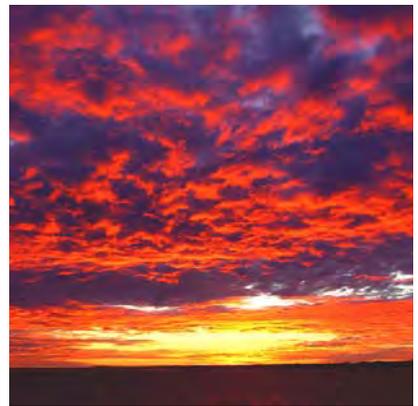


**ENVIRONMENTAL MANAGEMENT
PROGRAM CLAY EXCAVATIONS**

**Lot 201 Great Northern Highway, Upper
Swan**



**ENVIRONMENTAL MANAGEMENT PROGRAM
CLAY EXCAVATIONS
LOT 201 GREAT NORTHERN HIGHWAY
UPPER SWAN**

(Ministerial Statement 658)

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**ENVIRONMENTAL MANAGEMENT PROGRAM
FOR CLAY EXCAVATIONS
AT LOT 201 GREAT NORTHERN HIGHWAY
UPPER SWAN**

(Ministerial Statement 658)

Document Status

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1.0 INTRODUCTION AND CORPORATE POSITION STATEMENT

The potential environmental impacts of a proposal by Metro Brick Bristile Clay Tiles Pty Ltd (Austral Brick) to excavate clay from Lot 201 (formerly Lots 10 and 11 Great Northern Highway; Figure 1), Upper Swan was assessed by the Environmental Protection Authority as a Consultative Environmental Review (CER). The CER was prepared as a joint document regarding this and other nearby clay excavation proposals, due to the potential impact of these operations on the nearby habitat of the extremely rare and endangered Western Swamp (or Short-Necked) Tortoise (*Pseudemydura umbrina*).

Following assessment and public review of the CER, which included provision of additional information by the company, the EPA concluded that the proposal is environmentally acceptable and that the environmental issues are manageable through both the commitments to environmental management made by Metro Brick (now Austral Brick) in the CER (see Appendix A), and the preparation and implementation of an Environmental Management Program. The Environmental Management Program (EMP) is a condition of approval set by the Minister for Environment (see Appendix A) which was fulfilled by the preparation and acceptance of the original EMP (BBG, 1992). Following a Section 46 Review of the project in 2004 revised Ministerial Conditions were issued. These conditions are presented in Appendix B (Ministerial Statement 658). The requirement for preparation and implementation of the EMP remains under the new approval.

This revised EMP has been prepared at the request of the Department of Environment and Conservation (DEC) in order to document any changes agreed since preparation of the original EMP.

Austral Brick is a subsidiary company of Bristile Ltd (which remains the proponent), which has been active in the clay extraction industry for a period of almost 90 years. The following statements reflect Austral Brick's corporate position in relation to this EMP.

- (i) The management and staff of Austral Brick are committed to operating on the site in a manner which minimises the environmental impact of the operation. In particular, the Company recognises that the survival of the Western Swamp Tortoise is at grave risk. Water quality in the Ellen Brook Nature Reserve

(EBNR) is critical to its survival. The Company will do all in its power to avoid disturbance to the tortoise habitat by full implementation of this EMP.

- (ii) Austral Brick will comply with all the Environmental Protection Authority conditions and monitoring requirements as well as being proactive in anticipating and eliminating potential risks to the environment from the Company's operations.
- (iii) Should environmental issues arise where specialised knowledge/abilities are required which are not available within Austral Brick, the Company will employ the services of the appropriate specialists on a contract basis.
- (iv) The relevant Government departments will be reported to on a routine basis according to the schedule defined in the EMP. Should special circumstances arise, Austral Brick will communicate immediately with the relevant Government department or other affected organisation rather than waiting for the next routine report.
- (v) The company will appoint, where possible, one only contractor to carry out its earthmoving operations. The appointed contractor will be fully briefed in the requirements of the Environmental Management Program. In addition, a summary list of key points will be presented to all contractors for compulsory circulation to workers. Any breaches of the requirements or evidence of any contractor's negligence may result in the contractor's dismissal.
- (vi) Company personnel will be likewise made aware of requirements set out in the Environmental Management Program. Breaches of the requirements will be reported immediately to the Technical Manager. Failure to do so may result in dismissal.
- (vii) An internal audit of environmental performance will be conducted by the Technical Manager prior to the on-set of winter rains (say April) in each year of operation. Shortcomings in rehabilitation, drainage control, etc. will be immediately addressed.

2.0 OBJECTIVES

The primary objective of the Environmental Management Program is the protection of the habitat of the endangered Western Swamp Tortoise (*Pseudemydura umbrina*) at the Ellen Brook Nature Reserve (EBNR) and potential future extensions to the EBNR habitat. To this end, the EMP addresses:

- Management of excavation procedures (Staged Excavation Plan);
- Management of drainage waters (Drainage Management Plan); and
- Management and protection of groundwater resources (Groundwater Protection Plan).

Other objectives of the EMP are related to the management of local environmental and social impacts, and include:

- Management of noise, dust and visual impacts;
- Management for community health and safety;
- Rehabilitation.

Subsequent sections of this EMP provide details for each of the elements listed above.

3.0 STAGED EXCAVATION PLAN

Objectives

To implement a staged quarrying strategy which will allow for sequential rehabilitation, thereby limiting the total area of disturbance and allowing for effective management. To provide a flexible buffer zone to optimise protection of the tortoise habitat, in addition to minimising noise, dust and visual impacts of the quarrying operations offsite.

3.1 Buffer Zone

No quarrying has or will occur within 100 metres of the existing or future boundaries of the EBNR, unless sufficient data is available to conclusively demonstrate that closer excavations could have no detrimental hydrological effect on tortoise habitat areas, to the satisfaction of the Environmental Protection Authority.

Phase 1 of the excavations commenced as far away from the habitat as possible, i.e. with the clay in the southern sector of the resource area being preferentially mined first.

3.2 Staged Quarrying Strategy

3.2.1 Basis

- The program for the whole site is expected to extend for over 25 years.
- The former Lot 10 has been excavated first, which will be followed by the former Lot 11 further to the north. Excavation within the former Lot 11 will commence in the east and progress westward.
- Excavation activity is limited to the drier months of the year (say) November to May.
- Normally, one excavation campaign each season is anticipated, with the associated formation of a clay stockpile on Lot 10.

3.2.2 Responsibility

Austral Brick will engage contractors to conduct the excavation and stockpiling campaigns. On-site supervision will be provided by the Resources Manager (Mr Craig O'Connor).

Overall coordination and ultimate responsibility for implementation of all aspects of the EMP rests with the proponent, Metro Brick Pty Ltd.

3.2.3 Excavation Plan

The area disturbed during each excavation season is approximately 1 hectare to a depth of 6-8 metres. Excavation material comprises a thin layer of topsoil, 3-4 metres of overburden and 3-4 metres of clay.

Figure 2 shows the site and the proposed excavation areas.

