Supplementary Information for the Native Vegetation Clearing Permit Application for the Laguna Green Granite Quarry at Lot 1 Marnigarup East Road, Gairdner, Shire of Jerramungup

19 July 2023

Version 1 Revision 0

Stella Contracting Services Pty Ltd

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Prepared By:	Charles Newland
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Land Tenure:	Lot 1 on Diagram 84693 Volume 1971 / Folio 488
Date:	19/07/2023
Contact Details	
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Introduction

The Laguna Green Granite Quarry ('the Quarry') is a pre-existing granite dimension stone operation ('the Operation') on freehold land in the Shire of Jerramungup ('the Shire').

The Quarry is not currently operational and has been in abeyance since 2004 when it was last worked by the previous owner Wales Quarries. Prior to mine closure, Laguna Green granite was exported for use in construction projects in Japan, South East Asia, New Zealand and England, including the Australian War Memorial in London. The Quarry is located on Lot 1 on Diagram 84693, Marnigarup East Road, Gairdner ('Lot 1'). Photographs of the operation are displayed in Plates 1 to 15 in Appendix 1.

Australia Jowin Mining Industry Pty Ltd ('AJMI') purchased Lot 1 on 05/02/2019 and now intends on recommencing quarrying operations to produce blocks of dimension stone for export. Mining and site management will be undertaken by Stella Contracting Services Pty Ltd ('SGS'). Both SGS and AJMI are owned by parent company Jowin Capital Pty Ltd.

The regional location of Lot 1 is displayed in Figure 1 and the locality map in Figure 2. Lot 1 is located approximately 143km northeast of Albany and 21km south-southeast from the Jerramungup townsite (Figures 1 and 2).

The proposed site layout for the Operation is provided as Figure 3. Figure 3 also shows the previous quarries and site disturbances. Much of the proposed development footprint has been previously disturbed. The proposed layout for the camp and workshop area is shown in Figure 4. The previous disturbances consist of four small quarries, three reject block stockpiles, a workshop area, access roads and previously cleared ground that is now partially covered in regrowth vegetation.

The Quarry is the subject of a planning approval (extractive industry) that was issued by the Shire of Jerramungup on 07/12/2021. A copy of the planning approval is provided as Appendix 2. The Quarry is also subject to a Bushfire Management Plan that has been submitted to the Shire.

Approximately one third of Lot 1 has been previously cleared by quarrying activities (Plates 1 to 15). The previously cleared areas were mapped against Landgate orthophotos from 1999, 2004 and 2008, as well as the ESRI image from 2023. The previously cleared areas are displayed in Figure 5. Much of the area proposed for quarry development has been previously cleared and/or significantly disturbed by quarrying (Figure 5). The previously cleared areas range from barren areas with no vegetation to areas with varying degrees of regrowth (Plates 1 to 15).

The total area of disturbance proposed under this Native Vegetation Clearing Permit ('NVCP') application is nominated as 8.4ha (Figure 3). This purpose permit seeks approval for the clearing of 8.4ha from within the total envelope of Lot 1 (31.86ha). Due to the interspersed nature of barren areas with regrowth with remnant patches of uncleared vegetation, it was not practical to map specific areas of native vegetation within the disturbance footprint. Hence, the 8.4ha of proposed site layout is a blanket coverage that includes some areas of native vegetation as well as previous quarrying disturbances. The actual area of native vegetation that will in effect be cleared under this application is thus significantly less than the specified 8.4ha.

Please note that the proposed site layout in Figure 3 is used for the purposes of calculating an area of disturbance for the purpose permit application, and could be subject to spatial changes on the ground as the quarry is developed. These changes are likely to be minor.

Kwongan TEC

The southern coastal areas of Western Australia have populations of a Threatened Ecological Community ('TEC') listed under the *Environmental Protection and Biodiversity Conservation Act 1999* ('*EPBC Act 1999*') as the "Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia" ('Kwongkan TEC'). The TEC category under the *EPBC Act 1999* is "Endangered". The TEC is described by the Department of Climate Change, Energy, the Environment and Water in the Approved Conservation Advice as kwongkan shrublands ranging from sparse to dense thickets with Proteaceaeous species forming a significant component of the community. It primarily occurs on sandplains and marine plains on lower to upper slopes and ridges, as well as uplands areas, across southeast botanical province of Western Australia. The Kwongkan TEC extends for >750km along the southern coastal area of Western Australia.

The Kwongkan TEC is also listed by DBCA as a Priority Ecological Community ('PEC'):

- PEC 40 (South Coast): Proteaceae Dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia.

The Kwongkan community has been recorded locally in the Lot 1 area.

Flora and Vegetation Survey

Lot 1 was the subject of a flora and vegetation survey conducted in 2019 by Landscape Ecologist Nathan McQuoid, who has significant experience in the Southwest vegetation communities. This report that has been lodged with DWER as IBSA-2023-0245 and is entitled:

- "Assessment for Threatened and Priority Ecological Communities and Flora, Laguna Green Granite Quarry, Marnigarup Rd, Jerramungup Western Australia"

The summary from the McQuoid 2019 report is provided below:

"The Laguna Green Granite Quarry property Lot 1 sits on Marnigarup Rd East, south east of Jerramungup near the south coast of Western Australia. Lot 1 is approximately 32 ha in size.

Lot 1 is surrounded by farmland on rural zoned private properties and adjoins public road reserve to the north.

Newland Environmental engaged Nathan McQuoid Landscape Ecologist of Bremer Bay to assess the proposed quarry target area on Lot 1 for the presence of the *Proteaceae dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia (Proteaceae Dominated Kwongkan Shrubland)* Nationally Listed Threatened Ecological Community (TEC) and WA State Listed Priority Ecological Community (PEC); and the presence of Threatened and Priority Flora.

The *Proteaceae Dominated Kwongkan Shrubland* TEC/PEC is known to occur on sandplain and shallow duplex soils over shallow granite in the area near Lot 1.

A number of Threatened and Priority Flora are known to occur in the area near Lot 1.

A field assessment of the proposed quarry target area was conducted on April 24 2019, followed by the preparation of a report on the findings, was designed to meet the objectives:

- Examine for the presence of the Proteaceae Dominated Kwongkan.
- Threatened/Priority Ecological Community.

- Map plant communities if possible.
- Compile a species list, as much as possible given the burn.
- Record any conservation-listed taxa with location coordinates.
- Provide an evaluation on the overall conservation value of Lot 1, especially the quarry target area.

The plant community and flora assessment recorded plant community structure, composition and site characteristics at nine sites within the proposed quarry target area.

The *Proteaceae Dominated Kwongkan Shrubland* PEC/TEC was not recorded on Lot 1, either in the proposed quarry target area or the remainder of Lot 1.

A vegetation of Lot 1 was mapped as plant communities, including the proposed quarry target area. Six major plant communities were found to be present.

No Threatened or Conservation Priority Flora were recorded by the assessment.

The conservation value of Lot 1 is significant due to the range of plant communities, the diversity of the flora, the intactness of the majority of the vegetation, the buffer it provides the adjacent farmland and river corridor, the protection of watercourses and the habitat value it provides.

A follow-up spring survey in 2019 or 2020 would help confirm the presence or absence of Threatened and Conservation Priority Flora, not able to be fully determined by this autumn 2019 survey.

Restoration post quarrying and to repair degraded sites will be successful through the use of the regenerative abilities and related processes of the native plants nearby on Lot 1.

