipment and materials likely to be required are available for use;
- Install sediment fencing where there is a risk of soil loss;
- Construct **ESC 3 Sedimentation Terminal Pond** at the first stage of construction. As extraction progresses, divert all surface water from the entire extraction area to ESC 3 via constructed grassed swales (ESC 4).
- Construct sediment basins for the subject cell and perimeter bunds for the subject cell prior to extraction of the cell. Divert internal runoff to the sediment basin via construction of earth bunds;
- Ensure slopes of embankments (batters) are stable to prevent collapse of banks during operations; and
- Areas containing planted vegetation and grasses (such as bunds) are to be watered regularly and monitored until an effective cover has been properly established.

6.4.6. ESC 6 - Other specific measures to be adopted for the extraction operation

Details of the various controls required are outlined below.

- Design capacity of basins will not be compromised by storage of any operational water on Lot 22 and Lot 32
- Sediment fencing will be installed at locations down-slope of disturbed areas where there is a risk of sediment losses;
- Install straw bale filters in areas of concentrated flows (i.e. within grassed swales).
- Access for contractor vehicles and equipment during construction of basins and bunds is to be restricted to a defined path;
- Vehicles will exit the site via a wheel wash; and

ESC 1. Perimeter bund.

A 'Perimeter Bund' will be constructed around the active extraction cell and tailings emplacement areas, thus forming an enclosed internal catchment around these disturbed areas. These bunds are to be dual purpose in that they will divert clean surface run-off waters around the active extraction pits and act as a catch drain to prevent the loss of surface waters without treatment.

Construction of the perimeter bund will be formed as the first activity to occur on the extraction cell and or tailings emplacement areas, and prior to any extraction or tailings emplacement taking place. The bund will be constructed from topsoil stripped from the subject extraction cell.

The topsoil perimeter bund will have a minimum height of 1m and base width of 4m with batter slope grades of 2H:1V. Stripped topsoil will include existing grass runners which will quickly stabilise the bund. Additional seeding with a mix of sterile grasses such as 'Wimmera Rye' and 'Japanese Millet' is to be undertaken if deemed necessary by the EMR.

ESC 2. Sediment basins.

Dirty surface waters from each active extraction cell, areas actively undergoing rehabilitation and the tailings emplacement area will be treated by a localised sediment basin. Each sediment basin is to have a volume of 588 cubic meters (500m3 sedimentation volume + 88 m3 storage volume - **Table 9**) for each hectare of up-slope surface water collected.

Sediment basins are to be managed subject to the following controls:

- Flocculants may be added if deemed necessary by the EMR and on an as-needed basis.
- Each basin is to be constructed as per the blue book - see **Appendix 2**.
- Basins are to be maintained so that the minimum required storage volume is achieved within 5 days of a storm event. This may be achieved by either over-sizing the basins and re-use of water onsite for irrigation and dust suppression measures.
- Sediment is to be removed as necessary to ensure that the minimum sediment storage volume is achieved at all times.

ESC 3. Sedimentation terminal pond.

























All surface water from the development site is to be collected via a sedimentation terminal pond. The volume of the sedimentation pond is to be at 1,300m3. The terminal pond is to be located at the location depicted on **Figure 3** and is to be retained at the completion of works as a long-term water quality management structure. Water from the sedimentation terminal pond is to be discharged via a 5 metre wide grassed swale.

The sedimentation terminal pond is to be managed subject to the following controls:

- Flocculants may be added if deemed necessary by the EMR and on an as-needed basis.
- The terminal pond is to be constructed as per the blue book - see **Appendix 2**.

Sediment is to be removed as necessary to ensure that the minimum sediment storage volume is achieved at all times.

LEGEND

- **High bank of Nepean River**
- **Proposed fence line**
- **Proposed plantings**
- **Powerpole**
- **Catch drain**
- **Intermittent drainage line**
- **Sediment basin**
- **Existing vegetation associated with the dry river anabranch located on Lot 32**
- **Riparian vegetation on Lot 32 associated with the Nepean River**
- **Past re-vegetation area/s (with weed infestation)**
- **High resilience natural vegetation GCB (2008)**
- **Medium resilience natural vegetation GCB (2008) (with weed infestation)**
- **Sand wash plant**
- **Soil processing and handling area**
- **Scarcely vegetated area**
- **Screen plantings**
- **Area used for turf farming (Lot 22) and former vineyard (Lot 32)**
- **Active extraction area (November 2009)**
- **Existing internal fence-line**
- **Property boundary**
- **Proposed extraction boundary (Lot 32)**
- **Approved extraction boundary - NDM 22/05/2009**
- **Aboveground powerlines**
- **Proposed progressive direction of extraction**
- **Tailings emplacement area**

Notes:

1. The position of all features on this plan is approximate.

Figure 8
Erosion and sediment control
plan

ESC 5. Sequence of works.

Extraction is to be subject to the following controls:

- Before any work commences ensure plans are on hand and all equipment and materials likely to be required are available for use;
- Install sediment fencing where there is a risk of soil loss;
- Construct **ESC 3 Sedimentation Terminal Pond** at the first stage of construction. As extraction progresses, divert all surface water from the entire extraction area to **ESC 3** via constructed grassed swales (**ESC 4**).
- Construct sediment basins for the subject cell and perimeter bunds for the subject cell prior to extraction of the cell. Divert internal runoff to the sediment basin via construction of earth bunds;
- Ensure slopes of embankments (batters) are stable to prevent collapse of banks during operations; and
- Areas containing planted vegetation and grasses (such as bunds) are to be watered regularly and monitored until an effective cover has been properly established.

Tailings emplacement is to be subject to the following controls:

- Before any work commences ensure plans are on hand and all equipment and materials likely to be required are available for use;
- Install sediment fencing where there is a risk of soil loss;
- Construct **ESC 2 Sediment basin** at the first stage of construction. As tailings placement progresses, divert all surface water from the new emplacement area via a constructed grassed swale/s (**ESC 4**).
- Construct sediment basins for the subject cell and perimeter bunds for the subject cell prior to tailings emplacement with the cell. Divert internal runoff to the sediment basin via construction of earth bunds;
- Ensure slopes of embankments (batters) are stabilised; and

Areas containing planted vegetation and grasses (such as bunds) are to be watered regularly and monitored until an effective cover has been properly established.

ESC 6. Other controls

Details of the various controls required are outlined below.

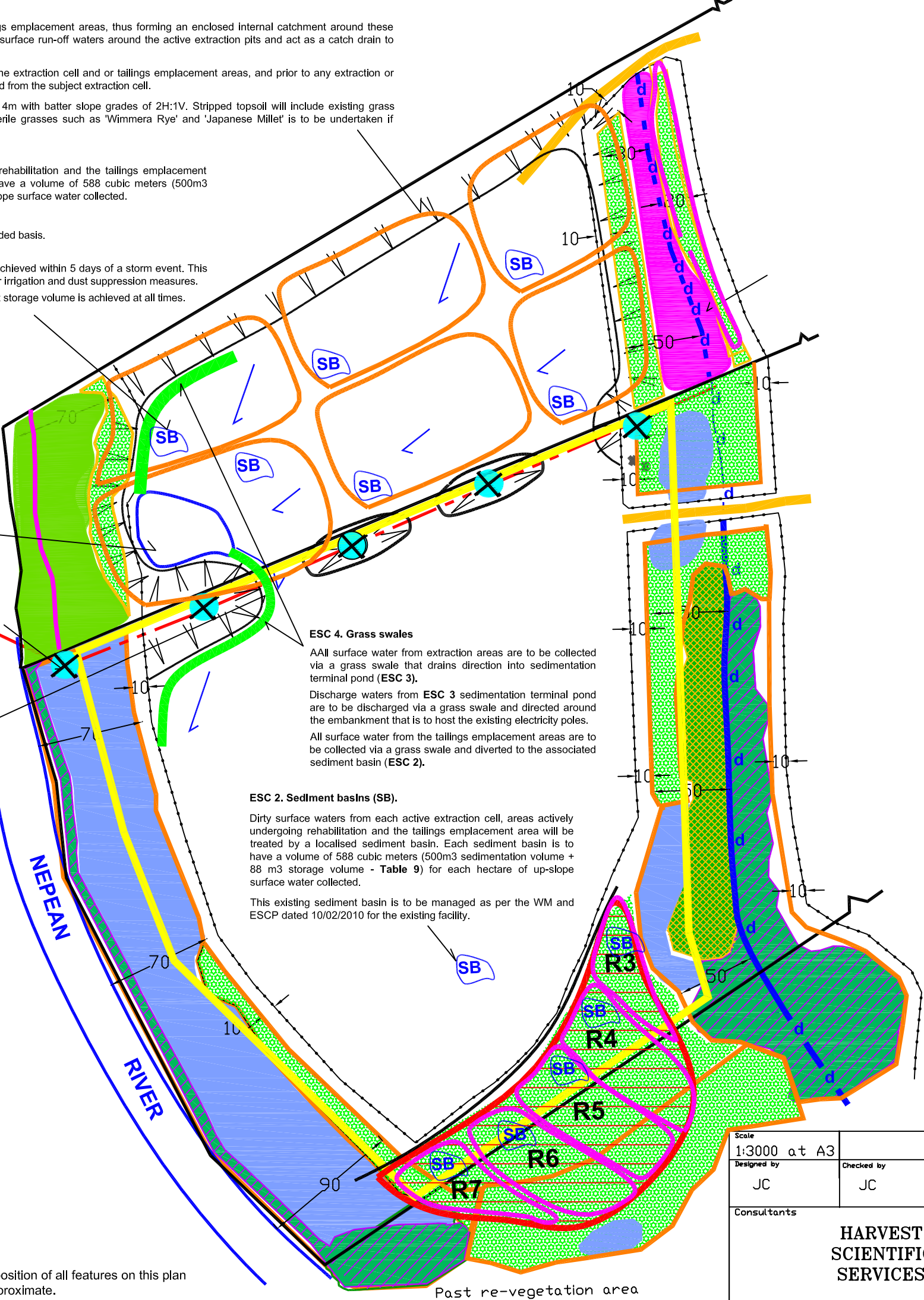
- Sediment fencing will be installed at locations down-slope of disturbed areas where there is a risk of sediment losses;
- Install straw bale filters in areas of concentrated flows (i.e. within grassed swales).
- Access for contractor vehicles and equipment during construction of basins and bunds is to be restricted to a defined path;
- Vehicles will exit the site via a wheel wash; and

Grass Filter strips (preferably at least 5 metres wide) of retained vegetation are to be maintained where possible on the down-slope side sediment basins, bund construction activities and roads.

ESC 7. Site monitoring and maintenance

The Environmental Management Representative (EMR) or nominated person is expected to inspect the site each work day, paying particular attention to:

- Ensuring that bunds and basins are operating effectively (i.e. no breaching), and carry out any necessary repairs;
- Removal of trapped sediment from sediment basins, sediment fences, bunds and other structures. Remove sediment from basins when their capacity is reduced by 30% and spread this sediment over rehabilitating areas (upslope of basin). Flocculant can be used on basins if required, apply gypsum evenly over water surface at a rate of 0.32kg/cubic metre of water; and
- Any remedial works carried out on sedimentation control structures and any diminished sediment retention basin capacity will be noted by the EMR in the site diary.



- Grass Filter strips (preferably at least 5 metres wide) of retained vegetation are to be maintained where possible on the down-slope side sediment basins, bund construction activities and roads.

6.4.7. ESC 7 - Site monitoring and maintenance

The Environmental Management Representative (EMR) or nominated person is expected to inspect the site each work day, paying particular attention to:

- Ensuring that bunds and basins are operating effectively (i.e. no breaching), and carry out any necessary repairs;
- Removal of trapped sediment from sediment basins, sediment fences, bunds and other structures. Remove sediment from basins when their capacity is reduced by 30% and spread this sediment over rehabilitating areas (upslope of basin). Flocculant can be used on basins if required, apply gypsum evenly over water surface at a rate of 0.32kg/cubic metre of water; and
- Any remedial works carried out on sedimentation control structures and any diminished sediment retention basin capacity will be noted by the EMR in the site diary.

6.5. Erosion and sediment control conclusion

Providing that the recommendations outlined in this ESCP are implemented, it is concluded that potential surface water impacts associated with this extraction proposal are consistent with the objectives of the Water Management Act (2000) (NSW).

7. FLOOD EMERGENCY PROCEDURES PLAN

The subject site and stockpiling areas are subject to the procedures outlined in this section for a major flood event and will be implemented for floods above the 1% AEP flood event up to the Probable Maximum Flood (PMF). The trigger for a major flood event will either a flood warning for the local area published on the Bureau of Meteorology Webpage, a flood warning on the local radio or a flood warning issued by Camden Council or the local Emergency Services. A precautionary approach is adopted such as conducting Emergency drills and monitoring the Menangle river gauge and visually for river flow during predicted rain periods.

In the event of a flood warning the flood procedures will be as follows:

- Monitor Menangle river gauge;
- Continually monitor for river flow and levels visually;
- Cease all extraction and processing operations (both the site and adjacent stockpiling & blending site);
- Isolate all relevant electricity supply;
- Check bore cap is sealed to prevent water entry;
- Ensure all tools are available for equipment relocation (loaders, tow slings, etc);
- Be aware of time available to evacuate before flood waters cut off access areas;
- Relocate portable fuels, oils to eliminate pollution incident;
- Gather all loose items and conduct housekeeping;
- Disconnect pump suction and discharge lines to eliminate being washed away;
- Re-locate all portable machinery (including electric pumps, heavy and light equipment and machinery) to above the PMF level ;
- Providing that there is sufficient time to do so and it is safe, manually drain all oils and fuels from any non-mobile equipment remaining within portions of the site affected by flood; and
- Continually monitor flood levels and warnings for higher than expected levels of flooding.

In order to limit the potential scour and erosion during flood events, all topsoil stockpiles and earthen bunds, which are to be in place for any period longer than three (3) months, are orientated parallel to potential flood flows and are promptly and effectively spray seed hydromulched with an appropriate fast growth native grass mix.

After a flood event the following procedures will occur:

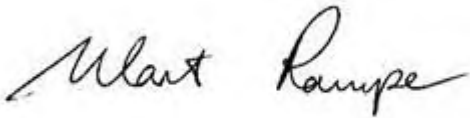
- Continue to monitor Menangle river gauge;
- Continue to monitor for river flow and levels visually;
- EMR is to check the integrity of all erosion and sediment control devices and ensure that any repairs are undertaken as soon as practical;
- EMR is to check the integrity of roadways, fences, bores and ensure repairs are undertaken as soon as practical;
- Conduct general housekeeping to ensure any debris or rubbish washed onto site is removed;
- As soon as practical drain water from any permanent equipment affected by flood waters and then service equipment, as appropriate;
- Ensure equipment affected by flood water is fit for purpose prior to reinstallation and use; and
- Before commencement of operations;
 - Wait for flood waters to seep away from the extraction pits and processing areas; and
 - Remove sediment from sediment basins to ensure that the minimum required storage capacity is available.
- Repair and reinstate all previous flood mitigation programs and procedures.

8. LIMITATIONS TO THIS REPORT

This report has been prepared subject to a number of limitations. These include:

- The application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In particular, the occurrence of earthquakes of any magnitude, extreme rainfall events or the effects of climate change have not been considered but should they occur, may have an impact on the site. The client agrees that such events are possible but nevertheless accepts the risk that they pose;
- The findings contained in this report are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site in question. Under no circumstances, however, can it be considered that these findings represent the actual state of the site/sites at all points;
- In preparing this report, Harvest Scientific Services Pty Ltd has relied upon certain verbal information and documentation provided by the client and/or third parties. Harvest Scientific Services did not attempt to independently verify the accuracy or completeness of that information. To the extent that the conclusions and recommendations in this report are based in whole or in part on such information, they are contingent on its validity. Harvest Scientific Services assume no responsibility for any consequences arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to Harvest Scientific Services Pty Ltd; and
- This report is not to be relied upon for any purpose other than that defined in it.

Prepared by:



Mart Rampe BSc (Applied Geology)
Principal Consultant
11 December 2018


9. REFERENCES

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APPENDIX 1

Soil profile logs


SOIL PROFILE LOG: 201279-07

Project		Salinity Assessment					Method of Investigation			Trench (excavation)			
Job Number		201279					Aspect						
Location		Lot 32 DP 635721 Macarthur Road, ELDERSLIE					Slope						
Land Use		Lucerne Paddock					Topography			Floodplain			
Geology		Quaternary Alluvium					Soil Landscape Unit			Theresa Park			
ASC Classification		Stratic Rudosol					External Drainage			Poor			
Depth (m)	Graph	Horizon	Boundary	Munsell Colour	Colour Class	Texture	Coarse Fraction	Structure	Fabric	CaCO₃	pH	Drainage	Comments
0 to 1 (approx)		A1 ₁		10YR 2/2	Very Dark Brown	Fine sandy loam	-	Weak	Rough	-	N/A	Excellent	Deep humic topsoil.
1 to 3.5 (approx)		A1 ₂	Gradual	10YR 4/3	Brown	Loamy sand (fine)	-	Apedal	Single	-	N/A	Excellent	Horizon ighter than horizon above and below.
3.5 to 5.5 (approx)		A1 ₃	Gradual	10YR 3/3	Dark Brown	Loamy sand (fine)	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
ASC: Australian Soil Classification N/A : Not assessed Notes: 1. Uniform profile.													
Author		JC											
Date Logged		3/05/2011											


SOIL PROFILE LOG: 201279-08

Project		Salinity Assessment					Method of Investigation			Trench (excavation)			
Job Number		201279					Aspect						
Location		Lot 32 DP 635721 Macarthur Road, ELDERSLIE					Slope						
Land Use		Lucerne Paddock					Topography			Floodplain			
Geology		Quaternary Alluvium					Soil Landscape Unit			Theresa Park			
ASC Classification		Stratic Rudosol					External Drainage			Poor			
Depth (m)	Graph	Horizon	Boundary	Munsell Colour	Colour Class	Texture	Coarse Fraction	Structure	Fabric	CaCO₃	pH	Drainage	Comments
0 to 0.5 (approx)		A1 ₁		10YR 2/2	Very Dark Brown	Fine sandy loam	-	Weak	Rough	-	N/A	Excellent	Deep humic topsoil.
0.5 to 3.5 (approx)		A1 ₂	clear	5YR 5/6	Yellowish red	Loamy sand (fine)	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
3.5 to 5.8 (approx)		A1 ₃	gradual	5YR 4/3	Reddish brown	Loamy sand (fine)	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
ASC: Australian Soil Classification N/A : Not assessed Notes: 1. Uniform profile.													
Author		JC											
Date Logged		3/05/2011											

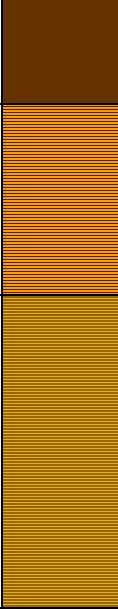
SOIL PROFILE LOG: 201279-09

Project		Salinity Assessment					Method of Investigation			Trench (excavation)			
Job Number		201279					Aspect						
Location		Lot 32 DP 635721 Macarthur Road, ELDERSLIE					Slope						
Land Use		Lucerne Paddock					Topography			Floodplain			
Geology		Quaternary Alluvium					Soil Landscape Unit			Theresa Park			
ASC Classification		Stratic Rudosol					External Drainage			Poor			
Depth (m)	Graph	Horizon	Boundary	Munsell Colour	Colour Class	Texture	Coarse Fraction	Structure	Fabric	CaCO₃	pH	Drainage	Comments
0 to 0.5 (approx)		A1 ₁		10YR 2/2	Very Dark Brown	Fine sandy loam	-	Weak	Rough	-	N/A	Excellent	Deep humic topsoil.
0.5 to 4.5 (approx)		A1 ₂	clear	10YR 4/3	Brown	Fine sandy loam	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
4.5 to 5.4 (approx)		A1 ₃	gradual	5YR 4/3	Reddish brown	Loamy sand (fine) / clayey sand	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
ASC: Australian Soil Classification N/A : Not assessed Notes: 1. Uniform profile.													
Author		JC											
Date Logged		3/05/2011											


SOIL PROFILE LOG: 201279-10

Project		Salinity Assessment					Method of Investigation			Trench (excavation)			
Job Number		201279					Aspect						
Location		Lot 32 DP 635721 Macarthur Road, ELDERSLIE					Slope						
Land Use		Lucerne Paddock					Topography			Floodplain			
Geology		Quaternary Alluvium					Soil Landscape Unit			Theresa Park			
ASC Classification		Stratic Rudosol					External Drainage			Poor			
Depth (m)	Graph	Horizon	Boundary	Munsell Colour	Colour Class	Texture	Coarse Fraction	Structure	Fabric	CaCO₃	pH	Drainage	Comments
0 to 1.0 (approx)		A1 ₁		7.5YR 3/2	Very Dark Brown	Fine sandy loam	-	Weak	Rough	-	N/A	Excellent	Deep humic topsoil.
1.0 to 4.5 (approx)		A1 ₂	gradual	7.5YR 3/1	Very dark grey	Sandy (fine) Clay	-	Apedal	Single grained	-	N/A	Moderate	Very fine sand. Alluvial bedding evident.
4.5 to 5.5 (approx)		B2	gradual	7.5YR 4/1	Gleyed dark gray	Sandy (fine) Clay	-	Apedal	Massive	-	N/A	Poor	Gleyed, mottled and moist.
ASC: Australian Soil Classification N/A : Not assessed Notes: 1. Uniform profile.													
Author		JC											
Date Logged		3/05/2011											

SOIL PROFILE LOG: 201279-11

Project		Salinity Assessment					Method of Investigation			Trench (excavation)			
Job Number		201279					Aspect						
Location		Lot 32 DP 635721 Macarthur Road, ELDERSLIE					Slope						
Land Use		Lucerne Paddock					Topography			Floodplain			
Geology		Quaternary Alluvium					Soil Landscape Unit			Theresa Park			
ASC Classification		Stratic Rudosol					External Drainage			Poor			
Depth (m)	Graph	Horizon	Boundary	Munsell Colour	Colour Class	Texture	Coarse Fraction	Structure	Fabric	CaCO₃	pH	Drainage	Comments
0 to 1.0 (approx)		A1 ₁		10YR 3/1	Very Dark Grey	Clay loam	-	Apedal	Massive	-	N/A	Moderate	
1.0 to 4.5 (approx)		A1 ₂	gradual	5YR 4/4	Brown	Fine sandy loam	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
4.5 to 5.5 (approx)		A1 ₃	clear	2.5YR 5/4	Reddish brown	Sandy (fine) clay	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
ASC: Australian Soil Classification N/A : Not assessed Notes: 1. Gradational profile.													
Author		JC											
Date Logged		3/05/2011											

SOIL PROFILE LOG: 201279-12

Project		Salinity Assessment					Method of Investigation			Trench (excavation)			
Job Number		201279					Aspect						
Location		Lot 32 DP 635721 Macarthur Road, ELDERSLIE					Slope						
Land Use		Lucerne Paddock					Topography			Floodplain			
Geology		Quaternary Alluvium					Soil Landscape Unit			Theresa Park			
ASC Classification		Stratic Rudosol					External Drainage			Poor			
Depth (m)	Graph	Horizon	Boundary	Munsell Colour	Colour Class	Texture	Coarse Fraction	Structure	Fabric	CaCO₃	pH	Drainage	Comments
0 to 1.0 (approx)		A1 ₁		10YR 3/1	Very Dark Grey	Clay loam	-	Apedal	Massive	-	N/A	Moderate	
1.0 to 3.0 (approx)		A1 ₂	gradual	5YR 4/6	Yellowish red	Loamy sand	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
3.0 to 5.5 (approx)		A1 ₃	clear	10YR 6/6	Brownish yellow	Sand (fine)	-	Apedal	Single	-	N/A	Excellent	Very fine sand. Alluvial bedding evident.
ASC: Australian Soil Classification N/A : Not assessed Notes: 1. Uniform profile.													
Author		JC											
Date Logged		3/05/2011											

APPENDIX 2

Guidance information on Sydney Basin Central Groundwater Source, for the WSPGMRGS, and the Camden Weir Management Zone and Mid Nepean River Catchment Management Zone, for the WSPGMRURWS

Water Sharing Rules

Middle Nepean River Management Zones

Water Sharing Plan	
Plan	Greater Metropolitan Region Unregulated Water Sources
Plan Commencement Date	1 July 2011
Term of the Plan	10 years
Water Sharing Rules	These rules apply to all surface waters in the management zones.
Note: Nine management zones (MZs) have been included in this rules summary as planning for the Middle Nepean River Catchment was undertaken as a single management unit.	
Boundary Definition	
Menangle Weir MZ	Includes the reach of the Nepean River below Douglas Park Weir to and including Menangle Weir.
Camden Weir MZ	Includes the reach of the Nepean River below Menangle Weir to and including Camden Weir. This MZ includes Thurns Weir and Bergins Weir.
Sharpes Weir MZ	Includes the reach of the Nepean River below Camden Weir to and including Sharpes Weir.
Cobbity Weir MZ	Includes the reach of the Nepean River below Sharpes Weir to and including Cobbity Weir.
Mount Hunter Rivulet Weir MZ	Includes the reach of the Nepean River below Cobbity Weir to and including Mount Hunter Rivulet Weir.
Brownlow Hill Weir MZ	Includes the reach of the Nepean River below Mount Hunter Rivulet Weir to and including Brownlow Hill Weir.
Theresa Park Weir MZ	Includes the reach of the Nepean River below Brownlow Hill Weir to and including Theresa Park Weir.
Wallacia Weir MZ	Includes the reach of the Nepean River below Theresa Park Weir to and including Wallacia Park Weir.
Mid Nepean River Catchment MZ	Includes the hydrological catchment of the Nepean River below Douglas Park Weir to Wallacia Weir.

Rules Summary				
The following rules are a guide only. For more information about actual license conditions, contact the NSW Office of Water in Parramatta, phone 8838 7531.				
Management Zone	EFPR			Reference point
	When inflows to the dams > 80 th percentile	When inflows are between 80 th and 95 th percentile	When inflows are < 95 th percentile	
Menangle Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.9.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.8.	Nepean River at Menangle (212238).
Camden Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.878.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.761.	Camden Weir stage gauge.
Sharpes Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.871.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.748.	Sharpes Weir stage gauge.
Cobbity Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.863.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.734.	Cobbity Weir stage gauge.
Mount Hunter Rivulet Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.858.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.726.	Mount Hunter Rivulet Weir stage gauge.

Brownlow Hill Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.856.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.734.	Brownlow Hill Weir stage gauge.
Theresa Park Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.837.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.687.	Theresa Park Weir stage gauge.
Wallacia Weir	An EFPR will be in place when the weir is unable to pass the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.810.	An EFPR will be in place when the weir is unable to pass (the volume of water released from Pheasants Nest Weir and Broughtons Pass Weir in the previous 24 hours) * 0.64.	Nepean River at Wallacia (212202).
Mid Nepean River Catchment	Pumping is not permitted when there is no visible flow at the pump site.			Pump site.

Note: Daily releases are not required to be made due to an emergency situation at that weir or an upstream weir and the holder notifies the Minister within 7 days of becoming aware of the emergency, the Minister is satisfied that releases cannot be made due to work capacity constraints or maintenance, refurbishment or modification work, at that weir or an upstream one for a period of more than 24 hours; the Minister requires an alternate release to be made due to an emergency or maintenance activity upstream; the stage of the weir is less than the stage necessary to deliver the release at that weir or upstream; when Wallacia Weir is spilling at a rate equal to or greater than its release requirement and when, from years 1 to 5 of the Plan, releases cannot be made despite the best endeavors of the licence holder to meet them. If the Minister determines that any of the release requirements aforementioned cannot be met despite best efforts then the Minister may conduct a review into why release requirements are not being met.

Trading rules for the Menangle Weir Management Zone	
INTO management zone	Only permitted if trading from the Camden Weir Management Zone, Sharpes Weir Management Zone, Cobbity Weir Management Zone, Mount Hunter Rivulet Weir Management Zone, Brownlow Hill Weir Management Zone, Theresa Park Weir Management Zone or Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.
Trading rules for the Camden Weir Management Zone	
INTO management zone	Trading is permitted from Menangle Weir. Trading is only permitted from the Sharpes Weir Management Zone, Cobbity Weir Management Zone, Mount Hunter Rivulet Weir Management Zone, Brownlow Hill Weir Management Zone, Theresa Park Weir Management Zone or Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.
Trading rules for the Sharpes Weir Management Zone	
INTO management zone	Trading is permitted from Menangle Weir and Camden Weir. Trading is only permitted from the Cobbity Weir Management Zone, Mount Hunter Rivulet Weir Management Zone, Brownlow Hill Weir Management Zone, Theresa Park Weir Management Zone or Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.

Trading rules for the Cobbity Weir Management Zone	
INTO management zone	<p>Trading is permitted from Menangle Weir, Camden Weir and Sharpes Weir.</p> <p>Trading is only permitted from the Mount Hunter Rivulet Weir Management Zone, Brownlow Hill Weir Management Zone, Theresa Park Weir Management Zone or Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.</p>
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.
Trading rules for the Mount Hunter Rivulet Weir Management Zone	
INTO management zone	<p>Trading is permitted from Menangle Weir, Camden Weir, Sharpes Weir and Cobbity Weir.</p> <p>Trading is only permitted from the Brownlow Hill Weir Management Zone, Theresa Park Weir Management Zone or Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.</p>
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.
Trading rules for the Brownlow Hill Weir Management Zone	
INTO management zone	<p>Trading is permitted from Menangle Weir, Camden Weir, Sharpes Weir, Cobbity Weir and Mount Hunter Rivulet Weir.</p> <p>Trading is only permitted from the Theresa Park Weir Management Zone or Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.</p>
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.
Trading rules for the Theresa Park Weir Management Zone	
INTO management zone	<p>Trading is permitted from Menangle Weir, Camden Weir, Sharpes Weir, Cobbity Weir, Mount Hunter Rivulet Weir and Brownlow Hill Weir.</p> <p>Trading is only permitted from the Wallacia Weir Management Zone if the trade will result in no net gain in entitlement to the water source.</p>
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.

Trading rules for the Wallacia Weir Management Zone	
INTO management zone	<p>Trading is permitted from Menangle Weir, Camden Weir, Sharpes Weir, Cobbity Weir, Mount Hunter Rivulet Weir, Brownlow Hill Weir and Theresa Park Weir.</p> <p>Trading is not permitted from the Mid Nepean River Catchment Management Zone, Lower Nepean River Management Zone, Erskine Creek and Glenbrook Creek Management Zone, Grose River Management Zone, Capertee River Management Zone, Colo River Management Zone, Upper Hawkesbury River (Grose River to South Creek) Management Zone, Upper Hawkesbury River (South Creek to Cattai Creek) Management Zone, Upper Hawkesbury River (Cattai Creek to Colo River) Management Zone, Lower Hawkesbury River Management Zone, Macdonald River Management Zone, Upper South Creek Management Zone, Lower South Creek Management Zone, Cattai Creek Management Zone, Berowra Creek and Cowan Creek Management Zone and Warragamba River Management Zone.</p>
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.
Trading rules for the Mid Nepean River Catchment Management Zone	
INTO management zone	Not permitted.
WITHIN management zone	Permitted.
Conversion to High Flow Access Licence	Not permitted.

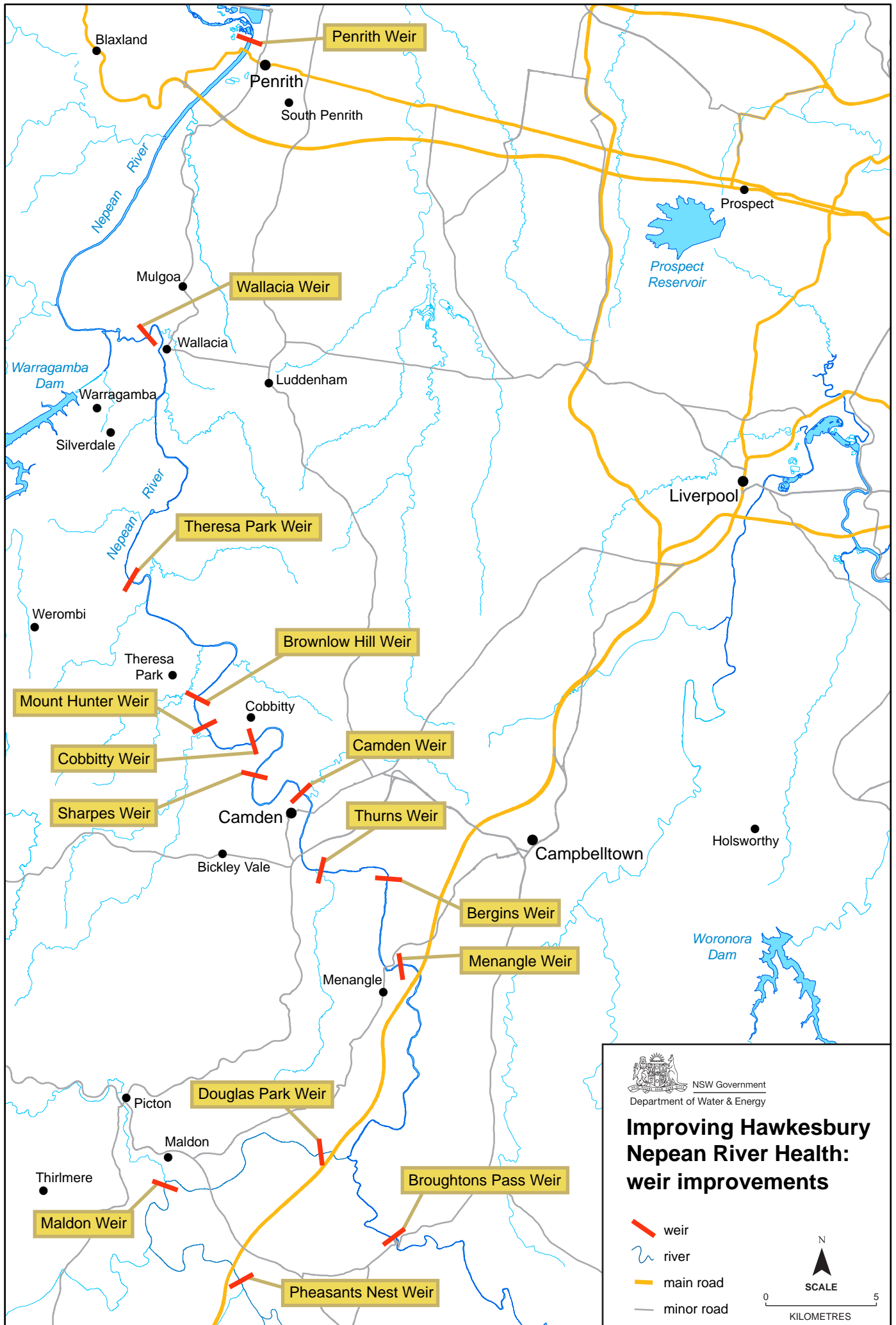
Access to very low flows (due to a water shortage)		
When a ‘water shortage’ is triggered there may be limited access to the very low flows during this period. A water shortage will be signalled when a 24 hour forecast temperature above or below a predefined temperature occurs along with consecutive previous days EFPR. The conditions which will trigger a ‘water shortage’ situation are shown in below. Note that the temperature conditions would be the 4:00 pm or later Bureau of Metrology forecast for Campbelltown for the following day.		
Forecast Temperature (T, °C)	No. of consecutive days EFPR before full exemption	Months
T < 4	0	All
4 ≤ T < 23	14	May to August
	9	September to April
23 ≤ T < 28	4	All
28 ≤ T < 31	1	All
31 ≤ T	0	All
Duration of water shortage	Once a water shortage exemption is signalled, it shall remain in force for 3 days irrespective of the pumping conditions and temperature	
The NSW Office of Water is to determine at the end of each water year the total volume of water extracted from very low flows during a water shortage. Where the volume of water extracted exceeds 41 ML/day, the Minister is to assess whether a total daily extraction limit is to be introduced for these management zones on extraction during periods of a water shortage.		

Lagoon rules	
Trading onto a lagoon from a river	Not permitted.
Application for new works on a lagoon	Not permitted.

More information about the macro planning process for the Greater Metropolitan Region Unregulated Water Sources is available at: www.water.nsw.gov.au.

Disclaimer: While every reasonable effort has been made to ensure that this document is correct at the time of printing, the State of New South Wales, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance upon the whole or any part of this document.

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APPENDIX 3

Sediment basins were sized according to the methodology outlined in Sections I4 & I5 of the guidelines entitled 'Managing Urban Stormwater, Soils and Construction' (the 'Blue Book'), 3rd Edition as produced by the NSW Department of Housing¹.

The site constraints which have been utilised in sediment basin sizing calculations are outlined in Table 1.

Table 1: Site soil constraints and values

Constraint and/or Characteristic	Value and/or rating for sediment basin calculations
Area disturbed	1ha
Rainfall erosivity value	2500
Soil erodibility factor	0.039
Slope gradient (%)	Maximum of 30
Calculated soil loss (tonnes/ha/yr)	674.31
Soil Texture Group	Type F ²
Soil Hydrologic Group	Group D ³
Runoff coefficient (Cv)	0.69 (as required by the NSW EPA)
Site Area (ha)	Per 1 hectare disturbed
R (90 th ile 5-day rainfall event (mm))	48.7

Based upon the above calculations the minimum required sediment basin size is **504m³** for each 1 ha of disturbed land.

The sediment basin is to have a minimum sediment storage volume of **87m³** per hectare of disturbed land.

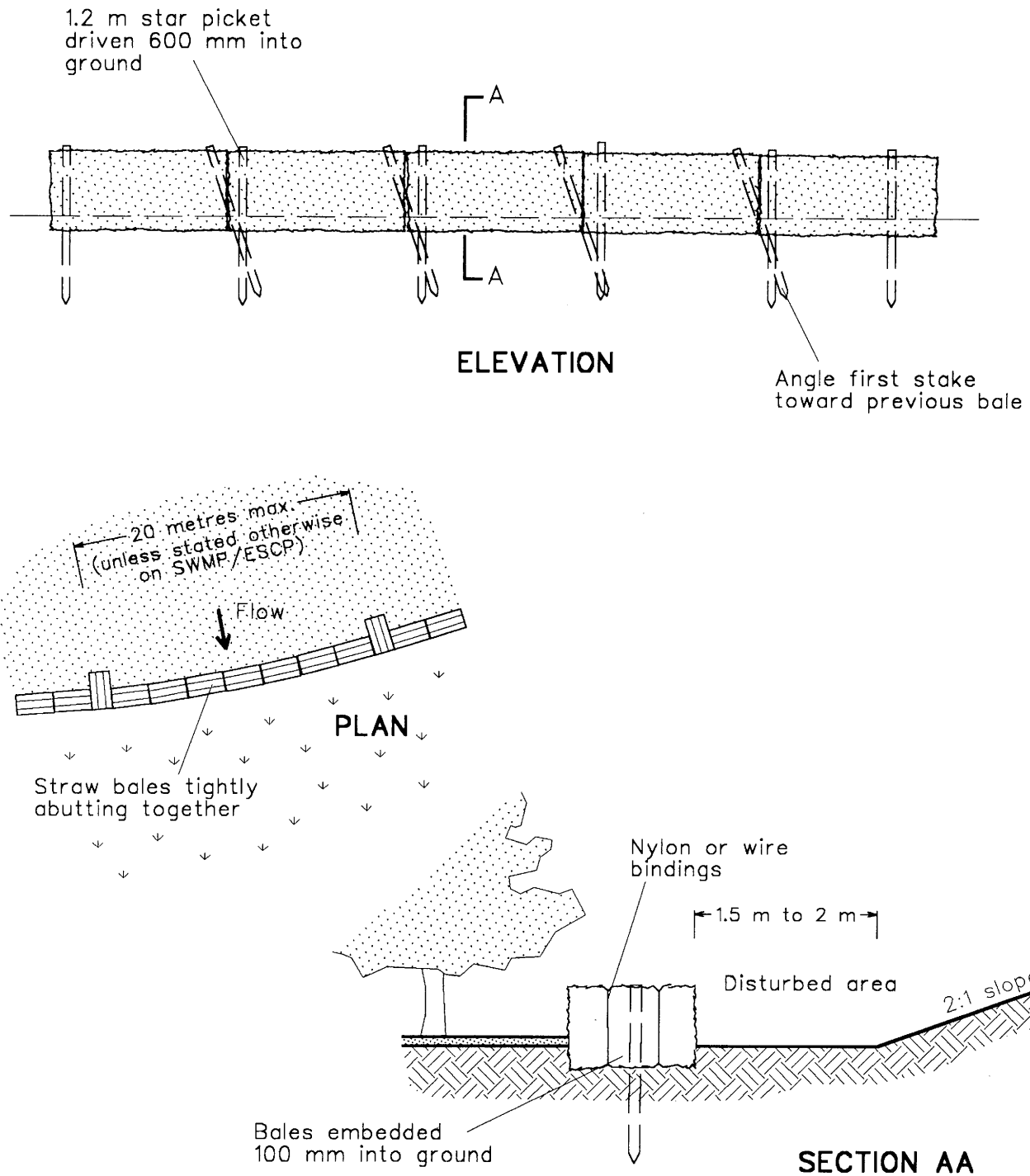
¹ NSW Department of Housing (1998) *Managing Urban Stormwater - Soils and Construction*. NSW Department of Housing, Liverpool.

² It is noted that the predominant soil category present is 'Type C' (i.e. coarse), particularly along the bank of the Nepean River, but some Type F soils may be present, particularly at the base of the extraction cells. The sediment basin has therefore been sized based on 'Type F' soils as a conservative measure.

³ It is noted that the predominant hydraulic category of onsite soils is 'Group A', particularly along the portion of land adjacent to the Nepean River, but some 'Group D' material may be present, particularly on the base of the extraction cells. The sediment basin has therefore been sized based on a 'Group D' hydraulic group as a conservative measure.

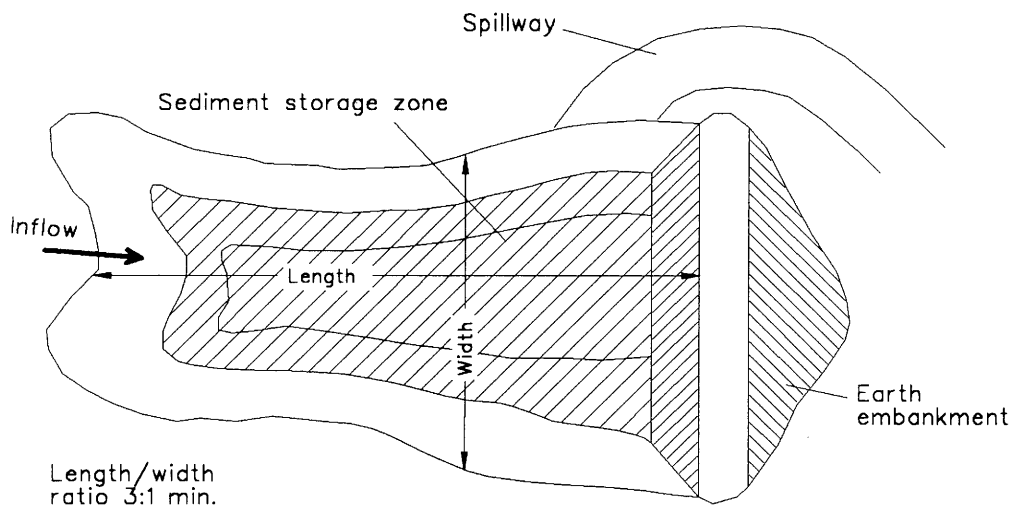
APPENDIX 4

General guidance for soil & water management devices from the 'Blue Book'

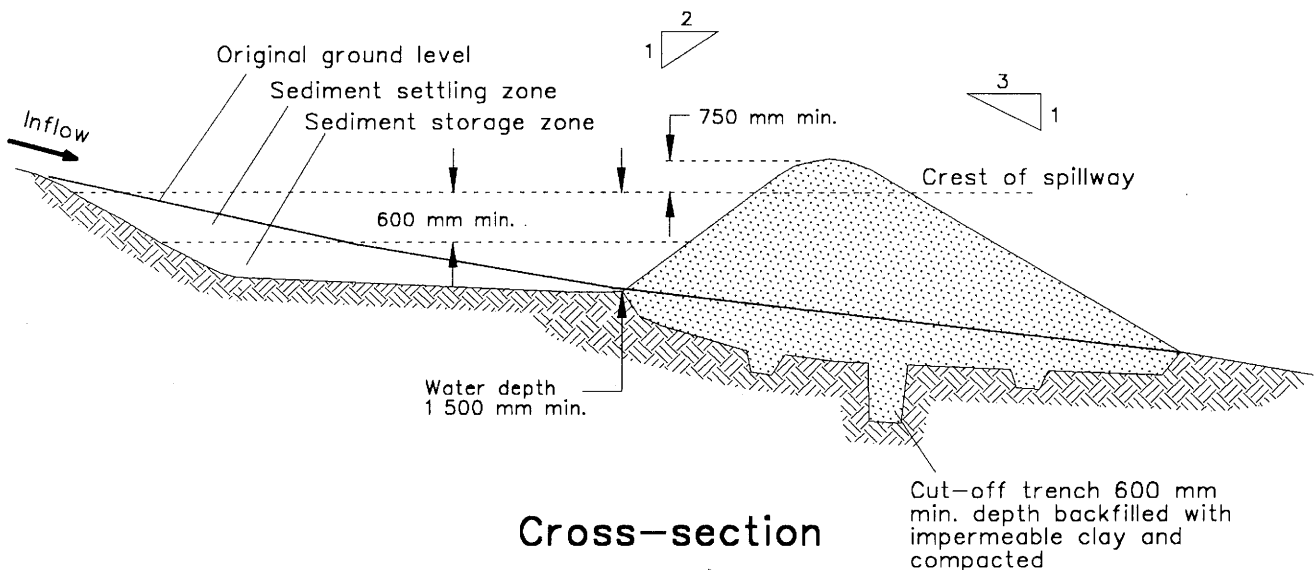


Construction Notes

1. Construct straw bale filter as close as possible to parallel to the contours of the site or at the toe of a slope.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws to be placed parallel to ground.
3. Maximum height of filter is one bale.
4. On soft materials, embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets. Angle the first stake in each bale towards the previously laid bale. Drive stakes 600 mm into the ground and flush with the top of the bales.
5. Where a straw bale filter is constructed downslope from a disturbed batter the bales should be located 1.5 to 2 metres downslope from the toe of the batter.



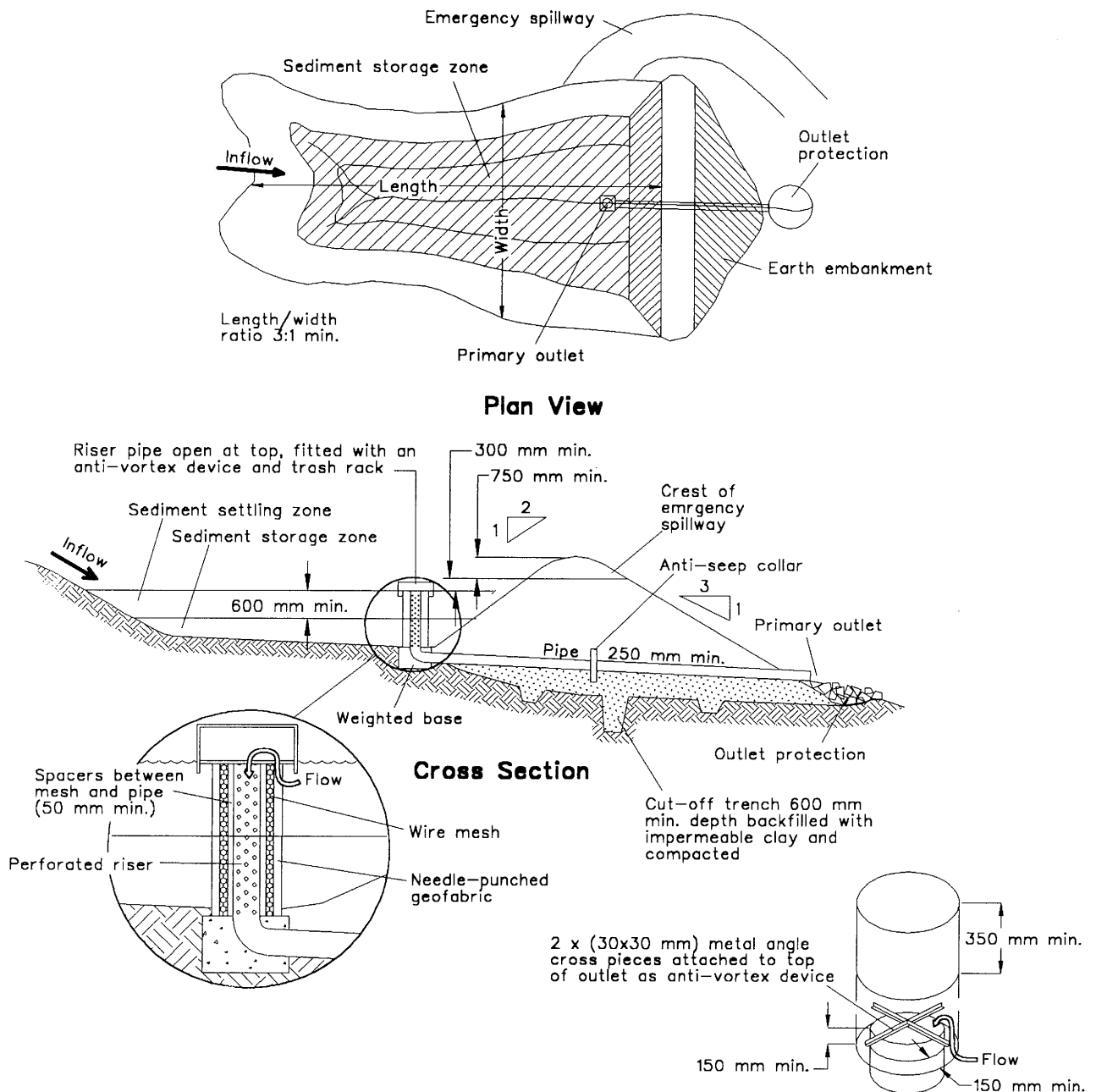
Plan View



Cross-section

Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Construct a cut-off trench 500 mm deep and 1 200 mm wide along the centreline of the embankment extending to a point on the gully wall level with the riser crest.
3. Maintain the trench free of water and recompact the materials with equipment specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill according to the directions of the SWMP that is free of roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping at least 100 mm deep to help bond compacted fill to existing substrate.
6. Spread fill in 100 mm to 150 mm layers and compact at optimum moisture content in accordance with the SWMP.
7. Construct emergency spillway.
8. Rehabilitate structure in accordance with the SWMP.
9. Place a "Full of Sediment" marker to show when less than design capacity occurs and sediment removal is required.



Construction Notes

1. Remove all vegetation and topsoil from under the dam wall and from within the storage area.
2. Form a cut off trench under the centreline of the embankment 600 mm deep and 1200 mm wide extending to a point on the gully wall above the riser sill level.
3. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density.
4. Select fill according to the directions of the SWMP that is free from roots, wood, rock, large stone or foreign material.
5. Prepare the site under the embankment by ripping at least 100 mm deep to help bond compacted fill to existing substrate.
6. Spread fill in 100 mm to 150 mm layers and compact at optimum moisture content in accordance with the SWMP.
7. Install pipe outlet with seepage collars as specified in SWMP.
8. Form batter grades at 2(H):1(V) upstream and 3(H):1(V) downstream or as specified in SWMP.
9. Install pipe riser as specified in SWMP.
10. Construct emergency spillway 300 mm above sill height of riser pipe.
11. Rehabilitate structure in accordance with the SWMP.
12. Geotextile to be replaced with the specified material if basin does not freely drain within four days.
13. Place a "Full of Sediment" marker to show when less than design capacity occurs and sediment removal is required.

EARTH BASIN - DRY
(APPLIES TO TYPE C SOILS ONLY)

SD 6-3

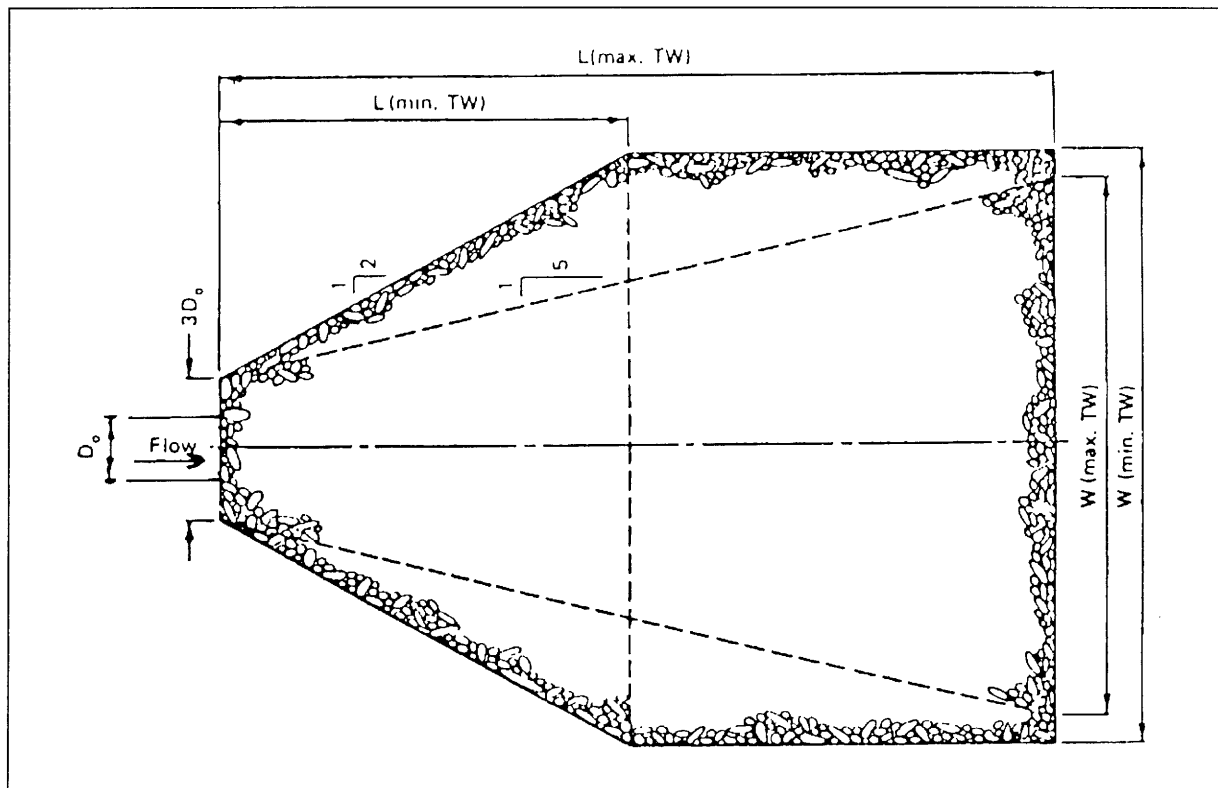
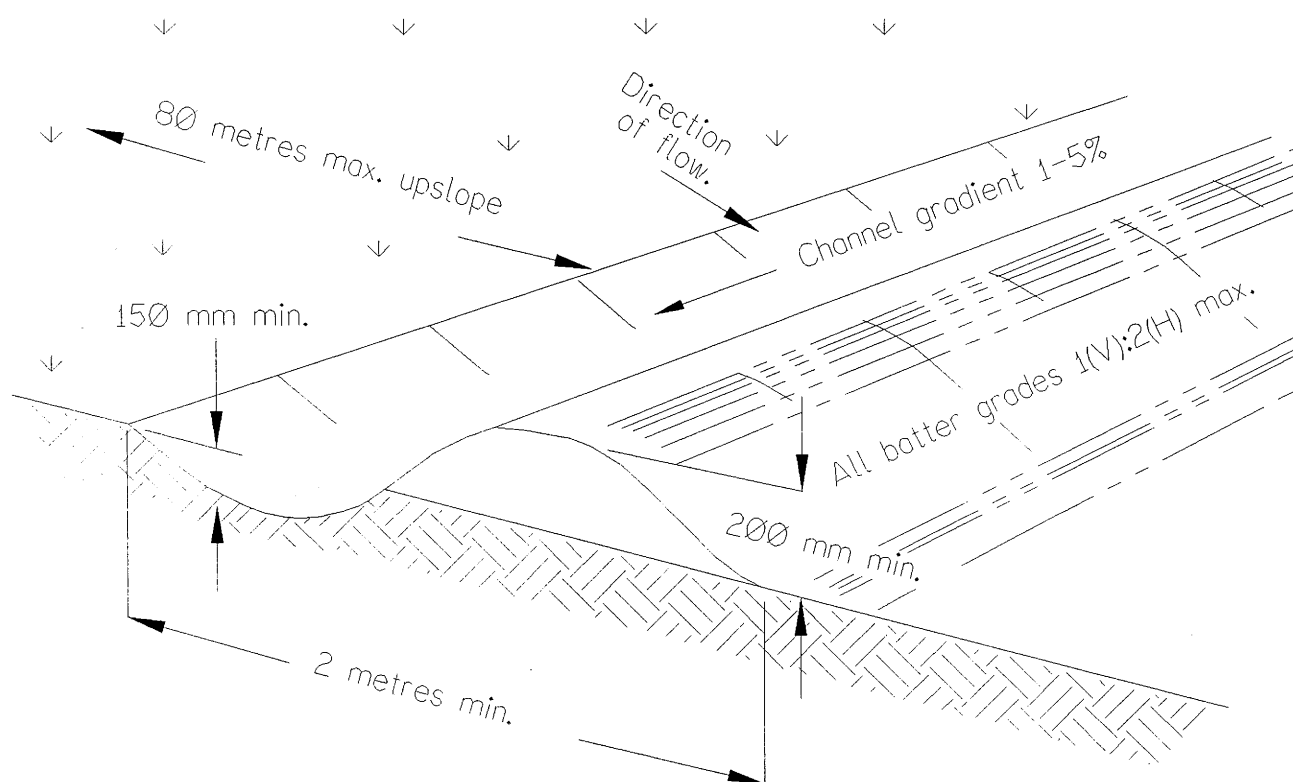


Figure 5.10 Riprap configuration for outlet protection under both maximum and minimum tailwater conditions (Bohan, 1970)

5.2.8. Subsoil Drainage

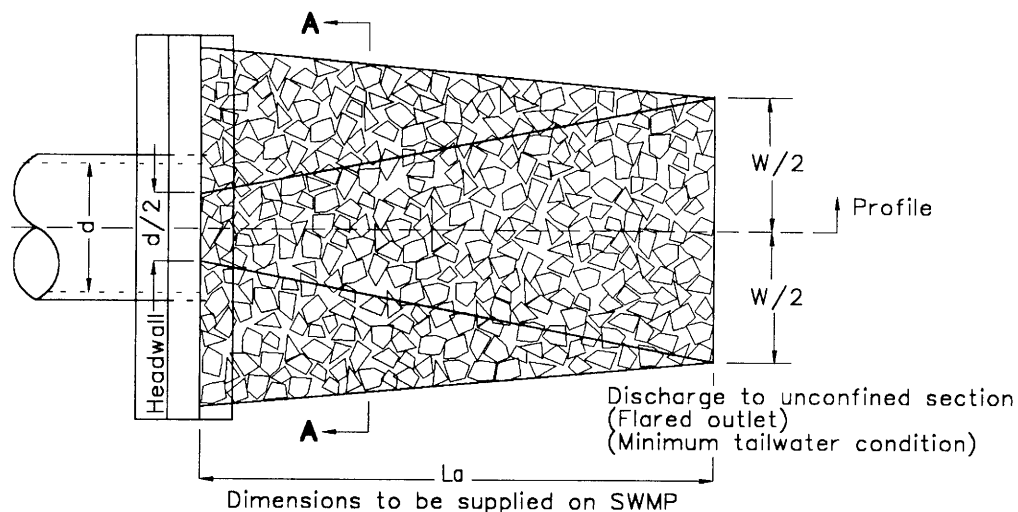
- (a) Subsoil drains provide a means for controlled flow of water through the soil. Types include:
 - (i) strip drains that comprise a geotextile filter over a non corroding, rot-proof, plastic core;
 - (ii) rubble drains; and
 - (iii) perforated or slotted pipes.
- (b) Subsoil drainage can be installed to:
 - (i) improve the soil environment for vegetative growth by regulating ground water flow, especially in grassed waterways and other low lying areas, recreation areas (such as ovals), and dry detention basins; and
 - (ii) provide drainage of ground water on steep slopes to improve stability.



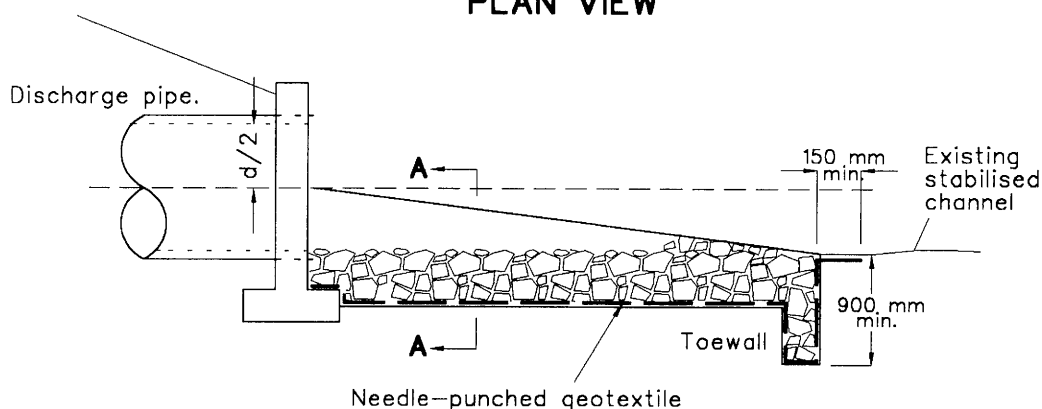
NOTE: Only to be used as temporary bank where max. upslope length is 80 metres.

Construction Notes

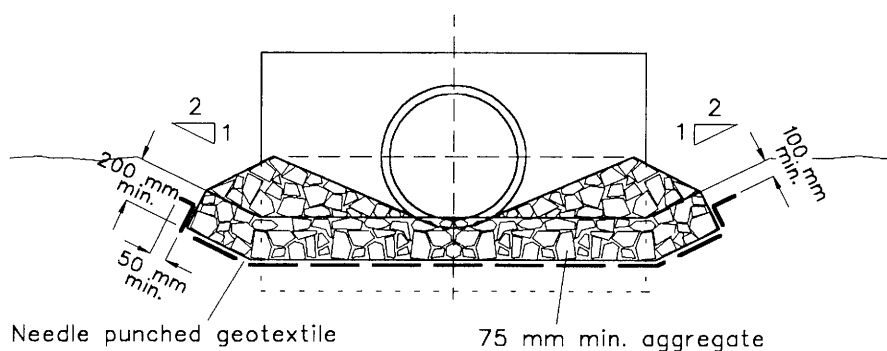
1. Construct along gradient as specified.
2. Maximum spacing between banks shall be 80 metres.
3. Drains to be of parabolic or trapezoidal cross section not V-shaped.
4. Earth banks to be adequately compacted in order to prevent failure.
5. Construction is of a temporary nature and shall be completed at the end a days work or immediately prior to rain.
6. All outlets from disturbed lands are to feed into a sediment basin or similar.
7. Discharge runoff collected from undisturbed lands onto either a stabilised or an undisturbed disposal site within the same subcatchment area from which the water originated.
8. Compact with a suitable implement in situations where they are required to function for more than five days.
9. Earth banks to be free of projections or other irregularities that will impede normal flow.



PLAN VIEW



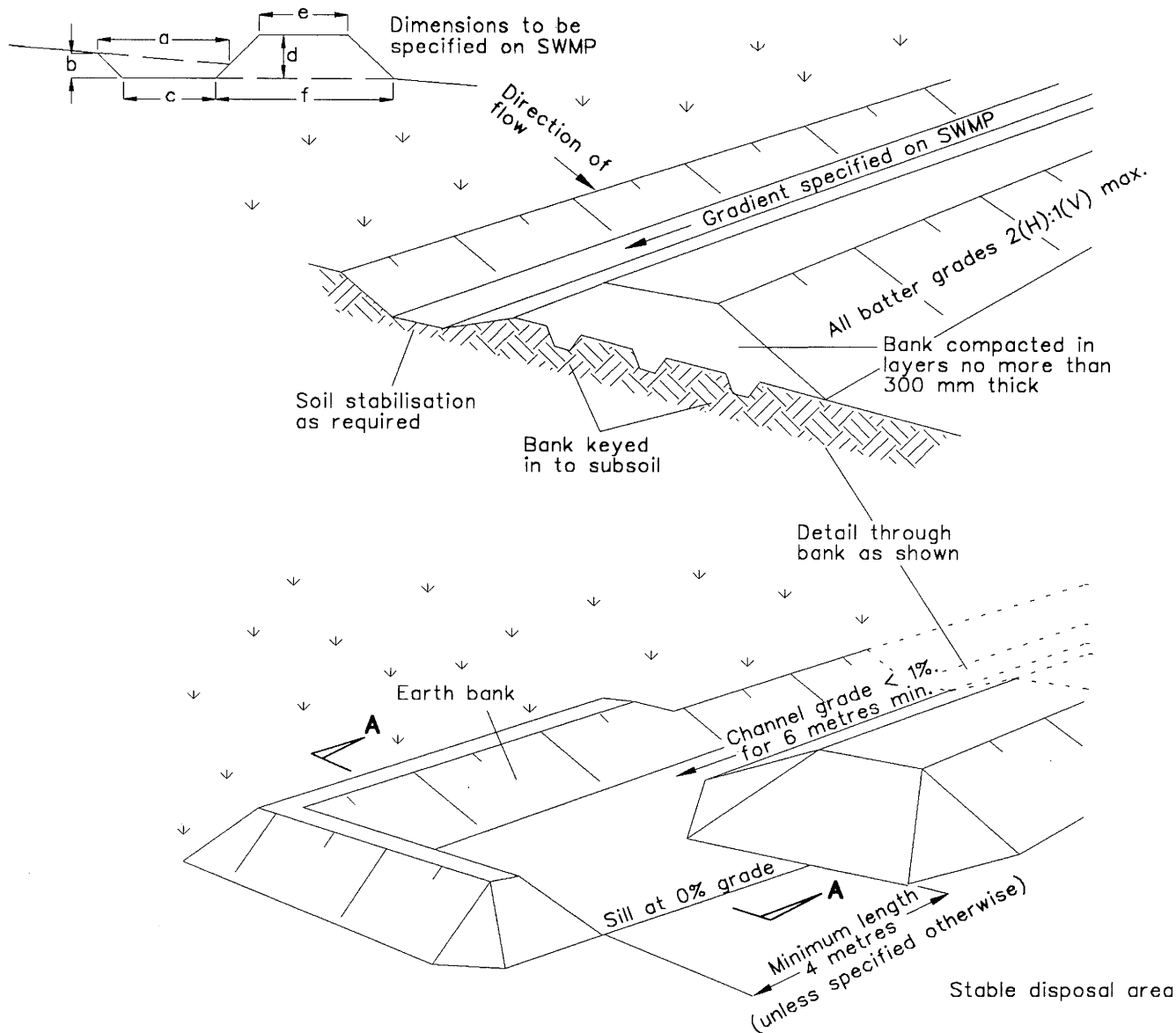
PLAN VIEW



CROSS SECTION AA

Construction Notes

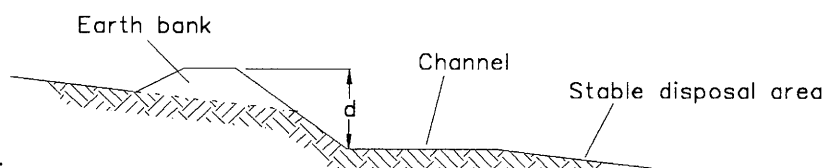
1. Subgrade fill to be compacted to the density of the surrounding undisturbed material.
2. Ensure that concrete or riprap used for energy dissipater or outlet protection conforms to the grading limits specified on the SWMP/ESCP.
3. Ensure that the geotextile does not sustain serious damage by preparing a smooth, even foundation.
4. Repair minor damage to the geotextile before spreading any aggregate. For repairs, patch one piece of fabric over the damage, making sure that all joints and patches overlap more than 300 mm.



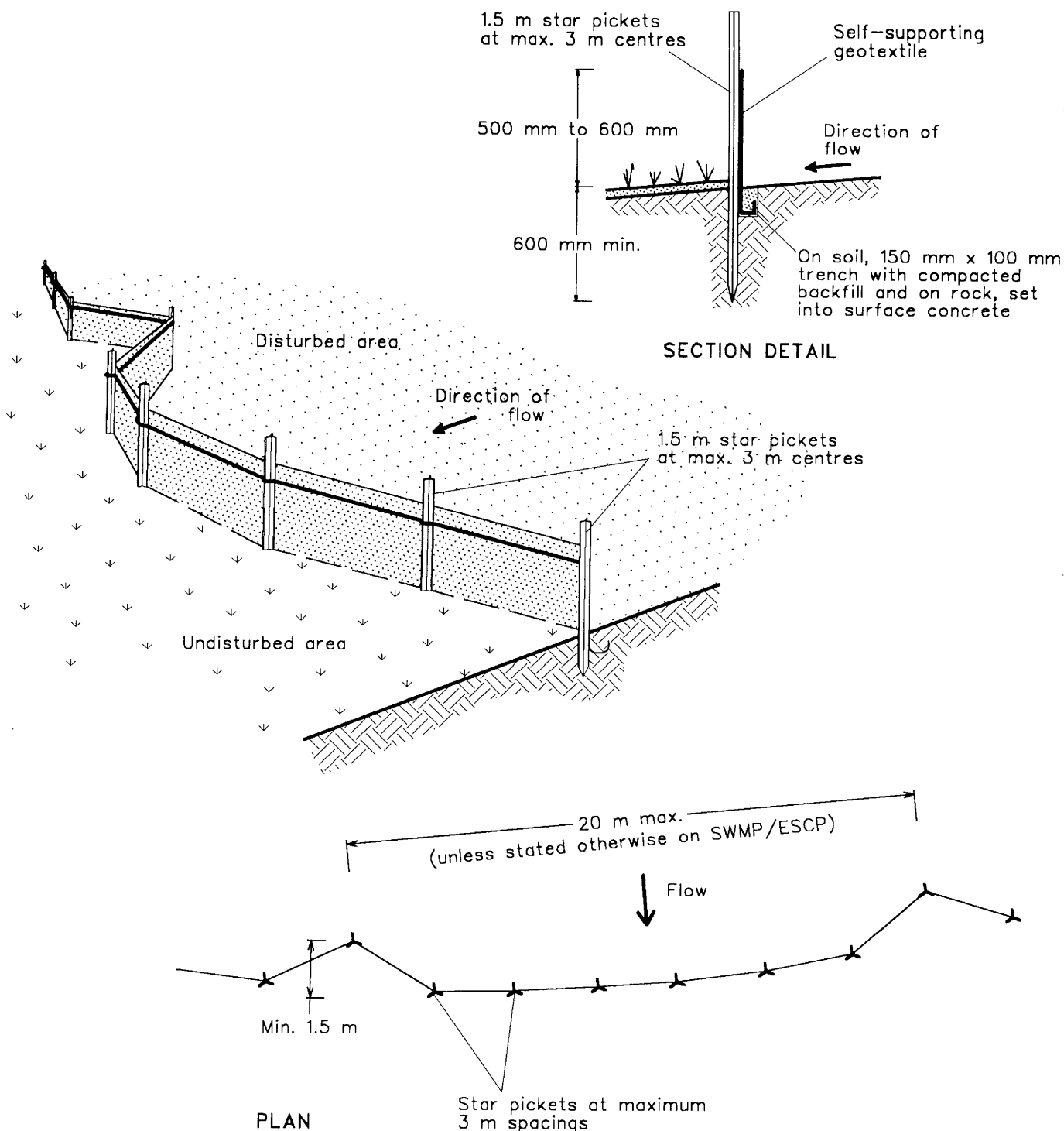
Level Spreader (or Sill)

Construction Notes

1. Construct along gradient as specified.
2. Avoid removing trees and shrubs if possible.
3. Drains to be of parabolic or trapezoidal cross section as opposed to V-shaped.
4. Earth banks to be adequately compacted in order to prevent failure.
5. Permanent or temporary stabilisation of the earth bank to be completed within 10 days of construction.
6. All outlets from disturbed lands are to feed into a sediment basin or similar.
7. Discharge runoff collected from undisturbed lands onto either a stabilised or an undisturbed disposal site within the same subcatchment area from which the water originated.
8. Compact with a suitable implement in situations where they are required to function for more than five days.
9. Earth banks to be free of projections or other irregularities that will impede normal flow.



Section AA



Construction Notes

1. Construct sediment fence as close as possible to parallel to the contours of the site.
2. Drive 1.5 metre long star pickets into ground, 3 metres apart.
3. Dig a 150 mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
4. Backfill trench over base of fabric.
5. Fix self-supporting geotextile to upslope side of posts with wire ties or as recommended by geotextile manufacturer.
6. Join sections of fabric at a support post with a 150 mm overlap.

APPENDIX 5

Historic Government Authority Consultation and Approval
Documentation



Natural Resources Access Regulator

Contact: Mohammed Ismail
Phone: 02 8838 7535
Fax: 02 8838 7554
Email: mohammed.ismail@nrar.nsw.gov.au

Collins and Sons Holdings Pty Ltd
SPO Box 378,
NARELLAN NSW-2567

Our ref: **10CX122891** (old Ref: ERM2013/830)
DA 75/256

email: matt@mcollins.com.au

7 December 2018

Re: Controlled activity approval - EXTENSION

For activity described as	Building/construction (Non-Residential)
To be carried out at	Spring Farm and Nesbitt Site, 186 Macarthur
Road, SPRING FARM 2570	
Date of Issue: 27/12/2018 -	Date of Expiry: 7 December 2018.

I refer to your application for extension of controlled activity approval under the *Water Management Act 2000* which was received by this office. Receipt of your application fee of \$722 is also acknowledged.

1. Controlled activity approval

The Natural Resources Access Regulator (NRAR) has determined to grant you an extension to a controlled activity approval. Please find enclosed the **Notice of Determination** together with your **Statement of Approval**.

Please read carefully the conditions of the approval and seek clarification from NRAR for any condition not fully understood.

A **copy** of this approval and any annotated documentation should be **provided to the council**, your **certifier** and to **all contractors** engaged in the implementation of this controlled activity to ensure they are also aware of the conditions.

The controlled activity approval must be kept **current until** the controlled activity has been **completed**. Applications for **extending the approval** should be made to NRAR, in writing, prior to the expiry date on the approval.

2. Inspections and fees

As the approval holder, you are required to notify NRAR on completion of the controlled activity. A site inspection may be needed to confirm that all of your obligations under the controlled activity approval have been carried out.

Costs associated with a single inspection may be covered by the application fee. However, if extra inspections or significant reassessment is required, then additional fees will be incurred.

Fees will also apply to any amendments requested or any extension of this approval. The current fee schedule is available at <https://www.industry.nsw.gov.au/water/licensing-trade/approvals/controlled-activities>

3. Other approvals may be required

Subject to the conditions of the attached Statement of Approval, the approval holder is only authorised to carry out the controlled activity described in the location specified.

The attached Statement of Approval does not relieve the approval holder of any obligation which may exist to also obtain permission/approval/consent from any other agency who may have some form of control over the site or the proposed development.

Any questions regarding this correspondence should be directed to by email to mohammed.ismail@nrar.nsw.gov.au.

Yours sincerely



**Mohammed Ismail
Water Regulation Officer
Natural Resources Access Regulator
Dol Crown Lands & Water, NRAR**

Enc:
Notice of Decision
Statement of Approval



	Application details
Reference number	10CX122891
Application type	Controlled activity approval under section 92 of the <i>Water Management Act 2000</i>
Description of activity	Controlled Activities
Applicant/s	Collins and Sons Holdings Pty Ltd SPO Box 378, NARELLAN NSW-2567
	Decision
Decision	Granted, subject to conditions This decision was made under section 95 of the <i>Water Management Act 2000</i> .
Date of decision	7 December 2018
Determining officer	Mohammed Ismail by a delegation from the Minister administering the <i>Water Management Act 2000</i> under the <i>Instrument of Delegation (Water Management Act) 2011</i>
	Reason/s for decision
	<p>This controlled activity approval was granted on the basis DPI Water is satisfied adequate arrangements are in place to ensure that no more than minimal harm will be done to waterfront land as a consequence of the carrying out of the controlled activity.</p> <p>Conditions were applied for the purpose of protecting the environment from the impacts associated with the approval, to give effect to any agreement between the applicant and a person who objected to the application, or to require security for the cost of performing the approval holder's obligations under the approval in case the approval holder fails to fulfil those obligations.</p>

Right of appeal

Section 368 of the *Water Management Act 2000* provides a right of appeal to the Land and Environment Court in certain circumstances:

- The applicant/s may appeal against a decision **imposing certain conditions** on an approval or **fixing the term** of an approval. This right of appeal also applies to conditions which are amended or added after an approval is granted.
- A person who objected to the granting of the approval under section 93 of the *Water Management Act 2000* may appeal against a decision **granting** the approval.

If you wish to make an appeal you must do so **within 28 days** after the date of the decision.

END OF STATEMENT

Approval details

Approval number	10CX122891
Status	CURRENT*
Approval kind	Controlled Activity
Water sharing plan	Greater Metropolitan Region Unregulated River Water Sources 2011
Date of effect	27/11/2018 Should an appeal be made against the granting of this approval, this approval will not take effect until the appeal is finally disposed of.
Expiry date	21/11/2021
Approval holder(s)	Schedule 1
Activities	Schedule 2
Conditions	Schedule 3

Contact for service of documents

Name	Collins and Sons Holdings Pty Ltd
Address	PO Box 378 NARELLAN NSW-2567

* Note: An approval has effect for such period as is specified in the approval, or if the period is extended under section 105, that extended period. If an application for extension of an approval is lodged before the approval expires, the term of the expiring approval is extended until either the date of the final decision on the application, or a date fixed by the Minister for the approval, whichever is the later date. An approval which has expired can be the subject of an application to extend it but it needs to be accompanied by a statutory declaration of the reasons for the delay in making the application. If the Minister accepts these reasons the term of the approval is taken to have been extended, and the application may be dealt with, as if the application had been made before the approval expired.

It is an offence under the Water Management Act 2000 to breach a term or condition of the approval or to construct and use works to which the approval does not relate. It is also an offence to use works the subject of an approval if the approval has expired, been surrendered or cancelled.

Schedule 1 - Approval holders

The holders of this approval are:

Approval holder(s)	ACN (if applicable)
Collins and Sons Holdings Pty Ltd	000 521 871

Important notice - change of landholder or contact

Please advise the Office in the event of any of the following, as soon as practicable:

- If there is a change in the ownership or occupation of the land benefited by this approval (see Schedule 2). Under the Water Management Act 2000, an approval is typically held by the owner or lawful occupier of the benefited land. Consequently, a change in occupation may cause a change in your legal obligations as an approval holder.*
- If there is a change to the contact person. You will be required to lodge a written statement signed by all the holders.*
- If there is a change to the mailing address for the nominated contact person. This should be done by the contact person in writing.

* An updated Statement of Approval will be issued free of charge

Schedule 2 - Activities

Part A: Authorised activities

Subject to the conditions of this approval, in relation to each numbered activity in the table, the holders of this approval are authorised to undertake the activity of the type shown at the location specified:

Activity 1

Specified Activity

Extractive Industry

Specified location

1//587631	Whole Lot
32//635271	Whole Lot
22//833317	Whole Lot

Water source

Hawkesbury And Lower Nepean Rivers Water Source

Water sharing plan

Greater Metropolitan Region Unregulated River Water Sources 2011

Schedule 3 - Conditions

The approval is subject to the following conditions:

Conditions

Water management works

DK6301-00001

All excavated material associated with the carrying out of the controlled activity must be removed from waterfront land and disposed of or used in a way that prevents the material from re-entering the water source.

DS4875-00001

A. Before commencing the controlled activity authorised by this approval, the boundary of the area where the activity is to be carried out must be clearly marked on the ground.
B. The markings must remain in place until the controlled activity has been completed.

DS4860-00001

The approval holder must employ a suitably qualified person to directly supervise the controlled activity authorised by this approval to be carried out.

DS4862-00001

The controlled activity authorised by this approval must be maintained for a period of 2 years after completion of the controlled activity.

Activities

DS6039-00001

The bed of the watercourse must not be excavated..

DS5035-00284

The controlled activity authorised by this approval must be carried out in accordance with the following plan(s)/document(s) held by Natural Resources Access Regulator, Parramatta Office:
A. Plan No. 77310.01.P08, Original Surface Contours (1983) by SMEC Urban
B. Plan No. 77310.01.P09, Current Surface Contours (2008) by SMEC Urban
C. Plan no. 77310.01.P16, Design Final Surface Contours by SMEC Urban.
D. Plans Nos. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban.
E. Plans No JET0328 drawing Nos 11 (issue 3) and 12 to 16 (inclusive all issue 2) by Johnstone Environmental Technology as indorsed by Department Land & Water (now office of Water) and department of Planning.
F. Plans No JET0989 drawing 2 to 4 inclusive and 7 to 10 inclusive.
.

DS5035-00285

The controlled activity authorised by this approval must be carried out in accordance with the following plan(s)/document(s) held by Natural Resources Access Regulator, Parramatta Office:

- A. Landscape Management Plan dated 24 April 2013 by Harvest Scientific Services Pty Ltd
- B. Figure 3 Final Landform and Rehabilitation Management Plan No 201279 dated 4 September 2012 by Harvest Scientific Services
- C. Attachment 1 to this CAA, Site drainage and erosion control measures.
- D. Attachment 2 to this CAA, Site Rehabilitation
- E. Vegetation Management Plan (VMP), The Knoll, Spring Farm, Elderslie NSW date February 2002
- .

Environmental matters

DK4951-00001

A. Before commencing any work authorised by this approval, erosion and sediment control measures must be established and implemented in accordance with the requirements of the Managing Urban Stormwater Manual, Volume 1, Soils and Construction (2004) as amended or replaced from time to time.

B. These control measures must be maintained until work is completed.

DS4861-00001

All erosion and sediment control works must be decommissioned using a suitably qualified person on completion of the controlled activity once the site has stabilised.

DS4865-00001

A. All materials must be stored away from the water source so that materials do not:

- i. obstruct water flow, or
- ii. wash into the water source, or
- iii. cause damage to river banks.

B. When the controlled activity authorised by this approval has been completed, surplus materials must be removed from waterfront land.

DS4866-00001

Machinery used for the controlled activity authorised by this approval must not enter the water source at any time.

DS4945-00001

Vegetation may only be cleared to the minimum extent required for the carrying out of the controlled activity, which means that the minimum area is cleared to allow:

- A. carrying out of the controlled activity and
- B. access for appropriate equipment and personnel.

Monitoring and recording

DS4852-00001

A copy of this approval must be kept at the site where the controlled activity is taking place. A copy of the approval must be provided to all personnel working on the controlled activity.

DS6278-00001

The approval holder must provide a progress report detailing extraction operations, site conditions and materials replenishment to the Natural Resources Access Regulator every twelve (12) months from the date of the granted approval. This progress report must be submitted to Natural Resources Access Regulator, Parramatta Office, and the report is to include photos of the entire site and the photo points must be identified by survey or other methods.

Reporting

DS4864-00014

When the controlled activity authorised by this approval has been completed:

- A. a certificate of completion must be provided by a suitably qualified person, and
- B. the approval holder must send the certificate to Natural Resources Access Regulator, Parramatta Office within 60 days of the controlled activity being completed.

DS4863-00022

At completion of the maintenance period for the controlled activity authorised by this approval, the approval holder must report in writing to Natural Resources Access Regulator, Parramatta Office, that:

- A. the controlled activity has been completed, and
- B. the water source and waterfront land have been restored and rehabilitated in accordance with plans held by Natural Resources Access Regulator.