3.2.4 Excavation Process

- Clearing: There is no vegetation to clear, other than annual pasture species.
- Access: Trucks and scrapers access the site from Great Northern Highway along the existing limestone road. A north-south circuit has been established by the scrapers, between the excavation cell and the clay stockpile area on Lot 10.
- Topsoil removal and stockpiling: Topsoil is removed by scrapers to about 20cm depth and stockpiled to a height no greater than 1.2m, adjacent to the working pit, prior to replacement for rehabilitation as soon as practicable.
- Overburden removal and stockpiling: Overburden is removed to a depth of 3-4 m and stockpiled adjacent to the pit separately to the topsoil. Initially, the overburden was used to form a bund for drainage control purposes, as outlined in Section 4.
- Removal and stockpiling of clay: Scrapers are used to remove the clay. A stockpile 5m high and approximately 50 x 100m was initially established to the south of the existing pit on Pt Lot 36. The stockpile was screened by landscaping, and drainage and dust control procedures implemented as necessary. The current stockpile is located with the former Lot 10.

4.0 DRAINAGE MANAGEMENT PLAN

Objectives

To retain all turbid run-off from areas disturbed during excavation, within the exhausted clay pits. To divert 'clean' run-off from peripheral areas away from the operational area to join with natural drainage downstream of the excavations.

4.1 Containment of Run-off

4.1.1 Basis

All drainage waters from the eastern side of Great Northern Highway were required to be diverted from entering the tortoise habitat area at the ENBR within 2 years of the Minister's approval.

For the first three years of operation (or until the above-mentioned drainage diversion is satisfactorily completed) all turbid water generated from the operational areas were to be retained on site to avoid deleterious effects on the tortoise habitat.

4.1.2 Run-off Management

- Containment of turbid run-off is achieved within the pits created during the excavation campaigns.
- Run-off from disturbed ground adjacent to the pit is 'captured' in exhausted pits by strategic formation and placement of bunds of overburden.
- Each excavation cell is completely bunded on the 'uphill' (eastern) side; the overburden has been placed by scrapers approximately 800mm high and two scraper widths wide. The upper surface of the bund is graded to shed water towards the pit.
- Run-off from the Darling Scarp (which can be significant) is diverted around the pit and working areas to a depression in the north western corner of the former Lot 11 where it is allowed to settle before entering the road side drain along Great Northern Highway (which connects to the ENBR Drainage Diversion – see Section 4.1.3) once

the storage capacity of this area is reached. As excavation progresses through the former Lot 11 this drainage system will require modification. The DEC will be advised of any revised drainage layout plans prior to implementation.

- To avoid the necessity for dewatering of run-off which collects in the pits, i.e. prior to commencement of excavation campaigns, the initial pit will be left as a discrete cell until eventually rehabilitated.

4.1.3 Drainage Diversion

Originally surface drainage waters from the roadside drain adjacent to the site flowed towards and eventually into (at least to some degree) the fenced habitat area of the EBNR. The EPA and the then CALM were satisfied that the main habitat area in the EBNR could be maintained primarily by direct rainfall, and that the tortoise's survival would benefit by the elimination of the risk of contaminated drainage waters entering the reserve.

With the construction of diversion bunds, clean drainage waters from undisturbed non-operational areas of the site now enter the roadside drain located on the eastern side of Great Northern Highway, which flows north to Ellen Brook.

4.2 Monitoring and Remedial Action

4.2.1 Monitoring

The objective of monitoring was to ensure the success of turbid run-off containment during the initial years of operation. Monitoring of drainage continued after the drainage diversion was completed. The EPA has acknowledged that this is no longer required, and cleared the Condition in June 2000.

4.2.2 Remedial Action

Remedial action will be dependent on the nature and extent of the identified problem, and may include:

- repairs to bunds;
- diversion of additional run-off into the clay pit for containment;

- use of hay bales in areas of sheet run-off to reduce water velocities and filter sediment loads; and
- hydro-mulching of disturbed ground to prevent water erosion.

4.3 Reporting

If remedial action is considered necessary the EPA will be advised at the time.

5.0 GROUNDWATER PROTECTION PLAN

Objectives

In the event that there is hydraulic connectivity between tortoise habitat and shallow groundwater, the primary objective of environmental management of groundwater is to ensure that clay excavation does not intersect and drain the perched groundwater aquifer in areas where it is connected to tortoise habitat.

The secondary objective is to prevent pollution of the underlying regional groundwater systems (Guildford and Leederville aquifers) from such agents as fuel spillages etc.

5.1 Delineation of Groundwater Levels and Effects of Clay Excavation

A number of shallow monitor bores were installed (December 1991/January 1992) in the vicinity of the initial clay excavation on the former Lot 10. The bores were installed to the top of the clay layer (average depth of about 4 metres). The majority of the bores were located to the west and north-west of the initial clay extraction area, i.e. in the direction of future clay excavation (west) and between the working area and the EBNR.

Austral Brick wishes to maximise the recovery of this scarce clay resource, and eventually excavate within the 100m arbitrary buffer established for the EBNR as the final excavation stage for the project. The former Water and Rivers Commission (WRC) considered that the potential for sandy soil profiles within the proposed excavation area should be investigated, to ensure that no hydraulic connection exists between the site and the EBNR which may be intersected during the excavation process.

Historical bore logs do not indicate the presence of sandy transmissive soils between the site and the EBNR. However, a further more rigorous drilling program has been undertaken within the north western end of the site through a collaborative effort by Austral Brick and the WRC to determine the extent of the transmissive soils, and to determine potential implications for excavation and the EBNR.

Consequently, a system of 5 nested (paired) bores have been installed in 2000; a shallow bore through the overburden to the top of the clay layer, and an adjacent deeper bore screened through the overburden and clay layer to the base of the resource (Figure 3).

The bores are monitored at monthly intervals.

Data from these bores is used to delineate the occurrence and continuity of shallow groundwater and, as clay excavation activity moves to the north and west, the lateral extent to which excavation may cause premature drawdown of groundwater levels.

The fluctuations in groundwater levels in the shallow bores are compared to water level variations in the tortoise swamp, as measured by CALM.

It is anticipated that these bores will serve a secondary function in determining if any lateral seepage is occurring from the excavated cells once they begin to fill with water from winter rains.

Should groundwater seepage into the pit be observed it will be reported to the Resource Manager so that it may be properly recorded. This is particularly emphasised to the contractors prior to commencement of excavation campaigns which occur early in the season (i.e. November), when shallow groundwater is more likely to be present.

5.2 Groundwater Protection and Pollution Control

Protection of the shallow groundwater regime near to tortoise habitat is recognised as an essential requirement if there is hydraulic connection and if clay excavation is to proceed in close proximity, and will be assessed in the light of monitoring results described above.

Action will be taken to prevent any deleterious effect on tortoise habitat if the risk is perceived to exist, and may include:

- determination of an appropriate buffer zone within which clay excavation would be permanently excluded;
- in consultation with the DEC, devise a management method which allows clay excavation to occur (during periods when groundwater is absent) whilst preventing premature groundwater drawdown (during periods when shallow groundwater is present).

