Wallaby Gold Mine Project

Placer (Granny Smith) Pty Limited

Report and Recommendations
of the Environmental Protection Authority

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Contents

1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to a proposal by Placer (Granny Smith) Pty Limited (PGS) to develop the Wallaby Gold Mine Project on Lake Carey, a naturally occurring saline wetland approximately 27 km South-west of Laverton. The Wallaby Gold Mine Project includes development of an open-cut gold mine, waste rock dumps and infrastructure to support mining on the northern shoreline of the lake. Gold ore produced at the mine will be transported via overland conveyor to PGS's existing processing plant.

The EPA was advised of the proposal in November of 1999. Based on the information provided, the EPA considered that, while the proposal had the potential to have an effect on the environment, the proposal could be managed to meet the EPA's environmental objectives and the strategy proposed by PGS could lead to a level of assessment being set at Environmental Protection Statement (EPS). Consequently, the EPA advertised its intention to set the level of assessment at EPS in *The West Australian* newspaper on 27 November 1999, subject to preparation of a suitable environmental review document by the proponent.

The proponent has prepared the Wallaby Environmental Review (WER) which accompanies this report. The WER is presented in three volumes. Volume I is an Executive Summary and provides a succinct project overview. Volume II is the main report on the Wallaby project. Volume III, available in a CD format, comprises all the subject-specific reports generated as part of the proponent's investigations into the Wallaby project. Volume III is also available at the Department of Environmental Protection (DEP), libraries and PGS offices.

The EPA considers that the proposal described is capable of being managed in an environmentally acceptable manner subject to the proponent's commitments being legally binding.

The EPA has determined that the proponent has undertaken its environmental investigations and reporting, including stakeholder consultation and responses to issues raised, in a manner which has established management strategies for the relevant environmental factors. This approach satisfies the EPA requirements for an EPS level of assessment under Section 40 (1) of the *Environmental Protection Act 1986* (EP Act).

Any person who disagrees with the EPA's decision on the level of assessment may lodge an appeal with the Minister for the Environment within 14 days of the date of the decision being placed in the public record, which was 23 June 2000.

This report provides the EPA advice and recommendations in accordance with Section 44 (1) of the EP Act. This report needs to be read in conjunction with the WER for further information on the assessment of environmental factors and appropriate programs to manage environmental issues.

A separate right of appeal exists for any person who disagrees with the content of, or any recommendations in this report, also within 14 days of release of the report, which was 23 June 2000.

2. The proposal

The proposal is described in detail in Section 2 of the proponent's Wallaby Environmental Review Volume II document. The proposal involves development of the Wallaby gold deposit by open-cut mining to provide gold ore via an overland conveyor to the existing PGS processing plant. The general arrangement of the Wallaby project is shown in Figure 1 of Appendix 2.

The key components of the proposal are:

- Open-cut mine with an expected life of 8 years and mining in the order of 40 million tonnes (Mt) of ore and 400 Mt of waste. The mining void located on the edge of the lake will eventually occupy 120 hectares (ha).

- A rock waste dump to contain 400 Mt of barren rock. The waste rock dump will be built partly on land (10%) with the majority on the margins of the lake (90%) and will eventually occupy approximately 550 ha.

- Development of an access and services corridor to contain utility services such as power and water, and in particular, an overland conveyor to transport crushed ore from the mine to the existing PGS processing plant. The corridor is approximately 11 kilometres (km) long and 82 metres wide occupying in the order of 90 ha.

- Dewatering of areas surrounding the mine to enable mining to occur. Abstracted hypersaline groundwater will be disposed of to a series of satellite mining pits that were developed as part of existing mining in the area. For volumes in excess of the capacity of the pits, groundwater will also be disposed to Lake Carey at a rate of approximately 80 litres/sec (l/sec).

- Processing of ore at the existing PGS processing plant. Some modification to the existing processing plant equipment will be required. Tailings from treatment of the Wallaby ore will be disposed of to an existing expanded tailings storage facility (TSF) and to a new TSF with a combined capacity of 60 Mt. The new tailings storage facility will have an approximate capacity of 25 Mt and occupy 100 ha.

The key characteristics of the proposal are further outlined in Schedule 1 of Appendix 2 of this Bulletin.

3. Consultation

3.1 Consultation process

During the preparation of the WER, the proponent has undertaken considerable consultation and a participative planning program with the local community, Government agencies and non-government organisations with an interest in the project. The consultation strategy developed and subsequently implemented by the proponent involved identification of stakeholders, establishment of a stakeholder register and a series of stakeholder meetings. Stakeholders associated with the consultation process for the Wallaby project are shown in Table 2, Volume 1 of the WER.