DS4857-00026

The approval holder must notify Natural Resources Access Regulator, Parramatta Office, in writing within 30 days of the controlled activity being completed.

DS4899-00003

The approval holder must notify Natural Resources Access Regulator, in writing to nrar.enquiries@nrar.nsw.gov.au , within 14 days of any change in site management, land ownership or land occupation.

DS4892-00031

- A. The approval holder must provide a report to Natural Resources Access Regulator, Parramatta Office, on the implementation of each of the following plan(s):
 - Vegetation Management plan; Works schedule every twelve (12) months up to the end of the maintenance period, and at the completion of the controlled activity authorised by this approval.
- B. Each report must:
 - i. address the requirements set out in each plan, and
 - ii. be prepared by a suitably qualified person.

Additional conditions

DK6311-00001

- The approval holder must not excavate:
- A. beyond the depth shown on plans No. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban approved by the NSW Office of Water and stamped on 8 October 2013,
 - B. below the depth shown on plans JET0328 Drawing 12, 13, 14, & 15 (all issue 2) prepared by Johnstone Environmental Technology stamped on 30 April 1996,
 - C. below the depth shown on plans JET0.989 drawings 8 issues 1, drawing 9 issues 0 and drawing 10 issues 0.

DK6312-00001

The approval holder must not excavate beyond a depth of 3 metres above the normal flow water level (taken as R55.63).

DS4924-00049

A. Before commencing carrying out the controlled activity authorised by this approval, a security deposit of \$ 45,200 must be provided to Natural Resources Access Regulator, Parramatta Office, in the form of an SGI document or equivalent (e.g. bank guarantee) attached to this approval.

B. The security deposit will be held by Natural Resources Access Regulator until:

i. the controlled activity has been satisfactorily completed and the water source and waterfront land have been rehabilitated in accordance with plans held by Natural Resources Access Regulator, and

ii. a certificate of compliance/statement of completion has been completed by a suitably qualified person and provided to Natural Resources Access Regulator, Parramatta Office.

DS4924-00050

A. Before commencing carrying out the controlled activity authorised by this approval, a security deposit of \$ 43,850 must be provided to Natural Resources Access Regulator, Parramatta Office, in the form of an SGI document or equivalent (e.g. bank guarantee) attached to this approval.

B. The security deposit will be held by Natural Resources Access Regulator until:

i. the controlled activity has been satisfactorily completed and the water source and waterfront land have been rehabilitated in accordance with plans held by Natural Resources Access Regulator, and

ii. a certificate of compliance/statement of completion has been completed by a suitably qualified person and provided to Natural Resources Access Regulator, Parramatta Office.

Glossary

licensor - WaterNSW or DPI Water, depending on which organisation administers your licences and/or approvals

waterfront land - Land and material in or within 40 m of the top of the bank or shore of a river, lake, estuary or coastal waters.

General Notes

All conditions on an approval require compliance. An appeal to the Land and Environment Court against a decision to impose certain conditions on an approval can be made within 28 days after the date the decision is made. Conditions identified with the first letter "D" are those that can be appealed during the appeal period.

The words in this approval have the same meaning as in the *Water Management Act 2000*

Note: The words in this approval have the same meaning as in the WMA

END OF STATEMENT

Mart Rampe

From: Richard Holz <Richard.Holz@camden.nsw.gov.au>
Sent: Wednesday, May 30, 2018 11:23 AM
To: Matt Collins
Cc: Bernadette Mackinnon
Subject: RE: Referral of Collins Spring Farm- Water management Plan to Camden Council

Hi Matt,

Thank you for forwarding the Water Management Plan and ESCP for the Spring Farm Quarry site. It is noted that this document also formed part of your recent modification application to DPE. Council has made a submission to DPE on 29 March 2018 regarding the proposed modification. It is noted the Water Management Plan has been commented on by DPI Water and that the site has an EPL with the EPA. Council has no issues with the proposed ESCP.
Regards Richard

Richard Holz
Stormwater Project Officer



70 Central Avenue, Oran Park, 2570
(02) 4654 7770
www.camden.nsw.gov.au

PO Box 183, Camden NSW 2570
richard.holz@camden.nsw.gov.au
www.facebook.com/camdenccouncil/

Leadership | Innovation | Partnership | Commitment | Customer Focus

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23
JUNE

This mail, including any attached files, may contain confidential and privileged information for the sole use of the intended recipient(s). If you are not the intended recipient (or authorised to receive information for the recipient), please contact the sender by reply e-mail and delete all copies of this message. Any views or opinions presented are solely those of the author.

From: Matt Collins [mailto:matt@mcollins.com.au]
Sent: Tuesday, 29 May 2018 4:04 PM
To: Richard Holz <Richard.Holz@camden.nsw.gov.au>
Cc: Bernadette Mackinnon <Bernadette.Mackinnon@camden.nsw.gov.au>
Subject: FW: Referral of Collins Spring Farm- Water management Plan to Camden Council

Dear Richard,

You should have received an invitation to join a dropbox folder named Camden Council Spring farm Quarry . This file contains the Quarry Water Management and Erosion and Sediment Control Plan that is the document we are required to consult with Council in accordance with DA/75/256 approved by the Minister of Planning.

In relation to the Water management Plan the requirement to consult Council is contained in Schedule 3 clause 12 (b) . A copy of the 2009 modification is attached for your information. Attached is a copy of the Department's approval of the other management plans issued in September 2017. The dropbox folder contains details of the Management Plan approval from the Office of Water that has occurred during the last twelve months.

Please contact us should you require any further information relating to this matter. We look forward to receiving your comments on the updated management plan.

Regards

Matt Collins
Managing Director
Collins Group



Email matt@mcollins.com.au

Upper Level, 1/49 Smeaton Grange Road, Smeaton Grange, NSW, 2567
PO Box 378, Narellan, NSW 2567

From: Matt Collins [<mailto:matt@mcollins.com.au>]
Sent: Thursday, 24 May 2018 4:58 PM
To: 'bernadette.mackinnon@camden.gov.au'
Subject: FW: Referral of Collins Spring Farm- Water management Plan to Camden Council

Dear Bernadette,

Please find attached the Spring Farm Quarry Water management and erosion and sediment control plan that the Department of Planning has requested we seek comments from Camden Council on.

Should you require any further explanation or assistance please do not hesitate to contact me.

Regards,

Matt Collins
Managing Director
Collins Group



Email matt@mcollins.com.au

Upper Level, 1/49 Smeaton Grange Road, Smeaton Grange, NSW, 2567
PO Box 378, Narellan, NSW 2567

From: Matt Collins [<mailto:matt@mcollins.com.au>]
Sent: Monday, 30 April 2018 3:51 PM
To: 'richard.holz@camden.nsw.gov.au'
Cc: 'bernadette.mackinnon@camden.gov.au'
Subject: FW: Referral of Collins Spring Farm- Water management Plan to Camden Council

Dear Richard/Bernadette,

Further to our email dated 10 April, 2018 in relation to The Department of Planning's request that we refer the Spring farm Quarry Water management and Erosion and sediment Control plan to Council for their comments could you please advise when we could expect comments for Council.

Regards

Matt Collins
Managing Director
Collins Group



Email matt@mcollins.com.au

Upper Level, 1/49 Smeaton Grange Road, Smeaton Grange, NSW, 2567
PO Box 378, Narellan, NSW 2567

From: Matt Collins [<mailto:matt@mcollins.com.au>]

Sent: Tuesday, 10 April 2018 2:06 PM

To: 'richard.holz@camden.nsw.gov.au'

Cc: 'bernadette.mackinnon@camden.gov.au'

Subject: Referral of Collins Spring Farm- Water management Plan to Camden Council

Dear Richard/ Bernadette,

NSW Department of Planning and Environment have requested that we consult Camden Council regarding the water management Plan that applies at Spring Farm Quarry, Macarthur Road, Spring Farm. Accordingly we have enclosed a copy of the document for your consideration. We would appreciate if you could provide your comments in writing so that we can incorporate any changes required as suggested by the Department.

Should you wish to discuss the document or arrange to visit the site please feel free to contact me email matt@mcollins.com.au or business phone 9774 1544.

Regards,

Matt Collins

Managing Director

Collins Group



Email matt@mcollins.com.au

Upper Level, 1/49 Smeaton Grange Road, Smeaton Grange, NSW, 2567
PO Box 378, Narellan, NSW 2567

■



Contact John Galea
Phone (02) 8838 7520
Email john.galea@dpi.nsw.gov.au
Our ref (WAL 30089)

Mr Matt Collins
Managing Director, Collins Group
PO Box 378
NARELLAN NSW 2567

Via email matt@mcollins.com.au

Dear Mr Collins

**Water Management (Incl. Groundwater Assessment) and Erosion and Sediment
Control Plan – April 2017 – Spring Farm Quarry**

I refer to your email of 25 September 2017 regarding the Division of Crown Lands and Water's (formerly DPI Water) comments on the Spring Farm Quarry Water Management (Incl. Groundwater Assessment) and Erosion and Sediment Control Plan – April 2017 (the Plan).

Division of Crown Lands and Water acknowledges the receipt of the extra information that was requested and is now satisfied that the Plan covers all matters. The Division understands that the bore is not equipped and that the Water Access Licence nominated against this bore should cover the excavation for sand and soil and that the Access Licence of 20 MI /annum has not been exceeded. This Access Licence may be used to account for the water transported in excavated material.

If you have any further inquiries, please do not hesitate in contacting me.

Yours sincerely

John Galea,
Water Regulation Officer
Regulatory Operations - Metro



M. Collins & Sons Holdings Pty Ltd

ABN: 28 000 521 871

P.O. Box 378, NARELLAN, NSW 2567
1/49 SMEATON GRANGE ROAD, SMEATON
GRANGE, NSW, 2567

Phone: (02) 9774 1544

Website: www.mcollins.com.au

1st September, 2017.

Mr John Galea,

DPI Water,

Regulatory Operation Matters,

Locked Bag 5123,

PARRAMATTA NSW 2124

Dear John,

Your Reference OUT 14/36017

**Water Management (Inc Groundwater assessment) and Erosion and Sediment Control Plan –
April 2017 - Spring Farm Quarry**

We write to acknowledge receipt of your letter received by email dated 30 August, 2017 .

The Company holds Approval Number 10CA117187 to use water from Hawkesbury Alluvia I Groundwater Source at Lot 22, DP833317 on land that contains the Spring Farm Quarry.

The Bore licence permits us to use water for industrial purposes for sand and gravel on Lot 1, DP 587631 and Lot 22, DP833317. The WAL 30089 entitlement from the bore is 20 megalitres per annum.

This bore is currently used to monitor the groundwater water level at the site on a monthly basis to enable accurate records of the groundwater aquifer to be maintained. We are not pumping from the bore as its purpose is to use the entitlement of 20 megalitres to offset against the moisture in sand particles sold from the site carried away by trucks.



M. Collins & Sons Holdings Pty Ltd

ABN: 28 000 521 871

P.O. Box 378, NARELLAN, NSW 2567
1/49 SMEATON GRANGE ROAD, SMEATON
GRANGE, NSW, 2567

Phone: (02) 9774 1544

Website: www.mcollins.com.au

The maximum quantity calculated in the Water Management Plan in table 4 will never be realised as the actual volumes of sand sold will never reach the maximum capacity as the volumes of material extracted from Lot 22 DP 833317 and Lot32 DP 635271 are much lower than 300,000 tonnes per annum.

Accordingly this addresses the point made in your response that technically we do not have a WAL that satisfies the Aquifer Interference Policy (AIP). WAL 30089 with an entitlement to 20 megalitres is committed to the water transported off site and thereby complies with the AIP. In the event there is capacity for future pumping from the bore s' licensed extraction limit it is our intention to utilise the excess for irrigation of agriculture and turf farm operations.

We seek your approval of the plan and look forward to your confirmation and thank you for your time spent reviewing the plan.

Yours faithfully,

M Collins & Sons Holdings Pty Ltd

A handwritten signature in black ink, appearing to read 'M J Collins', is written over a horizontal line.

Matthew John Collins - Director



Department of
Primary Industries
Office of Water

Contact: Mohammed Ismail
Phone: 02 8838 7535
Fax: 02 9895 7501
Email: mohammed.ismail@water.nsw.gov.au

Matt Collins
PO Box 55
MILPERRA NSW 2214

Our ref: 10 ERM2013/0830
File No: 9056802
Your Ref: 2604, DA75/256 Mod3

Attention:

13 November 2013

Dear

Re: Controlled activity approval number: – 10 ERM2013/0830
Described as: Sand and Soil Extraction
Being carried out at: Spring Farm and Nesbitt Site at Macarthur Road, ELDERSLIE
Date of Issue 8 October 2013 : Date of Expiry 8 October 2018.

The Office of Water is currently processing your request to return of a security it holds for the above approval as exchange bond amount has been received.

Please be advised the original Bank Guarantee for \$43,850.00 will be sent directly to you from our Finance unit.

If you do not receive this cheque or transfer within the next 28 working days, please contact me by phone **02 8838 7535**, or email mohammed.ismail@water.nsw.gov.au, so the matter can be followed up on your behalf.

Yours sincerely

Mohammed Ismail
Water Regulation Officer
NSW Office of Water
Water Regulatory Operations Sydney

Date: 15 October, 2013

Subject: NSW Office of Water - Controlled Activity Approval 10ERM 2013/830

Land:

Nesbitt Property	Lot 22 DP833317
Spring Farm Property	Lo1 1 DP587631
Penman Property	Lot 32 DP635271

Security:

*Nesbitt Property	Lot 22	5 June 2002	\$ 43,850
Spring Farm Property	Lot 1	5 June 2002	\$45,200
Penman Property	Lot 32	21 June 2013	\$43,850

* It is agreed this security is to be returned by NOW as it is replaced by Penman's security

Summary: The Company's extractive industry operations are now covered by one controlled activity approved 10ERM 2013/830.

Formerly it was regulated by the following permits:

Spring Farm Approval	04/4720
Nesbitt Approval	04/4722

As a result the new permit has consolidated the previously approved drawings, limits of extraction, regeneration and also incorporated the new requirements for the Penman Property.

The Register of Documents and plans that apply to the new approval 10ERM 2013/830 are:

1. Notice of Determination NOW 8 October, 2013 Pages 1 & 2
2. NOW Statement of Approval 8 October, 2013 Pages 1 to 7
3. Schedule 1 - Site Water and Sediment Run Off Management Page 1
4. Attachment 2 - Site Rehabilitation Pages 2, 3 & 4
5. Vegetation Management Plan (Gordon Limburg) Feb 1996 Pages 1 to 53
6. Harvest Scientific Services - Landscape Management Plan 24 April, 2013
7. SMEC Urban Approval Plans:

Plan No	Sheet	Date
77310.01.P08	1	Feb 2012
77310.01.P09	2	Feb 2012
77310.01.P16	3	Feb 2012
77310.01.P11	4	Feb 2012
77310.01.P13	6	Feb 2012
77310.01.P12	5	Feb 2012
77310.01.P04	1	13/10/2011
77310.01.P05	2	13/10/2011
77310.01.P06	3	13/10/2011

8. Johnstone Environmental Technology Approval Plans:

Plan No	Drawing	Issue	Date
JET 0989	2	4	30/04/01
JET 0989	3	4	11/04/01
JET 0989	4	4	11/04/01
JET 0989	7	2	15/10/01
JET 0989	8	1	11/04/01
JET 0989	9	0	30/04/01
JET 0989	10	0	30/04/01
JET 0328	11	3	29/02/96
JET 0328	12	2	29/02/96
JET 0328	13	2	29/02/96
JET 0328	14	2	29/02/96
JET 0328	15	2	29/02/96
JET 0328	16	2	29/02/96

9. Final Landform and Rehabilitation Management Plan Figure 3 No. 201279
4 September, 2012

10. Haulage Routes to Spring Farm Quarry

EXPIRY DATE: 8 October, 2018 and an application to extend the approval must be made at least one month prior to the expiry date.

File Electronic: R/managing director/judy/M Collins & Sons Holdings Pty Ltd ABN 28 000
521 871/Consent File/NOW CAA 10ERM 2013 830

HARD COPY: NOW Controlled Activity Approval 10ERM 2013/830

Approved Plans: Storage Room/NOW/Controlled Activity Approval 10 ERM 2013/830



Department of
Primary Industries
Office of Water

Contact: Mohammed Ismail
Phone: 02 8838 7535
Fax: 02 9895 7501
Email: mohammed.ismail@water.nsw.gov.au

Matt Collins
PO Box 55
MILPERRA NSW 2214

Our ref: 10 ERM2013/830
Previous Ref: ERM10/523 (ERM04/4720)
ERM10/210 (ERM04/4722)
File No: 9056802
Related Files: 0410826; 0151208
Development Ref: 75/256 Mod3; L & E 10409\1995
Other Related Approvals: DA252/93; 2604 (dated
27-1-89); Planning 75/256 (13-10-88)

Attention: Matthew J. Collins

8 October 2013

Dear Sir

Re: Controlled activity approval – 10 ERM2013/830
For activity described as: Spring Farm Sand and Soil Extraction,
To be carried out at: 186 MacArthur Road, Elderslie
Date of Issue 8 October 2013; Date of Expiry 8 October 2018.

I refer to your application for a controlled activity approval under the *Water Management Act 2000* which was received at this office. Receipt of your application fee of \$2141 (\$864+\$854+\$423) is also acknowledged.

1. Controlled activity approval

The Office of Water has determined to grant you a controlled activity approval. Please find enclosed the **Notice of Determination** together with your **Statement of Approval**.

Please read carefully the conditions of the approval and seek clarification from the Office of Water for any condition not fully understood.

A **copy** of this approval and any annotated documentation should be **provided to council**, your **certifier** and to all **contractors** engaged in the implementation of this controlled activity or the Vegetation Management Plan (VMP) to ensure they are also aware of the conditions.

The controlled activity approval must be kept **current until** the controlled activity has been **completed**. Applications for **extending the approval** should be made to the Office of Water, in writing, at least **one month** prior to the expiry date on the approval.

2. Security (bond or bank guarantee)

The Office of Water acknowledges receipt of your security as follows:

Number	Provider	Value
1	M Collins and Sons Holdings PL	\$43,850.00
2	M Collins and Sons Holdings PL	\$45,200.00

The security will be held by the Office of Water until such time as the works, rehabilitation and any specified maintenance period related to this controlled activity approval are complete and the reporting requirements and conditions of the approval have been met.

If the controlled activity approval is amended or the scope of the controlled activity is changed, the Office of Water may also alter or vary the amount of the security.

Please also note that a security release fee will apply to the release, replacement or exchange of a security held by the Office of Water.

3. Inspections and fees

As the approval holder, you are required to notify the Office of Water on completion of the controlled activity. A site inspection may be needed to confirm that all of your obligations under the controlled activity approval have been carried out.

Costs associated with a single inspection may be covered by the application fee. However, if extra inspections or significant reassessment is required then additional fees will be incurred.

Fees will also apply to any amendments requested or any extension of this approval. The current fee schedule is available at:

www.water.nsw.gov.au [Water licensing](#) > [Approvals](#) > [Controlled activities](#)

4. Other approvals may be required

Subject to the conditions of the attached Statement of Approval, the approval holder is only authorised to carry out the controlled activity described at the location specified.

The attached Statement of Approval does not relieve the approval holder of any obligation which may exist to also obtain permission / approval / consent from any other agency who may have some form of control over the site or the proposed development.

In the event that there is an inconsistency between the drawings, other documentation and the conditions herein, the interpretation that will result in the best outcome for the stabilisation of the Site and the subsequent rehabilitation and maintenance of the Site and protected land and any river, is to prevail. Such interpretation is to be applied in consultation with, and with the approval of the Office of Water.

You need to implement all practicable measures to prevent or minimise any harm to the environment that may result from the operation you intend to carry out according to this Controlled Activity Approval and rehabilitate the site.

Any questions regarding this correspondence should be directed to Mohammed Ismail, mohammed.ismail@water.nsw.gov.au.

Yours sincerely



Mohammed Ismail
Water Regulation Officer
NSW Office of Water

Enc:
Notice of Determination; Statement of Approval

Notice of Determination

issued under the Water Management Act 2000

Application details

Approval Number 10 ERM2013/0830

First applicant Mr

Last Name Collins

First Name Matt

Address PO Box 55

MILPERRA NSW 2214

Contact 0297741544

Fax:

Email matt@mcollins.com.au

Second applicant (if applicable)

Last Name

First Name

Address

Town:

State:

P/Code:

Contact

Ph:

Fax:

Email

Determination

Application type

Controlled Activity Approval

to be issued under Part 3, Chapter 3 of the *Water Management Act 2000* - for matters assessed as integrated development under Part 4 of the *Environmental Planning & Assessment Act 1979*

Determination

☒ Granted (subject to conditions)

☐ Refused

Date of Determination

8 October 2013

Reasons for Determination

see Attachment 1

Date of Expiry

8 October 2018

Location

Spring Farm and Nesbitt Site at Macarthur Road, ELDERSLIE

Description of activity

Sand and Soil Extraction

Determining Officer

Signature



Name

Mohammed Ismail

by delegation from the Minister administering the
Water Management Act 2000

Right of Appeal: Section 368 of the *Water Management Act 2000* gives a right of appeal in certain circumstances. As this application has been assessed as integrated development it will not be subject to any third party rights of appeal under the *Water Management Act 2000*. This does not affect any right of appeal an objector may be entitled to under section 98 of the *Environmental Planning and Assessment Act, 1979*.

Notice of Determination

issued under the Water Management Act 2000

ATTACHMENT 1

Reason for determination

Approval Number: 10 ERM2013/0830

Reason: This controlled activity approval is granted on the basis that the NSW Office of Water is satisfied the proposed development has adequate arrangements in place to ensure that no more than minimal harm will be done to waterfront land at this site as a consequence of carrying out the proposed controlled activity.

This controlled activity approval is subject to the attached conditions.

Schedule 1 - Approval holder(s)

Holder's name(1): Matt Collins**Postal Address:** PO Box 55

Town/City MILPERRA

State NSW

P/Code 2214

Holder's name(2):**Postal Address:**

Town/City

State

P/Code

Company Name: M Collins & Sons Holdings Pty Ltd**ACN (if applicable):** 000521871**Office Address:** 17 Fitzpatrick Street

Town/City REVERSBY

State NSW

P/Code 2212

Property/land owner's details

Name of Owner/s (1) Matt Collins**Postal Address:** PO Box 55

Town/City MILPERRA

State NSW

P/Code 2214

Name of Owner/s (2) Gregory Penman**Postal Address:** 172 Macarthur Road

Town/City Spring Farm

State NSW

P/Code 2570

IMPORTANT NOTICE – Change of approval holder or landholder or contact person.

Please advise the Office of Water in the event of any of the following as soon as practicable:

- If there is a change in the ownership or occupation of the land benefited by this approval (see Schedule 2). Under the *Water Management Act 2000*, an approval is typically held by the owner or lawful occupier of the benefited land. Consequently, a change in ownership may cause a change in your legal obligations as an approval holder. *
- If there is a change to the contact person or their contact details. You will be required to lodge a written statement signed by all the approval holders. *
- If there is a change in the mailing address for the nominated contact person. This should be done by the contact person in writing.

* An updated Statement of Approval reflecting these changes will be issued free of charge.

Statement of Approval

Water Management Act 2000

Approval details

Approval No: **10 ERM2013/0830**

File No: 9056802

Previous Ref: ERM10/523 (ERM04/4720)
ERM10/210 (ERM04/4722)

Status: CURRENT *

Approval type: Controlled Activity Approval

Water sharing plan: not applicable

Period of Approval

Date of effect: 8 October 2013

Expiry date: 8 October 2018

Approval holder(s): Schedule 1

Description of activity: Schedule 2

Conditions: Schedule 3

Contact for service of documents

Name: Matt Collins

Address: PO Box 55, MILPERRA, NSW, 2214

* NOTE: An approval has effect for such period as is specified in the approval, or if the period is extended under section 105 of the *Water Management Act 2000*, that extended period. If an application for extension of an approval is lodged before the approval expires, the term of the expiring approval is extended until either the date of the final decision on the application, or a date fixed by the Minister for the approval, whichever is the later date. An approval which has expired can be the subject of an application to extend it but it needs to be accompanied by a statutory declaration of the reasons for the delay in making the application. If the Minister accepts these reasons the term of the approval is taken to have been extended, and the application may be dealt with, as if the application had been made before the approval expired.

It is an offence under the *Water Management Act 2000* to breach a term or condition of the approval or to construct or carry out a controlled activity to which the approval does not relate, or if the approval has expired, been surrendered or cancelled.

Schedule 2 – Controlled activity**Authorised Controlled Activity**

Subject to the conditions of this approval, in relation to the controlled activity described, the holders of this approval are authorised to construct and carry out the controlled activity at the location specified:

Controlled activity: Sand and Soil Extraction,

Property Name:

Site address: 186 Macarthur Road, Spring Farm NSW 2570

Lot 1	DP 587631	Parish	County
Lot 22	DP 833317	Parish	County
Lot 32	DP 635271	Parish	County

Local Council: Camden Council

Development

Reference: 75/256 Mod3; L&E 10409/1995; (DA252/93)
(if applicable)

Name of watercourse: Nepean River

Catchment name: Hawkesbury Nepean

Security Details (if applicable)

Number	Provider	Value
1	M Collins and Sons Holdings PL	\$43,850.00
2	M Collins and Sons Holdings PL	\$45,200.00

1

Application fees

Fee: \$ 2,141.00 has been paid exclusive of GST

Receipt No: PAR13-06933; PAR13-693, PAR13-815

Approval issued by

Officer's name: Mohammed Ismail

Schedule 3 Conditions:

In relation to the controlled activity described in Schedule 2, the holders of this approval are authorised to construct and carry out the controlled activity at the location specified subject to the conditions listed:

Number	Condition
Plans, standards and guidelines	
1	This Controlled Activity Approval number 10 ERM2013/0830 only applies to the controlled activity carried out at the location marked on the Aerial Site Photo as approved by the NSW Office of Water and stamped on 8 October 2013. This Controlled Activity Approval does not permit controlled activities at any other site.
2	The approval holder must not transfer this Controlled Activity Approval 10 ERM2013/0830 without the written approval of the NSW Office of Water.
3	The approval holder must keep a copy of the current Controlled Activity Approval 10 ERM2013/0830 on site at all times and make this approval available to officers from the NSW Office of Water on request.
4	If the controlled activities described in this Controlled Activity Approval 10 ERM2013/0830, have not commenced or been completed within the period of this approval, the approval holder must apply to the NSW Office of Water for a new approval or seek an extension prior to the lapsing of the consent.
5	The approval holder must notify the NSW Office of Water in writing within 14 calendar days of any change in (i) site management; (ii) land ownership; (iii) land occupation.
6	The approval holder must comply with the requirements of each of the plans approved by the NSW Office of Water and stamped on 8 October 2013 (or as indicated) as follows: <ul style="list-style-type: none"> i. Plan No. 77310.01.P08, Original Surface Contours (1983) by SMEC Urban ii. Plan No. 77310.01.P09, Current Surface Contours (2008) by SMEC Urban iii. Plan no. 77310.01.P16, Design Final Surface Contours by SMEC Urban. iv. Plans Nos. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban. v. Plans No JET0328 drawing Nos 11 (issue 3) and 12 to 16 (inclusive all issue 2) by Johnstone Environmental Technology as indorsed by Department Land & Water (now office of Water) and department of Planning. vi. Plans No JET0989 drawing 2 to 4 inclusive and 7 to 10 inclusive.
7	The approval holder must carry out all vegetation management, erosion and sediment control and rehabilitation activities in accordance with the plans and schedules approved by the NSW Office of Water and stamped on 8 August 2013 as follows: <ul style="list-style-type: none"> i. Landscape Management Plan dated 24 April 2013 by Harvest Scientific Services Pty Ltd ii. Figure 3 Final Landform and Rehabilitation Management Plan No 201279 dated 4 September 2012 by Harvest Scientific Services iii. Attachment 1 to this CAA, Site drainage and erosion control measures. iv. Attachment 2 to this CAA, Site Rehabilitation v. Vegetation Management Plan (VMP), The Knoll, Spring Farm, Elderslie NSW date February 2002
8	The approval holder must submit for approval, by the NSW Office of Water, any amendments to a plan listed in Condition 6 (six) prior to carrying out any works in relation to the approved controlled activity.
9	The approval holder must clearly mark on the ground, the boundaries of the areas where the controlled activity is to be carried out before commencement of the controlled activity, and maintain the markings until the works are completed.

Number	Condition
10	Before commencing any extractive or deposition works on waterfront land the approval holder must engage a suitably qualified person to locate the benchmarks (cross-sections) as shown on Plan No 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban, approved by the NSW Office of Water and clearly mark these cross sections with stakes using a GPS with an agreed coordinate system.
11	The approval holder must comply with the requirements of the approved Vegetation Management Plan VMP dated February 2002 to the extent that it relates to the carrying out of the rehabilitation activities on the site which is the subject of this controlled activity approval.
12 - 15	N/A
16	The approval holder must maintain the approved controlled activity on waterfront land for a period of two (2) years from the date of completion of the controlled activity works.
17	The approval holder must complete a maintenance period of two (2) years after final planting for all areas described in the Vegetation Management Plans (VMP) approved by the NSW Office of Water.
18	The approval holder must reinstate land in the manner and to the extent described in the rehabilitation plan/s stated in condition 7, approved by the NSW Office of Water and stamped on 8 August 2013.
19	N/A.
20	The approval holder must submit survey plans to a professional standard of work as executed, and any other information required by the NSW Office of Water within 14 days of completion of the controlled activities.
21	At practical completion and/or at the end of the maintenance period, the approval holder must provide a final written report to the NSW Office of Water evidencing completion of the approved controlled activity.
22	<p>The approval holder must provide a report on the implementation of the vegetation management plan (VMP) to the NSW Office of Water at the completion of the revegetation works at every twelve (12) months up to the end of the maintenance period that must include:</p> <ul style="list-style-type: none"> (i) a schedule and map showing the vegetation species, number and location of initial and any replacement plantings and propagation materials, and (ii) the date of planting of vegetation, and (iii) the percentage cover of groundcover, shrubs, trees and weeds, and (iv) any problems that impacted on the survival rates of plants including climatic, fire, flooding and vandalism, and (v) a map of the location of any staged activities, and (vi) photographs showing the revegetation works during the reporting period.
23	The approval holder must provide the NSW Office of Water with a certificate of completion of approved activities and also a certificate of completion of maintenance to best practice provided by persons suitably experienced and/or qualified in such certification at the completion of the maintenance period.
24	The approval holder must provide a progress report to the NSW Office of Water every twelve (12) months.
25	<p>The approval holder must notify the NSW Office of Water in writing within seven (7) days if the controlled activity</p> <ul style="list-style-type: none"> (i) ceases for a period of more than 30 calendar days; or (ii) is terminated before its full completion, or (iii) is resumed.
Security deposits	
26	The approval holder must provide security of \$ 45,200 and \$43,850 by way of bank guarantee to the NSW Office of Water prior to commencing the controlled activity work. The security deposit will be held until such time as the controlled activity, together with any rehabilitation or revegetation works, have been completed in accordance with the conditions of this approval. The approval holder must certify compliance with the conditions of this Controlled Activity Approval (certificate of compliance) prior to the release of any security being held for the controlled activity.

Number	Condition
27 - 34	N/A
Disposal	
35	The approval holder must relocate any unused or excess materials at least 40 metres from the river and/or outside the designated riparian corridor.
36	The approval holder must not leave materials which could obstruct the flow of water or damage river banks on waterfront land at any time.
37	The approval holder must remove surplus material when operations cease and the controlled activity is completed.
38	The approval holder must not put materials in the drainage line or river or in any area that has existing native vegetation and/or that is identified as part of the riparian corridor.
Drainage and Stormwater	
39	The approval holder must establish all drainage control works in accordance with any Plan submitted and approved by the NSW Office of Water.
40 - 41	N/A
Erosion control	
42	The approval holder must establish erosion and sediment control works in accordance with Plans submitted and approved by the NSW Office of Water prior to the commencement of any other works on the site.
43	The approval holder must not locate permanent basins within 40 meters of the highest bank of the river.
44	The approval holder must use only biodegradable materials for any erosion control matting in the riparian corridor.
45	The approval holder must decommission all erosion and sediment control works using a suitably qualified person.
46	The approval holder must (i) implement erosion and sediment control measures in accordance with the requirements of the Managing Urban Stormwater Manual, Volume 1, Soils and Construction (Landcom, 4th Edition, March 2004) prior to any works commencing at the site; and (ii) maintain the control measures for the duration of the approval to prevent sediment and dirty water entering the waterway.
47 - 48	N/A
Excavation	
49	The approval holder must not excavate beyond a depth of 3 metres above the normal flow water level (taken as R55.63).
50	The approval holder must not excavate beyond: <ul style="list-style-type: none"> i. The depth shown on Plans No. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban approved by the NSW Office of Water and stamped on 8 October, 2013. ii. The approval holder must not excavate below the depth shown on plans JET0328 Drawing 12, 13, 14, & 15 (all issue 2) prepared by Johnstone Environmental technology Stamped on 30 April, 1996. iii. The approval holder must not excavate below the depth shown on plans JET0.989 drawings 8 issues 1, drawing 9 issues 0 and drawing 10 issues 0.
51 - 52	N/A
53	The approval holder must not allow machinery to enter or work in the Nepean River at any time.
54	N/A
Maintaining river	
55	The approval holder must not reduce river width, divert or realign the river from its existing alignment otherwise than in accordance with a Plan approved by the NSW Office of Water.

Number	Condition
56	N/A
River bed and bank protection	
57	The approval holder must grade the surfaces of river banks to a grade no flatter than 1 vertical to 50 horizontal, and no steeper than 1 vertical to 3 horizontal and grade them smooth and free from holes and ridges.
58 - 65	N/A
66	The approval holder must maintain and protect vegetation growing along the toe and face of the river bank and 3 metres above normal flow level of the river.
67	N/A
Vegetation management and riparian corridor	
68	The approval holder must delineate, protect and maintain a riparian corridor with a width of 40 metres measured horizontally landward from the top of the river bank, otherwise than in accordance with a Plan approved by the NSW Office of Water.
69 - 70	N/A
71	The approval holder must not remove or damage vegetation on waterfront land otherwise than in accordance with a Plan approved by the NSW Office of Water.
72	The approval holder must not compromise the implementation of the Vegetation Management Plan (VMP) for any work and/or controlled activity at the site.
73	N/A
74	The approval holder must only use virgin excavated natural material (VENM) that does not contain exotic weed plants or seeds as fill within the tailings emplacement area.
75	N/A
END OF CONDITIONS	



M. COLLINS & SONS HOLDINGS PTY LTD

0 9 0 0 5 2 1 8 7 1

ACN: 000 521 871

P.O. Box 55, MILPERRA NSW 2214

17 Fitzpatrick Street, REVESBY NSW 2212

Phone: (02) 9774 1544

Facsimile: (02) 9792 1532

Website: www.mcollins.com.au

31st January, 2013.

Mr. Jeremy Swan,
Acting Director Development and Environment,
Camden Council,
P O Box 183,
CAMDEN NSW 2570

Dear Jeremy,

**RE: s75W Modification of Development Consent granted by the Minister of Planning
(DOPI) for the Spring Farm Quarry at 186 Macarthur Road, Spring Farm NSW 2570**

On 25 October, 2012 the abovementioned consent was issued to carry out extractive industry operations on the adjoining property Lot 32 DP635271 at 172 Macarthur Road, Spring Farm in accordance with the Environmental Assessment titled Modification of Spring Farm Quarry Consent (DA75/2056) prepared by Pascoe Planning Solutions dated April 2012 including the response to submissions titled Review of Exhibition/Consultation Submissions, Part 1 August, 2012 and Part 2 dated September, 2012.

The DOPI has instructed that we consult with Council in relation to the updated management plans that incorporate the additional scope of works that will occur at Lot 32 DP635271.

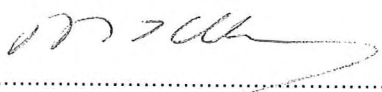
Accordingly we are pleased to attach copies of the following plans for your review.

- Waste Management Plan prepared by Harvest Scientific Services (201279) dated 20 April, 2012
- Landscape & Management Plan including the Rehabilitation Management Plan prepared by Harvest Scientific Services (201279) dated 20 April, 2012..

We will contact you in the near future to arrange a meeting to discuss any further information you may require in relation to the abovementioned plans.

Yours faithfully,

M. COLLINS & SONS HOLDINGS PTY LTD


.....
Matthew J. Collins
Managing Director



Camden Council
37 John Street, Camden NSW 2570 DX 25807
PO Box 183, Camden 2570 ABN: 31 117 341 764
Telephone: 02 4654 7777 Fax: 02 4654 7829
Email: mail@camden.nsw.gov.au



20 June 2012

Attention: Mr Kane Winwood
Major Development Assessment
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Sir,

RE: SPRING FARM QUARRY EXTENSION (DA 75/253 MOD 3)

PROPERTY: Macarthur Road, Spring Farm
LOT: 32 DP: 635271 and LOT: 22 DP 833317

I refer to the Department's letter dated 22 May 2012 regarding the proposed modification of the existing Spring Farm Quarry consent, which seeks approval for the further extraction of approximately 400,000 cubic metres of sand/soil at the above site.

Thank you for inviting Council to comment on this proposal. A review has been undertaken of the Environmental Assessment (EA) and the supporting reports provided and Council is generally supportive of the proposal. Below are our comments in relation to the proposal:

Acoustic

The recommendations of the acoustic report are considered acceptable and should be adopted in any modified development consent.

The proposed extension of quarrying activity must adopt the following operational constraints in-order to comply with adopted noise criterion:

- A maximum of two 40 tonne caterpillar dump trucks travel in /out of extraction site (per 15 minute period);
- One 36 tonne caterpillar operates continuously digging the sand / soil;
- One caterpillar 966 loader travelling within and operating within the extraction pit;
- A maximum of one power screen machine operating continuously.

Salinity

Council believes that the recommendations in the Salinity Management Plan that involve specific and general construction and management advice and the adoption of groundwater management protocols (produced by Harvest Scientific Services) be adopted and applied to the site.



Contamination

Council does not accept the report's recommendation that consent or approval be issued with conditions for further detailed contamination soil assessment for identified Areas of Environmental Concern (AEC's).

Council's Management of Contaminated Lands policy requires a Phase 2 - detailed investigation to be undertaken for all AEC's identified as part of a Phase 1 investigation prior to any approval / consent being issued for a development proposal.

Where contamination is identified after the Phase 2, a Remediation Action Plan (RAP) would also be required to be provided (to Council) for approval. Only after acceptance of a RAP (by Council) would suitable conditions be placed on a consent for remediation.

Stormwater

The MUSIC modelling results in the report prepared by Harvest Scientific Services Pty Ltd, ref 201279, dated 15 February 2012, should be reviewed and assessed by a person with suitable knowledge and/or expertise at the Department of Planning and Infrastructure, to confirm that the data, methodology adopted and outcomes are acceptable.

Groundwater

Council is satisfied with the outcomes of the groundwater assessment. The recommendations of the report should be adopted in any modified development consent.

Environmental Monitoring

Council agrees with the recommendation of the Annual Environmental Monitoring Report that air quality particulates will need to be monitored to ensure that Total Suspended Particles and PM10 are compliant.

Flora and Fauna

Council has reviewed the revised Flora and Fauna Assessment prepared by Actinous Environmental Consultants, February 2012 and makes the following comments regarding Part 3.4.1.3 "Tracts of contiguous natural vegetation":

In relation to no works occurring within the drip-line of any natural community, it is recommended that a condition of consent require the drip-line area be clearly labelled and marked on corresponding maps of the site – ensuring that works do not occur within this area. The drip-line of the vegetation community should be determined by a person with suitable knowledge and/or expertise.

Landscape

Council has reviewed the Landscape Management Plan (LMP) prepared by Harvest Scientific Services Pty Ltd, February 2012 (HSS) and makes the following comments in relation to Part (a) "Water Management Act 2000 and Controlled Activity Approval":

The current Controlled Activity Approval (CAA) from the NSW Office of Water expires on 8 April 2013 and will not reflect the proposed works. As such, it is recommended that a condition of consent require an amended CAA for the period of works and that the applicant provide Council with an amended CAA prior to works commencing. Further, that all conditions listed in the amended CAA be strictly adhered to.

Council makes the following comments in relation to Part 5.7 "Revegetation program":

In regards to the restoration zones known as Zone 1 the Nepean River and Zone 2 Dry River Anabranch, it is recommended that a condition of consent require the applicant to follow the processes and techniques as specified by HSS in their LMP to ensure that the Office of Environment and Heritage's targets as outlined in *How to Prepare a Vegetation Management Plan, Version 6* are achieved, and that these areas will provide over the longer term a greater diversity of habitats suitable for flora and fauna, thus increasing the overall biodiversity of the area.

Council makes the following comments in relation to Part 5.10.1 "Improving habitat value":

HSS have specified in their report that all plantings are to be mulched with recycled green waste. It is recommended that a condition of consent require that any recycled green waste that is used for this purpose be free from weed seeds and pathogens. Ideally it should come from a reputable source. If weeds do germinate in the green waste, they need to be appropriately treated as soon as possible to reduce the potential for further spread of weeds resulting in the degradation of habitat areas.

Traffic and Engineering

The contractors provided a Statement of Commitments for Spring Farm Quarry to the Department of Planning in April 2009, in which they committed to record and maintain comprehensive logs of truck movements. The daily truck movements data provided by the contractors for 2010-2011 clearly demonstrates that the recent truck movements to the adjacent public roads from the quarry is 12 per day (when averaged over any working week) or a maximum of 54 on any working day (refer page 79 of the Environmental Assessment). The number of truck movements from the quarry to Macarthur/Springs Road reflected in the graphical presentation for 2010-2011 is tolerable and acceptable.

Heavy vehicle movements in Macarthur Road will have a significant impact on Council's proposed Spring Farm residential development frontage to Macarthur Road. Any increase from current trend of truck use (average 12 per day or maximum of 54 on any working day) in Macarthur/Springs Road is not supported by Council.



The proposal has not assessed or commented on the safety of the current design of the Macarthur Road/Springs Road intersection. The performance of the intersection needs to be re-assessed, considering the anticipated traffic from the Spring Farm residential area adjacent to the quarry, as this area is gradually (and fully) developed in the future.

The NSW Roads and Maritime Service should be consulted further about the above aspects of the proposal.

Council recently reviewed the maintenance levy for damage to Macarthur Road caused by truck movements and is currently satisfied that the levy rate (including CPI indexes) payable until the project's completion in 2019 will cover the maintenance and reconstruction costs associated with the truck movements.

Aboriginal and European Heritage

It is recommended that conditions of consent which appropriately protect potential Aboriginal archaeology found within the subsurface of the subject site be adopted.

Similarly, conditions of consent which require that upon the conclusion of the excavation operations, the final landform be reinstated to complement the landscape vista of the Nepean River Alluvial Flats.

Strategic Planning Comments

Council considers that the amended EA has now adequately addressed the vital role that the resource plays on the local, regional and metropolitan level; the lifecycle of the site; and that the EA appropriately details the post extractive land use as reinstating the final landform as Class 1 agricultural land.

The proposal is consistent with the strategy for resource recovery and is generally compatible with the staged rollout of the residential development throughout the Spring Farm Urban Release area in a strategic land use context (subject to the comments made above in this correspondence).

Should you have any enquiries in relation to this matter, please do not hesitate to contact the undersigned on (02) 4654 7774.

Yours sincerely,

Ms A M Jones
TOWN PLANNER
(Development Branch)

English

"This information is important. If you need help understanding this document please call the Translating and Interpreting Service (TIS) on 131 450 and ask them to contact Council on 02 4654-7777 on your behalf."

Spanish

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Chinese

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Greek

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Maltese

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Serbian

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Tagalog

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Jim Cupitt

From: Dominic Bruszewski [dominic.bruszewski@camden.nsw.gov.au]
Sent: Tuesday, 17 November 2009 2:33 PM
To: Jim Cupitt
Subject: RE: Landscape Management Plan - M Collins site - Lot 22 DP 833317

Jim,
The Landscape Management Plan is satisfactory and also complies with Controlled Activity Approval for the site.
I should also mention that DWE the Dept of Water & Energy has recently been name changed to NOW the NSW Office of Water.
regards

Dominic (Nick) Bruszewski
Landscape Development Officer

Camden Council | PO Box 183, Camden NSW 2570
P: 02 4654 7742 M: 0419 628 975 | Email: dominic.bruszewski@camden.nsw.gov.au |
www.camden.nsw.gov.au

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From: Jim Cupitt [mailto:jimcupitt@harvestscientific.com.au]
Sent: Tuesday, 17 November 2009 8:53 AM
To: Dominic Bruszewski
Cc: 'Mart Rampe'
Subject: Landscape Management Plan - M Collins site - Lot 22 DP 833317

Dear Nick,

Further to our conversation today, please find appended hereto:

- 1) A copy of the draft Landscape Management Plan (LMP) for the M Collins Spring Farm site (Lot 22 DP 833317); and
- 2) A copy of the Department of Planning (DoP) 'Notice of Determination' for your reference.

The LMP has been provided to allow Camden Council the opportunity to comment on the recommendations outlined in that document – as per the DoP recommendations.

Should you have any further questions please do not hesitate to contact me.

Regards

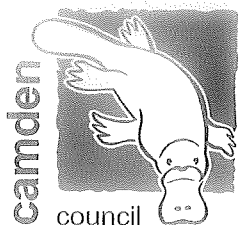
Jim Cupitt
Senior Environmental Scientist

Harvest Scientific Services
Tel: 02 4647 6177
Fax: 02 4647 7332
Email: jimcupitt@harvestscientific.com.au



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17/11/2009

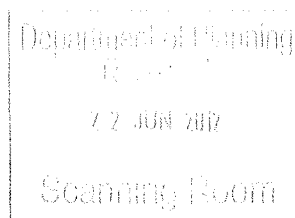


Camden Council
37 John Street, Camden NSW 2570 DX 25807
PO Box 183, Camden 2570 ABN: 31 117 341 764
Telephone: 02 4654 7777 Fax: 02 4654 7829
Email: mail@camden.nsw.gov.au



20 June 2012

Attention: Mr Kane Winwood
Major Development Assessment
Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001



Dear Sir,

RE: SPRING FARM QUARRY EXTENSION (DA 75/253 MOD 3)

PROPERTY: Macarthur Road, Spring Farm
LOT: 32 DP: 635271 and LOT: 22 DP 833317

I refer to the Department's letter dated 22 May 2012 regarding the proposed modification of the existing Spring Farm Quarry consent, which seeks approval for the further extraction of approximately 400,000 cubic metres of sand/soil at the above site.

Thank you for inviting Council to comment on this proposal. A review has been undertaken of the Environmental Assessment (EA) and the supporting reports provided and Council is generally supportive of the proposal. Below are our comments in relation to the proposal:

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The proposed extension of quarrying activity must adopt the following operational constraints in-order to comply with adopted noise criterion:

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Council believes that the recommendations in the Salinity Management Plan that involve specific and general construction and management advice and the adoption of groundwater management protocols (produced by Harvest Scientific Services) be adopted and applied to the site.

English

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Arabic

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Greek

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Italian

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Maltese

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Spanish

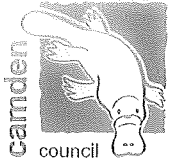
Esta información es importante. Si necesita ayuda para entender este documento sírvase llamar al Servicio de Traducción e Interpretación (Translating and Interpreting Service / TIS) al 131 450 y pídale que se comuniquen por usted con el Municipio llamando al 02 4654-7777.

Tagalog

Ang impormasyong ito ay mahalaga. Kung kailangan mo ng tulong upang maintindihan ang dokumentong ito mangyari lamang na tawagan ang Serbisyo para sa Pagsasaling-wika at Pang-interpreter (TIS) sa 131 450 at hilingin sa kanila na kontakin para sa inyo ang Konseho sa 02 4654 7777.

Chinese

這是一份重要的資料。如果您在了解這份文件方面需要幫助，請致電 131 450聯絡翻譯及傳譯服務 (TIS)，然後要求代致電 02 4654 7777聯絡市議會。



Contamination

Council does not accept the report's recommendation that consent or approval be issued with conditions for further detailed contamination soil assessment for identified Areas of Environmental Concern (AEC's).

Council's Management of Contaminated Lands policy requires a Phase 2 - detailed investigation to be undertaken for all AEC's identified as part of a Phase 1 investigation prior to any approval / consent being issued for a development proposal.

Where contamination is identified after the Phase 2, a Remediation Action Plan (RAP) would also be required to be provided (to Council) for approval. Only after acceptance of a RAP (by Council) would suitable conditions be placed on a consent for remediation.

Stormwater

The MUSIC modelling results in the report prepared by Harvest Scientific Services Pty Ltd, ref 201279, dated 15 February 2012, should be reviewed and assessed by a person with suitable knowledge and/or expertise at the Department of Planning and Infrastructure, to confirm that the data, methodology adopted and outcomes are acceptable.

Groundwater

Council is satisfied with the outcomes of the groundwater assessment. The recommendations of the report should be adopted in any modified development consent.

Environmental Monitoring

Council agrees with the recommendation of the Annual Environmental Monitoring Report that air quality particulates will need to be monitored to ensure that Total Suspended Particles and PM10 are compliant.

Flora and Fauna

Council has reviewed the revised Flora and Fauna Assessment prepared by Actinous Environmental Consultants, February 2012 and makes the following comments regarding Part 3.4.1.3 "Tracts of contiguous natural vegetation":

In relation to no works occurring within the drip-line of any natural community, it is recommended that a condition of consent require the drip-line area be clearly labelled and marked on corresponding maps of the site – ensuring that works do not occur within this area. The drip-line of the vegetation community should be determined by a person with suitable knowledge and/or expertise.

Landscape

Council has reviewed the Landscape Management Plan (LMP) prepared by Harvest Scientific Services Pty Ltd, February 2012 (HSS) and makes the following comments in relation to Part (a) "Water Management Act 2000 and Controlled Activity Approval":

The current Controlled Activity Approval (CAA) from the NSW Office of Water expires on 8 April 2013 and will not reflect the proposed works. As such, it is recommended that a condition of consent require an amended CAA for the period of works and that the applicant provide Council with an amended CAA prior to works commencing. Further, that all conditions listed in the amended CAA be strictly adhered to.

Council makes the following comments in relation to Part 5.7 "Revegetation program":

In regards to the restoration zones known as Zone 1 the Nepean River and Zone 2 Dry River Anabranch, it is recommended that a condition of consent require the applicant to follow the processes and techniques as specified by HSS in their LMP to ensure that the Office of Environment and Heritage's targets as outlined in *How to Prepare a Vegetation Management Plan, Version 6* are achieved, and that these areas will provide over the longer term a greater diversity of habitats suitable for flora and fauna, thus increasing the overall biodiversity of the area.

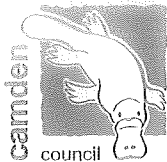
Council makes the following comments in relation to Part 5.10.1 "Improving habitat value":

HSS have specified in their report that all plantings are to be mulched with recycled green waste. It is recommended that a condition of consent require that any recycled green waste that is used for this purpose be free from weed seeds and pathogens. Ideally it should come from a reputable source. If weeds do germinate in the green waste, they need to be appropriately treated as soon as possible to reduce the potential for further spread of weeds resulting in the degradation of habitat areas.

Traffic and Engineering

The contractors provided a Statement of Commitments for Spring Farm Quarry to the Department of Planning in April 2009, in which they committed to record and maintain comprehensive logs of truck movements. The daily truck movements data provided by the contractors for 2010-2011 clearly demonstrates that the recent truck movements to the adjacent public roads from the quarry is 12 per day (when averaged over any working week) or a maximum of 54 on any working day (refer page 79 of the Environmental Assessment). The number of truck movements from the quarry to Macarthur/Springs Road reflected in the graphical presentation for 2010-2011 is tolerable and acceptable.

Heavy vehicle movements in Macarthur Road will have a significant impact on Council's proposed Spring Farm residential development frontage to Macarthur Road. Any increase from current trend of truck use (average 12 per day or maximum of 54 on any working day) in Macarthur/Springs Road is not supported by Council.



The proposal has not assessed or commented on the safety of the current design of the Macarthur Road/Springs Road intersection. The performance of the intersection needs to be re-assessed, considering the anticipated traffic from the Spring Farm residential area adjacent to the quarry, as this area is gradually (and fully) developed in the future.

The NSW Roads and Maritime Service should be consulted further about the above aspects of the proposal.

Council recently reviewed the maintenance levy for damage to Macarthur Road caused by truck movements and is currently satisfied that the levy rate (including CPI indexes) payable until the project's completion in 2019 will cover the maintenance and reconstruction costs associated with the truck movements.

Aboriginal and European Heritage

It is recommended that conditions of consent which appropriately protect potential Aboriginal archaeology found within the subsurface of the subject site be adopted.

Similarly, conditions of consent which require that upon the conclusion of the excavation operations, the final landform be reinstated to complement the landscape vista of the Nepean River Alluvial Flats.

Strategic Planning Comments

Council considers that the amended EA has now adequately addressed the vital role that the resource plays on the local, regional and metropolitan level; the lifecycle of the site; and that the EA appropriately details the post extractive land use as reinstating the final landform as Class 1 agricultural land.

The proposal is consistent with the strategy for resource recovery and is generally compatible with the staged rollout of the residential development throughout the Spring Farm Urban Release area in a strategic land use context (subject to the comments made above in this correspondence).

Should you have any enquiries in relation to this matter, please do not hesitate to contact the undersigned on (02) 4654 7774.

Yours sincerely,

Ms A M Jones
TOWN PLANNER
(Development Branch)

APPENDIX 6

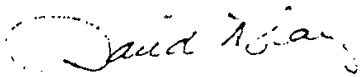
Modification 4 Approval

Environmental Planning and Assessment Act, 1979 Determination of a Development Application Pursuant to Section 101

In pursuance of Section 101 of the Environmental Planning and Assessment Act 1979 I determine the development application ("the Application") referred to below by granting consent to the application subject to the conditions set out in the Schedule.

The reasons for the imposition of the conditions are:

- (i) to minimize the adverse impact the development may cause through noise, traffic generation, water quality and stability;
- (ii) provide for an acceptable landform;
- (iii) ensure appropriate rehabilitation, visual amenity and the payment of guarantees and rehabilitation levies.



David Hay
Minister for Planning

Sydney 13th October 1988

THE APPLICATION

SCHEDULE 2

Delete all words including and following the words "The Application" and insert the following conditions of consent:

SCHEDULE 1

Development Application:	DA 75/256
Applicant:	M Collins and Sons Holdings Pty Ltd
Consent Authority:	Minister for Planning
Land:	Lot 22 DP 833317 and Lot 32 DP 635271
Development:	Spring Farm Quarry

Black type represents April 2009 modification
Red type represents October 2012 modification
Green type represents April 2018 modification

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DEFINITIONS

AEMR	Annual Environmental Management Report
AEP	Annual Exceedance Probability
Applicant	M Collins & Sons Holdings Pty Ltd, or its successors
Council	Camden Council
Department	Department of Planning and Environment
Development	The operation, closure and rehabilitation of the Spring Farm Quarry as described in the SEE
Dol	Department of Industry - Lands and Water
DPI	Department of Primary Industries
DRG	Division of Resources and Geoscience within the Department
EA (Mod 3)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/256), Lot 22 (No. 186) DP 833317 (incorporating Lot 32 No. 172 DP 635271) Macarthur Road, Spring Farm</i> , prepared by Pascoe Planning Solutions, dated April 2012; including the response to submissions titled <i>Review of Exhibition/Consultation Submissions</i> , Part 1, dated August 2012, and Part 2, dated September 2012.
EA (Mod 4)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/256), Lot 22 (No.186) DP 833317 and Part Lot 32 (No.172) (DP635271) Macarthur Road, Spring Farm</i> , prepared by Pascoe Planning Solutions, dated February 2018, and the associated Response to Submissions titled <i>Spring Farm Quarry (DA 75/256 MOD 4) Modification</i> , and dated 3 June 2018
EIS	Environmental Impact Statement prepared by Longworth & McKenzie Pty Ltd dated October 1985 that accompanied the original development application in 1988
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent
Minister	NSW Minister for Planning , or delegate
PMF	Probable Maximum Flood
Privately owned land	Land not owned by a public agency or the Applicant or its related companies
RMS	Roads and Maritime Services
Secretary	Planning Secretary under the EP&A Act, or nominee
SEE (Mod 2)	Statement of Environmental Effects for the development dated September 2008, prepared by McCotter Consulting Services.
Site	Land to which the development application applies
Statement of Commitments	Statement of Commitments provided by the Applicant (see Appendix 1)
Stockpile and blending site	Land adjacent to the site, located at Lot 1 DP587631

SCHEDULE 2 ADMINISTRATIVE

Obligation to Minimise Harm to the Environment

1. The Applicant **must** implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the establishment, operation, or rehabilitation of the development.

Terms of Consent

2. The Applicant **must** carry out the development generally in accordance with the:
 - (a) EIS, SEE (Mod 1), EA (Mod 3) and EA (Mod 4); and
 - (b) Statement of Commitments (see Appendix 1).
- 2A. The Applicant **must** carry out the development in accordance with the conditions of this consent.
3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.
4. The Applicant **must** comply with any reasonable requirement/s of the **Secretary** arising from the Department's assessment of:
 - (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent;
 - (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and
 - (c) the implementation of any actions or measures contained in these documents.

Limits on Consent

5. Extraction and processing operations may take place until 30 June 2021.

Note: Under this consent, the Applicant is required to rehabilitate the site to the satisfaction of the Secretary. Consequently this consent will continue to apply in all other respects other than the right to conduct extraction and processing operations until the site has been rehabilitated to a satisfactory standard.

Operation of Plant and Equipment

6. The Applicant **must** ensure that all plant and equipment used at the site is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Contributions

7. The Applicant **must** pay an annual contribution of \$6,500 (adjusted annually by reference to the Consumer Price Index) to Council for the maintenance of Macarthur Road, between the main site entrance and the intersection with Springs Road.

Inspection of Site

8. The Applicant **must** permit access to the site to Council officers or any other public authority at reasonable times for the purposes of inspecting site operations and environmental monitoring.

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Operating Conditions

1. The Applicant **must** not excavate outside the extraction areas or the limits of extraction shown in Appendix 2.
2. The Applicant **must** not open, excavate or work an area exceeding 2 hectares at any one time without the written consent of Council.
3. **The Applicant must not:**
 - (a) stockpile extractive material on the site, with the exception of topsoil stockpiles and proposed noise and/or visual mitigation bunds; or
 - (b) process any extractive material on the site, with the exception of mobile screening.
4. The Applicant **must** not import fill to the site for any purpose without written approval from Council.

NOISE

Operational Noise

5. The Applicant **must** ensure that site operations, including processing and transportation, are conducted in such a way as to minimise noise emissions from the site.
6. The Applicant **must** ensure that noise generated by the development does not exceed the noise impact assessment criteria as specified in the EPL.

Operating Hours

7. The Applicant **must** only operate the development:
 - (a) between the hours of 7:00am and 5:00pm Monday to Friday;
 - (b) between 8:00am and 1:00pm Saturday; and
 - (c) at no time on Sundays or Public Holidays

Notes: This condition does not apply to:

- maintenance which is inaudible at receiver locations or
- for delivery of material if that delivery is required by police or other authorities for safety reasons, and/or the operation or personnel or equipment are endangered. In such circumstances, notification is to be provided to **EPA** and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

AIR QUALITY

Impact Assessment Criteria

8. The Applicant **must** ensure that dust generated by the development does not cause exceedances of the criteria listed in Tables 1, 2 and 3 at any residence or on more than 25 percent of any privately owned land.

Table 1: Long Term Impact Assessment Criteria for Particulate Matter

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

Table 2: Short Term Impact Assessment Criteria for Particulate Matter

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

Table 3: Long Term Impact Assessment Criteria for Deposited Dust

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

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS 3580.10.1-1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Operating Conditions

9. The Applicant **must** ensure that any visible air pollution generated by the development is assessed regularly, and that quarrying operations are relocated, modified and/or stopped as required to minimise air quality impacts on privately owned land.

Air Quality Monitoring

10. The Applicant **must** prepare an Air Quality Monitoring Program for the development to the satisfaction of the **Secretary**. This program must:
 - (a) be submitted to the **Secretary** for approval within 3 months of the date of this **consent**;
 - (b) be prepared in consultation with **EPA**; and
 - (c) include details of how the air quality performance of the development would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this **consent**.

The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.

WATER

Discharges

11. The Applicant **must** not discharge any water from the quarry or its associated operations except in accordance with an EPL.

Water Management and Monitoring

12. The Applicant **must** prepare a Water Management Plan for the development to the satisfaction of the **Secretary**. This plan must:
 - (a) be submitted to the **Secretary** within 3 months of the date of this **consent**;
 - (b) be prepared in consultation with Council and **EPA and DoI Lands and Water**; and
 - (c) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Groundwater Monitoring Program; and
 - Flood Emergency Procedures Plan.

The Applicant must implement the Water Management Plan as approved by the Secretary.

13. The Site Water Balance must:
 - (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site, including the location and capacity of water storages on site and the means of access;
 - any off-site water transfers; and
 - reporting procedures; and
 - (b) investigate and describe measures to minimise water use by the development.
14. The Erosion and Sediment Control Plan must:
 - (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, including during flood events;
 - (d) describe the location, function, and capacity of erosion and sediment control structures;
 - (e) demonstrate that the design capacity of basins will not be compromised by storage of operational water; and
 - (f) describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.

15. The Groundwater Monitoring Program must include:
 - (a) baseline data on groundwater levels, flows and quality in the vicinity;
 - (b) groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; and
 - (c) a program to monitor any observed groundwater inflows to the quarry pit.
16. The Flood Emergency Procedures Plan must be put in place for floods above the 1% AEP flood event up to the PMF and:
 - (a) address both the site and the adjacent stockpiling and blending site;
 - (b) include procedures to be carried out in advance of a major flood event to minimise damage to plant equipment, operating staff and the environment; and
 - (c) include procedures to be followed after a major flood event to repair any damage and return the site to productive operations, including reinstatement of all pollution control devices and rehabilitation.
- 16A The Applicant must ensure that, in order to limit potential scour and erosion during flood events, all topsoil stockpiles and earthen bunds which are to be in place for any period longer than 3 months are oriented parallel to potential flood flows and are promptly and effectively spray-seed hydro-mulched with an appropriate fast-growing native grass mix, to the satisfaction of the Secretary.

LANDSCAPE MANAGEMENT

Landscape Management Plan

17. The Applicant must prepare a detailed Landscape Management Plan for the development to the satisfaction of the Secretary. This Plan must:
 - (a) be prepared in consultation with Council, DPI (Agriculture NSW) and DRG by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
 - (b) be submitted to the Secretary for approval within 6 months of the date of this consent; and
 - (c) include a Rehabilitation Management Plan.

The Applicant must implement the Landscape Management Plan as approved by the Secretary.

Rehabilitation Management Plan

18. The Applicant must prepare a Rehabilitation Plan for the development. This plan must include:
 - (a) the rehabilitation objectives for the site;
 - (b) a description of the short, medium, and long term measures that would be implemented to rehabilitate the site, including re-establishing high order agricultural land suitability and land use establishing healthy native vegetation and habitat for native fauna or other future land use acceptable to Council and proposed rehabilitation timeframes and timelines;
 - (c) performance and completion criteria for the rehabilitation of the site, including appropriate high order agricultural land suitability objectives with reference to the NSW Agricultural Land Suitability Classification system;
 - (d) a detailed description of the measures that would be implemented including the procedures for:
 - progressively rehabilitating disturbed areas;
 - protecting areas outside the disturbance areas;
 - protecting the Nepean River and drainage lines on the site to ensure no net loss of water quality and aquatic habitat;
 - managing impacts on fauna;
 - landscaping the site to minimise visual impacts;
 - conserving and reusing topsoil;
 - achieving a free draining final landform;
 - ensuring compatibility of the final land form with surrounding land uses;
 - erosion and sediment control;
 - identifying any proposed types and methods of agriculture;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement;
 - controlling weeds and feral pests;
 - controlling access; and
 - bushfire management;
 - (e) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);
 - (f) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
 - (g) details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant must implement the Landscape Management Plan as approved by the Secretary.

HERITAGE

Archaeology

19. Should the Applicant discover material suspected of being Aboriginal relics or skeletal remains, work in that area **must** cease and the Applicant **must** advise EPA and proceed in accordance with EPA instructions.

VISUAL

Visual Amenity

20. The Applicant **must** establish and maintain perimeter plantings in order to minimise the visual impacts of the development, to the satisfaction of Council.

WASTE MANAGEMENT

Waste Minimisation

21. The Applicant **must** minimise the amount of waste generated by the development to the satisfaction of Council.

Waste Disposal

22. The Applicant **must** store and manage waste and by-products generated by the development to the satisfaction of Council.

Waste Management Plan

22A. The Applicant **must** prepare a Waste Management Plan for the project in consultation with Council and to the satisfaction of the Secretary. The plan must:

- (a) be prepared by a suitably qualified person/s with expertise in asbestos risk management;
- (b) be submitted to the Secretary for approval prior to commencing earthworks on Lot 32; and
- (c) include a:
 - description of the measures and controls that would be implemented to manage asbestos within site;
 - validation protocol to be implemented to ensure that remaining soils and extractive materials products are asbestos free;
 - unexpected findings protocol in the event of encountering asbestos contaminated soils not previously identified in the EA (Mod 3); and
 - incident protocols in the event of exposure to asbestos.

The Applicant **must** implement the Waste Management Plan as approved by the Secretary.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

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

Safety

24. The Applicant **must** secure the development to ensure public safety to the satisfaction of Council.

Bushfire Management

25. The Applicant **must**:
- (a) ensure that the development is suitably equipped to respond to any fires on-site; and
 - (b) assist the Fire Service and emergency services as much as possible if there is a fire on site.

PRODUCTION DATA

26. The Applicant **must**:
- (a) provide annual production data to the DPI using the standard form for that purpose; and
 - (b) include a copy of this data in the AEMR.

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant **must** notify the **Secretary** and the affected landowners and tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.

INDEPENDENT REVIEW

2. If a landowner of privately owned land considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Applicant in writing for an independent review of the impacts of the development on his/her land.

If the **Secretary** is satisfied that an independent review is warranted, the Applicant **must** within 3 months of the **Secretary** advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the **Secretary**, to conduct monitoring on the land, to determine whether the development is complying with the relevant criteria in Schedule 3, and identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and
 - (c) give the **Secretary** and landowner a copy of the independent review.
3. If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the **Secretary**.
 4. If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Applicant **must**:
 - (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in Schedule 3, to the satisfaction of the **Secretary**.

If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the **Secretary**.

If the Applicant is unable to finalise an agreement with the landowner, then the Applicant or landowner may refer the matter to the **Secretary** for resolution.

5. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the **Secretary** for resolution.
-

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, MONITORING, REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT PLAN

1. The Applicant **must** prepare an updated Environmental Management Plan for the development to the satisfaction of the **Secretary**. This plan **must** be submitted to the **Secretary** for approval 3 months after the date of this consent and:
 - (a) provide the overall environmental management approach for the development;
 - (b) identify the statutory requirements that apply to the development;
 - (c) describe in general how the environmental performance of the development would be monitored and managed;
 - (d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the life of the development;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies, including flood-related emergencies; and
 - (e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.

The Applicant **must** implement the Environmental Management Strategy as approved by the Secretary.

ENVIRONMENTAL MONITORING PROGRAM

2. The Applicant **must** prepare an Environmental Monitoring Program for the development to the satisfaction of the **Secretary**. This program **must** be submitted to the **Secretary** concurrently with the submission of the various monitoring programs and consolidate the various monitoring requirements in Schedule 3 of this **consent** into a single document.

REPORTING

Incident Reporting

3. Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this **consent** or an incident causing (or threatening to cause) material harm to the environment, the Applicant **must** report the exceedance/incident to the Department and any relevant agencies. This report **must**:
 - (a) describe the date, time, and nature of the exceedance/incident;
 - (b) identify the cause (or likely cause) of the exceedance/incident;
 - (c) describe what action has been taken to date; and
 - (d) describe the proposed measures to address the exceedance/incident.

Annual Review

4. By the end of March each year, the Applicant **must** review the environmental performance of the project to the satisfaction of the **Secretary**. This review **must**:
 - (a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
 - (b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - the monitoring results of previous years; and
 - the relevant predictions in the documents listed in condition 2(a) of Schedule 2;
 - (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - (d) identify any trends in the monitoring data over the life of the project;
 - (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
 - (f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Within 12 months of the date of the consent, and every 3 years thereafter, unless the **Secretary** directs otherwise, the Applicant **must** commission and pay the full cost of an Independent Environmental Audit of the development. This audit **must**:
 - (a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the **Secretary**;
 - (b) include consultation with the relevant agencies;

- (c) assess the environmental performance of the development, and its effects on the surrounding environment;
 - (d) assess whether the development is complying with the relevant standards, performance measures and statutory requirements; and
 - (e) review the adequacy of any strategy/plan/program required under this **consent**, and, if necessary, recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this **consent**.
6. Within 6 weeks of completion of each Independent Environmental Audit, the Applicant **must** submit a copy of the audit report to the **Secretary**, with a response to any of the recommendations in the audit report.

Revision of Strategies, Plans & Programs

7. Within three months of:
- (a) the submission of an incident report under Condition 3 above;
 - (b) the submission of an Annual Review under Condition 4 above;
 - (c) the submission of an audit report under Condition 5 above, or
 - (d) any modification of the conditions of this **consent** (unless the conditions require otherwise),
- the Applicant **must** review, and if necessary revise, the strategies, plans, and programs required under this **consent** to the satisfaction of the **Secretary**.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

ACCESS TO INFORMATION

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

APPENDIX 1 STATEMENT OF COMMITMENTS



M. Collins & Sons Holdings Pty Ltd
ACN: 000 521 871

P.O. Box 55, MILPERRA NSW 2214
17 Fitzpatrick Street, REVESBY NSW 2212

Phone: (02) 9774 1544
Facsimile: (02) 9792 1532
Website: www.mcollins.com.au

Statement of Commitments for Spring Farm Quarry

M. Collins and Sons Holdings Pty Ltd undertakes to implement the commitments listed below, in respect of the Spring Farm Quarry, including the stockpile, processing and dispatch site.

- Notes: 1. Spring Farm Quarry encompasses Lot No 1 DP 587631, Lot No 22 DP 833317 and Lot No 32 DP 645271.
2. The stockpile, processing and dispatch site is located on Lot No 1 DP 587631.

Desired Outcome	Commitments
Traffic and Transportation	
Limit the impact of development-related traffic	1. Laden truck movements from the Spring Farm Quarry to public roads will not exceed 36 per day (when averaged over any working week) or 80 on any working day. 2. The total annual dispatches of extractive material products from the Spring Farm Quarry will not exceed 300,000 tonnes per annum.
Monitor traffic movements in and out of the site	3. Comprehensive logs of truck movements and extractive materials received and dispatched from the Spring Farm Quarry will be recorded and maintained. 4. These logs will be made available promptly for inspection on request by either the Secretary or the Council. 5. Comprehensive reports on truck movements and extractive materials received and dispatched will be included in each Annual Environmental Management Report for the development.
Limit the impact of quarry trucks on local roads	6. Except where permitted by Council, trucks travelling to and from the Spring Farm Quarry will not travel via local roads in the vicinity of the development other than Macarthur Road, Springs Road and Richardson Road.
Limit the tracking of material onto public roads to minimise dust, particulate matter and debris emissions	7. All laden trucks carrying material from the Spring Farm Quarry on public roads and will be covered. 8. All trucks leaving the Spring Farm Quarry and travelling on public roads will be cleaned of materials that may fall on the road, before leaving the site.
Ecology	
Rehabilitate the existing anabranch and eastern bank of the Nepean River	9. The existing anabranch and eastern bank of the Nepean River will be rehabilitated through appropriate conservation initiatives to a maintainable standard. 10. The current Rehabilitation Management Plan will be updated to include the rehabilitation program proposed in EA (Mod 3).
Greenhouse Gases	
Minimise greenhouse gas emissions	11. Energy efficiency associated with all extractive related activities will be constantly improved.

Signed By: M. Collins & Sons Holdings Pty Ltd
Name: Matthew J. Collins
Position: Managing Director
Date: 9th October, 2012



M. COLLINS & SONS HOLDINGS PTY LTD

M. Collins & Sons Holdings Pty Ltd

ACN: 000 521 871

P.O. Box 55, MILPERRA NSW 2214
17 Fitzpatrick Street, REVESBY NSW 2212

Phone: (02) 9774 1544

Facsimile: (02) 9792 1532

Website: www.mcollins.com.au

Visual	
Limit the visual impact from the public view	<p>12. The existing tree screens will be maintained in position for as long as practical.</p> <p>13. Additional screen planting will be undertaken along the anabranch on Lot 22 and Lot 32 prior to the commencement of extraction on Lot 32.</p> <p>14. The active extraction surface area will be restricted to 1 hectare (and a further hectare undergoing rehabilitation). Rehabilitation will be commenced as extraction is completed.</p> <p>15. The current Landscape Management Plan will be updated to include the visual impact mitigation measures proposed in EA (Mod 3).</p>
Surety	
Extend the current bond held with the Water Ministerial Corporation	16. The current bond held with the Water Administration Ministerial Corporation will be extended for the duration of extraction and rehabilitation activities on Lot 32, inclusive of a 2 year maintenance period after rehabilitation has been completed.
Post Extractive Land use	
Restore the final landform suitable for agricultural use	<p>17. The landform and soil profile will be restored to facilitate a diversity of intensive agricultural pursuits.</p> <p>18. The current Landscape Management Plan, including the Rehabilitation Management Plan, will be updated to include the rehabilitation program proposed in EA (Mod 3).</p>
Salinity and Groundwater	
Implement appropriate management measures	<p>19. All Salinity Management Plan and Groundwater Management Protocols prepared by Harvest Scientific Services will be complied with.</p> <p>20. The current Water Management Plan, including the Groundwater Monitoring Program, will be updated to include the impact mitigation measures proposed in EA (Mod 3).</p>
Contamination	
Remove and dispose of asbestos contaminated soils	21. Waste Management Plan consistent with the protocols detailed in the Phase 2 Contamination Assessment undertaken by Harvest Scientific Services will be prepared for the site.
Aboriginal Archaeological Watching Brief	
Minimise impacts on Aboriginal relics	22. Aboriginal Archaeological Watching Brief will be implemented.
Dust Monitoring	
Undertake dust monitoring	<p>23. Dust monitoring as currently in place, will be supplemented by an additional monitoring station near the existing workshop and shed.</p> <p>24. The current Air Quality Monitoring Program will be updated to include the additional air quality monitoring proposed in EA (Mod 3).</p>
Camden Bypass Bridge Integrity	
Protect the Camden-Bypass bridge integrity	25. All recommendations made in the SMEC Camden Bypass Report outlined in Appendix Z1 of EA (Mod 3) will be implemented.
Endeavour Energy Infrastructure	
Protect the Endeavour Energy onsite infrastructure	26. All recommendations made in respect of the Endeavour Energy Transmission Poles detailed in Appendix G of EA (Mod 3) will be implemented.
Flood Emergency Response Plan	
	27. The current Water Management Plan, including the Flood Emergency Procedures Plan, will be updated to include management measures proposed in EA (Mod 3).

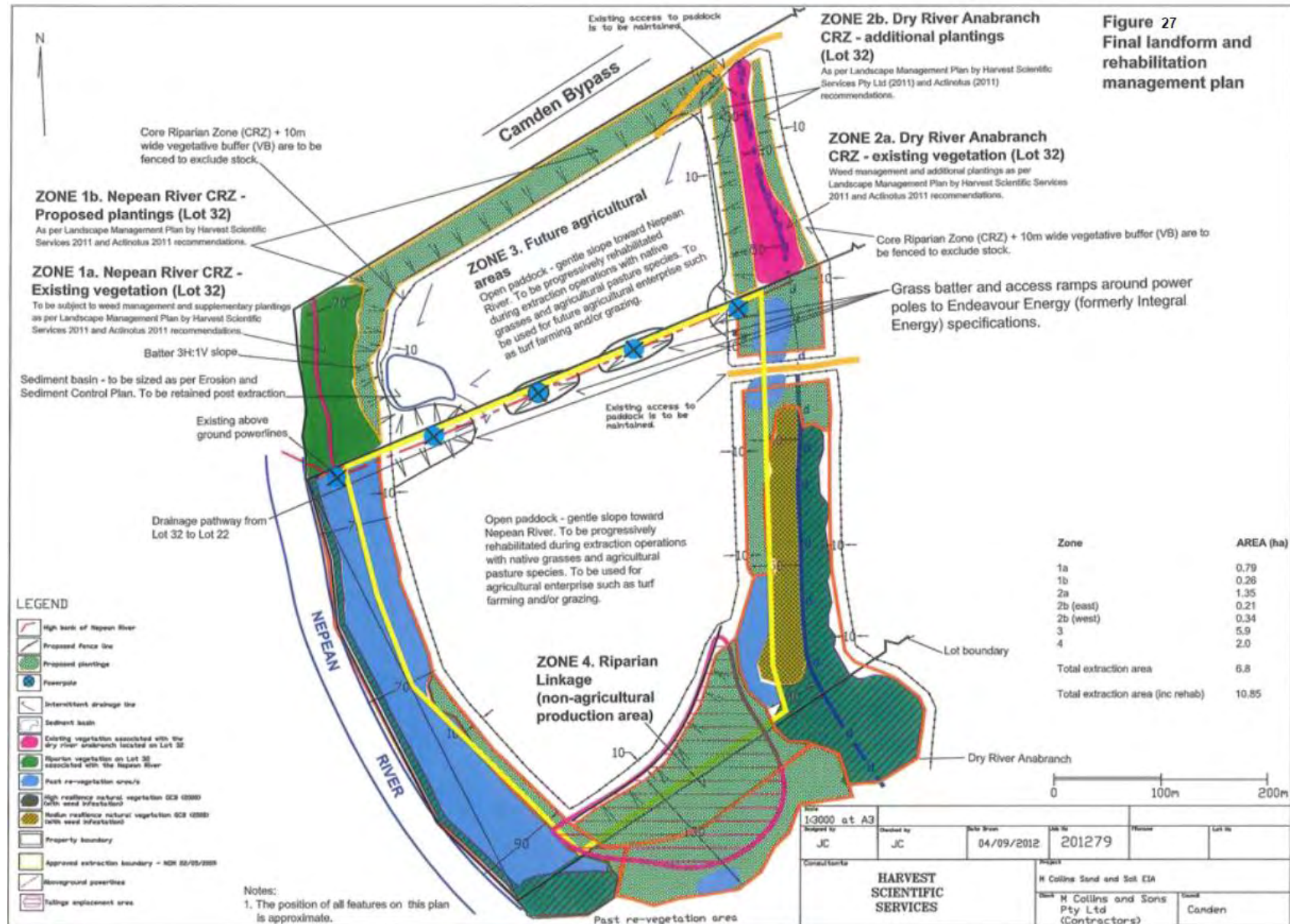
Signed By: M. Collins & Sons Holdings Pty Ltd
Name: Matthew J. Collins
Position: Managing Director
Date: 9th October, 2012

APPENDIX 2

Proposed extraction and rehabilitation staging plan for Lot 32 and existing operations on Lot 22



Proposed final landform for the extraction areas on Lots 22 and 32



APPENDIX 2

LANDSCAPE MANAGEMENT PLAN (LMP)



Ms Emma Collins
M Collins and Sons Holdings Pty Ltd
1/49 Smeaton Grange Road
Smeaton Grange NSW 2567

Email: ecollins@mcollins.com.au

Dear Ms Collins,

**Spring Farm Quarry (DA 75/256)
Landscape Management Plan**

I refer to your email dated 17 February 2019, submitting the Landscape Management Plan (incorporating Rehabilitation Management Plan) for approval.

The Department has reviewed this plan and considers that it meets conditions 17 and 18 of Schedule 3 of DA 75/256. Consequently, the Secretary has approved this plan.

Should you have any enquiries in relation to this matter, please contact Jack Murphy.

Yours sincerely,

Howard Reed

1.3.19

Director

Resource Assessments

As nominee of the Secretary



Harvest Scientific Services Pty Ltd
Geotechnical Environmental & Resource Consultants
ABN 43 132 363 289

LANDSCAPE MANAGEMENT PLAN (Including Quarry Closure, Rehabilitation and Post Extraction Land-use)

EXISTING SAND AND SOIL EXTRACTION OPERATIONS

**Lot 32 DP 635271 and Lot 22 DP 833317
Macarthur Road, Spring Farm**

Prepared for:

M Collins and Sons Holdings Pty Ltd

Job Reference 75/256/4

11th December 2018

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Revisions register

Version	Date	Details
1	22/06/2011	Draft document for comment
2	27/06/2011	Minor typographical revisions
3	07/07/2011	Final draft
4	12/07/2011	Report finalised
5	25/07/2011	Minor revisions following client review
6	30/11/2011	Minor revisions to address comments by NSW Department of Planning and
7	14/12/2011	Minor typographical revisions.
8	17/02/2012	Various typographical changes.
9	20/04/2012	Various typographical changes. Addition of further detail in relation to tailings
10	24/04/2013	Updated Figure 3 as per EA (mod 3)
11	14/07/2016	Submitted to DPE
12	30/10/2016	Revisions to address comments by DPE dated 31 st August 2016
		Updated outdated abbreviations for governing authorities – EPA, DPE, DPIW
		Removal of past tense phrasing to reflect definitive commitments (eg
		Added date of CAA to Appendix 3
		Various typographical errors corrected
		Updated Section 2.1 to include Section 8.9.5 of Mod 3 EA
		Rehabilitation phase program included in Section 5.12
		Added monitoring, reviewing and implementation responsibilities and reporting
		Added Section 5.5.4 Bushfire Management
		Added Section 5.5.5 Landscaping
		Added Section 5.5.6 Final Land Form
		Added 5.7.5 Rehabilitation/Revegetation potential risks/controls
13	31/10/2016	Final Submission to DPE for approval
14	1/3/2017	Modifications to address NSW Dept Planning letter dated 7/12/2016
15	11/7/2017	Modifications to address NSW Dept Planning letter dated 16/06/2017
16	6/9/2017	Final - Insert Table 8 into Section 5.12
17	11/12/18	Document updated to reflect new approval conditions under Modification 4 – see Appendix 4.

EXECUTIVE SUMMARY

M Collins and Sons Holdings Pty Ltd (MCS) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 and Lot 32 DP 635271 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 MCS was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

On the 25th October 2012 MCS was granted a further modification under Section 75W of the Environmental Planning and Assessment Act (1979) (NSW) to extend sand and soil extraction activities onto an adjacent portion of land at Lot 32 DP 635271. This approval enabled the following activities:

- Extraction of sand and soil within a 6.8 hectare (approximate) portion of land within Lot 32 DP 635271.
- Stockpiling, dry screening of sand and soil within the quarry floor on Lot 22 but not on Lot 32;
- Active extraction within Lot 32 DP635271 on 1 hectare portion of land at a time and concurrent rehabilitation works within an additional 1 hectare portion of land.
- On Lot 22 DP833317 permission exists to open and work five hectares at any one time;
- Extraction and rehabilitation works to occur in concert over an 8 year period (completion in 2019);
- Placement of tailings from the sand wash-plant for land-forming and rehabilitation purposes; and
- Rehabilitation maintenance activities to occur over an additional 2 year period.

On 2 August 2018, MCS was granted a further modification (Mod 4.) under Section 75W of the Environmental Planning and Assessment Act (1979) NSW to extend current approved activities under Quarry Consent (DA 75/256) Lot 22 (No. 186) DP) 833317 and Part Lot 32 (No. 172) DP 635271

Based on the well-established programs and protocols together with the recently approved modification, it is concluded that:

- This LMP provides MCS, contractors, Council and relevant Government Authorities with a common document that clearly sets out the performance targets, restoration principles, monitoring and maintenance procedures required for the long term sustainable management of the ecological plantings and their surrounding environment; and
- Lot 32 zone 3 open paddock area will have the capacity for use as 'Class 1' Agricultural land.