The exotic trees Sugar Gum (*Eucalyptus cladocalyx*) and South Australian Blue Gum (*E. leucoxylon*) are present on Lot 1 and should be removed to maintain conservation values."

Proof of Ownership

A copy of the Landgate Record of Certificate of Title for Lot 1 is provided in Appendix 3. Lot 1 is held by Australia Jowin Mining Industry Pty Ltd.

Letter of Authority

A copy of the letter of authority from Australia Jowin Mining Industry Pty Ltd to Stella Contracting Services Pty Ltd is provided in Appendix 4. The letter authorises Stella Contracting Services Pty Ltd to access and undertake work within Lot 1 for the purposes of conducting a dimension stone quarrying operation, and to obtain all necessary approvals under their name and this includes a native vegetation clearing permit.

As mentioned above, both Australia Jowin Mining Industry Pty Ltd and Stella Contracting Services Pty Ltd are owned by parent company Jowin Capital Pty Ltd.

Aerial Photo and Spatial Data

An aerial photo of the proposed site layout for Lot 1 is provided as Figure 3.

The site layout displayed in Figure 3 is provided spatially as a shapefile entitled:

- "Proposed_Layout_Laguna_GDA2020_Zone50.shp".

Clearing Avoidance and Mitigation

As per the NV-F01 application form, a description is provided below as to how, whenever possible, clearing of native vegetation will be avoided or otherwise mitigated.

- Previously cleared or regrowth areas will be utilised whenever possible in preference to clearing of new areas of native vegetation.
- The current proposed quarry layout occurs primarily over previously disturbed and cleared ground (Figure 5).
- Whenever possible, trees (exotic and native) and large shrubs will be avoided.
- A large part of the proposed site layout has been significantly disturbed by previous quarry developments and this includes:
    - Four granite quarry with open voids and no safety bunds.
    - Numerous small stockpiles of reject granite blocks.
    - Overburden stockpiles and costean pushings.
    - Large laydown areas cleared for quarry purposes.
    - Numerous access tracks.
    - Areas cleared that may have been grazing paddocks.
    - Historical infrastructure (seacontainer and derelict caravan).
    - Derelict earthmoving machinery.
    - A large array of remnant scrap material.
- There was no significant rehabilitation undertaken by the previous quarry operator. SCS intends to rehabilitate the previous quarrying disturbances as part of the ongoing Operation.
- Under the planning approval, the following condition is imposed:

  "*4. The Rehabilitation and Decommissioning Plan as submitted with the Planning Application is to be implemented to the satisfaction of the Shire of Jerramungup*".

  The Rehabilitation and Decommissioning Plan from the planning application is reproduced in Appendix 5. SCS will implement the Rehabilitation and Decommissioning Plan once operations have commenced.
- The objective of the Rehabilitation and Decommissioning Plan is to restore the rehabilitated areas to as close as possible to the natural landscape with a native vegetation community.
- Currently, approximately 10ha of area has been previously disturbed by quarrying. At quarry closure, it is intended that all previous disturbances as well as the new operational disturbances will be rehabilitated.

The following Appendices are provided in the document:

The following Figures are provided in the document:

Appendix 1: Photos of the Laguna Green Granite Project

Plate 1: Workshop area from previous site operation

Plate 2: Sea container and remnant equipment

Plate 3: Derelict loader left on site

Plate 4: Historical Quarry 1

Plate 5: Barren areas near Quarry 1

Plate 6: Historical Quarry 2

Plate 7: Regrowth on old overburden stockpiles

Plate 8: Historical Quarry 3

Plate 9: Historical Quarry 4

Plate 10: Cleared area near Quarry 4

Plate 11: One of many reject block stockpiles

Plate 12: Another reject block stockpile

Plate 13: Access track

Plate 14: One of many previously cleared area

Plate 15: Previously cleared area with tree regrowth (ex-paddock?)

Appendix 2: Planning approval (extractive industry) issued by the Shire of Jerramungup

SHIRE OF JERRAMUNGUP

8 VASEY STREET, JERRAMUNGUP WA

PO BOX 92, JERRAMUNGUP WA, 6337
PH: (08) 9835 1022

File No.: A81137/OPA212339
Application: P21-041

Australia Jowin Mining Industry Pty Ltd
PO Box 366
WEST PERTH WA 6090

Dear Sir/Madam

EXTRACTIVE INDUSTRY LICENCE – LAGUNA GREEN GRANITE PROJECT. LOT 1 MARNIGARUP EAST ROAD, GAIRDNER. SHIRE OF JERRAMUNGUP.

Your application for planning approval was Approved by the Council at the Ordinary Meeting of Council held on the 24th November 2021 subject to conditions. The attached Planning Approval details a number of conditions which must be met in the course of carrying out the development for which the approval has been granted.

The conditions have been imposed by Council under Shire of Jerramungup Local Planning Scheme No. 2 (as detailed in Schedule 2, Part 9, Clause 68 (2) of the Planning and Development (Local Planning Schemes) Regulations 2015) and relate specifically to the approved plan attached to the Planning Approval. Failure to comply with any condition of development approval constitutes an offence for which prosecution may be instituted under Part 13 of the Planning and Development Act 2005.

A footnote on the Planning Approval indicates that you may have a right of appeal in accordance with the provisions of the Planning and Development Act 2005, if you are aggrieved by Council's decision. Please note that appeals must be lodged to the State Administrative Tribunal within 28 days.

Should you have any enquiries relating to this planning approval, please contact the undersigned.

Yours faithfully

Noel Myers
MANAGER OF DEVELOPMENT
7 December 2021

Jerramungup - Bremer Bay
Progressive, Prosperous and a Premium Place to Live and Visit

PLANNING AND DEVELOPMENT ACT 2005

SHIRE OF JERRAMUNGUP
LOCAL PLANNING SCHEME NO. 2

NOTICE OF DETERMINATION ON APPLICATION FOR DEVELOPMENT APPROVAL

Location: LOT 1 MARNIGARUP EAST RD GAIRDNER 6337	
Lot: 1	Plan/Diagram: 84693
Vol. No.: 1971	Folio No.: 488
Application date: 20/09/2021	Received on: 20/09/2021
Description of proposed development: EXTRACTIVE INDUSTRY – GRANITE QUARRY. (LAGUNA GREEN GRANITE PROJECT)	

The application for planning approval was granted by the Council at the Ordinary Meeting of Council held on the 24th November 2021 subject to the following conditions:

1. **Development shall be carried out in full and fully implemented in accordance with the approved plans and details contained within the Submission Report prepared by Australia Jowin Mining Industry Pty Ltd, Version 1-Revision 1 dated August 2021 and updated Plans which include Figure 3 – (Land tenure); Figure 4 (Site layout map); Figure 5 (Map of Kwongkan Shrublands) and Figure 6 (DBCA Buffers for Kwonngkan Shrublands) submitted further to the planning application.**
2. **The approval is valid for a period of 5 years from the date of issue and is liable to cancellation without compensation at any time for infringement of any regulation governing the same or breach of any conditions under which it is issued;**
3. **The applicant shall install and maintain road signs along Marnigarup East Road, Gairdner warning other road users of trucks entering and using the public road system. Signs are to be to specification of the Shire in locations approved in writing by the Shire and in consultation with Main Roads WA.;**
4. **The Rehabilitation and Decommissioning Plan as submitted with the Planning Application is to be implemented to the satisfaction of the Shire of Jerramungup;**
5. **The applicant is to provide an activity report to the Manager of Development on an annual basis that identifies what works have been performed during the past twelve month period and what works identified with the Rehabilitation and Decommissioning Plan referred to in Condition 3) above;**
6. **The applicant is to notify the Shire's Manager of Works of any quarrying campaign that will generate more than Eight (8) truck movements to and from the site per week to enable the Shire to perform a pre-inspection of the road condition. The purpose of the inspection is to enable the Shire of Jerramungup to monitor and assess if the activity generated from the site is causing damage to the road that requires either upgrade or repair, the cost and responsibility for payment of which is to be negotiated with the Shire and be to the satisfaction of the Chief Executive Officer.**