The EPA acknowledges that attendance and participation in the stakeholder meetings by individuals or organisations does not necessarily endorse the final management and planning decisions that result. However, the EPA considers that adequate consultation can be demonstrated by the proponent when stakeholders:

- are kept informed about the potential and actual environmental impacts of the proposal;

- are included in the consultation process and able to make their concerns in regard to environmental impacts known to the proponent;

- receive well informed responses to concerns raised; and

- are able to have meaningful input into the proponent's management of environmental impacts.

A record of the consultation process, the issues raised and the proponent's responses is provided in Appendix 1, Volume I of the WER.

The key steps of the Wallaby project consultation process and the environmental management outcomes that have resulted are discussed below.

Following identification of stakeholders and convening of stakeholder meetings the Stakeholders were provided with a preliminary project scoping document for the project. Research investigations and management documents were tabled to provide a framework for identification of issues. Copies of these documents are included as Volume III of the WER.

Stakeholders resolved to consider the environmental management of the project within a framework of 4 key issues:

- Management of hypersaline groundwater.
- Construction and operation of the access and services corridor.
- Construction and operation of the mainly lake base waste rock dump.
- Closure and decommissioning of the minesite, access and services corridor, tailings storage facilities, waste rock dump and other areas disturbed by the proposal.

3.2 Changes as a result of the consultation process

Consideration of the 4 key issues above modified the proposal in the following ways.

Management of hypersaline groundwater

- The original proposal required management of up to 500 l/sec of hypersaline groundwater.
- The hydrological model was refined indicating a predicted 245 l/sec of hypersaline groundwater was required to be managed.
- Consideration of a number of alternatives for discharge to the terrestrial and lake environment, outlined in Section 4.12.3 of Volume II of the WER and detailed in Dames and Moore (1999) which is included in Volume III of the WER.
- Evolution of a strategy to accommodate the hypersaline discharge water by:
  - discharging to old mining pits at 165 l/sec; and
  - discharge to the lake at 80 l/sec.
- The proponent expressed confidence in the capacity of the lake system to cope with 80 l/sec based on examination of impacts at sites where an equivalent volume has previously been discharged. The results of investigations outlined in Section 6.3.2, Volume II of the WER indicate impacts were localised and the areas are recovering. The full report is included in Volume III of the WER.

- The proponent's confidence in the capacity of the lake system to cope with discharge water is supported by extensive ecological investigations indicating the aquatic fauna likely to affected in the area of the Wallaby project are not unique. The results of investigations are outlined in Section 5.4.6, Volume II of the WER.

- The proponent's confidence in the capacity of the lake system to cope with discharge water is also supported by predictions as to the extent of the impacts based on hydrological modelling outlined in Section 6.3, Volume II of the WER.

- The development of commitments by the proponent to conduct research to confirm the extent of discharge impacts. The commitments and the scope of proposed investigations are included in the Environmental Management Program (EMP), Section 9, Volume II of the WER.

- The development of a proposed monitoring program that is included in Section 8, Environmental Monitoring Program, Volume II of the WER.

Construction and operation of the access and services corridor

- The proposal was modified to ensure that surface drainage is not significantly affected by installation of drainage culverts and construction of floodways. The proponent has completed topographic surveys and presented a drainage design plan (Figure 35, Volume II of the WER) to the stakeholders showing how drainage would be managed. The design parameters for the access and services corridor to allow for management of surface water flows are included in Section 7.2.6 of the EMP included in Volume II of the WER.

- Modification of the proposal was also made to ensure that fauna can traverse the corridor. Design of the conveyors was modified to allow larger vertebrates to move underneath. The proponent's commitment to construct conveyors in this way is included in Section 7.2.8 of the EMP included in Volume II of the WER.

- Previous roads constructed for mining purposes in the area have caused impacts on adjacent vegetation from saline water (dust suppression). The proponent has included a commitment (Section 7.2.7 of the EMP included in Volume II of the WER) to ensure the use of saline water for dust suppression is managed to reduce impacts on vegetation.

Construction and operation of the mainly lake base waste rock dump

- A decision was taken to place the waste rock dump primarily on the lake playa to limit impacts on important terrestrial vegetation (Mulga) communities (refer Figure 23 in Volume II of the WER). This results in some impacts on approximately 3 ha of samphires (*Halosarcia sp*). The rest of the area is bare. The samphires are not unique to the area impacted by the Wallaby project. This 3 ha of vegetation are affected rather than 550 ha of Mulga if the waste rock dump was land based. Terrestrial and lake margin communities affected by the development of the waste rock dump are described in Sections 5.4.7 and 5.4.8, Volume II of the WER.