Importantly, implementation of this LMP will produce a sustainable post-extraction landscape, including enhanced biodiversity outcomes beyond those directly occasioned by extraction activities. Such landscapes will ultimately be little different to distant observers in a visual sense to that which is currently prevailing.

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Abbreviations

CAA	Controlled Activity Approval
CC	Camden Council
CMA	Catchment Management Authority
CRZ	Core riparian zone
DEHWA	Department of Environment, Heritage, Water and the Arts
DPE	Department of Environment & Planning
EECs	Endangered Ecological Communities
EP&BC Act	Environment Protection and Biodiversity Act 1999
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environmental Protection Authority
ESCP	Erosion and Sediment Control Plan
LGA	Local government area
LMP	Landscape Management Plan
NRAR	Natural Resource Access Registrar
NES	National environmental significance
DPIW	NSW Department of Primary Industries Water
TSC Act	Threatened Species Conservation Act 1995
VB	Vegetated buffer
WMA	Water Management Act 2000
WM & ESCP	Water Management and Erosion and Sediment Control Plan

1. INTRODUCTION

1.1 Overview

M Collins and Sons Holdings Pty Ltd (MCS) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

Preparation of this Landscape Management Plan (LMP), is one of several environmental and regulatory reports required by the NSW Department of Planning and Environment for the efficient management of the Spring Farm Quarry. These companion documents can be accessed from the Collins website [here](#).

On the 22 May 2009 MCS was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019. On the 25th October 2012 MCS was granted a further modification under Section 75W of the Environmental Planning and Assessment Act (1979) (NSW) to extend sand and soil extraction activities onto an adjacent portion of land at Lot 32 DP 635271. This approval enabled the following activities:

- Extraction of sand and soil within a 6.8 hectare (approximate) portion of land within Lot 32 DP 635271.
- Dry screening of sand and soil excluded from Lot 32;
- Stockpiling and dry screening of sand and soil within the quarry floor on Lot 22, not on Lot 32;
- Active extraction within Lot 32 DP635271 on 1 hectare portion of land at a time and concurrent rehabilitation works within an additional 1 hectare portion of land.
- On Lot 22 DP833317 permission exists to open and work five hectares at one time; Extraction and rehabilitation works are proposed to occur in concert over an 8 year period (completion in 2019);
- Placement of tailings from the sand wash-plant for land-forming and rehabilitation purposes; and
- Rehabilitation maintenance activities are proposed to occur over an additional 2 year period.

The LMP dated 30 October 2016 required MCS to include additional mitigation measures being, these being:

- Enhanced visual screening by the establishment of the Dry River Annabranche vegetation;
- Staged retention of existing screening south of the extraction site;
- Staged retention of vegetation cover on areas not being extracted and progressive rehabilitation of extracted areas;
- Rehabilitation of the Nepean River Riparian Zone and
- Application of recessive colours to visually intrusive plant, equipment and fencing.

On 2 August 2018, MCS was granted an extension of quarry life extraction from 20 June 2019 to 20 June 2021. Harvest Scientific Services Pty Ltd (HSS) has been engaged by MCS to review and update the Landscape Management Plan (LMP) to address Consent Modification 4 (Appendix 1), which was approved under Section 75W of the Environmental Planning and Assessment Act (1979).

1.2 Aims and objectives

The LMP aims to provide a clear, concise and practical framework for the restoration of the vegetation impacted by the activity and in accordance with relevant legislation and the DG requirements. The objectives of the LMP are to:

- summarise local vegetation characteristics;
- describe the restoration activities necessary to ensure an appropriate growing medium and progressive re-vegetation with local provenance vegetation and/or pasture species.
- describe the maintenance program to ensure vegetation establishment;

- ensure that re-vegetation activities are consistent with the rehabilitation works on the adjacent Lot 22 DP 833317, as outlined in this LMP;
- Establish practical plans and guidelines for the ongoing management of species richness and ecosystem function;
- Implement a monitoring program that will effectively guide adaptive management rather than prescriptive management;
- Facilitate regeneration of structural diversity and complexity of the adjacent endangered ecological community, River-Flat Eucalypt Forest on Coastal Floodplains;
- Describe the restoration activities necessary to progressively restore native vegetation throughout the designated restoration zone;
- Describe the maintenance program to ensure vegetation establishment;
- Protect adjacent remnant 'River-Flat Eucalypt Forest on Coastal Floodplains' and 'Alluvial Woodland on Coastal Floodplains' from human disturbance regimes within 2 years;
- Restoration zones 1 and 2 containing forbs and indigenous grass cover of 55% cover or greater;
- Progressive rehabilitation Lot 22 zone 4 open paddock, gentle slope towards the Nepean River with native grasses and agricultural pasture species;
- Create specialised habitat attributes for arboreal marsupials by 2 years post extraction;
- To assess the capacity of the restoration program to return Lot 32 zone 3 agricultural production areas to 'Class 1' agricultural land; and
- Provide an outline of the proposed post-extraction land-use.

1.3 Relevant legislative policies

The LMP has been prepared in accordance with the provisions contained in relevant legislation and policy guidelines, including but not limited to those listed in the following sections.

1.3.1. Water Management Act 2000

Riparian corridors form a transition zone between terrestrial and aquatic environments and perform a range of important environmental functions. The protection or restoration of vegetated riparian areas is important to maintain or improve the geomorphic form and ecological functions of watercourses through a range of hydrologic conditions in normal seasons and also in extreme events. This LMP, and the subsequent implementation of recommended restoration works, has considered the implications of the Water Management Act (WMA) 2000.

A controlled activity approval under the WMA is required for certain types of developments and activities that are carried out in or within 40 metres of the high bank of a river, lake or estuary. This includes the removal of material (whether or not extractive material) or vegetation from land, whether by way of excavation or otherwise. The EPA is required to assess the impact of a controlled activity to ensure that minimal harm will be done to any waterfront land, i.e. the bed and a distance inland of 40 metres from a river, lake or estuary.

The soil extraction activities and associated re-vegetation works involve works within 40 metres of a water course (i.e. the Nepean River and the Dry Anabranche) and are therefore considered to be a controlled action under the *Water Management Act* (WMA) 2000.

MCS has a current Controlled Activity Approval (CAA), which is administered by the NSW Department of Primary Industries Water (DPIW). The expiry date of the CAA is the 21 November 2021. A copy of the CAA is attached as Appendix 2.

1.3.2 Threatened Species Conservation Act 1995

The Threatened Species Act (TSC Act) 1995 includes schedules that list threatened species, populations and ecological communities and key threatening processes. The objectives of the TSC Act are to:

- Conserve biological diversity and promote ecologically sustainable development, to prevent the extinction and promote the recovery of threatened species, populations and ecological communities;
- To protect the critical habitat of those threatened species, populations and ecological communities that are endangered;

- To eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities;
- To ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed; and
- To encourage the conservation of threatened species, populations and ecological communities by the adoption of measures involving co-operative management.

The activity is not expected to impose a significant negative effect on any other local populations of native biota, including threatened species, EECs and their habitats listed on the TSC Act, which occur on the study site or in adjoining habitats.

1.3.3. Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act* (EPBC Act) makes it an offence for a person to undertake an action that has the potential to significantly impact on a matter of 'national environmental significance' (NES) without first obtaining a permit from the Commonwealth Minister for Environment and Heritage. Matters of national environmental significance include: declared World Heritage areas; declared Ramsar wetlands; listed threatened species and ecological communities; listed migratory species; listed marine species; nuclear actions; and the environment of Commonwealth marine areas.

The activity is not expected to impose a significant negative impact on any other local populations of native biota, including threatened species, EECs and their habitats listed on the EPBC Act, which occur on the study site or in adjoining habitats.

1.3.4. Noxious Weed Act 1993

This LMP also considers the landowner's obligations to control weeds listed as noxious and/or environmental in the Camden LGA. During the revegetation activities, site owners are legally obliged to 'fully and continuously suppress and destroy' any noxious weed colonisation.

Several listed noxious weed species were found during the flora assessment. Weed control methodologies outlined in this plan will be implemented upon initiation of clearing works to decrease the chances of site infestation by invasive noxious weed species.

1.4. Project team

The following personnel all contribute to the upkeep and relevance of the Landscape Management Plan.

Name	Position	Qualifications	Relevant experience
Alan Seidenkamp	Quarry Manager	Certified Practicing Quarry Management Certificates issued by Quarry Institute of NSW and Institute of Quarrying Australia Underground Mine Managers Certificate	30 + years in quarry development and management
Mart Rampe	Principal – Harvest Scientific Services (HSS)	Bachelor of Science in Applied Geology	40 + years in Earth Sciences, including 22+ years in quarry and mine site rehabilitation.
Daniel Anderson and Jordan Pont	Environmental restoration and planning consultants (Bowantz Bushfire and Environmental Pty Ltd (Bowantz))	Tertiary qualifications in planning, ecology and conservation biology	Engaged by Collins on the Spring Farm site since 2008

2. LMP OVERVIEW

2.1. Site opportunities and constraints

The rehabilitation of the Dry River Anabranh and the Nepean River embankment provide opportunities in riparian system restoration. Opportunities embraced in the restoration program include:

- Revegetating large areas of native vegetation associated with both the Nepean River and the Dry River Anabranh;
- Rehabilitating areas of existing native vegetation;
- Integrating ecological function and engineering design to achieve balanced landscape outcome and riparian function;
- Improving vegetation cover throughout the site and surrounds;
- Enhance visual screening by embellishment of the anabranh vegetation;
- Staged retention of existing screening south of the extraction site;
- Staged retention of vegetation cover on areas not being extracted and progressive rehabilitation of extracted areas;
- Rehabilitation of the Nepean River riparian zone;
- Use of recessive colours for visually intrusive plant, equipment, fencing and the like;
- Removing heavy weed infestations throughout the old river anabranh and along the eastern 'bank' of the Nepean River; and
- Improve water quality leaving the development site and entering Nepean Catchment.

Constraints encountered during project design include:

- The resources required to implement such a comprehensive rehabilitation program; and
- The seasonality of some of the works to be undertaken.

2.2. Project tasks and objectives

This LMP has been prepared giving consideration to the current EPA guidelines (*"How to Prepare a Vegetation Management Plan, Version 6"*). This requires the LMP to address the following issues:

- Site assessment and determination of constraints (eg. flora and fauna, habitat and corridor values, hydrology, fire issues, services, drainage, topography, weeds, etc);
- Definition of project tasks (description of all tasks necessary to implement the plan);
- Preparation of a program of works;
- Liaison with other consultants, landscape architects, government agencies and local Bush-care groups, as required;
- Preparation of a plant species lists, and maps and diagrams;
- Details on site preparation (protection of existing plants, erosion control, site works, weed control, soil amelioration, seed collection, etc);
- Description of planting program and methodology;
- Description of maintenance program;
- Description of monitoring and review process; and
- Addressing other potential issues (signage, other relevant legislation, other site areas, public relations, community involvement, etc).

2.3. Description of key terms

The following key terms are used throughout the description of the restoration program.

- **Regeneration** - Refers to natural regeneration of the vegetation community.
- **Bush regeneration** - Refers to techniques used to assist and promote natural regeneration without utilising plant material propagated in nurseries.
- **Revegetation** - Refers to the planting of tube stock or similar grown from local provenance seed to re-establish vegetation.
- **Restoration** - Refers to a combination of restoration activities and management techniques to restore native vegetation.
- **Forb**. An herbaceous plant that is not a grass.
- **Biodiversity** - The diversity of plant and animal life.
- **Remnant Vegetation** - Where there are no maps available, remnant vegetation is defined as vegetation where the dominant canopy has greater than 70% of the height and greater than 50% of the cover relative to the undisturbed height and cover of that stratum and dominated by species characteristic of the vegetation's undisturbed canopy.
- **Local** - means local environment or site type.
- **Practical completion** - Refers to the completion of installation of revegetation activities.
- **Establishment** - Refers to the minimum 24 month maintenance program (two-years proposed for this project) applied to re-vegetation work to ensure plant establishment.
- **Final Completion** - Refers to the successful completion of the entire restoration program.

2.4. Legislative requirements and work guidelines

2.4.1. Implementation guidelines

All work to be performed on site will be in accordance with the following guidelines:

- DEC *Recovering Bushland: Best Practice Guidelines for Vegetation Restoration on the Cumberland Plain*, 2005;
- Florabank *Seed Collection and Management Guidelines*, updated July 2006;
- DIPNR's *Best Practice Guidelines for Bush Regeneration on the Cumberland Plain*, 2004; and
- Greening Australia NSW Best Practice Revegetation Guidelines, 1999.

3. SITE DESCRIPTION

3.1. Site location

The original combined area for sand and soil extraction was approximately 23 Ha (16 hectares on Lot 22 and 6.8 hectares on Lot 32). It is bound by the Camden Bypass to the north, a dry river anabranch on the East, the adjoining Collins property Lot 22 DP83317 and Lot 1 DP 5877631 on the South and the Nepean River on the West (Figure 1). Currently the approximate extraction area is a combined 7 hectares (2 ha on Lot 22 and 5 Ha on Lot 32)

The extraction area is bound to the east by a Dry River anabranch (which parallels the flow of the Nepean River), the west by the Nepean River, the north by Camden Bypass and the south by former and active extraction areas (Figure 2) that are under-going rehabilitation works and active extraction works, respectively.

Vegetation within the extraction area has been extensively modified through historic clearing and ongoing agricultural activities. The extraction area was previously utilised for Lucerne paddocks.

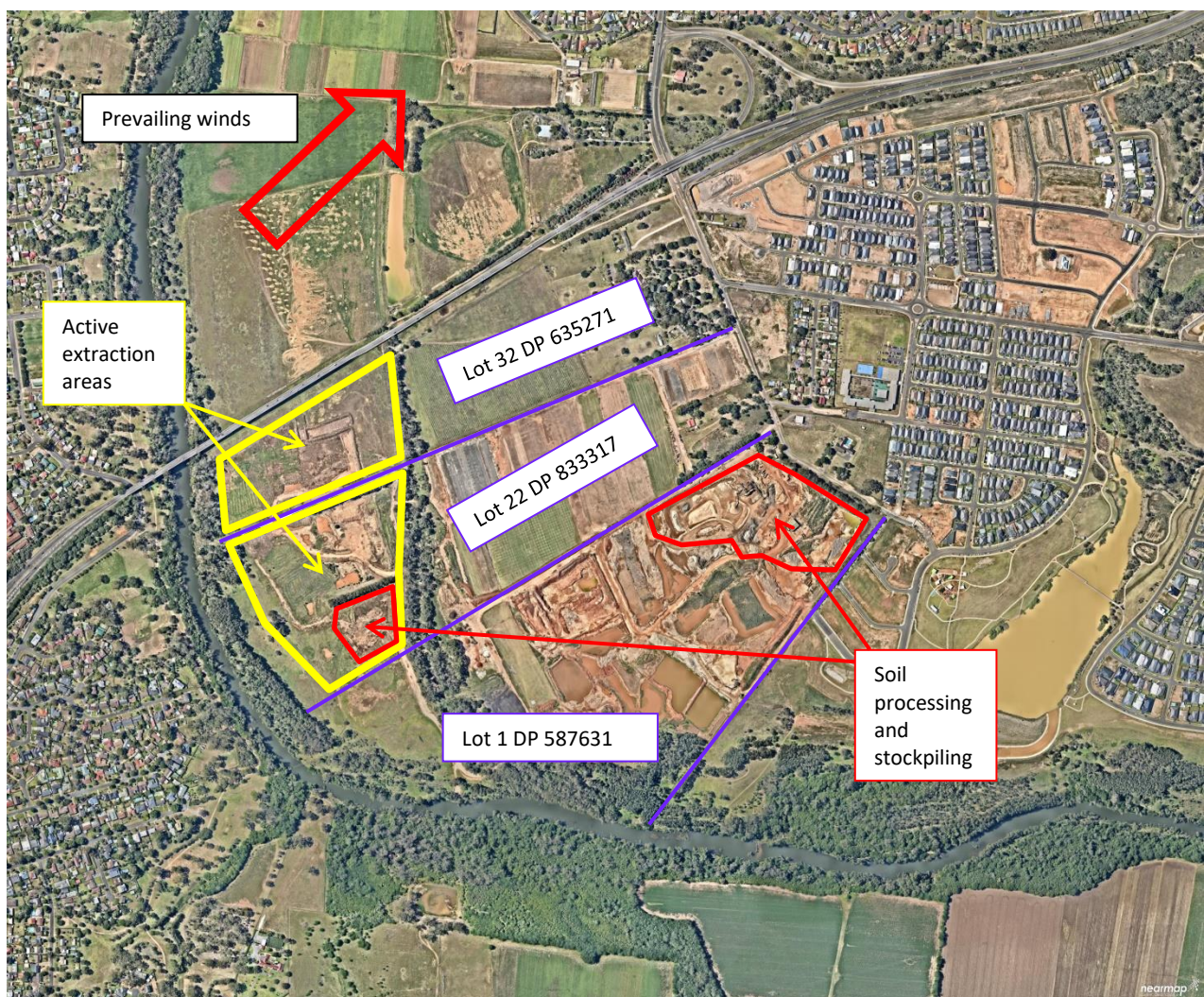
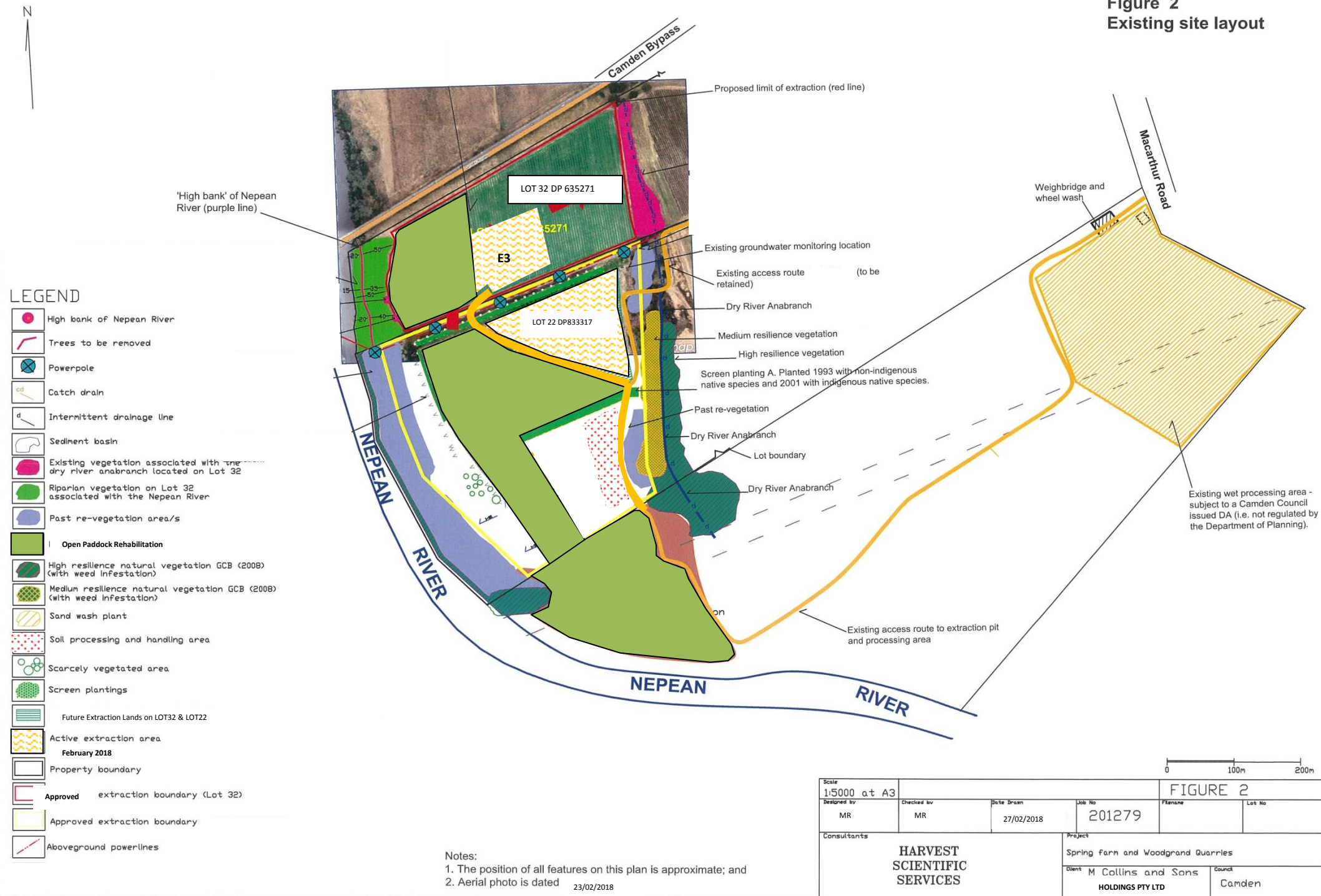


Figure 1. Plan of stockpiling, extraction and processing locations (December 2018)

Figure 2
Existing site layout



3.2. Climate

A well documented climatic history for Camden is available from the Meat and Livestock Australia website- see <http://weather.mla.com.au/climate-history/nsw/camden>. A summary is provided in Table 1.

Table 1: Maximum and Minimum Temperature History for Camden

Max temp history

Hottest Ever This Month	43.1°	17/12/2009
Hottest This Year	45.7°	07/01/2018
Hottest This Month	33.6°	02/12/2018
Long Term Average	28.5°	
Average This Month	28.4°	
Hottest December On Record	Avg. max. temp. 32.4°	1979

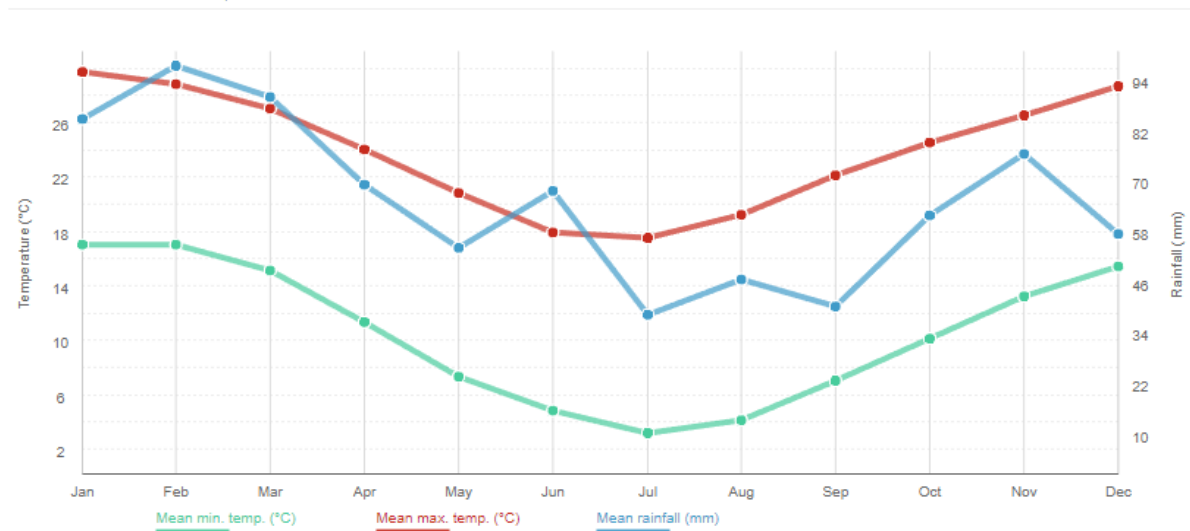
Camden maximum temp history (34.0546°S, 150.6957°E, 109m AMSL)

Min temp history

Coldest Ever	5.7°	19/12/2005
Coldest This Year	-4.9°	16/07/2018
Coldest This Month	11.7°	07/12/2018
Long Term Average	15.2°	
Average This Month	15.3°	
Coldest December On Record	Avg. min. temp. 13.0°	1984

Camden minimum temp history (34.0546°S, 150.6957°E, 109m AMSL)

Mean rainfall and temperature



Vegetation

The extraction area (Figure 2) resembles a landscape consistent with most alluvial agricultural landscapes in the Macarthur district, including a long history of agricultural activities. The vegetation in and around the extraction area includes the features outlined below.

Lucerne paddock

Vegetation within the extraction area has been extensively modified through historic clearing and ongoing agricultural activities. The extraction area was previously utilised for the growing of Lucerne.

Bank of the Nepean River

Vegetation immediately to the west of the extraction area and on the bank of the Nepean River is mapped by Actinotus (2011) as 'Riparian Forest on Coastal Floodplains'.

This vegetation is a mature stand of tall forest structure to 25m in height, dominated by River Peppermint and Broad-leaved Apple, with River Sheoak common along the edge bank of the river. Common associated shrub and twiner species include Wonga Wonga Vine (*Pandorea pandorana*) and Tree Violet (*Melicytis dentatus*), with Scurvy Weed occurring in the ground cover, the forest occurring on periodically flooded, undisturbed deep Quaternary alluvial sediments along the banks of the Nepean River. The extent of the distribution of this assemblage in the subject area is about 7,100 m². The assemblage has long been infested with woody weeds and with a high frequency of occurrence of Wandering Jew in the ground cover probably as a result of historical clearing of a natural understorey stratum.

Dry River Anabranch

Vegetation immediately to the east of the extraction area along the dry banks of the anabranch is mapped by Actinotus (2011) as 'Alluvial Woodland on Coastal Floodplains'.

This vegetation is a mature stand of tall woodland structure to 30m in height, dominated by River Peppermint, Broad-leaved Apple and River Sheoak. Common associated shrub species include Blackthorn (*Bursaria spinosa* var *macrophylla*), Twiggy Heath-myrtle (*Sannantha pluriflora*), Scrubby Spurge (*Phyllanthus gunnii*) and Tree Violet (*Melicytis dentatus*), with Spiny-headed Mat-rush (*Lomandra longifolia*) and Bamboo Grass (*Austrostipa ramosissima*) occurring in the ground cover. The woodland is established on a dry drainage course on periodically flooded, undisturbed Quaternary alluvial sediments. The extent of the distribution of this assemblage in the subject area is about 5,000 m². The assemblage has long been infested with woody weeds with Wandering Jew in the ground cover.

3.3. Proposed impacts to native vegetation

The activity is not expected to impose a significant negative impact on any other local populations of native biota, including threatened species, EECs and their habitats listed on the TSC Act and EP&BC Act, which are restricted to adjoining habitats and are not found in the area of extraction.

Impacts to vegetation will be limited to the removal of two isolated River Peppermint trees. These trees were assessed by Actinotus (2011) and were found to be of poor condition and their removal would not constitute a significant impact. The area of extraction has been designed to ensure impacts to native vegetation is minimal and does not constitute a 'significant impact'.

The project includes the restoration of native vegetation along the eastern 'bank' of the Nepean River and either side of the Dry Anabranch as described in this LMP. It is anticipated that this restoration program, through time, will significantly improve the cover and condition of native vegetation throughout these riparian zones when compared to existing conditions and thus improve migration of fauna and flora (transported in fauna droppings etc) and into restoration areas.

3.4. Topography, geology and soils

The site area is characterised by gently sloping to flat (0 - 5%) undulating rises on Terresa Park Soil Landscape group, which is a fluvial unit associated with Tertiary and Quaternary flood plains and terraces of the Nepean River. Soil types include brown sandy loam, reddish brown sandy clay, and light clay. Quaternary alluvial deposits of the Nepean River Valley underlie the flat-lying area. The Quaternary alluvial deposits of the Nepean River are mainly derived from weathering of Permian and Triassic bedrock and comprise typically grey-brown medium grained quartz sand with layers of silt and humic clay.

3.5. Hydrology

The study area is located within the Cumberland sub-region of the Hawkesbury-Nepean Catchment Management Authority (CMA). The site includes the old river Anabranch, which parallels the flow of the Nepean River. The sand extraction activities, which involve works within 40 meters of this waterway and the Nepean River, is considered a controlled action under the WMA 2000.

3.6. Adjacent land use

The site is primarily set in a rural area with surrounding land uses as follows:

West – Nepean River and Camden South residential area

North – Camden Bypass and agricultural lands on flood prone land

East – Spring Farm residential area

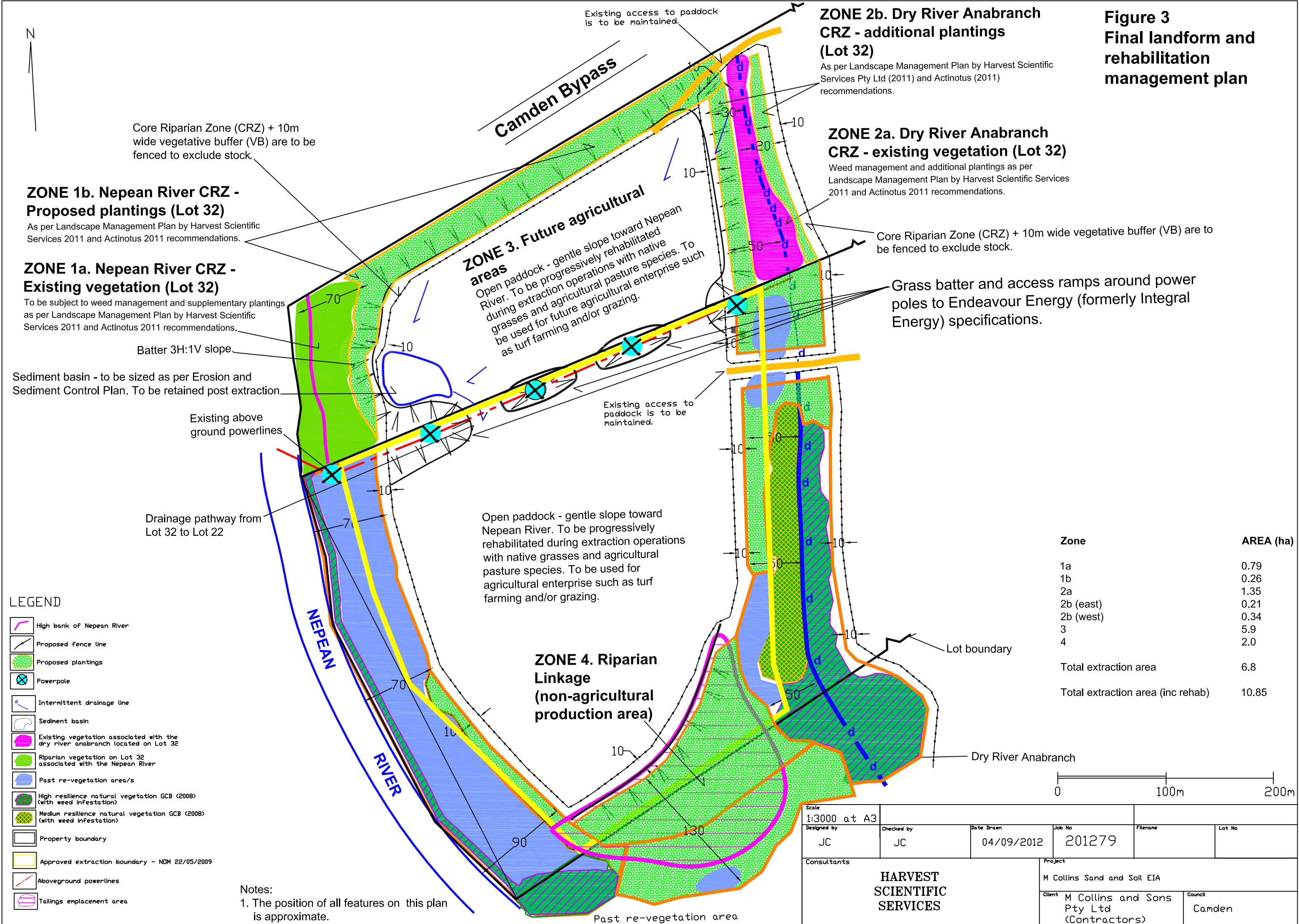
South – M Collins operations on flood prone land adjacent the Nepean River

4. QUARRY CLOSURE

At quarry closure, the site will be composed of a number of zones, the locations of which are illustrated in Figure 3. These zones are described as follows:

- **Nepean River Riparian Vegetation.** Approximately 1.05 hectares of riparian vegetation adjacent to the Nepean River. This area will be made up of 0.79ha (**Zone 1a**) of restored existing vegetation and 0.26 hectares of additional plantings (**Zone 1b**);
- **Dry River Anabranh Vegetation.** Approximately 1.06 hectares of riparian vegetation adjacent to the Nepean River. This area will be made up of 0.51ha (**Zone 2a**) of regenerated existing vegetation and 0.55 hectares of additional plantings (**Zone 2b**);
- **Agricultural production land (Zone 3).** Approximately 5.9 hectares of 'Class 1' Agricultural production land. This land will be relatively flat and will slope gently to the south-west, draining towards the Nepean River to ensure free draining compatibility of the final land form with surrounding land uses ;
- **Terminal sedimentation pond.** The terminal sedimentation pond is to be retained as a long-term sediment control measure. This feature will therefore result in long-term water quality improvements from surface waters draining from the agricultural land beyond the life of the extraction project; and
- **Riparian Linkage Zone (Zone 4).** This zone will develop a broad linkage between the Dry River Anabranh and the Nepean River riparian corridor. Works programmed for this area involve the integration of habitat structures, revegetation and weed control.
This land will be a combination of north facing batters rising to provide a feature on the landscape with associated bio-diversity outcomes.
The southern side comprises of existing batters that are vegetated and adjoin the existing riparian vegetated corridor.

Figure 3
Final landform and
rehabilitation
management plan



5. RESTORATION PROGRAM

5.1. Restoration zones

The following information provides a detailed description of all activities required to implement the LMP. The required activities were determined using field investigations to visually assess, record (photograph) and identify the different native vegetation zones at the site, any threatened or endangered species and the current habitat and wildlife corridor connectivity, as well as assess soil types and on site hydrology for potential erosion hazards. This information was supplemented by desktop research of existing reports pertaining to the site, and current vegetation maps and restoration guidelines. As indicated on Figure 3, the site is divided into four distinct zones that will require different vegetation management approaches, viz:

A detailed timetable indicating what rehabilitation measures have been completed and those that are to be implemented in the short term is included as Table 2 in the Bowantz Report (Appendix 3).

Zone 1a-b (Nepean River) – This zone incorporates a block of remnant Riparian Forest alongside the Nepean River. This area requires a combination of bush regeneration (sub-zone 'a') and revegetation (sub-zone 'b').

Zone 2a-b (Dry River Anabranh) – This zone is located in the Dry River Anabranh, the area supports degraded Riparian Forest impacted from cattle and invasive plant species. Restoration in this area involves a combination of bush regeneration (sub-zone 'a') and revegetation (sub-zone 'b').

Zone 3 (agricultural production areas) – This zone is located in the open paddock area between the Dry River Anabranh and the Nepean River riparian zone. This zone is to be continued to be used for agricultural production land-uses.

Zone 4 Riparian linkage (non-agricultural production areas) – This zone links the Nepean River Riparian Corridor at the Dry River Anabranh. It will be permanent bushland that will provide a landscape feature due to the raised platform above the batters that join agricultural land.

The restoration program has been undertaken by Bowantz Bushfire and Environmental Pty Ltd (Bowantz) who has been commissioned by Collins to manage and implement the environmental actions and recommendations described in this LMP and other supporting documents. Activities undertaken by Bowantz are reported in Appendix 3 and should be read in conjunction with the following sections of this LMP.

5.2. Staging of extraction and rehabilitation

Extraction and rehabilitation is to be staged subject to the following controls:

- Further to approval from Council, 5 hectares can be open at any one time, however the ration of 1 hectare active extraction to 1 hectare rehabilitation will be applied;
- Active extraction on Lot 32 within a 1 hectare portion of land at a time and concurrent rehabilitation works within an additional 1 hectare portion of land; and
- Extraction and rehabilitation works are proposed to occur in concert over the extended life of the quarry (completion in 2021).

The staging proposal is illustrated in Figure 4.

5.3. Noise generating re-vegetation activities

No noise generating activities are to be under-taken outside of standard hours of extraction.

5.4. Riparian corridor zones of the Water Management Act

The WMA describes two distinct management zones associated with riparian vegetation, these being the Core Riparian Zone (CRZ) and the Vegetated Buffer (VB).

- A Core Riparian Zone (CRZ) is the land contained within and adjacent to the channel. The Department will seek to ensure that the CRZ remains, or becomes vegetated, with fully structured native vegetation (including groundcovers, shrubs and trees). The width of the CRZ from the banks of the stream is determined by assessing the importance and riparian functionality of the watercourse, merits of the site and long-term use of the land. There will be no infrastructure such as roads, drainage, stormwater structures, services, etc. within the CRZ.

Figure 4
Extraction and
rehabilitation staging
plan

LEGEND

- Staging boundary
- Trees to be removed
- Powerpole
- Catch drain
- Intermittent drainage line
- Sediment basin
- Existing vegetation associated with the dry river anabranch located on Lot 32
- Riparian vegetation on Lot 32 associated with the Nepean River
- Past re-vegetation area/s
- High resilience natural vegetation GCB (2008) (with seed infestation)
- Medium resilience natural vegetation GCB (2008) (with seed infestation)
- Open Paddock Rehabilitation
- Soil processing and handling area
- Scarcely vegetated area
- Screen plantings
- Current Extraction Area – Lot 32
- Extraction Area – Lot 22
- Existing internal fence-line
- Property boundary
- Proposed extraction boundary (Lot 32)
- Approved extraction boundary - NDH 22/05/2009
- Aboveground powerlines
- Sediment Pond

Notes:
1. The position of all features on this plan is approximate: and
2. Aerial photo is from 23/02/2018

YEAR	REHABILITATION CELLS	EXTRACTION CELLS
2015	R1	E1
2016	R2	E2
2017	R3	E3
2018	R5	E5
2019	R7	E7 (extraction complete)
2019	R8 (rehabilitation complete)	
2020	Maintenance R6 and R7	
2021	Maintenance R6 and R7	

Scale 1:3000 at A3		Figure 4			
Designed by MR	Checked by MR	Date Drawn 26/02/2018	Job No 201279	Flameur	Lot No
Consultants HARVEST SCIENTIFIC SERVICES			Project M Collins Sand and Soil EIA		
			Client M Collins & Sons Holdings PtyLtd		Council Camden

- A Vegetated Buffer (VB) protects the environmental integrity of the CRZ from weed invasion, micro-climate changes (edge effects), litter, trampling and pollution. There will be no infrastructure such as roads, drainage, stormwater structures, services, etc. within the VB. The width of the VB is 10 metres.

5.5. Site preparation

5.5.1. Site protection

Fencing

When establishing or recovering riparian vegetation to maintain land based ecosystems and to conserve biodiversity, an essential management method is to incorporate the protection of riparian vegetation. This requires some form of fencing or other means of controlling the access of heavy machinery, human influences and domestic stock.

Restoration zones 1 and 2 (Figure 3) all require protection during the quarry extraction process and for future access management. These areas are fenced with a 5 strand barbwire fence for the long term protection of the rehabilitated riparian areas. Gates and Cattle Ramps are installed as required for access to extraction areas. The protection of these areas with permanent fencing ensures the long term effective management of the rehabilitated and re-vegetated riparian habitat and its wildlife linkages.

Permanent fencing provides conservation and protection to ameliorate threats such as grazing and human disturbance. On completion this will meet a number of priority actions listed as key strategies in EPA and the DEHWA recovery plans for the 'River Flat Eucalypt Forest on Coastal Floodplains'.

Signage is utilised as a tool to identify the restricted vegetation systems to staff, contractors and visitors. It is intended that fencing will not impact on bulk earthworks and extraction activities. All fencing allows for the extraction operation to continue outside these areas as part of the extraction process for some time.

5.5.2. Native and feral animal protection

Damage can occur to some or all of the species and can vary from mild to severe. There are several options to prevent the grazing or browsing of plantings. In the event that the revegetation is suppressed through herbivore activities the following methods will be utilised depending on the severity and type of pest problem.

Tree guards will be utilised as a standard procedure to protect young plants from browsing. The use of 1L milk carton, or equivalent to, tree guards generally gives protection from most herbivores during the plant establishment stage even though they may browse the tops of the plants. If the herbivores continue to suppress revegetation plants, very tall tree guards of rigid corrugated plastic will be used in some areas. Smaller guards are effective in stopping rabbits or hares from destroying young plants.

Reducing populations prior to planting - Rabbit and hare populations will be controlled in an attempt to reduce their numbers at the site prior to planting. Any rabbit burrows will be ripped and existing animals will be poisoned or shot. The Department of Primary Industries (DPI) can advise on effective and humane methods to control rabbits.

Deterrents - There are a number of options available to deter animals from entering a site, D-Ter is one product available for the protection of vegetation. This product is supplied in a powder form and is mixed with water and simply sprayed on plants. This product will be reapplied at regular intervals and after rain.

5.5.3. Litter removal

Currently the sound management of extraction operations has lead to a clean site with little to no litter polluting the natural areas and extraction sites.

During the rehabilitation process all litter is removed by hand systematically as part of the management of natural areas. Litter created in the process of revegetation is removed as an ongoing process and at completion of planting.

5.5.4 Bushfire Management

Ongoing management of undergrowth and removal of accumulated debris is conducted as a fire prevention measure. Suitable fire fighting and first aid equipment is available to respond to fires on site. These include fire hose reels, hoses, water access, pumps and fire extinguishers which are identified by means of installed signage. Bushfire management is integrated on site as part of Emergency Response procedures. In case of a bush fire or fire on site personnel are to assist fire services and emergency services as much as possible, when safe to do so.

5.5.5 Landscaping

Currently implemented measures to minimise visual impacts through landscaping, in addition to those mentioned in Section 2.1 include;

- Not removing vegetation or material from the river frontage;
- 45metre setback from Camden By-Pass to extraction hole top bund;
- No vegetation stripping until cells are activated;
- Working behind extraction face to limit bypass visibility;
- Lot 32 extraction to be 1Ha extraction to 1Ha rehabilitation;
- Landscape areas of native vegetation associated with both the Nepean River and the Dry River Anabranh;
- Landcape areas of existing native vegetation;
- Integrating ecological function and engineering design to achieve balanced landscape outcome and riparian function;
- Improving vegetation cover throughout the site and surrounds;
- Enhance visual screening by embellishment of the anabranh vegetation (as set out within vegetation tables 4 to 6);
- Staged retention of existing screening south of the extraction site where existing tree lines are maintained and coordinated within the extraction schedule;
- Staged retention of vegetation cover on areas not being extracted and progressive rehabilitation of extracted areas, with concurrent rehabilitation/extraction;
- Rehabilitation of the Nepean River riparian zone as per Figure 4;
- Construction of perimeter bunds as per ESCP ESP1 using site soil tailings and existing grass runners and additional seeding as required to minimise visual impact with additional 1 metre height and limiting site within the extraction cell;
- By-products from the extraction program including striping's, tailing, and rejects will be utilised in the rehabilitation and landscaping process, as is the current practice on adjoining land;
- Selection of denser understory as a screen minimizing visual impact;
- Selection of taller native species as a screen minimizing visual impact; and
- Selection and installation of recessive coloured fencing and fixed equipment applicable to the surrounds and area. Use of recessive coloured plant and equipment applicable to the surrounds to minimise visual impacts in conjunction with existing visually minimizing controls.

The LMP now includes MCS additional mitigation measures which include:

- Enhanced visual screening by the establishment of the Dry River Anabranh vegetation;
- Stated retention of existing screening south of the extraction site;
- Staged retention of vegetation cover on areas not being extracted and progressive rehabilitation of extracted areas;
- Rehabilitation of the Nepean River Riparian Zone' and
- Application of recessive colours to visually intrusive plant, equipment and fencing.

5.5.6 Final Landform

Achieving free draining and final landform levels with surrounding land uses will occur by following modelled final landform designs attached as Appendix 4. Progressive surveyor levels are obtained during rehabilitation and landscaping to gauge accuracy with approved final level designs. The objective for Lot 32 is to rehabilitate approximately 5.9 ha of it to Class 1 Agricultural land use. The objective for Lot 22 on the other hand, is for the rehabilitation of the final landform to agricultural land use (not Class 1). Ongoing monitoring and annual review of achieved levels and progress are conducted to this LMP performance criteria.

5.6. Erosion control

At the completion of earthworks in and surrounding Restoration Zones 1 and 2, appropriate sediment control fencing will be installed as necessary and maintained throughout the duration of the extraction program. Installation will be in accordance with bulk earthworks 'Water Management and Erosion and Sediment Control Plan' (WM & ESCP) as prepared by Harvest Scientific Services .

5.6.1. Soil preparation – Refer to Figure 3

Zones 1b (Nepean River – proposed plantings), 2b (Dry Anabranh – proposed plantings) and 4 (Riparian Linkage)

All battered re-vegetation areas are to be covered to a minimum depth of 500 mm with a clean weed free top soil. In non-battered areas, weeds are to be sprayed out and vegetation is to be planted directly into the natural top-soil horizon.

Ground preparation will consist of deep ripping to a depth of 300 to 400 mm, no further than 300 mm apart. The first stages of ripping will run down any batters or contours followed by a cross ripping along the contours. The cross-rip is to be undertaken to reduce the chance of incisions after periods of rain and help retain moisture on sloping surfaces. The fractured soil between rip lines eliminates glazing of the undisturbed soil interface and reduces air pockets and trench effects.

Following ripping, the soil surface may be rotary hoed, if necessary, to create a looser soil surface making it easier to plant tube-stock, encourage good root development and create a larger volume of soft soil which encourages rapid early growth.

Zone 3 Agricultural production areas

At the completion of extraction within any given extraction cell that is to be utilised for future agricultural production (Zone 3), the ground is to be prepared by ripping to a depth of 300 to 400 mm, no further than 300 mm apart. First stages of ripping will run down any batters or contours followed by a cross ripping along the contours. The cross rip will reduce the chance of incisions after periods of rain, help retain moisture on sloping surfaces, fracture soil between rip lines, eliminate glazing of the undisturbed soil interface and reduce air pockets and trench effects.

The entire area is then to be covered to a minimum depth of 500 mm with stockpiled top-soil (stored in the bunded mound around the extraction pit). Pasture grasses are then to be re-established by either natural re-generation from grass seed stored in the topsoil stock-pile or seeding with pasture species.

Zones 4 (Riparian Linkage)

These lands comprise of batters and a ridge that is to be capped with at least a 2 metre depth of clean topsoil extracted from the approved extraction areas and including dry tailing soils that remain after the topsoil has been processed.

Ground preparation will consist of deep ripping to a depth of 300 to 400 mm, no further than 300 mm apart. The first stages of ripping will run down any batters or contours followed by a cross ripping along the contours. The cross-rip is to be undertaken to reduce the chance of incisions after periods of rain and help retain moisture on sloping surfaces. The fractured soil between rip lines eliminates glazing of the undisturbed soil interface and reduces air pockets and trench effects.

Following ripping, the soil surface may be rotary hoed, if necessary, to create a looser soil surface making it easier to plant tube-stock, encourage good root development and create a larger volume of soft soil which encourages rapid early growth.

5.7. Re-vegetation program

Zones 1 (Nepean River – proposed plantings) and 2 (Dry Anabranh – proposed plantings)

To implement the LMP and achieve recommended targets, a combination of revegetation techniques will be employed throughout Restoration Zones 1 and 2. Each of the techniques are described below, with Table 1 outlining which species are suited to each revegetation technique.

All revegetation tasks in post extraction areas will commence upon completion of final landform levels. Additional planting in past revegetation sites and bush regeneration areas will commence as soon a plant stocks are available.

The aim of revegetation in this LMP is to restore the natural species composition and structures, combining this with other principles in this report, a self-sustaining ecosystem should result - one that will require minimum human intervention to maintain over time.

Planting locations will generally mimic where species would have naturally grown. This means plant species will be matched with the site conditions. The desired revegetation structure is one that cannot be seen through, creating a natural effect with clumps of vegetation, small clearings which predominantly are planted with ground layer species, and different heights of vegetation species.

To achieve this planting structure, revegetation planting will provide a high composition of ground cover plantings, typically growing less than 1.5 m, making up 50% of the overall planting composition. These plant species will eventually stabilise soils and provide vegetative habitat, food and nesting material for fauna species over a short period. Planting of these plants will range from 4 to 8 plants per m².

This structural layer will then be complemented by planting of mid-canopy species. This layer will again provide a good source of habitat and stability to ground soils. Plants in this structural layer will be planted as a general cover plant and clumped close together for habitat purposes. Taking these principles into account, planting distances will range from 4 plants per m² to 1 plant every 2 m².

The canopy structural layer will be planted with Angophora, Casuarina and Eucalyptus species; this layer will develop with time to dominate the revegetation structure. Planting this layer of vegetation structure at a rate of 1 plant per 5 to 10 m² will allow for thinning revegetation at a later date if required.

Zone 3 Agricultural production areas

In the areas that are to be used for future agricultural production (Zone 3), pasture grasses are then to be re-established by direct seeding with pasture species.

Zone 4 Riparian Linkage (Non-agricultural production area)

To implement the LMP and achieve recommended targets, a revegetation program is to be employed throughout Restoration Zone 4. Each of the techniques are described below, with Table 1 outlining which species are suited to each revegetation technique.

All revegetation tasks will commence upon completion of final landform levels. Within this area it is intended to spread mulch and forest residues to stabilise soils and prevent erosion whilst the tree canopy matures.

The aim of revegetation in this LMP is to restore the natural species composition and structures, combining this with other principles in this report, a self-sustaining ecosystem should result - one that will require minimum human intervention to maintain over time.

Planting locations will generally mimic where species would have naturally grown. This means plant species will be matched with the site conditions. The desired revegetation structure is one that cannot be seen through, creating a natural effect with clumps of vegetation, small clearings which predominantly are planted with ground layer species, and different heights of vegetation species.

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The canopy structural layer will be planted with Angophora, Casuarina and Eucalyptus species; this layer will develop with time to dominate the revegetation structure. Planting this layer of vegetation structure at a rate of 1 plant per 5 to 10 m² will allow for thinning revegetation at a later date if required.

5.7.1. Seed collection

To allow for enough lead-in time for the propagation of local provenance species, seed collection will start as soon as practical. Experienced and qualified bush regeneration staff with a Section 132C Scientific Licence and Florabank seed collection training will perform seed collection activities. All seed collection, management, cleaning and storage will be in accordance with the *Florabank Seed Collection Guidelines* (prepared by Greening Australia and now accepted as industry best practice).

When collecting seed, priority will be placed on sourcing seeds from a site with the same physical characteristics as the site vegetation. Preferably a large population base which is geographically as close as possible to the proposed extraction site. Local genetic material is well adapted to local environmental conditions - including soil, slope, aspect, rainfall and wind. Thus the best long term survival will be achieved by using this local genetic material.

5.7.2. Plant propagation

Plant propagation refers to the germinating of collected seed and the 'growing on' of plants in enviro cells, hiko cells or forestry tubes. All plants will be produced from local provenance seed. This activity will be managed by experienced and qualified bush regeneration staff with a Section 132C Scientific Licence and Florabank seed collection training.

5.7.3. Installation of native tube stock

The vegetation to be restored on site will consist of appropriate mixes of canopy, mid-storey and groundcover species from the suggested plant species shown in Table 1. The general percentage structural composition of canopy to middle storey to groundcovers in these communities is approximately 20%: 30%: 50%.

Most plants will be planted as hiko, enviro cells or tube stock. All tree and shrub species will be suitably guarded to prevent herbivory and weed competition, and to encourage optimum growing conditions. Guards will comprise of a recycled 1 L milk carton tree guard and two bamboo stakes, or equivalent to.

All plants planted as part of the revegetation program will require mulching to approximately 75 to 100 mm in depth at a 400 mm radius from the centre of the plant. This will retain soil moisture, temperature, assist in controlling weed growth and reduce the off target killing of native species during weed controlling activities.

In general, autumn is the best season for planting as summer temperatures can be too high for young plants to establish and frosts in winter impede survival rates. Planting in early spring can be effective as long as a suitable watering regime is implemented. All plants will be installed by hand.

5.7.3.1 Hand installation

After immersion for half an hour in a bucket of water, each plant is planted into a hole that is a minimum of 25% larger than the planting container and its edges will be suitably 'roughed' prior to plant installation. A soil additive, such as Terracottom may be added to provide nutrient, water holding crystal, high cation exchange and root stimulators. This product will significantly increase the survival and establishment rate of plant species if applied at the recommended rate. Soil is then to be filled into the hole and firmed to bring the soil in contact with the plant root zone. An earth saucer is then shaped around each plant, large enough to hold 5 to 10 litres of water and then filled after planting.

All tree or shrub species extending from the tree guard after planting will be planted as deep as possible or until the plant leaves are protected by the tree guard. This will stop any herbivores from pulling the plants out of the ground when grazing on the plant. It is also recommended when planting larger specimens to add a grass species in the same hole and guard.

5.7.3.2 Hand broadcasting of native seed

In managing post extraction rehabilitation areas, the first aim is to establish and maintain a continuous indigenous groundcover, with enough vegetation to protect the soil surface from heavy rain and to provide a filtering capacity where this is required. Hand broadcasting seed is one method utilized to achieve this outcome.

In a bid to develop a robust and resilient groundcover, predominantly native grass seed mixed with seed of suitable species which are readily available and germinate easily (see Table 1) will be hand broadcast throughout the maintenance period of the restoration program. This will add further diversity to the site, particularly ground covers, and assist in achieving recommended targets for planting densities in 3A permit works when required.

5.7.4. Brush matting

This is the practice of laying cut stems/branches (containing ripe fruit) on the soil surface. This technique has two aims - to spread seed and to reduce erosion. This will be a useful technique when local native seed is in abundant supply. The most suitable species for brush matting are those that retain seed capsules on the plant but which shed seed when the branch dries, e.g. (*Leptospermum* spp.), (*Eucalyptus* spp.), She Oak (*Casuarina cunninghamiana*), (*Callistemon salignus*) and Broad-Leaved Apple (*Angophora subvelutina*).

This method of vegetation establishment will be utilised throughout the development of the vegetation in bushland areas and in revegetation. Stems and branches will be laid in thick patches rather than spreading materials thinly over large areas. This will help achieve the development of the micro climates needed for the establishment of seedlings, and in turn reducing high water velocities and the level of maintenance required around seeding areas. Areas which have been brush matted will predominantly be maintained by hand weeding. When placing the materials out the maintenance capacity of the program will be considered.

5.7.5 Rehabilitation/Re-Vegetation potential Risks and Mitigation Controls

Table 2: Potential Risks and Mitigation Controls for Rehabilitation and Re-vegetation	
Potential Risk	Mitigation Controls
Native animals	Provide guarding
Weed competition	Guarding, mulch, spraying
Weather conditions	Increased watering, irrigation, mulching
Failed plantings	Regular maintenance and monitoring, re-planting
Damaged guarding	Regular monitoring, maintenance, replacement
Final Levels	Regular surveying, review Design plans and progress

5.8. Species for use in re-vegetation activities

The species outlined in Table 3 are for use in the rehabilitation program (from Actinotus, 2012). The list also includes which species suit the various techniques described to re-establish native vegetation.

Table 3: Plant schedule for revegetation program

Botanical Name	Common Name	Density	Revegetation Activity
Canopy:			
<i>Angophora subvelutina</i>	Broad-leaved apple	1 per 5m2	Planting/ brush matting/ broadcasting
<i>Casuarina cunninghamiana</i>	River-oak	1 per 5m2	Planting/ brush matting/ broadcasting
<i>Eucalyptus amplifolia</i>	Cabbage gum	1 per 10m2	Planting/ brush matting/ broadcasting
<i>Eucalyptus elata</i>	River peppermint	1 per 10m2	Planting/ brush matting/ broadcasting
<i>Eucalyptus tereticornis</i>	Forest red gum	1 per 10m2	Planting/ brush matting/ broadcasting
<i>Melia azedarach</i>	White Ceder	1 per 10m2	Planting/ brush matting/ broadcasting
Middle Storey:			
<i>Acacia parramattensis</i>	Parramatta green wattle	1 per 2m2	Planting/ brush matting/ broadcasting
<i>Acacia floribunda</i>	Sally Wattle	1 per 2m2	Planting/ brush matting/ broadcasting
<i>Acacia decurrens</i>	Sydney Green Wattle	1 per 2m2	Planting/ brush matting/ broadcasting
<i>Backhousia myrtifolia</i>	Grey Myrtle	1 per m2	Planting
<i>Baeckea linifolia</i>		1 per m2	Planting/ brush matting /clumps
<i>Bursaria spinosa</i>	Black thorn	1 per m2	Planting/ brush matting /clumps
<i>Callistemon salignus</i>	Willow bottlebrush	1 per m2	Planting/ brush matting /clumps/ broadcasting
<i>Commersonia fraseri</i>	Native Hemp	1 per 10m2	
<i>Dodonaea triquetra</i>	Hop Bush	1 per m2	Planting
<i>Ficus coronata</i>	Creek Sandpaper Fig	1 per 10m2	Planting close to river bank
<i>Hymenanthera dentata</i>	Tree violet	1 per 2m2	Planting/ clumps
<i>Kunzea ambigua</i>	Tickbush	1 per 2m2	Planting/ brush matting /clumps/ broadcasting
<i>Leptospermum morrisonii</i>	Tea-tree	1 per m2	Planting/ brush matting /clumps/ broadcasting
<i>Leptospermum polygalifolium</i>	Lemon-scented tea-tree	1 per m2	Planting/ brush matting /clumps/ broadcasting
<i>Pomaderris ferruginea</i>	Rusty Pomaderris	1 per 2m2	Planting
<i>Prostanthera lasianthus</i>	Victorian Christmas bush	1 per 2m2	Planting
<i>Trema aspera</i>	Native Peach	1 per 5m2	Planting
Groundcovers:			
<i>Aristida ramosa</i>	Purple wiregrass	8 per m2	Planting/broadcasting
<i>Aristida vagans</i>	Blown Grass	8 per m2	Planting/broadcasting
<i>Austrostipa ramosissima</i>	Stout Bamboo Grass	4 per m2	Planting/broadcasting
<i>Clematis aristata</i>	Old man's beard	1 per m2	Planting
<i>Commelina cyanea</i>	Scurvy weed	4 per m2	Broadcasting (cuttings)
<i>Cymbopogon refractus</i>	Barbed wire grass	4 per m2	Planting/broadcasting
<i>Desmodium varians</i>		4 per m2	Planting
<i>Dichelachne crinata</i>	Longhaired plume grass	4 per m2	Planting/broadcasting
<i>Dichelachne micrantha</i>	Shorthair plumegrass	4 per m2	Hand broadcasting
<i>Dichondra repens</i>		4 per m2	Broadcasting (cuttings)
<i>Einadia hastata</i>		4 per m2	Planting
<i>Entolasia marginate</i>	Bordered panic grass	8 per m2	Planting/Broadcasting
<i>Eustrephus latifolius</i>	Wombat Berry	1 per m2	Planting
<i>Geranium homeanum</i>		4 per m2	Planting
<i>Glycine clandestina</i>	Twining glycine	2 per m2	Planting
<i>Hardenbergia violacea</i>	False sarsaparilla	1 per m2	Planting
<i>Hydrocotyle peduncularis</i>	Penny Wort	2 per m2	Planting
<i>Imperata cylindrica</i>	Blady Grass	4 per m2	Planting
<i>Lomandra longifolia</i>	Mat rush	4 per m2	Planting
<i>Microlaena stipoides</i>	Weeping meadow grass	4 per m2	Planting
<i>Opercularia aspera</i>	Coarse stink weed	1 per m2	Planting
<i>Oplismenus aemulus</i>		4 per m2	Planting (cuttings)
<i>Phyllanthus gunnii</i>		1 per m2	Planting

<i>Pratia purperescens</i>		4 per m2	Planting (cuttings)
<i>Poa labillardieri</i>	Large tussock grass	2 per m2	Planting/ broadcasting
<i>Pteridium esculentum</i>	Bracken	4 per m2	Planting (cuttings)
<i>Sigesbeckia orientalis</i>	Indian Weed	4 per m2	Planting
<i>Stellaria flaccida</i>	Forest starwort	4 per m2	Planting (cuttings)
<i>Stephania japonica</i>	Tape Vine	4 per m2	Planting
<i>Stypantra glauca</i>	Nodding Blue Lily	4 per m2	Planting
<i>Themeda australis</i>	Kangaroo grass	4 per m2	Planting/ broadcasting
<i>Urtica incisa</i>	Scrub Nettle	2 per m2	Planting
<i>Viola hederacea</i>	Native violet	4 per m2	Planting
<i>Wahlenbergia gracilis</i>	Native bluebell	4 per m2	Planting

5.9. Maintenance program – re-vegetation

The completion of the revegetation (planting works) and target weed control activities will be considered the date of 'Practical Completion' for the restoration works and will signal the commencement of the two year plant maintenance program. The completion of the two year maintenance program will be considered as 'Final Completion' for the revegetation works. Maintenance activities will include such things as watering, herbicide spraying and general maintenance. Practical completion will occur on a staged basis and the maintenance period will commence as each stage reaches practical completion.

5.9.1. General maintenance

General maintenance activities will include repairing damaged tree guards, monitoring survival rates, installing replacement plants where required, weeding inside the tree guards and continued follow-up spot spraying. Over the first year all plant losses will be replaced and any remaining plants will be planted into the existing site as infill plantings to increase the density of the overall revegetation.

5.9.2. Watering

All plants will be 'watered in' on installation, with each plant receiving a minimum of five litres. All plantings will then receive a further three applications of water during the first 8 weeks, if required, to assist plant establishment. Should weather conditions remain dry for an extended period of time follow-up watering may be required. If so, discussion between client and contractor may be necessary to cover the cost of additional watering.

5.9.3. Maintenance spraying

To ensure the success of the revegetation activities it is essential to control weed infestation. Weeds compete with the newly installed plants for nutrients and water thereby limiting their survival and growth rates.

The revegetation will be continually maintained to a weed free state through a weed spraying program which is guided by the weather conditions, season and site monitoring. The site will be monitored for weed growth after extended rain and at the start and the end of seasons.

Areas where revegetation activities are dominated by hand planting, spraying of Round-up® and Biactive herbicides will occur using 'back packs'. Suitably qualified bush regeneration contractors will carry out all spraying.

5.10. Bush regeneration and weed control

Bush regeneration of the riparian remnant will meet a number of priority actions listed as key strategies in EPA and the DEHWA recovery plans for the 'River Flat Eucalypt Forest on Coastal Floodplains' and 'Alluvial Woodlands on Coastal Floodplains'.

The greatest likelihood of colonisation by native understorey (woody and herbaceous) will be from adjacent remnant vegetation. The riparian areas range from healthy resilient sections to heavily impacted and degraded areas. Through a comprehensive bush regeneration program, working from resilient riparian forest areas to more degraded vegetation, native vegetation will be restored to a resilient and robust plant community. Rehabilitating the riparian forest will provide the revegetation with the source of native propagules it requires, enhancing genetic exchange between the existing remnant forest and revegetation.

To meet statutory obligations listed in the Noxious Weeds Act, a weed control program targeting noxious weeds will be implemented prior to any revegetation work and all remaining weeds will be included in the bush regeneration program. All weed control and bush regeneration activities are to be completed by a suitably qualified contractor.

The suitably qualified contractor will make monthly observations. Annual reporting will be supplied by the contractor (using the criteria outlined in Appendix 5 regarding bush regeneration practices and rehabilitation) as listed below;

- Re-vegetation Activities minimum survival rate criteria 85%. All re-vegetation observations less than 85% triggers replacement of vegetation; and
- Weed Re-Growth cover observations above 15% trigger implementation of appropriate weed control activities.

5.10.1. Improving habitat value

Different fauna species require different structures as habitat for living, nesting and roosting. places to hide from predators, food and water, protection from weather, and opportunities to find mates. Most of these elements that make up this habitat take a long time to develop in a revegetated site, such as tree branches, hollows, dense or open shrubs, a complex ground layer, a range of bark types, different litter and root types. While leaf litter is often present after one year, fallen logs may take decades to develop and tree hollows may not form for up to 100 years. Thus, the more of these structures that are present, the greater the diversity of fauna that can be supported. Many plant species are also dependent on having a range of fauna species for services such as seed dispersal, pollination and distribution of symbiotic organisms.

When implementing the restoration of the post extraction sites, strong emphasis will be placed on a range of plant species to provide structural diversity for the development of a resilient ecosystem, providing habitat for a range of species. Developing this habitat value increases the extent of the native vegetation and therefore adds to its value as habitat. Revegetation may increase the viability of small flora and fauna populations and provide a buffer to existing remnants. In addition, the remnants will provide habitat features such as hollows and high roost sites, which will not be present in the revegetation site until it is much older (Ryan, 1999). Although revegetation will be used as a basic building block for the development of ecosystem function and habitat, it alone cannot provide all required habitat values for one to a hundred years. Combining revegetation with the integration of logs, trunks, organic matter, artificial hollows and nesting boxes will significantly advance the ecological function of the site and the value of revegetation as habitat.

Plant species utilised in the revegetation program will offer a variable set of habitat establishment properties. Planting large quantities of forbs, grasses and scrambling plants will provide initial habitat for some ground dwelling fauna. Plantings of shrub species particularly the spiky Blackthorn (*Bursaria spinosa*) in dense thickets and clumps throughout the revegetation site will provide shelter opportunities for small bird species. Planting species which provide food and a source of nesting material will encourage the use of the revegetation site as a resource to fauna residing in adjacent remnants. (See Table 1)

Woody material including logs, trunks, branches and sticks is to be placed throughout the areas to be revegetated. Utilising these materials can possibly advance habitat value by many years. The logs will provide instant habitat and a source of nutrients. They will provide possible roosting sites, provide niches for the retention of moisture and shelter from sun, wind and frost. They will help retain soil and nutrients through periods of heavy rain and trap pockets of organic matter for the succession of soil organisms and invertebrates.

Any sterile dead woody weeds removed as part of the bush regeneration are to be placed as stacks of timber or layered across the contours of the vegetation sites. All trees removed from the property or debris of trees after storms or alternatively, trunks and branches from off-site tree removal can be brought to the site and dispersed a minimum of 5 metres into the revegetated areas. Once large trees, branches or trunks are dispersed into the revegetated areas, suitable plants are to be planted to strengthen the habitat potential of the material. To allow enough lead time for the collection of suitable materials, companies involved in tree removal and site clearing are contacted and stock piles of large trees, branches or trunks will be accumulated. All plantings are to be mulched with recycled greenwaste. A minimum of one barrow load or a radius of 500mm around plants will provide the usual mulch benefits and support the advancement of many soil organisms and invertebrates by providing a source of food and shelter. The developments of these organisms will in turn provide benefits to the environment and the fauna species which interact with it.

5.10.1.1 Nesting Boxes

The installation of nesting boxes for fauna habitat will be one method utilised as compensation for lack of habitat availability in the revegetation. Nesting boxes in the revegetation will target arboreal marsupials as some members of this group can recolonise revegetation areas if hollows are present or provided. This group of fauna are considerably less mobile than other species (Birds, Bats, and Macropods) placing a greater reliance on localised habitat availability. The boxes will artificially increase the amount of locally available hollows for these arboreal marsupials, increasing the value of revegetation as a habitat resource. (Cunningham *et al*, 2007).

Nest Box Location

The location of the nesting box can be critical. A north-east to south-east aspect appears to be preferred by most species. Various orientations and exposure will be trialled. The entrance is to face away from prevailing winds and rain. Boxes are to be at a height to meet the species needs, and out of reach of human hands, to avoid vandalism, and potential predators, such as cats (Platt, 1999).

Ten (10) nesting boxes are to be placed in revegetation areas adjoining remnant riparian forest. The boxes will be located a minimum of 6m into vegetation in amongst areas of placed logs, trunks and branches with dense vegetation planted around. The boxes will be fixed to a 3600 mm x 200 mm treated pine pole. The poles will be placed 1000 mm into the ground and the earth will be rammed around the base firmly. The boxes will then be attached from 200 mm to 2600 mm above ground level. A summary of the dimensions are detailed in Table 4.

Table 4: Inside dimensions of nest boxes for some species that will use the general nest box design*				
	A (height)	B (depth)	C (width)	D (entrance)
Brushtail Possum (also suits ducks)	500	250	290	100-120
Ringtail Possum	400	240	200	70-80
Feather-Tailed Glider	400	240	200	32-35/ 35-40
Rosellas	400	240	200	70
*Note: All measurements are in mm and all depths are minimum				

5.10.2. Targeted weed control

This component of the restoration program refers to the control of listed noxious weeds such as Alligator Weed, Green Cestrum, African Box Thorn, Small-leaved Privet, Large-leaved Privet, Blackberry Complex and Bridal Creeper. This program requires specialised equipment and chemicals and will be managed by appropriately trained and experienced staff. Appendix 5 provides a summary of the most appropriate weed treatments. Control of these plants usually requires several treatments and is most effective during summer.

5.10.3. Noxious weeds

The *Noxious Weeds Act 1993* provides for the declaration of noxious weeds in local government areas. Landowners and occupiers must control noxious weeds according to the control category specified in the Act. Public authorities must control noxious weeds according to the control category to the extent necessary to prevent their spread to adjoining land.

The study area contains six species declared as noxious weeds in Camden LGA as shown in Table 5, below.

Table 5: Noxious weeds recorded in the Camden LGA area

Common name	Scientific name	Control category*
Green Cestrum	Cestrum parqui	3
Alligator Weed	Alternanthera philoxeroides	3
African Box Thorn	Lycium ferocissimum	4
Small-leaved Privet	Ligustrum sinense	4
Large-leaved Privet	Ligustrum lucidum	4
Blackberry complex	Rubus fruticosus sp. agg.	4
Bridal Creeper	Asparagus asparagoides	5

*Summary of responsibilities for treatment:

- For Category 3 'the plant must be fully and continuously suppressed and destroyed'.
- For Category 4 'the growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority'; and
- For Category 5 'the requirements in the *Noxious Weeds Act 1993* for a notifiable weed must be complied with'.

5.11. Bush regeneration program

Restoration zones 1a and 2a (Figure 4) are subject to a comprehensive and continuous bush regeneration program. All bush regeneration continues with the extensive weeding program in line with the extraction and concurrent rehabilitation program set out in Figures 3 and 4. All rehabilitation targets are set annually and reported within the AEMR. The site has scattered specimens of woody weeds are strategically controlled at the discretion of the bush regenerator. Weeds to be targeted include large woody weeds such as Southern Nettle Tree (*Celtis australis*), Large-leaved Privet (*Ligustrum lucidum*) and Small-leaved Privet (*Ligustrum sinensis*), Honey Locust (*Gladitsia triocanthus*) and a variety of other environmental and noxious weeds.

The bush regeneration program continues to recover resilient areas which are supporting a diversity of native plant species which demonstrate structural complexities characteristic of riparian forest. Work is graduating along these areas to assist limits of riparian forest which are in a state of decline. Working in this manner allows the program to utilise the local ecosystem functions as a fundamental tool to stimulate natural resilience, providing necessary recovery mechanisms required for the colonisation of adjacent revegetation areas with remnant flora and fauna.

The bush regeneration program continues to run for the entire length of the overall restoration program. The primary bush regeneration sessions has occurred during in the previous 24 month period. This has involved an average of 7 visits in each site during the previous 24 months. From this stage, there will be 14 visits scheduled per year for all areas and it is anticipated that this will occur for the next 2 years where the number of visits will eventually reduce to 6 maintenance visits per year for the whole site.

A 2 year maintenance program is running concurrently with the bush regeneration program. Tables 6 to 8 below indicates the specific restoration actions to be incorporated into zones 1, 2 and 4, with Table 9 outlining specific performance criteria – see also Figure 3. All work sessions are based on a two person team.

Table 6: Specific Restoration Actions for Zone 1 Nepean River

Item	Description of Rehabilitation Actions Completed & Continuing - Zone 1(a) – 0.79 ha	Previous Targets
1.	Target Weed control	2 days
2.	Bush regeneration program	
2.1.	Primary bush regeneration works	12 sessions first 2 years
2.2.	Secondary bush regeneration program	12 sessions remaining 2 years
3.	Monitoring and reporting program throughout two year maintenance period	2 reports
Item	Description of Rehabilitation Actions Continuous - Zone 1(b) – 0.26 ha	No. required (indicative)
1.	Installation of protective fencing surrounding Zone 1(a) and litter removal	As required
2.	Seed collection, cleaning and storage	9 days
3.	Plant propagation	1,600
4.	Installation of plants	
4.1.	Hand Installation	1,600
5.	Brush Matting	1 day
6.	Report at practical completion	1 report
7.	Commence maintenance program	14 visits (all tasks)
8.	Broadcast seeding	1 days

Table 7: Specific Restoration Actions for Zone 2 Dry River Anabranh

Item	Description of Rehabilitation Actions Continuous – Zone 2(a) – 0.51 ha	No. required (indicative)
1.	Target Weed control	1 day
2.	Bush regeneration program	
2.1.	Primary bush regeneration works	12 sessions first 2 years
2.2.	Secondary bush regeneration program	12 sessions remaining 2 years
3.	Monitoring and reporting program throughout two year maintenance period	2 reports
Item	Description of Rehabilitation Actions Continuous - Zone 2(b) – 0.55 ha	No. required (indicative)
1.	Installation of protective fencing surrounding Zone 1(b) and litter removal	As required
2.	Seed collection, cleaning and storage	9 days
3.	Plant propagation	12,400
4.	Installation of plants	
4.1.	Hand Installation	12,400
5.	Brush Matting	1 day
6.	Report at practical completion	1 report
7.	Commence maintenance program	20 visits (all tasks)

Table 8: Specific Restoration Actions for Zone 4 Riparian Linkage non-agricultural production area

Item	Description of Rehabilitation Actions Continuous – Zone 2(a) – ~2.0 ha	No. required (indicative)
1.	Installation of protective fencing surrounding Zone 1(b) and litter removal	As required
2.	Seed collection, cleaning and storage	9 days
3.	Plant propagation	12,400
4.	Installation of plants	
4.1.	Hand Installation	12,400
5.	Brush Matting	1 day
6.	Report at practical completion	1 report
7.	Commence maintenance program	20 visits (all tasks)

Table 9: Performance Completion Criteria

Final Landform	Progressive and final surveyor levels
Class 1 Agricultural land use – approximately 5.9 Ha on Lot 32 (Ground cover for pasture/future agricultural area)	NSW Agricultural Land Suitability Classification System. Figure 3 Zone 3 - Minimum 80% - ground cover for pasture grasses to ensure Zone 3 is re-established as a viable future agriculture area
Agricultural riparian lands – Lot 22 and the balance of Lot 32	Figure 3
Plantings	Minimum 85% survival rate for tubestock Appendix 5
Weed control	Triggered at 15% weed regrowth – Section 5.10 Appendix 1 Appendix 5

5.12. Monitoring and reporting

In order to accurately evaluate the progress and performance success of the rehabilitation and restoration works to the LMP performance criteria and objectives, an initial report will be prepared at 'Practical Completion' and then progress summary reports be prepared every twelve months throughout the two year maintenance period and rehabilitation phase. These reports will be brief, approximately one page, and include a copy of the field monitoring sheet (or similar) in Appendix 6. These reports will be provided to the client and Camden Council.

The monitoring and evaluation program will address the following:

- ▶ Plant growth, percentage cover and survival rates;
- ▶ Plant losses through herbivory, disease, vandalism, storm damage or other factors;
- ▶ Weed regrowth and control measures;
- ▶ Plant replacement;
- ▶ Achieved extraction, rehabilitation and levels;
- ▶ Guard repair and weeding inside guards; and
- ▶ Maintenance watering regime.

The above items will be monitored and evaluated through the establishment of one representative quadrant in each of the major vegetation communities at the practical completion stage. It is also essential to keep regular accurate photo-records of the progress of the restoration works by setting up an appropriate number of representative fixed photo-points across all restoration zones. Photos will be taken by digital camera and recorded in the project file by date and discrete photo-point number. Photo-point locations will be clearly marked on site and mapped by GPS.

Initial implementation ongoing monitoring and review are the responsibility of the EMR. The Landscape Contractor will provide monthly rehabilitation, maintenance and progress observation reports, to ensure compliance with the LMP performance criteria, which include photo evidence pre and post works. The monthly observation reports are provided to the client EMR for internal progress monitoring, review and project management to ensure compliance with the performance objectives and criteria within this LMP. The observation reports also contain recommendations by the Landscape Contractor to the client in regard to issues affecting the ongoing success, or otherwise, of the rehabilitation and restoration works, and the possible need for additional activities that may be required outside the normal maintenance program. It is the responsibility of the Production Manager for monitoring, reviewing and ongoing implementation of the LMP in consultation with the EMR and Landscape Contractor on a monthly and annual basis.

The Landscape Contractor will also complete an annual report outlining rehabilitation completed, where the next annual schedule will be prepared. Although these recommendations are to be on the annual report, these recommendations will be noted by the contractor as and when applicable. The above reporting requirements are summarised below as Table 10.

Table 10: Environmental monitoring parameters				
Monitoring parameter	Monitoring Frequency	Parameters to be measured and equipment required	Responsible Person	Reporting
Water Quality				
Groundwater	Monthly	pH, EC, depth to groundwater (m). Field pH and EC meters, water sampling device, tape measure.	Appropriately qualified consultant.	AEMR
Noise				
Ambient audible noise	Daily	Awareness of noise sources and controls. No routine parameters to be measured	EMR	AEMR
After an investigated noise related complaint warrants monitoring.	If directed by DPE, EPA and/or Camden Council	LA10 (15 minute)	Qualified acoustic consultant.	AEMR
Air quality				
Dust deposition	Monthly	Dust deposition. (g/m ² /month) - Dust monitoring station.	Appropriately qualified consultant.	AEMR
Particulate Matter	Following legitimate dust related complaint thereafter.	TSP and PM ₁₀ Hi Vol sampler with TSP and PM10 head.	Appropriately qualified consultant.	AEMR
Sediment controls				
All sediment controls, including, bunds, straw bale filters and sedimentation basin/s	After each rain event	Visual inspection of sediment control devices by EMR.	EMR.	AEMR
	Monthly monitoring	Visual inspection of sediment controls.	EMR	AEMR
Rehabilitation Works				
Rehabilitation Progress (until practical completion stage)	Monthly monitoring	Visual inspection of re-vegetation progress. Notes on maintenance requirements, including spraying for weeds and replacement of trees / shrubs, as required.	EMR	AEMR

Table 10: Environmental monitoring parameters				
Monitoring parameter	Monitoring Frequency	Parameters to be measured and equipment required	Responsible Person	Reporting
Weed Management (ongoing)	Monthly	Visual inspection of weed infestations and control requirements	EMR / Ecologist	AEMR
	When herbicides are used.	The following is to be recorded in EMM 2. <ul style="list-style-type: none"> • Date of chemical control; • Herbicide applied; Time applied; and • Wind direction (if any). 	EMR/Ecologist	EMM2
Practical Completion	Date of practical completion for each stage	Compliance with the performance criteria in Table 7	EMR/Ecologist	Client, Camden Council and AEMR
Maintenance Phase (2 years following practical completion)	Annual	Compliance with the performance criteria in Table 7	EMR/Ecologist	Client, Camden Council and AEMR
Environmental Management Reporting				
Annual Environmental Management Report (AEMR)	Within 12 months of date of DPE approval (22/05/2009) and modification (Mod 3 25/10/2012) & (Mod 4) and annually thereafter. Submitted to DPE, EPA and Camden Council and website by 31 st March each year..	As per s4 of Schedule 5 of Appendix 4.	Environmental consultant	AEMR
Independent Environmental Audit	Before 30 th June 2019 and every three years thereafter.	As per s5 of Schedule 5 of Appendix 4. As per approved DPE correspondence letter dated 30 th September 2016 Appendix 15.	Environmental consultant	Audit Report
Report to DPI for annual production data.	Annually by 15 December.	Complete form.	Industry and Investment (DPI) form	AEMR
EPA License	Annually, by 26 October.	Complete form	EPL licence annual form.	EPA

6. POST EXTRACTION LAND-USE AND AGRICULTURAL CLASSIFICATION

6.1. Existing agricultural classification

Based on the NSW Agriculture (2002) Land Classification System, the flat open paddock area of the subject site Lot 32 is currently classified as 'Class 1' agricultural land. This land within Lot 32, is suitable for intensive cultivation where constraints to sustained high levels of agricultural production are minor or absent. There is currently 6.8 hectares of agricultural land.

6.2. Post extraction land-use and agricultural classification

Post-extraction, there will be approximately 5.9 hectares of Class 1 agricultural land on Lot 32 (as per NSW Agricultural Land Suitability Classification system). The reduction in total production area was due to a portion of the site being replanted as either riparian vegetation associated with the Nepean River or the Dry River Anabranche. This loss of land will only marginally reduce the total agricultural productivity of the site but will have significant environmental benefits.

It is noted that DGRs for the proposed modification were issued on 23 December 2010 and as part of the consultation process for the Environmental Assessment, the NSW Department of Trade & Investment, Regional Infrastructure & Services (DT&IRIS, 2011) made the following comments in relation to the post extraction agricultural landform:

'Agriculture issues

'The Cultural Landscape & Visual Assessment report seems to lack the historical context of the agricultural landscape association between the land proposed for sand and soil extraction and the broader Camden agricultural heritage. The Aboriginal Archaeological Assessment notes that the land was most likely cleared for agriculture in the 1830s and able to be cultivated for crops, market gardens and growing grapes which demonstrate the versatility and robust nature of farming on class 1 agricultural soil.'

The Landscape Management Plan is adequate for the restoration for agricultural uses. Environmental Risk Assessment - There is a risk that the rehabilitation does not return the extracted area to class 1 agricultural land. Demonstration of successful rehabilitation and return to agricultural suitability on previously extracted areas may assist in determining the risk level.'

As a response to the above correspondence, Harvest Scientific Services Pty Ltd was engaged by MCS Pty Ltd to prepare an Agricultural Assessment for a portion of the M Collins and Sons (Contractors) Pty Ltd site that has been subject to similar land-forming and rehabilitation controls to those proposed as part of the current sand and soil extension proposal.

The agricultural assessment by Harvest Scientific Services Pty Ltd (2011) concluded that the re-instated rehabilitated landform was classified as 'Class 1' agricultural land.

A copy of this assessment is appended as Appendix 7.

6.3. Conclusion

Based on an assessment of the protocols for the re-instatement of areas for agricultural land on Lot 32 and an assessment of a comparable site whereby comparable protocols have been implemented, the controls will result in the re-establishment of 'Class 1' Agricultural land on 5.9ha of land within Lot 32. The balance of Lot 32 and Lot 22 will be retained as agricultural riparian lands as per Figure 3.

7. LIMITATIONS TO THIS REPORT

This report has been prepared subject to a number of limitations. These include:

- The application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In particular, the occurrence of earthquakes of any magnitude, extreme rainfall events or the effects of climate change have not been considered but should they occur, may have a significant impact on the site. The client agrees that such events are possible but nevertheless accepts the risk that they pose;
- The findings contained in this report are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site in question. Under no circumstances, however, can it be considered that these findings represent the actual state of the site/sites at all points;
- In preparing this report, Harvest Scientific Services Pty Ltd has relied upon certain verbal information and documentation provided by the client and/or third parties. Harvest Scientific Services Pty Ltd did not attempt to independently verify the accuracy or completeness of that information. To the extent that the conclusions and recommendations in this report are based in whole or in part on such information, they are contingent on its validity. Harvest Scientific Services Pty Ltd assume no responsibility for any consequences arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to Harvest Scientific Services; and
- This report is not to be relied upon for any purpose other than that defined in this report

8. CONCLUSION

Providing the rehabilitation protocols outlined in this report are implemented, it concluded that:

- This LMP provides MCS, contractors, Council and relevant Government Authorities with a common document that clearly sets out the performance targets, restoration principles, monitoring and maintenance procedures required for the long term sustainable management of the ecological plantings and their surrounding environment; and
- Open paddock areas on Lot 32 will have the capacity for use as 'Class 1' Agricultural land up to 5.9ha.

