

Waste disposal, Banjup

Readymix Group Pty Ltd

**Report and recommendation of the
Environmental Protection Authority**

**Environmental Protection Authority
Bulletin 454
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**Landfill, dry waste disposal site
Dollier Street, Banjup**

The Readymix Group Pty Ltd

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1. Introduction

The Readymix Group proposes to operate dry waste disposal site (ie. inert fill) on Pt Lot 135, Dollier Street Banjup and consider that it would be operational for about five years.

The site is located within a proclaimed Underground Water Pollution Control Area which is also a Public Water Supply Area designated as a Priority 2 Source Area. Pt Lot 135 is located about 750 m from two proposed Water Authority bores.

2. Description of proposal

The proposal is to fill a mined sand pit by allowing waste disposal operators, such as demolition contractors, to dump dry waste materials (ie inert fill) under the supervision of the proponent. The site would be operated from 7 am to 4 pm.

Figure 1 shows the proposed location of the landfill, which would have a floor area of about six hectares. The landfill would have a life of about 5 years.

The floor of the landfill pit would be raised to a minimum level of RL 30 m to ensure at least 3 metres of clean sand between the inert fill and the highest known water table. Waste materials would be dumped, levelled and compacted in 2 m thick stages.

Traffic entry would be via Dollier Street and exit directly onto Forrest Road.

The proposal would enable the final contours to match the original contours of the area and would be undertaken in a manner so that a rural land use such as a Special Rural subdivision could occur on the rehabilitated land. A 400 mm layer of clean sand with 100 mm of top soil is proposed for the final cover. A mix of rye grass and shrub/tree species would be used to stabilise the sand.

The proponent notes that this proposal would enable 5 hectares of Banksia Woodland to be retained, which would otherwise need to be cleared in order to provide acceptable slopes into the existing hole.

The Readymix Group have advised the Authority that there is insufficient high grade sand to warrant mining of the Banksia Woodland area.

3. Discussion of environmental issues

3.1 Potential for groundwater pollution

The potential for groundwater pollution within a Public Water Supply Area is a major issue in regards to this project. The site is within about 750 m of two proposed well sites for the Jandakot Groundwater Scheme Stage 2 wellfield.

The Authority is aware of at least three inert fill sites in the Metropolitan area where materials dumped at the site have caused or have had the potential to cause pollution.

It is difficult to ensure all of the material which is dumped at an inert fill site is inert.

With higher prices being charged at many domestic landfill sites there is increasing incentive for waste disposal operators to dump illegally or dispose of non-inert materials at sites suitable for inert fill only. Inert fill site operators need to be vigilant to ensure that materials which could cause pollution are not hidden in the loads which they accept. When such materials are detected, they need to be removed from the site.

This proposal is located in Bassendean Sand which is an almost pure silica sand varying in colour from white to yellow-brown and is very permeable. Newman (1977) lists sand as the second worst geological formation suitable for siting landfills and further notes "Almost every possible characteristic that could be wrong for attenuation of leachates is apparent in the case of Bassendean sand. Its small amount of organic matter is the only addition to coarse grains of silica".

