



MINISTER FOR THE ENVIRONMENT; SCIENCE

000883

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

**JANDAKOT MOUND GROUNDWATER RESOURCES
[INCLUDING JANDAKOT GROUNDWATER SCHEME, STAGE 2]**

Proposal: The management and abstraction of groundwater for public and private water supply from the Jandakot Mound, with provision for environmental water requirements, as documented in this statement.

Proponent: The Water and Rivers Commission

Proponent Address: Level 2, 3 Plain Street
EAST PERTH WA 6004

Assessment Number: 1540-2

Previous Assessment Number: 196

Previous Statement Number: 253 (Published on 29 April 1992)

Report of the Environmental Protection Authority: Bulletin 1155

Previous Report of the Environmental Protection Authority: Bulletin 587

The implementation and management of groundwater and groundwater allocations for the Jandakot Mound Groundwater Resources 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 "Section 46 Review of Environmental Conditions on Management of the Gnangara and Jandakot Mounds – Stage 1 Proposal for Changes to Conditions" (August 2004), as modified and documented in Environmental Protection Authority Bulletin 1155, which revised the Public Environmental Review (1991), published in Environmental Protection Authority Bulletin 587 as Appendices 1 and 2.

Published on

2 Proponent Commitments

- 2-1 The proponent shall implement the environmental management commitments, as revised in December 2004, and documented in schedule 1 of this statement, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

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 Environmental Protection Authority 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 provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced or the approval granted in the statement of 29 April 1992 shall lapse and be void.

5 Compliance Audit and Performance Review

- 5-1 The proponent shall prepare an audit program and submit compliance reports to the Environmental Protection Authority which address:
1. the status of implementation of the proposal;
 2. evidence of compliance with the conditions and commitments; and
 3. the performance of the environmental management plans and programs.

Note: Under delegation No. 54 issued on 18 June 2004 and section 48(1) of the *Environmental Protection Act 1986*, the Environmental Protection Authority is empowered to monitor 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 shall submit a performance review report by 1 December each year and more detailed reports by 1 February every three years, to the requirements of the Environmental Protection Authority, which address:

1. compliance with the conditions;
2. the achievement of environmental objectives set for the proposal;
3. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
4. proposed environmental management over the next three years to comply with conditions and environmental objectives set for the proposal.

5-3 The proponent shall make the reports required by condition 5-2 publicly available, to the requirements of the Environmental Protection Authority.

5-4 The proponent shall report any breach or anticipated breach of the environmental criteria set out in Tables 1 and 2 (attached) or environmental objectives to the Environmental Protection Authority immediately it becomes evident to the proponent.

6 Management Plan

6-1 The proponent shall implement the Environmental Management Plan prepared by the Water Authority of Western Australia (1992) to the requirements of the Environmental Protection Authority.

7 Groundwater Allocations

7-1 The proponent shall inform the Environmental Protection Authority immediately of any proposed changes to allocations, abstraction limits and licence or allocation periods.

8 Water Conservation

8-1 The proponent shall actively encourage further reduction in public and private water demand in accordance with the State Water Strategy (2003) and other water conservation initiatives.

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 prepare the 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.
- 3 Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Environmental Protection Authority.

Notes

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

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT; SCIENCE

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Proponent's Environmental Management Commitments

December 2004

JANDAKOT MOUND GROUNDWATER RESOURCES
[*INCLUDING* JANDAKOT GROUNDWATER SCHEME, STAGE 2]

(Assessment No. 1540-2)

Water and Rivers Commission

Jandakot Mound Groundwater Resources [including Jandakot Groundwater Scheme, Stage 2] (Assessment No. 1540-2), December 2004

Note: The term “commitment” as used in this schedule includes the entire row of the table and its six separate parts as follows:

- a commitment number;
- a commitment topic;
- the objective of the commitment;
- the “action” to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body / agency to provide technical advice to the Environmental Protection Authority.

No.	Topic	Objective	Action	Timing	Advice
1	Groundwater-dependent ecosystems	To protect significant environmental values.	Ensure that groundwater abstraction satisfies the environmental criteria presented in Tables 1 and 2 (attached).	Operation	
2	Environmental management and monitoring	To minimise environmental and/or significant impact.	<p>In the event that monitoring indicates that there will be significant impacts of a nature not predicted or indicates that a breach of the specified criteria has occurred or is likely to occur, then one or more of the following actions will be undertaken:</p> <ol style="list-style-type: none"> (1) demonstrate to the satisfaction of the EPA that the breach of criteria is not a result of groundwater abstraction; or (2) satisfy the EPA that the breach of a criterion is transient and not of permanent significance; or (3) take the following actions: <ol style="list-style-type: none"> (a) modify pumping from any bore where such changes can have a measurable effect (say raise water levels 1 centimetre or more), except in extenuating circumstances such as where significant economic hardship would occur, or CALM declare that the low water levels would be beneficial; (b) in the case of a wetland, artificially maintain the “action minima” water level; and (c) implement a short-term detailed monitoring program to establish the condition of agreed species in the affected area. 	Operation	