With regard to pollution control, only the excavation machinery (dozer, water-cart and hydraulic excavator) is refuelled on-site; the trucks are refuelled elsewhere. On-site refuelling is conducted via a fuel truck which only visits the site for the duration of refuelling. No fuel or lubricants are stored onsite.

5.3 Monitoring and Reporting

The results of the seasonal groundwater monitoring, described in Section 5.2, will be reported to DEC within the PCRs. The PCR review will assess the implications of the data with respect to ongoing clay excavation.

In the event that a significant seepage of groundwater is observed in the pit during excavation, this fact will be reported immediately to the EPA to enable onsite interpretation and discussion if considered appropriate.

In the event of a diesel spillage in excess of 20 litres, Austral Brick will immediately inform the DEC to enable consultation regarding appropriate recovery action.

6.0 MANAGEMENT OF POTENTIAL SOCIAL IMPACTS

Objectives

Austral Brick intend to operate the clay quarry within noise and dust limits which can be tolerated by the local community with minimal inconvenience.

To institute a revegetation program in strategic locations to ‘soften’ potential visual impacts of the quarry operation and associated stockpiling.

To ensure that community health and safety standards are maintained in terms of such factors as pit safety and mosquito breeding potential.

6.1 Noise and Dust

6.1.1 Noise and Dust Controls

- The noise and dust controls practised by Austral Brick at other clay excavation sites will continue to be applied to clay quarrying on Lot 201 (formerly Lots 10 and 11).
- A substantial buffer zone to the nearest residential area is available which reduces the risk of nuisance effects.
- Operating times are restricted to the hours of 7:00am to 5:30pm, Monday to Friday.
- A watering truck will be available for all excavation campaigns for the purposes of dust suppression. The contractors will be specifically instructed to minimise dust generation, and random checks will be made by the Resources Manager.

6.1.2 Complaints Procedure

A complaints record will be maintained by the company. To this end, relevant personnel are advised to report all complaints immediately including name and contact details of complainant and nature of complaint to Mr Craig O’Connor at Austral Brick.

In the event that a complaint is received, the matter will be investigated and the complainant advised of the reasons for the perceived nuisance and the remedial action (if necessary) to prevent a re-occurrence of the problem. Every endeavour will be undertaken to respond to complaints within 2 working days.

6.2 Aesthetic Considerations

The surrounding area is rural. The stockpiles, which will be the principal visible component of the clay quarry, will be formed by scrapers and therefore be smoothly contoured. Tree screens have been established and will continue to be maintained along Great Northern Highway.

6.3 Community Health and Safety

Austral Brick will liaise with the Health Surveyor from the City of Swan, prior to the commencement of rehabilitation works, to obtain advice in relation to mosquito breeding potential in the completed clay pits. It is anticipated that other completed clay pits which hold permanent water will be inspected in the locality to assess mosquito breeding activity.

The fences and gates will be maintained in functional condition to deter public access to the site for safety reasons.

7.0 REHABILITATION

Objective

To progressively restore the excavations to a landform that is aesthetically pleasing and function, i.e. capable of supporting a viable end use.

7.1 Rehabilitation Program

Austral Brick is committed to undertake progressive restoration of each stage following clay excavation at this site, to the greatest extent possible (i.e. without compromising drainage management and containment objectives).

Drainage control and, to a certain extent re-contouring of the pit, is instituted immediately on completion of each season's excavation campaign, prior to the onset of winter rains. Re-contouring of pit walls to acceptable grades is conducted for safety reasons.

The final land use planned at this time will be a number of "amenity lakes". The final configuration of the lakes will be determined in consultation with the City of Swan and the Swan River Trust. Conceptual rehabilitation plans are provided on Figures 4a and 4b.

Rehabilitation will be achieved with replacement and spreading of overburden, followed by re-spreading of topsoil, re-seeding with grasses and/or revegetation with trees and shrubs. Trees will be planted around the perimeter of the lakes to provide both shade and a screen from adjoining properties and road reserves. Disturbed areas surrounding the lakes will be planted with common mixed pasture species.

8.0 REFERENCES

Bowman Bishaw Gorham (1992) *Metro Brick Environmental Management Programme Clay excavation Lots 10 and 11 Great Northern Highway, Upper Swan*. Report prepared for Metro Brick Pty Ltd.

Environmental Protection Authority (1991). *Proposed clay excavation, Lots 10 and 11 and Part Lot 36 Great Northern Highway, Upper Sawn*. Bulletin No. 604, Report and Recommendations of the Environmental Protection Authority, Perth, Western Australia.