Importantly, implementation of this LMP will produce a sustainable post-extraction landscape, including enhanced biodiversity outcomes beyond those directly occasioned by extraction activities. Such landscapes will ultimately be little different to distant observers in a visual sense to that prevailing. The LMP also provides guidance on the plant species, planting techniques, revegetation methods and maintenance requirements for the site. Implementation of the LMP will:

- Revegetate large areas of native vegetation associated with the riparian zones of both the Nepean River (Zone 1 – Figure 3), Dry River Anabranh (Zone 2 – Figure 3) and Riparian Linkage (Zone 4 – Figure 3);
- Allow for continued use of zone 3 (Figure 3) for an agricultural land-use;
- Improve the condition of areas of existing native vegetation, through bush regeneration;
- Improve vegetation cover and connectivity throughout the site and surrounds;
- Remove heavy weed infestations throughout Dry River Anabranh (Zone 2 – Figure 3) and the eastern 'bank' of the Nepean River (Zone 1 – Figure 3); and
- Improve water quality leaving the development site and entering Nepean Catchment.
- Outlines additional mitigation measures to enhance regeneration of areas following extraction and reduce the visual impact during extraction.

9. REFERENCES

- Actinotus 2012. Flora and Fauna Assessment for Proposed Sand and Soil Extraction at Lot 32 DP 635271 Macarthur Road, Spring Farm
- Cunningham, RB., Lindenmayer, D.B., Crane, M, Michael, D. & Mac Gregor, C 2007, 'Reptiles and arboreal marsupial response to replanting vegetation in agricultural landscapes, Ecological Applications, Vol. 17 , pp. 609 – 19
- Department of Environment and Climate Change (2005) *Recovering Bushland on the Cumberland Plain' Best Practice Guidelines for the Management and Restoration of Bushland*, June 2005. DECC, Sydney
- Department of Infrastructure Planning and Natural Resources, (2003), *Bringing the Bush Back to Western Sydney. Best Practice Guidelines for Bush Regeneration on the Cumberland Plain*. DIPNR
- Environmental Planning and Assessment Act 1979* (NSW)
- Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- Harvest Scientific Services 2010. Landscape Management Plan for Spring Farm Sand and Soil Extraction (continuation of existing operations). Lot 22 DP 833317 Spring Farm
- Harvest Scientific Services 2011. Water Management and Erosion and Sediment Control Plan for Spring Farm Sand and Soil Extraction (continuation of existing operations) Lot 32 DP 635271 Spring Farm
- Greening Australia NSW Inc (1999) *Management Principles to Guide the Restoration and Rehabilitation of Indigenous Vegetation*, August 1999. Greening Australia.
- Noxious Weeds Act 1993* (NSW)
- NSW Agriculture 1991. Agricultural Land Classification Atlas. Sydney Basin, including the Lower Nepean/Hawkesbury. NSW Agriculture.
- NSW Agriculture, 2002. Agricultural Land Classification, AgFact AC.25. NSW Agriculture.
- Platt, S (1999) Nest boxes for wildlife - Department of Primary Industries Victoria
- Ryan, P 1999, 'The use of revegetated areas by vertebrate fauna in Australia'
- Threatened Species Conservation Act 1995* (NSW)

APPENDIX 1

MODIFICATION 4

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, I modify the development consent referred to in Schedule 1, as set out in Schedule 2.



Oliver Holm
Executive Director
Resource Assessments and Compliance

Sydney

2 August 2018

SCHEDULE 1

Development consent granted by the Minister for Planning on 13 October 1988 for the Spring Farm Quarry at 186 Macarthur Road, Lot 22 DP 833317 (formerly Lot 2 DP 625278 Vol 14788 Folio 34).

SCHEDULE 2

1. In the list of definitions delete the terms "Department", "Director General", "DRE", "Minister" and "NOW", and their definitions, and insert the following in alphabetical order:

AEP	Annual Exceedance Probability
Department	Department of Planning and Environment
Dol	Department of Industry - Lands and Water
DRG	Division of Resources and Geoscience within the Department
EA (Mod 4)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/256)</i> , Lot 22 (No. 186) DP 833317 and Part Lot 32 (No. 172) (DP 635271) Macarthur Road, Spring Farm, prepared by Pascoe Planning Solutions, dated February 2018, and the associated Response to Submissions titled Spring Farm Quarry (DA 75/256 MOD 4) Modification, and dated 3 June 2018
Minister	NSW Minister for Planning, or delegate
PMF	Probable Maximum Flood
Secretary	Planning Secretary under the EP&A Act, or nominee

2. Delete all references to "Director-General" and replace with "Secretary".
3. Delete all references to "shall" and replace with "must", except in condition 3 of Schedule 2.
4. Delete all references to "DRE" and replace with "DRG".
5. Delete all references to "NOW" and replace with "Dol".
6. Delete all references to "approval" and replace with "consent", except in:
 - a) condition 4 of Schedule 3;
 - b) the first reference in conditions 10, 17 and 22A of Schedule 3;
 - c) conditions 3 and 4 of Schedule 4;
 - d) condition 1 of Schedule 5; and
 - e) the first reference in condition 8 of Schedule 5.
7. Delete condition 2 of Schedule 2 and insert the following:
 2. The Applicant must carry out the development generally in accordance with the:

- (a) EIS, SEE (Mod 1), EA (Mod 3) and EA (Mod 4); and
 - (b) Statement of Commitments (see Appendix 1).
- 8. After condition 2 of Schedule 2, insert the following:
 - 2A. The Applicant must carry out the development in accordance with the conditions of this consent.
- 9. In condition 4 of Schedule 2, delete subparagraphs (a) and (b) and insert the following:
 - (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent;
 - (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and
 - (c) the implementation of any actions or measures contained in these documents.
- 10. In condition 5 of Schedule 2, delete "2019" and replace with "2021".
- 11. In condition 10 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (c) insert the following:

The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.
- 12. In condition 12 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (c) insert the following:

The Applicant must implement the Water Management Plan as approved by the Secretary.
- 13. In condition 17 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (c) insert the following:

The Applicant must implement the Landscape Management Plan as approved by the Secretary.
- 14. In condition 18 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (g) insert the following:

The Applicant must implement the Rehabilitation Management Plan as approved by the Secretary.
- 15. In condition 16 of Schedule 3, following the words "Plan must", insert the words "be put in place for floods above the 1% AEP flood event up to the PMF and".
- 16. In condition 22A of Schedule 3:
 - a) relabel sub-paragraphs "(c)", "(d)" and "(e)", as "(a)", "(b)" and "(c)", respectively;
 - b) delete the words "and implement" after the word "prepare"; and
 - c) after subparagraph (c) insert the following:

The Applicant must implement the Waste Management Plan as approved by the Secretary.
- 17. In conditions 4 and 5 of Schedule 4, delete the words "If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3)".
- 18. In condition 1 of Schedule 5:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (e) insert the following:

The Applicant must implement the Environmental Management Strategy as approved by the Secretary.
- 19. In condition 4(b) of Schedule 5 delete the words "EIS, SEE (Mod 2), EA (Mod 3)" and insert the words "documents listed in condition 2(a) of Schedule 2".
- 20. In the Statement of Commitment numbered 16 in Appendix 1, delete the words "Water Ministerial Corporation" and insert the words "Water Administration Ministerial Corporation".
- 21. In Appendix 2 delete both figures, and insert the following:

ZONE 2b. Dry River Anabranch
CRZ - additional plantings



22. Delete Appendix 3.
23. Update the Table of Contents to reflect the above changes.

APPENDIX 2

CONTROLLED ACTIVITY APPROVAL - 2018



Natural Resources Access Regulator

Contact: Mohammed Ismail
Phone: 02 8838 7535
Fax: 02 8838 7554
Email: mohammed.ismail@nrar.nsw.gov.au

Collins and Sons Holdings Pty Ltd
SPO Box 378,
NARELLAN NSW-2567

Our ref: **10CX122891** (old Ref: ERM2013/830)
DA 75/256

email: matt@mcollins.com.au

7 December 2018

Re: Controlled activity approval - EXTENSION

For activity described as	Building/construction (Non-Residential)
To be carried out at	Spring Farm and Nesbitt Site, 186 Macarthur
Road, SPRING FARM 2570	
Date of Issue: 27/12/2018 -	Date of Expiry: 7 December 2018.

I refer to your application for extension of controlled activity approval under the *Water Management Act 2000* which was received by this office. Receipt of your application fee of \$722 is also acknowledged.

1. Controlled activity approval

The Natural Resources Access Regulator (NRAR) has determined to grant you an extension to a controlled activity approval. Please find enclosed the **Notice of Determination** together with your **Statement of Approval**.

Please read carefully the conditions of the approval and seek clarification from NRAR for any condition not fully understood.

A **copy** of this approval and any annotated documentation should be **provided to the council**, your **certifier** and to **all contractors** engaged in the implementation of this controlled activity to ensure they are also aware of the conditions.

The controlled activity approval must be kept **current until** the controlled activity has been **completed**. Applications for **extending the approval** should be made to NRAR, in writing, prior to the expiry date on the approval.

2. Inspections and fees

As the approval holder, you are required to notify NRAR on completion of the controlled activity. A site inspection may be needed to confirm that all of your obligations under the controlled activity approval have been carried out.

Costs associated with a single inspection may be covered by the application fee. However, if extra inspections or significant reassessment is required, then additional fees will be incurred.

Fees will also apply to any amendments requested or any extension of this approval. The current fee schedule is available at <https://www.industry.nsw.gov.au/water/licensing-trade/approvals/controlled-activities>

3. Other approvals may be required

Subject to the conditions of the attached Statement of Approval, the approval holder is only authorised to carry out the controlled activity described in the location specified.

The attached Statement of Approval does not relieve the approval holder of any obligation which may exist to also obtain permission/approval/consent from any other agency who may have some form of control over the site or the proposed development.

Any questions regarding this correspondence should be directed to by email to mohammed.ismail@nrar.nsw.gov.au.

Yours sincerely



**Mohammed Ismail
Water Regulation Officer
Natural Resources Access Regulator
Dol Crown Lands & Water, NRAR**

Enc:
Notice of Decision
Statement of Approval



	Application details
Reference number	10CX122891
Application type	Controlled activity approval under section 92 of the <i>Water Management Act 2000</i>
Description of activity	Controlled Activities
Applicant/s	Collins and Sons Holdings Pty Ltd SPO Box 378, NARELLAN NSW-2567
	Decision
Decision	Granted, subject to conditions This decision was made under section 95 of the <i>Water Management Act 2000</i> .
Date of decision	7 December 2018
Determining officer	Mohammed Ismail by a delegation from the Minister administering the <i>Water Management Act 2000</i> under the <i>Instrument of Delegation (Water Management Act) 2011</i>
	Reason/s for decision
	<p>This controlled activity approval was granted on the basis DPI Water is satisfied adequate arrangements are in place to ensure that no more than minimal harm will be done to waterfront land as a consequence of the carrying out of the controlled activity.</p> <p>Conditions were applied for the purpose of protecting the environment from the impacts associated with the approval, to give effect to any agreement between the applicant and a person who objected to the application, or to require security for the cost of performing the approval holder's obligations under the approval in case the approval holder fails to fulfil those obligations.</p>

Right of appeal

Section 368 of the *Water Management Act 2000* provides a right of appeal to the Land and Environment Court in certain circumstances:

- The applicant/s may appeal against a decision **imposing certain conditions** on an approval or **fixing the term** of an approval. This right of appeal also applies to conditions which are amended or added after an approval is granted.
- A person who objected to the granting of the approval under section 93 of the *Water Management Act 2000* may appeal against a decision **granting** the approval.

If you wish to make an appeal you must do so **within 28 days** after the date of the decision.

END OF STATEMENT

Approval details

Approval number	10CX122891
Status	CURRENT*
Approval kind	Controlled Activity
Water sharing plan	Greater Metropolitan Region Unregulated River Water Sources 2011
Date of effect	27/11/2018 Should an appeal be made against the granting of this approval, this approval will not take effect until the appeal is finally disposed of.
Expiry date	21/11/2021
Approval holder(s)	Schedule 1
Activities	Schedule 2
Conditions	Schedule 3

Contact for service of documents

Name	Collins and Sons Holdings Pty Ltd
Address	PO Box 378 NARELLAN NSW-2567

* Note: An approval has effect for such period as is specified in the approval, or if the period is extended under section 105, that extended period. If an application for extension of an approval is lodged before the approval expires, the term of the expiring approval is extended until either the date of the final decision on the application, or a date fixed by the Minister for the approval, whichever is the later date. An approval which has expired can be the subject of an application to extend it but it needs to be accompanied by a statutory declaration of the reasons for the delay in making the application. If the Minister accepts these reasons the term of the approval is taken to have been extended, and the application may be dealt with, as if the application had been made before the approval expired.

It is an offence under the Water Management Act 2000 to breach a term or condition of the approval or to construct and use works to which the approval does not relate. It is also an offence to use works the subject of an approval if the approval has expired, been surrendered or cancelled.

Schedule 1 - Approval holders

The holders of this approval are:

Approval holder(s)	ACN (if applicable)
Collins and Sons Holdings Pty Ltd	000 521 871

Important notice - change of landholder or contact

Please advise the Office in the event of any of the following, as soon as practicable:

- If there is a change in the ownership or occupation of the land benefited by this approval (see Schedule 2). Under the Water Management Act 2000, an approval is typically held by the owner or lawful occupier of the benefited land. Consequently, a change in occupation may cause a change in your legal obligations as an approval holder.*
- If there is a change to the contact person. You will be required to lodge a written statement signed by all the holders.*
- If there is a change to the mailing address for the nominated contact person. This should be done by the contact person in writing.

* An updated Statement of Approval will be issued free of charge

Schedule 2 - Activities

Part A: Authorised activities

Subject to the conditions of this approval, in relation to each numbered activity in the table, the holders of this approval are authorised to undertake the activity of the type shown at the location specified:

Activity 1

Specified Activity

Extractive Industry

Specified location

1//587631	Whole Lot
32//635271	Whole Lot
22//833317	Whole Lot

Water source

Hawkesbury And Lower Nepean Rivers Water Source

Water sharing plan

Greater Metropolitan Region Unregulated River Water Sources 2011

Schedule 3 - Conditions

The approval is subject to the following conditions:

Conditions

Water management works

DK6301-00001

All excavated material associated with the carrying out of the controlled activity must be removed from waterfront land and disposed of or used in a way that prevents the material from re-entering the water source.

DS4875-00001

A. Before commencing the controlled activity authorised by this approval, the boundary of the area where the activity is to be carried out must be clearly marked on the ground.
B. The markings must remain in place until the controlled activity has been completed.

DS4860-00001

The approval holder must employ a suitably qualified person to directly supervise the controlled activity authorised by this approval to be carried out.

DS4862-00001

The controlled activity authorised by this approval must be maintained for a period of 2 years after completion of the controlled activity.

Activities

DS6039-00001

The bed of the watercourse must not be excavated..

DS5035-00284

The controlled activity authorised by this approval must be carried out in accordance with the following plan(s)/document(s) held by Natural Resources Access Regulator, Parramatta Office:
A. Plan No. 77310.01.P08, Original Surface Contours (1983) by SMEC Urban
B. Plan No. 77310.01.P09, Current Surface Contours (2008) by SMEC Urban
C. Plan no. 77310.01.P16, Design Final Surface Contours by SMEC Urban.
D. Plans Nos. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban.
E. Plans No JET0328 drawing Nos 11 (issue 3) and 12 to 16 (inclusive all issue 2) by Johnstone Environmental Technology as indorsed by Department Land & Water (now office of Water) and department of Planning.
F. Plans No JET0989 drawing 2 to 4 inclusive and 7 to 10 inclusive.
.

DS5035-00285

The controlled activity authorised by this approval must be carried out in accordance with the following plan(s)/document(s) held by Natural Resources Access Regulator, Parramatta Office:

- A. Landscape Management Plan dated 24 April 2013 by Harvest Scientific Services Pty Ltd
- B. Figure 3 Final Landform and Rehabilitation Management Plan No 201279 dated 4 September 2012 by Harvest Scientific Services
- C. Attachment 1 to this CAA, Site drainage and erosion control measures.
- D. Attachment 2 to this CAA, Site Rehabilitation
- E. Vegetation Management Plan (VMP), The Knoll, Spring Farm, Elderslie NSW date February 2002

.

Environmental matters

DK4951-00001

A. Before commencing any work authorised by this approval, erosion and sediment control measures must be established and implemented in accordance with the requirements of the Managing Urban Stormwater Manual, Volume 1, Soils and Construction (2004) as amended or replaced from time to time.

B. These control measures must be maintained until work is completed.

DS4861-00001

All erosion and sediment control works must be decommissioned using a suitably qualified person on completion of the controlled activity once the site has stabilised.

DS4865-00001

A. All materials must be stored away from the water source so that materials do not:

- i. obstruct water flow, or
- ii. wash into the water source, or
- iii. cause damage to river banks.

B. When the controlled activity authorised by this approval has been completed, surplus materials must be removed from waterfront land.

DS4866-00001

Machinery used for the controlled activity authorised by this approval must not enter the water source at any time.

DS4945-00001

Vegetation may only be cleared to the minimum extent required for the carrying out of the controlled activity, which means that the minimum area is cleared to allow:

- A. carrying out of the controlled activity and
- B. access for appropriate equipment and personnel.

Monitoring and recording

DS4852-00001

A copy of this approval must be kept at the site where the controlled activity is taking place. A copy of the approval must be provided to all personnel working on the controlled activity.

DS6278-00001

The approval holder must provide a progress report detailing extraction operations, site conditions and materials replenishment to the Natural Resources Access Regulator every twelve (12) months from the date of the granted approval. This progress report must be submitted to Natural Resources Access Regulator, Parramatta Office, and the report is to include photos of the entire site and the photo points must be identified by survey or other methods.

Reporting

DS4864-00014

When the controlled activity authorised by this approval has been completed:

- A. a certificate of completion must be provided by a suitably qualified person, and
- B. the approval holder must send the certificate to Natural Resources Access Regulator, Parramatta Office within 60 days of the controlled activity being completed.

DS4863-00022

At completion of the maintenance period for the controlled activity authorised by this approval, the approval holder must report in writing to Natural Resources Access Regulator, Parramatta Office, that:

- A. the controlled activity has been completed, and
- B. the water source and waterfront land have been restored and rehabilitated in accordance with plans held by Natural Resources Access Regulator.

DS4857-00026

The approval holder must notify Natural Resources Access Regulator, Parramatta Office, in writing within 30 days of the controlled activity being completed.

DS4899-00003

The approval holder must notify Natural Resources Access Regulator, in writing to nrar.enquiries@nrar.nsw.gov.au, within 14 days of any change in site management, land ownership or land occupation.

DS4892-00031

- A. The approval holder must provide a report to Natural Resources Access Regulator, Parramatta Office, on the implementation of each of the following plan(s):
 - Vegetation Management plan; Works schedule every twelve (12) months up to the end of the maintenance period, and at the completion of the controlled activity authorised by this approval.
- B. Each report must:
 - i. address the requirements set out in each plan, and
 - ii. be prepared by a suitably qualified person.

Additional conditions

DK6311-00001

- The approval holder must not excavate:
- A. beyond the depth shown on plans No. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban approved by the NSW Office of Water and stamped on 8 October 2013,
 - B. below the depth shown on plans JET0328 Drawing 12, 13, 14, & 15 (all issue 2) prepared by Johnstone Environmental Technology stamped on 30 April 1996,
 - C. below the depth shown on plans JET0.989 drawings 8 issues 1, drawing 9 issues 0 and drawing 10 issues 0.

DK6312-00001

The approval holder must not excavate beyond a depth of 3 metres above the normal flow water level (taken as R55.63).

DS4924-00049

A. Before commencing carrying out the controlled activity authorised by this approval, a security deposit of \$ 45,200 must be provided to Natural Resources Access Regulator, Parramatta Office, in the form of an SGI document or equivalent (e.g. bank guarantee) attached to this approval.

B. The security deposit will be held by Natural Resources Access Regulator until:

i. the controlled activity has been satisfactorily completed and the water source and waterfront land have been rehabilitated in accordance with plans held by Natural Resources Access Regulator, and

ii. a certificate of compliance/statement of completion has been completed by a suitably qualified person and provided to Natural Resources Access Regulator, Parramatta Office.

DS4924-00050

A. Before commencing carrying out the controlled activity authorised by this approval, a security deposit of \$ 43,850 must be provided to Natural Resources Access Regulator, Parramatta Office, in the form of an SGI document or equivalent (e.g. bank guarantee) attached to this approval.

B. The security deposit will be held by Natural Resources Access Regulator until:

i. the controlled activity has been satisfactorily completed and the water source and waterfront land have been rehabilitated in accordance with plans held by Natural Resources Access Regulator, and

ii. a certificate of compliance/statement of completion has been completed by a suitably qualified person and provided to Natural Resources Access Regulator, Parramatta Office.

Glossary

licensor - WaterNSW or DPI Water, depending on which organisation administers your licences and/or approvals

waterfront land - Land and material in or within 40 m of the top of the bank or shore of a river, lake, estuary or coastal waters.

General Notes

All conditions on an approval require compliance. An appeal to the Land and Environment Court against a decision to impose certain conditions on an approval can be made within 28 days after the date the decision is made. Conditions identified with the first letter "D" are those that can be appealed during the appeal period.

The words in this approval have the same meaning as in the *Water Management Act 2000*

Note: The words in this approval have the same meaning as in the WMA

END OF STATEMENT

APPENDIX 3

BOWANTZ REPORT



BUSH REGENERATION AND ECOLOGICAL RESTORATION REPORT

EXISTING SAND AND SOIL EXTRACTION OPERATIONS
Lot 32 DP 635271 & Lot 22 DP 833317
M Collins and Sons (Holdings Pty Ltd)



PREPARED BY
Bowantz Bushfire & Environmental Pty Ltd

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Prepared for: M Collins and Sons (Holdings Pty Ltd)

Prepared by:

Daniel Anderson

Master EnvSc (Planning & Ecology), Grad Cert (Bushfire Protection), Grad Dip (Conservation Land Management)



Version Control:

Report Compilation and Review	Name and Position	Document Revision	Date
Author:	Daniel Anderson Grad Cert Bushfire Planning, Grad Dip CLM, Master EnvSc (Planning, Ecology) Scientific license survey & impact assessment PRSL_000019	Final Draft	23/07/2018
Author:	Jordan Pont BSc (Conservation Biology) Scientific license survey & impact assessment PRSL_000019	Review	25/07/2018
Client Review	Landholders Review	Final Version	

Referenced Documents:

Harvest Scientific Services 2016; Landscape Management Plan Lot 32 DP 635271, Lot 22 DP 833317 Macarthur Road Spring Farm.

NSW Office of Water Controlled Activity Approval; Statement of Approval Number 10ERM2013/0830

Actinotus 2012; Flora and Fauna Assessment for proposed Sand and Soil Extraction at Lot 32 DP 635271 Macarthus Road Spring Farm.

NSW Biosecurity Act 2015, Part 3 Priority Weeds NSW Department of Primary Industries, Greater Sydney Local Land Services.

NSW Water Management Act 2000; Guidelines for Riparian Corridors on Waterfront Land.

NSW Biodiversity Conservation Act 2016; Schedule 1 Threatened Species, Schedule 2 Threatened Ecological Communities & Schedule 4 Key Threatening Processes

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1.0 INTRODUCTION

1.1 Background

Spring Farm Quarry is a sand and soil extraction and processing plant owned and operated by M Collins and Sons (Holdings) Pty Ltd (MCS). The Quarry and processing plant currently operates from two lots 22 DP 833317 and 32 DP 635271 located adjacent to the Nepean River in the Camden Local Government Area (LGA) *see figure 1 below*.

The site has been operational since 1988 and is a major source of products for the Sydney region, comprising a significant resource identified in the Sydney Regional Environmental Plan (No-9 Extractive Industry) (*Harvest Scientific Landscape Management Plan 2016*).

In May 2009 (MCS) was granted consent for the continuation of operations on the site by the Department of Planning for the continued extraction and processing of materials at the site. This approval was to allow operations to continue for a further 10 year period until 2019 (*Harvest Scientific Landscape Management Plan 2016*). Director General Requirements for the modification of continued operations were then issued on 23rd December 2010 and included requirements relating to future quarry closure and rehabilitation of the site (*Harvest Scientific Landscape Management Plan 2016*).

A Landscape Management Plan (LMP) was subsequently developed for the site by Harvest Scientific Services Pty Ltd in 2016 to address the Director General Requirements and to provide a clear practical framework for the restoration of the native vegetation impacted by the activity with accordance to relevant environmental and planning legislation and the operational consents for the site. As such the LMP has been used to provide MCS with clear performance targets, restoration principles, monitoring and maintenance procedures required for the sustainable management of the site and surrounding environments (*Harvest Scientific Landscape Management Plan 2016*).

Bowantz Bushfire & Environmental Pty Ltd (BBE) have been engaged by MCS since 2008 to manage and implement the environmental actions and recommendations described for the site within the LMP and other supporting planning documents for the site. Bowantz Bushfire & Environmental is an environmental restoration and environmental planning business, we have professional acumen and skills in ecological restoration works and an ability to integrate on ground practical project delivery with scientific monitoring and condition assessment practice.

This report constitutes a review of the applied restoration program predominantly targeting ecological restoration objectives and outcomes delivered over the most recent 2017-2018 work program. The report also incorporates specific condition assessment reviews of the key restoration zones in line with the original LMP objectives prescribed by Harvest Scientific within the LMP 2016.

The report focusses on specific auditing of outcomes delivered which relate to key restoration objectives stated for important ecological zones in the LMP and also responds to condition requirements 22 & 24 of the controlled activity approval number 10 ERM2013/0830 issued by the NSW Office of Water under the NSW Water Management Act 2000.

1.2 Site Location

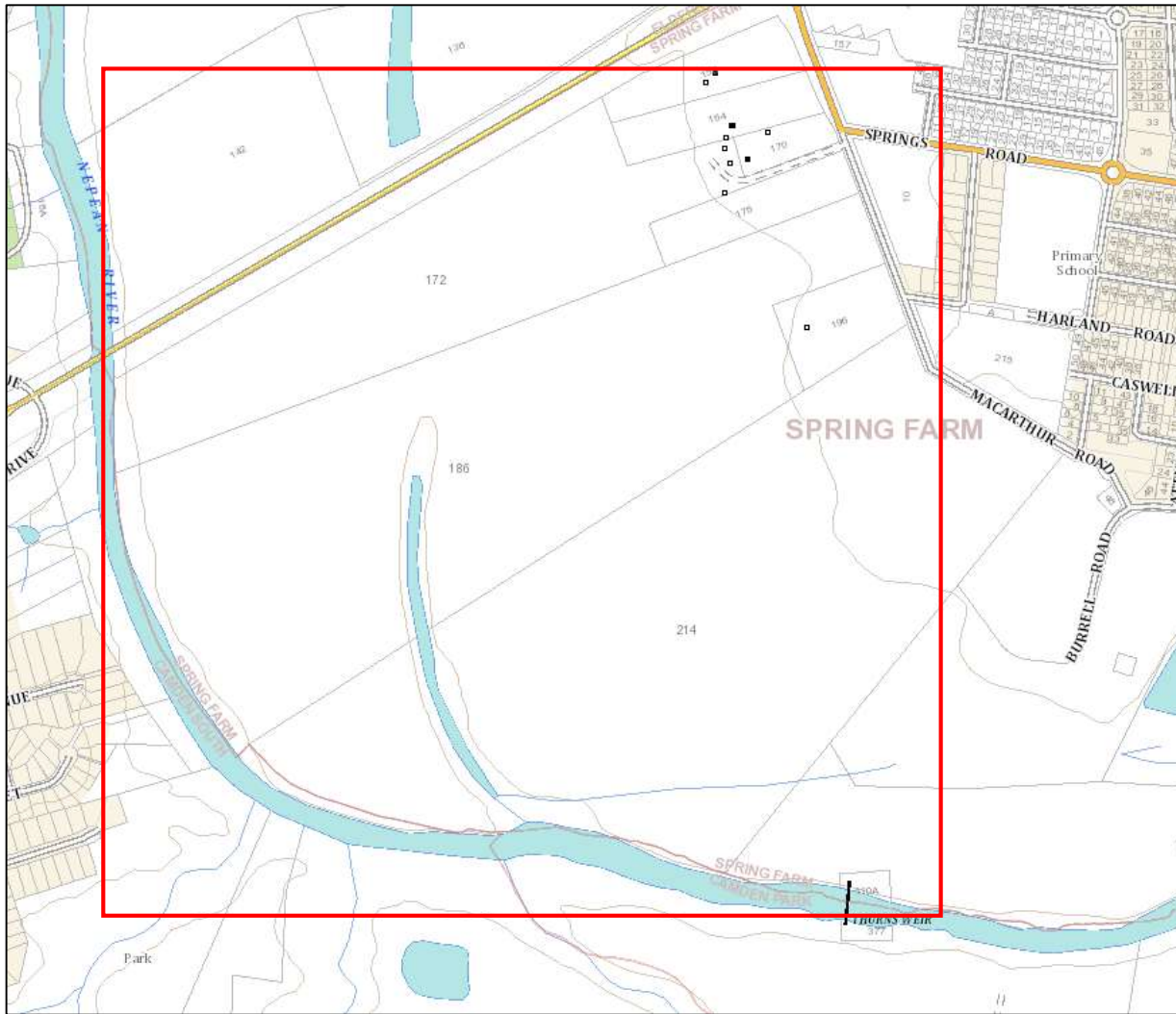


Figure 1; Site Location with subject site enclosed within red frame, (Image NSW Six Maps)

1.3 Site Description and Project Zones

The project site is displayed within the general area shown above in figure 1 (site location) and can also be referred as Map 1 within the appendices of this report. The project site is bound to the east by Macarthur Road, to the west by the Nepean River, the north by the Camden By-Pass Roadway and to the south again by the Nepean River.

Significant areas of environmental and ecological importance within the subject site have been to focus of the restoration works program. The LMP divided the restoration focus areas into four distinct zones accordingly:

- Zone 1 – The Nepean River Riparian Corridor
- Zone 2 – The Dry Past River Anabranh
- Zone 3 – Open Paddock Agricultural Production Areas
- Zone 4 – Riparian Linkage Zone

From this segregation our restoration program works have divided the work zones further into zone units which both reflect the vegetation and ecological landscapes intrinsic to each zone and portion the zones into management units incorporating the work activities prescribed.

The restoration work zones devised through the delivery of our program are provided as follows:

Zone 1a) Nepean River Corridor

This area contains remnant vegetation stands previously mapped by Actinotus (2011) as 'Riparian Forest on Coastal Floodplains'. This vegetation complex is now re-addressed as 'River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions' and is recorded as an endangered ecological community under the NSW Threatened Species Conservation Act.

Zone 1b) Core Riparian Zone – Nepean River

This zone is the land contained within and adjacent to important drainage channels.

This area has been scheduled for restoration program works over the coming program 2018-2019. The area has been prepared for a revegetation program with earthworks such as bank re-grading, battering and top dressing completed. Hydro mulch seeding and planting of native forestry tube stock has been planned for this zone *see section 6.3*.

Zone 2a) Dry River Anabranh

This area contains limited remnant vegetation stands previously mapped by Actinotus (2011) as 'Alluvial Woodland on Coastal Plains'. This vegetation complex is now re-addressed as 'Alluvial Cumberland Plain Woodland' and is recorded as an endangered ecological community under the NSW Threatened Species Conservation Act and under the federal Environmental Protection and Biodiversity Conservation Act.

Zone 2b) Dry River Anabranh

This area contains limited remnant vegetation stands previously mapped by Actinotus (2011) as 'Alluvial Woodland on Coastal Plains'. This vegetation complex is now re-addressed as 'Alluvial Cumberland Plain Woodland' and is recorded as an endangered ecological community under the NSW Threatened Species Conservation Act and under the federal Environmental Protection and Biodiversity Conservation Act.

Zone 3 Future Agricultural Area

This zone is located in the open paddock area between the Dry River Anabranh and the Nepean River Riparian Zone. This area is determined to be used for future agricultural pursuits such as animal grazing.

Zone 4 Riparian Linkage

This zone links the Nepean River Riparian Corridor and the Dry River Anabranh remnant vegetation corridors. This zone has been determined for ecological restoration whereby natural bushland areas are to be restored and re-created in the zone to link key retained remnant stands of vegetation on the subject site.

Zone 5 Nepean River Past Revegetation Zone

This area contains mostly recreated vegetation landscapes which reflect the vegetation assemblage of River-flat eucalypt forest on coastal floodplains. Previous revegetation programs in this zone date the vegetation stands to be approximately 15 years of age. Follow up weed management and secondary revegetation programs which aim to increase native species density and native species diversity have been initiated in the works program. This area is also functioning as an important habitat zone for native fauna populations.

Zone 6 Anabranh Central

This area contains limited remnant vegetation stands previously mapped by Actinotus (2011) as 'Alluvial Woodland on Coastal Plains'. This vegetation complex is now re-addressed as 'Alluvial Cumberland Plain Woodland' and is recorded as an endangered ecological community under the NSW Threatened Species Conservation Act and under the federal Environmental Protection and Biodiversity Conservation Act.

This zone has received extensive weed control efforts and has progressed into a bushland zone which contains significant resilience and a great diversity of native plant species.

Zone 7 Anabranh South

This zone offers substantial ecological restoration opportunity due to connectivity to the Nepean River Riparian Corridor to the south of the zone. This zone hasn't received restoration works from our previous programs as alternative zones were prioritised. Our program has now progressed to identifying this zone as a key primary and secondary weed control objective for the coming 2018-2019 program. The area contains some valuable remnant trees and forms a vegetation transition between the Alluvial Cumberland Plain Woodland 'and the Riparian Forest on Coastal Floodplains.

1.4 Statutory Requirements

Commonwealth	Environmental Protection Biodiversity Conservation Act 1999 (EPBC Act)
State	Threatened Species Conservation Act 1995 (TSC Act) Biosecurity Act 2015 Environmental Planning and Assessment Act 1979 (EP&A Act) Native Vegetation Act 2003 (NV Act) Water Management Act 2000
Local	Camden City Council Development Control Plan 2011 Camden City Council Bushland Restoration Objectives

1.5 Aims and Objectives of the Restoration Program

The aims and objectives of the restoration program were originally developed as part of the broader site management considerations which include legislated and regulatory expectations along with reference to best practice advice. The overarching restoration goals and opportunities are presented within the LMP document which has been used as the key guiding reference for our on ground project work.

In broad context our project activities have been determined to work towards achieving the following goals:

- Improving the condition of remnant bushland areas through reducing the impacts of key threatening processes like invasive weeds, harbouring of feral animals, and loss of remnant species through senescence, flood and drought.
- Rehabilitating key remnant vegetation communities such as the Riparian Forest on Coastal Floodplains and Alluvial Cumberland Plain Woodland to support legislative responsibilities.
- Improving the connectivity between vegetation zones of the subject site by selectively designing and implementing revegetation programs to increase vegetation cover and vegetation diversity.
- Improving ecological function across the site through the utilisation of environmental processes and services to reduce degradation such as soil loss and erosion and improve elements like water quality.
- Improving the habitat condition of key vegetation zones, whereby restoration practice aims to incorporate habitat requirements into the selection of management activities for a zone.
- Improve the resilience of the natural landscapes by reducing threats such as weed invasion and increasing species diversity and plant maturity through revegetation programs.
- Undertaking on-going maintenance activities to monitor and

2.0 RESTORATION PROGRAM

2.1 Landform Remediation Erosion / Sediment Management

2.1.1 Zone 3 Future Agricultural Production Areas

This zone is located in the open paddock area surrounded on three sides by batters adjacent to the Camden By-Pass Bridge, the Nepean River Bank on the west side and the Dry anabranch on the eastern side. Following the extraction operations, as part of the first phase of rehabilitation the ground is trimmed and surface levels are graded to comply with the final landform design and a survey is completed to validate the on ground levels.

The ground surface is ripped along the contours in order to retain moisture in the subsoil. Once this is completed a 500mm thick layer of topsoil is spread over the area to provide growing medium for the establishment of agricultural pasture. Once the surface preparation is completed the area is sown down with pasture and grasses suitable for grazing of animals.

Sediment and Erosion controls are installed within the perimeter of the downslope areas to prevent any loss of topsoil or sediment during the establishment stage of the grasses. These sediment controls also direct runoff in the direction of the terminal sediment ponds to protect the waters of the Nepean River.

2.1.2 Grass Batters around the Endeavour Energy Power Poles

The mounds that contain the Endeavour Energy power poles are supported structurally by forming batters that connect to the post extraction ground levels. These batters serve to provide access to the power poles for necessary maintenance works.

The mounds and the batters are trimmed to the design profile and re topsoiled and sown down with grasses to stabilise the surface and complement the adjoining pasture with in the open paddock areas.

As with the open paddock areas sediment and erosion controls are installed to control the loss of sediment and topsoil during the establishment of the grass surface

2.1.3 Zone 4 Riparian Linkage Area

This elevated platform of land that links the Nepean River with the Dry Anabranch at the southern boundary between Lot 22 and Lot 1 has been completed and revegetated and stabilised with grasses ready for additional landscape plantings to occur. This has included formation of a batter down to the reduced level of the open grassland and a transition to the western side of the dry anabranch.

2.1.2 Brush matting and use of harvested vegetation biomass

The practice of brush-matting has been implemented throughout all restoration Zones, coupled with revegetation programs to improve native species germination. *Eucalyptus* and *Casuarina* species occur in relative abundance throughout the prescribed revegetation areas and are capable of producing a high seed yield lending to their suitability as a brush-matting species.

All woody material and debris resultant from the ongoing weed management program in *Zones.1a, .2, .5 and .6* have been processed and piled in habitat mounds. This practice is expected to produce micro climates dispersed throughout the worked zones. These habitat mounds act as a significant ecological catalyst, their ability to retain moisture facilitates the decomposition of organic materials enriching the surrounding soil chemistry and assists in the germination of native seedlings. Micro-organisms and invertebrate species proliferate within these constructs increasing species richness across the project sites and aid in the pollination of native flora.

The project site occurs on a substantial alluvial deposit prone to erosion and sediment loss from natural weathering. Processed woody debris a product generated from woody weed control, has been applied as bank armouring along

susceptible areas of the Nepean River in *Zone.5 and .2*. Processed logs have been placed along slopes of steep contouring to assist in stabilize the sedimentary soils during the revegetation establishment periods in *Zone.1a, .2 and .5*.

2.2 Vertebrate Pest Monitoring

Vertebrate pest monitoring has been implemented as an ongoing process throughout the prescribed work zones. Initial monitoring aimed to identify the presence of high threat species which were able to impact our bushland restoration strategies. Dusk and dawn surveys collected and recorded the relative abundance and associated breeding sites of observed pest species across all zones. Data synthesized from the vertebrate pest monitoring program is expected to be used to facilitate an active baiting and culling program which aims to reduce pest species abundance and distribution across the project area.

Prescribed *Native and feral animal protection* actions as stated in *section 5.5.2* of the *LMP* have been enacted during revegetation programs applying tree guards and stakes to deter herbivores during the interim.

2.3 Fencing Stock and Animal Exclusion

An active fencing program has been implemented for the exclusion of heavy machinery, human influences and domestic stock for the protection of the rehabilitated riparian areas. Stock gates have been installed at vantage points in *Zone.1, .5 and .2* to maintain access to rehabilitated area and ensure the exclusion of domestic stock and human influences.

An approximate 750m of five (5) strand fencing has been installed to meet the objectives of the Fencing and Animal Exclusion works *refer Implemented Work Management Program Map 1*.

The project site is bordered by agricultural land and redeveloped residential allotments, upon completion of the fencing program it is expected to abate a number of key threats to the ecological community as listed in the NSW Department of Environment Climate Change and Water (DECCW) recovery plans for the 'River Flat Eucalypt Forest on Coastal Floodplains'.

2.4 Installation of Nesting and Habitat Boxes

The rehabilitation zones have been historically impacted from agricultural land use, historic land clearing and proceeding impacts such as weed proliferation. Much of the significant habitat features necessary to sustain native fauna populations have been impacted through the clearing and fragmentation of the native vegetation because of this surrogate habitat elements like man made boxes work to support the retention of native fauna within disturbed or impacted environments.

Habitat boxes have been installed in the rehabilitated vegetated areas of *Zone.1* and *Zone.2* to act as surrogate breeding and nesting boxes for aboral and avian species. This action is expected to increase species richness and diversity overtime, throughout the rehabilitated zones and act to improve the sites ecological resilience and future habitat value.

2.5 Weed Control Primary Eradication

Primary Weed Management strategies have been identified as a key support process in the restoration of the degraded Riparian Forest and Alluvial Woodlands. The proliferation of noxious woody and scrambling weeds has significantly inhibited native bushland natural regenerative processes and have reduced native species richness across the project site.

Primary weed control strategies have been enacted within *Zone.5* prior to implementation of a zone-specific revegetation program. The objectives of the primary weed management strategies aimed to increase light penetration through the weed dominant canopy and increase soil nutrients and microbial activity through the decomposition of weed biomass, to facilitate the succession of native seedlings and plant tube stock.

Several priority Primary Weed Management areas have been identified as a part of the conducted vegetation

assessment within *Zone.7*.

2.6 Weed Control Secondary

Weed management across the project site has been conducted as an active process, following primary weed control interventions, the succession of noxious annual and perennial weeds have established in the disturbed areas. Systematic treatment of the emergent noxious weeds has been enacted as a follow up to primary weed management in *Zone.1a* and the entirety of *Zone.2*.

Secondary Weed Management actions have aimed at reducing existing weed seed bank and targeting highly viable noxious weeds. Selective herbicide application and mechanical treatments have been applied to ensure native species establishment is advantaged during the ongoing rehabilitation of the native bushland areas.

2.7 Seed Collection and Provenance Plant Propagation

The practice of seed collection in accordance with *Flora Seed Collection Guidelines* as prescribed in the *LMP*, has been applied in the propagation of provenance species in collaboration with Wollondilly Council Nursery. This practice is viewed as an important process in obtaining local genetic material to ensure the natural resilience of revegetated stock against local environmental conditions and disease and restore natural species composition and assemblage.

Seed collection has been carried out across all zones to ensure a diversity of genetic material is collected prior to the enactment of revegetation programs. Where seed from species typical of the zones vegetative assemblage could not be collected due to seasonal variation, lack of local abundance or loss of species due to habitat clearing, collaboration with Wollondilly Council Nursery occurred to ensure species indicative of the local provenance and vegetation assemblage were sourced.

2.8 Revegetation

The revegetation programs were determined from a preliminary zone assessment, identifying the existing vegetation composition, species abundance and diversity. An adaptive management response was applied to ensure a wholistic representation of the natural vegetation assemblage was achieved through supplementary plantings. Special consideration was assigned to the planting of feed species, habitat trees and defined indicator species of the existing vegetation assemblage.

Revegetation programs have been carried out across *Zone.1a*, *.2* and *.5*. Plantings were carried out with the objectives of the *VMP* as guidelines, where the existing ecological composition required an adjustment to the plan, alterations were conducted to ensure the rehabilitation zones are restored to mirror their natural species composition and structure.

The implemented revegetation programs from the month of April 2017 to July 2018, facilitated the installation of 4,800 forestry tubes across *Zone.1a*, *.2* and *.5*. (refer to *table.1*). Planting allocations were conducted with the aims to improve the zones ecological habitat, stabilize alluvial soils and to provide food and nesting materials. Revegetation was conducted in *Zone.1a* and *.2* in accordance with the objectives of the *VMP*, *Zone.5* was identified as an additional area of significant ecological importance, for the improvement of vegetation connectiveness across the project site and enrichment of the sites ecosystem, actioning the implementation of weed management strategies and revegetation.

2.9 Watering - Installation of water tank supplies and drip irrigation lines

The project site's geological form is predominately composed of alluvial deposits, forming a freely draining substrate of low organic nutrient composition. These soil characteristics can be difficult for establishing plant growth and success of revegetation programs under less than optimal environmental conditions such as poor rainfall.

Water tanks and drip line irrigation were installed across *Zone.1a*, *.2* and *.5* to supplement revegetation programs during periods of low rainfall and extreme temperatures to assist in the succession of installed forestry tubes.

2.10 Maintenance Programs

A maintenance program has been enacted across the entirety of the project site to ensure a reduction of the noxious weed seed bank and limit the dispersal of noxious weeds from neighbouring land use across the rehabilitated zones.

A successive weed management strategy has been implemented across all work zones, transitioning from primary, secondary to maintenance phases to ensure the gradual eradication and suppression of noxious weeds during the establishment of revegetation to support the success of the restoration of the native ecology.

3.0 SITE CONDITION MONITORING

3.1 Site Ecological Condition Assessments – Field Surveys

A vegetation assessment was conducted over a two (2) day period from the 11th of July, with the objective of assessing the existing ecological condition within the defined zones across the project site and to audit the current and previous ecological management strategies.

The vegetation assessment was carried out in *Zones.1a, .5, .6 and .7*, observing the existing floral species richness within a delineated plot and recording species abundance and diversity within a randomly designated 10x10m quadrat. An integrated remote sensing and GIS analysis approach was employed to define the assigned vegetation classification in regards to *Tozer et al 2003*, occurring within each zone and produce a list of indicative species associated with the existing vegetation assemblage for baseline referencing.

The GIS desktop analysis mapped two (2) separate vegetative assemblage types encountered during the vegetation assessment. 'Riparian Forest' confined to the western end of the project site bordered by the Nepean River represented in *Zone.1a and .5* and 'Alluvial Woodland' encompassing the Dry River Anabranche represented by *Zone.6 and .7*. Both vegetation types fall within 'River Flat Eucalypt Forest on Coastal Floodplains' listed under Schedule 2 of the *BC Act (2016)*.

Spatial data delineating the surveyed plots and quadrat boundaries was obtained through the implementation of GPS systems and records regarding species richness and abundance were recorded by hand on field documents see appendix 9.3 Site vegetation condition assessment sheets.

3.2 Restoration Zones – Condition Audits

Nepean River Zone.1a (*refer plot 2 and respective quadrat*)

This plot represented the success of an ongoing weed management strategy and the implementation of a revegetation program. Current native species richness across the plot (*refer plot 2 & Quadrat 2; Map 2 page 42*), was assessed as low (discounting revegetation species) with the over-storey canopy comprised of remnant *Eucalyptus sp.* accounting for the greatest amount of native species richness, mid and shrub-strata were predominately absent with ground strata predominately comprised of exotic grasses.

Previous impact from significant woody and scrambling noxious weeds have significantly reduced native species richness and abundance across the assessed plot. The implementation of primary and secondary weed management strategy have eradicated all mature woody and scrambling noxious weed infestation across the plot, supporting an increase in native regeneration. The implementation of periodic weed maintenance and watering program is recommended to support growth and establishment of revegetation species.

Nepean River Zone.5 (*refer plot 1 and respective quadrat*)

This plot represented the success of an ongoing weed management strategy and the implementation of a revegetation program. Native species richness in this plot was significantly greater than the other representative 'Riparian Forest' plot in *Zone.1a*. The over-storey canopy accounted for the greatest native species diversity supporting a range of *Eucalyptus sp.* An important nectar species, *Banksia integrifolia* was observed dispersed throughout the predominately open mid-strata. With the shrub and ground-strata sparse in vegetation composition, though supporting a moderate degree of species richness.

Previous impact from significant woody and scrambling noxious weeds on native species richness and abundance were evident across the assessed plot. Ongoing weed management strategies have significantly reduced the abundance of noxious weeds occurring across plot and limited competitive stresses placed on regenerating native species. The implementation of periodic weed maintenance and watering program is recommended to support growth and establishment of revegetation species.

Dry River Anabranth Zone.6 (refer plot 3 and respective quadrat)

This plot was representative the successive implementation of weed management strategies leading to a maintenance phase. Native species richness and abundance throughout the delineated plot was assessed as moderate. A high degree of natural regeneration was observed, supported by a previous revegetation program (approx. 2 years growth).

A high proliferation of annual and perennial shrub and ground weeds was observed across the inner channel of the Anabranth, this was attributed to the deposition of highly fertile flood sediments trapped within the embankments. Continued periodic weed maintenance is recommended to reduce weed seed bank.

Dry River Anabranth Zone.7 (refer plot 4 & 5 and respective quadrats)

Plot 4 (Map 2 page 42) supported a moderate degree of species richness, with significant infestation of noxious weed impacting the mid, shrub and ground strata. Weed management strategies in this plot are not evident, with present native vegetation significantly stressed by competition with noxious weeds. A notable observation during the vegetative assessment was the presence of a marked and bordered *Pomaderris brunei* and *Commersonia fraseri* patch. Immediate resource allocation is recommended to eradicate noxious weeds impacting the endangered *Pomaderris brunei*.

The overall native vegetative composition was assessed as low with noxious weed accounting for over 50% of vegetative biomass. The implementation of primary weed management strategies is recommended to begin the rehabilitation of native vegetation occurring thorough this zone.

Plot 5 (Map 2 page 42) is representative of a significantly degraded native vegetation, supporting a dense proliferation of woody and scrambling noxious weeds. Existing native species occur at low abundance in the over-storey with only sporadic native individuals observed across the mid to ground strata. Implementation of primary weed management strategies is recommended to alleviate competitive stresses to native over-storey species and facilitate the enactment of native bushland restorative processes.

4.0 IMPACTS AND IMPLICATIONS DELIVERY OF RESTORATION PROGRAM

4.1 Issues, Pressures and Failures in Implementation

4.1.1 Flooding

Weather conditions prevalent across much of the 2017-2018 works period caused the greatest impact to the delivery of planned work activity. For example a large scale localised rainfall event which occurred in early 2017 created inundation to the entire Anabranth corridor of Zone 6. This rainfall was a positive influence of local ecological condition and no doubt provided a useful water source for local fauna species until mid- 2018 when infiltration and evaporation finally dispersed the water body. The retained water impacted our ability to work in this zone for the majority of the program period, although vast areas were suppressed from weeds due to inundation so we utilised our allocated work resources in different work zones. Flood waters from this same weather event also created a lot of damage to existing vegetation with zones 1a) and zone 5 along the Nepean River Corridor. Extensive bank scouring, the loss of trees and shrubs along the river banks and a substantial build-up of flood debris along sections this corridor were key impacts derived from this event. In response our restoration program was modified to undertake cleaning up of these zones and prepare for revegetation activities to help rehabilitate the river banks; the revegetation program along the flood damaged area was completed recently in July 2018 see *images 12 & 13*.

4.1.2 Drought

Outside of the flooding event of early 2017 the remainder of the program season was significantly hampered by limited rainfall and general drought conditions. Recurrent dry conditions limited our ability to undertake planned revegetation tasks due to limited confidence in follow rainfall which is generally relied upon to help establishing plants. Revegetation programs are an expensive component of restoration works, which require reasonable planning and good environmental conditions to ensure success. During dry periods our works plan was modified to focus on maintaining bushland through secondary and maintenance weed control whilst also preparing areas for revegetation programs for when weather became suitable.

Revegetation objectives that were held off for the majority of the 2017-2018 program were subsequently delivered recently in July 2018. We are currently hoping for winter rainfall patterns to help with the establishment of these areas.

To prepare for future droughts and dry conditions we spent some resources from the 2017-18 program to install poly water tanks and establish irrigation lines throughout key revegetation zones, zones 2a), 2b), 1a) & 5. The client (MCS) have supplied the water tanks and will supply water to the systems to aid in ongoing maintenance and watering activities.

4.1.3 Animal Predation – Plant Damage

The final reportable pressure impacting the success of our restoration program is sustained grazing pressure on our revegetation material from both native and pest animal species.

Newly installed plants and saplings are being heavily targeted by grazing animals. Tree stakes and guards have been installed around all of the planted tube stock, however grazing is still obvious damaging the top shoots and accessible branchlets.

There is evidence of predation from native animals wallabies and wombats and particular zones such as zones 2a), 2b) & 4 where rabbit activity is heightened. Bowantz has established a feral animal monitoring program in order to help with planning a future feral animal control program which aims to target reducing the current rabbit populations, control foxes and monitor for the presence of other introduced species such as deer.

The 2018-2019 restoration works program will see the implementation of this control program.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This report provides an accurate account and evaluation of the delivery of key restoration work activities prescribed for the 2017-2018 reporting period. Bowantz Bushfire & Environmental were commissioned by (MCS) to undertake the site environmental restoration works program and produce a robust monitoring and evaluation report accounting for the progress of the program.

The report also includes a review of the current status and environmental condition of restoration project zones as of July 2018 whilst including planning objectives for the coming work seasons.

The site restoration works program has been guided by the objectives and outputs documented within the Landscape Management Plan (LMP) produced for the subject site by Harvest Scientific Services in 2016.

The restoration activity outputs delivered by (BBE) on behalf of (MCS) are described within sections 2 of the report and in table formatting in tables 1 & 2 of the appendices. These outputs have successfully contributed to the overall restoration goals for the site which collectively aim to mitigate environmental deterioration and improve ecological and environmental conditions within and across the subject site.

For licensing and reporting processes the report should also be consulted to respond to conditions 22 and 24 of the controlled activity approval provided by the NSW Office of Water under approval number 10ERM2013/0830.

The report has provided validated information to respond to the following items:

- i) A schedule and map showing the vegetation species, number and location of initial and replacement plantings and propagation materials.
- ii) The date of planting the vegetation
- iii) The percentage cover of groundcover, shrubs, tree and weeds
- iv) Notification of problems that impacted on the survival rates of plants including climatic, fire flood, vandalism etc
- v) A map of the location of any staged activities
- vi) Photographs showing the revegetation works during the reporting period.

The report should also be recognised for including a plan for implementation of restoration program works over the coming 2018-2019 season. The work actions presented in section 6, are effectively recommendations which when employed will continue to support the environmental restoration objectives for the site in line with the LMP and other operational and licensing responsibilities.

6.0 PLANNED – PROGRAMMED WORKS 2018-2019

6.1 Vertebrate Pest Control

The significant grazing of both native and pest vertebrate species has been causing damage to restoration plantings and contributing to reasonable losses of plants.

The development of a strategic and targeted pest control program for the site will aim to reduce grazing pressures on the restoration zones in order to allow for vegetation complexes to successfully develop to maturity.

Vertebrate pest control activities using a multi-faceted approach including baiting and shooting will be used to ensure the most effective methods are applied seasonally to reduce rabbit populations. Qualified and experienced Vertebrate Pest Controllers will design and implement the most effective control methods practical for a positive result for all stakeholders.

The rabbit control program will be undertaken across all proposed revegetation zones and surrounding bushland areas prior to, during and after the implementation of large scale revegetation works.

The planning and design phase for the vertebrate pest control program is currently active. Implementation of on-ground works are scheduled for September 2018 and will continue seasonally through to July 2019.

6.2 Weed Control

An annual weed control program will be enacted across the priority restoration areas to compliment progress made across many of the restoration zones and also to establish opportunities for restoration in new identified zones. Weed control actions will be segregated into descriptive activity groups which represent the condition and needs for each site. Many of the restoration areas across the project site are representative of different phases of the ecological restoration spectrum, the management of weeds generally reflects the condition of each site and maturity towards a naturalised condition.

Primary weed control is required to target the eradication of highly developed weed populations and thus is generally required on heavily degraded environments. Primary weed control activities will concentrate on the removal of mass volume of weed stands and / or the control of highly invasive weeds with proliferate within an area quickly.

Secondary weed control is employed as a secondary control measure, once the majority of infestation has been removed and when mobilised weed propagules germinate from an established weed seed bank. Secondary weed control actions are employed to counteract a re-emergence of weeds within a previously worked area.

Maintenance weed control generally refers to the management of weeds and problematic plants within an operational work area or within an area that is being rehabilitated, where positive progress has been made to recreate a natural landscape. Maintenance weed control is less invasive through application technique and generally requires less resources to implement.

Primary Weed Control

The project zones that have been identified for targeting of primary weed control works for the coming works program are:

Zone 4 – Described as Riparian Linkage zone by the Landscape Management Plan.

The restored landform levels for this previously extracted site have been instated and the site can now be prepared for a revegetation program. During the 2017 – 2018 restoration works program the disturbed areas within Zone 4 were managed by implementing hi-volume herbicide spray applications to control emerging weeds within the fallow areas.

Revegetation preparation were delay due to ongoing drought conditions. An improvement in rainfall conditions in the 2018-2019 program will allow for this area to be revegetated. To prepare for this primary weed control will be the focus of our early season works program.

Zone 7 – Described as Dry River Anabranh in the site LMP and in this report as Anabranh South.

This area has not been the focus of our previous restoration works plans as other areas which have now been restored had higher priority status. This area whilst still retaining a level of native plant canopy and shrub mid-storey is observed as being highly impacted by weeds. The 2018-2019 works program will see this area become the focus of the majority of our primary weed control efforts. This heavily weed infested vegetation corridor currently impacted by *Ligustrum* species, *Cestrum parqui*, *Cardiospermum grandiflorum* and *Anredra cordifolia* will play a key role for the linkage of the riparian zones for many native native species both flora and fauna.

A holistic approach to weed control involving heavy primary weed eradication work to encourage natural regeneration in this area will be implemented over the next 12 months.

Secondary Weed Control

Secondary weed control will be scheduled across three (3) of the project zones over the coming works program.

Once primary weed control actions have been completed within Zones 4 (Riparian Linkage) and Zone 7 (Anabranh South) as described above, then a secondary weed control objective will be deployed across these areas over the later parts of the 2018-2019 season. Secondary weed control here will aim to reduce re-emergence of weeds given a productive weed seed bank is assumed to present.

Zone 6 (Anabranh Central) will form part of our secondary weed control target area, as we envisage that weeds will continue to emerge within this area, requiring follow up eradication to ward off re-infestation of particularly highly mobile invasive grasses such as African Love Grass & Chilean Needle Grass.

Maintenance Weed Control

Key restoration areas that have been the focus of much of our work over the past few seasons will generally require monitoring for re-establishment of weeds and the need for maintenance type activities to ensure the successful establishment of revegetation areas. In general context all areas that have been recently revegetated such as the following zones:

Zone 1a) Nepean River Corridor

Zone 1b) Nepean River Core Riparian Zone (which to be revegetated in August 2018)

Zone 5 Nepean River past Revegetation Area

Zones 2a) & 2b) Dry River Anabranch

Will require some level of monitoring and maintenance weed control actions over the coming works program. Maintenance weed control will require less resources and works hours to complete than the other weed control tasks.

6.3 Revegetation

Revegetation of degraded environmental areas is a key restoration objective for the project site. The aims of revegetating areas within the project site offer a range of rehabilitation benefits from restoring highly modified environments to reduce risk of broader environmental problems such as erosion and landscape degradation to improving habitat values, increasing species diversity and embellishing vegetation resilience within remnant or recreated bushland.

The aim of revegetation for the site as prescribed within the LMP is to restore the natural species composition and structures combining this with other principals should achieve a self-sustaining eco-system that will require minimum human intervention to maintain over time.

The proposed revegetation plans for the 2018-2019 works period will involve two methods.

1. Hydro mulching - Hydroseeding and hydromulching are efficient and impressive alternatives to traditional planting processes, such as hand seeding, drill seeding and sod applications. Both methods produce thicker, healthier vegetation that binds with the ground surface soil to effectively protect against erosion.

Hydromulching is similar to hydroseeding, but it adds a fibre-mulch to the mixture of seed, fertiliser and water. The mulch acts as a cover for the seed, helping it retain moisture for faster germination and growth, while protecting the soil from erosion and the seeds from washing away in the rain.

Hydroseeding and hydromulching are efficient and sustainable methods of rehabilitating and revegetating cleared lands on construction or mine sites, especially when compared to traditional forms of seeding.

2. Direct planting of native plants as tube stock. The collection of native plant seed is undertaken within the native bushland areas onsite by our project staff. This seed along with other native plant seed collected within the Wollondilly along the Nepean River corridor is provide to a local nursery to propagate juvenile plants and saplings which are then planted back into the relevant project areas.

Native plant tube stock is directly planted into the project areas, with the inclusion of terracotem' native plant fertiliser, bamboo stakes and a cardboard tree guard to protect from animal predation.

Hydro-mulching

Native plant seed has been collected and stored to supply the revegetation mixes displayed by the hydro mulcher - seeder. A mixture of native grasses, sedges, herbs and groundcovers will be revegetated through direct seeding (Hydro-mulching).

Zone 1b) Core Riparian Zone has an area of approximately 1 hectare prepared for hydro-mulching to be undertaken this August 2018.

Zone 4 Riparian Linkage has an area of approximately 2 hectares that will be prepared for hydro-mulching to also be undertaken this August 2018.

Tubestock Plantings

The preparation of sites and planting of native tubestock (forestry tubes) for revegetation purposes will form a major component of this coming works program. Tubestock plantings will be used to establish new vegetated areas such as Zone 1 b) and Zone 4 to compliment hydro mulching seeding areas and also as replacement plantings in Zones 5 (Nepean Past Revegetation Zone) & Zones 2a) , 2b).

Zone 1b) supply & install 2,000 forestry tubes to be planted in designed rows complimentary to direct seeding program. All tubestock will receive fertiliser, stakes and guarding.

Zone 5 supply and install 500 forestry tubes as secondary plantings to fill areas of previous revegetation failure.

Zone 2a), 2b) Supply and install 1,500 forestry tubes as secondary plantings to fill areas of previous revegetation failure.

Zone 4 supply & install 2,000 forestry tubes to be planted in designed rows complimentary to direct seeding program. All tubestock will receive fertiliser, stakes and guarding.

6.4 Seed Collection for revegetation

Bowantz staff will continue to collect seed from native species across the project area during the 2018-2019 rehabilitation works program. Native plants endemic to the local environment and that are important colonising species will be collected from when the relevant fruiting seasons are occurring. All seed collected is taken to Wollondilly Shire Community Nursery where it is stored in refrigerated cabinets and germinated for propagation when requested.

By providing local plants to this project we are aiming to maintain genetic integrity within remnant and recreated landscapes to ensure that the plants provided back to the site retain characteristics of remnant plants which survive successfully under localised environmental condition.

6.5 Fencing

Fencing will be required around the restoration zone 1 b) to restrict stock access and access to the revegetation area by native grazing animals such as macropods.

It is proposed that 1 fence approximately 50m in length on the North West boundary of revegetation zone 1b adjacent to the Camden Bypass Bridge will be replaced to exclude stock from the rehabilitation areas.

6.6 Installation of Habitat / Nesting Boxes

The installation of nesting boxes for fauna habitat was identified as a key ecological activity within the site LMP objectives. The inclusion of nesting boxes in prioritised bushland areas is designed to compensate for a potential loss of habitat availability within the restoration and revegetation areas.

The size and design of the nesting boxes will target use from arboreal native animals such as possums to provide surrogate roosting and breeding habitats where hollow bearing remnant trees are lacking.

Boxes that have previously been installed within our program have already proved to be effective with monitoring showing regular use by local populations.

The 2018-2019 works program has provided for the supply and installation of 12 nesting and habitat boxes. We propose placements in the following zones.

Zone 4 – 2 boxes

Zone 5 – 4 boxes

Zone 6 – 2 boxes

Zone 7 – 4 boxes

6.7 Maintenance Repair & Watering

Maintenance is an important works requirement to ensure that the implementation of restoration work activities is monitored and progressing effectively. Revegetation zones are particularly reliant of maintenance activities during the early establishment period, for example tree stakes and guards are readily disturbed by animals such as wallabies and wombats and will require replacement or rectification. Young plants require watering during dry spells, whilst floods

create much disturbance which can lead to deposition of wood and debris and large losses of revegetation all requiring high level of maintenance to repair.

The 2018 – 2019 works program has allowed for the provision of 500 hours from our works crew to respond to tasks relevant to maintenance. Repair and watering.

8.0 REFERENCES

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NSW Water Management Act 2000; Guidelines for Riparian Corridors on Waterfront Land.

NSW Biodiversity Conservation Act 2016; Schedule 1 Threatened Species, Schedule 2 Threatened Ecological Communities & Schedule 4 Key Threatening Processes

9.0 APPENDICES

9.1 Tables

Table 1: Work Outputs and Milestones Completed 2017 – 2018 Program

Output - Task	Units	Ecological Validation	Delivery Period
Vertebrate Pest – Vermin Monitoring Program	Monthly – observations and population estimate recordings	Refer section 5.5.2 of the LMP (pg.10) Prevention of excessive grazing and browsing of revegetation plantings. Prevent land degradation caused by rabbits.	June 2017 – July 2018 A pest eradication program for rabbits has been developed and will be implemented.
Dust Monitoring Program	August to September Daily on a three-week program. April to May Daily on a two-week program	Bowantz Bushfire & Environmental was engaged to help with undertaking of the dust monitoring program, to ensure sediment particulates are not excessively mobilised to become airborne.	August to September 2017 April to May 2018
Fencing – Stock and animal exclusion	Eastern boundary of zone 2b) 195m Stock & animal exclusion zone with access gate 1b) 60m Stock & animal exclusion zone 1b) 140m Southern boundary mine operation area – restricted access area 350m	Refer section 5.5.1 of the LMP (pg.9) Fencing was supplied and installed to ensure effective management of rehabilitated and revegetated areas through animal and stock exclusion	April 2017 May 2017 June 2017 August 2017
Installation of nesting / habitat boxes	Supply & installation of habitat nesting boxes zone 1b) Six (6) boxes Supply & installation of habitat nesting boxes zone 2a) Four (4) boxes	Refer section 5.10.1 of the LMP (pg.18) To support objectives of improving habitat value nesting / habitat boxes were installed in strategic bushland locations to provide surrogate habitat for local animal populations. Natural habitat provision through collection and retention of logs and ground	March 2017 August 2017 February 2018

	Inspections of boxes, cleanout maintenance	debris was also provide through our work methods.	
Weed Control -Primary Eradication	Core Riparian Zone (CRZ) Zone 1b) Zone 1b) Zone 1b) Zone 1b) Nepean Revegetation Area	Refer section 5.10 of the LMP (pg.18) Weed control for the purpose of regenerating bushland areas and recreation of bushland areas. Extensive primary weed control outcomes have been delivered over the past works program. Completed 1.4 hectares of primary weed control areas. Zones 1a) & Zone 5	July 2017 August 2017 September 2017 October 2017 November 2017 May 2018
Weed Control – Secondary	Zone 2a) Zones 2a) & 2b) Zone 2a) Zone 1b) Dry River Anabran Dry River Anabran Nepean River Revegetation Area Nepean River Revegetation Area Dry River Anabran	Refer section 5.10 of the LMP (pg.18) Weed control for the purpose of regenerating bushland areas and recreation of bushland areas. Extensive secondary weed control outcomes have been delivered over the past works program. Completed 1.5 hectares of secondary weeding Zone 6	July 2017 August 2017 September 2017 October 2017 January 2018 February 2018 March 2018 April 2018 June 2018
Weed Control – Maintenance	Zones 2a) & 2b) Zone 4	Refer section 5.10 of the LMP (pg.18) Weed control for the purpose of regenerating bushland areas and recreation of bushland areas. Extensive maintenance weed control outcomes have been delivered over the past works program. Completed 1.8 hectares of weed control maintenance Zones 2a), b). 1.6 hectares of weed control maintenance Zone 4.	July 2017 August 2017 September 2017 October 2017 January 2018 February 2018 March 2018 April 2018 June 2018
Seed Collection from established native plants	Seed collection along the Nepean	Refer section 5.7.1 & 5.7.2 of the LMP (pg.14)	July 2017

	river Zone 4 Riparian linkage Seed Collection Riparian zones	All plants produced and supplied to the project will be from local provenance seed. Propagation of 3,800 forestry tubes of variant species grown and replanted to the site from locally collected seed sources.	April 2018
Revegetation	Planting Zone 2a) 800 forestry tubes Planting Zone 1b) 500 forestry tubes Planting Zone 1a) 1,500 forestry tubes Nepean River – Previous revegetation zones 1,500 forestry tubes Zone 2a) 250 forestry tubes Zone 2b) 250 forestry tubes	Refer section 5.7.3 & of the LMP (pg.14) The revegetation program will consist of appropriate mixes of canopy, mid-storey and ground cover plant species from the suggested species list. The supply and installation of 3,800 forestry tubes with fertiliser, stakes and guards was completed during the past works program	April – May 2017 April 2018 July 2018 July 2018
Installation of water tank supplies and drip irrigation lines to support revegetation areas	Install water tanks and drip irrigation lines to support establishment of revegetation areas. Zones: 1a) 1b) 2a) 2b)	Refer section 5.9 & 5.9.2 of the LMP (pg.17) To support the practical completion of this revegetation program poly water tanks and irrigation lines were supplied and installed to support ongoing maintenance watering of the plants in Zones 1a), 2a) & 2b)	November & December 2017

Table 2: Restoration Zones Progress Reporting

Report Objective/ Section/ Statement	Progress (completed, not completed, in progress)	Comments (Alternatives, Additional Information required)
Zone 1: Nepean River Riparian Corridor		
Zone 1a (restore existing vegetation)	Completed	
<ul style="list-style-type: none"> • Stock & animal exclusion zone with access gate 1a) 60m • Stock & animal exclusion zone 1a) 140m • Primary Weed Control • Supply & installation of habitat nesting boxes zone 1a) Four (4) boxes • Secondary Weed Control • Site Preparation for Revegetation • Post extraction areas will commence upon completion of final landform levels. • Restore natural species composition and structures • Groundcover <1.5m, 50% plant composition, 4 to 8 plants per m², Mid-canopy 4 plants per m² to 1 plant every 2m², Canopy 1 plant per 5 to 10m² 	<p>Stock and animal exclusion fencing was established with an access gate along the southern aspect of the restoration corridor May 2017.</p> <p>Additional fencing along the boundaries of zone 1a) southern extent (powerline easement) was erected June 2018.</p> <p>Primary weed control which aimed to eradicate key problem weeds (notably <i>Dolichandra unguis-cati</i>, <i>Eragrostis curvula</i> and <i>Ligustrum lucidum</i>) was undertaken between April 2016 & April 2017.</p> <p>Secondary weed control undertaken April 2017 – January 2018</p> <p>Supply install habitat nest boxes (4) March 2017</p> <p>Site preparation weed control and clearing of fallen vegetation undertaken May – June 2018 Species planted are provided in revegetation table.</p> <p>Revegetation planting programs were undertaken in both April – May 2017 & July 2018 within this zones.</p> <p>Collectively 2,300 forestry tubes and hiko cells have</p>	<p>Site management Issues</p> <p>Weed eradication tasks led to the eradication of well-established privet forests which were impacting vegetation diversity and native vegetation proliferation within this zone.</p> <p>A long established population of cat's claw creeper vine which had caused death to several native canopy trees was also eradicated.</p> <p>A reasonable flood event in mid-2017 caused extensive erosion to unconsolidated silts and sediment banks along the Nepean River.</p> <p>Long periods of drought and extensive dry conditions lead to delay of the proposed revegetation works for this zone.</p> <p>The revegetation program was recently initiated & completed in July 2018</p> <p>Plant predation on newly planted tubestock by wallabies, rabbits and wombats is impacting revegetation success and may need further monitoring / intervention.</p> <p>Works prioritised for July 2018-July 2019 works program.</p> <ul style="list-style-type: none"> • Watering & Maintenance • Vertebrate Pest Control • Maintenance Weeding

	<p>been planted with stakes and guards within this zone.</p> <p>Water tanks and irrigation lines have also been installed to support the watering of this revegetation zone.</p>	<ul style="list-style-type: none"> • Substitute Plantings due to revegetation failure • Installation of additional habitat / nesting boxes
Zone 1b (additional planting Lot 32) – To be implemented July – August 2018		
<ul style="list-style-type: none"> • Post extraction areas will commence restoration upon completion of final landform levels. • Restore natural species composition and structures • Revegetation to stabilise soil banks and batters • Groundcover <1.5m, 50% plant composition, 4 to 8 plants per m², Mid-canopy 4 plants per m² to 1 plant every 2m², Canopy 1 plant per 5 to 10m² 	<p>The following work tasks will be completed August 2018</p> <p>Revegetation of the corner embankment of Zone 1 b) encompassing an area of approximately 1 hectare will be direct seeded using a hydro mulching process with locally sourced native plant seed material.</p> <p>Adding to the direct seeding revegetation of 2,000 plants as tube stock will be installed as dense pockets, plants in these areas will be no more than 2m apart.</p>	<p>The proposed revegetation area has been prepared with earthworks grading of the embankments and soil preparations as prescribed within the LMP, WM & ESCP planning documents.</p> <p>Cross ripping and soil cultivation will be undertaken shortly before the direct seeding by a hydro mulching system.</p> <p>The works plan for this revegetation program is included in this report as an appendices item.</p> <p>Installation of stock fencing to protect revegetation zone.</p>
Zone 5: Nepean River Past Revegetation Zone Completed		
<ul style="list-style-type: none"> • Primary Weed Control • Secondary Weed Control • Supply & installation of habitat nesting boxes zone 5) Two (2) boxes • Site Preparation for Revegetation • Post extraction areas will commence upon completion of final landform levels. • Restore natural species composition and structures • Groundcover <1.5m, 50% plant composition, 4 to 8 plants per m², Mid-canopy 4 plants per m² to 1 plant every 	<p>Primary weed control which aimed to eradicate key problem weeds (notably <i>Cardiospermum grandiflorum</i>, <i>Eragrostis curvula</i> and <i>Ligustrum lucidum</i>) was undertaken between April 2017 & January 2018.</p> <p>Supply install habitat nest boxes (2) March 2017</p> <p>Secondary weed control undertaken January 2018 and May 2018</p>	<p>Site management Issues</p> <p>Weed eradication tasks led to the eradication of well-established privet forests which were impacting vegetation diversity and native vegetation proliferation within this zone.</p> <p>Dense thickets of privet were directly impacting the success of previously established canopy trees, both creating enormous competition for water and nutrients within the sub-soil and harbouring successful populations of Bell minor birds</p>

<p>2m², Canopy 1 plant per 5 to 10m²</p> <ul style="list-style-type: none"> • Watering & Maintenance 	<p>Site preparation weed control and clearing of fallen vegetation undertaken May – June 2018</p> <p>Revegetation planting programs were undertaken in both April – May 2017 & July 2018 within this zones. Species planted are provided in revegetation table.</p> <p>Collectively 1,000 forestry tubes and hiko cells have been planted with stakes and guards within this zone.</p> <p>Water tanks and irrigation lines have also been installed to support the watering of this revegetation zone.</p>	<p>which create biological imbalance within localised food chains which increase predation on eucalypt trees by insect populations. This pressure has been removed through weed eradication.</p> <p>A long established population of balloon vine which had caused death to several native canopy trees was also eradicated.</p> <p>A reasonable flood event in mid-2017 caused extensive erosion to unconsolidated silts and sediment banks along the Nepean River.</p> <p>Long periods of drought and extensive dry conditions lead to delay of the proposed revegetation works for this zone.</p> <p>The revegetation program was recently initiated & completed in July 2018</p> <p>Plant predation on newly planted tube stock by wallabies, rabbits and wombats is impacting revegetation success and may need further monitoring / intervention.</p> <p>Works prioritised for July 2018-July 2019 works program.</p> <ul style="list-style-type: none"> • Watering & Maintenance • Vertebrate Pest Control • Maintenance Weeding • Substitute Plantings due to revegetation failure • Installation of additional nesting / habitat boxes
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Zone 2: Dry River Anabranh		
Zone 2a (regenerate existing vegetation) Completed		
<ul style="list-style-type: none"> • Application of bush regeneration techniques • Weed Management • A fence was installed along the Eastern edge of Zone 2a adjacent to the vineyard to exclude stock. • Supply & installation of habitat nesting boxes zone 2a) Four (4) boxes • Additional Revegetation as per native species list • Spread mulch • Groundcover <1.5m, 50% plant composition, 4 to 8 plants per m², Mid-canopy 4 plants per m² to 1 plant every 2m², Canopy 1 plant per 5 to 10m² • Watering & Maintenance 	<p>Selective weed control, the structural management of vegetation (through under pruning of limbs, cutting / removal of dead material) and revegetation of native plants (tube stock) are activities which have contributed to bush regeneration within this zone. April 2017 – July 2018</p> <p>Primary weed control targeting the eradication <i>Olea europaea</i> ssp. <i>Africana</i>, <i>Eragrostis curvula</i> and <i>Acetosa sagittaria</i> was delivered January 2017.</p> <p>Secondary weed control was undertaken prior to implementation of revegetation work April 2017</p> <p>Fencing was erected along the eastern edge of the zone to exclude stock and animals from the restoration area. April 2017</p> <p>Supply install habitat nest boxes (4) March 2017</p> <p>Revegetation planting programs were undertaken in both April – May 2017 & July 2018 within this zones. Species planted are provided in revegetation table.</p> <p>Collectively 250 forestry tubes and hiko cells have been planted with stakes and guards within this zone.</p> <p>Water tanks and irrigation lines have also been installed</p>	<p>Site Management Issues</p> <p>The spread on invasive dry land exotic grass species became a prevalent issue for the management of this zone over the reporting period. Species such as <i>Eragrostis curvula</i> (Love Grass) and <i>Nassella neesiana</i> (Chilean needle grass) were targeted for our weed control activities with repetitive spraying of infested areas.</p> <p>The preparation of the site and installation of revegetation forestry tube stock was undertaken back in April 2017. The success of this planting program which included 250 plant units was hampered by prolonged drought periods after the planting and also heavy predation on the plants by local rabbits and wallabies. Significant plant losses led to less than 60% survival rates.</p> <p>Replacement plantings are programmed for the 2018 – 2019 works program, however this undertaking will be incorporated only when suitable rainfall is forecast or occurs to trigger the process.</p> <p>Works prioritised for July 2018-July 2019 works program.</p> <ul style="list-style-type: none"> • Watering & Maintenance • Vertebrate Pest Control • Maintenance Weeding • Substitute Plantings due to revegetation failure

	to support the watering of this revegetation zone.	
Zone 2b (additional planting)	Completed	
<ul style="list-style-type: none"> • Application of bush regeneration techniques • Weed Management • Table 1. Species list (5.7) • Post extraction areas will commence upon completion of final landform levels. • Restore natural species composition and structures • Groundcover <1.5m, 50% plant composition, 4 to 8 plants per m², Mid-canopy 4 plants per m² to 1 plant every 2m², Canopy 1 plant per 5 to 10m² • Watering & Maintenance 	<p>Selective weed control, the structural management of vegetation (through under pruning of limbs, cutting / removal of dead material) and revegetation of native plants (tube stock) are activities which have contributed to bush regeneration within this zone. April 2017 – July 2018</p> <p>Primary weed control targeting the eradication <i>Olea europaea</i> ssp. <i>Africana</i>, <i>Eragrostis curvula</i> and <i>Acetosa sagittaria</i> was delivered January 2017.</p> <p>Secondary weed control was undertaken prior to implementation of revegetation work April 2017</p> <p>Revegetation planting programs were undertaken in both April – May 2017 & July 2018 within this zones. Species planted are provided in revegetation table.</p> <p>Collectively 250 forestry tubes and hiko cells have been planted with stakes and guards within this zone.</p> <p>Water tanks and irrigation lines have also been installed to support the watering of this revegetation zone.</p>	<p>Site Management Issues</p> <p>The spread on invasive dry land exotic grass species became a prevalent issue for the management of this zone over the reporting period. Species such as <i>Eragrostis curvula</i> (Love Grass) and <i>Nassella neesiana</i> (Chilean needle grass) were targeted for our weed control activities with repetitive spraying of infested areas.</p> <p>The preparation of the site and installation of revegetation forestry tube stock was undertaken back in April 2017. The success of this planting program which included 250 plant units was hampered by prolonged drought periods after the planting and also heavy predation on the plants by local rabbits and wallabies. Significant plant losses led to less than 60% survival rates.</p> <p>Replacement plantings are programmed for the 2018 – 2019 works program, however this undertaking will be incorporated only when suitable rainfall is forecast or occurs to trigger the process.</p> <p>Works prioritised for July 2018-July 2019 works program.</p> <ul style="list-style-type: none"> • Watering & Maintenance • Vertebrate Pest Control • Maintenance Weeding

		<ul style="list-style-type: none"> Substitute Plantings due to revegetation failure
Zone 3: Future Agricultural Area		
<ul style="list-style-type: none"> Construct Terminal sediment pond (fig 3./ p8) LMP report Revegetate with pasture grasses to Class 1 Agricultural land (section 5.7) LMP report 		
Zone 4: Riparian Linkage (non-agricultural production area) To be implemented August 2018 – July 2019		
<ul style="list-style-type: none"> Application of bush regeneration techniques Weed Management Secondary Revegetation program as per species list Spread mulch Groundcover <1.5m, 50% plant composition, 4 to 8 plants per m², Mid-canopy 4 plants per m² to 1 plant every 2m², Canopy 1 plant per 5 to 10m² 	<p>This project zone contains landscape areas with vastly differing natural vegetation conditions.</p> <p>Southern portions of the zone have been previously revegetated through past efforts and have established well as recreated natural vegetation habitats. These areas will be prioritised for ongoing bush regeneration style weed control efforts.</p> <p>Central and northern landscape areas within this zone will require ongoing maintenance weed control to manage emerging annual and perennial weeds which proliferate within the open stretches of reconfigured recreated areas.</p> <p>This weed control will be undertaken using hi-volume herbicide applications of selective herbicides. Once areas have been controlled revegetation programs will be engaged.</p> <p>Direct seeding of native endemic plants through hydro mulching processes may be implemented late within the next work period 2018- 2019.</p> <p>After hydro mulching as a preferred revegetation method site maintenance will be prioritised to engage in</p>	<p>Works prioritised for July 2018- July 2019 works program.</p> <ul style="list-style-type: none"> Hi- volume – broad area herbicide spraying weed control across fallow surfaces. Direct seeding of native plants via hydro mulching methods Watering & Maintenance Vertebrate Pest Control Maintenance Weeding Monitoring and reporting

	selective weed control, watering, and vertebrate pest control programs.	
Zone 6: Anabanch Central To be implemented August 2018 – July 2019		
<ul style="list-style-type: none"> • Secondary Weed Control • Selective Revegetation 	<p>The northern area of this works zone has received both primary and secondary weed control work from our project team – April 2017 – July 2018.</p> <p>The prevalence of weed species within the northern component of this zone is low, well below 20% cover with 80% native plant dominance.</p> <p>A flood event which occurred in mid-2017 was intense enough to render inundation to the remnant anabanch gullies with most of the gully depression inundated for many months. The permanency of the water supply provided great ecological benefit for local fauna species whilst also restricting weed growth in the lower elevations.</p> <p>Once the water subsided sometime between January and June 2018 a flourish of weed propagation occurred from existing seed banks of annual and perennial weed species. Our works team prioritised maintenance weed control here to remove weeds before maturity so that weed propagules were intercepted. March – April 2018</p>	<p>Works prioritised for July 2018- July 2019 works program.</p> <ul style="list-style-type: none"> • Vertebrate Pest Control • Maintenance Weeding • Infill revegetation planting • Installation of habitat nest boxes

Zone 7: Anabranh South To be implemented August 2018 – July 2019

- Application of bush regeneration techniques
- Extensive Weed Management (Primary Weed Control)
- Secondary Weed Control

Primary weed control will commence in the Dry River Anabranh extending to the south as mapped Zone 7 (Anabranh South).

No weed control has been undertaken in this area by Bowantz over the past 10 years. This heavily weed infested vegetation corridor currently impacted by Ligustrum species, Cestrum parqui, Cardiospermum grandiflorum and Anredra cordifolia will play a key role for the linkage of the riparian zones for many native native species both flora and fauna.

A holistic approach to weed control involving heavy primary weed eradication work to encourage natural regeneration in this area will be implemented over the next 12 months.

Primary weed control program to begin in September 2018 will utilize approximately 250 hours.

As Weed material is removed sequentially over the coming works program Habitat and nesting boxes will be installed to both replace lost habitats through weed removal and encourage habitation of the restoration area by new inhabitants drawn to the area through condition improvement.