- The design of the waste rock dump was modified to be more amenable to the lake landscape. A conceptual waste dump design has been prepared (Figure 11, Volume II of the WER) and the design parameters are included in the EMP, Volume II of the WER.

- At the completion of mining, the waste rock dump will be revegetated. Berms of the waste rock dump will be vegetated with woody vegetation and the samphire zone, removed when the waste rock dump was constructed, will be replaced at the base of the dump (refer Figure 14, Volume II of the WER).

- The waste rock dump design now isolates the pit from the lake. This provides opportunities to prevent impacts on the lake by the mining void at the completion of mining. The proponent has completed hydrological modelling and included predictions regarding hydrological management of the final mining void. These are outlined in Section 10.1.2, Volume II of the WER.

Mine closure and decommissioning

- The proponent has committed to developing and implementing closure plans for all major components of the Wallaby Project. The framework for the closure plans developed in consultation with the stakeholders is included in Section 10, Volume II of the WER.

Included in Volume II of the proponent's WER is an EMP. Volume II of the WER also includes an Environmental Monitoring Program that outlines the environmental monitoring that the proponent has committed to undertake as part of the Wallaby project implementation. In addition, the proponent has included a series of commitments (Table 29, Volume II of the WER) to finalise and implement the Environmental Management Program and the management plans for each of the 4 key environmental issues that were developed as part of the EMP. The proponent's commitments to finalise the EMP and Plans and their submission to Government agencies with statutory responsibility for the project's environmental management will ensure they satisfy statutory requirements.

The proponent intends to continue with consultation and participative planning during the implementation of the Wallaby project. The development of a project EMP and management plans provides a mechanism to ensure stakeholders and Government agencies with statutory responsibility for the Wallaby project can measure the proponent's progress implementing the EMP and Plans. This also provides a continuing opportunity for participation of stakeholders in the evolution and implementation of the EMP and the Plans.

4. Relevant environmental factors

Section 44 of the EP Act requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

In the EPA's opinion the following are the environmental factors relevant to the proposal:

(a) Groundwater quality and quantity – effects of pit dewatering on the local and regional aquifer and the consequential effects on lake margin and terrestrial habitat;

(b) Surface water quality and quantity – effects on surface water quality and alteration of surface hydrological processes particularly from discharged groundwater and the consequential effects on aquatic fauna and lake margin and terrestrial habitat;

(c) Vegetation communities - the effects of development of the mine, access and services corridor, ore transport and process facilities on the local and regional vegetation;

(d) Rehabilitation – avoidance of long-term impacts on landform and lake hydrology; and

(e) Lake Carey – effects of landform changes, abstraction of groundwater and its discharge to the lake surface on the functioning of the lake ecosystem.

The relevant environmental factors have been assessed in relation to the four key environmental issues identified in the WER and listed in Section 3.1 above as arising from the proposal.

The relationship between relevant environmental factors and key environmental issues arising from the proposal is shown in Table 1.

The EPA notes that an expansion of the capacity of the existing PGS process plant from 4.5 Mt to 5 Mt per annum is proposed as part of this proposal. The EPA considers that the potential impacts of the expansion are not significant because the impacts are essentially the same as the existing approved plant. Construction and operation of the expanded plant will be subject to approval processes administered by the Department of Minerals and Energy (DME) and the Department of Environmental Protection (DEP).

Table 1: The relationship between the relevant environmental factors and environmental issues arising from the proposal

Issue	Relevant environmental factors affected by the issue
Management of hypersaline groundwater	Lake Carey, Groundwater quality and quantity, Surface water quality, Aquatic fauna and flora, and Vegetation communities
Construction and operation of the access and services corridor	Vegetation communities, Declared Rare Flora (DRF) and Priority flora, and Terrestrial fauna
Construction and operation of the mainly lake based waste rock dump	Vegetation communities, Surface water quality and Lake Carey
Closure and decommissioning of the minesite, access and services corridor, waste rock dump and tailings storage facilities	Rehabilitation, and Risk and hazard

5. Conclusions

Details on the relevant environmental factors and their assessment appear below. The assessment of each issue is where the EPA decides whether or not a proposal meets the environmental objectives set for that issue.

