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Published on 4 December 2009

Statement No. 819

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

STATEMENT FOR THE DEPARTMENT OF WATER

**GNANGARA MOUND GROUNDWATER RESOURCES
[INCLUDING GROUNDWATER RESOURCE ALLOCATION, EAST GNANGARA
CITY OF SWAN]**

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

Proponent: The Department of Water

Proponent Address: The Atrium
168 St George's Terrace
PERTH Western Australia 6842

Assessment Number: 1540-1

Previous Assessment Numbers: 041/ 697/ 932

Previous Statement Numbers: Statement No. 021 (Published on 8 March 1988)
Statement No. 437 (Published on 6 February 1997)
Statement No. 438 (Published on 6 February 1997)
Statement No. 496 (Published on 17 February 1999)
Statement No. 687 (Published on 31 August 2005)

Report of the Environmental Protection Authority: Bulletin 1324

Previous Reports of the Environmental Protection Authority: Bulletins 295 / 817 / 904 /
1155

The implementation and management of groundwater and groundwater allocations for the Gnamagara Mound Groundwater Resources is subject to the following conditions and procedures, which replace all previous conditions and procedures applicable to the abovementioned proponent (See note 2 at foot of this statement):

1 Implementation

- 1-1 The proponent shall implement the proposals as documented in “Section 46 Review of Environmental Conditions on Management of the Gngangara 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 Environmental Review and Management Programme (1986), published in Environmental Protection Authority Bulletin 295 as Appendix D; and which were consolidated in May 1996 and reported on in Environmental Protection Authority Bulletin 817, as revised in November 1996, and also revised in the Public Environmental Review (1997), published in Environmental Protection Authority Bulletin 904 as Appendix 3.

2 Proponent Commitments

- 2-1 The proponent shall implement the environmental management commitments, as revised in May 2009, 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 proposals 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 proposals.
- 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 proposals 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 proposals shall also be provided.
- 3-3 The nominated proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation of any change of contact name and address within 60 days of such change.

4 Compliance Audit and Performance Review

- 4-1 The proponent shall prepare an audit program and submit compliance reports to the Chief Executive Officer of the Department of Environment and Conservation which address:
1. evidence of compliance with the conditions and commitments; and
 2. the performance of the environmental management plans and programs.

- 4-2 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 Chief Executive Officer of the Department of Environment and Conservation, 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.
- 4-3 The proponent shall make the reports required by condition 4-2 publicly available, to the requirements of the Chief Executive Officer of the Department of Environment and Conservation.
- 4-4 The proponent shall report any breach of the environmental criteria set out in Tables 1 and 2 or environmental objectives to the Chief Executive Officer of the Department of Environment and Conservation immediately it becomes evident to the proponent.

5 Management of the Water Resource

- 5-1 The proponent shall base decisions affecting the management of groundwater resources of the Gngangara Mound on the concept of sustainable yield of resources and maintenance of ecological systems in accordance with the objectives of the State Conservation Strategy (1987).
- 5-2 The proponent shall subject to review, every three years, the basis for groundwater management decisions, including groundwater allocations and licences, and the criteria specified for conservation of the environment and the groundwater resource of the Gngangara Mound, to the requirements of the Environmental Protection Authority on advice of the Department of Environment and Conservation.

6 Groundwater Allocation

- 6-1 The proponent shall ensure that the allocation of water to public and private users and the operation of the Pinjar Stages 1, 2 and 3, Wanneroo, Mirrabooka and Lexia Groundwater Schemes comply with environmental water provisions.

7 Groundwater-dependent Ecosystems

- 7-1 The proponent shall ensure that the integrity of all groundwater-dependent ecosystems located on the Gngangara Mound that may be impacted as a result of groundwater abstraction are protected, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Environment and Conservation.

8 Groundwater Availability

- 8-1 The proponent shall widely publish by the end of October each year the limits on groundwater availability for the Gngangara Mound.
- 8-2 The proponent shall update annually the figures published according to the requirements of condition 8-1, with emphasis on those areas of high allocation relative to sustainable yield of the groundwater resource so that limits to use and development can be clearly seen by all interested parties. The updated figures shall also be widely published.

9 Water Conservation

- 9-1 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.