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DETERMINATION ADVICE NOTES:

i) It is the responsibility of the Licence Holder to ensure that they apply for and hold all necessary Permits that may be required for the clearing of any native vegetation before such works are undertaken;

ii) The Licence Holder is to liaise with the Shire of Jerramungup, Manager of Development regarding any proposed demolition of buildings or construction and installation of new buildings prior to any works proceeding to determine if any planning or building approvals are required from the Shire;

iii) Condition 5 above requires annual reporting on activity. The anniversary date for that reporting to be submitted is Twelve (12) months from the date of this letter and it is the responsibility of the Licence Holder to ensure that Report is received by the Shire in accordance with the Condition;

iv) Condition 6 is applied to ensure that portions of public roads as are affected by the activities related to the approval are maintained as close as practicable to 'pre-development' standard acceptable to Council at the Licence Holders cost. A road maintenance contribution and/bond may be payable to Council prior to commencement of traffic above Eight movements to and from the site per week. The contribution may be applied at the discretion of Council and such contributions shall be used for road upgrade and or repair where necessary as a result of the operation;

v) In order to minimise noise pollution, working hours within the excavation area and transportation of bulk materials shall be as per those set out within Clause 3.10 of the applicants submission report;

vi) Approval shall not in any way render the Shire of Jerramungup liable for damage or injury of any kind to any member of the public; such liability shall be the sole responsibility of the applicant;

Note 1: If the development the subject of this approval is not substantially commenced within a period of 2 years, or such other period as specific in the approval after the date of the determination, the approval will lapse and be of no further effect.

Note 2: Where an approval has so lapsed, no development is to be carried out without the further approval of the local government having first been sought and obtained.

Note 3: If an applicant is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the Planning and Development Act 2005 Part 14. An application must be made within 28 days of the determination.

Noel Myers
MANAGER OF DEVELOPMENT:
Date: **7 December 2021**

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Appendix 3: Landgate Record of Certificate of Title for Lot 1

WESTERN AUSTRALIA

REGISTER NUMBER	
1/D84693	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
2	13/2/2019

VOLUME 1971 FOLIO 488

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 1 ON DIAGRAM 84693

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

AUSTRALIA JOWIN MINING INDUSTRY PTY LTD OF UNIT 3 13 OXLEIGH DRIVE MALAGA WA 6090
(T O084874) REGISTERED 5/2/2019

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	1971-488 (1/D84693)
PREVIOUS TITLE:	1636-183
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF JERRAMUNGUP

LANDGATE COPY OF ORIGINAL NOT TO SCALE 13/07/2023 03:30 PM Request number: 65345065

Landgate
www.landgate.wa.gov.au

Appendix 4: Letter of authority from Australia Jowin Mining Industry Pty Ltd to Stella Contracting Services Pty Ltd

JOW

Jowin Resources Pty Ltd
ABN: 93 629 315 546
Suite 2, Level 3
35 Havelock Street
West Perth WA 6005
(08) 6317 9988

Department of Water Environmental Regulation
8 Davidson Terrace
Joondalup WA 6027

July 4, 2023

To Whom It May Concern

As the registered land holder of LOT 1 ON DIAGRAM 8469, Volume 1971, Folio 488 ("Lot 1"), I, on behalf of AUSTRALIA JOWIN MINING RESOURCES PTY LTD hereby authorise STELLAR CONTRACTING SERVICES PTY LTD to access and undertake work within Lot 1 for the purposes of conducting a dimension stone quarrying operation, and to obtain all necessary approvals under their name and this will include a native vegetation clearing permit.

Kind regards

Mr WANG Huajie
Director
Jowin Resources Pty Ltd
Formerly: Australia Jowin Mining Industry Pty Ltd

Appendix 5: Rehabilitation and Decommissioning Plan from the planning application

POST-MINING LAND USES AND CLOSURE OBJECTIVES

Proposed Post-Quarrying Land Use

The proposed post-quarrying land use is the restoration of a natural habitat with a native species ecosystem similar to that occurring locally. The two endpoints for this land use are:

- **Granite outcrop habitat** - The quarries will be partially backfilled as stable rocky areas that will be landscaped to be similar to the surrounding granite outcrops. Blocky waste rock in the form of medium to large boulders and topsoil will be backfilled against the quarry face to create a rocky scree slope that could provide sheltering and denning habitat for a variety of fauna species. The topsoil will support the return of native vegetation.
- **Restoration of natural bushland environment** – The infrastructure areas, workshop areas, block laydown areas and roads will be restored to a natural environment similar to the pre-quarrying condition. All plant, equipment and infrastructure removed, the entire area landscaped back to original contours, covered with topsoil and deep ripped. Roads will have windrows graded back in and the entire area landscaped to original contours, covered with topsoil and deep ripped.

The closure objectives are to create post-quarrying landforms that are:

- Stable;
- Erosion resistant;
- Non-polluting;
- Consistent with local landscape aesthetics;
- Revegetated with native vegetation; and
- Safe.

Each closure objective is discussed below in relation to the post-mining landform endpoints.

Stable

The quarry areas will have waste rock stacked against the quarry faces to achieve a stable contour which resembles the surrounding landscape. The abandonment slope is planned at 1:4 (Figure 8). As there is an anticipated waste rock to product ratio of 3:1 there will be no shortage of waste blocks to return to the quarry void. Waste rock will be carefully placed using excavators and front-end loaders to achieve the target angles. Landscaped areas (including pit floors) will then be covered with topsoil where possible and deep ripped to facilitate the return of native vegetation and a natural ecosystem. The rehabilitated mined-out pits will be landscaped to visually blend in as much as possible with the surrounding natural landscapes.

The infrastructure areas will have all plant, infrastructure and stockpiles removed and the entire area landscaped to original pre-mining contours. Landscaped areas will then be

covered with topsoil and deep ripped to facilitate the return of native vegetation and a natural ecosystem. Deep ripping will be used to break soil compaction.

The mine roads will have the windrows graded back in and the entire road area landscaped to original pre-mining contours. The landscaped ex-road will then be covered with topsoil and deep ripped to facilitate the return of native vegetation and a natural ecosystem. Deep ripping will be used to break soil compaction.

The closure rehabilitation at the Quarry will result in stable post-mining landforms.

Erosion Resistant

Dimension stone extraction areas and stable rocky areas with exposed granite surfaces are considered to be extremely erosion resistant. The quarry edges will have a perimeter abandonment bund that will diverts runoff from flowing over the quarry, thus further reducing the erosion risk. This bund also acts as a safety measure to isolate operational areas. Pit slopes will thus just receive incidental rainfall. The final landscape will have no berms, banks, moonscapes or rip lines as these structures channel and pond water which inevitably results in pipe failure or 'off-contour' rip-line breakout gullying. The nature of waste rock material used will allow for water penetration through the structure and flow onto the surrounding plains. These rubble scree surfaces are self-armouring.