Management of hypersaline groundwater

The EPA concludes that hypersaline groundwater is capable of being managed to meet the EPA's environmental objectives to:

- maintain the quality and quantity of groundwater to ensure that existing and potential uses including ecosystem management are protected;
- maintain the quality and quantity of surface water to ensure that existing and potential uses including ecosystem maintenance are protected;
- maintain the abundance, species diversity, geographic distribution and productivity of vegetation communities and ensure impacts from changes to hydrological processes are not significant; and
- maintain the integrity, functions and environmental values of Lake Carey.

The proponent's research, hydrological investigations and consultation with stakeholders has resulted in the evolution of a strategy to accommodate the projected annual abstraction rate of

245 l/sec of hypersaline (250 000 mg/l total dissolved solids) groundwater. The strategy maximises disposal to existing mined out pits (145 l/sec) where there is likely to be a minimal impact on the environment and reduces the discharge to the lake system (80 l/sec) to a level that is comparable with previous discharges of mine water to the lake. The reduction in the volume of water discharged to the lake to a level where the proponent has been able to demonstrate that the impacts of discharges are localised, and the lake system has a capacity to recover, provides the EPA with a level of confidence that the proposed rate of discharge will not have a significant impact on the lake. The proponent's development of an EMP that includes commitments to ensure the proposed hypersaline groundwater management strategy is implemented, the development of a monitoring program, and the proponent's commitments to confirm its predictions and conduct additional research to determine the fate of discharges will ensure the hypersaline groundwater management strategy is managed to meet the EPA's objectives.

Construction and operation of the access and services corridor

The EPA concludes that the access and services corridor is capable of being managed to meet the EPA's environmental objectives to:

- maintain the abundance, species diversity, geographic distribution and productivity of vegetation communities;

- protect Declared Rare and Priority Flora, consistent with the provisions of the Wildlife Conservation Act 1950; and

- maintain the abundance, species diversity and geographical distribution of terrestrial fauna.

The proponent has conducted flora surveys that indicate no unique vegetation communities or Declared Rare Flora will be affected by construction of the corridor. The design of the corridor has been modified to reduce the impacts on surface water flows and vertebrate fauna. The proponent has developed plans and commitments as part of its EMP that specify construction and operation criteria for the access and services corridor. Provided the EMP and the commitments of the proponent are implemented, the EPA is satisfied that the access and services corridor is capable of being managed to meet the EPA's objectives.

Construction and operation of the waste rock dump

The EPA has concluded that the construction and operation of the waste rock dump is capable of being managed to meet the EPA's environmental objectives to:

- maintain the abundance, species diversity, geographic distribution and productivity of vegetation communities, and ensure impacts from changes to hydrological processes are not significant;

- maintain the quality of surface water to ensure that existing and potential uses including ecosystem maintenance are protected; and

- maintain the integrity, functions and environmental values of Lake Carey.

The EPA considers that the modifications that have been made to the proposal regarding the decision to place the waste rock dump on the bare lake playa to reduce impacts on Mulga vegetation communities and the design changes to facilitate rehabilitation of the waste rock dump consistent with surrounding landforms and vegetation communities are compatible with achieving the EPA's objectives. The EPA is satisfied that the waste rock dump is capable of being managed to meet the EPA's objectives provided the commitments of the proponent to

being managed to meet the EPA's objectives provided the commitments of the proponent to construct the waste rock dump and rehabilitate it in the manner outlined in the EMP are implemented.

Closure and decommissioning of the minesite, access and services corridor, the waste rock dump and tailings storage facilities

The EPA concludes that closure and decommissioning of the minesite, access and services corridor, waste rock dump and the tailings storage facilities is capable of being managed to meet the EPA's environmental objectives to:

- ensure the proposal area and any other area affected by the proposal is rehabilitated to a standard consistent with the intended post mining long-term land use;
- establish stable, sustainable landforms consistent with the surroundings and ecosystem maintenance; and
- ensure that risk is managed to meet the DME's requirements in respect of public safety.

The proponent has developed Mine Closure and Decommissioning plans for the key components of the Wallaby project. These plans specify the intended final use for areas disturbed by the proposal and include commitments to rehabilitate disturbed areas to native vegetation consistent with the surroundings and to measure rehabilitation performance. The commitment of the proponent to implement the EMP and the Mine Closure and Decommissioning plans provides a mechanism to ensure rehabilitation is carried out. Hence, the EPA is satisfied that closure and decommissioning of the minesite, access and services corridor, waste rock dump and the tailings storage facilities is capable of being managed to meet the EPA's environmental objectives.

