

**Environmental Management of Groundwater
Abstraction from the Jandakot Mound
July 2003 – June 2004
- Annual Compliance Report**

Water and Rivers Commission

**Report by the Environmental Protection Authority
under section 48(1a) of the *Environmental Protection Act 1986***

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1. Introduction and background

Groundwater abstraction from the Jandakot Mound is subject to environmental conditions in Statement 253 - Jandakot Groundwater Scheme, Stage 2 issued by the Minister for the Environment in 1992. The current nominated proponent for this statement is the Water and Rivers Commission (WRC).

The statement can be viewed at the Department of Environment's website (www.environment.wa.gov.au).

The EPA has delegated responsibility under section 20 of the *Environmental Protection Act* to audit compliance by the WRC with the environmental conditions and commitments applying to groundwater abstraction from the Jandakot Mound. This delegation was gazetted on 26 September 2003.

This report provides the advice of the Environmental Protection Authority (EPA) to the Minister for the Environment in relation to compliance with environmental conditions.

The Department of Environment (DoE), on behalf of the WRC, submitted the Annual Compliance Report for Environmental Management of Groundwater Abstraction from the Jandakot Mound July 2003–June 2004 to the EPA in November 2004 (Department of Environment 2004).

The 2003/04 Annual Report has been reviewed by an independent consultant to the EPA. The report of the Auditor is provided in Appendix 2.

The Annual Report was updated by the DoE to address points raised in the Auditor's review of the compliance report and is available on the Commission's website (www.environment.wa.gov.au).

2. Compliance with environmental conditions

Section 48(1) of the *Environmental Protection Act 1986* provides for monitoring of implementation of a proposal for the purposes of determining whether the environmental conditions related to the proposal are being complied with. The EPA has an obligation under section 48(1a) to report non-compliance to the Minister.

The EPA has undertaken this compliance audit in two parts. The first was to appoint an independent consultant to review and report to the EPA on the WRC's Compliance Report (see Appendix 2). The WRC was then given an opportunity to respond to the Auditor's report. This response is incorporated in this report. The second part was for the EPA to consider the Auditor's report and DoE response, and to prepare this report on issues associated with the compliance audit.

WRC 2003-04 Annual Report

The Annual Compliance Report on environmental monitoring and management of the Jandakot Groundwater Mound by the Water and Rivers Commission makes the following summary points.

“Although the total annual rainfall over the Jandakot Mound for the reporting period of July 2003 to June 2004 was greater than the thirty-year (medium term) average, a summer of typically low rainfall and high temperatures meant that there was still non-compliance for some wetland water level criteria on the Mound. Although variation in rainfall is reflected by groundwater levels and recharge entering the Jandakot Groundwater Mound, a relatively stable trend in groundwater level is apparent over the last several decades, unlike the situation on the Gnangara Groundwater Mound.

The total of private licensed groundwater allocations in the superficial aquifer in the Jandakot Groundwater Area declined during the reporting period although there were several subareas that had small increases.

The total Water Corporation wellfield abstraction from the superficial aquifer was slightly less than the agreed abstraction limit in all subareas and less than the previous year. As occurred elsewhere in the Perth region, community acceptance of water use efficiency measures (eg. sprinkler bans) in association with drought conditions is likely to have limited the overall water use on the Jandakot Mound.

There were seven non-compliances with environmental criteria on the Jandakot Mound for the period July 2003 to June 2004. All non-compliances were predicted (Section 46 2003 Progress Report). Six of the non-compliances related to wetland criteria levels and one to a rare flora monitoring bore (Tables 8, 9). The non-compliance reported for Banganup Lake is the first one recorded for this site, however, the extent was minimal (2.5cm).

The environmental criteria and resulting groundwater allocations for the Jandakot Mound were set under presumptions of a long-term higher rainfall average and full urban development on the eastern side of the Mound that would result in an increase in groundwater recharge. Given that these presumptions have not been fully realised, the Jandakot Mound groundwater system can be considered to be performing better than anticipated in light of the current dry climate sequence being experienced. The Mound is not impacted by confined aquifer abstraction or by pines as on the Gnangara Groundwater Mound.