The other areas to be rehabilitated, the infrastructure areas and mine roads, will be landscaped to pre-mining contours, will have windrows graded in, covered with topsoil and deep ripped. Deep ripping will ensure that compacted pavements are broken to allow water infiltration and root penetration.

Closure rehabilitation will result in non-erosive post-mining landforms.

Non-polluting

There are no structures or contaminated areas occurring at the Quarry that are considered as having the potential to pollute.

The potential for pollution during the operational phase is minimal as there are no chemicals, except hydrocarbons, used or stored on site. Due to the small scale nature of the operation, the quantity of hydrocarbons used on site is minimal. Hydrocarbons consist primarily of diesel. Up to 1,500L of other hydrocarbons, such as engine, transmission and hydraulic oil and lubrication products is be stored in 200L and 20L drums on oil spill packs inside a sea container. Gensets are self-bunded. A self-contained, self-bunded and double lined commercial portable refuelling facility is unitised with a nominal capacity of 10,000L. The refuelling bowser is fully lined and bunded to catch spillage. Repairs and servicing of fixed and mobile plant occurs on site using mobile mechanics equipped with hydrocarbon recovery equipment.

All hydrocarbon storage areas, refuelling points, workshop and washdown facilities are located inside contained catchments that drain to sump loci, directed via sloping ground, berms and culverts to an oily water catchment sump at the washdown bay. Waste oil contractors will remove the used hydrocarbons and washdown water on a regular basis.

The process of block cutting has no potential of creating pollution sources. Likewise, the camp is unlikely to create pollution sources as waste material is disposed of in a landfill and waste water will be treated in an approved septic tank and leach drain system. There are no pollution sources associated with mine roads.

The rehabilitated quarry areas will have silt and sediment loadings emanating from freshly rehabilitated surfaces for the first few major rainfall events. Bunding will be established around disused, rehabilitated quarry areas to contain any sediment occurring in runoff from these rainfall events and spreading to the surrounding area.

The processing areas involve cutting the excavated product into transportable blocks. This is a mechanical process and contains no pollution sources.

Mine closure will result in non-polluting post-mining landforms.

Consistent with Local Landscape Aesthetics

All rehabilitated surfaces will be designed, constructed and revegetated to blend into the natural landscape. The final landforms will be reconstructed rock outcrops or plains that are blended into the surrounding land systems. The use of local native species will facilitate the return of native vegetation consistent with that occurring locally. Experience on site has shown that local native species will regrow naturally on rehabilitated areas.

By landscaping, ripping, using topsoil where available and controlling weeds, it is expected that the revegetated post-mining landforms will become similar and/or indiscernible from the surrounding natural environment.

The quarry extraction areas will be stable rocky areas with loose material and scree used as backfill where possible and quarry edges battered back and 'bulldozer' landscaped as much as possible. Landscaped areas will then be covered with topsoil and deep ripped to facilitate the return of native vegetation and a natural ecosystem. The final landform should resemble a rocky outcrop and not too dissimilar from the natural surrounding granite hillsides.

The mine camp, workshop and laydown areas will have all processing plant, infrastructure and stockpiles removed and the entire area landscaped to original pre-mining contours. Landscaped areas will then be covered with topsoil and deep ripped to facilitate the return of native vegetation and a natural ecosystem. Deep ripping will be used to break soil compaction.

The mine roads will have the windrows graded back in and the entire road area landscaped to original pre-mining contours. The landscaped ex-road will then be covered with topsoil and deep ripped to facilitate the return of native vegetation and a natural ecosystem. Deep ripping will be used to break soil compaction.

The closure rehabilitation activities proposed for the Quarry will therefore result in rehabilitated surfaces that are consistent with local landscape aesthetics.

Revegetated with a Functioning Native Vegetation Ecosystem

SCS intends on developing a landform that is revegetated using only locally occurring native species and with a functioning ecosystem similar to that occurring in the surrounding un-mined areas. The aim is to reinstate a high level of biological diversity into the mined-out areas. This will be achieved by regrowing a healthy vegetation community dominated by rangeland native species.

Vegetation Association endpoints will aim to recreate the pre-mining structural descriptions provided by McQuoid (2019) report.

The respreading of topsoil and ripping should facilitate natural regrowth without the need for reseeding. Seed will, however, be used but only if considered necessary in the event that topsoil revegetation is poor or patchy. Only local provenance seed will be sourced using

seed pickers operating within 100km of the Quarry. All seed will be checked prior to use to ensure that it is free of weed species and of local provenance content.

A species list of target rehabilitation will be selected from the dominant species identified during the vegetation survey conducted by McQuoid (2019). SCS's aim is to grow at least 75% of these species, at foliage covers similar to pre-mining structural descriptions.

These endpoints are natural vegetation associations that have been recorded at the Quarry area in undisturbed areas over similar landscapes to those expected post-mining.

A full description of these vegetation associations and species assemblages for each association is provided in McQuoid (2019) that has been submitted to DWER as IBSA-2023-0245.

Safe

The requirements for mine abandonment from the *Mines Safety and Inspection Act 1994* and the *Mines Safety and Inspection Regulations 1995* will be complied with.

The Quarry will be left in a safe condition in regards to both humans and animals.

Public safety will be undertaken by ensuring that:

- DMIRS District Inspector of Mines is consulted regarding placement of abandonment bunds and other abandonment requirements.
- All vehicle access to site is blocked or removed.
- No vertical drop-off points are left, unless bunded or fenced.
- All quarry faces will be backfilled with waster rock material to create abandonment angles of 1:4.
- Appropriate sign posting will be utilised.
- All fencing and remnant material is removed.
- Any fuels or other hydrocarbons are removed from site.

Animal safety will be undertaken by ensuring that:

- All open bores or drills holes are capped or backfilled.
- No open excavations or any open holes will remain that could trap or injure native animals or stock.
- All remnant material that could pose a threat to fauna is removed.
- Any fuels or other hydrocarbons are removed from site.

The closure rehabilitation activities proposed for the Quarry will therefore result in a safe post-mining landform.

Specific completion criteria for the Quarry in relation to post-mining land uses, endpoints landforms and the closure objectives are provided in Table 5.

