



MINISTER FOR THE ENVIRONMENT;
EMPLOYMENT AND TRAINING

Statement No.

000483

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

**REMEDICATION OF THE FORMER LIQUID WASTE DISPOSAL FACILITY
SOUTHERN RIVER ROAD, GOSNELLS (930)**

CITY OF GOSNELLS

This proposal may be implemented subject to the following conditions:

1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments made in the Consultative Environmental Review and in response to issues raised following public submissions, provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

In the event of any inconsistency, the conditions and procedures shall prevail to the extent of the inconsistency.

The attached environmental management commitments (July 1998) form the basis for consideration by the Chief Executive Officer of the Department of Environmental Protection for auditing of this proposal in conjunction with the conditions and procedures contained in this statement.

2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 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.

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- 2-2 Where, in the course of the detailed implementation referred to in condition 2-1, the proponent seeks to change the designs, specifications, plans or other technical material submitted to the Environmental Protection Authority 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 Proponent

These conditions legally apply to the nominated proponent.

- 3-1 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.

4 Groundwater Quality

- 4-1 The proponent shall demonstrate through thorough investigations, modelling and monitoring, that leachate from the contaminants on the site, transported by groundwater, does not have an adverse impact on people or the environment and will not be a source of groundwater contamination, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection and the Water and Rivers Commission.
- 4-2 Within three months following the issuing of the formal authority to decision-making authorities under Section 45(7) of the Environmental Protection Act 1986, the proponent shall prepare a Groundwater Management Plan, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection and the Water and Rivers Commission.

The objectives of this Plan are:

- To determine if contamination of private bores is taking place and to manage any contamination that may occur;
- To delineate the plume of groundwater contamination and to manage the consequences of the contamination (See proponent commitment no. 25); and
- To ensure that in the long term, water quality of the groundwater meets groundwater quality standards.

To achieve the above objectives, the Plan shall consider and address the following:

- 1 Location of private bores.
- 2 Monitoring of all private bores which provide water for domestic use, initially within 1 500 metres of the site, and then within the defined area of the groundwater contamination plume, as soon as possible, but no later than three months following the issuing of the formal authority to decision-making authorities under Section 45(7) of the Environmental Protection Act 1986, to determine whether contaminants exceed guideline levels in the NHMRC/ARMCANZ "Australian Drinking Water Guidelines - National Water Quality Management Strategy" (1996).
- 3 Repetition of sampling of private bores which provide water for domestic use every six months until accurate delineation of the groundwater contamination plume is completed.

- 4 Provision by the proponent of an interim source of drinking water within 24 hours and an alternative source of drinking water within seven days, in the event that, prior to the delineation of the plume of groundwater contamination, a bore located within 1 500 metres of the site and used to supply residents who are dependent on groundwater for domestic use:
 - (1) is found to contain contaminants at levels higher than stated in the NHMRC/ARMCANZ "Australian Drinking Water Guidelines - National Water Quality Management Strategy" (1996); and
 - (2) is contaminated as a result of activities related to the former liquid waste disposal site.
- 5 Monitoring of all bores and soaks used to provide water for irrigation and animal-keeping purposes, initially within 1 500 metres of the site, and then within the defined area of the groundwater contamination plume, as soon as possible, but no later than three months following the issuing of the formal authority to decision-making authorities under Section 45(7) of the Environmental Protection Act 1986, to determine whether contaminants exceed guideline levels recognised by the Environmental Protection Authority, such as those in the Environmental Protection Authority "Draft Western Australian Water Quality Guidelines for Fresh and Marine Waters" Bulletin 711 (October 1993).
- 6 Provision by the proponent of a reasonable replacement source of water for irrigation or for animal-keeping within 21 days, or such time as the Environmental Protection Authority considers reasonable, in the event that all of the criteria below are met:
 - (1) the bore and soak monitoring program establishes that a bore or soak used to provide water for irrigation or animal-keeping purposes produces water with contaminants in excess of relevant guideline levels;
 - (2) the contaminants are associated with the former liquid waste disposal site;
 - (3) the contaminants are not a result of activities unrelated to the site;
 - (4) human or animal health may be adversely affected as a result of the contamination; and
 - (5) the use of the water and quantity required are reasonable.