The proponent has committed to finalise the EMP and the 4 key management plans developed in consultation with stakeholders. It is noted that the proponent has made a number of commitments that are included in its EMP. The development of the 4 key management plans should incorporate these commitments to ensure that the design, operation and eventual rehabilitation of the key components of the Wallaby Project are consistent with the proposed environmental management measures. The commitment of the proponent to submit the EMP and Plans to regulatory agencies with statutory responsibility to assess them, will ensure that they are consistent and comply with statutory requirements. Regulatory mechanism that apply to the Wallaby project are listed below. Should it become evident through the statutory monitoring requirements and reporting processes that the proposed environmental management measures included in the EMP and Plans are not adequate, the proponent would be required to amend its EMP and Plans accordingly.

The proponent has also included a commitment to continue with stakeholder consultation as part of the development of its EMP and Plans. This will further contribute to ensuring that the design, operation and rehabilitation of the Wallaby project is transparent and is managed to meet the EPA's and community expectations.

6. Other regulatory mechanisms

Implementation of the proposal, should it be allowed to proceed, is also subject to approval processes under various regulatory mechanisms administered by State Government agencies with statutory authority to administer other Acts that are relevant to the proposal. These approval processes generally consider in some detail aspects of the proposal. Also as part of the approval processes, environmental planning, management and monitoring of the proponent's effectiveness in achieving its commitments and complying with its statutory obligations will be addressed. The Acts and agencies with approval processes that will contribute to environmental assessment and ongoing management of the proposal are listed below.

- The provisions of the *Mines Safety and Inspection Act 1994* administered by DME and the proponent's requirement to comply with the Act with respect to ensuring public safety is maintained and management of the mining void, waste dumps and decommissioning of plant infrastructure is adequate.

- The provisions of the *Mining Act 1978* administered by the DME and the proponent's requirement to comply with the Act with respect to mine and rehabilitation planning and reporting of rehabilitation performance. The eventual release of the proponent from mining tenement bonds and other obligations is subject to the DME being satisfied that areas are satisfactorily rehabilitated.

- The provisions of the *Rights in Water and Irrigation Act 1914* administered by the Water and Rivers Commission (WRC) and the proponent's requirement to comply with the Act and obtain a groundwater well licence (GWL). The GWL approval process will address management of the groundwater resource and availability of the resource to other users. The proponent is required to report groundwater monitoring data, assess impacts and amend its groundwater management strategy as appropriate.

- The provisions of the *Wildlife Conservation Act 1950* administered by the Department of Conservation and Land Management (CALM) and the proponent's requirement to comply with the Act with respect to disturbance or taking of DRF and Priority flora.

- The provisions of Part V of the *Environmental Protection Act 1986* administered by the DEP and the requirement of the proponent to comply with the Act and obtain a Works Approval to construct processing infrastructure and a licence to operate processing facilities, and discharge to the environment. The Works Approval requires the proponent to construct processing facilities in accordance with the environmental measures proposed by the proponent and subsequently amended by the DEP. The licence to operate will address management of the process plant and the TSF to prevent pollution. The licence to discharge to the environment will specify where groundwater can be discharged and set limits on the quantity and quality of groundwater that can be discharged, in particular, to Lake Carey. The licence reporting process will require the proponent to monitor and report its environmental performance, and, on the basis of monitoring, amend its environmental management program as appropriate.

- The provisions of the *Aboriginal Heritage Act 1972* administered by the Aboriginal Affairs Department and the proponent's obligations to comply with the Act with respect to disturbance of Aboriginal archaeological and ethnographic sites.

7. Recommendations

The EPA considers that the proponent has demonstrated, in the WER document, that the proposal can be managed in an environmentally acceptable manner and provides the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for the Wallaby Gold Mine Project that includes development of an open-cut gold mine and waste rock dump on the northern shore of Lake Carey, and construction of an access and services corridor to transport gold ore via an overland conveyor to an existing processing plant located approximately 11 km east-north-east of the mine.

2. That the Minister considers the report on key environmental issues arising from the proposal and the relevant environmental factors as set out in Section 5.

3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions and proponent commitments as set out in Appendix 2.

4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

Keighery G.J., Hall, N.J. and Milewski, A.V. (1994) Vegetation and Flora In: Hall, N.J., McKenzie, N.L., and Keighery, G.J. (Eds) The Biological Survey of the Eastern Goldfields of Western Australia: Part 10 Laverton-Leonora Study Area. Records of the Western Australian Museum, Supplement No. 47.

Placer (Granny Smith) Pty Limited (2000) Wallaby Environmental Review, Volume I, Executive Summary. Placer (Granny Smith) Pty Limited. May 2000.

Placer (Granny Smith) Pty Limited (2000) Wallaby Environmental Review, Volume II. A report on the Proposed Development of the Wallaby Project. Placer (Granny Smith) Pty Limited. May 2000.