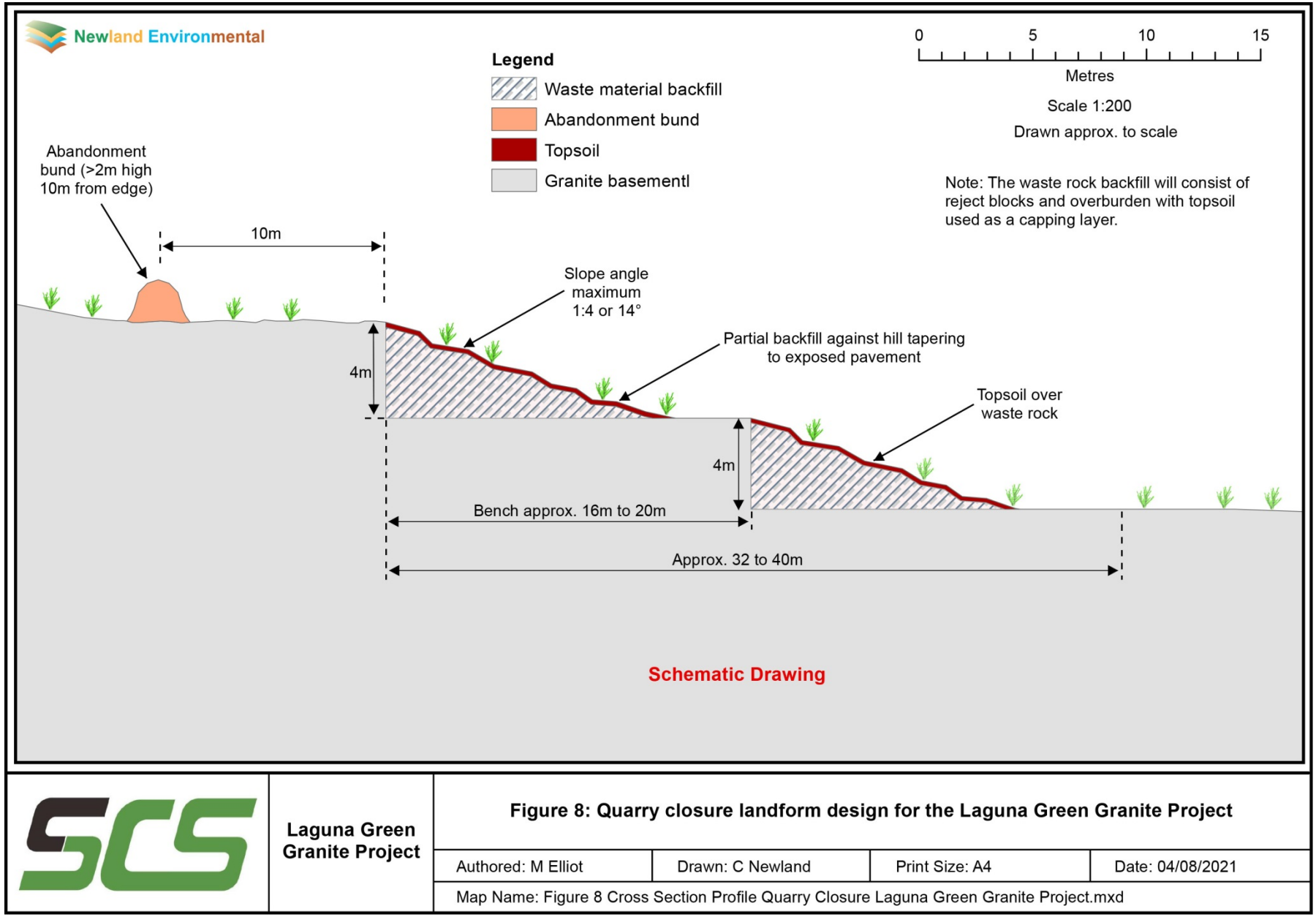


Figure 8: Quarry closure landform design for the Laguna Green Granite Quarry

Table 5: Landform objectives and tasks for quarry closure and decommissioning

Domain	Objective	Rationale	Required Tasks
Pre-Closure Planning			
All Quarry areas	Create an accurate site plan using survey pickup.	Survey is required for final landform design, management of mine closure activities as well as closure requirements under LPL 13.	• Engage a licensed surveyor to undertake a site survey of all disturbed areas with sufficient number of points to generate an accurate 1m contour plan for the entire Project area. For immediate quarry areas, a 0.2m or less accuracy is required. • Engage a surveyor with a drone to create a high resolution and geo-rectified image of the Project area. The drone could also be used to generate the site survey contour information as discussed above.
All Quarry areas	Determine the landowner's objectives for quarry closure and decommissioning.	Ensure that quarry closure and decommissioning is undertaken in accordance with landowner's desired outcome.	• Consult with landowner SCS in regards to quarry closure and decommissioning objectives and requirements. Organise an onsite meeting. • Document each objective and requirement as a task for incorporation into the design for quarry closure and decommissioning.
All Quarry areas	Determine closure and decommissioning objectives for other direct stakeholders.	Ensure that quarry closure and decommissioning is undertaken in accordance with stakeholder's requirements.	• Consult with the Shire planner and CEO regarding closure and decommissioning objectives and requirements. Organise an onsite meeting. • Consult with the District Inspector of Mines regarding closure and decommissioning objectives and requirements. Organise an onsite meeting. • Identify any other stakeholder, consult and seek input as required. • Document each objective and requirement as a task for incorporation into the final design for quarry closure and decommissioning.
All Quarry areas	Create a task register for quarry closure and decommissioning.	All activities required for quarry closure and decommissioning to be managed using a single document called a task register.	• Itemised all activities required for quarry closure and decommissioning as individual tasks linked to areas on the survey plan. Integrate individual tasks to the objectives provides by stakeholders. • Define activities required for each task with photographs. • Provide each stakeholder with a copy of the task register for review and comment.

Domain	Objective	Rationale	Required Tasks
			• Implement the task register activities. • Update the task register as each activity is completed.
Operational:			
All Quarry areas	Undertake progressive rehabilitation.	As per TP15, any exhausted/worked areas in excess of ha will be progressively rehabilitated (refer to Section 4.5.2).	• Monitor areas of disturbance on a regular basis using the Olynthos drone. • Identify areas that are no longer required for site operations and schedule for rehabilitation, at or before the total area reaches 2ha. • Implement rehabilitation tasks as described in the following section "Closure and Decommissioning".
Closure and Decommissioning:			
All Quarry areas	Undertake a site clean-up.	Ensure that all unwanted scrap, remnant material, equipment and rubbish are removed from site. Significant areas of hydrocarbon stained soil (>2m^2) to be removed from site.	• Conduct an "emu-parade" with material being taken to an approved landfill for disposal. • Excavate significant areas of hydrocarbon contaminated soil (remove material until no residual odour is detected). Contaminated material will then be taken to the nearest municipal bioremediation facility.
All Quarry areas	Downslope bunds will be backfilled to previous ground levels (unless the landowner wants to have these structures retained).	Reinstate natural hillside contours and downslope flows.	• Identify any downslope bunds that the landowner wants to retain. • Backfill non-retained downslope bunds to previous ground levels.
Remaining assorted blocks	Rationalise remaining blocks for future use.	The remaining blocks could have use for site closure (bunds, entrance blocking, backfill) or as a dimension stone resource for the local landowner (retaining walls etc) or Bridgetown community (stone monuments and plinths etc).	• Assess which remaining blocks have dimension stone potential and relocate to a holding area with access to enable removal from site. • Other blocks to be stockpiled near quarries where backfilling is proposed.
Quarry or	Backfill the quarry as	The quarries or sections of quarry not	• Refer to Figure 7.

Domain	Objective	Rationale	Required Tasks
quarries to be partially backfilled.	much as possible to remove vertical drops, subject to it being stable safe, non-erosive and non-polluting (see below).	selected for preservation will be rehabilitated by backfilling against the wall to remove vertical or steep fall points.	• Reject blocks and off-cuts to be stacked against quarry walls in a stable arrangement in conjunction with overburden and sideburden as backfill. • Create a stable slope from the top of the quarry wall to floor level. • Topsoil the backfilled slope. • Ensure that no fall points remain. If so then fencing or bunding is required at these points. • Implement the stability related tasks. • Implement the safety related tasks. • Implement the non-erosive related tasks. • Implement the non-polluting related tasks.
Site roads and laydown areas	Minimise hardstand areas.	Reduce the area of disturbance from site roads and laydown areas to increase available grazing pasture and minimise erosion potential from runoff surfaces.	• Seek direction from the landowner as to which roads and laydown areas are to be retained. • Areas not retained will be rehabilitated as outlined below: o Grade windrows back across road surface. o Landscape back to original contours. o Deep rip compacted surfaces. o Reinstate drainage lines and culvert as necessary. o Create spoon drains as necessary. • Block access as required with berms or large block. • Implement the stability related tasks. • Implement the safety related tasks. • Implement the non-erosive related tasks. Implement the non-polluting related tasks.
All Quarry areas	Stable landforms.	Ensure that the resultant landforms are stable.	• Assess quarry areas for potentially unstable features such as: o Unsecured boulders or blocks with potential movement or fall from height. o Overhanging or undercut walls.