FIGURES

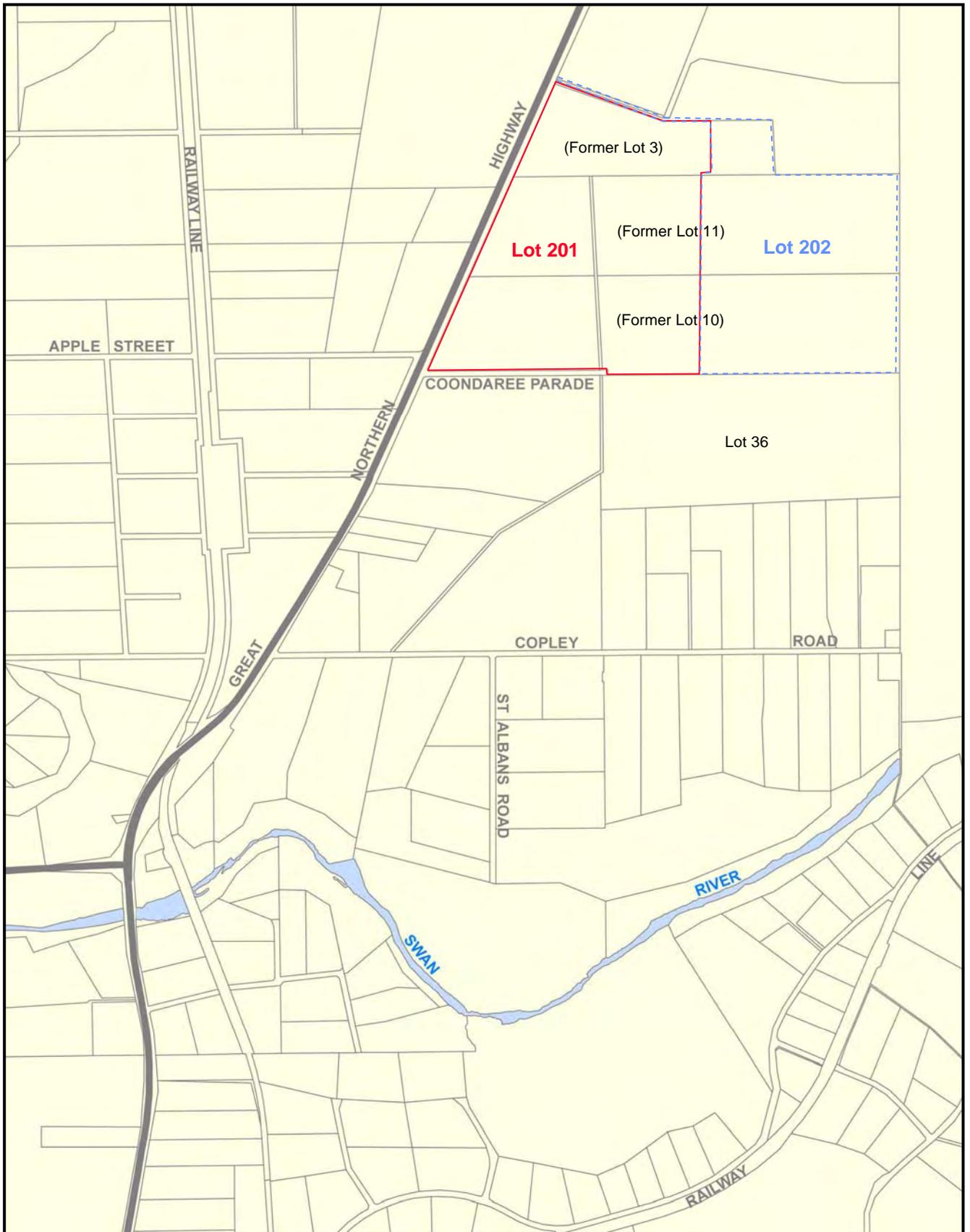
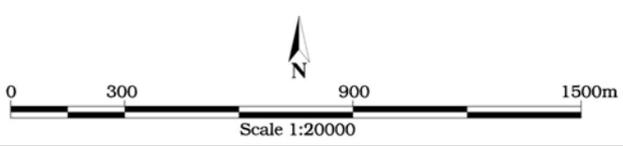
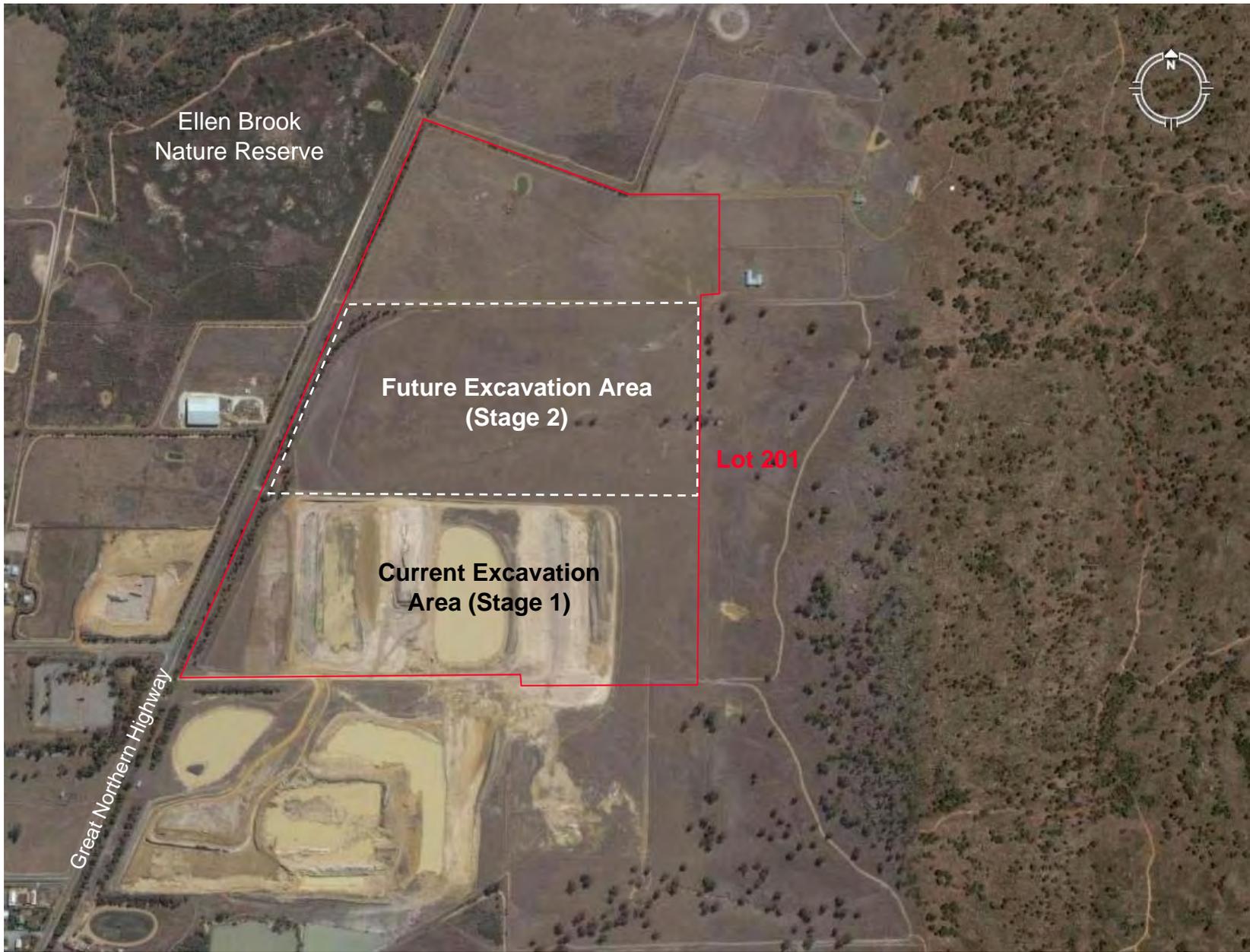


Figure 1
Site Location

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Ellen Brook
Nature Reserve

Future Excavation Area
(Stage 2)

Lot 201

Current Excavation
Area (Stage 1)