10 Research and Monitoring

- 10-1 The proponent shall participate in and undertake research and monitoring on the Gngangara Mound which includes:
1. clarification of the relationship between groundwater level and rainfall under conditions of declining long-term rainfall;
 2. improvement in the understanding of the relationship between groundwater levels and vegetation, including plantations;
 3. improvement in the understanding of the relationship between groundwater level and abstraction from unconfined and confined aquifers of the Gngangara Mound;
 4. clarification of the relationship between groundwater level and wetland water levels and wetland water quality;
 5. improvement in the understanding of the relationship between groundwater level and water levels in the Yanchep caves; and
 6. improvement in the understanding of the conservation value of wetlands and other groundwater-dependent ecosystems on the Gngangara Mound,

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

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 Chief Executive Officer of the Department of Environment and Conservation.

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.
- 2 The conditions and commitments of statement no. 437 for which the Water Corporation is primarily responsible have not been reviewed during the section 46 consideration which has lead to the amended conditions of this statement.

Donna Faragher JP MLC
MINISTER FOR ENVIRONMENT; YOUTH

Proponent's Environmental Management Commitments

May 2009

**GNANGARA MOUND GROUNDWATER RESOURCES
[*INCLUDING GROUNDWATER RESOURCE
ALLOCATION, EAST GNANGARA*]**

(Assessment No. 1540-1)

Department of Water

**Gnangara Mound Groundwater Resources [Including Groundwater Resource Allocation, East Gnangara] (Assessment No. 1540-1)
May 2009**

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 | Gnangara Mound allocations | | Manage public and private groundwater abstraction to meet objectives and Environmental Water Provision (EWP) criteria presented in Tables 1 and 2 (attached). | Ongoing | |
| 2 | Management objectives and Criteria | | Management objectives and criteria and water allocation limits will be regularly reviewed and amended as information becomes available to provide for ongoing adaptive management. | Ongoing | DEC |
| 3 | Yanchep caves | To minimise environmental and/or significant impact | Continue to develop catchment strategies to minimise change in hydrological regime within the caves of Yanchep National Park. Monitor water levels and cave fauna. | Ongoing | DEC |
| 4 | Strategic drainage plans | | Prepare strategic drainage plans for the study area including options for the management of high water levels in Lakes Joondalup, Goollelal, Mariginiup and Jandabup. | Ongoing | |
| 5 | Research and investigation program | | 1. Prepare a research and investigation program for submission to the EPA for review and subsequent finalisation of the program to the satisfaction of the EPA. The research and investigation program will be prepared with the objective of improving understanding of: <ul style="list-style-type: none"> • groundwater-environmental relationships on the Swan Coastal | Within four months of a revised statement being issued following the 2004 Stage 1 section 46 review/ | DEC |

| No. | Topic | Objective | Action | Timing | Advice |
|-----|--|-----------|---|--|--------|
| | | | <p>Plain;</p> <ul style="list-style-type: none"> • the associated management requirements; and • potential management techniques; <p>and will incorporate all relevant aspects of research and investigation work currently committed to under Ministerial Statements 438 and 496.</p> <ol style="list-style-type: none"> 1. Implement the research and investigation program to the satisfaction of the EPA. 2. Review and revise the program every six years (coinciding with triennial reports), to the satisfaction of the EPA. | Ongoing | |
| 6 | Environmental monitoring program | | <ol style="list-style-type: none"> 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. The monitoring program will include: <ul style="list-style-type: none"> • monitoring of groundwater levels in all relevant aquifer systems; • relevant wetland water levels and water quality; • condition of vegetation and fauna associated with groundwater-dependent ecosystems; and • cave water levels. 2. Implement the approved environmental monitoring plan to the satisfaction of the EPA. 3. Review and revise the program every six years (coinciding with triennial reports), to the satisfaction of the EPA. | Within four months of a revised statement being issued following the 2004 Stage 1 section 46 review/ Ongoing | DEC |
| 7 | Development advice | | Continue to provide advice to the City of Wanneroo, the Department for Planning, DEC and other relevant agencies on the impact of land use on groundwater resources. | Ongoing | |
| 8 | Gnangara inter-agency technical advisory group | | Convene and provide ongoing executive support for an inter-agency technical advisory group for water resources planning and management issues on the Gnangara Mound. The group will consider planning and management issues in the context of recommendations of the Select Committee on Metropolitan Development and Groundwater Supplies. | Ongoing | |