Placer (Granny Smith) Pty Limited (2000) Wallaby Environmental Review, Volume III. Technical Investigations and reports into the Wallaby Project. Placer (Granny Smith) Pty Limited. May 2000.

Pringle et al. (1994) An Inventory and Condition Survey of Rangelands in the North-eastern Goldfields, Western Australia. In: Howes, K. (ED); Technical Bulletin No. 87, Department of Agriculture, Western Australia.

Appendix 2

Recommended Environmental Conditions and Proponent's Commitments

Recommended Environmental Conditions

Statement No.

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

WALLABY GOLD MINE, LAKE CAREY, SHIRE OF LAVERTON

Proposal: To develop the Wallaby Gold Mine on the shore of Lake Carey, a naturally occurring saline wetland approximately 27 kilometres south-west of Laverton. The Wallaby Gold Mine Project includes development of an open-cut gold mine, waste rock dumps and infrastructure to support mining on the northern shoreline of the lake. Gold ore produced at the mine will be transported via overland conveyor to an existing processing plant with tailings placed in both an extended and a new tailings storage facility. Dewatering with some discharge to Lake Carey will occur. The general arrangement of the Wallaby project and other data are documented in schedule 1 of this statement.

Proponent: Placer (Granny Smith) Pty Limited

Proponent Address: PO Box 33, LAVERTON WA 6440

Assessment Number: 1348

Report of the Environmental Protection Authority: Bulletin 981

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following conditions and procedures:

Procedures

1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

2 Proponent Commitments

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

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

3 Proponent

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 in respect of the proposal.

3-2 Any request for the exercise of that power of the Minister referred to in condition 3-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

3-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

4 Commencement

4-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.

4-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

4-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement at least six months prior to the expiration of the five year period referred to in conditions 4-1 and 4-2.

4-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

5 Compliance Auditing

5-1 The proponent shall submit periodic Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

5-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal, written advice that the requirements have been met.

5-3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

Note

1 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act.

Schedule 1

The Proposal

The proposal involves development of the Wallaby gold deposit by open-cut mining to provide gold ore to the existing Placer (Granny Smith) Pty Limited processing plant. The mine, located on the northern shoreline of Lake Carey, has an expected life of 8 years and includes a waste rock dump, mining support infrastructure such as workshops and administration facilities. Dewatering with some discharge to Lake Carey will occur. The gold ore crushed at the minesite will be transported by overland conveyor to the processing plant located approximately 11 kilometres east north-east of the mine. The capacity of the processing plant will be expanded from 4.5 to 5 million tonnes per annum. Tailings from the processing plant will be disposed of into both an expanded and a new tailings storage facility located near to the processing plant. The general arrangement of the Wallaby project is shown in Figure 1.

Key Characteristics Table

Project Element	Description
Life of the Project	Approximately eight years
Type of Operation	Open- cut pit
Final Pit Size	Estimated 1,000 metres (east-west), 1,300 metres (north-south), 340 metres deep covering 120 hectares
Pit Location	11 kilometres west south-west of the Granny Smith process plant on the northern shore of Lake Carey
Proposed Mining Rate	Approximately 100-150,000 tonnes per day
Ore Transport	11 kilometre long overland conveyor
Processing: location technology	 Existing Granny Smith process plant with upgraded capacity from 4.5 million tonnes per annum to 5 million tonnes per annum Carbon-in-pulp
Solid Waste Materials: dump location dump area total waste volume	 Partly on land but the majority on Lake Carey Approximately 550 hectares Approximately 400 million tonnes
Tailing: capacity annual volume	 Total storage available is approximately 60 million tonnes Current tailing storage facility plus a new storage cell Approximately 5.0 million tonnes

Project Element	Description
Water Supply: Source maximum volume required maximum annual requirement	Existing Mount Weld Borefield and Windich Pit 0.75 cubic metres per tonne of ore processed 3.15 million cubic metres.
Pit Dewatering: maximum rate minimum rate 8-year average rate total volume abstracted	 480 litres per second 165 litres per second 245 litres per second 62 million cubic metres
Hypersaline Groundwater Disposal	Average 165 litres per second disposal to mined-out pits and discharge to Lake Carey surface at an average rate of 80 litres per second
Hypersaline Groundwater Quality	Average 250,000 milligrams per litre total dissolved solids
Greenhouse gas emissions life of project (10 years)	 Approximate total emissions 2 million tonnes of CO_2
Access and Services Corridor: length width total area components	 11 kilometres approximately 82 metres approximately 90 hectares Power transmission line, conveyor, emergency haul road, raw and potable water pipelines, distribution pipeline for hypersaline groundwater