Great Northern Highway

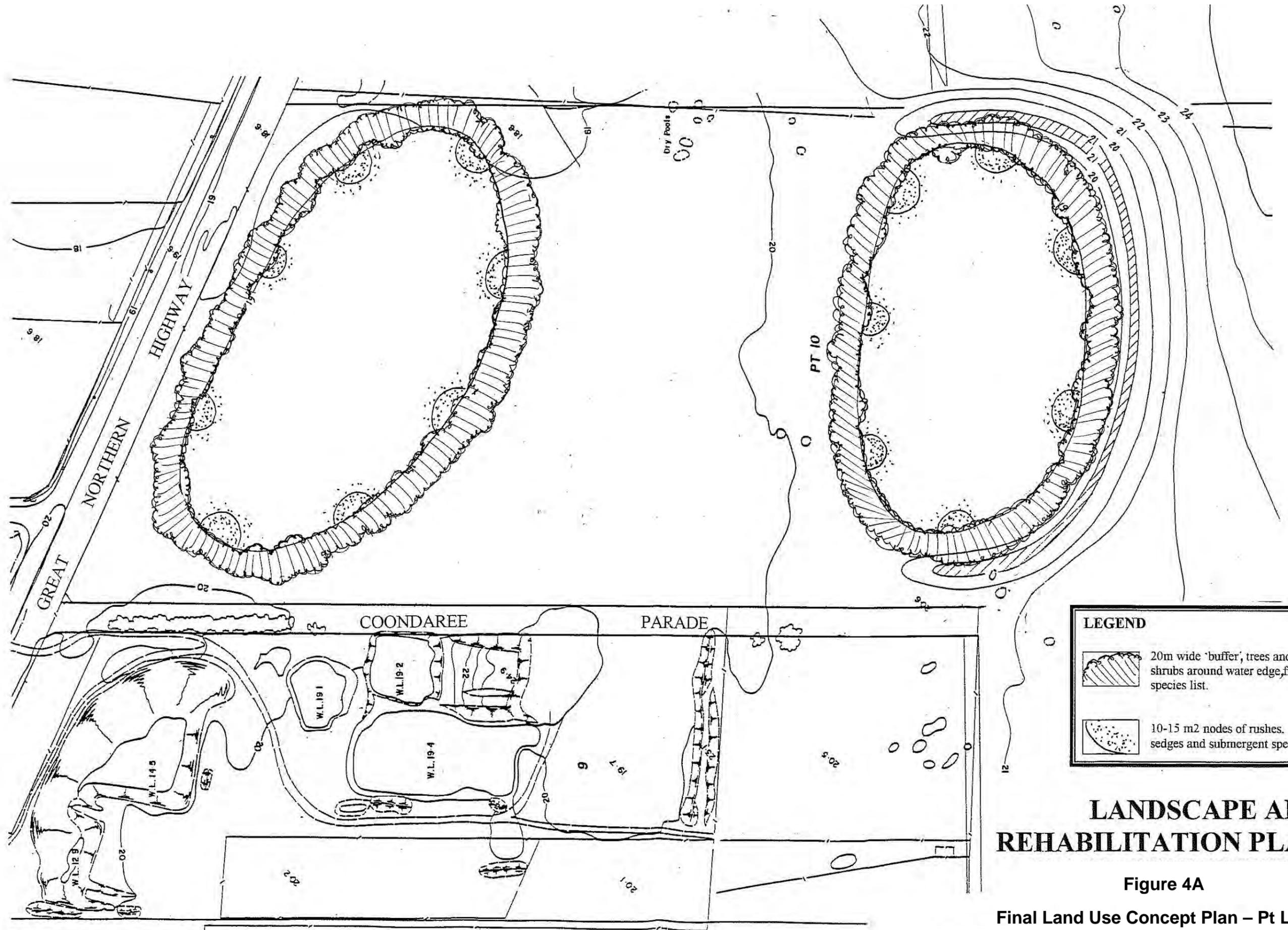
Figure 2
Excavation Areas





Figure 3
Monitor Bore Locations





LANDSCAPE AND REHABILITATION PLAN

Figure 4A
 Final Land Use Concept Plan – Pt Lot 10
 Great Northern Highway (Stage 1)

1:2500
 Source: Belton – Taylforth (2003)



Figure 4B

Final Land Use Concept Plan – Pt Lot 11
Great Northern Highway (Stage 2)

1:2500
Source: Belton – Taylforth (2000)

L99194 13/09/06

APPENDIX A

Ministerial Statement 226



Ass # 322

Bull # 604

State # 226

WESTERN AUSTRALIA
MINISTER FOR THE ENVIRONMENT

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT
TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT
1986)**

CLAY EXCAVATION, LOTS 10, 11 AND PART LOT 36 GREAT NORTHERN
HIGHWAY, UPPER SWAN (322)

METRO BRICK (A DIVISION OF BRISTILE LTD)

This proposal may be implemented subject to the following conditions:

1. Commitments

In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the proponent's Consultative Environmental Review and in response to issues raised following public submissions. These commitments have been consolidated and are included in Environmental Protection Authority Bulletin 604 as Appendix 1. (A copy of the commitments is attached).

2. Detailed Implementation

Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3. Duration of approval

This approval is for a period of ten years from the date of this statement. Subsequent applications for approval shall be referred to the Environmental Protection Authority and will be reviewed in the light of the proponent's environmental performance at the site.

4. Drainage management

A drainage management plan should be prepared to protect the habitat of the Western Swamp Tortoise at Ellen Brook Nature Reserve from external surface water drainage impacts affected by this proposal.

Published on

6 MAR 1992

- 4-1 Prior to quarrying activities and in consultation with the Department of Conservation and Land Management, the Main Roads Department, the Swan River Trust and the Shire of Swan, the proponent shall prepare a drainage management plan being part of the Environmental Management Programme required by condition 6, to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority. This plan shall enable the proponent to:
- (1) monitor drainage to detect, report on, and manage any drainage impacts on the Wildlife Sanctuary for the Western Swamp Tortoise at Ellen Brook Nature Reserve;
 - (2) remedy any unacceptable drainage impacts on the Wildlife Sanctuary caused by this proposal;
 - (3) detain all drainage waters on-site in the first three years of operation, so that they do not enter the Wildlife Sanctuary at Ellen Brook Nature Reserve nor create an unacceptable impact elsewhere; and
 - (4) divert all drainage waters from the eastern side of the Great Northern Highway to prevent their entering the Wildlife Sanctuary area at Ellen Brook Nature Reserve within two years of the date of this statement, and in so doing, ensure that this action does not cause an unacceptable impact elsewhere.
- 4-2 The timing of the preparation and review of the drainage management plan shall be to the satisfaction of the Environmental Protection Authority.
- 4-3 The proponent shall subsequently implement the drainage management plan to the satisfaction of the Environmental Protection Authority.

5. Wildlife Sanctuary buffer

The proponent shall ensure that there is no quarrying for this proposal within 100 metres of the boundaries of the Wildlife Sanctuary at Ellen Brook Nature Reserve and any additions thereto, until further investigations demonstrate, to the satisfaction of the Environmental Protection Authority on advice of the Department of Conservation and Land Management, that adverse effects will not occur to the tortoise habitat.

6. Environmental Management Programme

A comprehensive environmental management programme should be prepared to enable the proponent to detect, report on and manage any impacts on the environment, particularly the habitat of the Western Swamp Tortoise at Ellen Brook Nature Reserve.

- 6-1 Prior to the start of quarrying activities and following consultation with the appropriate government departments, the proponent shall prepare an Environmental Management Programme, to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority. Plans to be prepared as part of the Environmental Management Programme shall include, but not necessarily be limited to the following:
- (1) a staged quarrying strategy;
 - (2) drainage management (see condition 4);
 - (3) groundwater management and protection;
 - (4) progressive rehabilitation of the site;
 - (5) procedures to minimise noise, dust and visual impacts associated with the quarrying and transport operations;
 - (6) public safety and mosquito breeding;
 - (7) periodic reporting of monitoring results; and

- (8) consequential changes to project management to remedy unacceptable environmental impacts.
- 6-2 The timing of the preparation and review of these plans shall be to the satisfaction of the Environmental Protection Authority.
- 6-3 The proponent shall subsequently implement the Environmental Management Programme to the satisfaction of the Environmental Protection Authority.