Note: In the event that a reticulated Scheme water supply is available as may occur in the kennel zone, replacement water for irrigation or animal-keeping purposes should not have to be supplied unless there is a well justified requirement for additional water.
- 7 Monitoring of the groundwater in areas that may be affected by contaminated groundwater as a result of migration of contaminants off-site to delineate the plume of contamination.
- 8 Identification of the land above the contaminated groundwater and the provision of this information on a publicly available map.
- 9 Provision by the proponent of an interim source of drinking water within 24 hours and an alternative source of water within seven days following the delineation of the plume of groundwater contamination to all residents above the contaminated groundwater who are dependent on groundwater for domestic use, provided that the contamination is a result of activities related to the former liquid waste disposal site.

4-3 The proponent shall make the Groundwater Management Plan required by condition 4-2 available for public review for two weeks prior to finalisation of the Plan, to the requirements of the Department of Environmental Protection.

- 4-4 The proponent shall provide copies of the draft and final Groundwater Management Plan required by condition 4-2, including the results of the groundwater sampling and definition of the contaminant plume, to all residents within 1 500 metres of the site.
- 4-5 The proponent shall implement the Groundwater Management Plan required by condition 4-2.

5 Wastes - Class III and Above

- 5-1 Subsequent to appropriate groundwater sampling and soil testing (see commitment 12), and within three months following the issuing of the formal authority to decision-making authorities under Section 45(7) of the Environmental Protection Act 1986, the proponent shall:

- 1 determine the quantities and locations of Classes III, IV and V wastes, if applicable, within and surrounding the former lagoons (see note below);
- 2 report on the appropriateness of the off-site disposal of such wastes to landfill sites of Class III and above;

to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Note: Definitions and criteria for the classification of landfills and waste streams in Western Australia are included in the Department of Environmental Protection document "Landfill Waste Classification and Waste Definitions, 1996" (27 September 1996).

- 5-2 The proponent shall make the determinations and report referred to in condition 5-1 available for public review for two weeks prior to the Minister for the Environment making the determination referred to in condition 5-4.
- 5-3 The proponent shall provide copies of the determinations and report referred to in condition 5-1 to all residents within 1 500 metres of the site.
- 5-4 In the event that the Minister for the Environment determines that all or part of the above mentioned wastes should be taken to appropriate landfills (see procedure 4 below), the proponent shall, within three months of the Minister's determination, prepare a Site Management Plan to address the remediation of the site, consistent with the Minister's determination, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

Note: In the event that the Minister does not require the off-site disposal of wastes, the Site Management Plan described in commitment 2 shall be prepared and implemented.

- 5-5 In the event that all or part of the waste is required to be taken off-site, the proponent shall make the Site Management Plan required by condition 5-4 available for public review for two weeks prior to finalisation of the Plan, to the requirements of the Department of Environmental Protection.
- 5-6 The proponent shall provide copies of the Site Management Plan required by condition 5-4 to all residents within 1 500 metres of the site.
- 5-7 The proponent shall implement the Site Management Plan required by condition 5-4.

6 Environmental Management System

6-1 In order to manage the environmental impacts of the project, and to fulfil the requirements of the conditions and procedures in this statement, prior to ground-disturbing activities, the proponent shall demonstrate to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection that there is in place an environmental management system which includes the following elements:

- 1 environmental policy and commitment;
- 2 planning of environmental requirements;
- 3 implementation and operation of environmental requirements;
- 4 measurement and evaluation of environmental performance; and
- 5 review and improvement of environmental outcomes.

6-2 The proponent shall implement the environmental management system referred to in condition 6-1.

7 Commencement

The environmental approval for the substantial commencement of the proposal is limited.

7-1 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.

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.

8 Performance Review

8-1 Each six years following the commencement of construction, the proponent shall submit a Performance Review to evaluate the environmental performance relevant to:

- 1 environmental objectives reported on in Environmental Protection Authority Bulletin 876;
- 2 proponent's consolidated environmental management commitments attached to this statement and those arising from the fulfilment of conditions and procedures in this statement;
- 3 environmental management system environmental management targets;
- 4 environmental management programs and plans; and
- 5 environmental performance indicators;

to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

Note: The Environmental Protection Authority may recommend changes and actions to the Minister for the Environment following consideration of the Performance Review.