Table 3: Revegetation Completed Species List 2017-2018

Botanical Name	Common Name	Revegetation Material	Program Date
Angophora subvelutina	Broad leafed apple	Forestry tubestock	July 2018
Angophora floribunda	Rough bark apple	Forestry tubestock	July 2018
Casuarina cunninghamiana	River She-oak	Forestry tubestock	April 2017
Casuarina glauca	Swamp She-oak	Forestry tubestock	July 2018
Eucalyptus amplifolia	Cabbage gum	Forestry tubestock	April – May 2017
Eucalyptus elata	River peppermint	Branch mulching – Direct seeding	July 2018
Eucalyptus tereticornis	Forest Red gum	Forestry tubestock	May 2017
Eucalyptus viminalis	Ribbon gum	Forestry tubestock	July 2018
Eucalyptus paramattensis	Drooping Red Gum	Forestry tubestock	July 2018
Eucalyptus piperita	Sydney Peppermint	Forestry tubestock	July 2018
Eucalyptus globoidea	White stringybark	Forestry tubestock	July 2018
Melia azedarach	White cedar	Forestry tubestock	April – May 2017
Acacia floribunda	Sally Wattle	Branch mulching – Direct seeding	April – May 2017
Acacia decurrens	Black wattle	Forestry tubestock	July 2018
Trema tomentosa	Native peach	Forestry tubestock	July 2018
Dodonea triquetra	Hop bush	Forestry tubestock	April – May 2017
Callistemon salignus	Willow bottlebrush	Forestry tubestock	July 2018
Callistemon linearifolius	Netted bottlebrush	Forestry tubestock	July 2018
Melicytus dentatus	Tree violet	Forestry tubestock	April – May 2017
Bursaria spinosa	Blackthorn	Forestry tubestock	May 2017
Kunzea ambigua	Tick bush	Forestry tubestock	May 2017
Leptospermum polygalifolium	Lemon scented Tea-tree	Forestry tubestock	May 2017
Olearia microphylla	Daisy bush	Forestry tubestock	July 2018
Dodonea viscosa	Sticky hop bush	Forestry tubestock	July 2018
Wahlenbergia gracillis	Blue bell	Forestry tubestock	July 2018
Lomandra longifolia	Matt Rush	Hiko tubestock	April – May 2017
Carex appressa	Tall sedge	Hiko tubestock	May 2017
Austrostipa ramosissima	Stout bamboo grass	Direct seeding	April – May 2017
Aristida ramosa	Purple Wire grass	Hiko tubestock	July 2018 July 2018
Commelina cyanea	Scurry weed	Hiko tubestock	May 2017
Glycine clandestina	Twining glycine	Hiko tubestock	April – May 2017
Dichelachne micrantha	Short hair plume grass	Hiko tubestock	July 2018
Microlaena stipoides	Weeping rice grass	Hiko tubestock	July 2018
Chenopodium nutans	Climbing salt bush	Hiko tubestock	July 2018
Juncus usitatus	Common rush	Hiko tubestock	July 2018
Tube stock and hiko cell Revegetation Numbers – Totals to July 2018 = 4,800 units			

9.2 Site Photos

Fencing



Image 1 Zone 2b) Implemented July 2017



Image 2 Zone 2b) Implemented July 2017

Seed Collection



Image 3 April 2017 – Collecting seed for propagation of revegetation material



Image 4 April 2017 – Collecting seed for propagation of revegetation material

Weed Control – Primary



Image 5 Zone 1b) Primary weed control privet eradication September 2017



Image 6 Zone 1b) Primary weed control privet eradication October 2017

Weed Control – Secondary



Image 7 Zone 2a) Core Riparian Zone, secondary eradication of annual weeds, November 2017



Image 8 Zone 2a) Core Riparian Zone, secondary eradication of annual weeds, February 2018



Image 9 Secondary weeding anabranh zone 2a), August 2017

Revegetation



Image 10 Dry River Anabranh Zone 2a) Revegetation July 2017



Image 11 Nepean River Zone 1a) Revegetation April & July 2018



Image 12 Dry River Anabranh Zone 2a) Revegetation August 2017



Image 13 Revegetation and erosion control using privet logs salvaged from woody weed control, Core Riparian Zone Nepean River, July 2018

Nest - Habitat Boxes



Image 14 Installation of nest boxes 1a) – Core Riparian Zone September 2017



Image 15 Installation of nest boxes Past Revegetation Area – Core Riparian Zone November 2017



Image 16 Installation of nest boxes Past Revegetation Area – Core Riparian Zone November 2017



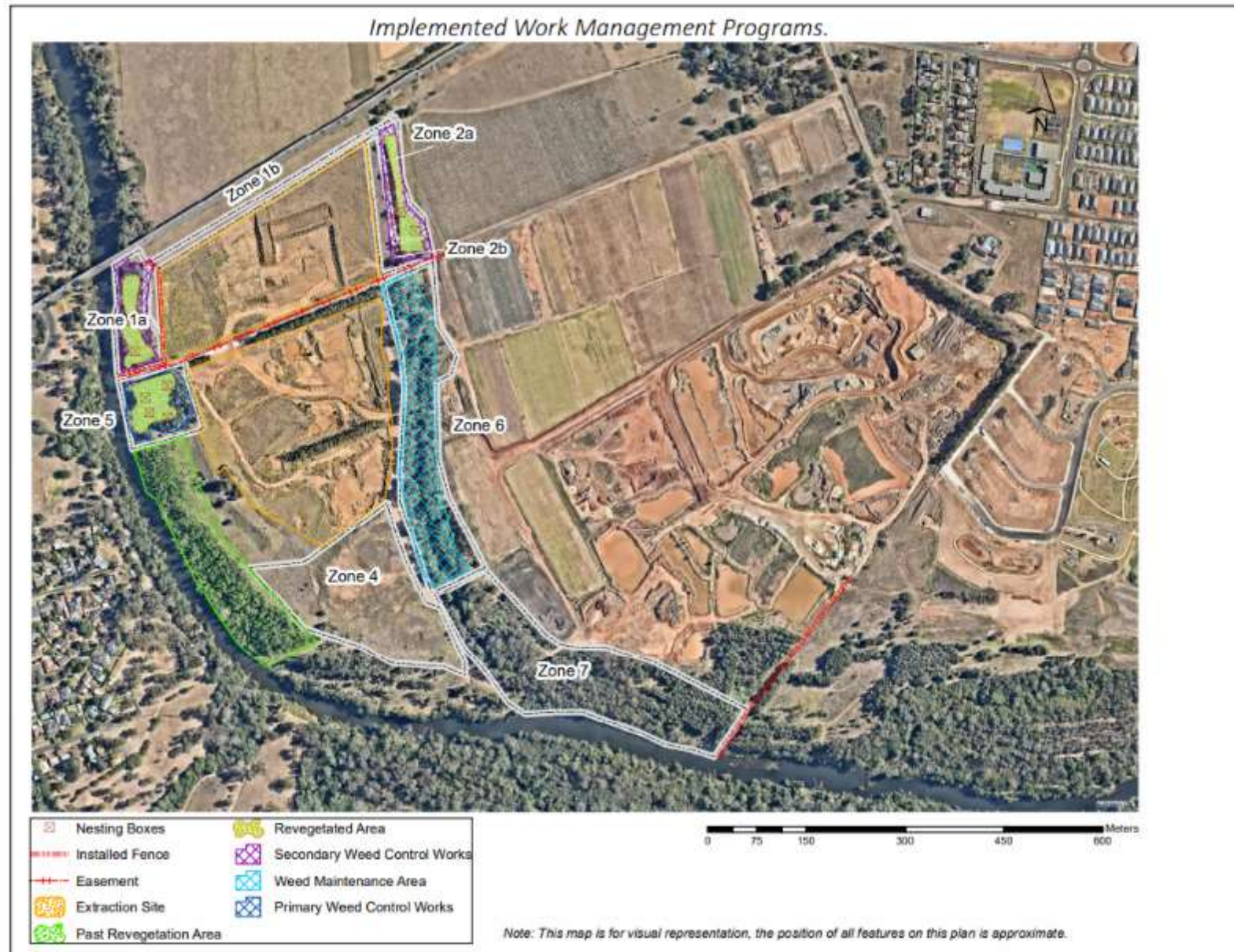
Image 17 Preparing areas for revegetation post weed control – Past Revegetation Zone, CRV Nepean River. March 2018

Revegetation infrastructure for irrigation of establishing plants

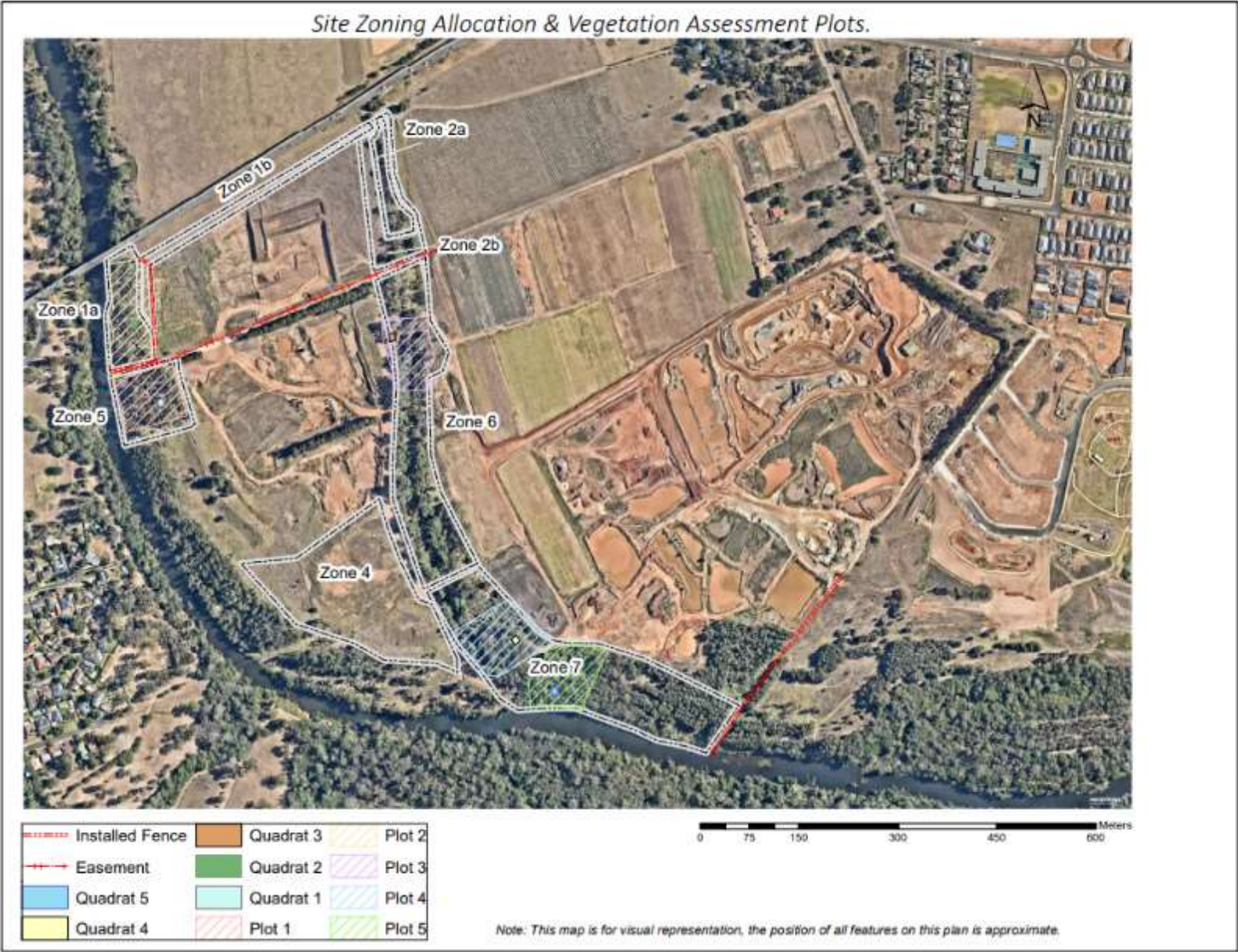


Image 18 Installation of water tanks and irrigation lines for watering of establishing plants Past Revegetation Zone, CRV Nepean River, January 2018

Map 1:



Map 2:



Map 3:




Map 4:



Map 5:

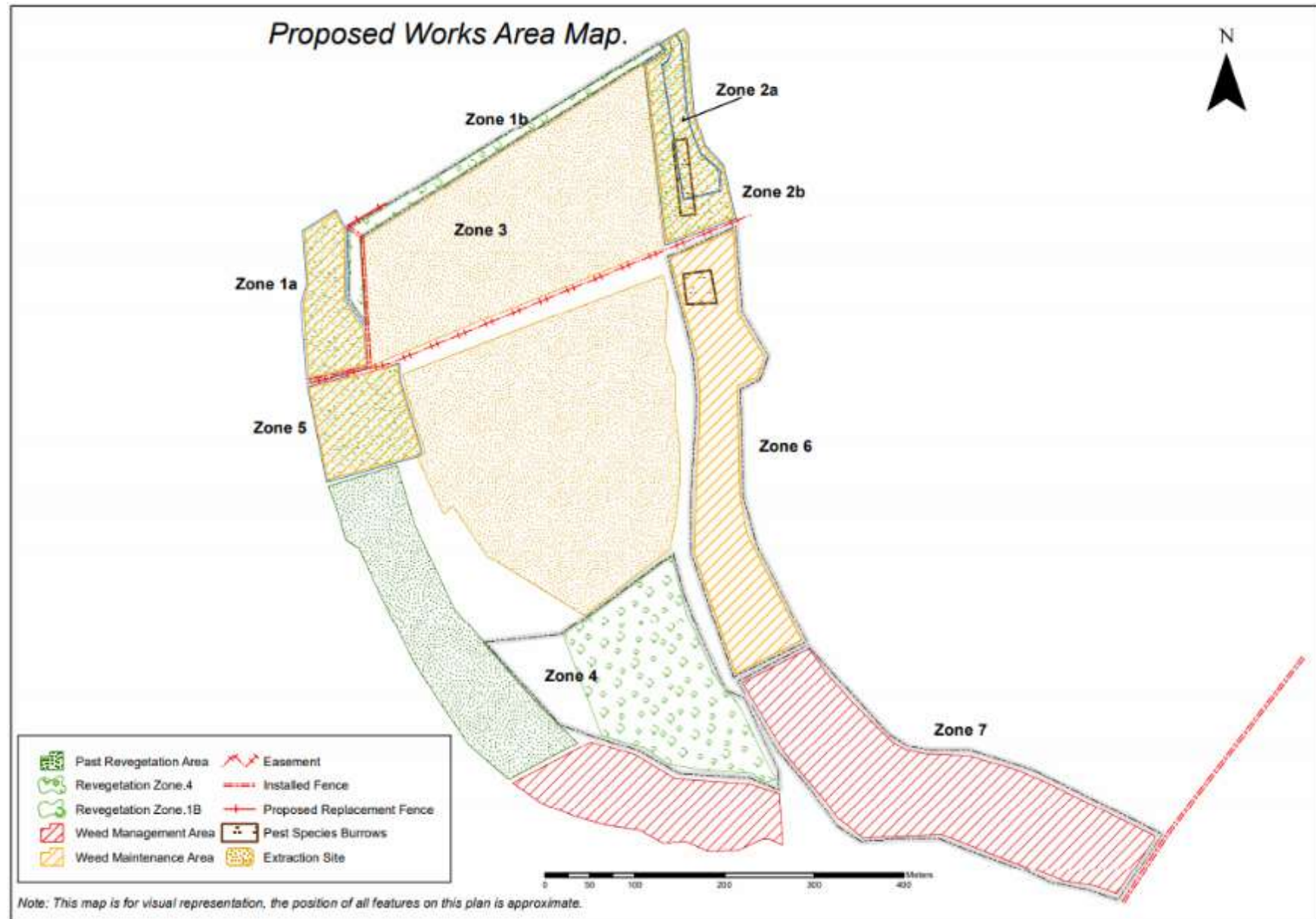
Zone 6. Alluvial Woodland Maintenance works.



 Weed Maintenance 0 10 20 40 60 80 Meters

*Note: This map is for visual representation,
the position of all features on this plan is approximate.*

Map 6: Planned Site Works 2018-2019 Program



9.3 Site Vegetation Condition Assessment Surveys



Plot 1 – Zone 5 after weed control but prior to revegetation planting

DECCW VEGETATION FIELD SURVEY FORM

Module 1 (Minimum requirements)

Location - Prepared Re-veg Area. data point 022.
Collins - Nepean River

Date	11-7-13	Plot ID.	022	Plot no.	1.	Recorders	Daniel Anderson Jordan Pont.
AMG grid reference	zone 54 55 56	datum GDA	Easting		Northing		Position in quadrat
Base plot size	20x20	Orientation of 0.1ha plot		marked	yes (no)	photo # / orientation	5th West

Structure & composition (within 0.04 ha quadrat)

Keith class		Confidence: high mod low N.A
Regional veg class (BVT)	River flat Euc. Forest. coastal floodplain	Confidence: high (mod) low N.A
Biometric type (or NVCA)		Confidence: high mod low N.A
Other:		Confidence: high mod low N.A

NVIS level V (within 0.04 ha quadrat)

Stratum	Growth form	Species name	Cover	Abund.	For the entire	Field
Upper	Tree	Eucalyptus amplifolia	5%	re-current	Upper stratum	
Upper	Tree	Angophora costata subsp. costata	10%	50%	Height to crown (m)	
Upper	Tree	Corymbia gummiifera	20%	re-current	min mode max	25m
Mid	Shrub	Hymenathera - melichrytus dentata	10%	re-current	Mid stratum	
Mid					Height to crown (m)	
Mid					min mode max	2m
Ground	Grass	Microlaena stipoides	50%	40m	Ground stratum	
Ground	Herb	Dichondra Repens	30%		Height to crown (m)	
Ground	Herb	Oplismenus amoenus	20%		min mode max	2cm 10cm

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern
Cover: 0-1,1,2,3,4,5,10,15,20,25,30,35, etc. Abundance: 1,2,3,4,5,6,7,8,9,10,20,50,100,500,1000,>1000

DECCW VEGETATION FIELD SURVEY FORM

Site no. 1

Condition

(within 0.04 ha)	Upper stratum	Mid stratum	Ground stratum Grasses	Ground stratum Shrubs	Ground stratum Other	Cover %		(within 0.1 ha quadrat)	
Native richness	4-5 species	absent	Low	absent	minimal	Litter	50	No. trees with hollows	Nil
Native cover	100%	absent	60%	absent	50%	Bare ground	10	Woody debris linear metres	Heavy
Exotic cover	Nil	Nil	40%	Nil	50%	Cryptogam	5	Woody regeneration No. upper stratum sp. & abundance.	low

(within 0.1 ha quadrat)

Woody stem-sizes (DBH) (tally within category)	≥ 5- <10	≥10- <20	≥20- <30	20 → 30 cm	≥30 cm DBH measure all
(or, measure all ≥5cm DBH)					
Tree health	no evidence	branchlets dead yes	small branches dead yes	main branches dead yes	trees dead 30%

Landuse and landcover

Age structure	early regeneration	advanced regeneration	uneven age	mature	senescent	- Wood weeds recently removed
Landuse (dominant)	nature conservation	travelling stock route	forestry	grazing	cropping	other: - revegetation restoration
Landcover (upper stratum)	none	native	environmental planting	native plantation	exotic other:	
Landcover (ground stratum)	none	native	environmental planting	native plantation	exotic other:	

Site history

	Freq. code	Age code	Land manager survey: categories, quantities, comments			
Grazing management			not grazed	set stocked	rotational / cell grazing	
Farming			none	direct drill	disc plough tined implement	mouldboard rotary hoe
Erosion control			none	contour cultivation	mulching banks	other
Pasture improvement rates (fertiliser) kg/ha			none	<125	125-250	>250
Pasture improvement rates (lime/dolomite) t/ha			none	<2	2-4	4-7 >7
Timber extraction (incl. firewood)			- Revegetation area			

Site history, continued

	Freq. code	Age code	Land manager survey: categories, quantities, comments
Regrowth management			
Weed control		2yrs	- quarterly woody weed control efforts removal of descending vines
Pest animal control	3	R	
Burning			
Other			- bush regeneration & herbicide controls.

Frequency: 0=no record, 1=rare (>5yrs), 2=occasional (2-5yrs), 3=frequent (<2yrs) Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Plot disturbance

	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			
Cultivation (inc. pasture)			
Soil erosion			
Firewood collection			
Grazing			
Fire damage			
Storm damage			
Other	3	R	previously impacted by extensive weed infestation

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Focal taxa

(e.g. disturbance sensitive spp., ROTAPS, etc. within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
G	Shrub	Solanum pr inophyllum	Forest nightshade	Nil	L		
m	Shrub	Hymenocallis dentata	Tree Violet - encourage natural regen	L	L		
m	T	Banksia	Banksia Integrifolia	L	L		

Physiography

Morphological Type - Riverine sediments	Landform Element - Riparian	Landform Pattern	Microrelief
Lithology - depositional	Soil surface Texture	Soil Colour - dark rich loam	Soil Depth - deep loam
Slope - negligent	Aspect - sth West	Site drainage - low	Distance to nearest water and type - 50m River

DECCW VEGETATION FIELD SURVEY FORM

Module 2 Full floristics

Site no.

Floristics

(within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
G	Grass	Microlaena	Microlaena stipoides				
G	H	Dichondra	Dichondra repens.				
G	Grass	Basket grass	Oplismenus aemulus.				
G	Weed	Rambling dock	Acetosa sagittata.				
G	Weed	Sida paddy's lucerne	Sida rhombifolia				
G	Weed	Purple Top	Verbena bonariensis				
G	Weed	blackberry nightshade	Solanum nigrum				
G	Weed	Scotch thistle	Onopordum acanthium.				
G	Weed	Japanese honeysuckle	Lonicera japonica				
G	Weed	Balloon vine	Cardiospermum grandiflorum.				
G	Weed	Solanum	Solanum syssipryphyllum				
M	shrub	Tree Violet	Melichrysus dentata.				
C	T	smooth apple.	Angophora costata.				
C	T	Bloodwood	Corymbia gumifera				
C	T	Eucalypt swamp gum	Eucalyptus amplifolia				
C	T	Forest red gum	Eucalyptus tereticornis				
C	S	maclura	Maclura pomifera				
M	T	Banksia	Banksia integrifolia				
M	T	Pittosporum	Pittosporum undulatum.				
G	Weed	Cape Ivy	Delairea odorata.				
m	T	River she-oak	Casuarina cunninghamiana				
G	Grass	Lomandra	Lomandra longifolia				
G	Weed	Pitchforks	Bidens pilosa				
m	T	Water gum	Tristanopsis laurina				
G	Grass	African Love grass	Eriogonum curvula				
m	Shrub	Acacia fimbriata	fringed wattle.				
		floribunda	white sally - Ac. floribunda				
G	Weed	Wild turnip	Brassica tourefortii				
m	Shrub	Acacia deuyrens	Black wattle.				
T	Herb	Kurrajong	Brachychiton populneus				

Growth form: T=tree, M=males tree, S=shrub, Y=males shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern, F=forb, L=vine, A=acacia, P=palm, X=xanthorrhoea, U=samphire shrub.

Cover: (<1% see explanatory notes) 1,2,3,4,5,10,15,20,25,30,35, etc. crown cover %

Abund: 1,2,3,4,5,6,7,8,9,10,20,50,100,500,1000 (>1000 see explanatory notes)



Plot 2 – Zone 1a) after weed control and currently revegetated with forestry tubes.

DECCW VEGETATION FIELD SURVEY FORM

Module 1 (Minimum requirements)

Location

Plot 027-029. Quadrat 030-033

Survey code		Plot no.		Recorders	
Date	11-7-18	Plot ID.	030	2	Jordan Post
AMG grid reference	zone 54 55 56	datum QDA	Easting 1029	Northing 102	Position in quadrat
Base plot size	10m x 10m	Orientation of 0.1ha plot	marked	yes <input checked="" type="checkbox"/> no	photo # / orientation SW

Structure & composition (within 0.04 ha quadrat)

Keith class	Dry Sclerophyll forest (Syd Sandflats)	Confidence: high mod low N.A.
Regional veg class (BVT)		Confidence: high mod low N.A.
BioMetric type (or NVCA)		Confidence: high mod low N.A.
Other: <u>tozer</u>	Shale Plains Woodland. Riparian forest	Confidence: high mod low N.A.

NVIS level V (within 0.04 ha quadrat)

Stratum	Growth form	Species name	Cover	Abund.	For the entire	Field
Upper	T	E. viminalis ssp. viminalis	30%	1	Upper stratum	
Upper	T	Hebe elata			Height to crown (m)	
Upper					min mode max	
						35
Mid	S	Hymenoclea dentata	5%	2	Mid stratum	
Mid					Height to crown (m)	
Mid					min mode max	
						2m
Ground	G	Austrostipa racemosa	30%	220	Ground stratum	
Ground		Commelina cyanea	15%		Height to crown (m)	
Ground					min mode max	
						2m

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern
Cover: 0-1, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, 35, etc. Abundance: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 50, 100, 500, 1000, >1000

DECCW VEGETATION FIELD SURVEY FORM

Site no.

Condition

(within 0.04 ha)	Upper stratum	Mid stratum	Ground stratum Grasses	Ground stratum Shrubs	Ground stratum Other	Cover %	Plot (within 0.1 ha quadrat) ↓	
Native richness	3-5 species	Absent	weed dominant	Native grass	Minimal	Litter	No. trees with hollows	Y
Native cover	70%	-	80%	60%	-	Bare ground	Woody debris linear metres	Heavy
Exotic cover	-	-	80% -90	-	-	Cryptogam	Woody regeneration No. upper stratum sp. & abundance.	Le

(within 0.1 ha quadrat)

Woody stem-sizes (DBH) (tally within category) (or, measure all ≥5cm DBH)	≥ 5- <10	≥10- <20	≥20- <30	≥30 cm DBH measure all
Tree health	no evidence	branchlets dead	small branches dead	main branches dead trees dead

Landuse and landcover

Age structure	early regeneration	advanced regeneration	uneven age	mature	senescent	- woody weed removal
Landuse (dominant)	nature conservation	travelling stock route	forestry	grazing	cropping	other: - Regeneration
Landcover (upper stratum)	none	native	environmental planting	native plantation	exotic other:	
Landcover (ground stratum)	none	native	environmental planting	native plantation	exotic other:	weed treatment

Site history

	Freq. code	Age code	Land manager survey: categories, quantities, comments			
Grazing management			not grazed	set stocked	rotational / cell grazing	
Farming			none	direct drill	disc plough tined implement	mouldboard rotary hoe
Erosion control			none	contour cultivation	mulching banks	other
Pasture improvement rates (fertiliser) kg/ha			none	<125	126-250	>250
Pasture improvement rates (lime/dolomite) t/ha			none	<2	2-4	4-7 >7
Timber extraction (incl. firewood)			- Regeneration			

Site history, continued

	Freq. code	Age code	Land manager survey: categories, quantities, comments
Regrowth management	-	-	
Weed control	3	2yrs	woody weed, ascending vines & grandcreeper
Pest animal control	-	-	
Burning			
Other			Bush regeneration, herbicide control

Frequency: 0=no record, 1=rare (>5yrs), 2=occasional (2-5yrs), 3=frequent (<2yrs) Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Plot disturbance

	Severity code	Age code	Observational evidence:
Clearing (inc. logging)	3	R	Woody weed removal
Cultivation (inc. pasture)	-	-	
Soil erosion	3	R	Flooding, High erosion on banks
Firewood collection	-	-	
Grazing	-	-	
Fire damage	-	-	
Storm damage	2	R	High winds, snapped limbs
Other	3	R	Extensive weed infestation

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Focal taxa

(e.g. disturbance sensitive spp., ROTAPS, etc. within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
	*	lack of nectar/flower producing spp.					

* note no flowering species/nectar. species
Physiography

Morphological Type	Landform Element	Landform Pattern	Microrelief
Lithology	Soil surface Texture	Soil Colour Dark rich Silt	Soil Depth
Slope	Aspect	Site drainage	Distance to nearest water and type

Holocene alluvium (100%)

Native Vegetation Interim Type Standard

Module 2 Full floristics

Floristics

(within 0.04 ha quadrat)

[illegible]

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern, F=forb, L=vine, A=cycad, P=palm, X=xanthorrhoea, U=samphire shrub.

Cover: (<1% see explanatory notes) 1,2,3,4,5,10,15,20,25,30,35, etc. crown cover %

Abund: 1,2,3,4,5,6,7,8,9,10,20,50,100,500,1000 (>1000 see explanatory notes)



Plot 3 – Zone 6

DECCW VEGETATION FIELD SURVEY FORM

Module 1 (Minimum requirements)

Location

		Survey code	Plot no.	Recorders	
Date	12/7/18	Plot ID.	03	Jordan & Aaron	
AMG grid reference	zone 54 55 56	datum	Easting	Northing	Position in quadrat
Base plot size	10x10m	Orientation of 0.1ha plot	SW	marked	yes no photo # / orientation
					SW

Structure & composition (within 0.04 ha quadrat)

Keith class	Dry Sclerophyll forest (Sgd Srd) flats	Confidence: high mod low N.A
Regional veg class (BVT)		Confidence: high mod low N.A
BioMetric type (or NVCA)		Confidence: high mod low N.A
Other: TOZER	Alluvial Woodland	Confidence: high mod low N.A

NVIS level V (within 0.04 ha quadrat)

Stratum	Growth form	Species name	Cover	Abund.	For the entire	Field
Upper	T	E. baueriana	15%		Upper stratum	
Upper	T	Casuarina cunninghamiana	5%	2	Height to crown (m)	
Upper	T	Unknown ribbon gum	40%	4	min mode max	
Mid		Amelia azedarach	-	1	Mid stratum	
Mid		Melaleuca maritima		2	Height to crown (m)	
Mid		Gallipolia citreus (S. kill)		1	min mode max	
Ground		Hymenandra dentata			5m	
Ground		Einadiola Hostata	40%		Ground stratum	
Ground		Austrostipa racemosa		Sind	Height to crown (m)	
Ground		leaf litter + exotic grass			min mode max	
					>2m	

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern
 Cover: 0-1,1,2,3,4,5,10,15,20,25,30,35, etc. Abundance: 1,2,3,4,5,6,7,8,9,10,20,50,100,500,1000,>1000

* = uncertain

DECCW VEGETATION FIELD SURVEY FORM

Site no.

Condition

(within 0.04 ha)	Upper stratum	Mid stratum	Ground stratum Grasses	Ground stratum Shrubs	Ground stratum Other	Cover %	(within 0.1 ha quadrat)
Native richness	low High	low	1-2 sp low	low	-	Litter	No. trees with hollows y/low
Native cover	100%	100%	40%	40%	-	Bare ground	Woody debris lineal metres low
Exotic cover	-	-	30%	-	-	Cryptogam	Woody regeneration No. upper stratum sp. & abundance. moderate

(within 0.1 ha quadrat)

Woody stem-sizes (DBH) (tally within category)	≥ 5– <10	≥10– <20	≥20– <30	≥30 cm DBH measure all	
(or, measure all ≥5cm DBH)					
Tree health	no evidence	branchlets dead	small branches dead	main branches dead	trees dead

Landuse and landcover

Age structure	early regeneration	advanced regeneration	uneven age	mature	senescent	
Landuse (dominant)	nature conservation	travelling stock route	forestry	grazing	cropping	other: mining re-vegetation weed control
Landcover (upper stratum)	none	native	environmental planting	native plantation	exotic other:	
Landcover (ground stratum)	none	native	environmental planting	native plantation	exotic other: Annual & perennial sporeadic weeds	

Site history

	Freq. code	Age code	Land manager survey: categories, quantities, comments
Grazing management			not grazed set stocked rotational / cell grazing
Farming			none direct drill disc plough mouldboard rotary hoe
Erosion control			none contour cultivation mulching banks other
Pasture improvement rates (fertiliser) kg/ha			none <125 125-250 >250
Pasture improvement rates (lime/dolomite) t/ha			none <2 2-4 4-7 >7
Timber extraction (incl. firewood)			-Revegetation area/low brush debris

Site history, continued

	Freq. code	Age code	Land manager survey: categories, quantities, comments
Regrowth management			n/a
Weed control		5yrs	Removal of woody's, suppression of groundworks
Pest animal control			n/a
Burning			n/a
Other			Revegetation program in past

Frequency: 0=no record, 1=rare (>5yrs), 2=occasional (2-5yrs), 3=frequent (<2yrs) Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Plot disturbance

	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			
Cultivation (inc. pasture)			
Soil erosion			
Firewood collection			
Grazing			
Fire damage			
Storm damage			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Focal taxa

(e.g. disturbance sensitive spp., ROTAPS, etc. within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
Mid	T		Melaleuca spp. Callistemon	30%	low		
			x sparse/lack diversity of ground h shrub strata.				

Physiography Holocene alluvium (59%) Wianamatta Shale (22%) Mittagong form (8%)

Morphological Type	Landform Element	Landform Pattern	Microrelief
Lithology	Soil surface Texture	Soil Colour	Soil Depth
Slope mod	Aspect Sth west	Site drainage	Distance to nearest water and type >200m.

Hawkesbury Sandstone (81%) Tertiary alluvium (31%)

Native Vegetation Interim Type Standard

DECCW VEGETATION FIELD SURVEY FORM

Module 2 Full floristics

Site no.

Floristics

(within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
Upper	T		E. Elata.				
Mid	S		Bursaria spinosa.				
Mid	T		Acacia floribunda				
Vine	Vine		Passiflora cinerariaea				
Mid	S		leptaspermum (polyanthus)				
Mid	T		Melia azedarach				
Ground	G		austrastipa racemosa				
Ground	G		lamandra longifolia				
Mid	T		Acacia decurrens				
Upper	T		Casuarina cunninghamiana				
Upper	T		E. baueriana				
Shrub	S		Hymenthra dentata				
Ground	H		Einadiola spp.				
Upper	T		Unknown ribbon gum				
			Mistletoe spp.				
✓	✓	Moth vine	Moth-v				
	✓	Trad					
	✓	Sida					
	✓	Mustard seed					
	✓	Purple top					
	✓	turkey rubarb					
	✓	Erhanta.					
	✓	Blackberry nightshock	Solanum nigrum				
	✓	Inkweed					
	✓	thistle.					
	✓	Alea bone.					
	✓	African love grass					
	Vine		Clematis aristata.				

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern, F=forb, L=vine, A=cycad, P=palm, X=xanthorrhoea, U=samphire shrub.

Cover: (<1% see explanatory notes) 1,2,3,4,5,10,15,20,25,30,35, etc. crown cover %

Abund: 1,2,3,4,5,6,7,8,9,10,20,50,100,500,1000 (>1000 see explanatory notes)



Plot 4 – Zone 4 Scheduled for restoration works 2018-2019 program

DECCW VEGETATION FIELD SURVEY FORM

Module 1 (Minimum requirements)

Location

		Survey code	Plot no.	Recorders
Date	12/7/18	Plot ID.	4	JP, AR
AMG grid reference	zone 54 55 56	datum	Easting	Northing
Base plot size	10x10	Orientation of 0.1ha plot	marked	yes no photo # / orientation Sw

Structure & composition (within 0.04 ha quadrat)

Keith class	Dry Sclerophyll forest (Scl)	Confidence: high mod low N.A
Regional veg class (BVT)	Sand flats	Confidence: high mod low N.A
BioMetric type (or NVCA)		Confidence: high mod low N.A
Other: Tozer	Alluvial Woodland	Confidence: high mod low N.A

NVIS level V (within 0.04 ha quadrat)

Stratum	Growth form	Species name	Cover	Abund.	For the entire	Field
Upper		E Elata	70-80%	67	Upper stratum	
Upper					Height to crown (m)	
Upper					min mode max	
Upper		Acacia decurrens		1		
Mid		Acacia floribunda		4	Mid stratum	
Mid		Trema tormentosa		3	Height to crown (m)	
Mid		Clematis		1	min mode max	
Ground		Dicandra repens	10-20%		Ground stratum	
Ground		Pteridium	45%		Height to crown (m)	
Ground		Protia purpurea	45%		min mode max	

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fern

Cover: 0-1, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, 35, etc. Abundance: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 50, 100, 500, 1000, >1000

phyllanthus spp. <5 seedlings
 austrostipa racemosa <10%
 hymenandra stenoloba <10%

DECCW VEGETATION FIELD SURVEY FORM

Site no.

Condition

(within 0.04 ha)	Upper stratum	Mid stratum	Ground stratum Grasses	Ground stratum Shrubs	Ground stratum Other	Cover %	(within 0.1 ha quadrat)
Native richness	low	low	low	low	mod	Litter	No. trees with hollows
Native cover	100%	80%	20-30%	10-15%	-	Bare ground	Woody debris lineal metres
Exotic cover	-	10%	5%	5%	5%	Cryptogam	Woody regeneration No. upper stratum sp. & abundance.

(within 0.1 ha quadrat)

Woody stem-sizes (DBH) (tally within category)	≥ 5– <10	≥10– <20	≥20– <30	≥30 cm DBH measure all	
(or, measure all ≥5cm DBH)					
Tree health	no evidence	branchlets dead	small branches dead	main branches dead	trees dead

Landuse and landcover

Age structure	early regeneration	advanced regeneration	uneven age	mature	senescent	
Landuse (dominant)	nature conservation	travelling stock route	forestry	grazing	cropping	other: <i>mining</i>
Landcover (upper stratum)	none	native	environmental planting	native plantation	exotic other:	
Landcover (ground stratum)	none	native	environmental planting	native plantation	exotic other:	

Site history

	Freq. code	Age code	Land manager survey: categories, quantities, comments			
Grazing management			not grazed	set stocked	rotational / cell grazing	
Farming			none	direct drill	disc plough tined implement	mouldboard rotary hoe
Erosion control			none	contour cultivation	mulching banks	other
Pasture improvement rates (fertiliser) kg/ha			none	<125	125-250	>250
Pasture improvement rates (lime/dolomite) t/ha			none	<2	2-4	4-7 >7
Timber extraction (incl. firewood)			n/a.			

Site history, continued

	Freq. code	Age code	Land manager survey: categories, quantities, comments
Regrowth management			n/a
Weed control			n/a
Pest animal control			n/a
Burning			n/a
Other			n/a

Frequency: 0=no record, 1=rare (>5yrs), 2=occasional (2-5yrs), 3=frequent (<2yrs) Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Plot disturbance

	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			n/a
Cultivation (inc. pasture)			n/a
Soil erosion			n/a
Firewood collection			n/a
Grazing			n/a
Fire damage			n/a
Storm damage			n/a
Other			Heavily weed infestation

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Focal taxa

(e.g. disturbance sensitive spp., ROTAPS, etc. within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
		Endangered plat pomaderis					
		* Lack of flowering/nectar shrub spp.					

Physiography

Morphological Type	Landform Element	Landform Pattern	Microrrelief
Lithology	Soil surface Texture	Soil Colour	Soil Depth
Slope	Aspect	Site drainage	Distance to nearest water and type

→ Holocene alluvium (59.1%), Wianamatta Shale (22.1%), Mithagang formation (8.1%),
Native Vegetation Interim Type Standard
Hawks Sandstone (8.1%), Fertile alluvium (3.7%)

DECCW VEGETATION FIELD SURVEY FORM

Module 2 Full floristics

Site no.

Floristics

(within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.
			E. Blata				
			Clematis				
			Bursaria spinosa				
		Brush Kerpajong	Commersonia fraseri				
		Broken fern	Pteridium esculentum				
			Commelina cyanea				
			Passiflora cinnabarina.				
			trema tomentosa.				
			austroskipa racemosa.				
			Dicondra repens				
			Acacia floribunda.				
		Black Wattle.	Acacia decurrens				
			Hymenandra dentata				
		Snake vine					
			Pomadouris (Endangered)				
			Aralia purpurens				
			Breynia oblongifolia.				
			Glycine clandestina.				
	weed	Maple					
	"	Int weed					
	"	Crack Willow					
	"	Olive					
	"	Ballon vine					
	"	Trach					
	"	African love grass					
	"	S	Sida rhombifolia.				
	"		ligustrum spp.				
	"	Man vine					
	"		Solanum sisirifilum				
	"	Bridal Creeper					

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fem, F=forb, L=vine, A=cycad, P=palm, X=xanthorrhoea, U=samphire shrub.

Cover: (<1% see explanatory notes) 1,2,3,4,5,10,15,20,25,30,35, etc. crown cover %

Abund: 1,2,3,4,5,6,7,8,9,10,20,50,100,500,1000 (>1000 see explanatory notes)



Plot 5 – Zone 7 scheduled for restoration works 2018-2019 program

DECCW VEGETATION FIELD SURVEY FORM

Module 1 (Minimum requirements)

Location

		Survey code	Plot no.	Recorders		
Date	12-7-18	Plot ID	5			
AMG grid reference	zone 54 55 56	datum	Easting	Northing	Position in quadrat	
Base plot size	10x10m	Orientation of 0.1ha plot	marked	yes no	photo # / orientation	048 / East

Structure & composition (within 0.04 ha quadrat)

Keith class	Dry River Sclerophyll forest (by Sand flat)	Confidence: high mod low N.A.
Regional veg class (BVT)		Confidence: high mod low N.A.
BioMetric type (or NVCA)		Confidence: high mod low N.A.
Other:	Alluvial Woodland	Confidence: high mod low N.A.

NVIS level V (within 0.04 ha quadrat)

Stratum	Growth form	Species name	Cover	Abund.	For the entire	Field
Upper	T	E. Gladiolus		4	Upper stratum	
Upper					Height to crown (m)	
Upper					min mode max	
Mid	S	Hymenocallis densata		4	Mid stratum	
Mid		phylanthus spp.			Height to crown (m)	
Mid	S	phyllanthus spp.			min mode max	
Ground	S	Lomandra longifolia		2	Ground stratum	
Ground					Height to crown (m)	
Ground	V	Clematis aristata	27%		min mode max	

Growth form: T=tree, M=mallee tree, S=shrub, Y=mallee shrub, Z=heath shrub, C=chenopod shrub, G=tussock grass, H=hummock grass, D=sod grass, V=sedge, R=rush, E=fem
 Cover: 0-1, 1, 2, 3, 4, 5, 10, 15, 20, 25, 30, 35, etc. Abundance: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 50, 100, 500, 1000, >1000

DECCW VEGETATION FIELD SURVEY FORM

Site no.

Condition

(within 0.04 ha)	Upper stratum	Mid stratum	Ground stratum Grasses	Ground stratum Shrubs	Ground stratum Other	Cover %	(within 0.1 ha quadrat)
Native richness	low 100%	absent	low	low	low	Litter	No. trees with hollows No
Native cover	100%	—	10-15%	5%	—	Bare ground	Woody debris linear metres low
Exotic cover	—	90% 100%	10-15%	15%	15%	Cryptogam	Woody regeneration No. upper stratum sp. & abundance.

(within 0.1 ha quadrat)

Woody stem-sizes (DBH) (tally within category)	≥ 5– <10	≥10– <20	≥20– <30	≥30 cm DBH measure all	
(or, measure all ≥5cm DBH)					
Tree health	no evidence	branchlets dead	small branches dead	main branches dead	trees dead

Landuse and landcover

Age structure	early regeneration	advanced regeneration	uneven age	mature	senescent	
Landuse (dominant)	nature conservation	travelling stock route	forestry	grazing	cropping	other: old mining
Landcover (upper stratum)	none	native	environmental planting	native plantation	exotic other	
Landcover (ground stratum)	none	native	environmental planting	native plantation	exotic other	

Site history

	Freq. code	Age code	Land manager survey: categories, quantities, comments			
Grazing management			not grazed	set stocked	rotational / cell grazing	
Farming			none	direct drill	disc plough tined implement	mouldboard rotary hoe
Erosion control			none	contour cultivation	mulching banks	other
Pasture improvement rates (fertiliser) kg/ha			none	<125	125–250	>250
Pasture improvement rates (lime/dolomite) t/ha			none	<2	2–4	4–7 >7
Timber extraction (incl. firewood)						

Site history, continued

	Freq. code	Age code	Land manager survey: categories, quantities, comments
Regrowth management			n/a
Weed control			Not in the last 5 yrs
Pest animal control			n/a
Burning			n/a
Other			n/a

Frequency: 0=no record, 1=rare (>5yrs), 2=occasional (2-5yrs), 3=frequent (<2yrs) Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Plot disturbance

	Severity code	Age code	Observational evidence:
Clearing (inc. logging)			
Cultivation (inc. pasture)			
Soil erosion			
Firewood collection			
Grazing			
Fire damage			
Storm damage			
Other			

Severity: 0=no evidence, 1=light, 2=moderate, 3=severe Age: R=recent (<3yrs), NR=not recent (3-10yrs), O=old (>10yrs)

Focal taxa

(e.g. disturbance sensitive spp., ROTAPS, etc. within 0.04 ha quadrat)

Stratum	Growth form	Field name	Species name	Cover	Abund.	Field no.	RBG no.

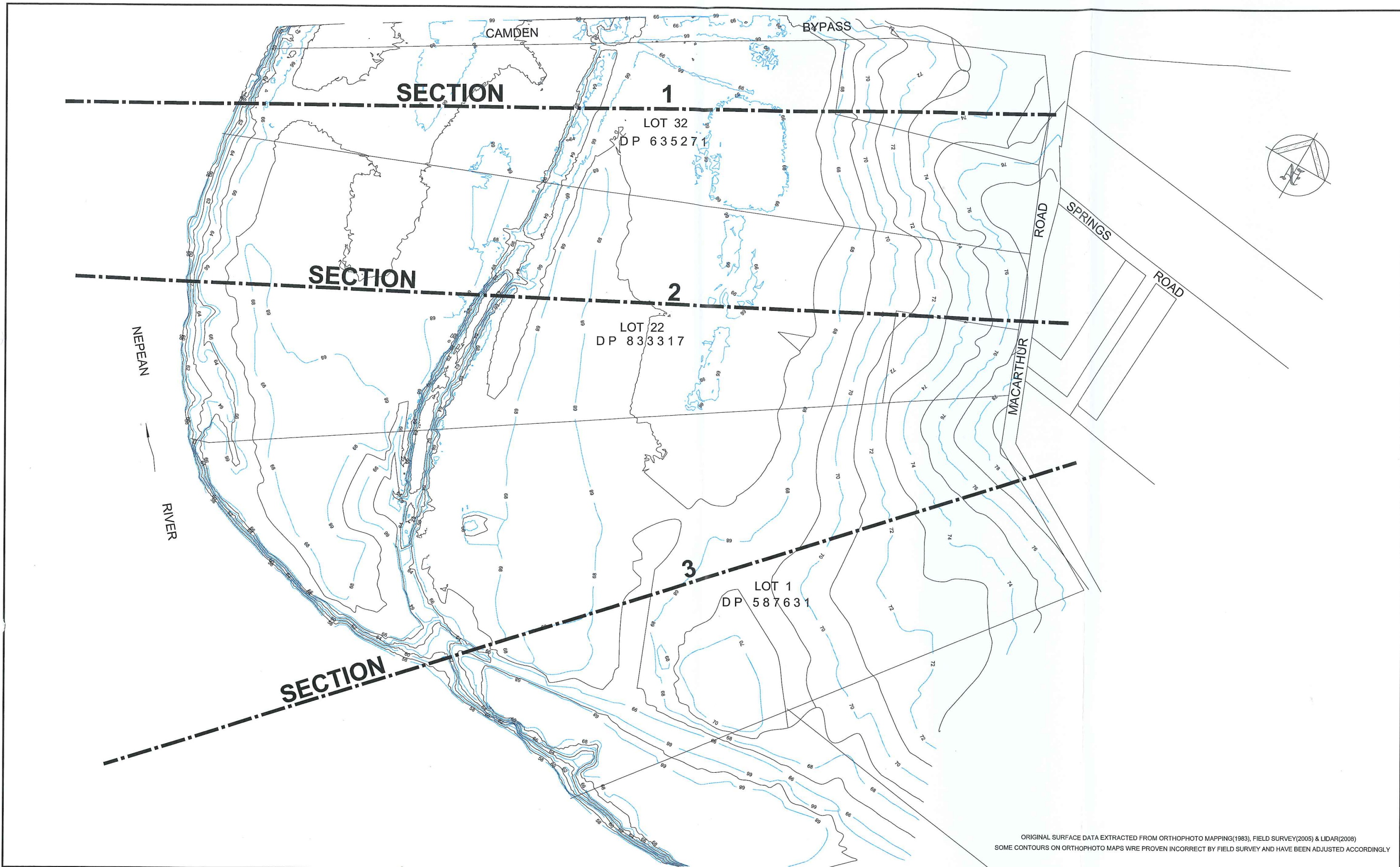
Physiography

Morphological Type	Landform Element	Landform Pattern	Microrelief
Lithology	Soil surface Texture	Soil Colour Dark rich silt	Soil Depth
Slope	Aspect Sth West	Site drainage	Distance to nearest water and type

* Holocene alluvium (59%), Manamatta shale (22%), Miltagong form (8%),
Native Vegetation Interim Type Standard
Huskberry Sandstone (8%), Tertiary alluvium (37%)

APPENDIX 4

FINAL LANDFORM DESIGN



ORIGINAL SURFACE DATA EXTRACTED FROM ORTHOPHOTO MAPPING(1983), FIELD SURVEY(2005) & LIDAR(2008)
SOME CONTOURS ON ORTHOPHOTO MAPS WRE PROVEN INCORRECT BY FIELD SURVEY AND HAVE BEEN ADJUSTED ACCORDINGLY

REVISION	DATE	DES/IFT	APPD

Principal
M. COLLINS & SONS Pty. Ltd
17 Patrick St.
REVESBY, NSW. 2212

Designed
D. Morison
Drawn
D. Morison
Checked
D. Morison
Authorised
P. McNamara
Date
Feb. 2012

Scale @ A1
Hor. 1:2500

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SPRING FARM
MACARTHUR ROAD
Department of Planning and Infrastructure
ORIGINAL SURFACE CONTOURS (1983)

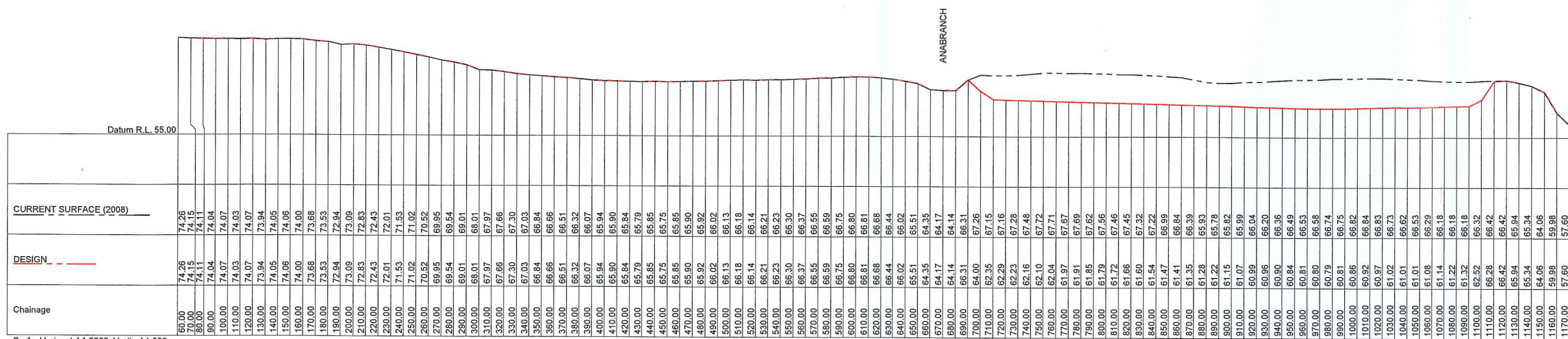
Drawing No. 77310.01.P08
Sheet No. 1 of 4

Rev -

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NOTES

1. ORIGINAL SURFACE DATA EXTRACTED FROM ORTHOPHOTO MAPPING(1983), FIELD SURVEY(2005) & LIDAR(2008)
2. CURRENT SURFACE DATA EXTRACTED FROM LIDAR (2008)
3. DESIGN SURFACE DATA EXTRACTED FROM JOHNSTONE ENVIRONMENTAL TECHNOLOGY Pty. Ltd., Plan No. JET0328 Drawings 1-16 Issue 4 Dated 11/04/2001 & SMEC URBAN Plan No. 77310.01.P04-P07 Dated 13/10/2011

REVISION	DATE	DES/DT	APPD
A REVISE SHEET LAYOUT	2/12	MS	

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Date
Feb. 2012

Scale @ A1
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SPRING FARM
MACARTHUR ROAD
Department of Planning and Infrastructure
Sand Mining Cross Sections

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Sheet No. 4 of 6

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Hor. 1:2000 Ver. 1:500



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Drawing No. 77310.01.P12
Sheet No. 5 of 6

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D.Morison

Drawn
D.Morison

Checked
D.Morison

Authorised
P.McNamara

Date
Feb. 2012

Scale @ A1
Hor. 1:2000 Ver. 1:500

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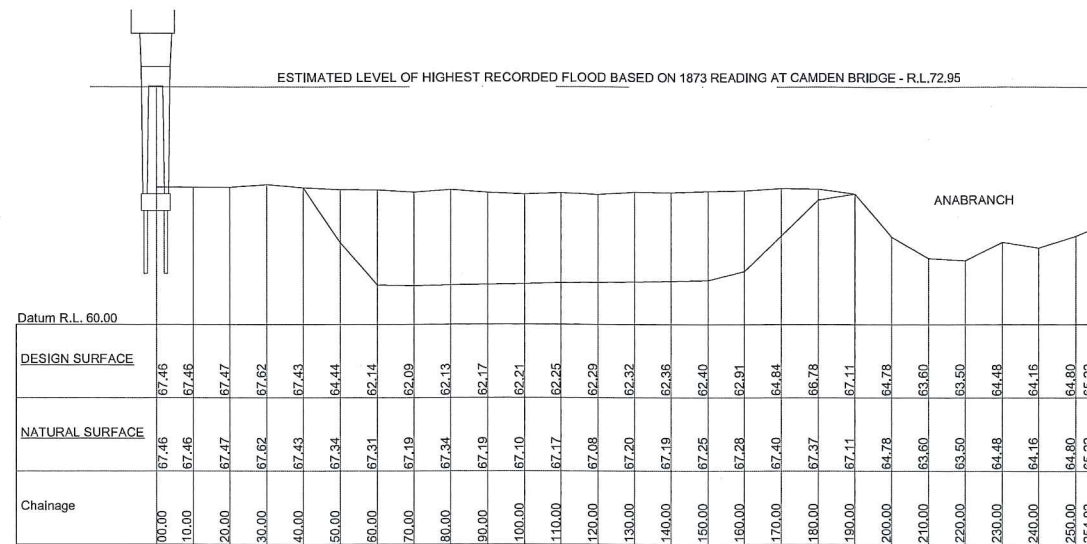
SPRING FARM
MACARTHUR ROAD
Department of Planning and Infrastructure
Sand Mining Cross Sections

Drawing No. 77310.01.P13
Sheet No. 6 of 6

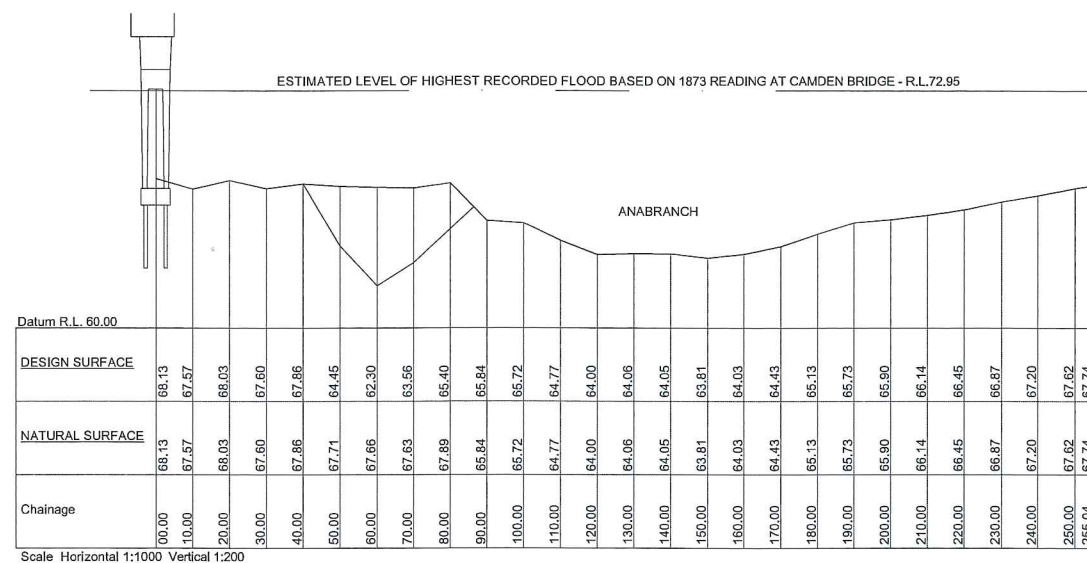
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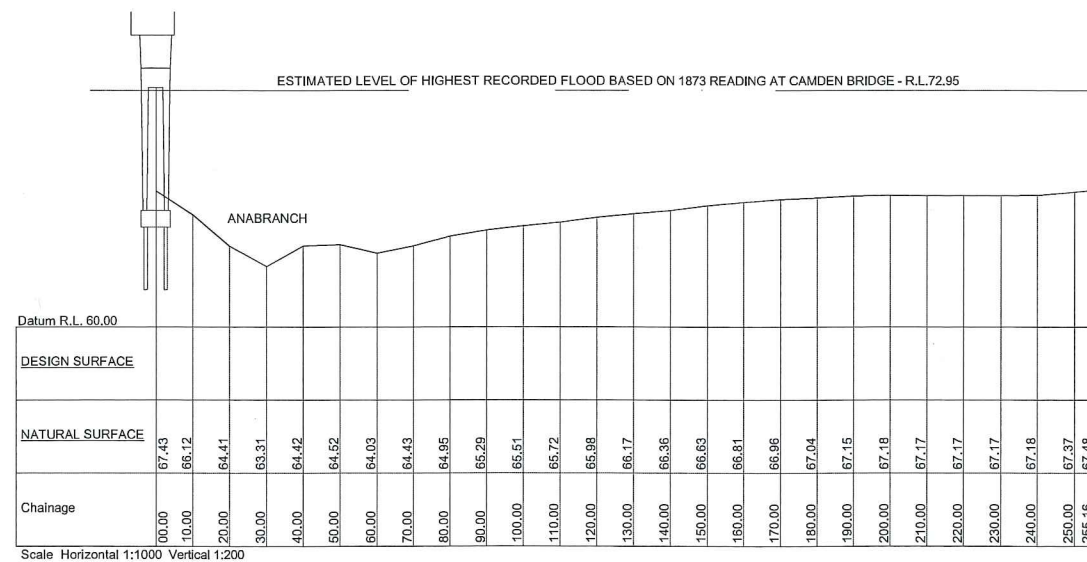




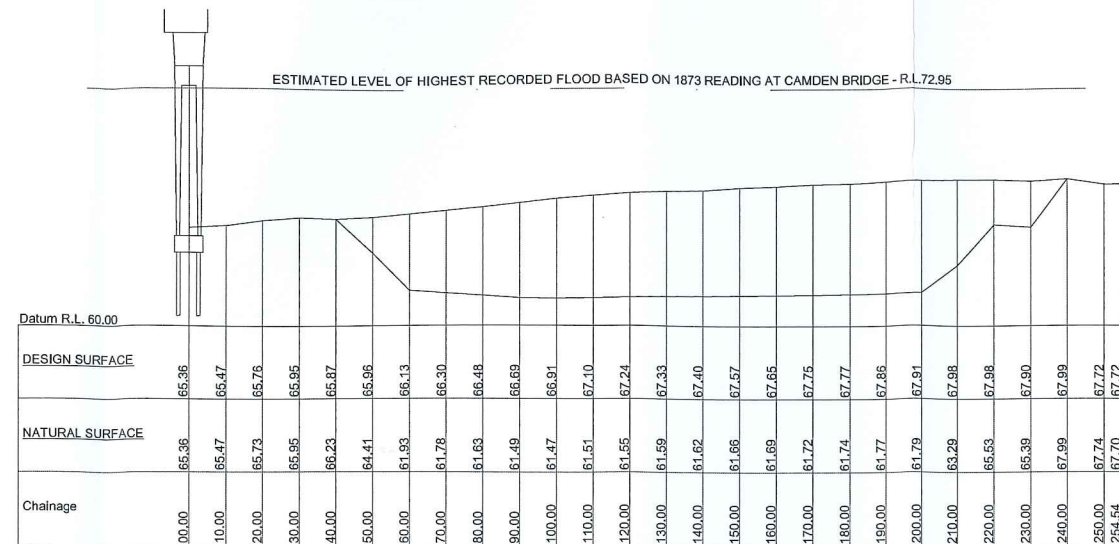
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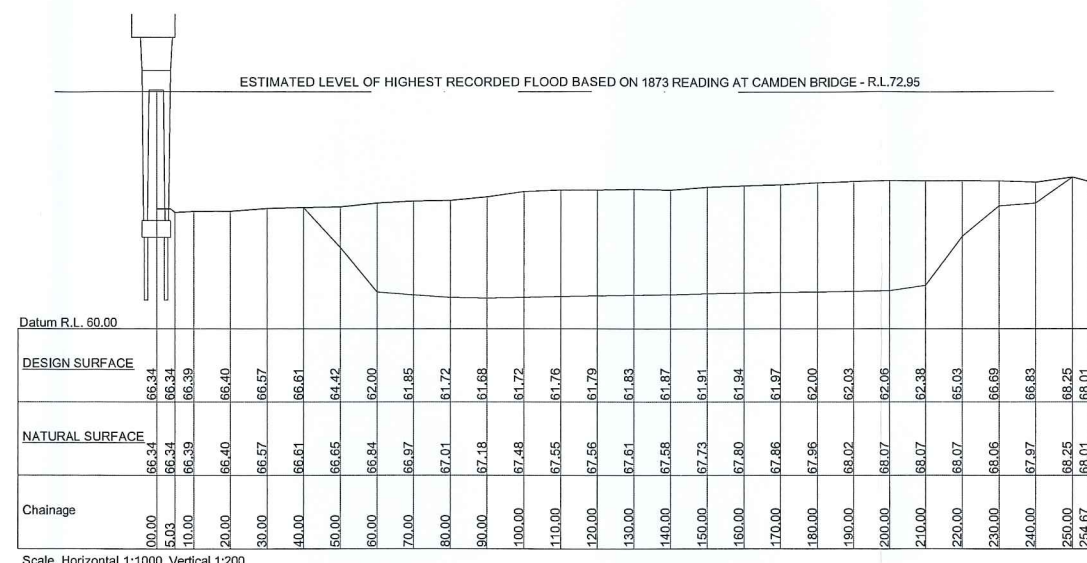
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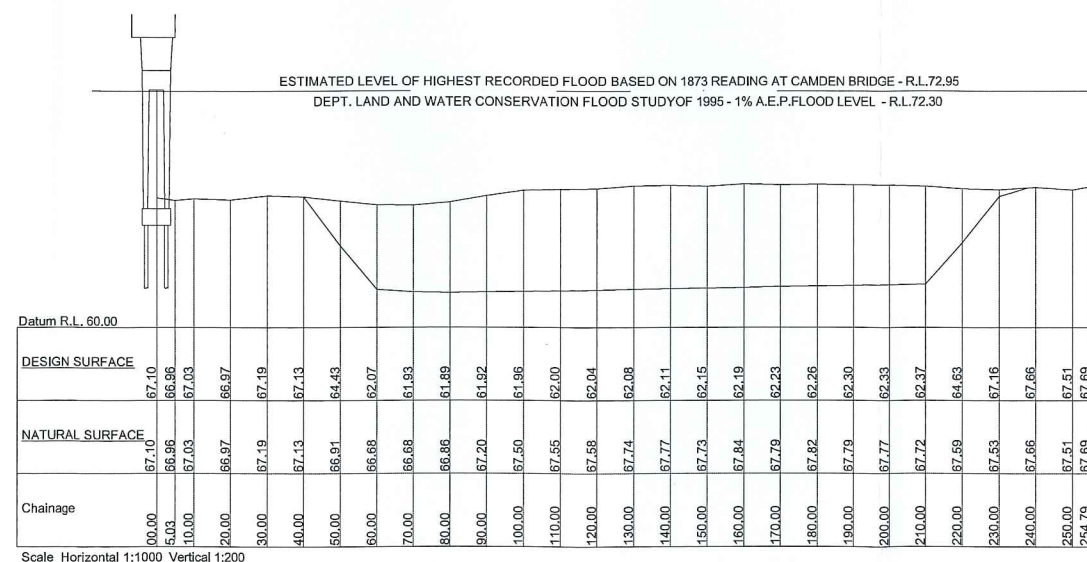
X-SECTION -PIER 10



X-SECTION -PIER 15



X-SECTION -PIER 14



X-SECTION -PIER 13

NOTE :-
DATA RELATING TO BRIDGE STRUCTURE AND FLOOD LEVEL
HAS BEEN OBTAINED FROM DEPARTMENT OF MAIN ROADS PLANS
NUMBERED 0002 0758C2712 DATED 15-09-1970
AND PARTIALLY BY FIELD SURVEY

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NO.	AMENDMENT	DATE	DRAWN	CHECK'D	AUTH'D

CLIENT/PROJECT		
M. COLLINS & SONS PTY LTD		
SURV'D/DES'G'D	CHECKED	AUTHORISED

AUTHORITY	SCALE
CAMDEN COUNCIL	AS SHOWN
PROPERTY DESCRIPTION	ORIGIN OF LEVELS
LOT 32 DP 635271	FROM GPS & LIDAR SURVEY
LOCALITY	DATUM
ELDERSLIE	APPROX. A.H.D.

MACARTHUR ROAD					
CROSS SECTIONS OF PROPOSED SAND EXTRACTION AREA					
DATE	DRAWN	SHEET	OF	AMENDMENT	DRAWING No
13.10.2011	DGM	2	3		77310.01.P05

APPENDIX 5

SUMMARY OF WEED CONTROL TECHNIQUES

Common Name	Botanical Name	Status	Removal Techniques
African love grass	<i>Eragrostis curvula</i>	Environmental Weed	Slash or mow before it sets seed along roads and in highly disturbed areas. Spot spray with diluted 1:100 Roundup. Hand remove isolated plants.
Dodder	<i>Cuscuta sp.</i>	Environmental Weed	Hand remove.
Blackberry	<i>Rubus fruticosus agg. Spp.</i>	Noxious Weed W2	Cut and paint crown/lignotuber with undiluted Roundup or Garlon and diesel immediately for isolated plants. Slash large populations and spray re-growth with selective herbicide Garlon, Grazon or Brushoff at flowering/fruiting stage.
Bridal Creeper	<i>Myrsiphyllum asparagoides</i>	Environmental Weed	Hand remove (i.e. by crowning with a knife) isolated plants after removing and bagging fruit. Spray large populations with Brushoff at flowering stage.
Cobblers peg	<i>Bidens pilosa</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup. Best done before it sets seed. Hand remove isolated plants.
Crofton weed	<i>Ageratina adenophora</i>	Environmental Weed	Hand remove or spray with 1:100 Roundup.
Fireweed	<i>Senecio madagascariensis</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup. Best done before it sets seed. Hand remove isolated plants.
Fleabane	<i>Conyza spp.</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup. Best done before it sets seed. Hand remove isolated plants.
Green cestrum	<i>Cestrum parqui</i>	Noxious Weed W2	Stem scrape and paint with Garlon and diesel (i.e. both sides of stem) immediately at flowering stage. Remove and bag fruit.
Inkweed	<i>Phytolacca octandra</i>	Environmental Weed	Hand remove or cut and paint base with undiluted Roundup after removing and bagging fruit.
Kikuyu	<i>Pennisetum clandestinum</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup.
Lantana	<i>Lantana camara</i>	Noxious Weed W2	Cut and paint base of trunks with undiluted Roundup immediately. Slash Lantana stems into 2x2 metre piles. Treatment of re-growth may be necessary as layering stems may re-shoot. Hand remove seedlings.
Large leaf privet	<i>Ligustrum lucidum</i>	Environmental Weed	Cut and paint base of trunk or drill/chisel trunk (>10cm diameter) and inject with undiluted Roundup immediately before fruiting stage. Hand remove or spot spray seedlings with 1:100 Roundup.
Madiera winter cherry	<i>Solanum pseudocapsicum</i>	Environmental Weed	Stem scrape and paint with Garlon and diesel (i.e. both sides of stem) immediately at flowering stage. Remove and bag fruit.
Moth plant	<i>Arauja sericifolia</i>	Environmental Weed	Hand remove or cut and paint base of stems with undiluted Roundup after removing and bagging fruit.
Paddy's lucerne	<i>Sida rhombifolia</i>	Environmental Weed	Hand remove or cut and paint base with undiluted Roundup. Slash large populations and spray re-growth with 1:100 Roundup.
Pampas grass	<i>Cortaderia spp.</i>	Noxious Weed W2	Spot spray with diluted 1:70 Roundup after removing and bagging fruit/flowering stems.
Paspalum	<i>Paspalum dilatatum</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup.
Prickly pear	<i>Opuntia spp.</i>	Noxious Weed W4f	Mattock/hand remove all parts of plant.
Boneseed	<i>Chrysanthemoides monilifera</i>	Environmental Weed	Spray actively growing plants, spray to wet all foliage. Spray Roundup at a ratio of 1:100.
Scotch thistle	<i>Onopordum acanthium</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup. Best done before it sets seed. Hand remove isolated plants.
Broom	<i>Spp.</i>	Environmental Weed	Spray with Garlon 600 Herbicide.
Silky oak	<i>Grevillea robusta</i>	Environmental	Cut and paint base of trunk or drill/chisel trunk

Common Name	Botanical Name	Status	Removal Techniques
		Weed	(>10cm diameter) and inject with undiluted Roundup immediately. Hand remove seedlings.
Small leaf privet	<i>Ligustrum sinense</i>	Environmental Weed	Cut and paint base of trunk or drill/chisel trunk (>10cm diameter) and inject with undiluted Roundup immediately before fruiting stage. Hand remove or spot spray seedlings with 1:100 Roundup. Treatment of re-growth may be necessary as the plant has the ability to sucker from roots.
Sowthistle	<i>Sonchus oleraceus</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup. Best done before it sets seed. Hand remove isolated plants.
Verbena	<i>Verbena spp.</i>	Environmental Weed	Spot spray with diluted 1:100 Roundup. Best done before it sets seed.
Wandering jew	<i>Tradescantia fluminensis</i>	Environmental Weed	Spot spray with 1:50 Roundup or Starane. It is photo-inhibited so must be treated on overcast days after rain. Rake and hand remove all stem fragments in small populations amongst native species.
Mother of millions	<i>Kalanchoe tubiflora</i>	Environmental Weed	Remove by hand, bag all plant material and dispose of in appropriate manner.

Note: Not all weeds listed in the above table are currently found on-site. Weeds in the above table are found in the locality and the information regarding their treatment will assist those involved in future management of the site should infestation occur.

APPENDIX 6

EXAMPLE FIELD MONITORING SHEET

Landscape Management Plan Monitoring Field Sheet

Project: _____

Date: _____

Quadrat: _____

Recorder: _____

Measure	Observation				Comments/Actions Required	Responsibility	Completion Date
Plant Growth (cm):							
Trees	0-5	5-20	20-50	50+			
Understorey	0-5	5-10	10-30	30+			
Ground cover	0-5	5-10	10-20	20+			
Percentage Cover (%):							
Trees	0-10	10-50	50-85	85+			
Understorey	0-10	10-50	50-85	85+			
Ground cover	0-10	10-50	50-85	85+			
Survival Rates (%):							
Trees (Minimum 85%)	0-10	10-50	50-85	85+			
Understorey (Minimum 85%)	0-10	10-50	50-85	85+			
Ground cover (below 85%)	0-10	10-50	50-85	85+			
Plant replacement required/Ha							
Trees	0-5	5-20	20-50	50+			
Understorey	0-5	5-20	20-50	50+			
Ground cover	0-5	5-50	50-100	100+			
Weed regrowth (% cover below 15%)	0-10	10-50	50-85	85+			
Condition of Tree Guards	Poor	Ok	Good				
Watering required	Yes	Some	No				
Stream bank erosion	Stable	Slight	Mod.	Severe			

Photographs:

Number

Location

Direction

Comments:

APPENDIX 7

AGRICULTURAL ASSESSMENT – RECONSTRUCTED AGRICULTURAL LANDFORM



Harvest Scientific Services Pty Ltd
Geotechnical Environmental & Resource Consultants
ABN 43 132 363 289

AGRICULTURAL ASSESSMENT

RECONSTRUCTED AGRICULTURAL LANDFORM

Macarthur Road, Spring Farm

Prepared for:

M Collins and Sons (Contractors) Pty Ltd

**Job reference: 201279
14 December 2011**

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Revisions register

Version	Date	Details
1	30/11/2011	Draft report for comment
2	14/12/2011	Report finalised. Minor typographical changes.

Executive summary

Introduction and background

M Collins and Sons (Contractors) Pty Ltd (MCS Pty Ltd) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 MCS Pty Ltd was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

MCS Pty Ltd is currently seeking a further modification under Section 75W of the Environmental Planning and Assessment Act (1979) (NSW) to extend sand and soil extraction activities onto an adjacent portion of land within Lot 32 DP 635271. The extension of extraction activities are proposed to consist of the following features:

- Extraction of sand and soil within a 6.8 hectare (approximate) portion of land within Lot 32 DP 635271.
- Dry screening of sand and soil within the quarry floor;
- Active extraction within a 1 hectare portion of land at a time and concurrent rehabilitation works within an additional 1 hectare portion of land;
- Extraction and rehabilitation works are proposed to occur in concert over an 8 year period (completion in 2019); and
- Rehabilitation maintenance activities are proposed to occur over an additional 2 year period.

Agricultural production areas are proposed to be rehabilitated subject to the following controls:

- At the completion of extraction within any given extraction cell that is to be utilised for future agricultural production (Zone 3 - Figure 3), the ground is to be prepared by ripping to a depth of 300 to 400 mm, no further than 300 mm apart. First stages of ripping should run down any batters or contours followed by a cross ripping along the contours. The cross rip will reduce the chance of incisions after periods of rain, help retain moisture on sloping surfaces, fracture soil between rip lines, eliminate glazing of the undisturbed soil interface and reduce air pockets and trench effects.
- The entire area is then to be covered to a minimum depth of 500 mm with stock-piled top-soil (stored in the bunded mound around the extraction pit). Pasture grasses are then to be re-established by either natural re-generation from grass seed stored in the topsoil stock-pile or seeding with pasture species.

Director General Requirements for the proposed modification were issued on 23 December 2010. As part of the consultation process for the Environmental Assessment, the NSW Department of Trade & Investment, Regional Infrastructure & Services (DT&IRIS, 2011) made the following comments in relation to the post extraction agricultural landform:

'Agriculture issues

'The Cultural Landscape & Visual Assessment report seems to lack the historical context of the agricultural landscape association between the land proposed for sand and soil extraction and the broader Camden agricultural heritage. The Aboriginal Archaeological Assessment notes that the land was most likely cleared for agriculture in the 1830s and able to be cultivated for crops 1 market gardens and growing grapes which demonstrate the versatility and robust nature of farming on class 1 agricultural soil.

The Landscape Management Plan is adequate for the restoration for agricultural uses. Environmental Risk Assessment - There is a risk that the rehabilitation does not return the extracted area to class 1 agricultural

land. Demonstration of successful rehabilitation and return to agricultural suitability on previously extracted areas may assist in determining the risk level.'

In response to the above correspondence, Harvest Scientific Services Pty Ltd has been engaged by MSC Pty Ltd to prepare an Agricultural Assessment for a portion of the M Collins and Sons (Contractors) Pty Ltd site that has been subject to similar land-forming and rehabilitation controls to those proposed as part of the current sand and soil extension proposal.

Aims and objectives

This Agricultural Assessment aims to:

- Describe the soil and agricultural conditions of a portion of the subject site that has previously been subject to land-forming activities and subsequent profile re-construction; and
- Classify the agricultural capacity of the re-habilitated landform.

Methodology

This assessment was subject to the following methodology:

- A visual site inspection;
- Excavation of a soil test-pit; and
- Classification of the agricultural capacity of the subject land with reference to the classification system outlined in the Agricultural Classification Atlas (**NSW Agriculture, 1991**).

Results

At the time of the site inspection, the investigation area was intensively cropped with turf farming (**Plate 1**) and had been continuously intensively cropped since the land was re-habilitated. No surficial constraints to agricultural production were evident.

The soil profile (**Plate 2**) consisted of approximately 450mm of brown sandy loam with a weak to massive structure. Some soil compaction was noted in the zone of approximately 100 to 300mm below ground level. Located immediately below the topsoil horizon was a loose friable moderately structured red sandy clay sub-soil.

Whilst some compaction was noted in the zone of approximately 100 to 300mm below ground level, this constraint is minor and consistent with adjacent areas of alluvial 'Class 1' agricultural lands. Soil compaction in the turf farming environments result from a combination of intensive management (and associated vehicle movements), organic matter depletion (due harvesting of the organic rich layer with the product) and sodicity.

Soil compaction on Class 1 Agricultural lands is routinely managed by ripping to the depth of compaction, addition of gypsum and organic matter as required.

Conclusion

Based on the findings of this assessment it was found that the re-constructed soil profile and associated soil landscape was consistent with the 'Class 1' Agricultural land. The proposed method of profile re-construction is therefore considered appropriate to return the subject land to 'Class 1' agricultural land.

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Table 1 Summary of the five agricultural classes as described by NSW Agriculture (2002)

PLATES

Plate 1 View of the re-constructed agricultural landform – currently utilised for turf farming
 Plate 2 View of the re-constructed soil profile

1. INTRODUCTION

M Collins and Sons (Contractors) Pty Ltd (MCS Pty Ltd) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 Collins was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

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- The entire area is then to be covered to a minimum depth of 500 mm with stock-piled top-soil (stored in the bunded mound around the extraction pit). Pasture grasses are then to be re-established by either natural re-generation from grass seed stored in the topsoil stock-pile or seeding with pasture species.

Director General Requirements for the proposed modification were issued on 23 December 2010. As part of the consultation process for the Environmental Assessment, the NSW Department of Trade & Investment, Regional Infrastructure & Services (DT&IRI&S, 2011) made the following comments in relation to the post extraction agricultural landform:

'Agriculture issues

'The Cultural Landscape & Visual Assessment report seems to lack the historical context of the agricultural landscape association between the land proposed for sand and soil extraction and the broader Camden agricultural heritage. The Aboriginal Archaeological Assessment notes that the land was most likely cleared for agriculture in the 1830s and able to be cultivated for crops 1 market gardens and growing grapes which demonstrate the versatility and robust nature of farming on class 1 agricultural soil.

The Landscape Management Plan is adequate for the restoration for agricultural uses. Environmental Risk Assessment - There is a risk that the rehabilitation does not return the extracted area to class 1 agricultural land. Demonstration of successful rehabilitation and return to agricultural suitability on previously extracted areas may assist in determining the risk level.

In response to the above correspondence, Harvest Scientific Services Pty Ltd has been engaged by MSC Pty Ltd to prepare an Agricultural Assessment for a portion of the M Collins and Sons (Contractors) Pty Ltd site that has been subject to similar land-forming and rehabilitation controls to those proposed as part of the current sand and soil extension proposal.

2. AIMS AND OBJECTIVES

The Agricultural Assessment aims to:

- Describe the soil and agricultural conditions of a portion of the subject site that has previously been subject to land-forming activities and subsequent profile re-construction; and
- Classify the agricultural capacity of the re-habilitated landform.

3. METHODOLOGY

This assessment was subject to the following methodology:

- A visual site inspection;
- Excavated a soil test-pit; and
- Classification of the agricultural capacity of the subject land with reference to the classification system outlined in the Agricultural Classification Atlas (**NSW Agriculture, 1991**).

4. AGRICULTURAL CLASSIFICATION SYSTEM

Knowledge of the relative suitability of land for agriculture is required to enable the development of strategic plans which protect land highly suited to agriculture and allow identification of land more suited to non-agricultural activities. This process requires that land be evaluated based upon generally accepted practices.

The Agricultural Land Classification method, as presented by **NSW Agriculture, (2002)** considers the various factors that influence land use in a different manner (NSW Agriculture, 2002). A brief summary of agricultural classification definitions relied upon by this method are outlined in **Table 1**.

Table 1. Summary of the five agricultural classes as described by NSW Agriculture, (2002)

Class	Definition
1	Arable land suitable for intensive cultivation where constraints to sustained high levels of agricultural production are minor or absent.
2	Arable land suitable for regular cultivation for crops but not suited to continuous cultivation. It has moderate to high suitability for agriculture, but edaphic (soil factors) or environmental constraints reduce the overall level of production and may limit the cropping phase to a rotation with sown pastures.
3	Grazing land or land well suited to pasture improvement. It may be cultivated or cropped in rotation with pasture. The overall production level is moderate because of edaphic or environmental constraints. Erosion hazard, soil structural breakdown and other factors including climate may limit the capacity for cultivation; and soil conservation or drainage works may be required.
4	Land suitable for grazing but not cultivation. Agriculture is based on native pastures or improved pastures established using minimum tillage techniques. Production may be seasonally high but the overall production level is low as a result of major environmental constraints.
5	Land suitable for agriculture or at best suited to only light grazing. Agricultural production is very low to zero as a result of severe constraints, including economic factors, which preclude land improvement.

5. SITE DESCRIPTION

5.1. Site location

The site of the former land-forming area is located immediately to the south of Lot 22 and is delineated as the investigation area (in red) on **Figure 1**.

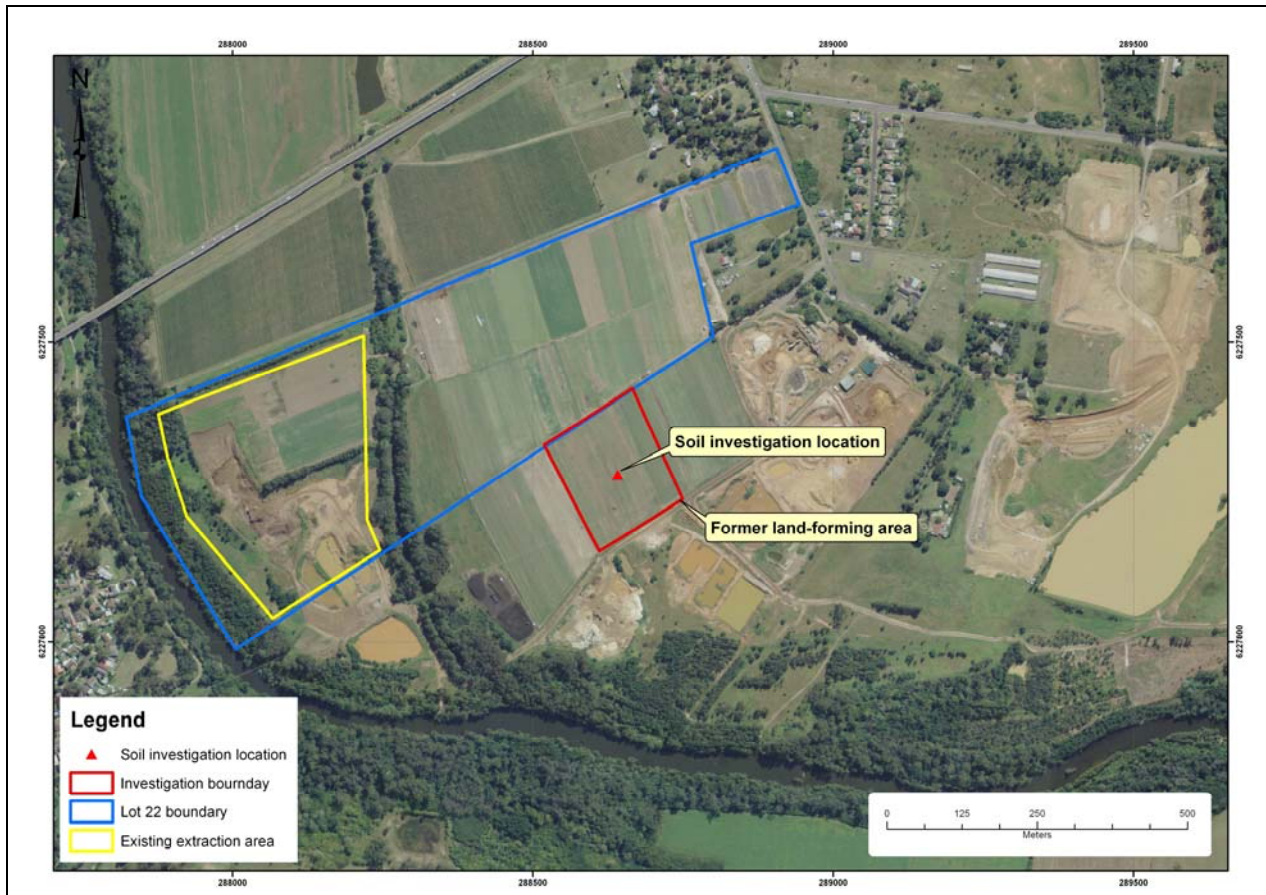


Figure 1. Site location (Lot 22 DP833317). Source: Department of Lands circa 2008.