Figure attached

Figure 1. The General Arrangement of the Wallaby Gold Mine

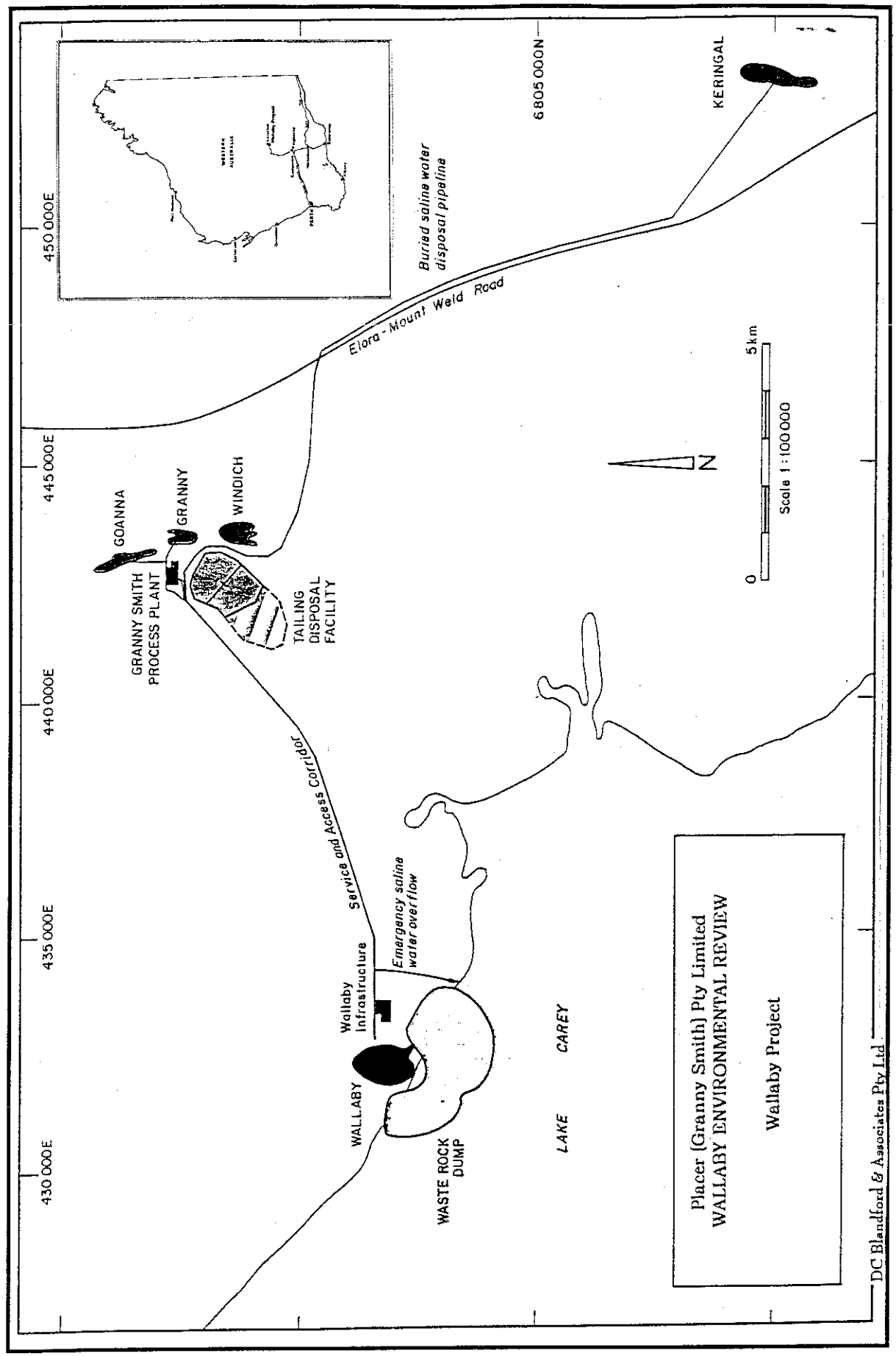

Figure 1. The General Arrangement of the Wallaby Gold Mine Project

Schedule 2

Proponent's Consolidated Environmental Management Commitments

June 2000

WALLABY GOLD MINE
LAKE CAREY, SHIRE OF LAVERTON

PLACER (GRANNY SMITH) PTY LIMITED

Schedule 2: Proponent's Environmental Management Commitments – Wallaby Gold Mining Project