Domain	Objective	Rationale	Required Tasks
			o Rock fractures indicating potential geotechnical failures / slippages. o Erosion gullies with ground destabilising potential. • Seek guidance from the District Inspector of Mines on stability issues. • Implement stability tasks (e.g. scaling faces to bring down large rocks, collapsing faces with potential rock slippage fracturing, remedial earthworks to close or redirect catchment areas for erosion gullies.
All Quarry areas	Safe landforms.	Ensure that the resultant landforms are safe.	• Assess quarry areas for potentially unsafe features such as: o Vertical or steep walls with risk of falling from height. o Large blocks or boulders that could dislodge and cause injury. o Steep embankments with risk of falling from height. o Inadvertent access points to fall points, vehicle and pedestrian. • Seek guidance from the District Inspector of Mines on safety issues. • Implement safety tasks such as: o Fencing or bunding at vertical or steep walls and steep embankments. o Fencing around the entire quarry. o Warning signage.
All Quarry areas	Non-polluting landforms.	Ensure that the resultant landforms are non-polluting	• Assess quarry areas for potentially unsafe features such as: o Old drums, tanks or containers with potential pollutants. o Septic tanks. o Hydrocarbon stained ground. • Implement clean-up tasks such as: o Removal of all suspect drums and containers o Septic tank evacuation using a grey water removal contractor and fill in the tank. o Remove hydrocarbon stained soil to bioremediation landfill (refer to Section 4.3.2).

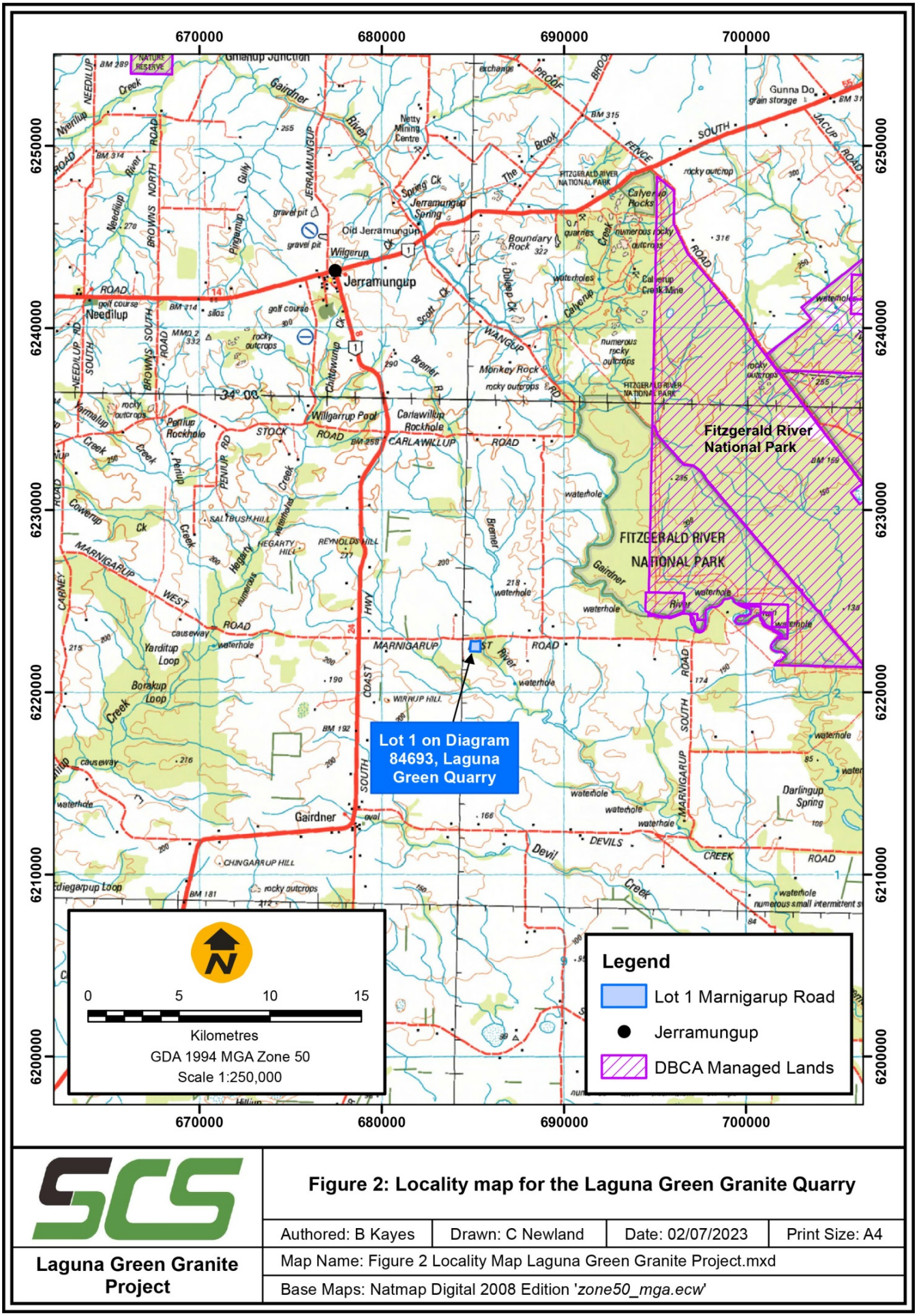
Domain	Objective	Rationale	Required Tasks
All Quarry areas	Non-erosive landforms.	Ensure that the resultant landforms are non-erosive.	• Assess all Quarry areas for erosion issues or erosive potential: o Channelisation creating rills and gulleys / drainage lines. o Potential runoff concentration points. o Uncontrolled runoff feeder catchments. o Ground cavitation. • Implement erosion control measures such as: o Constructing a bund at the downslope aspect of each quarry to prevent runoff from leaving site (Figure 16). o Directing runoff to internal catchment ponds. o Managing runoff from upstream catchments by reducing erosional velocities and flow volumes (interceptor banks, spoon drains, rocky cascade structures, rock armouring or scree mantles and vegetation screens). o Reinstate previous drainage lines to flow though or around quarry areas. o Install culverts as required. o Monitoring for erosion breakouts and implementing control measures.
Post Closure and Decommissioning:			
All Quarry areas	Create an accurate site final site plan using survey pickup.	Survey is required for under TP15 at Quarry completion. Site works will also be visible on the aerial photo for future reference and to verify completion of all requisite tasks.	• Engage a licensed surveyor to undertake a site survey of the Quarry area as required by LPL 13 sufficient number of points to generate an accurate 1m contour plan. For immediate ex-quarry areas, a 0.2m or less accuracy is required. • Engage a surveyor with a drone to create a high resolution and geo-rectified image of the Quarry area. The drone could also be used to generate the site survey contour information as discussed above.
All Quarry areas	Assess effectiveness of closure and decommissioning	Ensure that closure and decommissioning tasks have met the required objectives as well s TP15.	• Inspect the ex-quarry areas with the landowner and Shire representative after all rehabilitation and decommissioning activities have been completed.