5.2. Land-forming history

The investigation area was subject to land-forming and profile re-constructive activities approximately 8 years ago. At that time, the profile was reconstructed by the following protocols:

- Forming of the desired subsoil landform with onsite derived sandy clay and clayey sand sub-soil;
- Preparing the reconstructed sub-soil horizon by ripping to approximately 300mm; and
- Importing of approximately 300-500mm of onsite derived sandy loam top-soil onto the finished re-constructed profile.

5.3. Land-use

The investigation area has been used for turf farming continuously since the profile was re-constructed.

6. RESULTS

6.1. Visual assessment

At the time of the site inspection, the investigation area was intensively cropped with turf farming (**Plate 1**) and had been continuously intensively cropped since the land was re-habilitated.

No surficial constraints to agricultural production were evident.

6.2. Soils

The soil profile (**Plate 2**) consisted of approximately 450mm of brown sandy loam with a weak to massive structure. Some soil compaction was noted in the zone of approximately 100 to 300mm below ground level.

Located immediately below the topsoil horizon was a loose friable moderately structured red sandy clay sub-soil.

Whilst some compaction was noted in the zone of approximately 100 to 300mm below ground level, this constraint is minor and consistent with adjacent areas of alluvial 'Class 1' agricultural lands. Soil compaction in the turf farming environments result from a combination of intensive management (and associated vehicle movements), organic matter depletion (due harvesting of the organic rich layer with the product) and sodicity.

Soil compaction on Class 1 Agricultural lands is routinely managed by ripping to the depth of compaction, addition of gypsum and organic matter as required.

6.3. Agricultural classification

Based on the **NSW Agriculture (2002)** Land Classification System, the re-constructed profile and surrounding landscape is considered to be '**Class 1**' agricultural land. This land is suitable for intensive cultivation where constraints to sustained high levels of agricultural production are minor or absent.

This finding is supported by the continued use of the subject land for intensive turf-farming operations since the profile was reconstructed.

7. LIMITATIONS OF THIS REPORT

This report has been prepared subject to a number of limitations. These include:

- The application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In particular, the occurrence of earthquakes of any magnitude, extreme rainfall events or the effects of climate change have not been considered but should they occur, may have a significant impact on the site. The client agrees that such events are possible but nevertheless accepts the risk that they pose;
- The findings contained in this report are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site in question. Under no circumstances, however, can it be considered that these findings represent the actual state of the site/sites at all points;
- In preparing this report, Harvest Scientific Services Pty Ltd has relied upon certain verbal information and documentation provided by the client and/or third parties. Harvest Scientific Services Pty Ltd did not attempt to independently verify the accuracy or completeness of that information. To the extent that the conclusions and recommendations in this report are based in whole or in part on such information, they are contingent on its validity. Harvest Scientific Services Pty Ltd assume no responsibility for any consequences arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to Harvest Scientific Services Pty Ltd; and

- This report is not to be relied upon for any purpose other than that defined in this report.

8. CONCLUSION

Based on the findings of this assessment it was found that the re-constructed soil profile and associated soil landscape was consistent with the 'Class 1' Agricultural land. The proposed method of profile re-construction is therefore considered appropriate to return the subject land to 'Class 1' agricultural land.

Prepared by

A handwritten signature in black ink, appearing to read 'Jim Cupitt', written in a cursive style.

Jim Cupitt BSc Agr (Hons)
Senior Environmental Scientist

REFERENCES

- Charman, P.E.V. & Murphy, B.W. (2000) Soils: their Properties and Management (Second Edition). Oxford University Press, Melbourne.
- Hazelton, P.A. & Tille, P.J. (1990) Soil Landscapes of the Wollongong to Port Hacking 1:100,000 Sheet. Soil Conservation Service of NSW, Sydney.
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PLATES



Plate 1 View of the re-constructed agricultural landform – currently utilised for turf farming



Plate 2 View of the re-constructed soil profile. Note: Scale is 1 metre in length.

APPENDIX 3

AIR QUALITY MONITORING PROGRAM (AQMP)



DOC18/972364-3

Mr Matthew Collins
M Collins and Sons Holdings Pty Ltd
PO Box 378
NARELLAN NSW 2567

Dear Mr Collins

**M Collins and Sons Holdings Pty Ltd – Spring Farm Quarry
Air Quality Monitoring Program – EPL 4093**

M Collins and Sons Holdings Pty Ltd (Collins) wrote to the Environment Protection Authority (EPA) on 6 March 2019 providing additional information relating to the Air Quality Monitoring Program (AQMP) for the Spring Farm Quarry - Environment Protection Licence (EPL) 4093.

The information was provided in response to the EPA letter of 24 January 2019 in which the EPA made a number of observations regarding the AQMP. The EPA subsequently met with Collins on 2 April 2019, where Collins outlined the response measures and plans it has in place to reduce any potential impact on the surrounding environment.

As discussed with Collins, the EPA considers there is value in moving towards a system of real time monitoring at your Spring Farm premises. With sensitive receivers encroaching towards your premises, the EPA considers that such monitoring could be useful in providing data that can inform Trigger Action Response Plans and better environmental management. If Collins wished to investigate the implementation of a real time monitoring system, the EPA considers this would satisfy the framework for an Environmental Improvement Study and the work could be added to your EPL.

An existing condition of Collins development consent DA75/256 requires the Company to consult with the EPA in relation to the AQMP for the quarry. The EPA acknowledges receipt of the AQMP and subsequent documents in accordance with DA75/256 which we will keep on file for our records. While the EPA encourages the development of such programs to ensure Company's have determined how they will meet their statutory obligations and environmental objectives, the EPA does not approve or endorse the documents.

Should you wish to discuss this matter or have any questions please contact Mr Chris Kelly on (02) 4224 4118.

Yours sincerely

William Dove

08.04.2019

WILLIAM DOVE
Unit Head Regulation - Illawarra
Environment Protection Authority

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DOC18/972364-01

Mr Matthew Collins
M Collins and Sons Holdings Pty Ltd
PO Box 378
NARELLAN NSW 2567

Dear Mr Collins

**M Collins and Sons Holdings Pty Ltd – Spring Farm Quarry
Air Quality Monitoring Program – EPL 4093**

I refer to the 14 December 2018 email from M Collins and Sons Holdings Pty Ltd (Collins) to the Environment Protection Authority (EPA) regarding the Air Quality Monitoring Program (AQMP) for the Spring Farm Quarry - EPL 4093.

Collins advised the EPA that on 2 August 2018, the Department of Planning and Environment approved a two-year extension to consent DA75/256 allowing extraction and processing operations to continue until 30 June 2021. An existing condition of consent requires Collins to consult the EPA in relation to the Air Quality Monitoring Program for the quarry.

The EPA encourages the development of such programs to ensure proponents have determined how they will meet their statutory obligations and designated environmental objectives. The EPA does not approve or endorse the documents, as our role is to set environmental objectives for environmental/conservation management, not be directly involved in the development of strategies to achieve those objectives.

The EPA does however make the following observations regarding the Air Quality Monitoring Program:

- Operations and activities at the premises must be carried out in a manner that minimises or prevents the generation and emission of dust from the premises.
- Total suspended particles and PM10 monitoring was undertaken during April/May and September/October 2018. Based on the program report, it is not clear on how this monitoring was undertaken. The EPA requests that clarification be provided.
- There were three PM10 results at location MS3 that were close to, or exceeded, the short term 30 micrograms per cubic metre ($\mu\text{g}/\text{m}^3$) criteria.
 - 18 April 2018 - result $27.4\mu\text{g}/\text{m}^3$
 - 18 September 2018 –result $30.8\mu\text{g}/\text{m}^3$
 - 3 October 2018 –result $49.9\mu\text{g}/\text{m}^3$

Collins should include an explanation/discussion regarding results that are close to or that exceed criteria limits.

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- Deposited Dust Results (Figure 4) record a significant result in June 2018, which Collins has indicated was due to vandalism. Collins should provide clarification why it considered the matter vandalism.
- Deposited Dust Results recorded what appeared to be unusual spikes for February and March 2018 at MS3 and April 2018 at MS1 (Figure 4). Collins should include comments where any abnormal results are recorded.
- Collins has proposed two rounds of total suspended particles and PM10 monitoring in April/May and September/October 2019. The program does not however appear cover periods past 2019.
- Collins must have appropriate measures in place to monitor operations to ensure any dust impacts are minimised on the surrounding community.
- Collins has proposed to continue monitoring using similar sampling programs into the future. The EPA believes a more contemporary sampling method using real time monitoring could be more beneficial. This would provide Collins with faster and more accurate data related to its operations. Data from real time monitors can be used to generate automated dust alerts. In conjunction with real time monitoring Trigger Action Response Plans (TARPs) could be developed to inform management and mitigation measures for potentially impacted sensitive receivers. With sensitive receivers moving closer to Collins extraction areas such monitoring can be particularly useful. The EPA will discuss these measures separately with Collins.

Collins holds an Environment Protection Licence for activities undertaken at the Spring Farm Quarry and must ensure all activities are undertaken in compliance with the *Protection of the Environment Operations (POEO) Act 1997* and any associated Regulations.

Should you wish to discuss this matter or have any questions please contact Chris Kelly on telephone (02) 4224 4118.

Yours sincerely

William Dove 24 January 2019

William Dove
Unit Head Regulation - Illawarra
Environment Protection Authority



Harvest Scientific Services Pty Ltd
Geotechnical Environmental & Resource Consultants
ABN 43 132 363 289

AIR QUALITY MONITORING PROGRAM

FOR

SPRING FARM SAND AND SOIL EXTRACTION (Continuation of existing operations)

186 MACARTHUR ROAD, SPRING FARM

Prepared for:

M Collins and Sons Holdings Pty Ltd



Project Reference: 75/256/4

Date: 11/12/2018

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Figure 2	Plan of stockpiling, extraction and processing locations.
Figure 3	Recent aerial photograph of the Spring Farm extraction sites and location of dust monitoring points MS1, MS2 and MS3
Figure 4	Deposited dust results during 2018

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Table 1	Long-term impact assessment criteria for Particulate Matter
Table 2	Short-term impact assessment criteria for Particulate Matter
Table 3	Long term impact assessment criteria for Deposited Dust
Table 4	TSP and PM10 Results for April-May 2018
Table 5	TSP and PM10 Results for September-October 2018

Appendices

Appendix 1	Determination of Development Application
Appendix 2	Wind rose diagrams for Camden Airport

1. INTRODUCTION

1.1. Background

M Collins and Sons Holdings Pty Ltd (MCS) owns and operates the Spring Farm Quarry located at Spring Farm (Figure 1). Development consent for the extraction of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of sand and soil products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

Since the original grant, there have been a number of modifications applied to the project, the most recent of which (Modification No 4) were determined on 2nd August, 2018 – see Appendix 1. Conditions applicable to Air Quality include the following:

Condition 8

The Applicant must ensure that dust generated by the development does not cause exceedances of the criteria listed in Tables 1, 2 and 3 at any residence or on more than 25 per cent of any privately owned land.

Condition 9

The Applicant must ensure that any visible air pollution generated by the development is assessed regularly, and that quarrying operations are relocated, modified and/or stopped as required to minimise air quality impacts on privately owned land.

Condition 10

The Applicant must prepare an Air Quality Monitoring Program for the development to the satisfaction of the Secretary. This program must:

- (a) be submitted to the Secretary for approval within 3 months of the date of this consent;
- (b) be prepared in consultation with EPA; and
- (c) include details of how the air quality performance of the development would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval.

The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.

1.2. Objectives

The objectives of the AQMP are to:

- define the short-term and long-term impact assessment criteria for Particulate Matter;
- define long-term impact assessment criteria for Deposited Dust; and
- outline the proposed monitoring regime for air quality impacts.

1.3. Environmental Protection License

This property is currently subject to an Environmental Protection Licence (EPL#: 4093) that is administered by the Environmental Protection Authority (EPA).

2. SITE DESCRIPTION

2.1. Site location

The subject land, 186 MacArthur Road (Lot 22 DP 833317) and Lot 32 (DP653271) Spring Farm, is bound to the east by the Nepean River, to the north and south by rural residential land and to the east by MacArthur Road.

To townships of South Camden and Spring Farm are located to the west and east of the subject site respectively. The Camden Bypass (Macarthur Bridge) is located approximately 250m north of the northern boundary of the subject site.

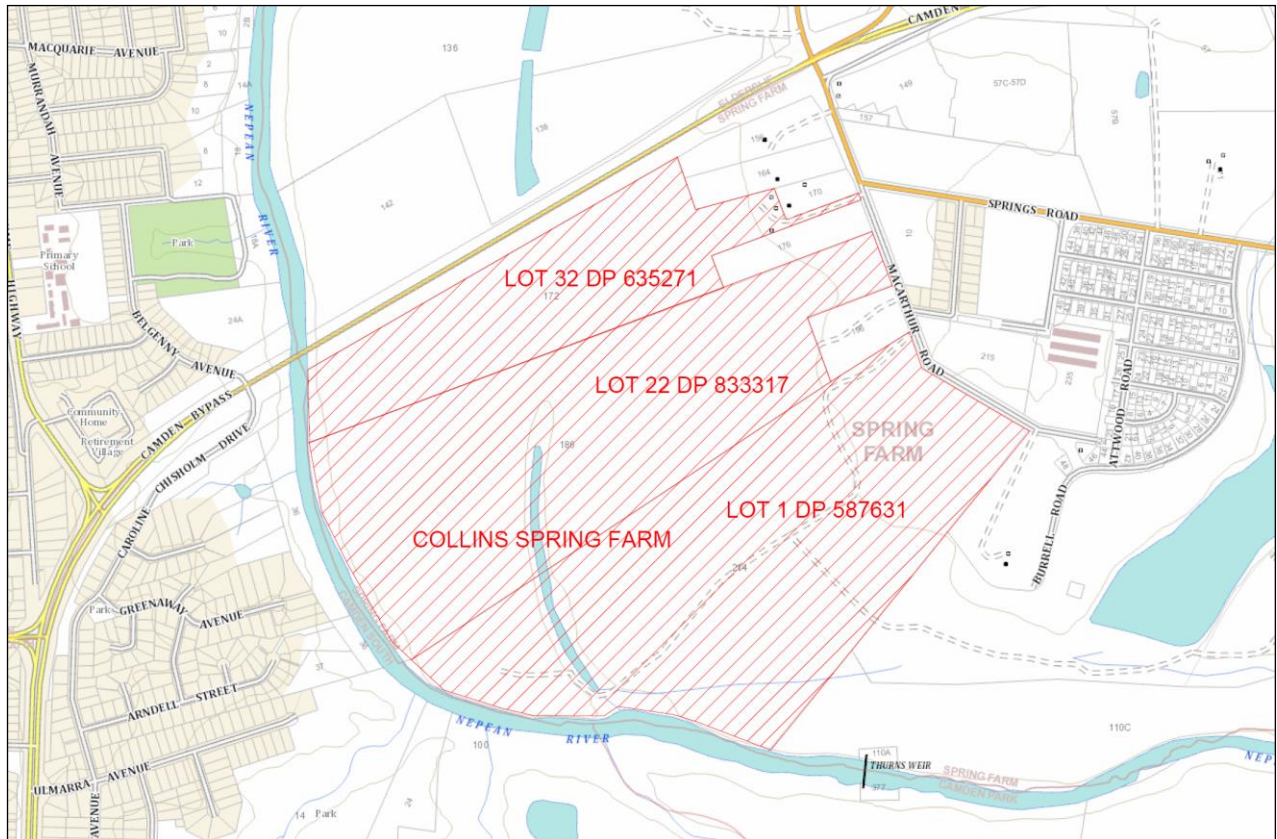


Figure 1. Location of Spring Farm Extraction and Processing Operations

2.2. Extraction and processing areas

The limits of the approved extraction areas within Lot 22 (DP 833317) and Lot 32 (DP635271) are depicted in Figure 2. No more than 5 hectares of land can be actively extracted at any given time as per Condition 2 Schedule 3 approval from Council dated 10th September 2009 (EMP Appendix 13).

Stockpiling and processing of sand and soil also occurs within the active extraction area of Lot 22 and in close proximity to the sand-wash plant located within Lot 1 – see also Figure 2.

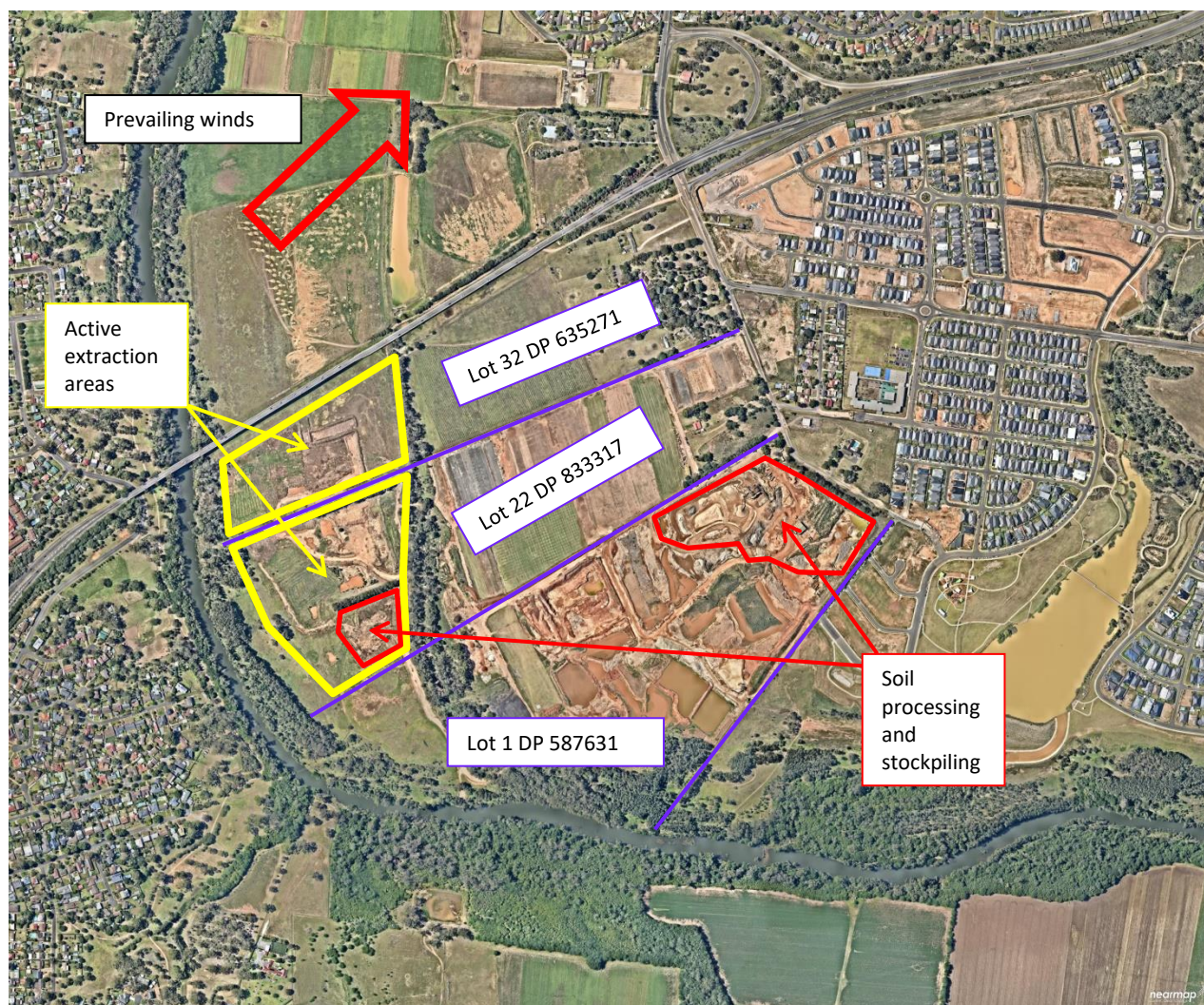


Figure 2. Plan of stockpiling, extraction and processing locations (December 2018)

2.3. Prevailing wind conditions

Wind rose diagrams from Camden Airport are attached as Appendix 2. Based on these diagrams, the following is a summary of the prevailing wind environment:

- The strongest prevailing winds (>40km/hr) blow from the south-west and west in the mornings and from the south, south-west and north-west in afternoon (3pm). These winds are considered to have the greatest potential to cause nuisance dust;
- Winds also blow from the north-east, east and south-east in the after (3pm), but wind speed is generally much less (<30km/hr); and
- Mornings are typically calmer (46% calm @ 9:00am) than in the afternoon (9% calm @ 3:00pm).

3. AIR QUALITY MONITORING PROTOCOL

3.1. Current Monitoring locations

The location of current air quality monitoring stations are illustrated on Figure 3.



Figure 3: Recent aerial photograph of the Spring Farm extraction sites and location of dust monitoring points MS1, MS2 and MS3 (December 2018)

3.2. Impact assessment criteria and monitoring frequency

Air quality impact assessment criteria is outlined in Table 1 to 3.

Table 1: Long term impact assessment criteria for Particulate Matter				
Pollutant	Averaging period	Criterion¹	Monitoring frequency²	Method of assessment
Total Suspended Particles (TSP) matter	Annual	90 µg/m ³	After any legitimate dust related complaint thereafter.	AM15 and AS2724.3-1984
Particulate Matter < 10µm (PM ₁₀)	Annual	30 µg/m ³	After any legitimate dust related complaint thereafter.	AM18 and AS3580.9.6-1990

Notes:

- 1) Based on criterion outlined in the Notice of Modification 3 from the DPE dated 25th October 2012; and
- 2) Method of assessment based on National Environmental Protection (Ambient Air Quality) Measure and EPA publication entitled 'Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

Table 2: Short term impact assessment criteria for Particulate Matter				
Pollutant	Averaging period	Criterion¹	Monitoring frequency²	Method of assessment
Particulate Matter < 10µm (PM ₁₀)	24 hour	50 µg/m ³	After any legitimate dust related complaint thereafter.	AM18 and AS3580.9.6-1990

Notes:

- 1) Based on criterion outlined in the Notice of Modification 3 from the DPE dated 25th October 2012; and
- 2) Method of assessment based on National Environmental Protection (Ambient Air Quality) Measure and EPA publication entitled 'Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

Table 3. Long term impact assessment criteria for Deposited Dust					
Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level¹	Monitoring frequency	Method of assessment
Deposited dust	Annual	2g/m ² /month	4g/m ² /month	Monthly	AM18 and AS3580.9.6-1990

Notes:

- 1) Based on criterion outlined in the Notice of Modification from the DPE dated 25th October 2012; and
- 2) Method of assessment based on National Environmental Protection (Ambient Air Quality) Measure and EPA publication entitled 'Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.

4. MONITORING RESULTS 2018

4.1 Introduction

During 2018, two sets of air quality monitoring data was assessed. This included two periods of TSP and PM10 assessment according to criteria set out in Tables 1 and 2 as well as monthly measurements of deposited dust (subject to criteria outlined in Table 3).

4.2 TSP and PM10 Results

Results for TSP and PM10 results are outlined in Tables 4 and 5.

Table 4: TSP and PM10 Results for April-May 2018															
	17-04-18	18-04-18	19-04-18	20-04-18	23-04-18	24-04-18	26-04-18	27-04-18	30-04-18	01-05-18	02-05-18	03-05-18	Average	Criteria - Short	Criteria - Long
Total Suspended Particles (TSP) (ug/m3)															
MS 1				29.3				15.7				33.5	26.2	90	90
MS 3	62.8				33.1				14.1				15.7	90	90

PM10 (ug/m3)															
MS 1			21.6				21.8				14.0		11.9	30	50
MS 3		27.4				19.5				21.1			13.5	30	50

Table 5: TSP and PM10 Results for September-October 2018															
	17-09-18	18-09-18	19-09-18	20-09-18	25-04-18	26-04-18	27-04-18	28-04-18	02-10-18	03-10-18	04-10-18	05-10-18	Average	Criteria - Short	Criteria - Long
Total Suspended Particles (TSP) (ug/m3)															
MS 1				16.4			18.3					12.8	15.8	90	90
MS 3	46.5							27.4	31.6				35.2	90	90
PM10 (ug/m3)															
MS 1			11.1			4.7					4.2		6.67	30	50
MS 3		30.8			12.0					49.9			30.9	30	50

The above data indicates that no short or long term criteria for TSP nor PM10 were exceeded during the April-May period. During the September-October period the short term criteria was exceed twice and only once by any significant degree.

4.3 Deposited Dust Results

Deposited dust results over the last year are illustrated in Figure 4

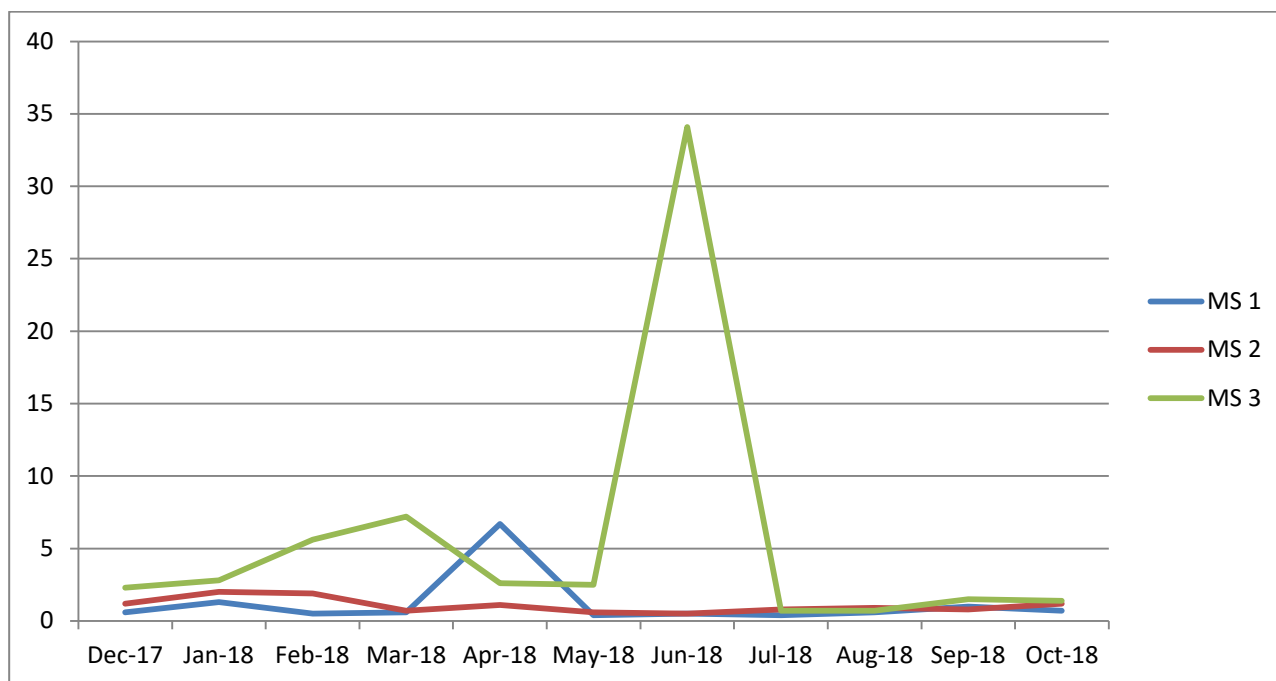


Figure 4: Deposited dust results during 2018

A significant exceedance was observed at MS3 (Wash plant location) in June 2018. This result was however, considered to be the result of the monitoring station being vandalized and should be disregarded.

Other minor exceedances were noted at MS1 and MS3 but are not considered to be significant.

5. OPERATING PROTOCOLS FOR DUST SUPPRESSION

In satisfaction of Condition 9 of the approved modification (no 4), the following protocols have been updated, improved or newly applied to ensure that any visible air pollution generated by the development is assessed regularly, and that quarrying operations are relocated, modified and/or stopped as required to minimise air quality impacts on privately owned land.

- Watering:** All haul roads, stockpiles and acoustic bunding is subject to a daily wetting from an installed sprinkler system. Water cannons are utilized to wet down all stockpiles being held for sale to suppress fugitive dust emissions;
- Plantings:** Upon the completion of final land forming, all surfaces are planted with appropriate grasses and shrubs. This includes quarry floors and batters;
- Shut down:** All extractive and processing operations are shut down when wind conditions exceed acceptable velocities and threaten dust generation. This is a subjective assessment by the quarry manager and is based on past experience; and
- Security:** Monitoring stations are cordoned off to prevent vandalism and nuisance readings where appropriate.

6. PROPOSED MONITORING PROGRAM FOR 2019

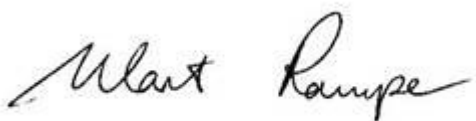
In satisfaction of Condition 10 of the approved modification (no 4) and in consultation and as approved by the EPA, the 3 current dust deposition monitoring stations (MS1, MS2 and MS3) which are located adjacent to the main extraction areas, the site access area and the nearest residences respectively will continue to be monitored on a monthly basis. These monitoring stations reflect those areas which have the highest potential to generate nuisance dust, the results of which will be assessed against the criteria outlined in Table 3.

In addition, TSP and PM10 dust assessments according to the criteria set out in Tables 1 and 2 well be assessed during April-May and September-October of 2019 to supplement the dust deposition data. However, these assessments will also be implemented immediately after a legitimate complaint about dust being generated as a result of the quarry operations.

7. CONCLUSIONS

It is concluded that the current air quality monitoring program satisfies conditions 8, 9 and 10 of the Approval modification (No 4). Furthermore, the current protocols and those proposed for the 2019 period will ensure that air quality in and around the quarry area will be of a standard which will meet all of the relevant criteria.

Prepared by:



Mart Rampe BSc(Applied Geology)
Principal Environmental Consultant

11/12/2018

DISCLAIMER

This report was prepared in accordance with the scope of services set out in the contract between Harvest Scientific Services and the client, or where no contract has been finalised, the proposal agreed to by the client. To the best of our knowledge the report presented herein accurately reflects the clients intentions when it was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document.

The findings contained in this report are the result of discrete/specific methodologies used in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site in question. Under no circumstances, however, can it be considered that these findings represent the actual state of the site/sites at all points.

In preparing this report, Harvest Scientific Services has relied upon certain verbal information and documentation provided by the client and/or third parties. Harvest Scientific Services did not attempt to independently verify the accuracy or completeness of that information. To the extent that the conclusions and recommendations in this report are based in whole or in part on such information, they are contingent on its validity. Harvest Scientific Services assume no responsibility for any consequences arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to Harvest Scientific Services.

APPENDIX 1

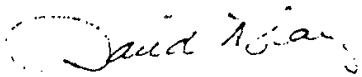
Determination of Development Application

Environmental Planning and Assessment Act, 1979 Determination of a Development Application Pursuant to Section 101

In pursuance of Section 101 of the Environmental Planning and Assessment Act 1979 I determine the development application ("the Application") referred to below by granting consent to the application subject to the conditions set out in the Schedule.

The reasons for the imposition of the conditions are:

- (i) to minimize the adverse impact the development may cause through noise, traffic generation, water quality and stability;
- (ii) provide for an acceptable landform;
- (iii) ensure appropriate rehabilitation, visual amenity and the payment of guarantees and rehabilitation levies.



David Hay
Minister for Planning

Sydney 13th October 1988

THE APPLICATION

SCHEDULE 2

Delete all words including and following the words "The Application" and insert the following conditions of consent:

SCHEDULE 1

Development Application:	DA 75/256
Applicant:	M Collins and Sons Holdings Pty Ltd
Consent Authority:	Minister for Planning
Land:	Lot 22 DP 833317 and Lot 32 DP 635271
Development:	Spring Farm Quarry

Black type represents April 2009 modification
Red type represents October 2012 modification
Green type represents April 2018 modification

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DEFINITIONS

AEMR	Annual Environmental Management Report
AEP	Annual Exceedance Probability
Applicant	M Collins & Sons Holdings Pty Ltd, or its successors
Council	Camden Council
Department	Department of Planning and Environment
Development	The operation, closure and rehabilitation of the Spring Farm Quarry as described in the SEE
Dol	Department of Industry - Lands and Water
DPI	Department of Primary Industries
DRG	Division of Resources and Geoscience within the Department
EA (Mod 3)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/256), Lot 22 (No. 186) DP 833317 (incorporating Lot 32 No. 172 DP 635271) Macarthur Road, Spring Farm</i> , prepared by Pascoe Planning Solutions, dated April 2012; including the response to submissions titled <i>Review of Exhibition/Consultation Submissions</i> , Part 1, dated August 2012, and Part 2, dated September 2012.
EA (Mod 4)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/256), Lot 22 (No.186) DP 833317 and Part Lot 32 (No.172) (DP635271) Macarthur Road, Spring Farm</i> , prepared by Pascoe Planning Solutions, dated February 2018, and the associated Response to Submissions titled <i>Spring Farm Quarry (DA 75/256 MOD 4) Modification</i> , and dated 3 June 2018
EIS	Environmental Impact Statement prepared by Longworth & McKenzie Pty Ltd dated October 1985 that accompanied the original development application in 1988
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this consent
Minister	NSW Minister for Planning , or delegate
PMF	Probable Maximum Flood
Privately owned land	Land not owned by a public agency or the Applicant or its related companies
RMS	Roads and Maritime Services
Secretary	Planning Secretary under the EP&A Act, or nominee
SEE (Mod 2)	Statement of Environmental Effects for the development dated September 2008, prepared by McCotter Consulting Services.
Site	Land to which the development application applies
Statement of Commitments	Statement of Commitments provided by the Applicant (see Appendix 1)
Stockpile and blending site	Land adjacent to the site, located at Lot 1 DP587631

SCHEDULE 2 ADMINISTRATIVE

Obligation to Minimise Harm to the Environment

1. The Applicant **must** implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the establishment, operation, or rehabilitation of the development.

Terms of Consent

2. The Applicant **must** carry out the development generally in accordance with the:
 - (a) EIS, SEE (Mod 1), EA (Mod 3) and EA (Mod 4); and
 - (b) Statement of Commitments (see Appendix 1).
- 2A. The Applicant **must** carry out the development in accordance with the conditions of this consent.
3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.
4. The Applicant **must** comply with any reasonable requirement/s of the **Secretary** arising from the Department's assessment of:
 - (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent;
 - (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and
 - (c) the implementation of any actions or measures contained in these documents.

Limits on Consent

5. Extraction and processing operations may take place until 30 June 2021.

Note: Under this consent, the Applicant is required to rehabilitate the site to the satisfaction of the Secretary. Consequently this consent will continue to apply in all other respects other than the right to conduct extraction and processing operations until the site has been rehabilitated to a satisfactory standard.

Operation of Plant and Equipment

6. The Applicant **must** ensure that all plant and equipment used at the site is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

Contributions

7. The Applicant **must** pay an annual contribution of \$6,500 (adjusted annually by reference to the Consumer Price Index) to Council for the maintenance of Macarthur Road, between the main site entrance and the intersection with Springs Road.

Inspection of Site

8. The Applicant **must** permit access to the site to Council officers or any other public authority at reasonable times for the purposes of inspecting site operations and environmental monitoring.

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Operating Conditions

1. The Applicant **must** not excavate outside the extraction areas or the limits of extraction shown in Appendix 2.
2. The Applicant **must** not open, excavate or work an area exceeding 2 hectares at any one time without the written consent of Council.
3. **The Applicant must not:**
 - (a) stockpile extractive material on the site, with the exception of topsoil stockpiles and proposed noise and/or visual mitigation bunds; or
 - (b) process any extractive material on the site, with the exception of mobile screening.
4. The Applicant **must** not import fill to the site for any purpose without written approval from Council.

NOISE

Operational Noise

5. The Applicant **must** ensure that site operations, including processing and transportation, are conducted in such a way as to minimise noise emissions from the site.
6. The Applicant **must** ensure that noise generated by the development does not exceed the noise impact assessment criteria as specified in the EPL.

Operating Hours

7. The Applicant **must** only operate the development:
 - (a) between the hours of 7:00am and 5:00pm Monday to Friday;
 - (b) between 8:00am and 1:00pm Saturday; and
 - (c) at no time on Sundays or Public Holidays

Notes: This condition does not apply to:

- maintenance which is inaudible at receiver locations or
- for delivery of material if that delivery is required by police or other authorities for safety reasons, and/or the operation or personnel or equipment are endangered. In such circumstances, notification is to be provided to EPA and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

AIR QUALITY

Impact Assessment Criteria

8. The Applicant **must** ensure that dust generated by the development does not cause exceedances of the criteria listed in Tables 1, 2 and 3 at any residence or on more than 25 percent of any privately owned land.

Table 1: Long Term Impact Assessment Criteria for Particulate Matter

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

Table 2: Short Term Impact Assessment Criteria for Particulate Matter

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

Table 3: Long Term Impact Assessment Criteria for Deposited Dust

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

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS 3580.10.1-1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Operating Conditions

9. The Applicant **must** ensure that any visible air pollution generated by the development is assessed regularly, and that quarrying operations are relocated, modified and/or stopped as required to minimise air quality impacts on privately owned land.

Air Quality Monitoring

10. The Applicant **must** prepare an Air Quality Monitoring Program for the development to the satisfaction of the **Secretary**. This program must:
 - (a) be submitted to the **Secretary** for approval within 3 months of the date of this **consent**;
 - (b) be prepared in consultation with **EPA**; and
 - (c) include details of how the air quality performance of the development would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this **consent**.

The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.

WATER

Discharges

11. The Applicant **must** not discharge any water from the quarry or its associated operations except in accordance with an EPL.

Water Management and Monitoring

12. The Applicant **must** prepare a Water Management Plan for the development to the satisfaction of the **Secretary**. This plan must:
 - (a) be submitted to the **Secretary** within 3 months of the date of this **consent**;
 - (b) be prepared in consultation with Council and **EPA and DoI Lands and Water**; and
 - (c) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Groundwater Monitoring Program; and
 - Flood Emergency Procedures Plan.

The Applicant must implement the Water Management Plan as approved by the Secretary.

13. The Site Water Balance must:
 - (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site, including the location and capacity of water storages on site and the means of access;
 - any off-site water transfers; and
 - reporting procedures; and
 - (b) investigate and describe measures to minimise water use by the development.
14. The Erosion and Sediment Control Plan must:
 - (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, including during flood events;
 - (d) describe the location, function, and capacity of erosion and sediment control structures;
 - (e) demonstrate that the design capacity of basins will not be compromised by storage of operational water; and
 - (f) describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.

15. The Groundwater Monitoring Program must include:
 - (a) baseline data on groundwater levels, flows and quality in the vicinity;
 - (b) groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; and
 - (c) a program to monitor any observed groundwater inflows to the quarry pit.
16. The Flood Emergency Procedures Plan must be put in place for floods above the 1% AEP flood event up to the PMF and:
 - (a) address both the site and the adjacent stockpiling and blending site;
 - (b) include procedures to be carried out in advance of a major flood event to minimise damage to plant equipment, operating staff and the environment; and
 - (c) include procedures to be followed after a major flood event to repair any damage and return the site to productive operations, including reinstatement of all pollution control devices and rehabilitation.
- 16A The Applicant must ensure that, in order to limit potential scour and erosion during flood events, all topsoil stockpiles and earthen bunds which are to be in place for any period longer than 3 months are oriented parallel to potential flood flows and are promptly and effectively spray-seed hydro-mulched with an appropriate fast-growing native grass mix, to the satisfaction of the Secretary.

LANDSCAPE MANAGEMENT

Landscape Management Plan

17. The Applicant must prepare a detailed Landscape Management Plan for the development to the satisfaction of the Secretary. This Plan must:
 - (a) be prepared in consultation with Council, DPI (Agriculture NSW) and DRG by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
 - (b) be submitted to the Secretary for approval within 6 months of the date of this consent; and
 - (c) include a Rehabilitation Management Plan.

The Applicant must implement the Landscape Management Plan as approved by the Secretary.

Rehabilitation Management Plan

18. The Applicant must prepare a Rehabilitation Plan for the development. This plan must include:
 - (a) the rehabilitation objectives for the site;
 - (b) a description of the short, medium, and long term measures that would be implemented to rehabilitate the site, including re-establishing high order agricultural land suitability and land use establishing healthy native vegetation and habitat for native fauna or other future land use acceptable to Council and proposed rehabilitation timeframes and timelines;
 - (c) performance and completion criteria for the rehabilitation of the site, including appropriate high order agricultural land suitability objectives with reference to the NSW Agricultural Land Suitability Classification system;
 - (d) a detailed description of the measures that would be implemented including the procedures for:
 - progressively rehabilitating disturbed areas;
 - protecting areas outside the disturbance areas;
 - protecting the Nepean River and drainage lines on the site to ensure no net loss of water quality and aquatic habitat;
 - managing impacts on fauna;
 - landscaping the site to minimise visual impacts;
 - conserving and reusing topsoil;
 - achieving a free draining final landform;
 - ensuring compatibility of the final land form with surrounding land uses;
 - erosion and sediment control;
 - identifying any proposed types and methods of agriculture;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement;
 - controlling weeds and feral pests;
 - controlling access; and
 - bushfire management;
 - (e) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);
 - (f) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
 - (g) details of who would be responsible for monitoring, reviewing, and implementing the plan.

The Applicant must implement the Landscape Management Plan as approved by the Secretary.

HERITAGE

Archaeology

19. Should the Applicant discover material suspected of being Aboriginal relics or skeletal remains, work in that area **must** cease and the Applicant **must** advise EPA and proceed in accordance with EPA instructions.

VISUAL

Visual Amenity

20. The Applicant **must** establish and maintain perimeter plantings in order to minimise the visual impacts of the development, to the satisfaction of Council.

WASTE MANAGEMENT

Waste Minimisation

21. The Applicant **must** minimise the amount of waste generated by the development to the satisfaction of Council.

Waste Disposal

22. The Applicant **must** store and manage waste and by-products generated by the development to the satisfaction of Council.

Waste Management Plan

22A. The Applicant **must** prepare a Waste Management Plan for the project in consultation with Council and to the satisfaction of the Secretary. The plan must:

- (a) be prepared by a suitably qualified person/s with expertise in asbestos risk management;
- (b) be submitted to the Secretary for approval prior to commencing earthworks on Lot 32; and
- (c) include a:
 - description of the measures and controls that would be implemented to manage asbestos within site;
 - validation protocol to be implemented to ensure that remaining soils and extractive materials products are asbestos free;
 - unexpected findings protocol in the event of encountering asbestos contaminated soils not previously identified in the EA (Mod 3); and
 - incident protocols in the event of exposure to asbestos.

The Applicant **must** implement the Waste Management Plan as approved by the Secretary.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

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

Safety

24. The Applicant **must** secure the development to ensure public safety to the satisfaction of Council.

Bushfire Management

25. The Applicant **must**:
- (a) ensure that the development is suitably equipped to respond to any fires on-site; and
 - (b) assist the Fire Service and emergency services as much as possible if there is a fire on site.

PRODUCTION DATA

26. The Applicant **must**:
- (a) provide annual production data to the DPI using the standard form for that purpose; and
 - (b) include a copy of this data in the AEMR.

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant **must** notify the **Secretary** and the affected landowners and tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.

INDEPENDENT REVIEW

2. If a landowner of privately owned land considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Applicant in writing for an independent review of the impacts of the development on his/her land.

If the **Secretary** is satisfied that an independent review is warranted, the Applicant **must** within 3 months of the **Secretary** advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the **Secretary**, to conduct monitoring on the land, to determine whether the development is complying with the relevant criteria in Schedule 3, and identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and
 - (c) give the **Secretary** and landowner a copy of the independent review.
3. If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the **Secretary**.
 4. If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Applicant **must**:
 - (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in Schedule 3, to the satisfaction of the **Secretary**.

If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the **Secretary**.

If the Applicant is unable to finalise an agreement with the landowner, then the Applicant or landowner may refer the matter to the **Secretary** for resolution.

5. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the **Secretary** for resolution.
-

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, MONITORING, REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT PLAN

1. The Applicant **must** prepare an updated Environmental Management Plan for the development to the satisfaction of the **Secretary**. This plan **must** be submitted to the **Secretary** for approval 3 months after the date of this consent and:
 - (a) provide the overall environmental management approach for the development;
 - (b) identify the statutory requirements that apply to the development;
 - (c) describe in general how the environmental performance of the development would be monitored and managed;
 - (d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the life of the development;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies, including flood-related emergencies; and
 - (e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.

The Applicant **must** implement the Environmental Management Strategy as approved by the Secretary.

ENVIRONMENTAL MONITORING PROGRAM

2. The Applicant **must** prepare an Environmental Monitoring Program for the development to the satisfaction of the **Secretary**. This program **must** be submitted to the **Secretary** concurrently with the submission of the various monitoring programs and consolidate the various monitoring requirements in Schedule 3 of this **consent** into a single document.

REPORTING

Incident Reporting

3. Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this **consent** or an incident causing (or threatening to cause) material harm to the environment, the Applicant **must** report the exceedance/incident to the Department and any relevant agencies. This report **must**:
 - (a) describe the date, time, and nature of the exceedance/incident;
 - (b) identify the cause (or likely cause) of the exceedance/incident;
 - (c) describe what action has been taken to date; and
 - (d) describe the proposed measures to address the exceedance/incident.

Annual Review

4. By the end of March each year, the Applicant **must** review the environmental performance of the project to the satisfaction of the **Secretary**. This review **must**:
 - (a) describe the development (including rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;
 - (b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - the monitoring results of previous years; and
 - the relevant predictions in the documents listed in condition 2(a) of Schedule 2;
 - (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - (d) identify any trends in the monitoring data over the life of the project;
 - (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
 - (f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Within 12 months of the date of the consent, and every 3 years thereafter, unless the **Secretary** directs otherwise, the Applicant **must** commission and pay the full cost of an Independent Environmental Audit of the development. This audit **must**:
 - (a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the **Secretary**;
 - (b) include consultation with the relevant agencies;

- (c) assess the environmental performance of the development, and its effects on the surrounding environment;
 - (d) assess whether the development is complying with the relevant standards, performance measures and statutory requirements; and
 - (e) review the adequacy of any strategy/plan/program required under this **consent**, and, if necessary, recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this **consent**.
6. Within 6 weeks of completion of each Independent Environmental Audit, the Applicant **must** submit a copy of the audit report to the **Secretary**, with a response to any of the recommendations in the audit report.

Revision of Strategies, Plans & Programs

7. Within three months of:
- (a) the submission of an incident report under Condition 3 above;
 - (b) the submission of an Annual Review under Condition 4 above;
 - (c) the submission of an audit report under Condition 5 above, or
 - (d) any modification of the conditions of this **consent** (unless the conditions require otherwise),
- the Applicant **must** review, and if necessary revise, the strategies, plans, and programs required under this **consent** to the satisfaction of the **Secretary**.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

ACCESS TO INFORMATION

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

APPENDIX 1 STATEMENT OF COMMITMENTS



M. COLLINS & SONS HOLDINGS PTY LTD

M. Collins & Sons Holdings Pty Ltd

ACN: 000 521 871

P.O. Box 55, MILPERRA NSW 2214
17 Fitzpatrick Street, REVESBY NSW 2212

Phone: (02) 9774 1544

Facsimile: (02) 9792 1532

Website: www.mcollins.com.au

Statement of Commitments for Spring Farm Quarry

M. Collins and Sons Holdings Pty Ltd undertakes to implement the commitments listed below, in respect of the Spring Farm Quarry, including the stockpile, processing and dispatch site.

- Notes: 1. Spring Farm Quarry encompasses Lot No 1 DP 587631, Lot No 22 DP 833317 and Lot No 32 DP 645271.
2. The stockpile, processing and dispatch site is located on Lot No 1 DP 587631.

Desired Outcome	Commitments
Traffic and Transportation	
Limit the impact of development-related traffic	1. Laden truck movements from the Spring Farm Quarry to public roads will not exceed 36 per day (when averaged over any working week) or 80 on any working day. 2. The total annual dispatches of extractive material products from the Spring Farm Quarry will not exceed 300,000 tonnes per annum.
Monitor traffic movements in and out of the site	3. Comprehensive logs of truck movements and extractive materials received and dispatched from the Spring Farm Quarry will be recorded and maintained. 4. These logs will be made available promptly for inspection on request by either the Secretary or the Council. 5. Comprehensive reports on truck movements and extractive materials received and dispatched will be included in each Annual Environmental Management Report for the development.
Limit the impact of quarry trucks on local roads	6. Except where permitted by Council, trucks travelling to and from the Spring Farm Quarry will not travel via local roads in the vicinity of the development other than Macarthur Road, Springs Road and Richardson Road.
Limit the tracking of material onto public roads to minimise dust, particulate matter and debris emissions	7. All laden trucks carrying material from the Spring Farm Quarry on public roads and will be covered. 8. All trucks leaving the Spring Farm Quarry and travelling on public roads will be cleaned of materials that may fall on the road, before leaving the site.
Ecology	
Rehabilitate the existing anabranch and eastern bank of the Nepean River	9. The existing anabranch and eastern bank of the Nepean River will be rehabilitated through appropriate conservation initiatives to a maintainable standard. 10. The current Rehabilitation Management Plan will be updated to include the rehabilitation program proposed in EA (Mod 3).
Greenhouse Gases	
Minimise greenhouse gas emissions	11. Energy efficiency associated with all extractive related activities will be constantly improved.

Signed By: M. Collins & Sons Holdings Pty Ltd
Name: Matthew J. Collins
Position: Managing Director
Date: 9th October, 2012



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Visual	
Limit the visual impact from the public view	<p>12. The existing tree screens will be maintained in position for as long as practical.</p> <p>13. Additional screen planting will be undertaken along the anabranch on Lot 22 and Lot 32 prior to the commencement of extraction on Lot 32.</p> <p>14. The active extraction surface area will be restricted to 1 hectare (and a further hectare undergoing rehabilitation). Rehabilitation will be commenced as extraction is completed.</p> <p>15. The current Landscape Management Plan will be updated to include the visual impact mitigation measures proposed in EA (Mod 3).</p>
Surety	
Extend the current bond held with the Water Ministerial Corporation	16. The current bond held with the Water Administration Ministerial Corporation will be extended for the duration of extraction and rehabilitation activities on Lot 32, inclusive of a 2 year maintenance period after rehabilitation has been completed.
Post Extractive Land use	
Restore the final landform suitable for agricultural use	<p>17. The landform and soil profile will be restored to facilitate a diversity of intensive agricultural pursuits.</p> <p>18. The current Landscape Management Plan, including the Rehabilitation Management Plan, will be updated to include the rehabilitation program proposed in EA (Mod 3).</p>
Salinity and Groundwater	
Implement appropriate management measures	<p>19. All Salinity Management Plan and Groundwater Management Protocols prepared by Harvest Scientific Services will be complied with.</p> <p>20. The current Water Management Plan, including the Groundwater Monitoring Program, will be updated to include the impact mitigation measures proposed in EA (Mod 3).</p>
Contamination	
Remove and dispose of asbestos contaminated soils	21. Waste Management Plan consistent with the protocols detailed in the Phase 2 Contamination Assessment undertaken by Harvest Scientific Services will be prepared for the site.
Aboriginal Archaeological Watching Brief	
Minimise impacts on Aboriginal relics	22. Aboriginal Archaeological Watching Brief will be implemented.
Dust Monitoring	
Undertake dust monitoring	<p>23. Dust monitoring as currently in place, will be supplemented by an additional monitoring station near the existing workshop and shed.</p> <p>24. The current Air Quality Monitoring Program will be updated to include the additional air quality monitoring proposed in EA (Mod 3).</p>
Camden Bypass Bridge Integrity	
Protect the Camden-Bypass bridge integrity	25. All recommendations made in the SMEC Camden Bypass Report outlined in Appendix Z1 of EA (Mod 3) will be implemented.
Endeavour Energy Infrastructure	
Protect the Endeavour Energy onsite infrastructure	26. All recommendations made in respect of the Endeavour Energy Transmission Poles detailed in Appendix G of EA (Mod 3) will be implemented.
Flood Emergency Response Plan	
	27. The current Water Management Plan, including the Flood Emergency Procedures Plan, will be updated to include management measures proposed in EA (Mod 3).

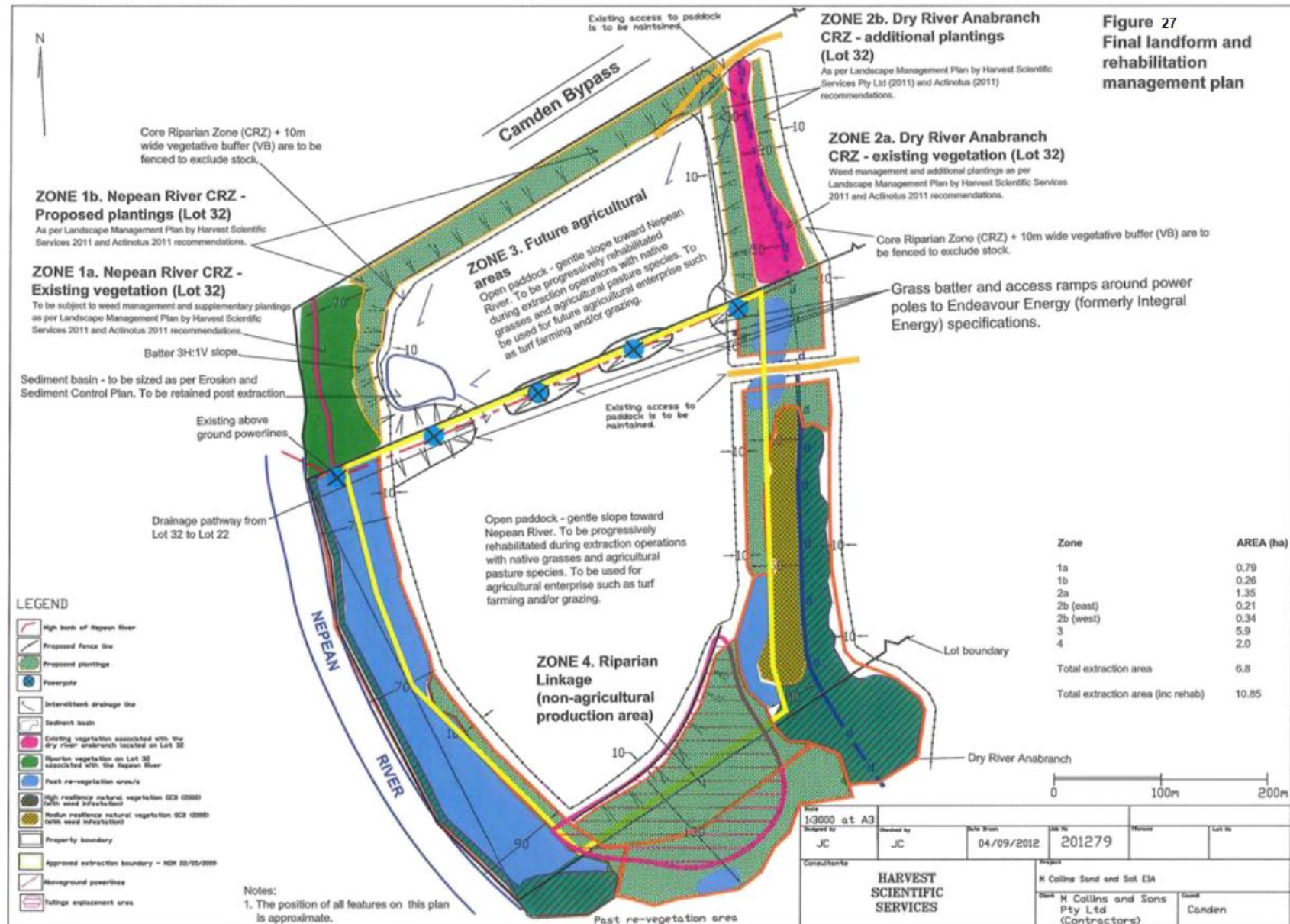
Signed By: M. Collins & Sons Holdings Pty Ltd
Name: Matthew J. Collins
Position: Managing Director
Date: 9th October, 2012

APPENDIX 2

Proposed extraction and rehabilitation staging plan for Lot 32 and existing operations on Lot 22

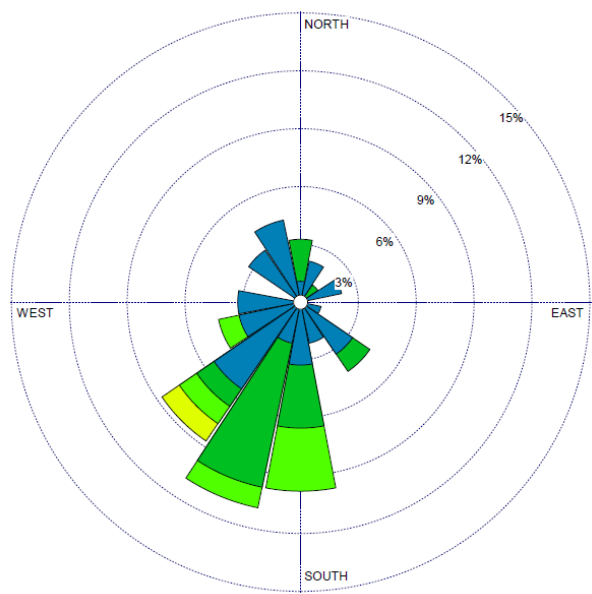


Proposed final landform for the extraction areas on Lots 22 and 32

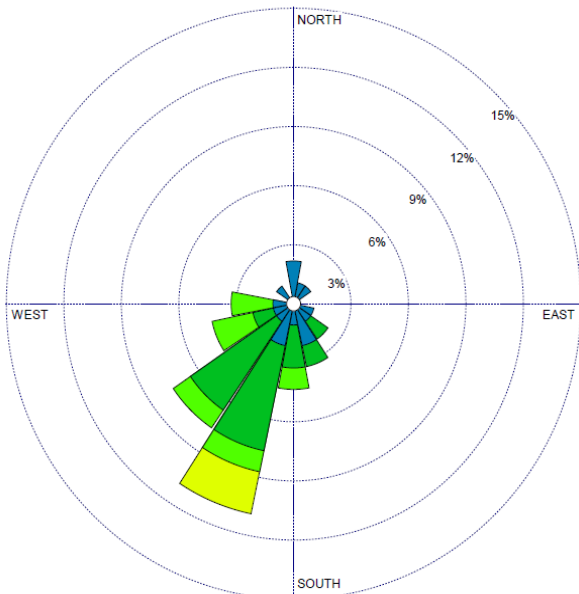


APPENDIX 2

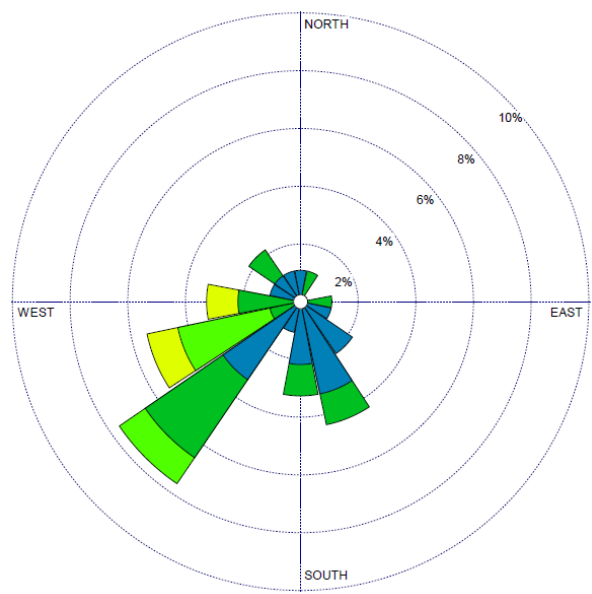
Wind Rose diagrams for Camden Airport



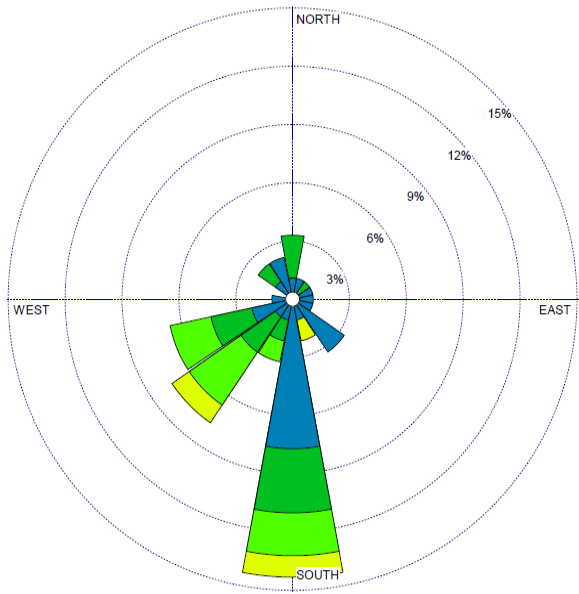
Summer



Autumn

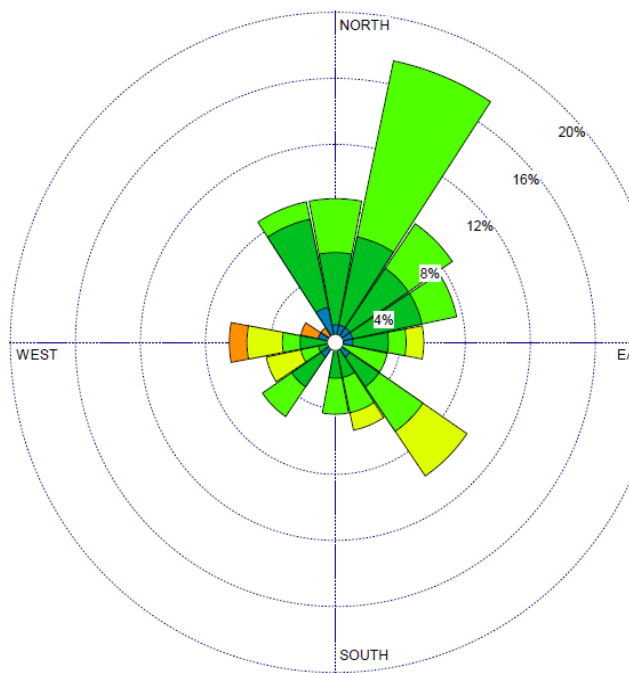


Winter

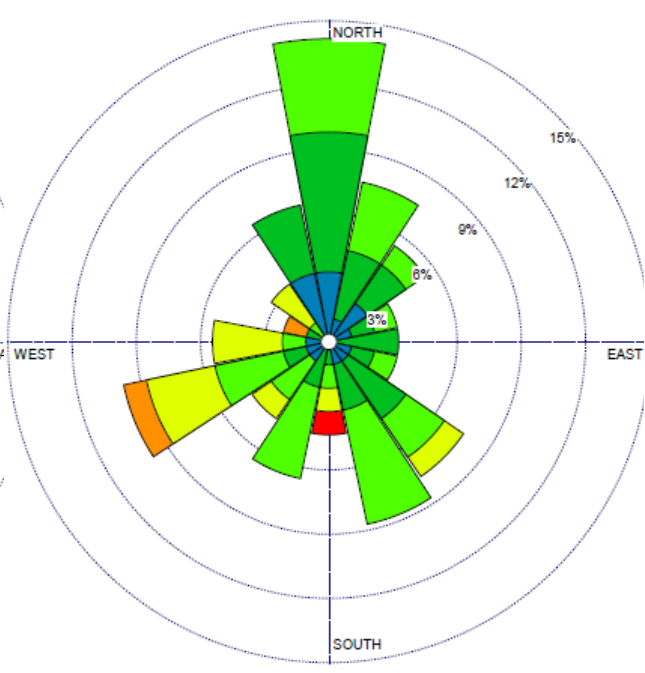


Spring

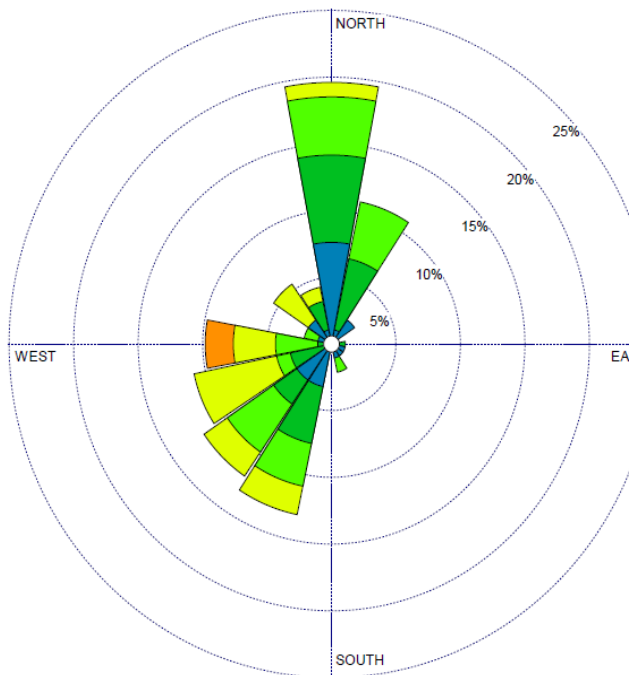
Wind Roses (Morning) at Camden Airport



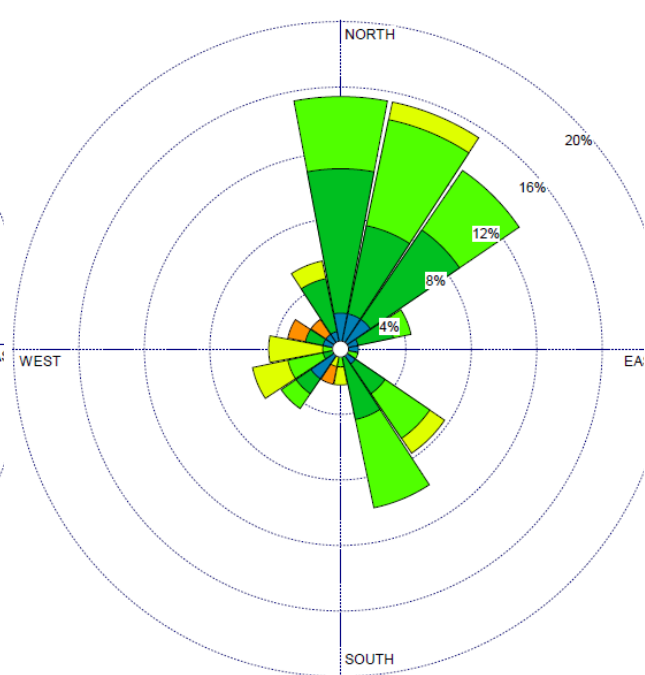
Summer



Autumn



Winter



Spring

Wind Roses (Afternoon) at Camden Airport

APPENDIX 4

**DEVELOPMENT CONSENT CONDITIONS ISSUED BY THE DEPARTMENT
OF PLANNING & ENVIRONMENT (DPE) (DA 75/256 MOD 4) DATED 2
AUGUST 2018**

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, I modify the development consent referred to in Schedule 1, as set out in Schedule 2.



Oliver Holm
Executive Director
Resource Assessments and Compliance

Sydney

2 August 2018

SCHEDULE 1

Development consent granted by the Minister for Planning on 13 October 1988 for the Spring Farm Quarry at 186 Macarthur Road, Lot 22 DP 833317 (formerly Lot 2 DP 625278 Vol 14788 Folio 34).

SCHEDULE 2

1. In the list of definitions delete the terms "Department", "Director General", "DRE", "Minister" and "NOW", and their definitions, and insert the following in alphabetical order:

AEP	Annual Exceedance Probability
Department	Department of Planning and Environment
Dol	Department of Industry - Lands and Water
DRG	Division of Resources and Geoscience within the Department
EA (Mod 4)	Environmental Assessment titled <i>Modification of Spring Farm Quarry Consent (DA 75/256)</i> , Lot 22 (No. 186) DP 833317 and Part Lot 32 (No. 172) (DP 635271) Macarthur Road, Spring Farm, prepared by Pascoe Planning Solutions, dated February 2018, and the associated Response to Submissions titled Spring Farm Quarry (DA 75/256 MOD 4) Modification, and dated 3 June 2018
Minister	NSW Minister for Planning, or delegate
PMF	Probable Maximum Flood
Secretary	Planning Secretary under the EP&A Act, or nominee

2. Delete all references to "Director-General" and replace with "Secretary".
3. Delete all references to "shall" and replace with "must", except in condition 3 of Schedule 2.
4. Delete all references to "DRE" and replace with "DRG".
5. Delete all references to "NOW" and replace with "Dol".
6. Delete all references to "approval" and replace with "consent", except in:
 - a) condition 4 of Schedule 3;
 - b) the first reference in conditions 10, 17 and 22A of Schedule 3;
 - c) conditions 3 and 4 of Schedule 4;
 - d) condition 1 of Schedule 5; and
 - e) the first reference in condition 8 of Schedule 5.
7. Delete condition 2 of Schedule 2 and insert the following:
 2. The Applicant must carry out the development generally in accordance with the:

- (a) EIS, SEE (Mod 1), EA (Mod 3) and EA (Mod 4); and
 - (b) Statement of Commitments (see Appendix 1).
- 8. After condition 2 of Schedule 2, insert the following:
 - 2A. The Applicant must carry out the development in accordance with the conditions of this consent.
- 9. In condition 4 of Schedule 2, delete subparagraphs (a) and (b) and insert the following:
 - (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the conditions of this consent;
 - (b) any reviews, reports or audits undertaken or commissioned by the Department regarding compliance with the conditions of this consent; and
 - (c) the implementation of any actions or measures contained in these documents.
- 10. In condition 5 of Schedule 2, delete "2019" and replace with "2021".
- 11. In condition 10 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (c) insert the following:

The Applicant must implement the Air Quality Monitoring Program as approved by the Secretary.
- 12. In condition 12 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (c) insert the following:

The Applicant must implement the Water Management Plan as approved by the Secretary.
- 13. In condition 17 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (c) insert the following:

The Applicant must implement the Landscape Management Plan as approved by the Secretary.
- 14. In condition 18 of Schedule 3:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (g) insert the following:

The Applicant must implement the Rehabilitation Management Plan as approved by the Secretary.
- 15. In condition 16 of Schedule 3, following the words "Plan must", insert the words "be put in place for floods above the 1% AEP flood event up to the PMF and".
- 16. In condition 22A of Schedule 3:
 - a) relabel sub-paragraphs "(c)", "(d)" and "(e)", as "(a)", "(b)" and "(c)", respectively;
 - b) delete the words "and implement" after the word "prepare"; and
 - c) after subparagraph (c) insert the following:

The Applicant must implement the Waste Management Plan as approved by the Secretary.
- 17. In conditions 4 and 5 of Schedule 4, delete the words "If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3)".
- 18. In condition 1 of Schedule 5:
 - a) delete the words "and implement" after the word "prepare"; and
 - b) after subparagraph (e) insert the following:

The Applicant must implement the Environmental Management Strategy as approved by the Secretary.
- 19. In condition 4(b) of Schedule 5 delete the words "EIS, SEE (Mod 2), EA (Mod 3)" and insert the words "documents listed in condition 2(a) of Schedule 2".
- 20. In the Statement of Commitment numbered 16 in Appendix 1, delete the words "Water Ministerial Corporation" and insert the words "Water Administration Ministerial Corporation".
- 21. In Appendix 2 delete both figures, and insert the following:

ZONE 2b. Dry River Anabranch
CRZ - additional plantings



22. Delete Appendix 3.
23. Update the Table of Contents to reflect the above changes.

APPENDIX 5

ENVIRONMENT PROTECTION LICENCE (EPL) 4093

Environment Protection Licence

Licence - 4093



Licence Details

Number:	4093
Anniversary Date:	26-August

Licensee

M COLLINS & SONS HOLDINGS PTY LTD

PO BOX 55

MILPERRA NSW 2214

Premises

SPRING FARM

214 MACARTHUR ROAD

SPRING FARM NSW 2570

Scheduled Activity

Crushing, Grinding or Separating

Extractive Activities

Fee Based Activity

Scale

Crushing, grinding or separating	> 100000-500000 T processed
Land-based extractive activity	> 100000-500000 T extracted, processed or stored

Region

Metropolitan - Illawarra

Level 3, NSW Govt Offices, 84 Crown Street

WOLLONGONG NSW 2500

Phone: (02) 4224 4100

Fax: (02) 4224 4110

PO Box 513 WOLLONGONG EAST

NSW 2520

Environment Protection Licence

Licence - 4093



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Environment Protection Licence

Licence - 4093



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Environment Protection Licence

Licence - 4093



Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 4093



The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

M COLLINS & SONS HOLDINGS PTY LTD
PO BOX 55
MILPERRA NSW 2214

subject to the conditions which follow.

Environment Protection Licence

Licence - 4093



1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, Grinding or Separating	Crushing, grinding or separating	> 100000 - 500000 T processed
Extractive Activities	Land-based extractive activity	> 100000 - 500000 T extracted, processed or stored

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
SPRING FARM
214 MACARTHUR ROAD
SPRING FARM
NSW 2570
LOT 1 DP 587631, LOT 32 DP 635271, LOT 22 DP 833317

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 4093



P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Dust Monitoring		Dust deposition gauge labelled as MS1 as labelled Environmental Monitoring Locations Plan - Spring Farm Water and Dust Monitoring Stations 9 August 2013 [Trim DOC13/42029].
2	Dust Monitoring		Dust deposition gauge labelled as MS2 as labelled Environmental Monitoring Locations Plan - Spring Farm Water and Dust Monitoring Stations 9 August 2013 [Trim DOC13/42029].
3	Dust Monitoring		Dust deposition gauge labelled as MS3 as labelled Environmental Monitoring Locations Plan - Spring Farm Water and Dust Monitoring Stations 9 August 2013 [Trim DOC13/42029].

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the	As specified in each particular resource recovery exemption	NA

Environment Protection Licence

Licence - 4093



		Environment Operations (Waste) Regulation 2005		
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

L3 Noise limits

- L3.1 Noise from the premises must not exceed an LA10 (15 minute) noise emission criterion of 55 dB(A), except as expressly provided by this licence.
- L3.2 Noise from the premises is to be measured or computed at any point within one metre of the boundary of any residential premises or other noise sensitive areas (such as schools, hospitals) in the vicinity of the premises to determine compliance with condition L3.1. 5dB(A) must be added if the noise is tonal or impulsive in character.

L4 Hours of operation

- L4.1 Activities covered by this licence on Lot 1 DP587631 must only be carried out between the hours of 0700 and 1700 Monday to Friday, and 0700 and 1300 Saturday, and at no time on Sundays and Public holidays.
- L4.2 Activities covered by this licence on Lot 22 DP833317 and Lot 32 DP635271 must only be carried out between the hours of 0700 and 1700 Monday to Friday, and 0800 and 1300 Saturday, and at no time on Sundays and Public holidays.
- L4.3 This condition does not apply to the delivery of material outside the hours of operation permitted by condition L4.1 and L4.2, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible or within a reasonable period in the case of emergency.

L5 Potentially offensive odour

- L5.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

Environment Protection Licence

Licence - 4093



4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- a) in a legible form, or in a form that can readily be reduced to a legible form;
- b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- a) the date(s) on which the sample was taken;
- b) the time(s) at which the sample was collected;
- c) the point at which the sample was taken; and
- d) the name of the person who collected the sample.

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M2 Requirement to monitor concentration of pollutants discharged

M2.1 Air Monitoring Requirements

POINT 1,2,3

Pollutant	Units of measure	Frequency	Sampling Method
Insoluble solids	grams per square metre per month	Monthly	AM-19

M2.2 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M3 Testing methods - concentration limits

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

- a) the date and time of the complaint;
- b) the method by which the complaint was made;
- c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- d) the nature of the complaint;
- e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the licensee, the reasons why no action was taken.

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M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after:

- a) the date of the issue of this licence or
- b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

- a) a Statement of Compliance; and
- b) a Monitoring and Complaints Summary.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and

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ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

- R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').
- R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.
- R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
- a) the licence holder; or
 - b) by a person approved in writing by the EPA to sign on behalf of the licence holder.
- R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

R2 Notification of environmental harm

- R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- a) the cause, time and duration of the event;
 - b) the type, volume and concentration of every pollutant discharged as a result of the event;

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- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

G2.1 Completed Pollution Studies and Reduction Programs (PRPs)

PRP	Description	Completed Date
PRP 1 - Noise Mitigation Measures	Noise mitigation measures installation. To reduce noise emissions from the sand washery at the premises.	15-March-2008
PRP 2 - Control of Dust Emissions	Control of dust emissions. Dust management plan for the premises.	15-March-2008
PRP 3 - Air Monitoring Program	Undertake Total Suspended Particles and PM10 Monitoring Investigation Program for operations at Spring Farm.	14-May-2014

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Bernie Weir

Environment Protection Authority

(By Delegation)

Date of this edition: 08-January-2001

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End Notes

- 1 Licence varied by notice 1016200, issued on 09-May-2003, which came into effect on 03-Jun-2003.
- 2 Licence varied by notice 1047682, issued on 12-Jul-2005, which came into effect on 06-Aug-2005.
- 3 Licence varied by notice 1058707, issued on 18-Apr-2006, which came into effect on 18-Apr-2006.
- 4 Licence varied by notice 1067861, issued on 20-Dec-2006, which came into effect on 20-Dec-2006.
- 5 Licence varied by notice 1081325, issued on 07-Jan-2008, which came into effect on 07-Jan-2008.
- 6 Licence varied by Change to schedule 1, issued on 08-May-2008, which came into effect on 08-May-2008.
- 7 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 8 Licence varied by notice 1096062, issued on 20-Jan-2009, which came into effect on 20-Jan-2009.
- 9 Licence varied by notice 1103855, issued on 28-Jul-2009, which came into effect on 28-Jul-2009.
- 10 Licence varied by change to DECCW region, issued on 20-Aug-2009, which came into effect on 20-Aug-2009.
- 11 Licence varied by notice 1107936, issued on 20-Oct-2009, which came into effect on 20-Oct-2009.
- 12 Licence varied by correction to premise st name and number, issued on 13-Dec-2010, which came into effect on 13-Dec-2010.
- 13 Licence varied by notice 1124885, issued on 05-Apr-2011, which came into effect on 05-Apr-2011.
- 14 Licence varied by notice 1504257 issued on 20-Feb-2012
- 15 Licence varied by notice 1506975 issued on 08-Aug-2012
- 16 Licence varied by notice 1511248 issued on 13-Aug-2013
- 17 Licence varied by notice 1516264 issued on 20-Aug-2013
- 18 Licence varied by notice 1517225 issued on 19-Sep-2013
- 19 Licence varied by notice 1522816 issued on 18-Jun-2014

APPENDIX 6

CONTROLLED ACTIVITY APPROVAL (CAA) DATED 7TH DECEMBER 2018.



Natural Resources Access Regulator

Contact: Mohammed Ismail
Phone: 02 8838 7535
Fax: 02 8838 7554
Email: mohammed.ismail@nrar.nsw.gov.au

Collins and Sons Holdings Pty Ltd
SPO Box 378,
NARELLAN NSW-2567

Our ref: **10CX122891** (old Ref: ERM2013/830)
DA 75/256

email: matt@mcollins.com.au

7 December 2018

Re: Controlled activity approval - EXTENSION

For activity described as	Building/construction (Non-Residential)
To be carried out at	Spring Farm and Nesbitt Site, 186 Macarthur
Road, SPRING FARM 2570	
Date of Issue: 27/12/2018 -	Date of Expiry: 7 December 2018.

I refer to your application for extension of controlled activity approval under the *Water Management Act 2000* which was received by this office. Receipt of your application fee of \$722 is also acknowledged.

1. Controlled activity approval

The Natural Resources Access Regulator (NRAR) has determined to grant you an extension to a controlled activity approval. Please find enclosed the **Notice of Determination** together with your **Statement of Approval**.

Please read carefully the conditions of the approval and seek clarification from NRAR for any condition not fully understood.

A **copy** of this approval and any annotated documentation should be **provided to the council**, your **certifier** and to **all contractors** engaged in the implementation of this controlled activity to ensure they are also aware of the conditions.

The controlled activity approval must be kept **current until** the controlled activity has been **completed**. Applications for **extending the approval** should be made to NRAR, in writing, prior to the expiry date on the approval.

2. Inspections and fees

As the approval holder, you are required to notify NRAR on completion of the controlled activity. A site inspection may be needed to confirm that all of your obligations under the controlled activity approval have been carried out.

Costs associated with a single inspection may be covered by the application fee. However, if extra inspections or significant reassessment is required, then additional fees will be incurred.

Fees will also apply to any amendments requested or any extension of this approval. The current fee schedule is available at <https://www.industry.nsw.gov.au/water/licensing-trade/approvals/controlled-activities>

3. Other approvals may be required

Subject to the conditions of the attached Statement of Approval, the approval holder is only authorised to carry out the controlled activity described in the location specified.

The attached Statement of Approval does not relieve the approval holder of any obligation which may exist to also obtain permission/approval/consent from any other agency who may have some form of control over the site or the proposed development.

Any questions regarding this correspondence should be directed to by email to mohammed.ismail@nrar.nsw.gov.au.

Yours sincerely



**Mohammed Ismail
Water Regulation Officer
Natural Resources Access Regulator
Dol Crown Lands & Water, NRAR**

Enc:
Notice of Decision
Statement of Approval



	Application details
Reference number	10CX122891
Application type	Controlled activity approval under section 92 of the <i>Water Management Act 2000</i>
Description of activity	Controlled Activities
Applicant/s	Collins and Sons Holdings Pty Ltd SPO Box 378, NARELLAN NSW-2567
	Decision
Decision	Granted, subject to conditions This decision was made under section 95 of the <i>Water Management Act 2000</i> .
Date of decision	7 December 2018
Determining officer	Mohammed Ismail by a delegation from the Minister administering the <i>Water Management Act 2000</i> under the <i>Instrument of Delegation (Water Management Act) 2011</i>
	Reason/s for decision
	<p>This controlled activity approval was granted on the basis DPI Water is satisfied adequate arrangements are in place to ensure that no more than minimal harm will be done to waterfront land as a consequence of the carrying out of the controlled activity.</p> <p>Conditions were applied for the purpose of protecting the environment from the impacts associated with the approval, to give effect to any agreement between the applicant and a person who objected to the application, or to require security for the cost of performing the approval holder's obligations under the approval in case the approval holder fails to fulfil those obligations.</p>

Right of appeal

Section 368 of the *Water Management Act 2000* provides a right of appeal to the Land and Environment Court in certain circumstances:

- The applicant/s may appeal against a decision **imposing certain conditions** on an approval or **fixing the term** of an approval. This right of appeal also applies to conditions which are amended or added after an approval is granted.
- A person who objected to the granting of the approval under section 93 of the *Water Management Act 2000* may appeal against a decision **granting** the approval.

If you wish to make an appeal you must do so **within 28 days** after the date of the decision.

END OF STATEMENT

Approval details

Approval number	10CX122891
Status	CURRENT*
Approval kind	Controlled Activity
Water sharing plan	Greater Metropolitan Region Unregulated River Water Sources 2011
Date of effect	27/11/2018 Should an appeal be made against the granting of this approval, this approval will not take effect until the appeal is finally disposed of.
Expiry date	21/11/2021
Approval holder(s)	Schedule 1
Activities	Schedule 2
Conditions	Schedule 3

Contact for service of documents

Name	Collins and Sons Holdings Pty Ltd
Address	PO Box 378 NARELLAN NSW-2567

* Note: An approval has effect for such period as is specified in the approval, or if the period is extended under section 105, that extended period. If an application for extension of an approval is lodged before the approval expires, the term of the expiring approval is extended until either the date of the final decision on the application, or a date fixed by the Minister for the approval, whichever is the later date. An approval which has expired can be the subject of an application to extend it but it needs to be accompanied by a statutory declaration of the reasons for the delay in making the application. If the Minister accepts these reasons the term of the approval is taken to have been extended, and the application may be dealt with, as if the application had been made before the approval expired.