9 Compliance Auditing

- 9-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit programme prepared in consultation between the proponent and the Department of Environmental Protection.

Procedure

- 1 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.
- 2 Where compliance with any condition or procedure is in dispute, the matter will be determined by the Minister for the Environment.
- 3 When and as legislation permits, the City of Gosnells and the City of Armadale, in collaboration with the Water and Rivers Commission and any other relevant agency, will put in place appropriate measures so that additional groundwater bores are not permitted, either initially within two kilometres of the site, or subsequently within the area delineated as being affected by groundwater contamination, as defined by further studies required by condition 4-2.
- 4 The Minister for the Environment will consider the report referred to in condition 5-1 on the off-site disposal of wastes of Classes III and above, and will determine whether all or part of the abovementioned wastes should be taken from the site.

Note

- 1 The Environmental Protection Authority reported on the proposal in Environmental Protection Authority Bulletin 876 (December 1997).


CHERYL EDWARDES (Mrs) MLA
MINISTER FOR THE ENVIRONMENT

27 JUL 1998

Proponent's Environmental Management Commitments

July 1998

**REMEDICATION OF THE FORMER LIQUID
WASTE DISPOSAL FACILITY
SOUTHERN RIVER ROAD, GOSNELLS (930)**

CITY OF GOSNELLS

Proponent's commitments
Southern River Liquid Waste Disposal Site (Assessment No. 930)
(July 1998)

1. A monitoring plan, as outlined in Section 7.1 of the Consultative Environmental Review (CER) for the above assessment, will be prepared and submitted to the Department of Environmental Protection (DEP) for approval.

The plan will be submitted to the DEP within 3 months of the release of the ministerial conditions.

Implementation will begin within 3 months of the plan's approval by the DEP.

All bore construction and monitoring will be funded by the City of Gosnells.

2. A detailed Site Management Plan will be prepared and submitted to the DEP for approval within 3 months of the release of the ministerial conditions.

Implementation of the Management Plan will commence within 6 months of the DEP's approval.

The preparation of the Management Plan and the implementation of the plan will be funded by the City of Gosnells.

The Site Management Plan will detail:

- (1) the construction of a clay cap and cut-off walls (Section 6.3.1.1)
- (2) facilities to be used for the extraction of landfill gas (Section 6.3.4)
- (3) procedures for the excavation of contaminated soil from around the site and placement of this contaminated soil under the cap (Section 6.3.3)
- (4) procedures for the excavation of metallic objects buried beneath the site (Section 6.3.4).

3. The City of Gosnells will provide an alternative drinking water source to all existing households within the defined distance from the site which currently rely on groundwater for drinking purposes and where the groundwater shows lead, arsenic, or chromium contamination in excess of NH&MRC drinking water guidelines as a result of activities at the site.

The defined distance cited above will extend 1,500 metres radially from the site. The City of Gosnells will review the defined distance as the results of the planned monitoring programme become available.

Any changes to the defined distance will be subject to the approval of the DEP. The term "defined distance" as defined in this commitment has also been used in following commitments.

4. The City of Gosnells will test the groundwater of any household within the defined distance at their request provided that the groundwater is currently relied on for drinking purposes.

The test will comprise one representative sample taken with the test commencing within one week of the request.

If the test shows arsenic, chromium, or lead contamination at concentrations which exceed NH&MRC drinking water guidelines and where the contamination is a result of activities at the site, the City of Gosnells will provide an alternative drinking water source as described in commitment 3.

The City of Gosnells will perform the test up to twice annually.

The sampling frequency will be reviewed as results of the monitoring programme become available. Any modifications to the sampling frequency will be subject to the approval of the DEP.

5. Where contamination above drinking water guidelines has been detected, the City of Gosnells will negotiate with the landowner to place a memorial on the title which informs prospective purchasers of the potential risks (Section 6.3.1.2).

If the property is outside the City of Gosnells, the City of Gosnells will advise the relevant local government authority and recommend that the authority undertake a similar action or that the City of Gosnells undertake the negotiation on their behalf. All settlements would be funded by the City of Gosnells.