7. Regional development, drainage and rehabilitation

The proponent shall contribute, to the satisfaction of the Environmental Protection Authority, to the preparation of a regional development, drainage and rehabilitation strategy for the Upper Swan Locality in consultation with the Department of Conservation and Land Management, the Department of Planning and Urban Development, the Shire of Swan, and other current and known proposed clay producers in the area, such that the plan can be prepared within two years of the date of this statement.

8. Decommissioning

The proponent shall be responsible for decommissioning and removal of the plant and installations and rehabilitating the site and its environs, to the satisfaction of the Environmental Protection Authority. At least six months prior to decommissioning, the proponent shall prepare and subsequently implement a decommissioning and rehabilitation plan, to the satisfaction of the Environmental Protection Authority.

9. Proponent

No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

10. Time Limit on Approval

If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced. Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority).

11. Compliance Auditing

The proponent is responsible for complying with the environmental conditions and commitments.

11-1 The proponent shall prepare an "Audit Programme" in consultation with and to the satisfaction of the Environmental Protection Authority. The programme shall include, but not be limited to, the preparation of regular "Compliance Reports" to show the progress of the proposal, any changes to the original proposal, and how the proponent has complied with the environmental conditions.

11-2 Subsequent to condition 11-1, the proponent shall implement the approved Audit Programme to the satisfaction of the Environmental Protection Authority.

Bob Pearce, MLA
MINISTER FOR THE ENVIRONMENT

5 MAR 1992

APPENDIX 1

ENVIRONMENTAL MANAGEMENT COMMITMENTS FOR CLAY EXCAVATION, LOTS 10, 11 & PART LOT 36 GREAT NORTHERN HIGHWAY, UPPER SWAN

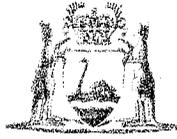
The proponent hereby commits itself to the overall environmental management and rehabilitation philosophy outlined in the Consultative Environmental Review and subsequent modifications as outlined in Appendices 2 and 4 of EPA Bulletin 604. In specific terms, this means the proponent will;

- (1) Consult with Planning Authorities to facilitate the derivation of a long term strategic plan for the locality which recognises and accepts the interim priority land use of clay extraction.
- (2) Establish an inter-company liaison mechanism to enable a co-ordinated approach between all three proponents with respect to addressing potential cumulative operational effects and overall rehabilitation goals.
- (3) Implement the management techniques described in both Sections 5 and 6 of the CER to ensure that adverse effects are not experienced in relation to:
 1. potential visual intrusion for residents at Upper Swan and through-traffic on Great Northern Highway;
 2. potential noise and dust disturbance of the residents at Upper Swan, particularly near the road junction of Apple Street and Almeria Parade;
 3. potential erosion of working areas and stockpiles and consequent silt transport to local drainage;
 4. dewatering of accumulated rainfall and (perhaps) groundwater seepage from the working area of the pit which may be necessary to allow excavation to proceed.
- (4) Implement routine surveillance of the quarries at regular intervals throughout the year to assess the critical parameters identified in the monitoring programme.
- (5) Comply with excavation licence conditions negotiated with the Shire of Swan and in consultation with the Environmental Protection Authority.
- (6) Introduce sequential rehabilitation of previously worked area as soon as practicable in accordance with the rehabilitation objectives developed in consultation with Planning Authorities and the landowner (ie. in respect of leasehold arrangements).

- (7) Contain turbid water within its excavations and immediate surroundings thus ensuring it does not flow onto the tortoise habitat.
- (8) Not quarry within a hundred metres of the nature reserve boundary, until further investigations are able to conclusively demonstrate that no adverse effect could occur.
- (9) Prepare an Environmental Monitoring and Management Programme to the satisfaction of the Environmental Protection Authority prior to commencement of operations at the site.
- (10) Verify that no adverse effects experienced on the Short-Necked Tortoise habitat are experienced, by appropriate staging and monitoring of excavations on lots 10 and 11.

APPENDIX B

Ministerial Statement 658



MINISTER FOR THE ENVIRONMENT

Statement No.

000653

**STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

**CLAY EXCAVATION
LOTS 10, 11 & PART LOT 36 GREAT NORTHERN HIGHWAY
UPPER SWAN**

Proposal: The operation of a clay excavation facility in Upper Swan, as documented in schedule 1 of this statement.

Proponent: Metro Brick Bristle Clay Tiles Pty Ltd

Proponent Address: Harper Street, Caversham WA 6055

Assessment Number: 1431

Previous Assessment Number: 0322

Previous Statement Number: 226 (Published on 6 March 1992)

Report of the Environmental Protection Authority: Bulletin 1118

Previous Report of the Environmental Protection Authority: Bulletin 604

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is subject to the following conditions and procedures, which replace all previous conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

2 Proponent Commitments

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

Published on

14 SEP 2004

3 Proponent Nomination and Contact Details

- 3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

- 4-1 The proponent shall substantially commence the proposal within five years of the date of the statement published on 6 March 1992 or the approval granted in that statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of the statement published on 6 March 1992 to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- 1 the environmental factors of the proposal have not changed significantly;
- 2 new, significant, environmental issues have not arisen; and
- 3 all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Audit and Performance Review

- 5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

- 1 the status of implementation of the proposal as defined in schedule 1 of this statement;
- 2 evidence of compliance with the conditions and commitments; and
- 3 the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

- 5-2 The proponent may excavate clay indefinitely, subject to the acceptability of performance review reports which shall be submitted every five years after the start of the operations phase, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The performance review reports shall address the following:

- 1 the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;
- 2 the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
- 3 significant improvements gained in environmental management, including the use of external peer reviews;
- 4 stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
- 5 the proposed environmental targets over the next five years, including improvements in technology and management processes.

6 Drainage Management

- 6-1 Prior to quarrying activities and in consultation with the Department of Conservation and Land Management, Main Roads WA, the Swan River Trust and the City of Swan, the proponent shall prepare a Drainage Management Plan to protect the fenced-off habitat of the Western Swamp Tortoise at Ellen Brook Nature Reserve from external surface water drainage impacts of the proposal, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This plan shall address the following:

- 1 monitoring of drainage to detect, report on, and manage any drainage impacts on the Wildlife Sanctuary for the Western Swamp Tortoise at Ellen Brook Nature Reserve;
 - 2 remediation of any unacceptable drainage impacts on the Wildlife Sanctuary caused by this proposal;
 - 3 detention of all drainage waters on-site in the first three years of operation, so that they do not enter the Wildlife Sanctuary at the Ellen Brook Nature Reserve nor create an unacceptable impact elsewhere; and
 - 4 diversion of all drainage waters from the eastern side of the Great Northern Highway to prevent their entering the Wildlife Sanctuary area at Ellen Brook Nature Reserve within two years following the date of the statement published on 6 March 1992, and in doing so, ensuring that this action does not cause an unacceptable impact elsewhere.
- 6-2 The proponent shall make publicly available and subsequently implement the Drainage Management Plan being part of the Environmental Management Programme required by condition 8, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7 Wildlife Sanctuary Buffer

- 7-1 The proponent shall not quarry within 100 metres of the boundaries of the Wildlife Sanctuary at Ellen Brook Nature Reserve, until further investigations demonstrate, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management, that adverse effects upon the tortoise habitat will not occur.