3	Water allocation	To minimise environmental and/or significant impact and manage the resource sustainability.	Regularly review the bulk allocations for private abstraction, as part of the total water abstraction allocation for the Jandakot PWSA, with regard to the sustainable yield of the superficial aquifer, including consideration of the environmental impacts of that abstraction.	Operation	
4	Water allocation	To minimise environmental and/or significant impact and manage the resource sustainability.	Restrict the issuing of licences for private water abstraction to the limits set by the bulk allocations for both the Jandakot PWSA in its entirety and the licensing sub-areas.	Operation	
5	Water allocation		Investigate and implement efficient mechanisms for groundwater allocation.	Operation	
6	Groundwater protection		Assist the EPA in the development of Environmental Protection Policies to protect groundwater.	Ongoing	
7	Groundwater protection	To minimise environmental and/or significant impact.	Participate in the review of Regional Plans proposed by the Department for Planning and Infrastructure, Local Government Town Planning Schemes, and re-zoning and development applications.	Ongoing	
8	Groundwater protection		Participate in the review of development submissions to the EPA.	Ongoing	
9	Groundwater protection		Work with the Department for Planning and Infrastructure to prepare an integrated Land Use and Water Management Strategy for the Jandakot Mound.		
10	Water conservation		Actively pursue programs in both supply and demand management. This includes ongoing public information programs and, where appropriate, regulation for design changes and regular reviews of pricing to conserve water. Improvements in the Water Corporation's supply system will also be pursued.		
11	Groundwater protection		Actively participate in integrated management of the Jandakot catchment.	Ongoing	
12	Environmental management and monitoring		Review and revise the management criteria and strategies, with the agreement of the EPA, as knowledge of the Jandakot environment and its interaction with groundwater improves.	Ongoing	

13	Environmental management and monitoring		Monitor water levels in groundwater monitoring bores and North, Bibra, Yangebup, Kogolup, Thomsons and Forrestdale Lakes, and The Spectacles and Twin Bartram Swamp, as well as some other small wetlands.	
14	Environmental management and monitoring	To minimise environmental and/or significant impact or amenity.	<p>1. Prepare an environmental monitoring program for submission to the EPA for review and subsequent finalisation of the program to the satisfaction of the EPA.</p> <p>The monitoring program will include:</p> <ul style="list-style-type: none"> • monitoring of groundwater levels in all relevant aquifer systems; • relevant wetland water levels and water quality; and • condition of vegetation and fauna associated with groundwater-dependent ecosystems. <p>2. Implement the approved environmental monitoring plan; and</p> <p>3. Review and revise the program every six years (coinciding with triennial reports), to the satisfaction of the EPA.</p>	Within four months of a revised statement being issued following the 2004 Stage 1 section 46 review
15	Environmental management and monitoring		Use aerial photographs or equivalent on a triennial basis to detect habitat shifts in North, Bibra, Yangebup, Kogolup, Thomsons and Forrestdale Lakes.	
16	Community consultation		Hold meetings at least annually with the Jandakot Consultative Committee established in consultation with the EPA. This Committee will be informed on the groundwater scheme's operation and will provide feed-back to the proponent.	
17	Community information		Continue to monitor community response to relevant water resource issues as reported by the media and maintain the current practice of public accessibility of WRC staff. Upon request and adequate notice, staff will address community groups on issues associated with groundwater management.	

18	Environmental management and monitoring		Install monitoring wells and improved wetland water level monitoring facilities for Forrestdale Lake, and evaluate the monitoring data to determine the groundwater-wetland water level relationship. Subject to CALM / WRC installing a permanent vegetation monitoring transect and undertaking flora and fauna studies to establish environmental values, the proponent will review the available information to propose revised management criteria, if appropriate.		CALM
19	Environmental management and monitoring	To minimise environmental and/or significant impact or amenity.	<ol style="list-style-type: none"> 1. Prepare a Management and Monitoring Program; and 2. Implement the Management and Monitoring Program. 	Prior to commissioning of Stage 2 scheme	
20			Continue to fund the research projects 10.6.3 listed in Appendix 2 of the EPA Bulletin 587 for the duration of the studies.		
21			<p>Develop a fauna monitoring program which will focus on:</p> <ol style="list-style-type: none"> (1) waterbird species diversity and breeding success; and (2) number of families of aquatic invertebrate and at infrequent intervals, species richness. 	Prior to the commissioning	CALM
22			Undertake a study of Banganup Lake, in conjunction with CALM and the University of WA to establish management criteria and consider the effectiveness of artificial maintenance of water levels.		CALM
23			Undertake a study of Twin Bartram Swamp to consider the feasibility and effectiveness of artificial maintenance of water levels.		