Summary of Non-compliances with Ministerial Conditions - 2003-04, Jandakot Groundwater Mound

JANDAKOT MOUND:	Absolute (A) or Preferred (P)	Relevant criteria (mAHD)	Minimum level (mAHD)	Predicted 2004 Non-compliance
WETLANDS#				
North Lake*	A	12.7	11.79	Yes
Lake* Forrestdale	A	21.1	20.77	Yes
Shirley Balla Swamp*	Summer drying	Water till end January	Dry in December	Yes
Beenyup Road Swamp*	P	24.0	23.72	Yes
Banganup Lake	A	11.5	11.47	Yes- severe summer
Bibra Lake	A	13.6	13.52	Yes- severe summer
MONITORING BORES+				
JM45*	A	23.52	23.43	Yes

6 of 10 wetlands in total.

- + 1 of 27 monitoring bores in total.
- * also non-compliant in 2002-03. Beenyup Swamp was an Absolute non-compliance in 2002-03.” (Department of Environment 2004)

Audit of Compliance Report

In summary, the Auditor has provided the following advice and comments to the EPA on the Jandakot Mound Annual Compliance Report 2003-04:

“There is detailed reporting of monitoring the water levels in wells and wetlands near and on the [Jandakot] mound. This has shown that in seven cases the minimum levels were not maintained and so there is non-compliance with the environmental criteria set for abstracting water from the mound. Some of these water level non-compliances have been predicted in advance and some have recurred over a number of years.

Where future non-compliance can be predicted, the prediction should trigger action to ensure the non-compliance is avoided. The Report acknowledges the non-compliance, argues that this is significantly due to climatic variation beyond WRC’s control and advises that a review of conditions has been initiated under section 46 of the Act to set environmental performance criteria more within WRC’s control.

In the meantime, actions taken by the proponent in the face of predicted and actual non-compliance to date to avoid the non-compliance or return to a state of compliance have been ineffective.

In the context of the section 46 review WRC has proposed that twelve of the monitoring bores (over one third of the total bores) be removed as criteria sites as the vegetation values have been or are soon to be lost. The present conditions fail to address this issue. There is little point in placing significant constraints on the abstraction of water for private users and the public scheme to protect vegetation values only to have those values destroyed by decisions elsewhere in government.

There needs to be a co-ordinated whole-of-government approach to the protection of native vegetation values on the Jandakot Groundwater Mound, of which the management of water abstraction forms a part. At the very least, WRC needs to ensure that its administration of the system of clearing permits under the Act works with the management of groundwater abstraction to stop the loss of native vegetation values. Perhaps consideration should be given to declaring the area to be an “environmentally sensitive area” in which all clearing requires a permit.

The Audit Report for 2002-03 recommended that the EPA require WRC to take action on ten listed matters. The EPA endorsed all but one of these recommendations. The 2003-04 Compliance Report presents WRC’s responses to these. In only two of the nine cases has the required action been satisfactorily completed.” (Malcolm 2005)

Recommendations from the Jandakot Audit

Table 1 from the Auditor’s report summarises the issues identified in this Audit and recommended actions. Note that not all recommended actions relate to actual non-compliances. Shading indicates non-compliance.