8 Environmental Management Programme

- 8-1 The proponent shall prepare, make publicly available and subsequently implement an Environmental Management Programme, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The plans, strategies or reports to be prepared as part of the Environmental Management Programme shall include the following:

- 1 a staged quarrying strategy;
- 2 drainage management (see condition 6);
- 3 groundwater management and protection;
- 4 progressive rehabilitation of the site;

- 5 procedures to minimise noise, dust and visual impacts associated with the quarrying and transport operations;
- 6 public safety and mosquito breeding;
- 7 periodic reporting of monitoring results; and
- 8 consequential changes to project management to remedy unacceptable impacts.

9 Regional Development, Drainage and Rehabilitation

- 9-1 The proponent shall contribute to the preparation of a regional development, drainage and rehabilitation strategy for the Upper Swan Locality in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan, and other current and known proposed clay producers in the area, such that the strategy can be prepared within two years following the date of the statement published on 6 March 1992, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

10 Decommissioning/Closure Plans

- 10-1 Within two years following the date of the statement published on 6 March 1992, the proponent shall prepare a Preliminary Decommissioning/Closure Plan, which provides the framework to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Preliminary Decommissioning/Closure Plan shall address:

- 1 rationale for the siting and design of plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure;
 - 2 long-term management of ground and surface water systems;
 - 3 a conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders;
 - 4 a conceptual plan for a care and maintenance phase; and
 - 5 management of noxious materials to avoid the creation of contaminated areas.
- 10-2 At least 12 months prior to the anticipated date of decommissioning/closure, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Decommissioning/Closure Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Final Decommissioning/Closure Plan shall address:

- 1 removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;
 - 2 long-term management of ground and surface water systems;
 - 3 rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and
 - 4 identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.
- 10-3 The proponent shall implement the Final Decommissioning/Closure Plan required by condition 10-2 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning/closure responsibilities have been fulfilled.
- 10-4 The proponent shall make publicly available the Final Decommissioning/Closure Plan required by condition 10-2 to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Procedures

- 1 Where a condition states "to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

Notes

- 1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT

14 SEP 2004

Schedule 1

The Proposal (Assessment No. 1431)

This proposal is located outside the Western Swamp Tortoise Environmental Protection Policy area.

Clay excavation has proceeded in a westerly direction from the previously excavated central area of Lot 10. Future excavations will continue to the west within Lot 10 towards Great Northern Highway.

There is generally only one mining campaign per year for four to six weeks in which clay is excavated and stockpiled onsite. Clay is transported to the Malaga Works in roughly monthly intervals on an as-required basis.

The Key Proposal Characteristics are shown in Table 1.

Table 1 – Key Proposal Characteristics

Element	Quantities/Description
Size of Clay Body (million tonnes)	1.6
#Total Area of Disturbance (ha)	50.0
*Rate of Extraction (tonnes per year)	100,000
Major Infrastructure	nil
Overburden (million tonnes)	1.6 (1:1 ratio to clay)
Water Usage	nil

will also be rehabilitated.

* estimated at present usage.

Figures (attached).

Figure 1 – Location.

Figure 2 – Proposed archaeological survey sites.

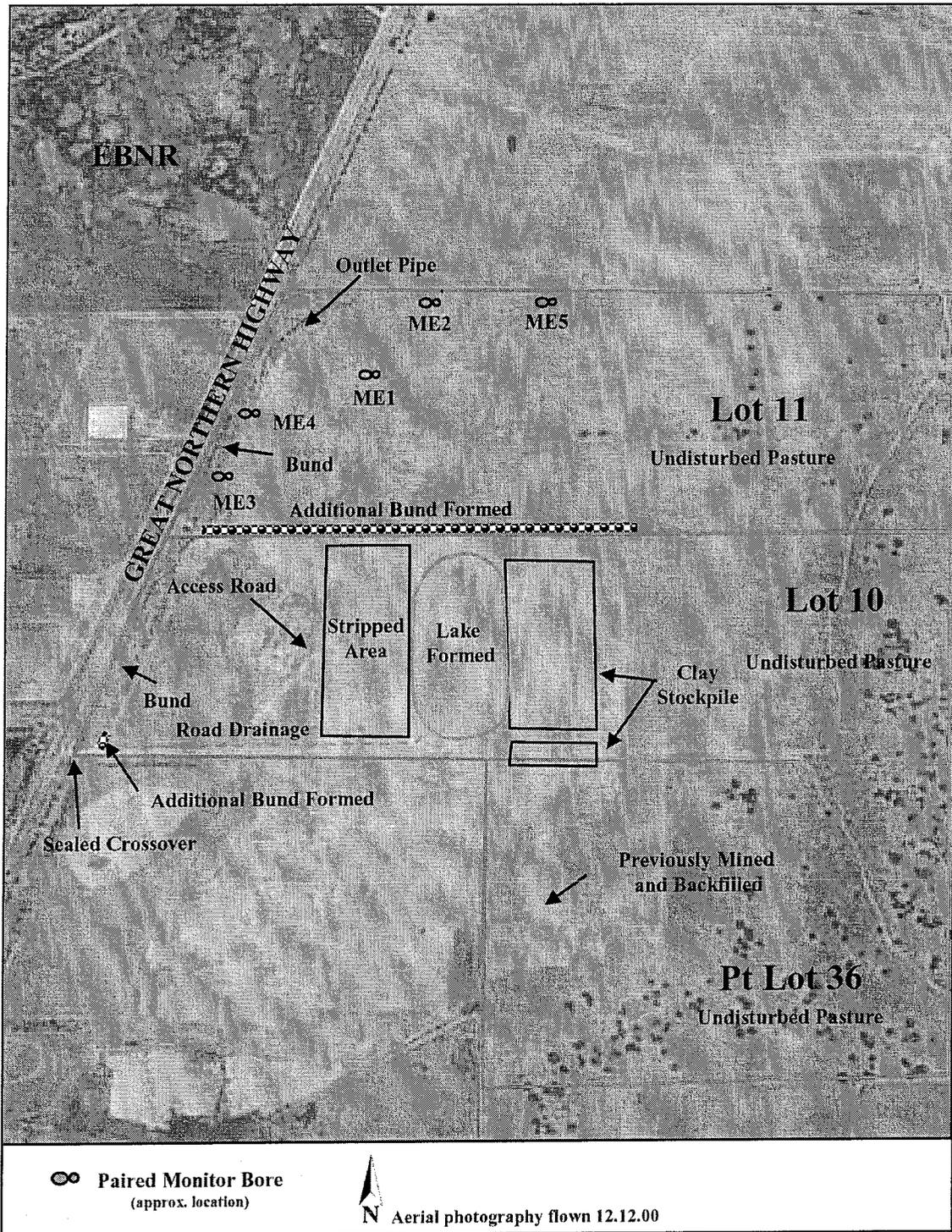


Figure 1: Location.