Abbreviations

CALM = Department of Conservation & Land Management
 EPA = Environmental Protection Authority
 PWSA = Public Water Source Area
 WRC = Water & Rivers Commission

Jandakot Mound Criteria (2004)

Table 1 – Monitoring Wells

Groundwater Monitoring Well		End of Summer	
		Preferred Minimum (mAHD)	Absolute Minimum (mAHD)
Vegetation Wells			
JM14	61610247	24.39	23.89
JM16	61610445	23.90	23.40
JM19	G61610177	25.26	24.76
JM35	61610333	21.25	20.75
JM39	61410142	21.20	20.70
JM49	61410111	22.34	21.84
8284	61610178	24.82	24.32
JE4C	61610234	24.00	23.50
JE10C	61410250	21.80	21.30
Rare Flora Wells			
JM7	61610180		22.06*
JM8	61610248		23.38*
JM45	61610179		22.71*
JE17C	61419703		16.35*

Notes: Water levels are permitted to fall between the preferred and absolute criterion levels. Objectives are considered as not being met each time groundwater levels fall below the absolute minimum criterion.

* water levels should not decline at rates greater than 0.1 m/yr.

Jandakot Mound Criteria (2004)

Table 2 – Wetlands

Wetland	SWRIS ID No.	Current Water level criterion (m AHD)		Other criteria
		Preferred	Absolute	
North Lake	Staff Q6142521 Bore 424 G61410726	13.29	12.68	Water levels should not decline at rate greater than 0.1 m/year. Monitor staff gauge.
Bibra Lake	Staff Q6142520 Bore BM7C G61410177B	13.6 - 14.2 <15.0 peak	13.6	Not to dry more than 2 in 3 years, and preferably less than 1 in 3 years
Kogolup Lake (South)*	Staff Q6142522 Bore 61410727	13.1 - 14.0 <14.8 peak	13.1	
Thomsons Lake	Staff Q6142517 Bore TM14A G61410367	11.3-11.8	10.8	For 30% of time, water levels > 11.8. (wet year –10%), or 11.3-11.8 m (medium year 80%), or 10.8 – 11.3 m (dry years 10%)
Lake Forrestdale	Staff Q6162557 Bore 602 G61410714	21.2 – 21.6	21.1	Preferred earliest drying by April (wet year), Feb-March (medium year) or January (in a dry year); at least 0.9 m water at peak levels (22.6 m AHD)
Yangebup Lake	Staff Q6142523 Bore JE21C G61419614	13.9-15.5 < 16.5 peak	13.8	Either Bibra or Yangebup Lake must contain 0.3 m water, preferably 0.5 m
Banganup Lake	Staff Q6142516 Bore LB14 G61419614	-	11.5	
Twin Bartram Swamp	Staff Q6142544 Bore G61410715	22.8	22.5	Not to dry before end of January; Must be above preferred min. 4 in every 6 years
Shirley Balla Swamp	Staff Q6142576 Bore G61410713		23.1 or 0.5 m below lake base, whichever is the higher	Not to dry before end of January; Must be above preferred min. 4 in every 6 years Water levels should not decline at rate greater than 0.1 m/year. Monitor staff gauge.
Beenyup Road Swamp	Staff Q6142547 Bore G61410711	24.0	23.6	Must be above preferred min. 4 in every 6 years

Notes: Water levels are permitted to fall between the preferred and absolute criterion levels at any time, except for Beenyup, Shirley Balla and Twin Bartram Swamps. For Beenyup, Shirley Balla and Twin Bartram Swamps, non-compliances also occur where water levels fall between the preferred and absolute criterion levels for more than 2 in 6 years.

Levels for North Lake are represented by groundwater levels that reflect wetland water levels of 13.5 mAHD (preferred) and 12.7 mAHD absolute) through application of a groundwater-wetland water level relationship formula. Some level of non-achievement of criteria can be expected because of reduced drainage inflows to lake.

Maximum allowable habitat reductions (excluding Thomsons Lake) are: Type I habitat is 5% (in a wet year), 10% (medium year), 15% (dry year); Type II is 8% (wet), 13% (medium), and 18% (dry); Type III is 12% (wet), 17% (medium), 22% (dry); and Type IV habitat is 15%(wet), 20% (medium), and 25% habitat reduction during a dry year.

* indicates that the Water Corporation pumps excess water out of these wetlands if spring peak levels are exceeded