| No. | Topic | Objective | Action | Timing | Advice |
|-----|-------------------------------|---|--|--|--------|
| 9 | Community consultation | | Continue to chair and provide support for the Gngangara Consultative Committee as an ongoing forum for information exchange and advice. | Ongoing | |
| 10 | Vegetation protection | | Limit potential for tree deaths around production wells to 100 metres radius for normal (average) climate conditions and within 200 metres in extreme conditions. | Ongoing | |
| 11 | Lake Nowergup supplementation | | Should EWPs in Lake Nowergup not be met by November 1, artificial supplementation will be used until the EWP is reached. | Ongoing | |
| 12 | Reporting | | Require the Water Corporation to submit yearly production plans as part of the operating strategy and to report on compliance with environmental commitments made in the operating strategy. | Ongoing | |
| 13 | Vegetation protection | To minimise environmental and/or significant impact | Establish additional monitoring wells in those areas where suitable wells do not exist to monitor groundwater levels under phreatophytic vegetation. | Before 5 May 1997 | |
| 14 | East Gngangara wetlands | | Require the Water Corporation to implement its 2001 wetland mitigation strategy and subsequent approved revisions and report to the Department of Environment on implementation. | Prior to commissioning of Lexia scheme/ Ongoing | |

Abbreviations

DEC = Department of Environment and Conservation

EPA = Environmental Protection Authority

EWPs = Environmental Water Provisions

FPC = Forest Products Commission

Gnangara Mound Criteria (2004)

Table 1 – Monitoring Wells

| Groundwater Monitoring Well | End of Summer | |
|-----------------------------|--------------------------|-------------------------|
| | Preferred Minimum (mAHD) | Absolute minimum (mAHD) |
| MM16 | - | 38.8 |
| MM18 | - | 38.6 |
| MM53 | - | 33.3 |
| MM55B | - | 29.5 |
| MM59B | - | 36.3 |
| MT3 | - | 43.0 |
| NR6C | - | 58.5 |
| PM9 | - | 56.3 |
| PM24 | - | 40.5 |
| WM1 | - | 55.7 |
| WM2 | - | 66.5 |
| WM8 | - | 64.8 |
| MM12 (G61610989) | - | 42 |
| L30C (G61611010) | - | 47.2 |
| L110C (G61611011) | - | 55.7 |
| L220C (G61611018) | - | 52.2 |

Gnangara Mound Criteria (2004)

Table 2 – Wetlands

| Wetlands | | End of Summer (mAHD) | | Spring (mAHD) | |
|---|--|----------------------|------------------|---------------------|--------------------|
| | | Preferred Minimum | Absolute minimum | Preferred Min. peak | Absolute Min. peak |
| Lake Goollelal | Q6162517 | * 26.2 | 26 | | |
| Loch McNess | (Q6162564) | | 6.95 | | |
| Yonderup | (Q6162565) | | 5.9 | | |
| Lake Joondalup | (Q6162572 staff) (G61610661 bore) | * 16.2 | 15.8 | | |
| Mariginiup Lake | (Q6162577 staff) (peak levels recorded) (G61610685 bore) | | | * 42.1 | 41.5 |
| Lake Jandabup Artificially maintained | (Q6162578) | | 44.3 | * 44.7 | 44.2 |
| Nowergup Lake Artificially maintained | (Q6162567) (peak levels recorded) | | | * 17 | 16.8 |
| Wilgarup | (Q6162623 staff) (61618500 bore) | 4.8 | 4.5 | 6.10 | 5.65 |
| Pipidinny Swamp | (Q6162624) | | 1.6 | 2.70 | 2.40 |
| Lexia 86 | (GNM16) G61613215 | * 47.3 | 47 | | |
| Lexia 186 | (GNM15) G61613214 | * 47.5 | 47.2 | | |
| Melaleuca Park (EPP) 173 | (GNM14) Q6162628 staff Bore G61613213 | | 50.2 | | |
| Melaleuca Park (Dampland) 78 | (GNM31) G61613231 | * 65.4 | 65.1 | | |
| Egerton | (B25) (G61618607) | | 39.29 | | |

* water levels allowed between minimum and absolute minimum at a rate of 2 in 6 years to replicate natural drying cycles.