Domain	Objective	Rationale	Required Tasks
	undertakings.		• Photograph and document completed rehabilitation and decommissioning tasks by GPS waypoint. Assess and record the effectiveness of each task. Update the task register with completed activities. • Record any additional tasks required to finalise site closure and add to the task register. • Undertake the additional tasks. • Re-inspect the ex-quarry areas with the landowner after a winter rainfall season. Assess for any issues that have developed post-closure and rectify if required. • As per LPL 13, rehabilitation works are to be monitored and information reported to the Shire demonstrating the progress and success of rehabilitation for a two year period from the conclusion of rehabilitation. • At the appropriate time, complete an agreement with the landowner that all rehabilitation and decommissioning activities as required under the access agreement have been satisfactorily completed. • At the appropriate time, notify the Shire that all rehabilitation and decommissioning activities as per the Development Approval have been completed. Provide the Shire with the final monitoring report.

*Vegetation monitoring plots: The McQuoid (2019) flora and vegetation survey was conducted using 20x 20m quadrats. This methodology will be re-utilised to monitor rehabilitation revegetation.

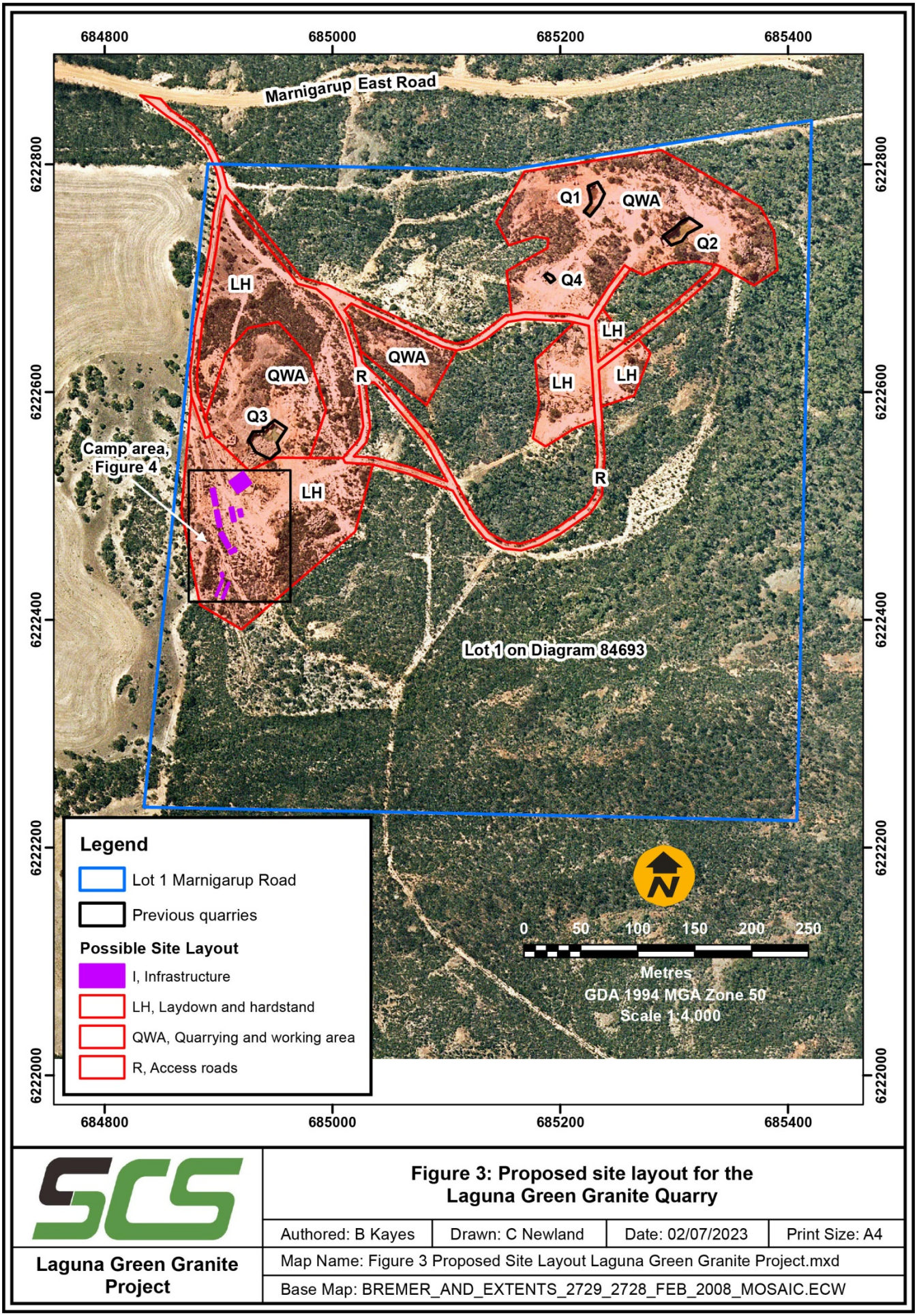
Figures

Figure 1: Regional location of the Laguna Green Granite Quarry



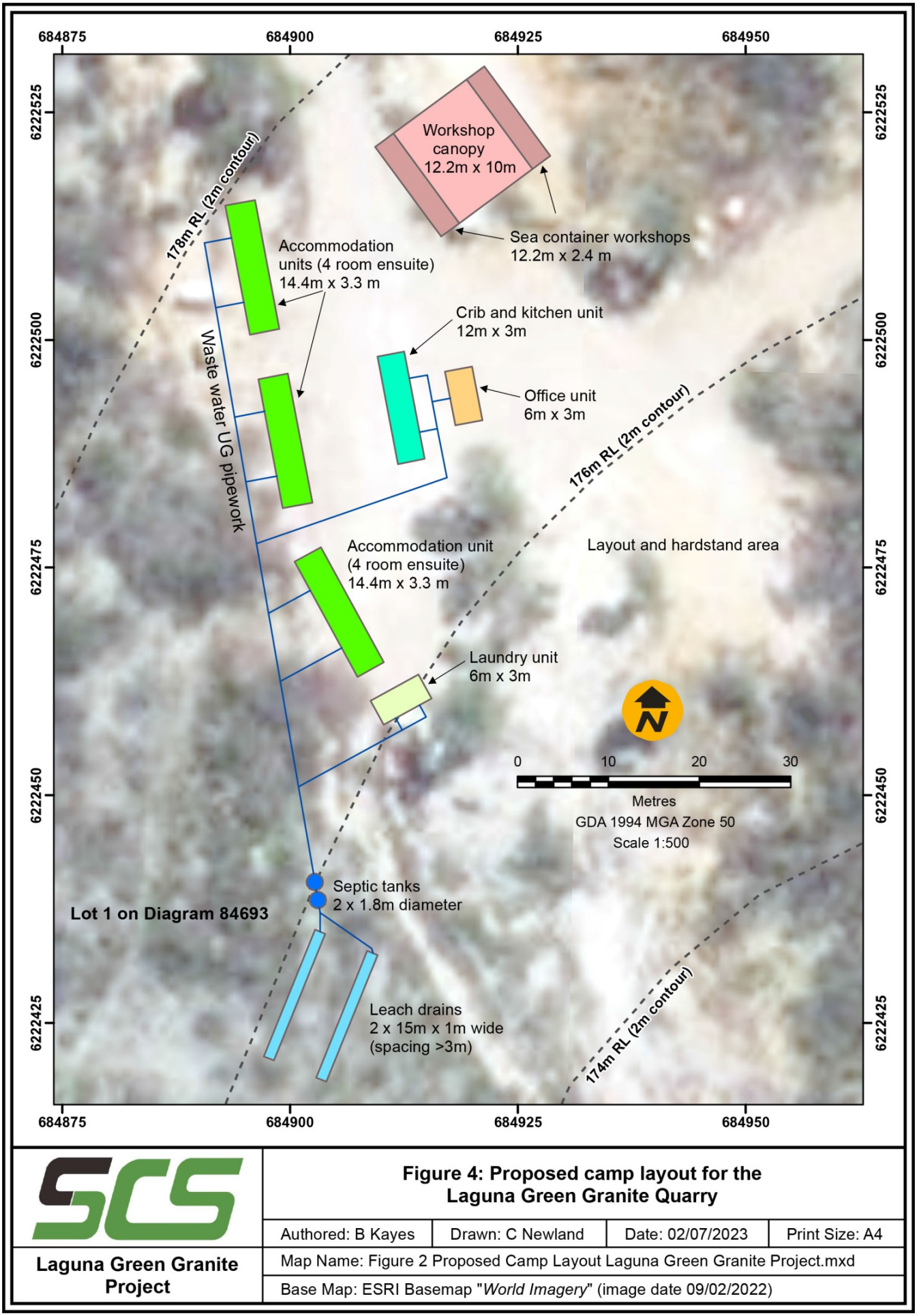
Laguna Green Granite Project	**Figure 2: Locality map for the Laguna Green Granite Quarry**			
	Authored: B Kayes	Drawn: C Newland	Date: 02/07/2023	Print Size: A4
	Map Name: Figure 2 Locality Map Laguna Green Granite Project.mxd			
	Base Maps: Natmap Digital 2008 Edition '*zone50_mga.ecw*'			