It is an offence under the Water Management Act 2000 to breach a term or condition of the approval or to construct and use works to which the approval does not relate. It is also an offence to use works the subject of an approval if the approval has expired, been surrendered or cancelled.

Schedule 1 - Approval holders

The holders of this approval are:

Approval holder(s)	ACN (if applicable)
Collins and Sons Holdings Pty Ltd	000 521 871

Important notice - change of landholder or contact

Please advise the Office in the event of any of the following, as soon as practicable:

- If there is a change in the ownership or occupation of the land benefited by this approval (see Schedule 2). Under the Water Management Act 2000, an approval is typically held by the owner or lawful occupier of the benefited land. Consequently, a change in occupation may cause a change in your legal obligations as an approval holder.*
- If there is a change to the contact person. You will be required to lodge a written statement signed by all the holders.*
- If there is a change to the mailing address for the nominated contact person. This should be done by the contact person in writing.

** An updated Statement of Approval will be issued free of charge*

Schedule 2 - Activities

Part A: Authorised activities

Subject to the conditions of this approval, in relation to each numbered activity in the table, the holders of this approval are authorised to undertake the activity of the type shown at the location specified:

Activity 1

Specified Activity

Extractive Industry

Specified location

1//587631	Whole Lot
32//635271	Whole Lot
22//833317	Whole Lot

Water source

Hawkesbury And Lower Nepean Rivers Water Source

Water sharing plan

Greater Metropolitan Region Unregulated River Water Sources 2011

Schedule 3 - Conditions

The approval is subject to the following conditions:

Conditions

Water management works

DK6301-00001

All excavated material associated with the carrying out of the controlled activity must be removed from waterfront land and disposed of or used in a way that prevents the material from re-entering the water source.

DS4875-00001

A. Before commencing the controlled activity authorised by this approval, the boundary of the area where the activity is to be carried out must be clearly marked on the ground.
B. The markings must remain in place until the controlled activity has been completed.

DS4860-00001

The approval holder must employ a suitably qualified person to directly supervise the controlled activity authorised by this approval to be carried out.

DS4862-00001

The controlled activity authorised by this approval must be maintained for a period of 2 years after completion of the controlled activity.

Activities

DS6039-00001

The bed of the watercourse must not be excavated..

DS5035-00284

The controlled activity authorised by this approval must be carried out in accordance with the following plan(s)/document(s) held by Natural Resources Access Regulator, Parramatta Office:
A. Plan No. 77310.01.P08, Original Surface Contours (1983) by SMEC Urban
B. Plan No. 77310.01.P09, Current Surface Contours (2008) by SMEC Urban
C. Plan no. 77310.01.P16, Design Final Surface Contours by SMEC Urban.
D. Plans Nos. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban.
E. Plans No JET0328 drawing Nos 11 (issue 3) and 12 to 16 (inclusive all issue 2) by Johnstone Environmental Technology as indorsed by Department Land & Water (now office of Water) and department of Planning.
F. Plans No JET0989 drawing 2 to 4 inclusive and 7 to 10 inclusive.
.

DS5035-00285

The controlled activity authorised by this approval must be carried out in accordance with the following plan(s)/document(s) held by Natural Resources Access Regulator, Parramatta Office:

- A. Landscape Management Plan dated 24 April 2013 by Harvest Scientific Services Pty Ltd
- B. Figure 3 Final Landform and Rehabilitation Management Plan No 201279 dated 4 September 2012 by Harvest Scientific Services
- C. Attachment 1 to this CAA, Site drainage and erosion control measures.
- D. Attachment 2 to this CAA, Site Rehabilitation
- E. Vegetation Management Plan (VMP), The Knoll, Spring Farm, Elderslie NSW date February 2002
- .

Environmental matters

DK4951-00001

A. Before commencing any work authorised by this approval, erosion and sediment control measures must be established and implemented in accordance with the requirements of the Managing Urban Stormwater Manual, Volume 1, Soils and Construction (2004) as amended or replaced from time to time.

B. These control measures must be maintained until work is completed.

DS4861-00001

All erosion and sediment control works must be decommissioned using a suitably qualified person on completion of the controlled activity once the site has stabilised.

DS4865-00001

A. All materials must be stored away from the water source so that materials do not:

- i. obstruct water flow, or
- ii. wash into the water source, or
- iii. cause damage to river banks.

B. When the controlled activity authorised by this approval has been completed, surplus materials must be removed from waterfront land.

DS4866-00001

Machinery used for the controlled activity authorised by this approval must not enter the water source at any time.

DS4945-00001

Vegetation may only be cleared to the minimum extent required for the carrying out of the controlled activity, which means that the minimum area is cleared to allow:

- A. carrying out of the controlled activity and
- B. access for appropriate equipment and personnel.

Monitoring and recording

DS4852-00001

A copy of this approval must be kept at the site where the controlled activity is taking place. A copy of the approval must be provided to all personnel working on the controlled activity.

DS6278-00001

The approval holder must provide a progress report detailing extraction operations, site conditions and materials replenishment to the Natural Resources Access Regulator every twelve (12) months from the date of the granted approval. This progress report must be submitted to Natural Resources Access Regulator, Parramatta Office, and the report is to include photos of the entire site and the photo points must be identified by survey or other methods.

Reporting

DS4864-00014

When the controlled activity authorised by this approval has been completed:

- A. a certificate of completion must be provided by a suitably qualified person, and
- B. the approval holder must send the certificate to Natural Resources Access Regulator, Parramatta Office within 60 days of the controlled activity being completed.

DS4863-00022

At completion of the maintenance period for the controlled activity authorised by this approval, the approval holder must report in writing to Natural Resources Access Regulator, Parramatta Office, that:

- A. the controlled activity has been completed, and
- B. the water source and waterfront land have been restored and rehabilitated in accordance with plans held by Natural Resources Access Regulator.

DS4857-00026

The approval holder must notify Natural Resources Access Regulator, Parramatta Office, in writing within 30 days of the controlled activity being completed.

DS4899-00003

The approval holder must notify Natural Resources Access Regulator, in writing to nrar.enquiries@nrar.nsw.gov.au , within 14 days of any change in site management, land ownership or land occupation.

DS4892-00031

- A. The approval holder must provide a report to Natural Resources Access Regulator, Parramatta Office, on the implementation of each of the following plan(s):
 - Vegetation Management plan; Works schedule every twelve (12) months up to the end of the maintenance period, and at the completion of the controlled activity authorised by this approval.
- B. Each report must:
 - i. address the requirements set out in each plan, and
 - ii. be prepared by a suitably qualified person.

Additional conditions

DK6311-00001

- The approval holder must not excavate:
- A. beyond the depth shown on plans No. 77310.01.P04, 77310.01.P05, 77310.01.P06, 77310.01.P11, 77310.01.P12 & 77310.01.P13, Sand Mining Cross Sections by SMEC Urban approved by the NSW Office of Water and stamped on 8 October 2013,
 - B. below the depth shown on plans JET0328 Drawing 12, 13, 14, & 15 (all issue 2) prepared by Johnstone Environmental Technology stamped on 30 April 1996,
 - C. below the depth shown on plans JET0.989 drawings 8 issues 1, drawing 9 issues 0 and drawing 10 issues 0.

DK6312-00001

The approval holder must not excavate beyond a depth of 3 metres above the normal flow water level (taken as R55.63).

DS4924-00049

A. Before commencing carrying out the controlled activity authorised by this approval, a security deposit of \$ 45,200 must be provided to Natural Resources Access Regulator, Parramatta Office, in the form of an SGI document or equivalent (e.g. bank guarantee) attached to this approval.

B. The security deposit will be held by Natural Resources Access Regulator until:

i. the controlled activity has been satisfactorily completed and the water source and waterfront land have been rehabilitated in accordance with plans held by Natural Resources Access Regulator, and

ii. a certificate of compliance/statement of completion has been completed by a suitably qualified person and provided to Natural Resources Access Regulator, Parramatta Office.

DS4924-00050

A. Before commencing carrying out the controlled activity authorised by this approval, a security deposit of \$ 43,850 must be provided to Natural Resources Access Regulator, Parramatta Office, in the form of an SGI document or equivalent (e.g. bank guarantee) attached to this approval.

B. The security deposit will be held by Natural Resources Access Regulator until:

i. the controlled activity has been satisfactorily completed and the water source and waterfront land have been rehabilitated in accordance with plans held by Natural Resources Access Regulator, and

ii. a certificate of compliance/statement of completion has been completed by a suitably qualified person and provided to Natural Resources Access Regulator, Parramatta Office.

Glossary

licensor - WaterNSW or DPI Water, depending on which organisation administers your licences and/or approvals

waterfront land - Land and material in or within 40 m of the top of the bank or shore of a river, lake, estuary or coastal waters.

General Notes

All conditions on an approval require compliance. An appeal to the Land and Environment Court against a decision to impose certain conditions on an approval can be made within 28 days after the date the decision is made. Conditions identified with the first letter "D" are those that can be appealed during the appeal period.

The words in this approval have the same meaning as in the *Water Management Act 2000*

Note: The words in this approval have the same meaning as in the WMA

END OF STATEMENT

APPENDIX 7

FACILITY OPERATING PROCEDURES (FOPs)

FACILITY OPERATING PROCEDURE NO: 1

TITLE: EXTRACTION ACTIVITIES

Short description and purpose of FOP

Sand and soil extraction areas are depicted on Plan 1.

This FOP outlines environmental management measures to be implemented minimise environmental risk from extraction areas.

Detailed Requirements

Extraction activities are to be carried out in accordance with the following documents:

- DA 75/256 DPE Consent Modification 2 (2009)Environmental Assessment prepared by Pascoe Planning (April 2012)
- Modification of Spring Farm Quarry Consent (DA 75/256) prepared by Pascoe Planning (August 2012)
- DPE Modification 3 Consent (25th October 2012)
- Water Management and Erosion and Sediment Control Plan (WM & ESCP) prepared by Harvest Scientific Services Pty Ltd (Appendix 1).
- Landscape Management Plan (LMP) prepared by Harvest Scientific Services Pty Ltd as (Appendix 2).
- Air Quality Monitoring Program (AQMP) prepared by Harvest Scientific Services Pty Ltd as (Appendix 3).

FACILITY OPERATING PROCEDURE NO: 2

TITLE: SAND WASH PLANT AND WET-SAND SCREENING

Short description and purpose of FOP

The sand wash plant and wet-sand screening area (Plan 1) is utilised for washing (to remove fines) and screening (to remove coarser material) of excavated sand material.

This FOP outlines environmental management measures to be implemented to minimise environmental risks from this area.

Detailed requirements

- Unwashed sand stockpiles are to be kept to a minimum in the wash plant area.
- Bare soil in working areas and stockpiles are to be monitored daily and wet down with a water cart and/or sprinklers as required.
- All screening and stockpiling operations shall cease in adverse weather conditions.

FACILITY OPERATING PROCEDURE NO: 3

TITLE: DRY SAND AND SOIL SCREENING AND EXTRACTION

Short Description and Purpose of FOP

Sand and soil are to be excavated on the area depicted on Plan 1. Dry and soil screening is a procedure that is undertaken to remove coarser material from the excavated material. The main environmental hazard from implementation of this FOP is generation of excessive amounts of dust.

This FOP outlines environmental management measures to be implemented to minimise environmental risks associated with this procedure.

Detailed requirements

- All screening, blending and extraction operations shall cease in adverse environmental conditions.
- Bare soil within working areas is to be monitored daily and wet down as required.
- Sand and soil stockpiles are to be monitored and wet down as required.
- Any bare soil areas where extraction is complete are to be re-vegetated as soon as practical after extraction.
- The area stripped of topsoil prior to extraction is to be kept to a minimum. Stripped topsoil material is to be re-used for revegetation and rehabilitation, as soon as practical after extraction.

FACILITY OPERATING PROCEDURE NO: 4

TITLE: MANAGEMENT OF EXPOSED SOIL AREAS

Short description and purpose of FOP

Bare soil areas are associated with this development in the form of access tracks, operational and stockpiling areas and areas subject to active extraction (Plan 1). These areas have the potential to generate excessive dust if not appropriately managed.

This FOP outlines environmental management measures to be implemented to minimise environmental risks from these areas.

Detailed Requirements

- Bare soil areas are to be monitored daily and wet down with a water cart as required.
- With the exception of watering activities, all activities are to cease if weather conditions are adverse.
- In extraction areas, bare soil areas are to be re-vegetated as soon as practical after completion of extraction.

FACILITY OPERATING PROCEDURE NO: 5

TITLE: EQUIPMENT MAINTENANCE

Short description and purpose of FOP

Equipment maintenance activities are to be supervised and controlled in a manner that will minimise the risk of oil and fuel spills, which potentially may result in pollution to surface and groundwater and/or contamination of product stockpiles.

This FOP outlines environmental management measures to be implemented to minimise environmental risks from this procedure.

Detailed requirements

Equipment maintenance activities will be subject to the following controls:

- Separate waste containers will be made available for oil and waste fuels, used oil and grease containers as well as filters.
- Waste materials will be removed from site to an appropriate facility on a weekly basis.
- All oils and fuels are to be stored within a sealed bunded area with a storage volume of 1.5 times the total volume of fuel and/or oil stored within the bunded area.
- A spill kit is to be located within close proximity to where any servicing activities take place.

FACILITY OPERATING PROCEDURE NO: 6

TITLE: REFUELING ACTIVITIES

Short description and purpose of FOP

Refueling activities are to be supervised and controlled in a manner to reduce the risk of fuel spills which may result in pollution to surface and ground waters and/or contamination of product stockpiles.

Detailed requirements

Refuelling activities will be subject to the following controls:

- All refuellers will carry a spill kit.
- Refuelling activities are to occur in bunded areas only.

FACILITY OPERATING PROCEDURE NO: 7

TITLE: WASTE CONTROL

Short description and purpose of FOP

All waste generated on the facility will be either recycled or disposed of to Jack's Gully Land fill.

The purpose of this procedure is to limit any contamination of out-going product as well as ensuring that all waste is properly dealt with on site and disposed of offsite.

Detailed requirements

- All waste generated from this facility is to be segregated into putrescible waste, organic waste, paper/cardboard, oils and grease and plastic/glass.
- All waste is to be disposed of offsite at Jack's Gully Waste management facility on a weekly basis or as and when required.
- Where practical, all recyclable materials are to be recycled.

FACILITY OPERATING PROCEDURE NO: 8

TITLE: RECEIPT OF EXCAVATED NATURAL MATERIAL (ENM)

Short description and purpose of FOP

This facility may receive Excavated Natural Material (ENM) as authorised by the development consent issued by Council (Appendix 13) and EPA licence 4093 (Appendix 5) for the following purposes:

- Site land-filling and re-vegetation activities ('Consumer'); or
- Onsite processing and subsequent re-sale ('Processor').

In the ENM exemption, made under the Protection of the Environment Operations (Waste) Regulation (2005), the following definitions are provided:

'Consumer, means a person who applies, causes, or permits the application to land of excavated natural material within the definitions of 'application to land' in accordance with the Act. The consumer may be the landholder responsible for the land to which excavated natural material is applied'

and

'Processor, means a person who generates, processes, mixes, blends, or otherwise incorporates excavated natural material into a material for supply to a consumer'.

Attached to this FOP is a copy of the ENM 2008 Exemption, which outlines the 'consumer' and 'processor' responsibilities. This FOP has in turn been prepared to outline the procedures to be undertaken by MCS to fulfill its responsibilities under the ENM 2008 exemption.

Detailed requirements

All imported ENM material will be subject to the following procedures:

- **Advice to processor.** All processors (suppliers) of ENM are to be provided with a copy of this FOP prior delivery of ENM material.
- **Visual inspections.** All truck loads are to be visually inspected at the weighbridge by the site Manager/Supervisor as well as by the operator during unloading.
 - Any load containing suspicious material (as deemed by the visual inspector/s) is to be rejected.
 - Any material that is deemed to contain suspicious material after unloading is to be reloaded and rejected.
- **Documentation.** For all incoming ENM the following documentation must be provided by the producer:
 - A material classification report (or equivalent) for the subject material. The report must include a statement that the subject material has been tested in accordance with relevant conditions of the ENM (2008) exemption and that the material complies with the exemption. The report must also include analytical results, laboratory quality control reports and chain-of-custody documentation.
 - A written statement of compliance (or equivalent) from the processor that the subject material complies with the ENM (2008) exemption.

- All supporting documentation is to be visually checked for suspect or fraudulent reports. If any reports are suspected to be suspect the subject material is to be rejected.
- **Records.** For all incoming loads the following information is to be recorded:
 - Name and address of the supplier
 - Vehicle registration
 - Driver name and licence number
 - Mass (kgs or tonnes) of material
 - Street or Lot and DP address of the source material
 - Material classification report
 - Statement of compliance

If the above information cannot be supplied, the subject material is to be rejected.

- **Purpose of material. Resale or Landfill (reclamation) ENM material received on site is authorised by the development consent issued by Council (Appendix 13) and EPA licence 4093 Appendix 5)**
- The intended purpose of the subject material is to be recorded (i.e. resale or landfill).
- If the material is to be used for resale, storage and processing occurs on Lot 1 in the processing area.
- If the material is to be used for landfill (reclamation) the location of the land-filling is to be recorded (for example a grid reference on a plan/map or equivalent).
- All records are to be kept for a period of three years.

FACILITY OPERATING PROCEDURE NO: 9

TITLE: RECEIPT OF VIRGIN EXCAVATED NATURAL MATERIAL (VENM)

Short description and purpose of FOP

This facility may receive Virgin Excavated Natural Material (VENM) as authorised by the development consent issued by Council (Appendix 13) and EPA licence 4093 (Appendix 5) for the following purposes:

- Site land-filling and re-vegetation activities ('Consumer'); or
- Onsite processing and subsequent re-sale ('Processor').

The Protection of the Environment Operations Act (1997) defines *virgin excavated natural material* 'as natural material (such as clay, gravel, sand, soil or rock fines):

- (a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities, and
- (b) that does not contain any sulfidic ores or soils or any other waste, and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice'.

This FOP has in turn been prepared to outline the procedures to be undertaken by MCS in relation to receipt of VEMN material.

Detailed requirements

All imported VENM material will be subject to the following procedures:

- **Advice to suppliers.** All suppliers of VENM are to be provided with a copy of this FOP prior delivery of ENM material.
- **Visual inspections.** All truck loads are to be visually inspected at the weighbridge by the site Manager/Supervisor as well as by the operator during unloading.
 - Any load containing any foreign material (as deemed by the visual inspector/s) is to be rejected.
 - If any load is found to contain any foreign material (anything other than clay, gravel, sand, soil or rock fines) after unloading is to be reloaded and rejected.
- **Documentation.** For all incoming VENM the following documentation must be provided by the producer:
 - Complete EPA Certification Virgin Excavated Natural Material Form.
 - A material classification report (or equivalent) for the subject material. The report must include a statement that the subject material is classified as 'VEMN' under the Protection of the Environment Operations Act (1997) (or equivalent wording).

- A written statement from the supplier that the subject material is classified as VEMN under the Protection of the Environment Operations Act (1997).
- All supporting documentation is to be visually checked for suspect or fraudulent reports. If any reports are suspected to be suspect the subject material is to be rejected.
- **Records.** For all incoming loads the following information is to be recorded:
 - Name and address of the supplier
 - Vehicle registration
 - Driver name and licence number
 - Mass (kgs or tonnes) of material
 - Street or Lot and DP address of the source material
 - Material classification report
 - Statement of compliance

If the above information cannot be supplied the subject material is to be rejected.

- **Purpose of material. Resale or Landfill (reclamation) VENM material received on site is authorised by the development consent issued by Council (Appendix 13) and EPA licence 4093 Appendix 5)**
- The intended purpose of the subject material is to be recorded (i.e. resale or landfill).
- If the material is to be used for resale, storage and processing occurs on Lot 1 in the processing area.
- If the material is to be used for landfill (reclamation) the location of the land-filling is to be recorded (for example a grid reference on a plan/map or equivalent).
- **Records.** All records are to be kept for a period of three years.

APPENDIX 8

ENVIRONMENTAL CONTROL PROTOCOLS (ECPs)

ENVIRONMENTAL CONTROL PROTOCOL NO: 1

TITLE: EROSION AND SEDIMENT CONTROL

Short description and purpose of ECP

Sediment may enter the natural drainage system if sediment management is not appropriate. Sources of sediments include:

- In run-off waters from working and stockpile areas;
- Sediments from access roads; and
- Sediments from areas undergoing rehabilitation.

The purpose of this ECP is to outline Environmental Control Protocols for the management of erosion and sediment control.

Detailed requirements

All controls outlined in the Water Management and Erosion and Sediment Control Plan prepared by Harvest Scientific Services Pty Ltd dated 30th October 2016 (Appendix 1) are to be implemented.

ENVIRONMENTAL CONTROL PROTOCOL NO: 2

TITLE: LANDSCAPING AND REHABILITATION

Short description and purpose of ECP

The purpose of this ECP is to outline control protocols to:

- minimise the spread of weeds (noxious or otherwise).
- enhance the controlled growth of native vegetation; and
- ensure that the site is rehabilitated in accordance with an approved plan.

Detailed requirements

All controls outlined in the Landscape Management Plan prepared by Harvest Scientific Services Pty Ltd dated 30th October 2016 (Appendix 2) are to be implemented.

ENVIRONMENTAL CONTROL PROTOCOL NO: 3

TITLE: AIR QUALITY MANAGEMENT

Short description and purpose of ECP

Roadways, turning areas, material handling areas, transport vehicles and stockpiles areas are sources of dust from this facility.

Excessive dust represents a health and amenity hazard and its generation from internal roadways and bare soil areas should therefore be suppressed as much as practical.

Detailed requirements

Control measures to be used in minimising dust generation are as follows: -

- Follow the site Air Quality Management Plan dated 40th October 2016 (Appendix 3)
- All working areas and recently rehabilitated areas are to be inspected on a daily basis by the EMR. During hours of operation, dust is to be suppressed by wetting down dusty surfaces and stockpiles, as deemed appropriate by the EMR;
- Extraction, loading and processing operations are to cease if weather conditions are adverse;
- All vehicles exiting this site must exit via the wheel wash that is located adjacent to the weigh-bridge;
- Loaders should not be operated if weather conditions are adverse;
- The fall distance from the end loader bucket should be reduced to as small a distance as practical; and
- The payload of all trucks (including trucks carrying no load) entering, leaving and on the site is to be covered at all times, except when loading or unloading.

ENVIRONMENTAL CONTROL PROTOCOL NO: 4

TITLE: NOISE MANAGEMENT

Short Description and Purpose of ECP

Processing equipment, loaders and trucks are sources of noise from this facility.

Noise is considered to be an environmental pollutant and its generation should therefore be suppressed as much as practical. The purpose of these measures is to maintain the amenity of the surroundings.

Detailed Requirements

The following measures are to be adopted:

- All equipment used at the Facility will be maintained in good order;
- Trucks entering and leaving the site will travel at slow speeds (<25km/hr);
- Shielding of shredding and screening facilities by strategically located earthen bunds;
- The use of product stockpiles and built infrastructure to shield the noisiest part of the operations from neighbouring properties;
- Ensure exhaust mufflers on all trucks and equipment are maintained to limit tonal noise emissions;
- Access roads are to be designed and graded to prevent unnecessary noise from empty trucks;
- These instructions are to be relayed to all employees and contractors operating at the Facility; and
- **Hours of operation.** In accordance with the Department of Planning & Environment's Conditions of Consent, the following hours of operation apply:
 - 7:00am to 5pm Monday to Friday;
 - 8:00am to 1:00pm Saturday; and
 - No operations are to occur on Sundays and Public Holidays

Noise levels at the boundary of the premise (in which the facility is located) are not to exceed allowable noise limits (LA10 [15 minute] noise emission criterion of 55Db(A)). Exceedance of these levels will lead to a breach of the EPA conditions of consent.

ENVIRONMENTAL CONTROL PROTOCOL NO: 5

TITLE: ABORIGINAL HERITAGE

Short description and purpose of ECP

It is an offence under the NSW NPWS Act – Section 90, to knowingly damage or destroy relics without the prior consent of the Director General, Office of Environment and Heritage (OEH).

This ECP describes procedures for the protection of Aboriginal Heritage. The purpose of these measures is to limit loss of aboriginal heritage by either preservation or recoding of occurrences.

Detailed requirements

All personnel associated with the site should be made aware of the potential for aboriginal relics to be located within close proximity to the facility;

- During the course of activities in and around the facility, all activities on a disturbed site should cease in the event that relics are uncovered; and
- The NSW EPA should be contacted and advice sought with respect to further action.

ENVIRONMENTAL CONTROL PROTOCOL NO: 6

TITLE: TRAFFIC AND TRANSPORTATION

Short description and purpose of ECP

Implementing traffic management controls to address DPE Modification 3 Consent Conditions 25th October 2012 and Statement of Commitments dated 9th October 2012 to reduce significant impact on the local and regional road network with laden truck movement limits and monitoring procedures.

Detailed requirements

Overview

- Limit the impact of development-related traffic with maximum truck movements.
- Laden truck movements from the Spring Farm Quarry to public roads will not exceed 36 per day (when averaged over any working week) or 80 or any working day.
- Set annual and monthly budgets to consider annual dispatches of extractive material products from the Spring Farm Quarry (300,000 tonnes) and laden truck movements comply with consent conditions and statement of commitments.

Monitoring traffic movements

- Comprehensive logs of truck movements of extractive materials dispatched from the Spring Farm Quarry will be recorded and maintained.
- Conduct and review weighbridge laden load reports when truck movement is considerable (increased activity/truck movement visibly noticeable)
- Conduct weighbridge laden load reports to check compliance with truck limits stated above.
- Document all split-loads (one truck movement with two products) to obtain accurate records.
- Report all exceedance to the site Manager;
- Report truck movement logs annually on the AEMR and submit to DPE and Council
- Make logs available for inspection on request by the Director General or the Council.

Limit the impact of quarry trucks on local roads

- Except, where permitted by Council, trucks travelling to and from the Spring Farm Quarry will not travel via local roads in the vicinity of the development other than Macarthur Road, Springs Road and Richardson Road.

Limiting the tracking of material onto public roads to minimise dust, particular matter and debris emissions

- All laden trucks carrying material from the Spring Farm Quarry on public roads will be covered
- All trucks leaving the Spring Farm Quarry and travelling on public roads will be cleaned of material that may fall on the road, before leaving the gate via the wheel wash.

ENVIRONMENTAL CONTROL PROTOCOL NO: 7

TITLE: RESPOND TO NON COMPLIANCE

Short description and purpose of ECP

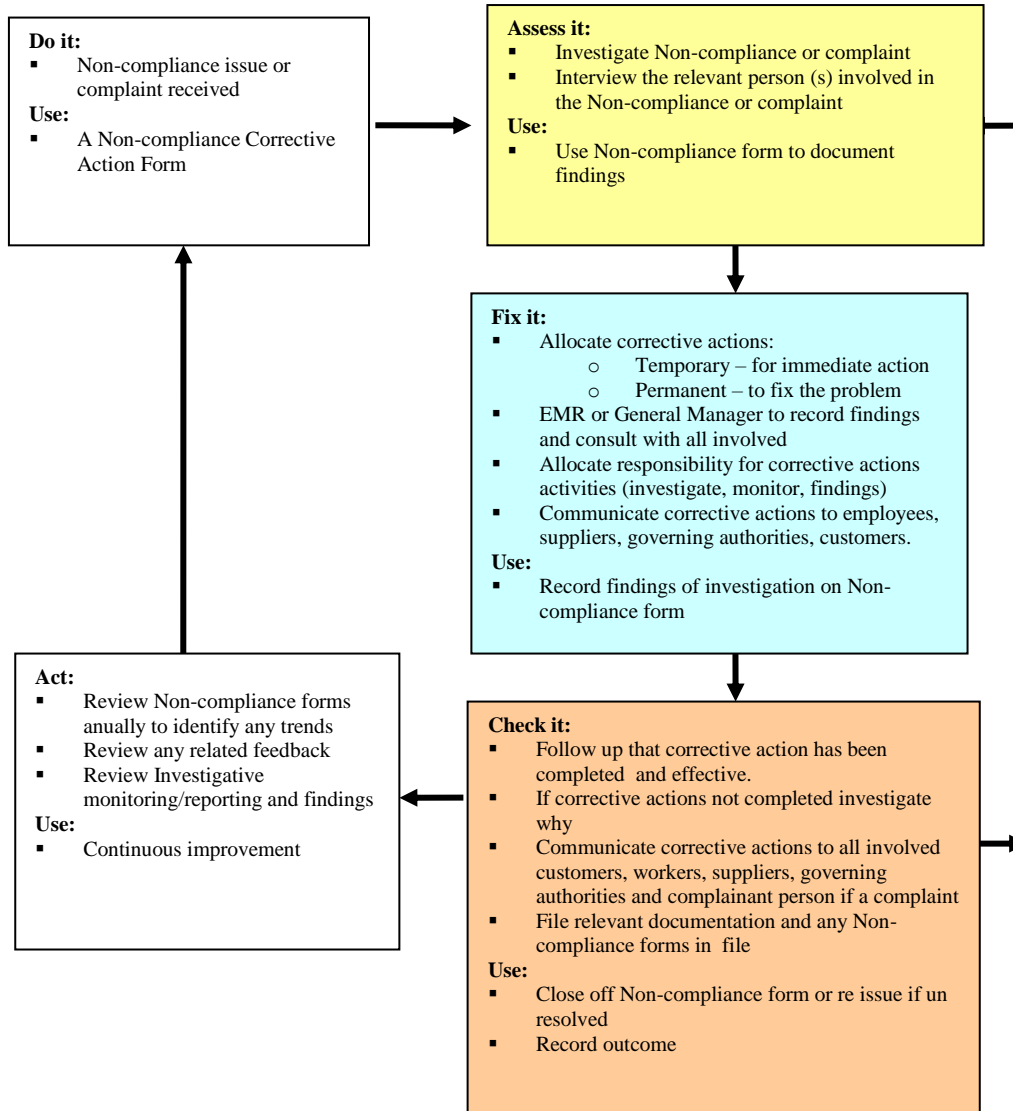
All non-compliance items and/or complaints are subject to review and rectification by the nominated personnel. The type and extent of the non-conformity is documented in order to establish trends and identify possible areas of improvement.

The corrective action required to prevent recurrence is evaluated, documented and its effectiveness implementation is monitored. All rectification is subsequently re-inspected to ensure complete customer, governing authority satisfaction.

Detailed requirements

Non compliances can be identified through the following activities:

- | | |
|--|---|
| <input type="checkbox"/> Internal audit findings | <input type="checkbox"/> Incidents |
| <input type="checkbox"/> Third party audit findings | <input type="checkbox"/> Housekeeping/Inspections |
| <input type="checkbox"/> Complaints (internal or external) | <input type="checkbox"/> Checklist findings |
| <input type="checkbox"/> Observation | <input type="checkbox"/> Near-misses |
| Annual performance Review | Exceed performance criteria |



ENVIRONMENTAL CONTROL PROTOCOL NO: 8

TITLE: CUMULATIVE IMPACT MANAGEMENT

Short description and purpose of ECP

To comply with Modification 3 Consent, Condition 1 Schedule 5 (d). To ensure an effective review process is conducted to address cumulative impacts addressed in the Environmental Assessment and Environmental Risk Reports and identified ongoing.

Detailed requirements

Cumulative impact assessment was conducted at project initiation and during DPE Consent Modification approval process. The EA primarily addressed approaches to manage cumulative impacts and are addressed through implementation of site Management Plans (EMP, AQMP, WM&ESCP, LMP)

The site Manager and EMR manage cumulative impacts by;

- Conducting AEMR annual environmental review reporting;
- Monitoring compliance to consent conditions;
- Review of the environmental risk register and identified cumulative impacts,
- Review of the Environmental Assessment and identified cumulative impacts;
- Ongoing site monitoring results to performance criteria;
- Compliance review to site management plans (Air Quality, Water Management, Sediment Control, EMP)
- Identify potential cumulative impacts adapted to suit specific circumstances arising;
- Identify cumulative trends to predict forecasts for proactive measures/actions that address the potential for non compliance with site management plans

APPENDIX 9

ENVIRONMENTAL MONITORING RECORDS (EMRs)

ENVIRONMENTAL MONITORNG RECORD 1

Monthly environmental management summary

Month:

Date of summary:

Author:

Environmental Aspect	Component	Actions required	Date undertaken
Soil and water management	Sediment basins		
	Sediment fences		
	Straw bale filters		
	Wheel wash		
	Rattle bar		
	Bunding integrity		
Re-vegetation	Weed management		
	Watering		
	Planting		
Dust management	Stockpiles		
	Access tracks		
	Bare soil areas		
	Speed limits and training		
Noise management	Location of operations		
	Equipment maintenance required		
	Maintenance of access tracks/grading		
Other			
EMP revisions			

ENVIRONMENTAL MONITORING RECORD 2

HERBICIDE/PESTICIDE USE REGISTER

All herbicide and pesticide use is to be recorded in this register.

Herbicide/pesticide use register

[illegible]

ENVIRONMENTAL MONITORING RECORD 3

TRAFFIC MOVEMENTS

Traffic movements are to be recorded in the vehicle log at the weighbridge.

ENVIRONMENTAL MONITORING RECORD 4

NOISE MONITORING

Any instrumental noise monitoring reports are to be recorded in this EMM

ENVIRONMENTAL MONITORING RECORD 5

AIR QUALITY MONITORING

All air quality monitoring reports are to be stored in this EMM.

ENVIRONMENTAL MONITORING RECORD 6

GROUNDWATER QUALITY MONITORING

All groundwater quality monitoring reports are to be stored in this EMM

ENVIRONMENTAL MONITORING RECORD 7

METEOROLOGICAL DATA

Relevant meteorological reports are to be stored in this EMM

ENVIRONMENTAL MONITORING RECORD 8

ENM REGISTER

All relevant ENM documentation is to be stored in this EMM Register

Excavated Natural Material (ENM) record sheet

Supply details

Date	
Time	
Vehicle registration	
Driver's name	
Drivers licence number	
Name of supplier	
Address of supplier	
Mass (kgs or tonnes) of material	
Street address or Lot and DP of source material	

Documentation

Document	Supplied (Y/N)
Material classification report	
Statement of compliance	

Visual inspections

Location	Inspected (Y/N)	Was material accepted (Y/N)	Signature
Weighbridge			
Field inspection			

Intended purpose of ENM

Purpose	Intended purpose (Y/N). If land-filling state grid reference for filling location.
Land-filling / rehabilitation works	
Resale	

Notes:

1. All boxes on this sheet must be filled out otherwise ENM will be rejected.
2. If visual contaminants are observed subject load must be rejected.

ENVIRONMENTAL MONITORNG RECORD 9

VENM REGISTER

All relevant VENM documentation is to be stored in this EMM

Virgin Excavated Natural Material (VENM) record sheet

Supply details

Date	
Time	
Vehicle registration	
Driver's name	
Drivers licence number	
Name of supplier	
Address of supplier	
Mass (kgs or tonnes) of material	
Street address or Lot and DP of source material	

Documentation

Document	Supplied (Y/N) – attach documents to this record sheet
Material classification report	
Statement of compliance	

Visual inspections

Location	Inspected (Y/N)	Was material accepted (Y/N)	Signature
Weighbridge			
Field inspection			

Intended purpose of ENM

Purpose	Intended purpose (Y/N). If land-filling state grid reference for filling location.
Land-filling / rehabilitation works	
Resale	

Notes:

1. All boxes on this sheet must be filled out otherwise ENM will be rejected.
2. If visual contaminants are observed subject load must be rejected.

APPENDIX 10

Complaints Register and Record Sheet

Environmental Complaints Form

Applicable Site / Address	
Name of person making the complaint	
Any personal details of the person making the complaint	
The date and time of the complaint	
(Complaint method) How was the complaint made, in person, phone, in writing etc.	
What is the nature of the complaint, noise, dust, smell or other	
What response was given to the complainant	
What immediate action was taken, detail below dates	
If no action was taken detail why no action was taken	
In what area was the incident noticed from	
When was the incident noticed	
Date and time of an investigation, record initial findings, (map, photo, etc).	
Was an authority called? And which one?	

Additional comments and notes: _____

INTERNAL USE

Person filling out this form, Name: _____ Signature: _____
Date: _____ What manager was it reported to: _____
Company and Division: _____
How was it reported: _____
Date and time the division manager received it: _____

Records to be kept for 4 years

Complaint response ongoing notes

Complaint number: _____[illegible]

APPENDIX 11

ENVIRONMENTAL INCIDENT REGISTER AND RECORD SHEET

Environmental incident record number:

Date:

Time:

Recorded by:

Signature:

Details of incident

Response/s undertaken and investigation outcomes

Response summary

Component	Y/N	Date	Comment
EPA notified			
DPE Notified			
Camden Council notified			

Environmental incident response ongoing notes

Environmental incident number:[illegible]

APPENDIX 12

ENVIRONMENTAL SUMMARY AND ENVIRONMENTAL RISK ASSESSMENT DATED 240413



Harvest Scientific Services Pty Ltd

Geotechnical Environmental & Resource Consultants

ABN 43 132 363 289

ENVIRONMENTAL SUMMARY (Inc. WASTE) AND ENVIRONMENTAL RISK ASSESSMENT

Lot 32 DP 635271 Macarthur Road, Spring Farm

Prepared for:

M Collins and Sons (Contractors) Pty Ltd

Job reference: 201279

24 April 2013

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Revisions register

Version	Date	Details
1	14/07/2011	Draft document.
2	15/07/2011	Draft document
3	14/12/2011	Various Added comment that groundwater monitoring is to be at location GW 1 until bore pump is installed and then moved to location GW 3.
4	16/02/2012	Various typographic revisions. Environmental monitoring plan updated. Assessment of tailings emplacement area.
5	16/02/2012	Assessed loss of agricultural land
6	20/04/2012	Minor typographical revisions. Updated Figure 2.
7	24/04/2013	Updated Figure 3 as per EA (mod 3)

Executive summary

Introduction

M Collins and Sons (Contractors) Pty Ltd (MCS Pty Ltd) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 MCS Pty Ltd was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

MCS Pty Ltd is currently seeking a further modification under Section 75W of the Environmental Planning and Assessment Act (1979) (NSW) to extend sand and soil extraction activities onto an adjacent portion of land located within Lot 32 DP 635271. The extension of extraction activities is proposed to consist of the following features:

- Extraction of sand and soil within a 6.8 hectare (approximate) portion of land within Lot 32 DP 635271.
- Dry screening of sand and soil within the quarry floor;
- Active extraction within a 1 hectare portion of land at a time and concurrent rehabilitation works within an additional 1 hectare portion of land;
- Extraction and rehabilitation works are proposed to occur in concert over an 8 year period (completion in 2019); and
- Rehabilitation maintenance activities are proposed to occur over an additional 2 year period.

Director General Requirements (DG) for the proposed modification were issued on 23 December 2010 and included the following requirements relating to environmental management.

- *'a summary of the existing and approved operations, including and relevant statutory approvals, and the existing environmental management and monitoring regime at the quarry';*
- *A risk assessment of the potential environmental impacts of the modification, identifying key issues for further assessment;*
- *A statement of commitments, outlining the proposed environmental management and monitoring measures'*

The DG requirements also highlighted 'Waste' as a key issue.

This report has been prepared to address the above DG requirements relating to environmental and waste management.

Conclusion

(a) Environmental risk assessment

An environmental risk assessment (**Table 2**) was undertaken for the proposed extension of extraction activities. Based on the findings of that assessment, potential environmental impacts from the project may be summarised as follows:

High risk activities (4)

- Nil.

Medium risk activities (3)

- Dust emissions from extraction areas and vehicle movements
- Dust emissions from tailings emplacement
- Noise from vehicle movements and machinery in extraction areas
- Potential impacts from asbestos access pits

Low risk activities (2)

- Dust derived from exposed sand and soil excavation faces
- Sediment emissions to waterways from extraction areas and internal roads
- Odour emissions
- Impacts on groundwater
- Impacts on indigenous heritage
- Traffic impacts
- Short-term visual
- Potential loss of Class 1 Agricultural Land

Positive impact activities (1)

- Positive ecological impacts by:
 - re-vegetation works along the Dry River Anabranh and the riparian corridor associated with the Nepean River
 - removal of Noxious weeds in the riparian corridor of the Nepean River and the Dry River Anabranh
- Long-term visual impacts as a result of rehabilitation works along the Nepean River and the Dry River Anabranh
- Positive social impacts by:
 - the provision of employment
 - provision of sand and soil for the local market
 - a reduction of traffic impacts on local roads (and on local community) by the provision of a local source of sand and soil. The alternative is to import sand and soil products that are required by the local community but from sources that are not locally produced and over much greater distances.

(b) Waste management

The potential for generation of waste from the proposed extension activities is low. Nonetheless, a number of waste management protocols were recommended to provide for the effective waste management for the project.

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APPENDIX 2	Environment Protection Licence (EPL)
APPENDIX 3	Controlled Activity Approval (CAA)

ABBREVIATIONS

DA	Development Application
DGRs	Director General Requirements
ECP	Erosion Control Protocol
WM & ESCP	Water Management (inc. groundwater) and Erosion and Sediment Control Plan

1. INTRODUCTION

M Collins and Sons (Contractors) Pty Ltd (MCS Pty Ltd) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 MCS Pty Ltd was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

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This report has been prepared to address the above DG requirements relating to environmental and waste management.

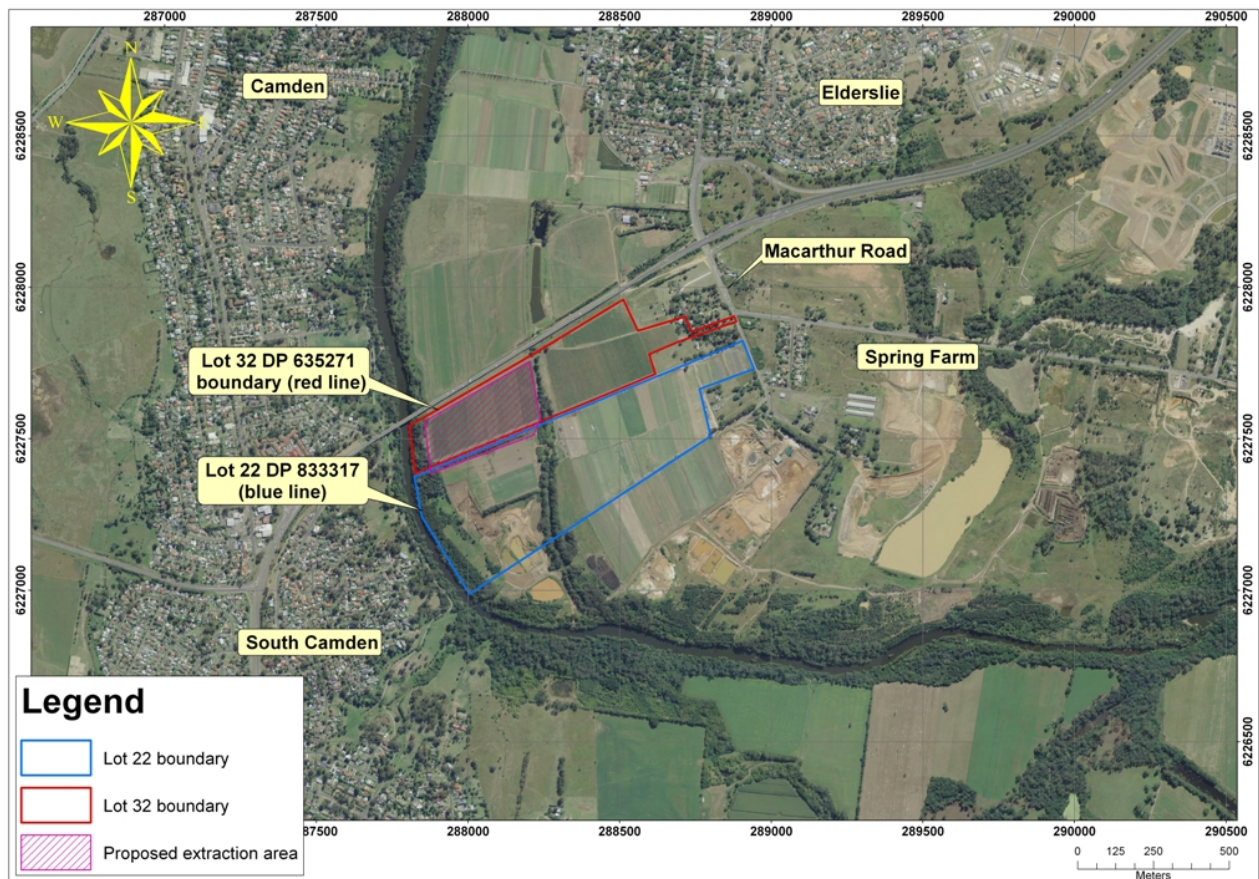
2. PROJECT OVERVIEW (EXISTING OPERATIONS)

2.1. Introduction and site location

MCS Pty Ltd own and operate the Spring Farm sand and soil quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). These operations are accessed via Macarthur Road, Spring Farm (**Figure 1**). A site plan for the facility, indicating the existing extraction areas is presented on **Figure 2**.

This site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

Figure 1. Site location. Source of aerial photo: Department of Lands circa 2008.



2.2. Description of operations - Statement of Environmental Effects (SEE)

A description of the existing operations is presented in the SEE prepared by **McCotter Consulting Services Pty Ltd (2008)**.

2.3. Hours of operation

As per Condition 7 (Schedule 3) of the **DoP (2009)** Notice of Modification (**Appendix 1**), the hours of operation are:

- Monday to Friday: 7:00am to 5:00pm
- Saturday: 8:00am to 1:00pm
- No time on Sundays or Public Holidays

The above hour limits do not apply to:

- Maintenance which is inaudible at receiver locations; or
- For the delivery of material if that delivery is required by Police or other authorities for safety reasons, and/or the operation or personnel or equipment are endangered. In such circumstances, notification is to be provided to DECCW and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

2.4. MCS Pty Ltd Environmental policy

The management of MCS Pty Ltd is committed to carrying out all extraction and processing of sand and soil and composting and blending activities subject to a well defined environmental policy. This policy is specific to operations located on Lot 22 DP833317, Macarthur Road, SPRING FARM.

The environmental policy, as set out below is the basis for the standards contained in this EMP. Accordingly, MCS Pty Ltd is committed to:

- the extraction and processing of sand and soil in an environmentally sensitive manner and to supply a variety of products to a number of consumers in the landscaping and horticultural construction industries;
- the implementation of sound environmental management at all levels, incorporating environmental considerations into investment and corporate strategy and undertaking a regular review of environmental practices, including an extensive monitoring program;
- developing a high level of environmental awareness amongst employees, along with encouraging environmental excellence amongst its suppliers and contractors;
- meeting all of the requirements of relevant statutory consents, approvals, licences, etc issued to MCS Pty Ltd and relating to the operations on the subject site;
- complying with all general and specific requirements of NSW environmental law covering pollution control, health and safety and environmental planning generally;
- meeting the reasonable requirements of the Department of Planning (DoP) and to work with the DoP in the furtherance of environmental standards on the site and the development of regional planning strategies for the long-term benefit of the Spring Farm area and the citizens of the Elderslie and Spring Farm community; and
- communicating with local community groups and to do so in an open and frank manner, in order to facilitate harmonious relationships between the parties, and achieve an environmentally responsible outcome.

All employees and contractors are bound to observe this policy and the rules and requirements promulgated under this policy.

3. DEVELOPMENT PROGRAM AND APPROVALS (EXISTING OPERATIONS)

3.1. Agency approvals and licensing

3.1.1. Development Consent – NSW Department of Planning

M Collins and Sons (Contractors) Pty Ltd (MCS Pty Ltd) owns and operates the Spring Farm Quarry located at Lot 22 DP833317 at Spring Farm, in the Camden Local Government Area (LGA). Development consent (DA 75/256) for the extraction and processing of sand and soil was originally granted by the Minister for Planning in 1988 and the consent was modified in 1998 to extend the quarry's life. The site is a major source of products for the Sydney region and comprises part of the regionally significant resource identified in the Sydney Regional Environmental Plan No 9 (Extractive Industry).

On the 22 May 2009 MCS Pty Ltd was granted a further Section 96(2) Modification for the Continuation of Operations by the Department of Planning for extraction within an 8 hectare portion of the subject site and for the continued processing of extracted materials onsite. That approval was to allow operations to continue for a further 10 year period until 2019.

A copy of the DoP development consent is presented in **Appendix 1**.

3.1.2. Environmental Protection Licence (EPL)

This development is subject to EPL 4093 (**Appendix 2**).

3.1.3. Controlled Activity Approval (CAA)

This development is subject to a CAA (**Appendix 3**).

4. ENVIRONMENTAL RISK AND PLANNING

4.1. Introduction and environmental risk assessment framework

All organizations have some impact on the environment. For environmental management, however, an Environmental Management Plan (EMP) is a structured system designed to help an organization to reduce these impacts through targeted continuous improvement in its management of the environment, leading to improvements in the operations overall environmental performance. As such, to effectively implement an EMP, potential impacts associated with each aspect of an activity must be identified through an environmental risk assessment. This risk assessment process should be ongoing and aim at determining past, present and potential impacts.

An environmental risk assessment rating system adapted from **Environment Australia (2007)**, which is outlined in **Table 1**, has been adopted for the assessment of risks associated with the proposed operation. The results of this assessment will be included in the operational EMP for this facility.

Table 1. Environmental risk significance rating table.

Risk of Occurrence						
May be as a result of a continuously operated process, activity or occurrence.	Continuous	1	4	4	4	4
May be a result of a frequently used process, activity or occurrence.	Frequent	1	2	3	4	4
May be a result of a little used process, activity or occurrence.	Occasional	1	2	3	4	4
May be as a result of a chain of unusual events leading to an environmental incident	Remote	1	2	3	3	4
May be a result of a chain of extraordinary events leading to an environmental accident/disaster.	Improbable	1	2	3	3	4
	Significance (Degree of Impact)	Positive	Minor	Critical	Major	Catastrophic
		Positive impact on environment thus positive impact on business	Limited and/or localised impact on the environment and/or business	Medium scale impacts, wider implications to environment and/or business	Serious long term implications for environment and/or business	Serious permanent damage to business and/or environment (e.g. loss of licence, restriction of activity)

Key to Risk Significance Rating	1	Positive
	2	Low Risk
	3	Medium Risk
	4	High Risk

4.2. Environmental risk rating for the proposed operation

A review of potential environmental impacts associated with the proposed extension of extraction operations was conducted by HSS Pty Ltd. The review consisted of discussions with site management personnel about potential environmental impacts, a site walk-over (whilst the existing facility was in full operation), and a review of previous EMPs, a Dust Management Plan and Conditions of Consent that were made available by site management.

A summary of the potential environmental impacts associated with the proposed development and risk ratings based on **Table 1** is presented in **Table 2**.

Table 2. Summary of environmental aspects and associated risk assessment rating (in brackets)

Activity Number	Activity	Potential Aspects	Potential environmental impacts identified in initial review and risk assessment rating (in brackets)
1	Dry sand extraction and dry sand screening area	Agricultural	Potential loss of 'Class 1' Agricultural Land. (2 – Remote/Minor)
		Contamination	Potential environmental and health risks associated with asbestos access pits. (3 – Remote/Major)
			Potential environmental and health risks associated existing soil contamination (2 – Improbably/minor)
		Dust	Derived from bare soil in working areas and extraction and processing (3 – Frequent/Critical)
			Derived from dry screening (2 – Frequent/Minor)
			Derived from use of loaders (2 – Frequent/ Minor)
			Derived from stockpiles (2 – Occasional/Minor)
			Derived from stackers (2 – Frequent/Minor)
			Derived from excavation face (2 – Frequent/ Minor)
		Noise	Generation of noise from quarry pit (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/minor)
		Water	Sediment discharges from rain events to local water ways (2 – Remote/minor)
			Impact on groundwater (2 – Improbable/minor)
		Aboriginal heritage	Impact on aboriginal sites (2 – Remote/minor)
			Impact on artefacts (2 – Remote/minor)
		Ecological	Impact on threatened flora and vegetation communities (1 – Continuous/positive)
			Removal of Noxious weeds from the Nepean River and Dry River Anabranh riparian corridors (1 – Continuous/positive)
			Impact on habitat for native species (1 – Continuous/positive)
		Traffic	Impact on traffic volumes (2 – Remote/minor)
		Visual	Short-term visual landscape change (2 – Frequent/minor)
			Long-term visual impact. Improvement in long-term visual impact by planting local provenance vegetation along the Dry River Anabranh and rehabilitation of the Nepean River Riparian corridor.

Activity Number	Activity	Potential Aspects	Potential environmental impacts identified in initial review and risk assessment rating (in brackets)
			(1 – Continuous/positive)
		Social	Provision of employment (1 – Continuous/positive)
			Supply of sand and soil for local community (1 – Continuous/positive)
			Reduction of traffic impacts on local roads (and on local community) by the provision of a local source of sand and soil. The alternative is to import the sand and soil products that are required by the local community but from sources that are not locally produced and over much greater distances. (1 – Continuous/positive)
2	Internal roadways and vehicular movements	Dust	Derived from internal roadways (3 – Frequent /Critical)
			Derived from loads (3 – Frequent/Critical)
			Derived from sediment on wheels and tyres (2 – Remote/Minor)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/Minor)
		Water	Sediment discharges from rain events to local water ways (2 – Remote/Minor)
3	Tailings emplacement	Dust	Derived from placement activities (3 – Remove/Critical)
		Noise	Generation of noise impacting on amenity of surround areas (3 – Frequent/Critical)
		Odour	Generation of odour impacting on amenity of surround areas (2 – Improbable/Minor)
		Water	Sediment discharges from rain events to local water ways (2 – Remote/Minor)

4.3. Summary of Environmental Risks

Based on **Table 2**, activities with the greatest degree of environmental risk are listed below in an approximate order of priority:

High risk activities (4)

- Nil.

Medium risk activities (3)

- Dust emissions from extraction areas and vehicle movements
- Dust emissions from tailings emplacement
- Noise from vehicle movements and machinery in extraction areas
- Potential impacts from asbestos access pits

Low risk activities (2)

- Potential loss of Class 1 Agricultural land
- Dust derived from exposed sand and soil excavation faces
- Sediment emissions to waterways from extraction areas and internal roads
- Odour emissions
- Impacts on groundwater
- Impacts on indigenous heritage
- Traffic impacts

- Short-term visual

Positive impact activities (1)

- Positive ecological impacts by:
 - re-vegetation works along the Dry River Anabranh and the riparian corridor associated with the Nepean River
 - removal of Noxious weeds in the riparian corridor of the Nepean River and the Dry River Anabranh
- Long-term visual impacts as a result of rehabilitation works along the Nepean River and the Dry River Anabranh
- Positive social impacts by:
 - the provision of employment
 - provision of sand and soil for the local market
 - a reduction of traffic impacts on local roads (and on local community) by the provision of a local source of sand and soil. The alternative is to import sand and soil products that are required by the local community but from sources that are not locally produced and over much greater distances.

5. ENVIRONMENTAL MONITORING, TARGETS AND COMMITMENTS**5.1. Introduction**

The management of MCS Pty Ltd have committed to undertaking environmental monitoring in accordance with the requirements outlined in this report section.

5.2. Environmental monitoring locations

Environmental monitoring locations are outlined on **Figure 3**.

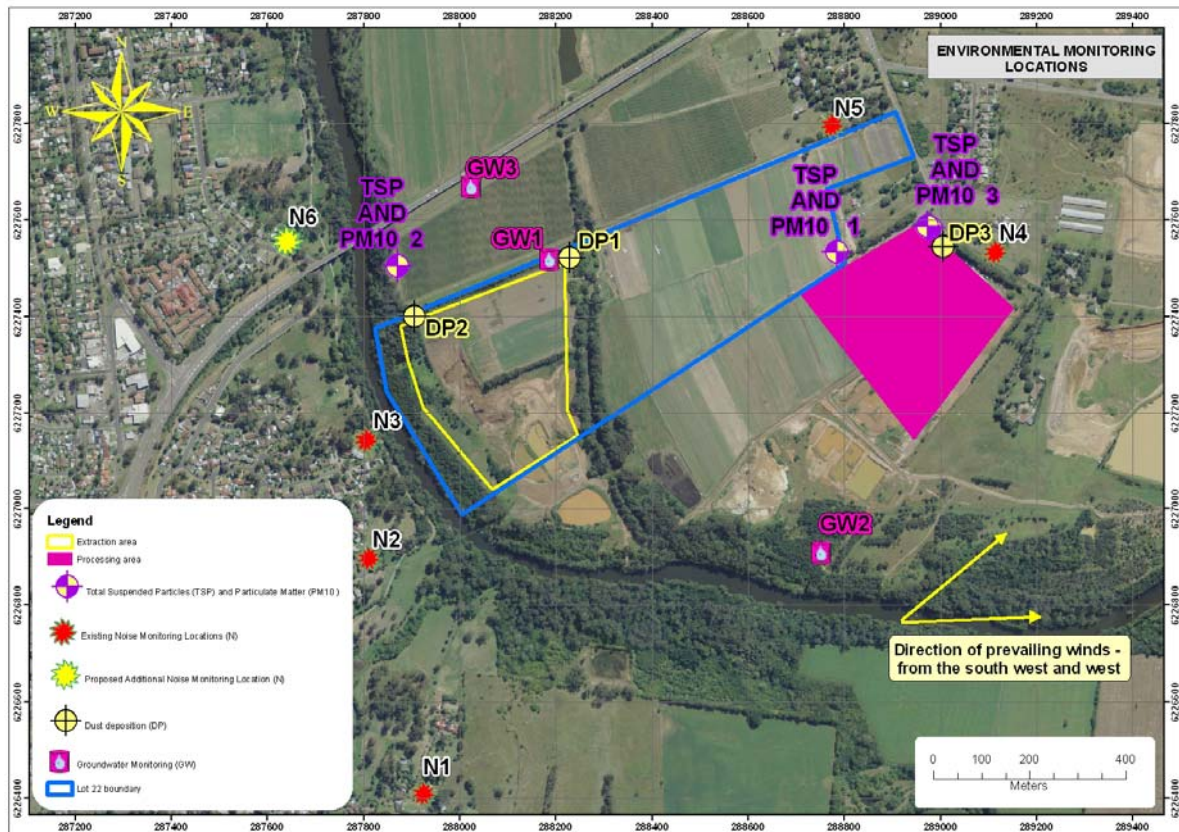


Figure 3. Environmental monitoring locations

5.3. Environmental targets

Environmental targets for this facility are outlined in **Table 3**.

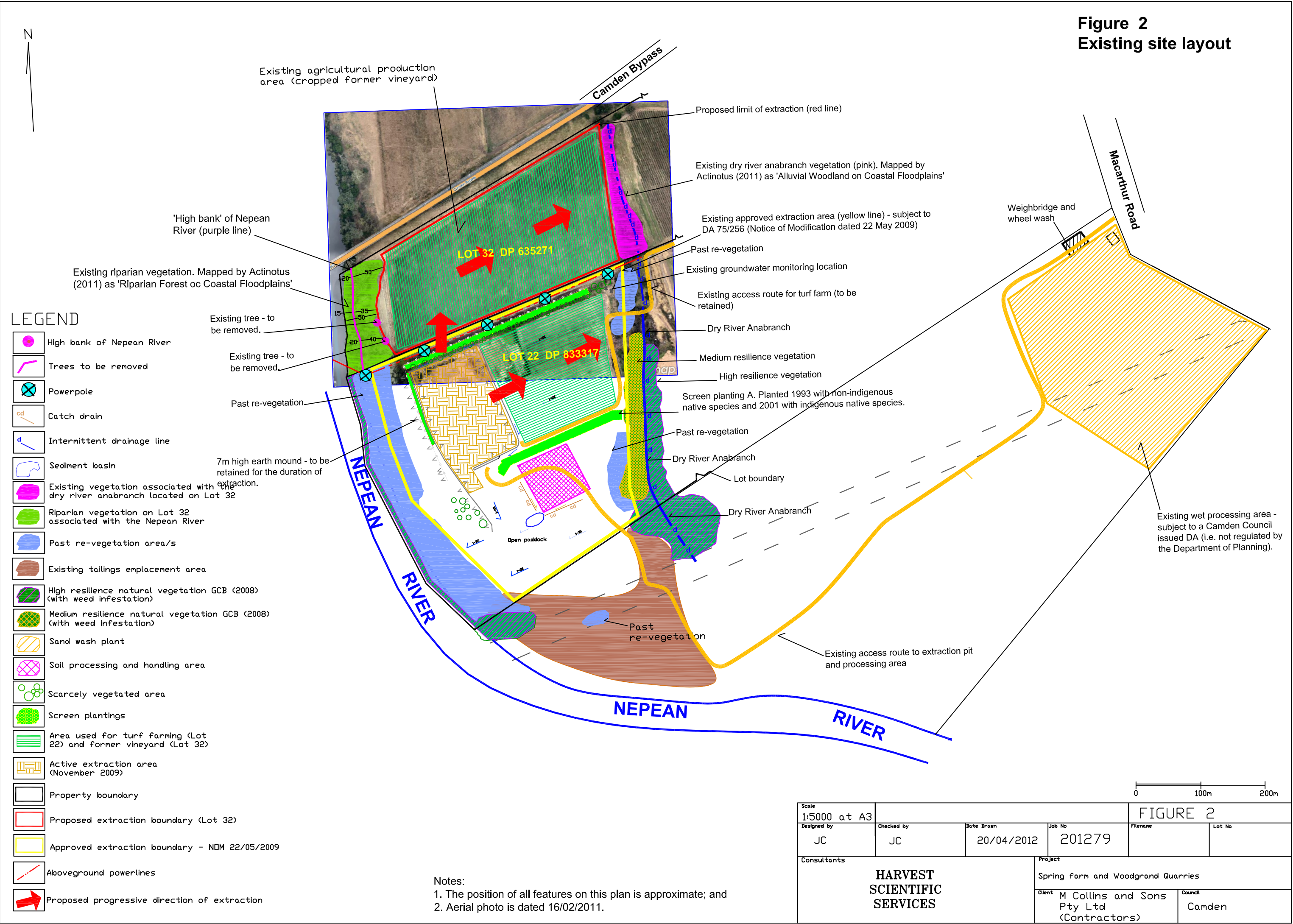
Table 3: Environmental monitoring targets

Environmental aspect	Component	Location	Target	Averaging period	Source
Air quality	Nuisance dust – deposited dust.	DP1, 2 and 3 - Figure 3	< 4 g / m ² / month	Annual	Existing consent. DoP (2009)
	Long-term - Total Suspended Particles (TSP) Matter	TSP 1, 2 and 3 - Figure 3	< 90 µg/m ³	Annual	
	Long-term - Particulate Matter (PM ₁₀)	TSP 1, 2 and 3 - Figure 3	< 30 µg/m ³	Annual	
	Short-term - Particulate Matter (PM ₁₀)	TSP 1, 2 and 3 - Figure 3	< 50 µg/m ³	24 hour	
Noise	LA10 (15 minute) at each sensitive receptor outlined on Figure 3.	N1, N2, N3, N4, N5, N6 – Figure 3	< 55 dB(A)	15 minutes	EPL 4093
Groundwater	Electrical conductivity	GW 1, GW 3 - Figure 23	< 800 uS/cm	N/A	

Notes:

1. In the event that a pump is installed on GW1 for irrigation and/or process water, GW 3 is to become the dominant groundwater monitoring location. A licence is to be sought from the NSW Office of Water to monitor groundwater at location GW3.

Figure 2
Existing site layout



5.4. Monitoring parameters and frequency

Environmental parameters to be monitored and the frequency of monitoring are outlined in **Table 4**.

Table 4: Environmental monitoring parameters

Monitoring parameter	Frequency	Parameters to be measured	Equipment required
Water Quality			
Groundwater	Monthly	pH, EC, depth to groundwater (m)	Field pH and EC meters, water sampling device, tape measure.
Noise			
Ambient audible noise	Daily	Awareness of noise sources and controls. No routine parameters to be measured	EMR
After a noise related complaint	If directed by DoP, DECCW and/or Camden Council	LA10 (15 minute)	Appropriately qualified consultant.
Air quality			
Dust deposition	Monthly	Dust deposition. (g/m ² /month)	Dust monitoring station.
Particulate Matter	For a period of six (6) months and until compliance with targets is achieved.	TSP and PM ₁₀	Hi Vol sampler with TSP and PM ₁₀ head.
Sediment controls			
All sediment controls, including, bunds, straw bale filters and sedimentation basin/s	After each rain event	Visual inspection of sediment control devices by EMR.	EMR.
	Monthly monitoring	Visual inspection of sediment controls.	EMR
Rehabilitation Works			
Rehabilitation progress	Monthly monitoring	Visual inspection of re-vegetation progress. Notes on maintenance requirements, including spraying for weeds and replacement of trees / shrubs, as required.	Ecologist.
Weed management	Monthly	Visual inspection of weed infestations and control requirements	EMR / Ecologist
	When herbicides are used.	<ul style="list-style-type: none"> • Date of chemical control; • Herbicide applied; • Time applied; and • Wind direction (if any). 	EMR/Ecologist
Environmental Management Reporting			
Annual Environmental Management Report (AEMR)	Within 12 months of date of DoP approval (22/05/2009) and annually thereafter.	As per s4 of Schedule 5 of Appendix 1 .	Environmental consultant
Independent Environmental Audit	Within 12 months of date of DoP approval (22/05/2009) and every three years thereafter.	As per s5 of Schedule 5 of Appendix 1 .	Environmental consultant
Report to DPI for annual production data.	Annually by 15 December.	Complete form.	Industry and Investment (DPI) form
EPA License	Annually, by 26 October.	Complete form	EPL licence annual form.

6. WASTE MANAGEMENT

6.1. MCS Pty Ltd waste management policy

MCS Pty Ltd will ensure that all waste and waste products generated by the operation and its employees and contractors as a result of the on-site activities are reused or recycled, disposed of in a safe and efficient manner without harm to employees and the public, and in compliance with relevant environmental legislation and voluntary programs to which the organisation subscribes.

Accountability for the application of this policy rests with the Managing Director of MCS Pty Ltd and all employees sharing waste management responsibilities. All personnel on the site are responsible for the

implementation of this policy and MCS Pty Ltd will commit the resources necessary to ensure efficient and environmentally friendly waste management practices.

The goals of this policy will be achieved by environmentally responsible:

- Avoidance practices
- Re-use and recovery practices;
- Recycling and disposal practices; and
- Waste management research and training

In implementing this policy, MCS Pty Ltd will consider:

- The environmental impact of waste treatment and disposal options;
- The nature and quantity of the wastes produced;
- Waste streams and their disposal when specifying plant and equipment;
- Waste minimisation through purchasing and procurement; and
- Employee health and safety

MCS Pty Ltd waste management practices will be reviewed on a regular basis to ensure compliance with the policy and the legislative and regulatory framework. Re-use, recycling and disposal options will be periodically reviewed to ensure the most efficient practices are being utilised.

6.2. MCS Pty waste management protocols

Waste generated from this facility shall be managed subject to the following controls:

- All waste generated from this facility is to be segregated into putrescible waste, organic waste, paper/cardboard, oils and grease and plastic/glass. Bins for each waste stream shall be provided at the site office.
- All putrescible waste and non-organic recyclable waste (including engine oils) are to be disposed of offsite at Jack's Gully Waste management facility on a weekly basis.
- Organic waste that is free of weed seeds and pathogens shall be mulched and re-used for onsite revegetation works;
- Screening reject shall be re-used for rehabilitation works; and
- Tailings material will be utilised for land-forming for site rehabilitation works.

7. CONCLUSIONS

7.1. Environmental risk

An environmental risk assessment (**Table 2**) was undertaken for the proposed extension of extraction activities. Based on the findings of that assessment, potential environmental impacts from the project may be summarised as follows:

High risk activities (4)

- Nil.

Medium risk activities (3)

- Dust emissions from extraction areas and vehicle movements
- Dust emissions from tailings emplacement
- Noise from vehicle movements and machinery in extraction areas

- Potential impacts from asbestos access pits

Low risk activities (2)

- Potential loss of Class 1 Agricultural land Dust derived from exposed sand and soil excavation faces
- Sediment emissions to waterways from extraction areas and internal roads
- Odour emissions
- Impacts on groundwater
- Impacts on indigenous heritage
- Traffic impacts
- Short-term visual

Positive impact activities (1)

- Positive ecological impacts by:
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7.2. Waste management

The potential for generation of waste from the proposed extension activities is low. Nonetheless, a number of waste management protocols were recommended to provide for the effective waste management for the project.

Prepared by:



Jim Cupitt BScAgr
Senior Environmental Scientist

REFERENCES

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- Standards Australia, 2007. AS/NZ ISO 14000. Environmental Management

APPENDIX 1

Development Consent Conditions issued by the Department of Planning (DoP)

Notice of Modification

Section 96(2) of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning, I modify the development consent referred to in Schedule 1, as set out in Schedule 2.



Chris Wilson
Executive Director
Major DA Assessment

Sydney

22 May

2009

SCHEDULE 1

Development consent granted by the Minister for Planning on 13 October 1988 for the Spring Farm Quarry at 186 Macarthur Road, Lot 22 DP 833317 (formerly Lot 2 DP 625278 Vol 14788 Folio 34).

SCHEDULE 2

Delete all words including and following the words "The Application" and insert the following conditions of consent:

SCHEDULE 1

Development Application:	DA 75/256
Applicant:	M Collins and Sons (Contractors) Pty Ltd
Approval Authority:	Minister for Planning
Land:	Lot 22 DP 833317
Development:	Spring Farm Quarry

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DEFINITIONS

AEMR	Annual Environmental Management Report
Applicant	M Collins & Sons (Contractors) Pty Ltd, or its successors
Council	Camden Council
DECC	Department of Environment and Climate Change
Department	Department of Planning
Development	The operation, closure and rehabilitation of the Spring Farm Quarry as described in the SEE
Director-General	Director-General of the Department of Planning, or delegate
DPI	Department of Primary Industries
DWE	Department of Water and Energy
EIS	Environmental Impact Statement prepared by Longworth & McKenzie Pty Ltd dated October 1985 that accompanied the original development application in 1988
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Minister	Minister for Planning, or delegate
Privately owned land	Land not owned by a public agency or the Applicant or its related companies
RTA	Roads and Traffic Authority
SEE	Statement of Environmental Effects for the development dated September 2008, prepared by McCotter Consulting Services.
Site	Land to which the development application applies
Statement of Commitments	Statement of Commitments provided by the Applicant, dated 17 April 2009 (see Appendix 1)
Stockpile and blending site	Land adjacent to the site, located at Lot 1 DP587631

SCHEDULE 2 ADMINISTRATIVE

Obligation to Minimise Harm to the Environment

1. The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the establishment, operation, or rehabilitation of the development.

Terms of Approval

2. The Applicant shall carry out the development generally in accordance with the:
 - (a) EIS;
 - (b) SEE;
 - (c) Statement of Commitments (see Appendix 1); and
 - (d) conditions of this approval.
3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Extraction and processing operations may take place until 30 June 2019.

Note: Under this approval, the Applicant is required to rehabilitate the site to the satisfaction of the Director-General. Consequently this approval will continue to apply in all other respects other than the right to conduct extraction and processing operations until the site has been rehabilitated to a satisfactory standard.

Operation of Plant and Equipment

6. The Applicant shall ensure that all plant and equipment used at the site is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient condition.

Contributions

7. The Applicant shall pay an annual contribution of \$6,500 (adjusted annually by reference to the Consumer Price Index) to Council for the maintenance of Macarthur Road, between the main site entrance and the intersection with Springs Road.

Inspection of Site

8. The Applicant shall permit access to the site to Council officers or any other public authority at reasonable times for the purposes of inspecting site operations and environmental monitoring.

SCHEDULE 3 ENVIRONMENTAL PERFORMANCE

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Operating Conditions

1. The Applicant shall not excavate outside the extraction areas or the limits of extraction shown in Appendix 2.
2. The Applicant shall not open, excavate or work an area exceeding 2 hectares at any one time without the written consent of Council.
3. The Applicant shall not stockpile or process any extractive material on the site with the exception of:
 - (a) a 7m high earthen bund to be maintained to the west of the working extraction cell until completion of extraction activities within that cell; and
 - (b) mobile screening.
4. The Applicant shall not import fill to the site for any purpose without written approval from Council.

NOISE

Operational Noise

5. The Applicant shall ensure that site operations, including processing and transportation, are conducted in such a way as to minimise noise emissions from the site.
6. The Applicant shall ensure that noise generated by the development does not exceed the noise impact assessment criteria as specified in the EPL.

Operating Hours

7. The Applicant shall only operate the development:
 - (a) between the hours of 7:00am and 5:00pm Monday to Friday;
 - (b) between 8:00am and 1:00pm Saturday; and
 - (c) at no time on Sundays or Public Holidays

Notes: This condition does not apply to:

- maintenance which is inaudible at receiver locations or
- for delivery of material if that delivery is required by police or other authorities for safety reasons, and/or the operation or personnel or equipment are endangered. In such circumstances, notification is to be provided to DECC and the affected residents as soon as possible, or within a reasonable period in the case of emergency.

AIR QUALITY

Impact Assessment Criteria

8. The Applicant shall ensure that dust generated by the development does not cause exceedances of the criteria listed in Tables 1, 2 and 3 at any residence or on more than 25 percent of any privately owned land.

Table 1: Long Term Impact Assessment Criteria for Particulate Matter

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

Table 2: Short Term Impact Assessment Criteria for Particulate Matter

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

Table 3: Long Term Impact Assessment Criteria for Deposited Dust

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

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS 3580.10.1-1991: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Operating Conditions

9. The Applicant shall ensure that any visible air pollution generated by the development is assessed regularly, and that quarrying operations are relocated, modified and/or stopped as required to minimise air quality impacts on privately-owned land.

Air Quality Monitoring

10. The Applicant shall prepare and implement an Air Quality Monitoring Program for the development to the satisfaction of the Director-General. This program must:
 - (a) be submitted to the Director-General for approval within 3 months of the date of this approval;
 - (b) be prepared in consultation with DECC; and
 - (c) include details of how the air quality performance of the development would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval.

WATER

Discharges

11. The Applicant shall not discharge any water from the quarry or its associated operations except in accordance with an EPL.

Water Management and Monitoring

12. The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Director-General. This plan must:
 - (a) be submitted to the Director-General within 3 months of the date of this approval;
 - (b) be prepared in consultation with Council and DECC; and
 - (c) include a:
 - Site Water Balance;
 - Erosion and Sediment Control Plan;
 - Groundwater Monitoring Program; and
 - Flood Emergency Procedures Plan.
13. The Site Water Balance must:
 - (a) include details of:
 - sources and security of water supply;
 - water use on site;
 - water management on site, including the location and capacity of water storages on site and the means of access;
 - any off-site water transfers; and
 - reporting procedures; and
 - (b) investigate and describe measures to minimise water use by the development.
14. The Erosion and Sediment Control Plan must:
 - (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
 - (b) identify activities that could cause soil erosion and generate sediment;
 - (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, including during flood events;
 - (d) describe the location, function, and capacity of erosion and sediment control structures;
 - (e) demonstrate that the design capacity of basins will not be compromised by storage of operational water; and
 - (f) describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.
15. The Groundwater Monitoring Program must include:
 - (a) baseline data on groundwater levels, flows and quality in the vicinity;
 - (b) groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; and

- (c) a program to monitor any observed groundwater inflows to the quarry pit.
16. The Flood Emergency Procedures Plan must:
- (a) address both the site and the adjacent stockpiling and blending site;
 - (b) include procedures to be carried out in advance of a major flood event to minimise damage to plant equipment, operating staff and the environment; and
 - (c) include procedures to be followed after a major flood event to repair any damage and return the site to productive operations, including reinstatement of all pollution control devices and rehabilitation.

LANDSCAPE MANAGEMENT

Landscape Management Plan

17. The Applicant shall prepare and implement a detailed Landscape Management Plan for the development to the satisfaction of the Director-General. This Plan must:
- (a) be prepared in consultation with Council and DECC by suitably qualified expert/s whose appointment/s have been approved by the Director-General;
 - (b) be submitted to the Director-General for approval within 6 months of the date of this approval; and
 - (c) include a Rehabilitation Management Plan.

Rehabilitation Management Plan

18. The Applicant shall prepare and implement a Rehabilitation Plan for the development. This plan must include:
- (a) the rehabilitation objectives for the site;
 - (b) a description of the short, medium, and long term measures that would be implemented to rehabilitate the site, including establishing healthy native vegetation and habitat for native fauna or other future land use acceptable to Council;
 - (c) performance and completion criteria for the rehabilitation of the site;
 - (d) a detailed description of the measures that would be implemented including the procedures for:
 - progressively rehabilitating disturbed areas;
 - protecting areas outside the disturbance areas;
 - protecting the Nepean River and drainage lines on the site to ensure no net loss of water quality and aquatic habitat;
 - managing impacts on fauna;
 - landscaping the site to minimise visual impacts;
 - conserving and reusing topsoil;
 - achieving a free draining final landform;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement;
 - controlling weeds and feral pests;
 - controlling access; and
 - bushfire management;
 - (e) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);
 - (f) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
 - (g) details of who would be responsible for monitoring, reviewing, and implementing the plan.

HERITAGE

Archaeology

19. Should the Applicant discover material suspected of being Aboriginal relics or skeletal remains, work in that area shall cease and the Applicant shall advise DECC and proceed in accordance with DECC instructions.

VISUAL

Visual Amenity

20. The Applicant shall establish and maintain perimeter plantings in order to minimise the visual impacts of the development, to the satisfaction of Council.

WASTE MANAGEMENT

Waste Minimisation

21. The Applicant shall minimise the amount of waste generated by the development to the satisfaction of Council.

Waste Disposal

22. The Applicant shall store and manage waste and by-products generated by the development to the satisfaction of Council.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

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

Safety

24. The Applicant shall secure the development to ensure public safety to the satisfaction of Council.

Bushfire Management

25. The Applicant shall:
- (a) ensure that the development is suitably equipped to respond to any fires on-site; and
 - (b) assist the Fire Service and emergency services as much as possible if there is a fire on site.

PRODUCTION DATA

26. The Applicant shall:
- (a) provide annual production data to the DPI using the standard form for that purpose; and
 - (b) include a copy of this data in the AEMR.
-

SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria, then the Applicant shall notify the Director-General and the affected landowners and tenants accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant criteria.

INDEPENDENT REVIEW

2. If a landowner of privately owned land considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Applicant in writing for an independent review of the impacts of the development on his/her land.

If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Director-General advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to determine whether the development is complying with the relevant criteria in Schedule 3, and identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and
 - (c) give the Director-General and landowner a copy of the independent review.
3. If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the Director-General.
 4. If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Applicant shall:
 - (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in Schedule 3,to the satisfaction of the Director-General.

If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Applicant may discontinue the independent review with the approval of the Director-General.

If the Applicant is unable to finalise an agreement with the landowner, then the Applicant or landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3).

5. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3).

SCHEDULE 5

ENVIRONMENTAL MANAGEMENT, MONITORING, REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT PLAN

1. The Applicant shall prepare and implement an updated Environmental Management Plan for the development to the satisfaction of the Director-General. This plan shall be submitted to the Director-General for approval 3 months after the date of this consent and:
 - (a) provide the overall environmental management approach for the development;
 - (b) identify the statutory requirements that apply to the development;
 - (c) describe in general how the environmental performance of the development would be monitored and managed;
 - (d) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the life of the development;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies, including flood-related emergencies; and
 - (e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.

ENVIRONMENTAL MONITORING PROGRAM

2. The Applicant shall prepare an Environmental Monitoring Program for the development to the satisfaction of the Director-General. This program shall be submitted to the Director-General concurrently with the submission of the various monitoring programs and consolidate the various monitoring requirements in Schedule 3 of this approval into a single document.

REPORTING

Incident Reporting

3. Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Applicant shall report the exceedance/incident to the Department and any relevant agencies. This report shall:
 - (a) describe the date, time, and nature of the exceedance/incident;
 - (b) identify the cause (or likely cause) of the exceedance/incident;
 - (c) describe what action has been taken to date; and
 - (d) describe the proposed measures to address the exceedance/incident.

Annual Reporting

4. Within 12 months of the date of this approval, and annually thereafter, the Applicant shall submit an AEMR to the Director-General, relevant agencies and Council. This report shall:
 - (a) identify the standards and performance measures that apply to the development;
 - (b) describe the works that will be carried out in the next 12 months;
 - (c) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
 - (d) include a summary of the monitoring results for the development during the past year;
 - (e) include an analysis of these monitoring results against the relevant:
 - impact assessment criteria/limits;
 - monitoring results from previous years; and
 - predictions in the EA;
 - (f) identify any trends in the monitoring results over the life of the development;
 - (g) identify any non-compliance during the previous year; and
 - (h) describe what actions were, or are being, taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

5. Within 12 months of the date of the consent, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit shall:
 - (a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the Director-General;
 - (b) include consultation with the relevant agencies;
 - (c) assess the environmental performance of the development, and its effects on the surrounding environment;
 - (d) assess whether the development is complying with the relevant standards, performance measures and statutory requirements; and

- (e) review the adequacy of any strategy/plan/program required under this approval, and, if necessary, recommend measures or actions to improve the environmental performance of the development, and/or any strategy/plan/program required under this approval.
- 6. Within 6 weeks of completion of each Independent Environmental Audit, the Applicant shall submit a copy of the audit report to the Director-General, with a response to any of the recommendations in the audit report.
- 7. Within 3 months of submitting a copy of the audit report to the Director-General, the Applicant shall review and if necessary revise each of the environmental management and monitoring strategies/plans/programs in Schedules 3 and 5 to the satisfaction of the Director-General.

ACCESS TO INFORMATION

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

**APPENDIX 1
STATEMENT OF COMMITMENTS**



M. COLLINS & SONS (CONTRACTORS) PTY. LIMITED

Statement of Commitments for Spring Farm Quarry

M Collins and Sons (Contractors) Pty Ltd undertakes to implement the commitments listed below, in respect of the Spring Farm Quarry and the adjacent extractive materials stockpile, processing and dispatch site operated by the company.

Desired Outcome	Commitments
Traffic and Transportation	
Limit the impact of development-related traffic	1. Laden truck movements to public roads from the Spring Farm Quarry and the adjacent Collins processing site, together, will not exceed 36 per day (when averaged over any working week) or a maximum of 80 on any working day.
Monitor traffic movements in and out of the site	2. Comprehensive logs of truck movements and extractive materials received and dispatched from the Spring Farm Quarry and the adjacent Collins processing site will be recorded and maintained. 3. These logs will be made available promptly for inspection on request by either the Director-General or the Council. 4. Comprehensive reports on truck movements and extractive materials received and dispatched will be included in each Annual Environmental Management Report for the development.
Limit the impact of quarry trucks on local roads	5. Except where permitted by Council, trucks travelling to and from the Spring Farm Quarry or the adjacent Collins processing site will not travel via local roads in the vicinity of the development other than Macarthur Road, Springs Road and Richardson Road.
Limit the tracking of material onto public roads to minimise dust, particulate matter and debris emissions	6. All laden trucks travelling on public roads and carrying material from the Spring Farm Quarry or the adjacent Collins processing site will be covered.
	7. All trucks leaving the Spring Farm Quarry or the adjacent Collins processing site and travelling on public roads will be cleaned of materials that may fall on the road, before they leave the site.