No.	Topic	Objective	Action	Timing	Advice	Reporting of Compliance
1	Environmental Management Program (EMP)	To minimise environmental impacts on the Wallaby Project Area.	(1.1) Finalise the EMP as detailed in Volume II of the WER and submit to the relevant statutory authorities for review and modification as appropriate. (1.2) Implement the EMP and update as necessary following an annual review prepared by the proponent and reviewed by the relevant statutory authorities. (1.3) Modify the EMP as appropriate.	Pre-construction and operation	CALM DME WRC	AER
2	Hypersaline water management	To minimise the impact of abstraction and disposal of hypersaline groundwater on the receiving environment	(2. 1) Finalise the management plan for the abstraction and disposal of hypersaline groundwater and submit to statutory authorities for review and modification as appropriate. The plan shall address the following: 1) the relevant commitments of the proponent included in the EMP and environmental monitoring program; 2) the siting and management of pipelines carrying hypersaline groundwater; 3) disposal of groundwater in mined-out pits; 4) disposal of groundwater at 80 L/s to Lake Carey; 5) water balance and water quality monitoring program for mined-out pits; 6) further studies into evaporation enhancement in the mined-out pits; and 7) investigations into the fate of saline water discharged to Lake Carey. (2.2) Implement the management plan for the abstraction and disposal of hypersaline groundwater. (2.3) Modify the management plan to achieve environmental objectives if monitoring indicates requirements are not being met.	Pre-construction and operation	CALM DME WRC	AER
3	Access and services corridor	To minimise environmental impacts on vegetation through drainage control, and to protect fauna habitats.	(3.1) Finalise the management plan for the access and services corridor and submit to statutory authorities for review and modification as appropriate. The plan shall address: 1) the relevant commitments of the proponent included in the EMP and environmental monitoring program; 2) construction and operation of the corridor to protect native vegetation; 3) construction and operation of the corridor to maintain surface drainage; and 4) construction and operation of the corridor to enable fauna to traverse the corridor and the maintenance of fauna habitat. (3.2) Implement the access and services corridor management plan. (3.3) Modify the management plan to achieve environmental objectives if monitoring indicates requirements are not being met.	Pre-construction and operation	DME CALM	AER
4	Waste Rock Dump	To construct a waste rock dump that blends with the local landscape and that is stable in the long-term, to minimise erosion and to minimise impacts on the saline wetland habitat of Lake Carey.	(4.1) Prepare a management plan for the waste rock dump that will address the following: 1) the relevant commitments of the proponent included in the EMP and environmental monitoring program; 2) material characteristics; 3) cover treatments; 4) use of growth media;	During construction and operation	CALM DME	AER

No.	Topic	Objective	Action	Timing	Advice	Reporting of Compliance
			5) drainage control; 6) rehabilitation methods; 7) rehabilitation monitoring; 8) performance criteria; and 9) completion criteria. (4.2) Implement the waste rock dump management plan. (4.3) Modify the management plan to achieve environmental objectives if monitoring indicates requirements are not being met.			
5	Mine closure and decommissioning	To return the areas disturbed by miming to a defined final landuse.	(5.1) Prior to construction, the proponent will finalise its preliminary mine closure and decommissioning plan that is included in the WER. The plan shall address the following: 1) a description of project components; 2) rationale for siting plant and infrastructure and conceptual plans for their removal, and if appropriate, retention; 3) conceptual rehabilitation plans for all disturbed areas and a process to agree on end landuse(s); 4) management of noxious materials to avoid the creation of contaminated areas; and 5) description of the process to agree on completion criteria and performance criteria including a time-line in which they will be developed. (5.2) At least six months prior to the anticipated date of decommissioning or at a time agreed with the DEP, the proponent shall prepare a final decommissioning plan designed to ensure that the site is left in a suitable condition. This final plan shall address: 1) removal , or if appropriate, retention of all plant and infrastructure; 2) rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and 3) identification of contaminated areas including provision of evidence of notification to relevant statutory authorities. (5.3) Implement the mine closure and decommissioning strategy.	5.1 Pre-construction and operation. 5.2 At least six months prior to the anticipated date of decommissi-oning or at a time agreed with the DEP. 5.3 During operations and decommissi-oning phase.	DME WRC CALM	AER

Abbreviations: 1. Annual Environmental Report (AER) 2. Department of Conservation and Land Management (CALM) 3. Department of Environmental Protection (DEP) 4. Department of Minerals and Energy (DME) 5. Wallaby Environmental Review (WER) 6. Water and Rivers Commission (WRC)