The memorial cited above would be removed and the supply of alternative drinking water discontinued when the results of ongoing monitoring indicate that the groundwater is no longer contaminated with arsenic, chromium, or lead at levels which exceed NH&MRC drinking water guidelines.

6. The City of Gosnells will supply funding for a rainwater tank and tankered water as an alternative water source. This commitment will be implemented within two months of the groundwater being identified as contaminated.

Over the longer term, the City of Gosnells undertakes to request the Water Corporation to provide scheme water to households close to the site as part of the urbanisation of the Southern River area.

7. All landowners and households within the defined distance from the site will be informed of:
 - the potential risks associated with the use of groundwater for drinking purposes;
 - the findings of the groundwater monitoring; and
 - the commitments put in place by the City of Gosnells (Section 6.3.1.3).

All notifications will be by means letter drops with each letter addressed to the individual household and landowner.

8. Where ongoing monitoring indicates that groundwater contamination exceeds NH&MRC drinking water guidelines as a result of activities at the site, those properties in the affected area will be notified within two weeks.

The City of Gosnells will then negotiate with the landowner to place a memorial on the title advising prospective buyers of the risks associated with the use of groundwater for drinking purposes. The memorial would be removed when groundwater monitoring results indicate that the contamination no longer exceeds NH&MRC guidelines.

9. For landowners and households within the defined distance of the site who are currently using the groundwater for the watering of animals, and where these animals are not covered by ANZECC (1992), the City of Gosnells will, at their request and for the specified animal, determine guidelines for acceptable levels of arsenic, chromium, and lead in groundwater (Section 6.3.2).

The guidelines will be based on a risk assessment using available data.

The guidelines will be made available within four weeks of the request.

10. If the monitoring programme indicates that groundwater contamination which is a result of activities at the site exceeds the ANZECC (1992) guidelines or the guidelines determined by the risk assessments cited in commitment 9, the City of Gosnells will advise the affected landowners and households of: the level of contamination detected and the potential risks.

The land owners and households will be advised within two weeks of the contamination being detected (Section 6.3.2).

11. Where it becomes necessary to recommend that the groundwater is no longer suitable for irrigation or stock watering purposes as a result of activities on the site, the City of Gosnells will negotiate with the land owner to place a memorial on the title of the property, advising of the condition of the groundwater (Section 6.3.2)

The memorial cited above would be removed when results from the monitoring programme indicate that the groundwater is suitable for irrigation and livestock purposes (Section 6.3.2).

12. Soil contamination around the site will be identified using a 25 metre grid survey (Section 6.3.3).

All soil in which the contamination exceeds:

- ANZECC B (1992) guidelines , or
- Victorian EPA hydrocarbon cleanup criteria for the Bayside site,

will be excavated and placed under the cap.

Where ANZECC guidelines are not available, Dutch "B" (1990) will be used.

The area around the site will be validated using a second grid survey at 25 metre intervals.

Details of the process to remove contaminated soil from around the site will be incorporated into the Site Management Plan.

13. All metallic objects buried on the site which were identified during the magnetic survey (Groundwater Technology, 1994) will be excavated (Section 6.3.4).
14. The City of Gosnells undertakes to request the WA Planning Commission for a condition of subdivision that all residential developments within the defined distance from the site include a hydrogeological study. The objective of this study would be to determine the impact of any changes to the groundwater table on the migration of contaminants from the site. The investigation would also be required to confirm the suitability of groundwater for reticulation purposes within the development (Section 6.4.1).
15. If the hydrogeological investigation identifies any aspect of the development as adversely affecting the migration of contaminated groundwater and thereby resulting in a health or environmental risk, and if this conclusion is supported by the regulatory authorities, the City of Gosnells would apply to the WA Planning Commission for a condition of subdivision which addresses these risks (Section 6.4.1).
16. Where the hydrogeological study cannot eliminate the risk to prospective purchasers to the satisfaction of the regulatory authorities, the City of Gosnells will undertake to request the WA Planning Commission to place a memorial on title as a condition of subdivision that notifies prospective purchasers or landowners of potential risks associated with the contaminated groundwater (Section 6.4.1).
17. Where the hydrogeological study cannot eliminate the risk arising from the development to existing residents to the satisfaction of the regulatory authorities, the City of Gosnells will withhold planning approval for the subdivision (Section 6.4.1).
18. Where a lot is to be developed within the defined distance from the site, the City of Gosnells will subject the approval of the development licence to the approval of the DEP.