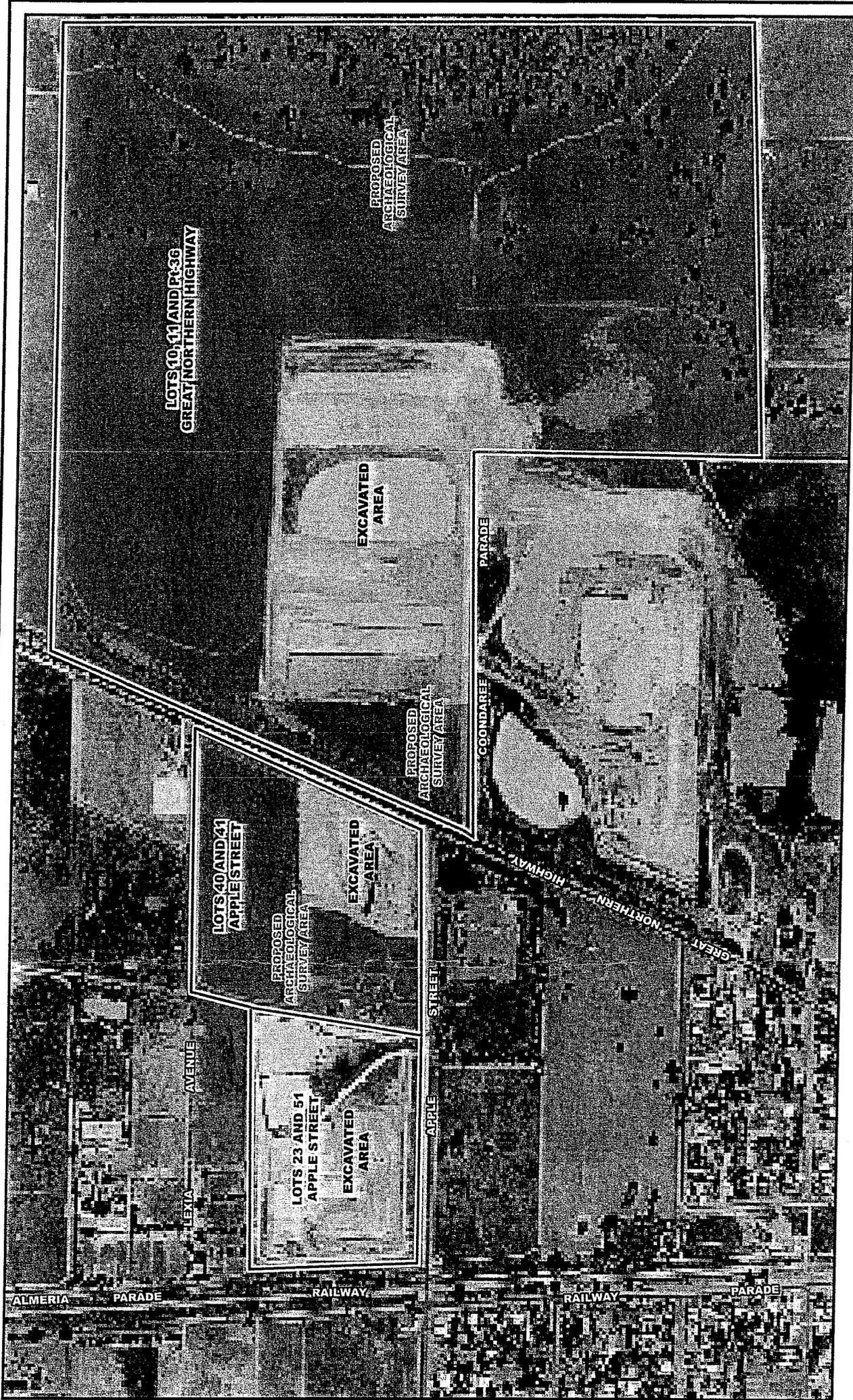


Figure 2 - Proposed Archaeological Survey Sites

NOT TO SCALE

Proponent's Environmental Management Commitments

1992, as amended

**CLAY EXCAVATION
LOTS 10, 11 & PART LOT 36
GREAT NORTHERN HIGHWAY, UPPER SWAN**

(Assessment No. 1431)

METRO BRICK BRISTILE CLAY TILES PTY LTD

Proponent's Environmental Management Commitments (consistent with commitments detailed in 1992)

CLAY EXCAVATION LOTS 10, 11 & PART LOT 36 GREAT NORTHERN HIGHWAY UPPER SWAN (Assessment No. 1431)

The proponent is committed to the overall environmental management and rehabilitation philosophy outlined in the Consultative Environmental Review and subsequent modifications as outlined in Appendices 2 and 3 of Environmental Protection Authority Bulletin 604.

In specific terms, this means the proponent will:

- (1) Consult with the Planning Authorities to facilitate the derivation of a long-term strategic plan for the locality, which recognises and accepts the interim priority land use of clay extraction.
- (2) Establish an inter-company liaison mechanism to enable a coordinated approach between all three proponents of the nearby clay excavation projects with respect to addressing potential cumulative operational effects and overall rehabilitation goals.
- (3) Implement the management techniques described in both Sections 5 and 6 of the Consultative Environmental Review to ensure that adverse effects are not experienced in relation to:
 1. potential visual intrusion for residents at Upper Swan and through-traffic on Great Northern Highway;
 2. potential noise and dust disturbance of the residents at Upper Swan, particularly near the road junction of Apple Street and Almeria Parade;
 3. potential erosion of working areas and stockpiles and consequent silt transport to local drainage; and
 4. dewatering of accumulated rainfall and (perhaps) groundwater seepage from the working area of the pit which may be necessary to allow excavation to proceed.
- (4) Implement routine surveillance of the quarries at regular intervals throughout the year to assess critical parameters identified in the monitoring programme.
- (5) Rehabilitate previously worked areas sequentially as soon as practicable in accordance with the rehabilitation objectives developed in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan and the landowner (ie. in respect of leasehold arrangements).
- (6) Contain any turbid water within its excavations and immediate surroundings to ensure it does not flow onto the tortoise habitat.
- (7) Not quarry within a hundred metres of the nature reserve boundary, until further investigations are able to conclusively demonstrate that no adverse effect could occur.

- (8)
 - 8.1 Prepare an Environmental Monitoring and Management Programme to the requirements of the Environmental Protection Authority prior to commencement of operations at the site.
 - 8.2 Implement the Environmental Monitoring and Management Programme outlined in 8.1 to the requirements of the Environmental Protection Authority.
- (9) Verify that no adverse effects on the Short-Necked Tortoise habitat are experienced, by appropriate staging and monitoring of excavations.
- (10) Not excavate below the permanent water table and, if the excavation did reach the water table, the area would be backfilled to maintain at least one metre of cover.
- (11) Undertake an archaeological survey in the areas currently undisturbed by clay excavation activities within the project area, prior to clay excavation in these areas. (See figure 2 attached).
- (12) In the event that Aboriginal cultural deposits are discovered during the archaeological survey referred to in commitment 11 above or uncovered as a result of clay excavation or any other activities, work in the immediate area will cease immediately and the discovery will be reported to the Department of Indigenous Affairs.