Figure 2: Locality map for the Laguna Green Granite Quarry



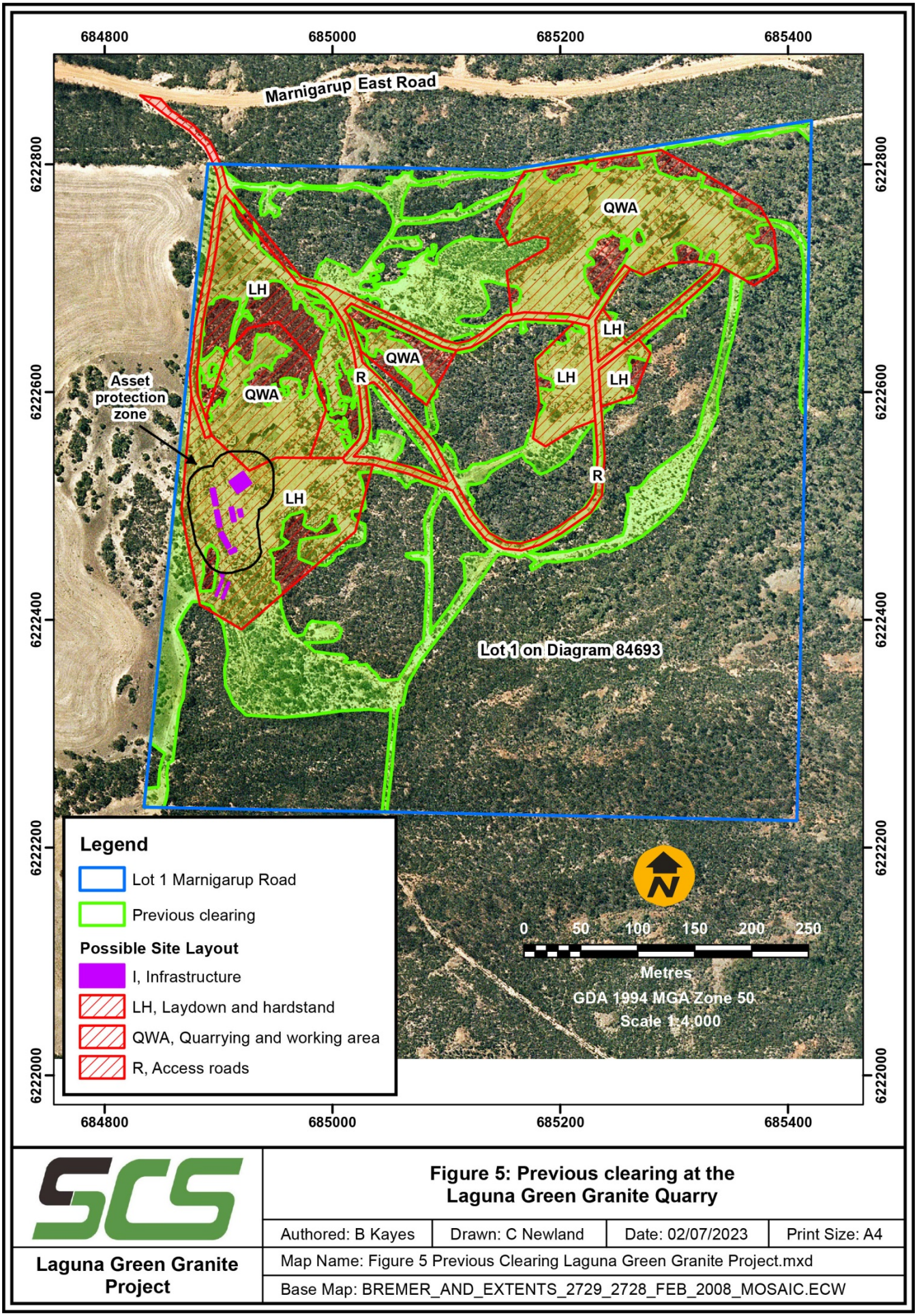
Laguna Green Granite Project	Figure 3: Proposed site layout for the Laguna Green Granite Quarry			
	Authored: B Kayes	Drawn: C Newland	Date: 02/07/2023	Print Size: A4
	Map Name: Figure 3 Proposed Site Layout Laguna Green Granite Project.mxd			
	Base Map: BREMER_AND_EXTENTS_2729_2728_FEB_2008_MOSAIC.ECW			

Figure 3: Proposed site layout for the Laguna Green Granite Quarry



SCS	**Figure 4: Proposed camp layout for the Laguna Green Granite Quarry**			
	Authored: B Kayes	Drawn: C Newland	Date: 02/07/2023	Print Size: A4
Laguna Green Granite Project	Map Name: Figure 2 Proposed Camp Layout Laguna Green Granite Project.mxd			
	Base Map: ESRI Basemap "*World Imagery*" (image date 09/02/2022)			

Figure 4: Proposed camp layout for the Laguna Green Granite Quarry



SCS	**Figure 5: Previous clearing at the Laguna Green Granite Quarry**			
	Authored: B Kayes	Drawn: C Newland	Date: 02/07/2023	Print Size: A4
Laguna Green Granite Project	Map Name: Figure 5 Previous Clearing Laguna Green Granite Project.mxd			
	Base Map: BREMER_AND_EXTENTS_2729_2728_FEB_2008_MOSAIC.ECW			

Figure 5: Previous clearing at the Laguna Green Granite Quarry