If the property is outside the City of Gosnells, the City of Gosnells will advise the relevant local government authority and recommend that the authority undertake a similar action (Section 6.4.2).
19. The City of Gosnells will advise the Water and Rivers Commission and the Swan River Trust of the current extent of groundwater contamination and the results of ongoing monitoring (Section 6.4.2).
20. The City of Gosnells undertakes to request that the Water and Rivers Commission link the granting of bore licences in the defined area to potential adverse effects on contaminated groundwater movement.

The need to perform a hydrogeological investigation to quantify the potential effects would be determined on a case by case basis by the City of Gosnells and the Water and Rivers Commission (Section 6.4.2).
21. The City of Gosnells will not approve any building application for a house if that house relies on groundwater for drinking purposes and if the groundwater contains contamination in excess of NH&MRC drinking water guidelines (Section 6.4.2).

22. The City of Gosnells will monitor any gases collected and vented from beneath the proposed capping until the contents of the gases and consequent risks are defined to the satisfaction of the DEP.
23. The City of Gosnells will undertake ongoing community consultation similar to that undertaken during the CER to present results from the proposed monitoring programme. Letter drops and meetings with members of the community affected would be undertaken at least annually.
24. An Environmental Management Plan (EMP) will be prepared to describe the management of soil contamination and include detail of ongoing management required, a draft definition of the criteria by which the proposal to cap and contain could be deemed to have succeeded or failed, and a contingency plan in case of failure.

This EMP will meet the requirements of the EPA on advice of the Department of Environmental Protection (DEP) and the Water and Rivers Commission (WRC).

The EMP will be submitted to the DEP within 3 months of the release of the ministerial conditions.

Implementation will begin within 3 months of the plan's approval by the EPA.

25. An EMP will be prepared to accurately delineate the contaminated groundwater plume to an accuracy of approximately 500 m as it currently exists and as it may be in the foreseeable future. The comprehensive investigation, modelling and monitoring plan will delineate the nature and extent of the contaminated groundwater plume to an accuracy of approximately 500 m, and model and identify areas that are at risk of being subject to contaminated groundwater in the future.

The plan will detail the timing of sampling and basis for varying monitoring.

This EMP will meet the requirements of the EPA on advice of the DEP and the WRC.

The EMP will be submitted to the DEP within 3 months of the release of the ministerial conditions.

Implementation will begin within 3 months of the plan's approval by the EPA.

All bore construction and monitoring will be funded by the City of Gosnells.



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Our ref: 11/90/9; St 483
Enq: H.Jacob 9222 7178

Dear Sir

**REMEDIATION OF THE FORMER LIQUID WASTE DISPOSAL
FACILITY, SOUTHERN RIVER ROAD, GOSNELLS (STATEMENT 483)**

I refer to your letter of 29 September 1998, in which you seek an extension of time for the completion of the Draft Groundwater Management Plan and the determination of the extent, distribution of and suitability for disposal of Class III, IV and V wastes to 4 December 1998.

The Department of Environmental Protection has concluded that the additional time required does not constitute a substantial change to the proposal. Accordingly, under Condition 2-2 of Statement 483:

- I consider that the extension of time requested for the submission of the Draft Groundwater Management Plan (Condition 4-2) and the determination of the extent, distribution of and suitability for disposal of Class III, IV and V wastes (Condition 5-1) to 4 December 1998 does not constitute a substantial change to the proposal as assessed by the EPA and published in Bulletin 876. However the three month time limit for determining contamination of private bores (Condition 4-2(2) and 4-2(5)) should remain unchanged.

Please note that the above information refers to environmental issues in the Statement of 28 July 1998. This does not remove the necessity to obtain any approvals which may be required by other agencies.

Yours faithfully

(Dr) Bryan Jenkins
CHIEF EXECUTIVE OFFICER

Date: 9.10.98