Signed by M Collins & Sons (Contractors) Pty Limited

Name Matthew J Collins

Position Director

Date 17 April 2009

17 Fitzpatrick Street, Revesby NSW 2212

Phone: (02) 9774 1544 Fax: (02) 9792 1532

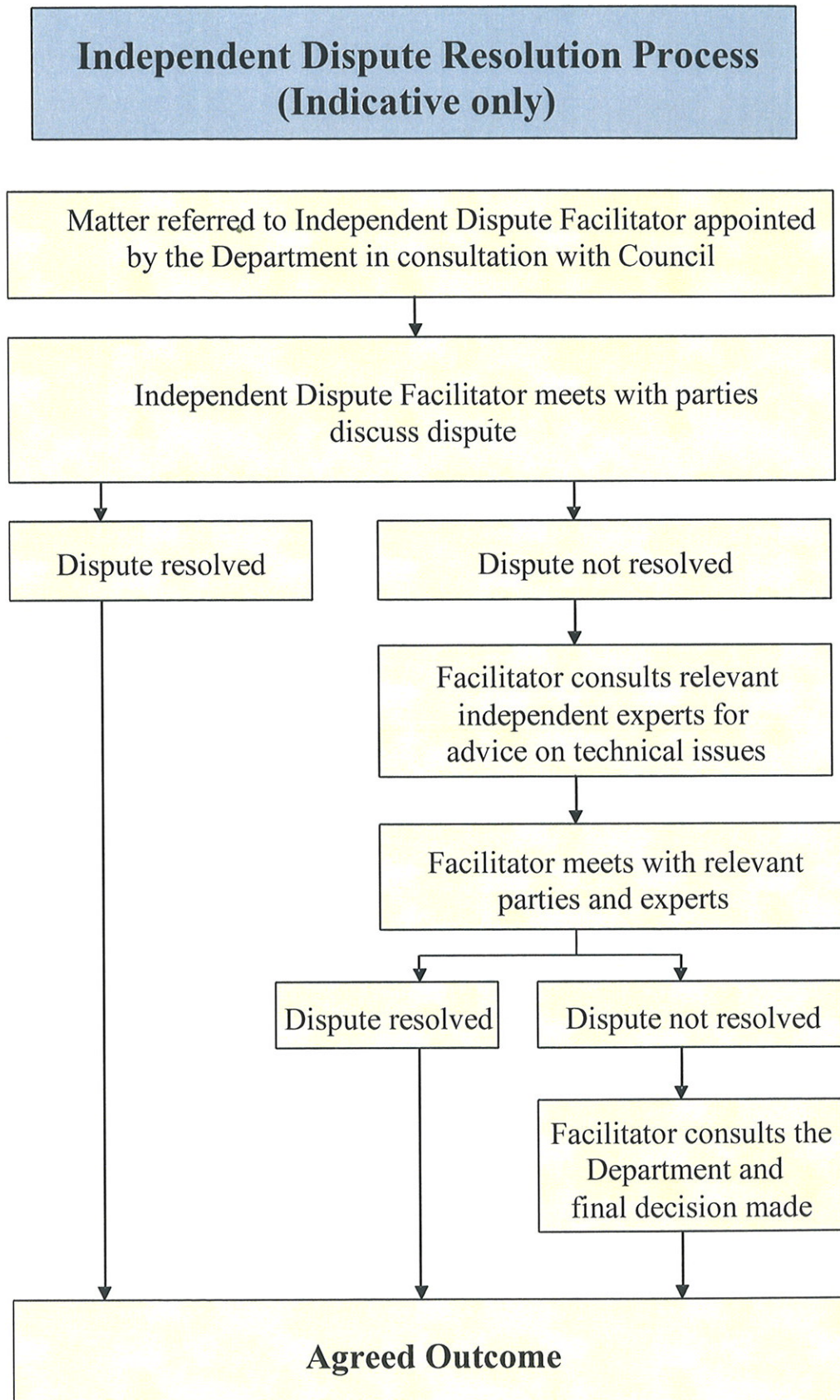
PO Box 55, MILPERRA NSW 2214

ABN 28 000 521 871

*** www.mcollins.com.au ***

This topographic map illustrates the Spring Farm Property, which is divided into several sections. The map features contour lines indicating elevation, with labels such as 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000, 1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080, 1090, 1100, 1110, 1120, 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200, 1210, 1220, 1230, 1240, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1340, 1350, 1360, 1370, 1380, 1390, 1400, 1410, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490, 1500, 1510, 1520, 1530, 1540, 1550, 1560, 1570, 1580, 1590, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 1680, 1690, 1700, 1710, 1720, 1730, 1740, 1750, 1760, 1770, 1780, 1790, 1800, 1810, 1820, 1830, 1840, 1850, 1860, 1870, 1880, 1890, 1900, 1910, 1920, 1930, 1940, 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2020, 2030, 2040, 2050, 2060, 2070, 2080, 2090, 2100, 2110, 2120, 2130, 2140, 2150, 2160, 2170, 2180, 2190, 2200, 2210, 2220, 2230, 2240, 2250, 2260, 2270, 2280, 2290, 2300, 2310, 2320, 2330, 2340, 2350, 2360, 2370, 2380, 2390, 2400, 2410, 2420, 2430, 2440, 2450, 2460, 2470, 2480, 2490, 2500, 2510, 2520, 2530, 2540, 2550, 2560, 2570, 2580, 2590, 2600, 2610, 2620, 2630, 2640, 2650, 2660, 2670, 2680, 2690, 2700, 2710, 2720, 2730, 2740, 2750, 2760, 2770, 2780, 2790, 2800, 2810, 2820, 2830, 2840, 2850, 2860, 2870, 2880, 2890, 2900, 2910, 2920, 2930, 2940, 2950, 2960, 2970, 2980, 2990, 3000, 3010, 3020, 3030, 3040, 3050, 3060, 3070, 3080, 3090, 3100, 3110, 3120, 3130, 3140, 3150, 3160, 3170, 3180, 3190, 3200, 3210, 3220, 3230, 3240, 3250, 3260, 3270, 3280, 3290, 3300, 3310, 3320, 3330, 3340, 3350, 3360, 3370, 3380, 3390, 3400, 3410, 3420, 3430, 3440, 3450, 3460, 3470, 3480, 3490, 3500, 3510, 3520, 3530, 3540, 3550, 3560, 3570, 3580, 3590, 3600, 3610, 3620, 3630, 3640, 3650, 3660, 3670, 3680, 3690, 3700, 3710, 3720, 3730, 3740, 3750, 3760, 3770, 3780, 3790, 3800, 3810, 3820, 3830, 3840, 3850, 3860, 3870, 3880, 3890, 3900, 3910, 3920, 3930, 3940, 3950, 3960, 3970, 3980, 3990, 4000, 4010, 4020, 4030, 4040, 4050, 4060, 4070, 4080, 4090, 4100, 4110, 4120, 4130, 4140, 4150, 4160, 4170, 4180, 4190, 4200, 4210, 4220, 4230, 4240, 4250, 4260, 4270, 4280, 4290, 4300, 4310, 4320, 4330, 4340, 4350, 4360, 4370, 4380, 4390, 4400, 4410, 4420, 4430, 4440, 4450, 4460, 4470, 4480, 4490, 4500, 4510, 4520, 4530, 4540, 4550, 4560, 4570, 4580, 4590, 4600, 4610, 4620, 4630, 4640, 4650, 4660, 4670, 4680, 4690, 4700, 4710, 4720, 4730, 4740, 4750, 4760, 4770, 4780, 4790, 4800, 4810, 4820, 4830, 4840, 4850, 4860, 4870, 4880, 4890, 4900, 4910, 4920, 4930, 4940, 4950, 4960, 4970, 4980, 4990, 5000, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5090, 5100, 5110, 5120, 5130, 5140, 5150, 5160, 5170, 5180, 5190, 5200, 5210, 5220, 5230, 5240, 5250, 5260, 5270, 5280, 5290, 5300, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5380, 5390, 5400, 5410, 5420, 5430, 5440, 5450, 5460, 5470, 5480, 5490, 5500, 5510, 5520, 5530, 5540, 5550, 5560, 5570, 5580, 5590, 5600, 5610, 5620, 5630, 5640, 5650, 5660, 5670, 5680, 5690, 5700, 5710, 5720, 5730, 5740, 5750, 5760, 5770, 5780, 5790, 5800, 5810, 5820, 5830, 5840, 5850, 5860, 5870, 5880, 5890, 5900, 5910, 5920, 5930, 5940, 5950, 5960, 5970, 5980, 5990, 6000, 6010, 6020, 6030, 6040, 6050, 6060, 6070, 6080, 6090, 6100, 6110, 6120, 6130, 6140, 6150, 6160, 6170, 6180, 6190, 6200, 6210, 6220, 6230, 6240, 6250, 6260, 6270, 6280, 6290, 6300, 6310, 6320, 6330, 6340, 6350, 6360, 6370, 6380, 6390, 6400, 6410, 6420, 6430, 6440, 6450, 6460, 6470, 6480, 6490, 6500, 6510, 6520, 6530, 6540, 6550, 6560, 6570, 6580, 6590, 6600, 6610, 6620, 6630, 6640, 6650, 6660, 6670, 6680, 6690, 6700, 6710, 6720, 6730, 6740, 6750, 6760, 6770, 6780, 6790, 6800, 6810, 6820, 6830, 6840, 6850, 6860, 6870, 6880, 6890, 6900, 6910, 6920, 6930, 6940, 6950, 6960, 6970, 6980, 6

**APPENDIX 3
INDEPENDENT DISPUTE RESOLUTION PROCESS**

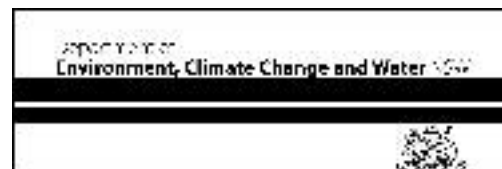


APPENDIX 2

Environment Protection Licence (EPL)

Environment Protection Licence

Licence - 4093



Licence Details

Number:	4093
Anniversary Date:	26-August
Review Due Date:	18-Apr-2011

Licensee

M COLLINS & SONS (CONTRACTORS) PTY LTD
PO BOX 55
MILPERRA NSW 2214

Licence Type

Premises

Premises

WOODGRAND
110 SPRINGS ROAD
SPRING FARM NSW 2570

Scheduled Activity

Composting
Crushing, grinding or separating
Extractive activities

Fee Based Activity

Composting
Land-based extractive activity
Crushing, grinding or separating

Scale

> 5000 - 50000 T received
> 100000 - 500000 T obtained
> 100000 - 500000 T processed

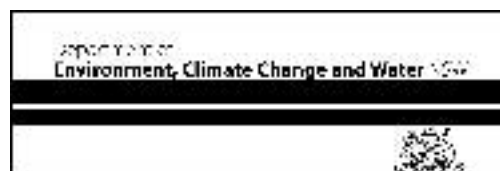
Region

Metropolitan
Level 3, NSW Govt Offices, 84 Crown Street
WOLLONGONG NSW 2500
Phone: 02 4224 4100
Fax: 02 4224 4110

PO Box 513 WOLLONGONG EAST
NSW 2520

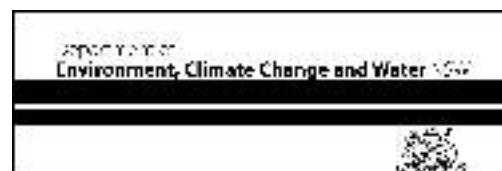
Environment Protection Licence

Licence - 4093



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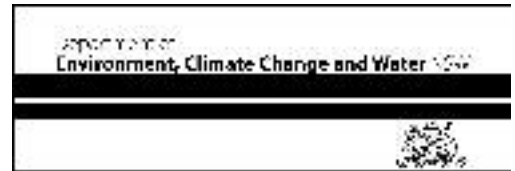


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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

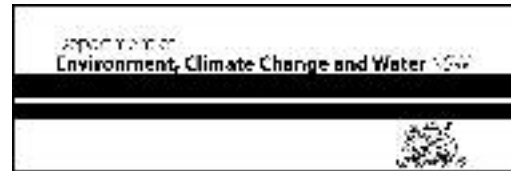
For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

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The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

M COLLINS & SONS (CONTRACTORS) PTY LTD
PO BOX 55
MILPERRA NSW 2214

subject to the conditions which follow.

1 Administrative conditions

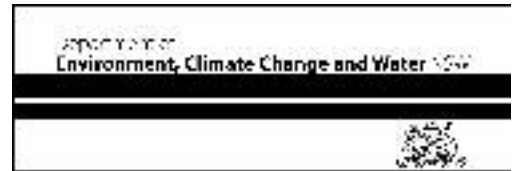
A1 What the licence authorises and regulates

A1.1 Not applicable.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

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Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity
Composting
Crushing, grinding or separating
Extractive activities

Fee Based Activity	Scale
Composting	> 5000 - 50000 T received
Land-based extractive activity	> 100000 - 500000 T obtained
Crushing, grinding or separating	> 100000 - 500000 T processed

A1.3 Not applicable.

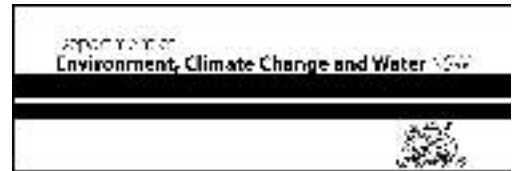
A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
WOODGRAND
110 SPRINGS ROAD
SPRING FARM
NSW
2570
LOT 1 DP 587631, LOT 22 DP 833317, LOT 61 DP 810692

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A3 Other activities

A3.1 Not applicable.

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to air and water and applications to land

P1 Location of monitoring/discharge points and areas

P1.1 Not applicable.

P1.2 Not applicable.

P1.3 Not applicable.

3 Limit conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

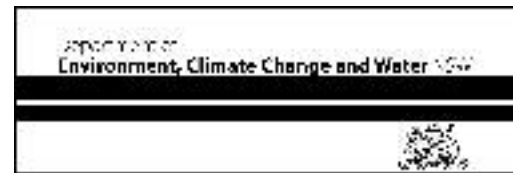
L2 Load limits

L2.1 Not applicable.

L2.2 Not applicable.

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L3 Concentration limits

L3.1 Not applicable.

L3.2 Not applicable.

L3.3 Not applicable.

L4 Volume and mass limits

L4.1 Not applicable.

L5 Waste

L5.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

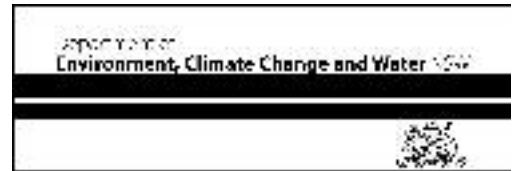
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

Condition L5.1 does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Aged duck and poultry manure		Composting Waste storage	Limit of 500 cubic metres stored on site at any time
NA	Spent mushroom compost		Composting Waste storage	Limit of 150 cubic metres stored on site at any time
NA	Garden waste	As defined in Schedule 1 of the POEO Act, in force from time to time	Composting Waste Storage	Limit of 1800 tonnes stored on site at any time
NA	Wood waste			
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the <i>Protection of the Environment Operations (Waste) Regulation 2005</i>	As specified in each particular resource recovery exemption.	NA
NA		Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time		NA

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L6 Noise Limits

- L6.1 Noise from the premises must not exceed an LA10 (15 minute) noise emission criterion of 55 dB(A), except as expressly provided by this licence.
- L6.2 Noise from the premises is to be measured or computed at any point within one metre of the boundary of any residential premises or other noise sensitive areas (such as schools, hospitals) in the vicinity of the premises to determine compliance with condition L6.1. 5dB(A) must be added if the noise is tonal or impulsive in character.

L7 Hours of Operation

- L7.1 Activities covered by this licence must only be carried out between the hours of 0630 and 1700 Monday to Friday, and 0630 and 1300 Saturday, and at no time on Sundays and Public Holidays.

L8 Potentially offensive odour

- L8.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

4 Operating conditions

O1 Activities must be carried out in a competent manner

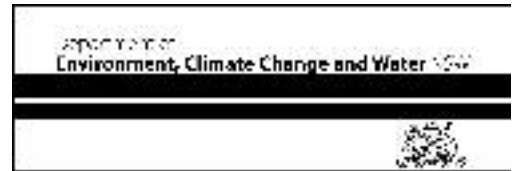
- O1.1 Licensed activities must be carried out in a competent manner.
- This includes:
- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
 - (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- (a) must be maintained in a proper and efficient condition; and

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(b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Management of Garden Waste and Wood Waste Stockpile/s

O4.1 All garden waste and wood waste must be processed within 21 calendar days of receipt at the premises.

5 Monitoring and recording conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:

- (a) in a legible form, or in a form that can readily be reduced to a legible form;
- (b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- (c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- (a) the date(s) on which the sample was taken;
- (b) the time(s) at which the sample was collected;
- (c) the point at which the sample was taken; and
- (d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 Not applicable.

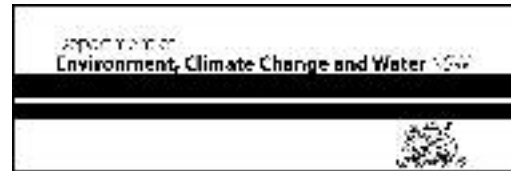
M3 Testing methods - concentration limits

M3.1 Not applicable.

M3.2 Not applicable.

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M4 Recording of pollution complaints

- M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M4.2 The record must include details of the following:
- (a) the date and time of the complaint;
 - (b) the method by which the complaint was made;
 - (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - (d) the nature of the complaint;
 - (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - (f) if no action was taken by the licensee, the reasons why no action was taken.
- M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

- M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:
- (a) the date of the issue of this licence or
 - (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

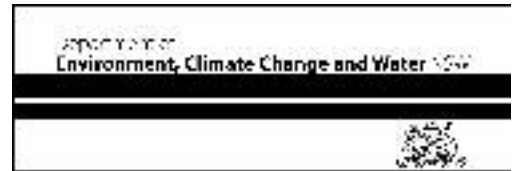
M6 Requirement to monitor volume or mass

- M6.1 Not applicable.

6 Reporting conditions

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R1 Annual return documents

What documents must an Annual Return contain?

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
- (a) a Statement of Compliance; and
 - (b) a Monitoring and Complaints Summary.
- A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

Period covered by Annual Return

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

- R1.3 Where this licence is transferred from the licensee to a new licensee:
- (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

Deadline for Annual Return

- R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

Notification where actual load can not be calculated

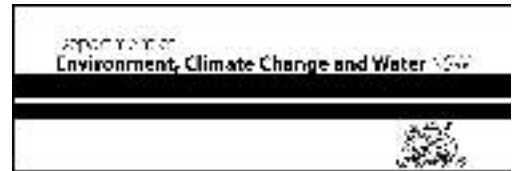
- R1.6 Not applicable.

Licensee must retain copy of Annual Return

- R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

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Certifying of Statement of Compliance and signing of Monitoring and Complaints Summary

R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- (a) the licence holder; or
- (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

R2 Notification of environmental harm

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- (a) where this licence applies to premises, an event has occurred at the premises; or
- (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

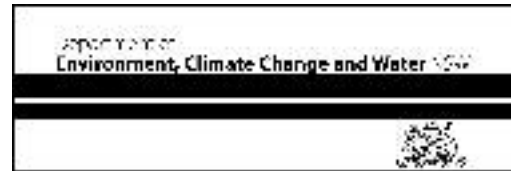
R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

- (a) the cause, time and duration of the event;
- (b) the type, volume and concentration of every pollutant discharged as a result of the event;
- (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

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- (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- (g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

General conditions

G1 Copy of licence kept at the premises

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Pollution studies and reduction programs

Completed Pollution Reduction Program Table

PRP ID	PRP Details	PRP Completed
PRP 1	Noise Mitigation Measures <i>To reduce noise emissions from the sand washery at the premises</i>	15 March 2008
PRP 2	Control of Dust Emissions <i>Dust Management Plan for the premises</i>	15 March 2008

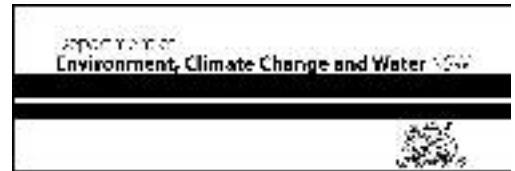
Special conditions

E1 Financial Assurance

E1.1 A financial assurance, in favour of the EPA, in the form of an irrevocable and unconditional guarantee from a bank, building society or credit union to the amount of thirty thousand dollars (\$30,000) must be maintained during the operation of the facility and thereafter until such time as the EPA is satisfied the premises is environmentally secure.

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This assurance must be replenished to the full amount should the EPA have any reason to call up the financial assurance or any part thereof to correct environmental problems which have not been remedied by the occupier upon being given notice to do so.

Failure to maintain the assurance at the full amount will result in the suspension of this licence.

This financial assurance shall be indexed to the Consumer Price Index (CPI). The EPA reserves the right to vary the magnitude of the bank guarantee at any time depending upon any reassessment or possible cost(s) of rehabilitation of the premises.

Dictionary

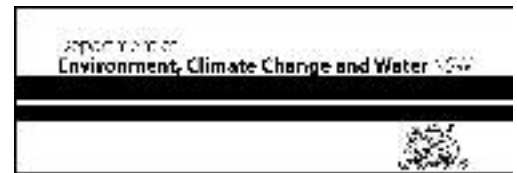
General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings:

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity

Environment Protection Licence

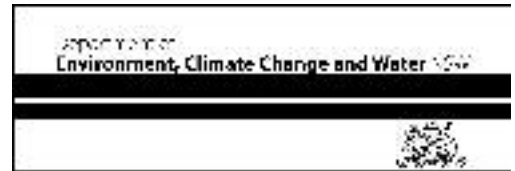
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environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998.
flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary

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	of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Bernie Weir

Environment Protection Authority

(By Delegation)

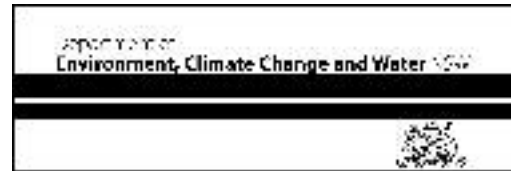
Date of this edition - 20-Oct-2009

End Notes

- 1 Licence varied by notice 1016200, issued on 09-May-2003, which came into effect on 03-Jun-2003.
- 2 Licence varied by notice 1047682, issued on 12-Jul-2005, which came into effect on 06-Aug-2005.

Environment Protection Licence

Licence - 4093



End Notes

3	Licence varied by notice 1058707, issued on 18-Apr-2006, which came into effect on 18-Apr-2006.
4	Licence varied by notice 1067861, issued on 20-Dec-2006, which came into effect on 20-Dec-2006.
5	Licence varied by notice 1081325, issued on 07-Jan-2008, which came into effect on 07-Jan-2008.
6	Licence varied by Change to schedule 1, issued on 08-May-2008, which came into effect on 08-May-2008.
7	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
8	Licence varied by notice 1096062, issued on 20-Jan-2009, which came into effect on 20-Jan-2009.
9	Licence varied by notice 1103855, issued on 28-Jul-2009, which came into effect on 28-Jul-2009.
10	Licence varied by change to DECCW region, issued on 20-Aug-2009, which came into effect on 20-Aug-2009.
11	Licence varied by notice 1107936, issued on 20-Oct-2009, which came into effect on 20-Oct-2009.

APPENDIX 3

Controlled Activity Approval (CAA)



NSW Government
DEPARTMENT OF NATURAL RESOURCES

Contact: Gina Potter
Phone: 9895 7259
Fax: 9895 7501
Email: gina.potter@dnr.nsw.gov.au
Our ref: File: 0151208
ERM 04/4722

M. Collins & Sons (Contractors) Pty Limited
PO Box 55
MILPERRA NSW 2214
Attention: Matt Collins

21 July 2008

Dear Mr Collins,

SUBJECT: Part 3A Permit Renewal/Controlled Activity Approval (CAA) – to undertake sand and soil extraction – Nepean River - Lot 22 DP 833317 and part of Lot 1 DP 587631, Elderslie – Nesbitt site.

I refer to your letter dated 5 March 2008 including payment of **\$4,040.00** for renewal of your permit under Part 3A of the Rivers and Foreshores Improvement Act to undertake excavations at the subject site.

Please note that the RFI Act has been repealed and the controlled activity provisions under Part 3 of the Water Management Act 2000 (WMA) have commenced. This came into force on the 4 February 2008. The existing Part 3A Permit was converted to a controlled activity approval on this day.

The provisions relating to controlled activities will replace the RFI Act. This means that those activities prescribed by the WMA occurring within 40 meters of a watercourse will now require a controlled activity approval (CAA) instead of a permit under the RFI Act.

The Part 3A permit will operate as a controlled activity approval under s91 of the WMA and the approval provisions of the WMA (Chapter 3) will apply. The controlled activity approval will be subject to the same conditions that applied to your Part 3A permit.

Receipt is acknowledged of the sum of **\$4,040.00**, being payment for the Part 3A Permit renewal/new CAA.

The attached CAA has been issued for a period of **two years**, subject to conditions, and expires on **8 April 2010**. It is important that you carefully read the CAA conditions and request clarification from the Department of Water and Energy (the Department) of any condition that is not fully understood.

The CAA needs to be kept current till all conditions have been met. It is the CAA holder's responsibility to renew the CAA by submitting an application in writing to the Department, together with payment of the renewal fee, which will be **\$4,040.00** at current rates. You will be advised in the event of a change in this rate.

Please contact me if you would like to go over any of the above requirements.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Gina Potter', written over the printed name.

Gina Potter
Natural Resource Project Officer
Licensing, South

Encls.
Part 3A Permit Renewal/New CAA



NSW Government
DEPARTMENT OF NATURAL RESOURCES

Controlled Activity Approval

Water Management Act 2000

DA5075.960-2

File: PAR0151208

ERM04/4722

To: M. Collins & Sons (Contractors) Pty Limited
PO Box 55
MILPERRA NSW 2214

To Excavate or Remove:

A Maximum of 901,200m³ of Sand and Soil

From Protected Land in or near the Rivers known as:
Nepean River and the Anabranh

At the Site Described as:

The "Nesbitt Property", Lot 22 DP 833317, Parish of Narellan, County of Camden (the Site).

Permit Expires: 8 April 2010

This Controlled Activities Approval (CAA) is granted under the Water Management Act 2000 as amended and is subject to the following conditions:

Area and Extent of Operation

1. The location and nature of the operation as shown on the endorsed plan number JET0328 drawing numbers 11 (issue 3) and 12 to 16 (inclusive and all issue 2) shall not be altered. One copy of the plans has been issued to you, and to Council, and a copy is retained in the office of the Department of Natural Resources (DNR).
2. No operations shall be undertaken outside the area shown in red on the endorsed plans.
3. Operations shall be undertaken in such a manner that no excavation takes place below the limit lines shown in red on the endorsed plans, with the exception of the construction of temporary runoff traps as defined in Schedule 1.
4. Operations shall not take place on the river bank at a level of less than 3 metres above normal low flow water level. Low flow water level shall be defined as the broad crest height of Camden Weir, being RL 55.63 m AHD.

5. The surface of the excavated area shall be progressively graded to a smooth and even slope free from holes or ridges. The slope shall drain towards the river at grades consistent with those shown on the endorsed plans. No slopes shall be flatter than a grade of **1V:50H** within 50 m of the top of the river bank, or steeper than a grade of **1V:3H**.
6. This CAA is only valid for operations on freehold land. The CAA is null and void for any operation on Crown Land.

Survey Information

7. A permanent bench mark is to be established on the Site and outside the area of operations.
8. The cross sections shown on the endorsed plans shall be marked permanently on Site and outside the area of operations. Markers shall consist of steel star pickets painted white and set firmly in the ground in concrete.
9. Work as executed survey plans of a satisfactory standard shall be provided to DNR on request.

Site Water & Sediment Runoff Management

10. Site drainage and erosion control measures in accordance with **Schedule 1** of this CAA shall be implemented prior to commencement of, and during the course of, operations, and shall be maintained in good working order.

Method of Operation

11. Operations shall commence at the downstream end of the Site and progress in an upstream direction for Areas 1 and 2, and thereafter follow the sequence of extraction as indicated by Areas, on drawing number 11. Separate and concurrent extraction from elsewhere on the Site is not permitted without written approval from DNR.
12. Operations shall be undertaken in successive stages, with no more than 100 metres of the river bank or Anabranche being excavated at any one time.
13. Operations shall not damage or interfere in any way with:
 - vegetation and habitat on the river bank up to a level of 3 metres above low flow water level
 - vegetation and habitat outside the area of operation
 - the stability of adjacent or nearby river banks or bed
 - the flow of water in the river
 - the quality of water in the river
 - any pumps or structures in the vicinity

14. Excavated material shall be transported from the area of operation or shall be stored on the adjacent floodplain. Where material is stored, the stockpile shall be no larger than 14 days supply. All stockpiled material shall be removed if the operation ceases.
15. All scrub, undergrowth and timber removed from the area of operation shall be mulched and stored above flood height, or otherwise disposed of, so that the debris cannot be swept back into the stream during a flood. Burning shall not be carried out unless a permit is obtained from the relevant authority.
16. If any work is detrimentally affecting the river, the Anabranche or their environment, DNR may direct all operations to cease immediately.

Site Rehabilitation

17. Rehabilitation of the Site shall be undertaken progressively in accordance with **Schedule 2** of this CAA. Rehabilitation is to be completed prior to the operation ceasing. Maintenance of the rehabilitation works shall continue until a standard that is satisfactory to DNR has been achieved.
18. Rehabilitation of the area is the responsibility of the CAA holder *and the owner or occupier of the land*.

Monitoring and Maintenance Report

19. A brief and concise monitoring and maintenance report shall be forwarded to DNR every twelve months for the length of the maintenance period. The report shall include the results of monitoring of the implementation of **Schedule 2** of this CAA as required by these conditions. The report shall also describe any problems implementing **Schedule 2** of this CAA and means to overcome these.

Bonds

20. The bond provided, for the amount of **\$43,850.00**, equal to the cost of decommissioning any temporary sediment and erosion controls, completing earthworks in accordance with the endorsed plans, and the rehabilitation and maintenance of the Site as required by these conditions, will be held until such time as the rehabilitation works and any specified maintenance period are completed to the satisfaction of DNR.
21. The sum held may be reduced on application to DNR, subject to the satisfactory completion of "stages" of the extraction and rehabilitation works.
22. A sum of money, being not less than 25% of the total amount of the bond, will be held by DNR for a minimum period of 24 months after completion of all works. The money will be released upon satisfactory performance of the works

and completion of vegetation establishment and maintenance over the area affected by the works.

23. DNR may at any time, and more than once and without notice to the Part 3A CAA holder, draw on all or part of the moneys available under the bond, if in its opinion, the CAA holder has failed at any time to satisfactorily complete the extraction, decommission any temporary sediment and erosion controls or to rehabilitate and maintain the Site in accordance with these conditions, as determined by DNR.

Controlled Activity Approval Breaches

24. If any CAA condition is breached, the CAA holder shall follow DNR directions to address the breach and shall rehabilitate the Site as directed by, and to the satisfaction of, DNR. If any breach of the CAA conditions requires a special site inspection by DNR, then the CAA holder shall pay a supplementary CAAfee for this inspection and for each and every subsequent inspection until the breach has been rectified.

Other Approvals

25. This CAA does not allow an extractive industry at the Site unless a current development consent or an existing use determination has been obtained from Council.
26. This CAA does not relieve you of any obligation which may exist to also obtain permission from other authorities who may have some form of control over the Site and or the operation that you propose to undertake.
27. A licence is required from this Department if you intend to:
 - install a pump
 - construct a dam
 - construct a levee
 - divert the river

Resolution of Inconsistencies

28. In the event that there is an inconsistency between the drawings, other documentation and the conditions herein, the interpretation that will result in the best outcome for the stabilisation of the Site and the subsequent rehabilitation and maintenance of the Site and protected land and any river, is to prevail. Such interpretation is to be applied in consultation with, and with the approval of, DNR.

CAA to be kept Current

D. All sediment and erosion control structures shall be inspected following any local storm event and any necessary maintenance shall be undertaken to ensure the continued proper operation of the structures.

SCHEDULE 2

Site Rehabilitation

Preamble

The aim of rehabilitation of the area of operations is to produce a healthy area of local native vegetation and habitat along the river. Revegetation is to aim at structural diversity using a mix of native tree, shrub, groundcover and grass species local to the area.

Rehabilitation of the Site is to be undertaken progressively in accordance with **this schedule** and is to be completed prior to the operation ceasing. Follow-up maintenance will be required.

Rehabilitation of that part of the Site located on Lot 1 DP 587631 "Spring Farm" shall be in accordance with the requirements of the consent for the Site made on 1 May 1995, as amended, and the *Landscape Plan of Management*, but shall not be of a lesser standard than that described below.

Topsoil

A. A quantity of the original excavated topsoil sufficient to cover all areas of operation to a depth of 100 mm must be retained on Site. The topsoil is to be stored in low heaps to allow survival of soil organisms.

B. The topsoil shall be progressively spread over the area where operations have been completed.

C. Prior to spreading the topsoil, the subsoil shall be prepared by roughening.

D. The area covered in topsoil shall be contour ploughed, re-grassed and maintained to prevent erosion.

Grass Cover

E. Grassing is to comprise of a cover crop of the following species:

<i>Type</i>	<i>Spring/Summer Sowing</i>	<i>Autumn/Winter Sowing</i>
Japanese Millet	20 kg/ha	---
Ryecorn/Barley	---	30 kg/ha
Red Clover	4 kg/ha	4 kg/ha
White Clover	4 kg/ha	4 kg/ha

Wimmera Rye	10 kg/ha	---	
Perennial Rye	---	10 kg/ha	
Couch	8/8 kg/ha (hulled/unhulled)	8/8	kg/ha
(hulled/unhulled)			

Note: Kikuyu is not to be used as it is a vigorous choking perennial that will out-compete native species.

F. Supplementary planting of local *native* grass and groundcover species shall be undertaken using locally collected seed consisting of species selected from the list below:

<i>Aristida</i> spp.	Three-awned Spear Grass
<i>Cymbopogon refractus</i>	Barbed-wire Grass
<i>Danthonia pilosa</i> var. <i>pilosa</i>	Wallaby Grass
<i>Dichelachne micrantha</i>	Plume Grass
<i>Echinopogon</i> spp.	Hedgehog Grass
<i>Ghania</i> spp.	Saw Sedge
<i>Imperata cylindrica</i>	Blady Grass
<i>Kennedia rubicunda</i>	Dusky Coral Pea
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
<i>Microlaena stipoides</i>	Weeping Meadow Grass
<i>Oplismenus aemulus</i>	Basket Grass
<i>Pteridium esculentum</i>	Bracken Fern
<i>Stipa ramosissima</i>	Stout Bamboo Grass
<i>Themeda australis</i>	Kangaroo Grass

Appropriate for planting on the bank and along the toe of the bank:

<i>Baumea</i> spp.	Twig-rushes
<i>Carex</i> spp.	Sedges
<i>Eleocharis</i> spp.	Spike rushes
<i>Juncus</i> spp.	Rushes
<i>Lepidosperma</i> spp.	Sword-sedges
<i>Restio</i> spp.	Cord-rushes
<i>Schoenoplectus</i> spp.	Club-rushes
<i>Schoenus</i> spp.	Bog-rushes

Trees and Shrubs

G. The following species shall be propagated from locally collected seed:

Trees

<i>Angophora subvelutina</i>	Broad-leaved Apple
<i>Casuarina cunninghamiana</i>	River Oak

Eucalyptus amplifolia
Eucalyptus bauerana
Eucalyptus elata
Eucalyptus eugenioides
Eucalyptus viminalis
 Gum

Cabbage Gum
 Blue Box
 River Pepperment
 Thin-leaved Stringybark
 Ribbon Gum, Manna

Shrubs

Acacia binervia (prev. *A. glaucescens*)
Acacia decurrens
Acacia floribunda
Acacia parramattensis
Commersonia fraseri
Hymenanthera dentata
Callistemon viminalis
Leptospermum polygalifolium (prev. *L. flavescens*)
Tristaniopsis laurina

Coast Myall
 Green Wattle
 Sally Wattle
 Sydney Green Wattle
 Black-fellow's Hemp
 Tree Violet, Scrub Box
 Bottle Brush
 Yellow Tea-tree
 Water Gum

H. Native tree and shrub species are to be established on the banks of the Nepean River as follows:

- no more than 2 m apart
- in at least 16 staggered rows no more than 2 m apart
- to cover a strip 30 m wide from the top the river bank
- plant only *Casuarina*, *Leptospermum* and *Tristaniopsis* species in the three rows closest to the river
- with an even mix of all other shrub and tree species in remaining rows
- existing small native plants and seedlings growing on the area to be excavated are to be transplanted to the area being restored
- existing native trees and shrubs, when felled, are to have seeding branches collected and spread over the area under restoration

I. Native tree and shrub species are to be established on the western bank of the Anabranck, and across it near the access track at the northern boundary, to supplement existing native vegetation, as follows:

- no more than 2 m apart
- in staggered rows no more than 2 m apart
- to form a strip on the "Nesbitt" property at least 20 m wide, and on the "Spring Farm" property at least 50 m wide, from the top of the bank
- plant tree and shrub species listed except for the last three shrub species
- plant grass species as listed

General

J. The use of fertilizers shall be minimised in order to reduce the influx of nutrients to the river system. If used at all, fertilizers are to be low P types, and slow release, such as Agriform Tablets, Kokei Pellets, Osmocote, etc.. Pellets, if used, are to be placed at least 100 mm beneath the root tip of seedlings being planted.

K. The vegetation shall be regularly watered and protected against predators such as hares and rabbits).

L. The rehabilitated area shall be regularly weeded of exotic plant species.

M. A stock proof fence shall be constructed and maintained around the replanted site.

APPENDIX 13

CAMDEN COUNCIL APPROVAL DATED 10 SEPTEMBER 2009



COLLINS

M. COLLINS & SONS (CONTRACTORS) PTY. LIMITED

8 September, 2009.

Mr D Bruszewski,
Camden Council,
PO Box 183,
CAMDEN NSW 2570

Dear Mr Bruszewski,

**Re: Importation of Fill and Approval to Open five (5) Hectares Land at 186
Macarthur Road, Spring Farm (Lot 22 DP833317)**

The Department of Planning recently approved our application to extend the extractive industry at Lot 22 DP833317 until 30 June, 2019.

The approval conditions include "Environmental Performance" criteria within Schedule 3 of the consent. There are operating conditions that specifically require the written consent of Council including:

- Clause 2 "The Applicant shall not open, excavate or work an area exceeding 2 hectares at any time without the written consent of Council."
- Clause 4 "The Applicant shall not import fill to the site for any purpose without written approval from Council"

The site operations proposed include access roadways, an active extraction pit, dry screening and stockpiling areas, truck loading areas, backfilling and reclamation of the extraction pits with the placement and compaction of tailings and excavated natural materials, and rehabilitation and maintenance of the site.

In our experience it is necessary to disturb five (5) hectares of the site to safely and efficiently carry out the scope of the site operations. In order to comply with the Department's Schedule 3 "Operating Conditions" of the consent we hereby seek the approval of Council to:

- Open and work an area of land of five hectares at any one time.
- Import excavated natural material in accordance with the Protection of the Environment Operations (Waste) Regulations 2005 specifically the Excavated Natural Material Exemption 2008.

u e¹

As you are aware the site operations comply with an Environmental Management Plan and a Dust Management Plan that impose guidelines for best environmental practices at the site which are available for your inspection by appointment on site. In addition we undertake monthly dust monitoring via a site dust measuring gauge to ensure compliance is measured regularly. In the future the Annual report will be provided to Council as required by Schedule 5, Clause 4 in the consent conditions.

We have attached a copy of the Department's Notice of Modification Approval dated 23 May, 2009 together with the Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption under Clause 51 and 51A for your information.

We shall be pleased to provide any further information that you may require in relation to this matter.

Yours faithfully,
M Collins & Sons (Contractors) Pty Limited.



Matthew J Collins – Managing Director

M. Collins

From: Dominic Bruszewski [dominic.bruszewski@camden.nsw.gov.au]
Sent: Thursday, 10 September 2009 11:45 AM
To: M. Collins
Subject: RE: DOP DA75/256 MOD2 Nesbitt Consent Part One

Matt,
Thank you for the advice and follow up from our site meeting.
Council is satisfied that there will not be any detrimental impacts from your request and that your requests satisfy the DA256(2)/1975 Conditions of Consent.
Approval is hereby given to your requests.
Regards

Dominic (Nick) Bruszewski
Landscape Development Officer

Camden Council | PO Box 183, Camden NSW 2570
P: 02 4654 7742 M: 0419 628 975 | Email: dominic.bruszewski@camden.nsw.gov.au |
www.camden.nsw.gov.au

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From: M. Collins [mailto:matt@mcollins.com.au]
Sent: Thursday, 10 September 2009 8:37 AM
To: Dominic Bruszewski
Subject: DOP DA75/256 MOD2 Nesbitt Consent Part One

Dear Nick,

Thanks for your time this morning discussing the Department of Planning Consent conditions for the Nesbitt site (DOP DA75/256 MOD2). Please find attached our application seeking Council's approval for:

- Permission to open and work an area of five hectares at one time
- Approval to import Natural Excavated Material for reuse in reclamation of the site .

A copy of the Department's consent together with the DECC Exemption for excavated natural material 2008 is attached hereto

I shall be pleased to assist with any further details required.

Regards

PS I have had to send the attachments as two emails due to size

Matt Collins
Managing Director
M. Collins & Sons (Contractors) Pty Limited
17 Fitzpatrick Street, Revesby NSW 2212

Tel. 02 9774 1544
Fax. 02 9792 1532
Email. matt@mcollins.com.au

10/09/2009

APPENDIX 14

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN (PIRMP) DATED 17TH APRIL 2018



COLLINS

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

**Created 22nd November, 2012
Latest review 17 April 2018**

**PIRMP
SPRING FARM QUARRY**

EPA Licence No. 4093



COLLINS

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2. Protocol for Industry Notification of Pollution Incidents
3. Definition of Environmental Incident, Pollution Incident Notification Criteria and Response.
4. Emergency Contact Details
5. Environmental Incident Preventative Action, Responses and Emergency Responses
6. Emergency equipment requirements and storage locations
7. Incident Reporting
8. Complaints
9. Testing of PIRMP
10. Pollution Incident Notification Protocol

Last Modified/Reviewed: 7 January 2019 5	Version:	Document No MP22 SF	MP Name: PIRMP
Approved by: Managing Director Matthew Collins	Page 2 of 19		
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COLLINS

Issue of Pollution Incident Response Management Plan (PIRMP)

This Pollution Incident Response Management Plan (PIRMP) has been issued to the persons listed below. All persons to whom the PIRMP is issued are bound under a confidentiality requirement not to provide the PIRMP to any third party, except with the written permission of M Collins and Sons Holdings Pty Ltd and Harvest Scientific Services Pty Ltd (HSS).

It is the responsibility of those persons to whom this PIRMP is issued to safeguard and have available the PIRMP as and when required, and to maintain the currency of the PIRMP by inclusion of inserts and amendments, as and when issued. Copies of the manual may be issued to additional persons/ organisations, on the basis of need and relevance.

PIRMP Document Register

Controlled document No.	Issued to	Company/ organisation	Address	Date Issued	Authorising signature
1	Matt Collins	M. Collins and Sons Pty Limited	17 Fitzpatrick Street, REVESBY	06/07/2016	
2	Vacant – (TBA)	Collins Construction Materials P/L	17 Fitzpatrick Street, REVESBY	06/07/2016	
34	Billy Lewis	Collins Construction Materials P/L	214 Macarthur Road Spring Farm	06/07/2016	

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POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN (PIRMP)

1. Introduction – Pollution incident notification requirements

As of 6 February 2012, licensees under the POEO Act and anyone carrying on an activity or occupying a premises who becomes aware of a pollution incident are required to report pollution incidents **immediately** instead of 'as soon as practicable' under section 148 of the POEO Act. The protocols for contact in the event of a pollution incident are outlined in **Section 2** of this PIRMP, relevant contact details are presented in **Section 4** and the adopted criteria for a pollution incident is outlined in **Section 3**.

Sections 5 to 7 outline the preventative actions and general operational response protocols to a pollution incident.

2. Protocol for industry notification of pollution incidents

The NSW EPA describe the protocol for notification of pollution incidents on the webpage (<http://www.environment.nsw.gov.au/pollution/other.html>).

The changes take effect from 6 February 2012 and require the occupier of premises, the employer or any person carrying on the activity which causes a pollution incident to immediately notify each relevant authority (identified below) when material harm to the environment is caused or threatened. The following information and procedures may assist those responsible for reporting a pollution incident.

- 2.1 *Call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.*
- 2.2 *If the incident does not require an initial combat agency, or once the 000 call has been made, notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:*
 - *the EPA phone Environment Line on 131 555*
 - *the Ministry of Health (02 9391 9000)*
<http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx>
 - *the WorkCover Authority – phone 13 10 50*
 - *Camden Council – phone 02 4654 7777*

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3. Environmental incident definition, pollution incident notification criteria and response

A pollution incident is defined as:

'an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur....' (POEO Act).

Pollution incidents on or around the site are considered to have occurred in the course of the Contractor's activities in the following circumstances:

- *'If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial; and*
- *If actual or potential loss or property damage (including clean-up costs) associated with a pollution incident exceeds \$10,000.'*

Above criteria is based on **s147** of the *Protection of the Environment Operations Act 1997* (NSW) and has been adopted in this PIRMP as the threshold for notification purposes.

The above definition has been adopted for the purposes of an environmental incident in this PIRMP. The proposed response to an environmental incident is as outlined below and in Table 1:

- EMR to ensure site safety, move people from immediate areas where safety is a concern;
- EMR to take any practical steps to contain the hazard and prevent it from spreading;
- EMR to notify the General Manager (or delegate), the Director and if necessary, the relevant authority, if the General Manager (or delegate) and Director cannot be contacted EMR must notify each relevant authority.
- The General Manager (or delegate) is to decide with the Director if the adopted pollution incident criteria threshold has been reached. If the adopted pollution incident threshold has been reached, the EMR is to contact immediately contact the EPA and Camden Council; and the relevant information about a pollution incident required consists of the following:
 - The time, date, nature, duration and location of the incident,
 - The location of the place where pollution is occurring or is likely to occur,
 - The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known,
 - The circumstances in which the incident occurred (including the cause of the incident, if known),
 - The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known,
 - Other information prescribed by the regulations.
- The EMR is to complete and environmental incident report form.

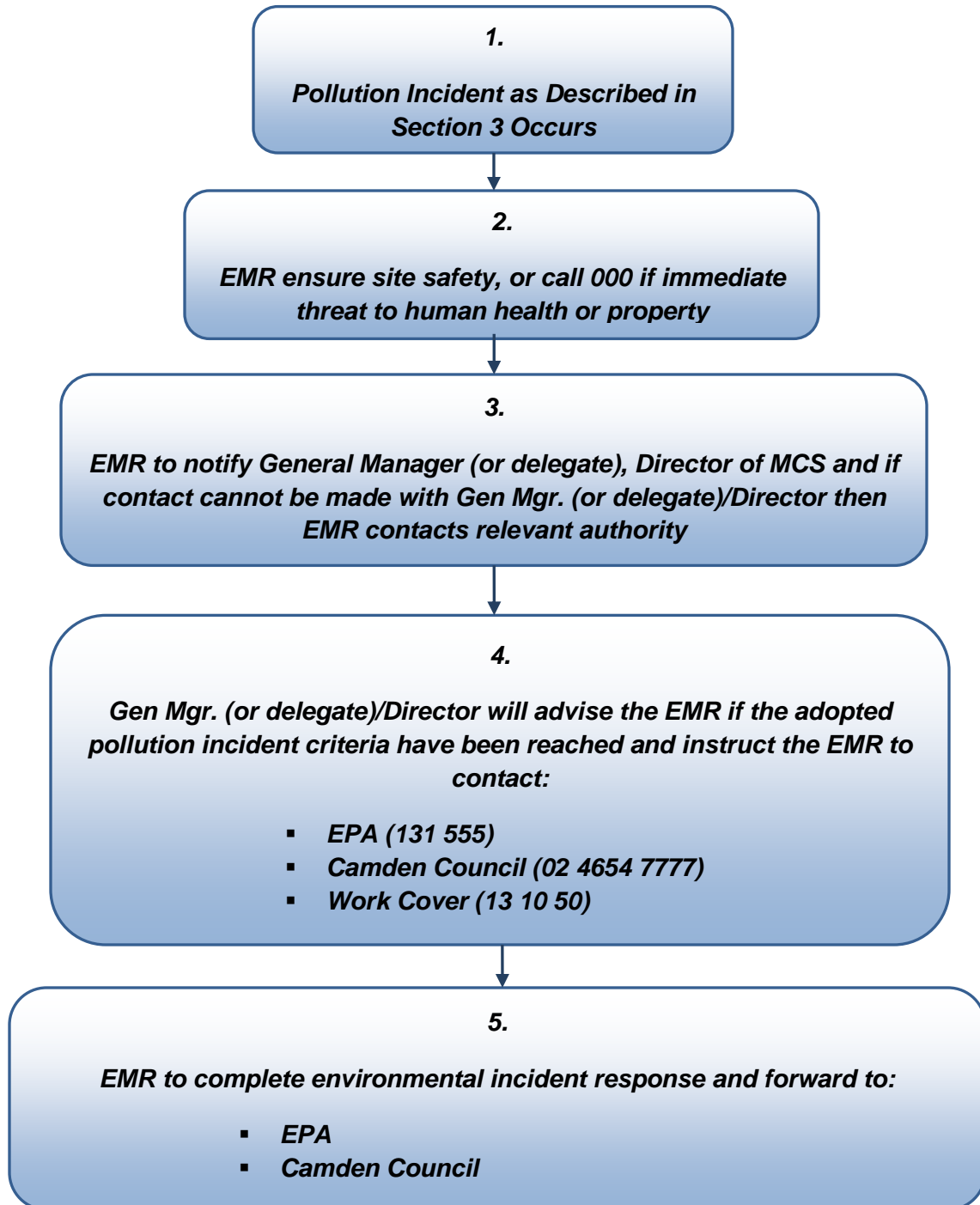
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Once completed, a copy of the incident report form must be forwarded to Camden Council and the EPA.

TABLE 1

Flow Chart for PIRMP





4. Emergency contact details

Table 2 outlines emergency contact details and is to be maintained by the EMR.

Table 2. Emergency contact details

Service required	Company	Contact name	Phone number
EMR (p)	CCM Pty Limited	Mr. Billy Lewis	0401 142 687
Police			000
Fire Brigade			000
Ambulance			000
Report Environmental Incident	EPA Pollution Line		131 555
	Camden Council		(02) 4654 7777
	DPI / DoI	Incident Hotline	1300 814 609
	WorkCover NSW		13 10 50
	Ministry of Health		9391 9000
Environmental Consultant	Harvest Scientific Services Pty Ltd	Mr. Mart Rampe	02 4647 6177
WIRES			1800 641 188
Waste services	Thiess		02 46 771910
Sydney Water Service Centre			132 090
Energy Australia			131 388
AGL			131 003
Integral Energy			131 909
Telstra			132 203

5. Environmental incident preventative actions and responses

Table 3 outlines the potential environmental incidents identified and Risk Assessed during the environmental review process to-date, the proposed preventative actions, the response actions to be under-taken and the person/s responsible for implementation of appropriate actions. Other potential environmental incidents may be identified after the operation commences, these should be documented by the EMR and **Table 3** should be updated as they are identified.



Table 3. Summary of potential environmental incidents, preventative actions and proposed response actions.

Potential environmental incident	Potential Risk	Preventative actions	Responses actions to incident	Responsible persons
Excessive dust	2 – Frequent / Minor	<ul style="list-style-type: none"> Operate water trucks/irrigators Cease or limit operations based on risk assessment 	<ul style="list-style-type: none"> Contact EMR; Water down areas identified as the source of dust immediately; and Cease works if weather conditions are adverse. 	All personnel and EMR
Spills Fuel / Chemical spill / Fire	3 – Remote / Critical	<ul style="list-style-type: none"> All chemicals to be stored in accordance with the Code of Practice for safe use and storage in Agricultural. All diesel storage tanks to be bunded to contain spills and disposed of by qualified contractors. HS&DG Audits and Register with quantities and SDS for each. 	<ul style="list-style-type: none"> Contact EMR All re-fuelling vehicles are to contain a spill kit Use spill kit to contain the spill at the mixing and storage sites. Dispose of contaminated materials appropriately; and clean and decontaminate this site. If discharge enters waterway and criteria outlined in Section 3 of this PIRMP is met ring EPA Pollution line 131 555. Emergency Evacuation plan implemented, contain fire if safe to do so, follow first aid plan and account for all on site at EEA. 	All personnel and EMR
Stored Pollutants spill, escape, unknown quantities	3 – Remote / Critical	<ul style="list-style-type: none"> All bunded as per COP Maximum Storage Quantities; Fuel 52,000L, Oils 5000L, Grease 600kg, Coolant 500L, Fertiliser 1t, Gas combined 100,000/L Conduct Audits and update SDS register and SDS's. 	<ul style="list-style-type: none"> All re-fuelling vehicles are to contain a spill kit Use spill kit to contain the spill at the mixing and storage sites. Dispose of contaminated materials appropriately; and clean and decontaminate this site. If discharge enters waterway and criteria outlined in Section 3 	All personnel and EMR
Diesel Fuel leaks & spills at the storage tank/bunded area	2 – Improbable / Minor	<ul style="list-style-type: none"> Avoid rainwater being contaminated with diesel Maintain bunded free from soil and dirt 	<ul style="list-style-type: none"> Contact the EMR Pump into a waste fuel tank Dispose in a lawful manner If discharge enters waterway and criteria outlined in Section 3 of this PIRMP is met ring EPA Pollution line 131 555 	All personnel and EMR
Sediment losses to waterways	2 – Remote / Minor	<ul style="list-style-type: none"> Maintain Erosion & Sediment Controls on site 	<ul style="list-style-type: none"> Contact EMR Where relevant, repair sediment controls; and Cease works if weather conditions are adverse. If discharge enters waterway and criteria outlined in Section 3 of this 	All personnel and EMR



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			PIRMP ring EPA Pollution Line 131 555.	
Chicken Manure escape into waterway	2 – Remote / Minor	<ul style="list-style-type: none"> Store in dedicated stockpile areas with sediment control measures at the site Regular inspections and maintain sediment controls 	<ul style="list-style-type: none"> Contact EMR Where relevant repair sediment controls If discharge enters waterway and criteria outlined in Section 3 of the PIRMP ring EMA Pollution line 131 555 	All personnel and EMR

An environmental risk assessment rating system adapted from **Environment Australia (2007)**, which is outlined in **Table 4**, has been adopted for the assessment of risks associated with potential environmental risks listed in **Table 3**. The results of this assessment will be included in the operational EMP for this facility.

Table 4. Environmental risk significance rating table*.

Risk of Occurrence						
May be as a result of a continuously operated process, activity or occurrence	Continuous	1	4	4	4	4
May be a result of a frequently used process, activity or occurrence.	Frequent	1	2	3	4	4
May be a result of a little used process, activity or occurrence.	Occasional	1	2	3	4	4
May be as a result of a chain of unusual events leading to an environmental incident	Remote	1	2	3	3	4
May be a result of a chain of extraordinary events leading to an environmental accident/disaster.	Improbable	1	2	3	3	4
		Positive	Minor	Critical	Major	Catastrophic
	Significance (Degree of Impact)	Positive impact on environment thus positive impact on business	Limited and/or localised impact on the environment and/or business	Medium scale impacts, wider implications to environment and/or business	Serious long term implications for environment and/or business	Serious permanent damage to business and/or environment (e.g. loss of licence, restriction of activity)

*From: Environment Australia, 2007. Model Environmental Management System for Commonwealth Agencies.

Key to Risk Significance Rating	1	Positive
	2	Low Risk
	3	Medium Risk
	4	High Risk

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6. Emergency equipment requirements and storage locations (see Map 1 below)

Table 5 outlines the locations of emergency response equipment.

Table 5: Emergency equipment requirements

Name of equipment	Storage location	Comment
Spill kit	On each re-fuelling unit, workshop and fuel bowser.	Instructions for use must be provided with kit. Notify of use and replace items within. Locations of site map through induction process.
Fire extinguisher/s	On each piece of onsite equipment, office and maintenance shed as per signage.	To be maintained in satisfactory working order and checked by qualified external contractor 6 monthly. Only use when two people involved and safe to do so, never take on large or uncontrolled fires. Ensure staff trained in different types of extinguishers and safe use of extinguishers. Locations on site map through induction process.
Eyewash	At the mixing and storage site, maintenance area and weighbridge toilet facility	Maintain in satisfactory working order and test to ensure working correctly. Locations on site map through induction process.

7. Incident reporting

As per conditions of consent within 7 days of detecting an exceedance of goals/limits/performance criteria of this PIMPR or an environmental incident (as defined in **Section 3**), MCS Pty Ltd shall report the exceedance to the Camden Council. All Incidents are to be reported on an Incident report Form 20.

The report shall:

- describe the date, time and nature of the exceedance/incident;
- identify the cause (or likely cause) of the exceedance/incident;
- describe what action has been taken to date; and
- describe the proposed measures to address the exceedance/incident.

7.1 Community Notification Strategy

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Who Will Be Notified?

All community stakeholders that may be affected by an incident will be notified. Appropriate to the incident circumstance, these include:

- Neighbouring residential property owners
- Neighbouring commercial properties
- General public within the vicinity of the site:
 - Pedestrians
 - Motorists
 - Users of nearby recreational facilities (sporting facilities, parks etc)
 - Nearby water courses (rivers, streams, dams etc.) used for recreational and/or commercial purposes
- Farmers located downstream from water courses affected by a spill
- Schools
- Churches
- Nursing homes

When Will the Community be Notified?

If an incident presents a significant risk of causing material harm to persons, property, and/or the environment to an area that is not trivial, any community stakeholders within these areas will be notified at the earliest convenience.

How Will the Community be Notified?

When it has been established that a community stakeholder is at risk from an incident that has the potential to cause material harm the following process will be implemented:

- 1) Community stakeholders will be contacted immediately after the relevant authorities have been contacted by telephone (or face to face if this is not possible).
- 2) Stakeholders will be advised of recommended actions that can be taken to prevent or minimise material harm e.g. evacuate area, shut all doors and windows, cease drawing water for irrigation purposes.
- 3) After the incident has been contained and managed by key personnel and authorities subsequent communication will be undertaken by the NSW Planning & Environment Coordinators. Appropriate to the circumstance, these may include:
 - Follow up telephone calls and/or face to face contact (door knocking)
 - Meetings with stakeholders
 - Written correspondence containing updates in regards to safety and environmental concerns associated with the pollution incident
 - Letterbox drops

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- Website notification
- Social media notification

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Map 1 – Site Map and Evacuation Plan



Legend: All yellow Outlined areas are Turf Farm designated areas – WorkCover monitored. All other areas are Quarry areas – Industry & Investment.

- Wash Plant and Screening area ◇ Pump + First Aid areas (also within vehicles – not marked) ↔ Two way Traffic 20km speed limit ■ Emergency Assembly Area
- ⇄ Heavy vehicle route call prior to entry on UHF — Overhead Power lines ■ Office locations and parking areas ■ Restricted Vegetation Areas
- ▲ Toilet facility ★ Work Shop ■ Tip off area ○ Wash Out Pad ■ Truck Rest Area ★ Electrical Room → Turf Farm Traffic Route ● Eye Wash Stations



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8. COMPLAINTS

8.1 Complaints register

A telephone complaints line has been established to receive any complaints from members of the public in relation to this site. Details of the complaints line are below:

COMPLAINTS TELEPHONE LINE:

Environmental Management Representative

Mr. Billy Lewis (p) 0401 142 687

02 4658 1666

8.2 Complaints response protocol

If a complaint is received the following procedures are to be followed:

- Details of the complaint are to be recorded by the EMR in the complaints register) and the complainant is to be advised verbally that the matter will be investigated by MCS Pty Ltd in accordance with the Environmental Management Plan for the operation.
- The EMR is investigate the complaint and to liaise with the complainant to attempt to resolve the complaint. Where necessary, the EMR will make appropriate changes to onsite management practices / procedures to resolve the complaint.
- If, through a subsequent investigation, the EMR becomes aware of an environmental incident (as defined in **Section 3** of this PIRMP), then Camden Council is to be notified in writing at the first available opportunity.
- If the criterion outlined in **Section 5** of this PIRMP is met then EPA is to be notified and at the first available opportunity.
- If the dispute is resolved, the agreed outcome is to be documented (in writing) and forwarded to the complainant, Camden Council and the EPA.
- If the dispute is not resolved, the EPA and Camden Council are to be advised in writing.
- If directed by the EPA or Camden Council, MCS Pty Ltd will contract the services of an independent consultant to review the specific details of the complaint and make appropriate recommendations to resolve the matter.
- At closure of the complaint the following information will have been recorded:
 - a. Date of complaint;
 - b. Name of complainant;
 - c. Contact details of complaint (if supplied);
 - d. A record of notification of Camden Council, DPE, DPE, DPI;
 - e. A summary actions taken to address the subject matter of the complaint;



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- f. Investigation outcomes; and
- g. A record of notification of the complainant of the investigation outcomes.

Records will be kept for at least 4 years after the complaint was registered.

9. REVIEW

This PIRMP is to be reviewed annually as part of the AEMR or on as needed basis. Updates of this PIRMP will be supplied to all persons listed in the document register at the beginning of this PIRMP.

10. Testing of PIRMP

This PIRMP will be tested at least once a year and within one calendar month of any pollution incident occurring where the plan has been activated.

A record of the testing of PIRMP will be maintained in this plan. See below table.

Pollution Incident Management Response Plan Testing

Date of Test	Recommended Actions/Outcomes from Testing
22/11/2012	PIRMP implementation, EMR and site personnel training and procedure review.
18/9/2013	PIRMP review, updates. 17092013 Triggered MP and review of fire incident – activated and PIRMP followed. Tool Box meeting on ECP's.
12/3/2014	PIRMP review with site personnel. Procedure review and PIRMP Drill.
17/7/2015	PIRMP Emergency Preparedness Drill – Chemical Spill and Dust, reporting requirements and Environmental Control Protocols. Review current PIRMP, no changes or updates required. See Tool Box minutes and Drill 20150717.
4/6/2016	Emergency Preparedness Drill for PIRMP – Flooding. See Tool Box Minutes 4/6/2016 and training records for all site personnel 6/6/2016. PIRMP updated 4/7/2016 to reflect EPA recommendations 3/6/16 and PIRMP Drill, Tool Box.
17/4/18	MP22 SF PIRMP reviewed and updated to contain new contact details.
7/1/2019	MP22 SF PIRMP Checked



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POLLUTION INCIDENT NOTIFICATION PROTOCOL

Step one: What is a Pollution Incident?

A Pollution Incident occurs when material harm to the Environment is caused or threatened.

Step Two: What is material harm to the Environment?

(i) It involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial,

OR

(ii) It results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 and loss includes the reasonable costs or losses to prevent mitigate or make good harm to the environment.

Step Three: Who must notify?

- a) the person carrying on the activity
- b) an employee or agent carrying on the activity

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- c) an employee carrying on the activity
- d) the occupier of the premises where the incident occurs.

Step Four: Who do I notify?

A person engaged as an employee in carrying on an activity must immediately after becoming aware of the incident, notify the employer of the incident and all relevant information about it.

Step Five:

Who must be notified about a Pollution Incident?

1. Call 000 if the incident presents an immediate threat to human health or property.

Ask for: > Fire and Rescue NSW
> NSW Police
> NSW Ambulance
Service

AND/OR

2. EPA 131 555
 - Local Council – Camden Council
Phone: (02) 4654 7777
 - Ministry of Health
Phone: (02) 9391 9000
- <http://www.health.nsw.gov.au/Infectious/Pages/notification.aspx>



- Work Cover 131 050

Examples of Potential Environmental Incidents

Excessive Dust

- Cease work, and
- Contact Environmental Management Representative
- Water Areas identified as source of dust

Fuel/Oil/Chemical Spills

- Always refuel in a bunded area
- Use spill kits in the field
- If discharge enters a waterway and may cause \$10,000 damage and/or clean up costs notify employer immediately.

Sediment Loss to a Waterway

- Cease work and contact Environmental Management Representative
- Repair Sediment controls
- If discharge enters a waterway and may cause \$10,000 damage and/or clean up costs notify employer immediately.

Excluded Pollution Incidents

Odour

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A pollution Incident does **NOT** include an Odour. Odour incidents **DO NOT** have to be notified.

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APPENDIX 15

**DEPARTMENT OF PLANNING AND ENVIRONMENT INDEPENDENT
AUDIT FREQUENCY CHANGE CORRESPONDENCE DATED 30TH
SEPTEMBER 2016.**



Ms Nicole Pearce
Compliance Manager
Collins Group
17 Fitzpatrick St
Revesby NSW 2212

Dear Ms Pearce

**Spring Farm Quarry (DA 75/256)
Independent Environmental Audit**

I refer to your email dated 28 September 2016, requesting an extension to undertake the next independent environmental audit (IEA) of the Spring Farm Quarry, in accordance with condition 5 of Schedule 5 of Development Consent DA75/256.

The Department notes your advice that Collins Group had some internal confusion regarding the frequency of the IEA due to the approval of Modification 3 and the delayed date of project commencement. On this basis, it is noted that IEAs were submitted in February 2011 and June 2016.

The Secretary has approved the next IEA to be submitted no later than June 2019, and every three years thereafter.

Should you have any questions about this matter, please contact Genevieve Seed at the details above.

Yours sincerely

Howard Reed

30.9.16.

Director Resource Assessments

As nominee of the Secretary

APPENDIX 16

**SPRING FARM QUARRY MANAGEMENT PLAN REVIEW – POST
APPROVAL CORRESPONDENCE DATED 31ST AUGUST 2016.**



Nicole Pearce
Collins Group
17 Fitzpatrick Street
Revesby NSW 2212

Email: npearce@mcollins.com.au

Dear Ms Pearce,

**Spring Farm Quarry (DA 75/256)
Environmental Management Plans**

The Department has reviewed a number of management plans and programs for the Spring Farm Quarry, which have been prepared in accordance with the development consent. The Department has reviewed the following plans:

- Environmental Management Plan dated November 2013 (condition 1, Schedule 5);
- Environmental Monitoring Program dated November 2013 (condition 2, Schedule 5);
- Air Quality Monitoring Program dated February 2010 (condition 10, Schedule 3);
- Water Management Plan (incorporating Flood Emergency Procedures Plan) dated July 2016 (conditions 12 and 16, Schedule 3); and
- Landscape Management Plan (incorporating Rehabilitation Management Plan) dated April 2013 (conditions 17 and 18, Schedule 3).

The Department considers that the documents have not adequately addressed the relevant requirements of the consent. The Department's comments on these documents are enclosed in **Attachment A**.

The Department therefore requests that these documents are re-submitted once its comments have been fully addressed, and no later than **31 October 2016**.

Should you have any enquiries in relation to this matter, please contact Lauren Evans.

Yours sincerely,

Howard Reed
Director
Resource Assessments
As nominee of the Secretary

31.8.16

ATTACHMENT A
Collins Spring Farm Quarry (DA 75/256) – Post Approval
Environmental Management Plans

General Comments:

- The EMP should include a table of conditions, which lists all conditions of consent and a reference to where they are addressed in the relevant plan/program.
- All management plans and monitoring programs should provide commitments, rather than 'recommendations'. Where sections have been imported from previous EAs, the language should be amended accordingly.
- All plans should provide definitive statements and avoid vague or ambiguous language, e.g. "Re-use, recycling and disposal options will be periodically reviewed..." (EMP pg 4).
- Any outdated references to government agencies should be updated, e.g. DoP, DECCW and NOW.
- Plans should include all Appendices.
- Any outdated references to the quarry's extraction/rehabilitation program (i.e. 1 ha active extraction: 1 ha rehabilitation) should be updated to reflect the expanded working area as agreed by Council (5 ha). The plans also should clarify the current ratio for active extraction area to rehabilitation.

Environmental Management Plan - condition 1, Schedule 5				
Environmental Management Plan - condition 1, Schedule 5		Compliance (Yes/No)	Comment	Action Required
The Applicant shall prepare and implement an updated Environmental Management Plan for the development to the satisfaction of the Director-General. This plan shall be submitted to the Director-General for approval 3 months after the date of this consent and:				
(a) provide the overall environmental management approach for the development;		Yes	See Section 4.0	-
(b) identify the statutory requirements that apply to the development;		Yes	-	-
(c) describe in general how the environmental performance of the development would be monitored and managed;		Yes	-	-
(d) describe the procedures that would be implemented to:		Partial	Detailed procedures required regarding management of cumulative impacts. Note PIRMP (Appendix 14) not attached.	To note the comments and amend the plan accordingly.
<ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the life of the development; • respond to any non-compliance; • manage cumulative impacts; and • respond to emergencies, including flood-related emergencies; and 				
(e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.		Yes	See Section 8.0	-
General Comments				
<ul style="list-style-type: none"> • FOP 8 & 9 refer to the receiving, processing and subsequent re-sale of ENM & VENIM from off site. Further clarification is required with respect to these activities. If the importation and resale of material from off site is authorised by the development consent issued by Council, the EMP should state this, and confirm that these activities are limited to the processing area on the adjacent land (which is not subject to DA 75/256). 				

<ul style="list-style-type: none"> • The plan could be improved by adding an additional 'Environmental Control Protocol' which relates to traffic and transport impacts. This section could incorporate the relevant sections of the Statement of Commitments, including the maximum number of truck movements, logging procedures, the approved haul route etc. • Section 2.0 states that the 'EMP will be updated, as necessary.' Section 14.0 states that the plan 'is to be reviewed annually as part of the AEMR or on as needed basis'. The plan should specify all circumstances when a review of the plan is required (see condition 7 of Schedule 5). • There is a typographical error in Section 4.0 – the section refers to DP653271 rather than DP 635271. • FOP 1 should be updated to include the EA accompanying Modification 3. • Sections 3.2 and 8.2.3 should be updated to include the EA accompanying Modification 3. • In ECP 5, references to DEC should be updated to OEH. 			
Environmental Monitoring Program - condition 2, Schedule 5	Compliance (Yes/No)	Comment	Action Required
<p>The Applicant shall prepare an Environmental Monitoring Program for the development to the satisfaction of the Director-General. This program shall be submitted to the Director-General concurrently with the submission of the various monitoring programs and consolidate the various monitoring requirements in Schedule 3 of this approval into a single document.</p>	Partial	<p>See Section 10 –</p> <ul style="list-style-type: none"> • Air Quality targets (Table 4): This section refers only to the maximum total deposited dust level, and not the maximum increase in deposited dust level (2 g/m²/month). • Groundwater targets (Table 4): pH target should be between 4.00 and 6.50, not less than 4.00 and greater than 6.50. Electrical conductivity target should be <u>less than</u> 800 uS/cm. Also, this section does not include depth targets (as per Table 7 in WMP). 	To note the comments and amend the plan accordingly
Air Quality Monitoring Program - condition 10, Schedule 3	Compliance (Yes/No)	Comment	Action Required
The Applicant shall prepare and implement an Air Quality Monitoring Program for the development to the satisfaction of the Director-General. This program must:			
(a) be submitted to the Director-General for approval within 3 months of the date of this approval;	Yes	Submitted February 2010.	
(b) be prepared in consultation with EPA; and	Yes	DECCW declined to review plan (see correspondence in Appendix 2).	To note the comments and amend the plan accordingly
(c) include details of how the air quality performance of the development would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval.	Partial	<p>The plan needs to be updated following Modification 3. In particular:</p> <ul style="list-style-type: none"> • The site location plan (Figure 1) is outdated. • Figure 2 does not include the expanded extraction area, and does not include the additional DP and TSP/PM10 locations as provided in the Mod 3 EA and the Statement of Commitments. Monitoring locations should be as per Appendix F13 of the Mod 3 EA, except where relocation was required following subsequent Compliance discussions. • The notes under Tables 1 and 2 reference Modification 2. 	To note the comments and amend the plan accordingly

			<p>The Monitoring Program needs to demonstrate compliance with condition 8 of Schedule 3:</p> <ul style="list-style-type: none">• The Long Term Impact Assessment criterion for PM10 under condition 8 is <u>30</u> µg/m³. Section 3.2 of the AQMP specifies <u>90</u> µg/m³.• The AQMP only proposes monitoring of TSP & PM10 for 6 months to demonstrate compliance, then following 'any legitimate dust related complaint thereafter.' <p>Data should be provided to demonstrate compliance during this initial 6 month period. If the Department is satisfied with the information presented, then monitoring may proceed on a complaints basis as proposed. Alternatively, the AQMP should be amended to provide 6 monthly monitoring for a further 2 year period, in order to demonstrate ongoing compliance with the assessment criteria.</p> <ul style="list-style-type: none">• The Long Term Impact Assessment Criteria for Deposited Dust in Table 3 do not include the maximum increase in deposited dust level (2 g/m²/month).	
			Comment	Action Required
Water Management Plan – condition 12, Schedule 3	Compliance (Yes/No)	Comment		
The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Director-General. This plan must:				
(a) be submitted to the Director-General within 3 months of the date of this approval;	Yes	Submitted February 2010		
(b) be prepared in consultation with Council and EPA and NOW; and	Partial	Evidence of consultation with Council and DPI Water (formerly NOW) to be provided in an Appendix. Outdated references to 'NOW' to be corrected.		
(c) include a: <ul style="list-style-type: none">• Site Water Balance;• Erosion and Sediment Control Plan;• Groundwater Monitoring Program; and• Flood Emergency Procedures Plan.	Yes	Notations on figures are illegible. Higher resolution plans to be provided.		
Site Water Balance - condition 13, Schedule 3	Compliance (Yes/No)	Comment		
Action Required				
The Site Water Balance must:				
(a) include details of: <ul style="list-style-type: none">• sources and security of water supply;	Partial	<ul style="list-style-type: none">• See Section 4.3		
To note the comments and amend the plan accordingly				

	<ul style="list-style-type: none">• water use on site;• water management on site, including the location and capacity of water storages on site and• the means of access;• any off-site water transfers; and		<ul style="list-style-type: none">• See Section 4.4• See Sections 4.5 & 6.4• See Section 4.5• Section 4.6 indicates that there are no off-site water transfers. Off-site transfers include all water losses, e.g. evaporation, groundwater seepage, water loss in silt, river discharges etc. This section should be reviewed, and if necessary, the site water balance should be updated accordingly.	Are comments regarding transition of existing licences to WALs still current? If not, this section should be updated.	
(b)	<ul style="list-style-type: none">• reporting procedures; and• investigate and describe measures to minimise water use by the development.	Yes	<ul style="list-style-type: none">• See Section 4.7		-
Erosion & Sediment Control Plan - condition 14, Schedule 3					
The Erosion and Sediment Control Plan must:					
(a)	be consistent with the requirements of Managing Urban Stormwater: Soils and Construction, Volume 1, 4 th Edition, 2004 (Landcom);	Yes	See Section 6		-
(b)	identify activities that could cause soil erosion and generate sediment;	No	To be provided		To note the comments and amend the plan accordingly
(c)	describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, including during flood events;	Yes			-
(d)	describe the location, function, and capacity of erosion and sediment control structures;	Yes	See Section 6.4 The locations of the ESC structures are shown on Figure 5, however, this plan is not legible.		To note the comments and amend the plan accordingly
(e)	demonstrate that the design capacity of basins will not be compromised by storage of operational water; and	No	See also section 6.4.5, which has a notation "INSERT FIGURE 8" – this figure has not been inserted. Additional information to be provided		To note the comments and amend the plan accordingly
(f)	describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.	Yes	See Section 6.4.7		-

Ground Water Monitoring Program – condition 15, Schedule 3		Compliance (Yes/No)	Comment	Action Required
The Ground Water Monitoring Program must include:				
(a)	baseline data on groundwater levels, flows and quality in the vicinity;	Yes	See Section 5.1	
(b)	groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; and	Partial	<p>Trigger levels are provided in Table 7.</p> <p>Much of the Groundwater section appears to have been extracted from the Mod 3 EA. This section outlines 'recommendations'. However, the Monitoring Program needs to provide clear commitments, based on those recommendations.</p> <p>The program should also include a plan which shows all three groundwater monitoring locations as per the Mod 3 EA</p> <p>There is a typographical error in Table 4: 'Moderate Acitic'.</p> <p>In Table 7, the pH trigger value should be less than 4.0 and greater than 6.5.</p> <p>To be provided</p>	To note the comments and amend the program accordingly
(c)	a program to monitor any observed groundwater inflows to the quarry pit.	No		To note the comments and amend the program accordingly
Flood Emergency Procedures Plan - condition 16, Schedule 3		Compliance (Yes/No)	Comment	Action Required
The Flood Emergency Procedures Plan must:				
(a)	address both the site and the adjacent stockpiling and blending site;	Yes	-	-
(b)	be include procedures to be carried out in advance of a major flood event to minimise damage to plant equipment, operating staff and the environment; and	Yes	Provided in Section 7, however further detail is needed.	To note the comments and amend the plan accordingly
(c)	include procedures to be followed after a major flood event to repair any damage and return the site to productive operations, including reinstatement of all pollution control devices and rehabilitation.	Yes	Provided in Section 7, however further detail is needed.	To note the comments and amend the plan accordingly
Landscape Management Plan – condition 17, Schedule 3		Compliance (Yes/No)	Comment	Action Required
The Applicant shall prepare and implement a detailed Landscape Management Plan for the development to the satisfaction of the Director-General. This Plan must:				
(a)	be prepared in consultation with Council, DPI (Agriculture NSW) and DRE by suitably qualified expert/s whose appointment/s have been approved by the Director-General;	Partial	Evidence of consultation with Council, DPI Agriculture and DRE to be provided in an Appendix.	Copies of correspondence to be included in the Appendices

		Evidence of approval of expert(s) to be provided in an Appendix Submitted February 2010	-
(b) be submitted to the Director-General for approval within 6 months of the date of this approval;	Yes	Submitted February 2010	-
(c) include a Rehabilitation Management Plan.	Yes	Satisfied The plan also needs to incorporate the visual impact mitigation measures outlined in the Mod 3 EA referenced in the Statement of Commitments. Section 8.9.5 of the EA proposed the following measures: <ul style="list-style-type: none"> Enhanced visual screening by embellishment of the anabranch vegetation. Staged retention of existing screening south of the extraction site. Staged retention of vegetation cover on areas not being extracted and progressive rehabilitation of extracted areas. Rehabilitation of the Nepean River riparian zone. Encouragement of recessive colours for visually intrusive plant, equipment, fencing and the like. However, in relation to dot point 5 above, the plan should provide clear commitments, rather than 'encouragement'.	To note the comments and amend the plan accordingly
Rehabilitation Management Plan – condition 18, Schedule 3			
The Applicant shall prepare and implement a Rehabilitation Plan for the development. This plan must include:			
(a) the rehabilitation objectives for the site;	Yes	See Section 1.1	-
(b) a description of the short, medium, and long term measures that would be implemented to rehabilitate the site, including re-establishing high order agricultural land suitability and land use establishing healthy native vegetation and habitat for native fauna or other future land use acceptable to Council and proposed rehabilitation timeframes and timelines;	Partial	<p>Figures 2, 3 and 4 have not been included in the document. Some Appendices are also missing.</p> <p>Typographical errors:</p> <ul style="list-style-type: none"> s 5.5.1 – 'Gates and Cattle Ramps will be installed as required for <u>assess</u> to extraction areas.' s 5.5.2 – 'In the event that the revegetation is suppressed through herbivore activities the <u>follow</u> methods will be utilised...' 	To note the comments and amend the plan accordingly
(c) performance and completion criteria for the rehabilitation of the site, including appropriate high order agricultural land suitability objectives with	No	No clear completion criteria provided.	To note the comments and amend the plan accordingly

reference to the NSW Agricultural Land Suitability Classification system;			
<p>(d) a detailed description of the measures that would be implemented including the procedures for:</p> <ul style="list-style-type: none"> Progressively rehabilitating disturbed areas; protecting areas outside the disturbance areas; protecting the Nepean River and drainage lines on the site to ensure no net loss of water quality and aquatic habitat; managing impacts on fauna; landscaping the site to minimise visual impacts; conserving and reusing topsoil; achieving a free draining final landform; ensuring compatibility of the final land form with surrounding land uses; erosion and sediment control; identifying any proposed types and methods of agriculture; collecting and propagating seed for rehabilitation works; salvaging and reusing material from the site for habitat enhancement; controlling weeds and feral pests; 	Partial	<p>The plan should provide definitive commitments, rather than advice. Words such as 'should' and 'recommend' are to be avoided. Please adjust the language of the plan accordingly.</p> <ul style="list-style-type: none"> Progressive rehabilitation should be updated to reflect increased working area (up to 5ha) as agreed by Council. See Sections 5.5 & 5.6 See Section 5.6 & the WMP. See Section 5.10.1 To be addressed To be addressed To be addressed To be addressed See Section 5.6 Agricultural assessment not included in Appendix 4 (also referenced as 'Appendix D'). See Section 5.7.1 – 5.7.2 See Section 5.10.1 See Sections 5.5.2, 5.10.2, 5.10.3 & Appendix A. The word 'recommended' should be removed from Table 1 in Appendix A. 	To note the comments and amend the plan accordingly

	<ul style="list-style-type: none"> controlling access; and bushfire management; 		<ul style="list-style-type: none"> See Section 5.5.1 To be provided 	
(e)	a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria (see (c) above);	Partial	<p>The Monitoring Program outlined in Section 5.12 begins at the 'practical completion' stage, and only appears to cover the 2 year maintenance period. It does not provide for progress monitoring during the rehabilitation phase.</p> <p>The frequency of monitoring reports is also unclear. Section 5.12 refers to both annual and six-monthly reports during the maintenance period.</p>	To note the comments and amend the plan accordingly
(f)	description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and	No	To be provided	To note the comments and amend the plan accordingly
(g)	details of who would be responsible for monitoring, reviewing, and implementing the plan.	No	To be provided	To note the comments and amend the plan accordingly



Ms Emma Collins
M Collins and Sons Holdings Pty Ltd
1/49 Smeaton Grange Road
Smeaton Grange NSW 2567

Email: ecollins@mcollins.com.au

Dear Ms Collins,

**Spring Farm Quarry (DA 75/256)
Environmental Management Plans**

I refer to your email dated 18 April 2019, submitting the revised documents for the Spring Farm Quarry. The Department has reviewed the following documents:

- Air Quality Monitoring Program dated April 2019 (condition 10, Schedule 3); and
- Environmental Management Plan dated April 2019 (condition 1, Schedule 5).

I can advise that the Secretary approves the Air Quality Monitoring Program. Please ensure a finalised copy of this document is made publicly available on the company's website.

The Department considers that the Environmental Management Plan has not adequately addressed the relevant requirements of its respective condition. The Department's comments on this document are enclosed in **Attachment A**.

The Department requests that this document is re-submitted once these comments have been addressed, and no later than **29 May 2019**.

Should you have any enquiries in relation to this matter, please contact Jack Murphy.

Yours sincerely,

Howard Reed

Director

Resource Assessments

As nominee of the Secretary

1.5.19

Attachment A

Environmental Management Plan – condition 1 Schedule 5	Satisfactory (Yes/No)	Comment	Action Required
The Applicant must prepare an updated Environmental Management Plan for the development to the satisfaction of the Secretary. This plan must be submitted to the Secretary for approval 3 months after the date of this consent and:			
(a) provide the overall environmental management approach for the development;	Yes	Satisfied – Section 7.	-
(b) identify the statutory requirements that apply to the development;	Yes	Satisfied – Section 4 and Section 7.	-
(c) describe in general how the environmental performance of the development would be monitored and managed;	Yes	Satisfied – Section 10.	-
(d) describe the procedures that would be implemented to: <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the life of the development; • respond to any non-compliance; <ul style="list-style-type: none"> • manage cumulative impacts; and • respond to emergencies, including flood-related emergencies; and 	Partial	<ul style="list-style-type: none"> • Further details are required around how the local community is kept informed. • Satisfied – Section 12. • Satisfied – Section 12. • See Appendix 8 – Please ensure any non-compliance is reported as per condition 3 of Schedule 5. • Satisfied – Appendix 8. • Satisfied – Section 11 and Appendix 14. 	Note the comments and amend the plan accordingly.
(e) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the development.	Yes	Satisfied – Section 8, Section 10, Section 11 and Appendix 14.	-
Other Comments			