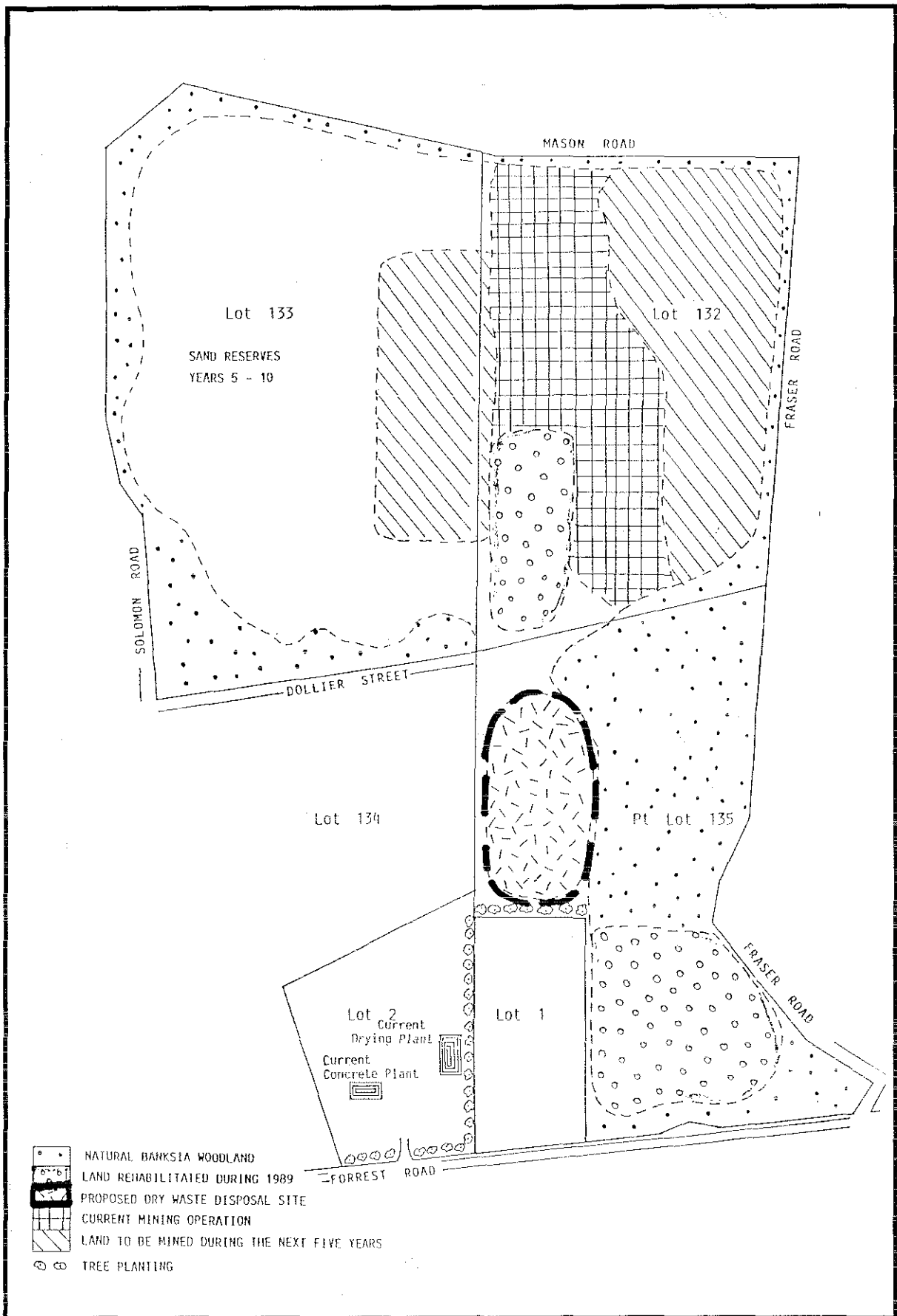


Figure 1: Proposed location of landfill

These characteristics of Bassendean sand make it likely that any pollution resulting from non-inert materials being dumped at the site would reach the Water Authority's bores with little attenuation.

The Authority therefore concurs with advice received from the Water Authority, that such a proposal at this location is undesirable. A copy of the Water Authority's letter appears in Appendix 1.

3.2 Other issues

3.2.1 Cost of clean-up if pollution occurs

Where landfill proposals result in groundwater pollution, the Authority believes that the "polluter pays" principle should apply. If this proposal were to proceed, and in order to ensure that the State Government did not have to bear the cost of clean-up operations, the Authority considers that the issue of the provision of financial guarantees sufficient to meet the cost of clean up would need to be resolved.

3.2.2 Landscape issues

The Basic Raw Materials Resource Protection Policy identified the proposed site as part of a relatively large area for existing and future quarrying. The policy notes that excavation in the area should be subject to an overall plan of management/rehabilitation and should recognise areas of landscape interest.

The Water Authority and the Department of Planning and Urban Development have engaged consultants to prepare a Land Use and Water Management Strategy for the Jandakot area, which includes the proposed site. When the study is complete after a public consultation period, the study will become a Strategic Plan.

The Water Authority considers that it is not appropriate to consider this landfill proposal in isolation. The Environmental Protection Authority supports development of the Strategic Plan and agrees that it should not be pre-empted by ad hoc developments in the area.

3.2.3 Banksia woodland

The strategy plan referred to above takes into consideration conservation of Banksia Woodland. Whilst the proponents desire to retain 5 ha of Banksia Woodland by filling the site is commended, it may be better from a strategic planning or regional perspective protect larger, more ecologically viable areas of Banksia Woodland. Landfill sites may have undesirable impacts on flora and fauna adjacent to the operation.

4. Consultation

The Environmental Protection Authority received comments on the proposal from the following persons and agencies;

Jeff Spencer

Rita Nieuwenhuizen

Conservation Council of Western Australia

Department of Planning and Urban Development

Water Authority of Western Australia

Recommendation

The Environmental Protection Authority has concluded that the proposal by The Readymix Group Pty Ltd to operate a landfill site for dry waste disposal within this Public Water Supply Area is unacceptable because of the potential risk of groundwater pollution and recommends that it not be implemented.

Reference

Newman, P (1977) *Municipal landfill sites - geochemistry and site management* in The Institution of Engineers, Australia and Australian Institute of Health Surveyors WA Divisions Conference; Waste Management,