Table 1 – Issues identified in the Audit and recommended actions

No.	Issue	Recommended action
1	<p>Figure 1 has significant deficiencies:</p> <ul style="list-style-type: none"> • Twin Bartram Swamp not labelled; • Can't tell "areas" from "subareas"; • many monitoring bores not shown; • not clear which subarea some production bores relate to; • Warton Road not labelled; • scale of the map is not shown; and • the position of North is not shown. 	<p>Rectify the deficiencies.</p>
2	<p>Report tells of clearing or degradation of native vegetation making some monitoring bores no longer relevant, but does not show status of native vegetation.</p>	<p>Report should show the changing status of native vegetation on the Jandakot Groundwater Mound.</p>
3	<p>The report continues the confusing use of terminology of last year's report, where "quota" and "allocation" mean different things in respect of the public scheme and private use.</p>	<p>Report should adopt more consistent terminology.</p>
4	<p>Audit report has a section headed "<i>Distribution of Allocation and Breaches by Subarea</i>" that shows non-compliances are associated with subareas with the highest abstraction, public and private.</p>	<p>WRC review this section of the audit report and advise the EPA of the extent to which abstraction can be further diverted from subareas associated with non-compliances.</p>
5	<p>This Report does not comply with several of the listed requirements.</p> <ol style="list-style-type: none"> (1) There is no estimate of the quantity for private use; (2) There is no reporting against "environmental objectives". (3) There is no review of the effectiveness of the criteria in meeting the objectives. (4) The Audit Report highlights that the Report is inadequate in its proposals for change to management and mitigation. 	<p>Modify report to rectify these inadequacies.</p>
6	<p>Breaches of water level criteria have been reported annually, instead of "immediately" as required. In response to last year's audit WRC has proposed reporting of quarterly monitoring (effectively 'immediate').</p>	<p>WRC to submit quarterly reports to the EPA on the results of monitoring, specifically bringing to the EPA's attention any non-compliances or breaches of preferred minima that the monitoring has revealed, and any short-term management actions proposed in response.</p>
7	<p>There is no information about compliance with items (6) and (7) of M-5-1 (wetland mitigation plan), and no comprehensive reporting of compliance with the environmental management plan of which the wetland mitigation plan forms a part.</p>	<p>WRC to prepare a full compliance table for the environmental management plan, including the wetland mitigation plan, so compliance with the EMP can be properly audited.</p>
8	<p>When there is a breach of specified criteria, under commitment P11 WRC must take one of three actions. The report suggests that option (3) has been taken, but the information provided is inadequate to confirm compliance.</p>	<p>WRC to provide further information to demonstrate compliance.</p>
9	<p>The EPA in Bulletin 1134 called for a repeat of the survey in 2004/05. It is not clear that WRC has complied with this. The item 9 response refers to a "compliance monitoring program of private licences scheduled for 2004/05" that may be intended to meet the call for a water use survey. WRC should be asked to clarify this.</p>	<p>WRC to confirm whether or not the "compliance monitoring program of private licences scheduled for 2004/05" is intended to meet the EPA's call for a survey of private water use be repeated in the 2004-05 reporting period and if not to advise the EPA when the survey will be undertaken.</p>
10	<p>There is no report of specific action in response to the commitment for "Intensive compliance monitoring in targeted areas" though WRC "proposes discussions with the EPA regarding merits of an intensive monitoring program". If the merits are "demonstrated" WRC proposes to include the Banjup subarea in its "compliance monitoring program of private licences schedules for 2004/05".</p>	<p>EPA to meet with WRC as soon as possible to ensure that there is intensive compliance monitoring in the Banjup subarea as previously required by the EPA.</p>

No.	Issue	Recommended action
11	WRC is committed to refusing applications for allocations in under-allocated subareas where analysis shows resulting allocations will exacerbate criteria breaches. In the report it claims to have done so. However, in the Airport subarea there was non-compliance at monitoring well JM45 and breaches of preferred minimum levels at JM7 and JM8. Despite this, the private use allocation for the subarea increased by 27 Megalitres. <i>Prima facie</i> this appears inconsistent with the response provided.	WRC to provide further information to explain the apparent inconsistency.
12	In Bulletin 1134 the EPA made a number of calls for action or the provision of information. WRC has so far failed to comply with six of these. (see Table 4 below)	WRC to rectify non-compliance with EPA recommendations in Table 2 of Bulletin 1134.

Shading indicates non-compliance.

WRC's Response to the Auditor's report and recommendations

The DoE provided the following comments on each of the recommendations in the Auditor's report:

Table 2. – WRC response to Auditor's issues and recommended actions

Issue No	WRC Response
1.	Figure 1 has been amended to show this information.
2.	This does not appear to be required by the Ministerial Conditions. More clarification is requested.
3.	Agreed. The report will be modified accordingly. The word 'quota' has been replaced with 'revised allocation limit' (ie. a value revised (reduced) from the original scheme allocation limit. Edits to Tables 4 & 5.
4.	Shifting some of the scheme allocation from the Airport, Banjup and Success sub areas to the Canning Vale and Forrestdale sub areas, where there were no breaches or non compliances in 2003/04, would be a major exercise, as it would require the Water Corporation to relocate several of its production bores and delivery mains. The WRC will ask the Water Corporation to advise on whether this can be achieved and at what cost and advise the EPA of the response.
5.	(1) An estimate will be provided based on water use surveys in similar areas. (2) Noted (3) The Section 46 review is reviewing the effectiveness of the criteria in meeting the objectives.
6.	The WRC monitors criteria sites on a monthly basis and currently reports non compliances monthly to the EPA.
7.	Noted. The EMP has changed several times since initial approval and these changes have been documented in previous reports to the EPA. WRC will discuss with the EPA how best to report the EMP work.
8.	Option 3 has initially been taken with respect to modifying pumping from nearby bores likely to have a measurable effect on criteria levels. Eg Water Corporation bores J40 and J50 in the Banjup sub area and bores J230, J240 and J250 in the Success sub area have been shut down to reduce the impact on Shirley Balla Swamp and Beenyp Road Swamp. The WRC will also be seeking to demonstrate to the EPA via the section 46 process that Option 1 is also applicable in that water levels are being affected by climate change.
9.	Compliance surveys were undertaken in the Jandakot GWA in 2004/05 but the compliance monitoring program of private licences scheduled for 2004/05 was not intended to fully meet the call for a water use survey. The WRC will schedule a survey of private water use in the Jandakot Groundwater Area as a priority. Timing of the survey is dependent on resourcing and the EPA will be advised when a survey is carried out. A water use survey for one sub-area (Banjup) is currently being planned before the end of the financial year (see 10 below). Resourcing issues make it unlikely that the entire groundwater area will be surveyed in the near future. Issues on the Gngangara Mound are generally considered of higher priority and hence most existing resources are being directed in this area.
10.	Meeting to be arranged so that results from compliance monitoring on the Mound and the need for further monitoring can be discussed.
11.	The 27 Megalitre increase was due to the issue of two licences to the City of Cockburn. One licence was 1200 metres downstream of JM 45 and the other 700 metres downstream of JM 45. As such, they would

Issue No	WRC Response
	be unlikely to have any impact on the water level in JM 45.
12.	<p>Issue 3 in table 4 – WRC considers its actions constitute responses to non-compliances, ie. additional compliance inspections and reductions in private water abstraction. The section 46 review is not yet complete.</p> <p>Issue 5 in table 4 - covered by response to Issue 9.</p> <p>Issue 6 in table 4 – covered by response to Issue 6.</p> <p>Issue 9 in table 4 – noted.</p> <p>Issue 10 in table 4 - WRC (in its response to the audit report) last year discussed the merits of metering private water use in Gngangara and Jandakot and concluded that a detailed study, including metering, of the likely impact of private abstraction on environmentally sensitive areas may be of more value and cost effective than intensive metering of all licensed users. Use of the updated PRAMS computer model is likely to be beneficial in assessing such impact. In areas where modelling suggests detrimental impact, ground truthing by select metering and surveys of private use may be required</p> <p>In response to this, the State Govt has committed funding for a trial program to install meters on private bores in key areas on the Gngangara Mound, where the allocation is greater than 5,000 kL per annum. However, there are insufficient funds to allow the fitting of meters to all private bores where the allocation is greater than 5,000 kL per annum.</p>

Shading indicates non-compliance issue

EPA's advice on compliance

The EPA considers that the Audit reports are comprehensive and the Auditor's recommended actions are appropriate. The EPA therefore accepts the recommendations and comments of the Auditor and expects the DoE will resolve each of these issues.

Three matters of non-compliance are identified by the Auditor, two of which relate to the DoE/WRC response to the EPA's 2004 audit report (Bulletin 1134). In its response to the Auditor's findings, the DoE has undertaken to modify the annual compliance report to address these matters. The DoE has revised the Jandakot Mound annual compliance report 2003-04 in accordance with its response in Table 2.

In relation to Audit Issues 5, 6 and 12 where non-compliance has been identified by the Auditor, the EPA provides the following comment:

Issue 5. The DoE has indicated that it will address these matters. This should be included in the next annual report. Further comment on the section 46 review is provided under Other Advice.

Issue 6. As indicated in its response to this issue, the DoE now advises the EPA on a monthly basis those sites on the Jandakot Mound where non-compliance with criteria water levels has occurred. The advice also identifies sites which are at risk of non-compliance.

Issue 12. The EPA notes the response of the DoE. Comment is provided under Other Advice in relation to progress on the section 46 and also addressing sustainable yields and allocations.

The DoE report also acknowledges that there was seven non-compliances with environmental criteria on the Jandakot Mound for the period July 2003 to June 2004. In relation to these breaches, the sense of frustration that the EPA expressed last year continues. With continuing breaches of criteria comes the real consequences

associated with prolonged stress on wetlands and groundwater-dependent vegetation. The EPA provides some additional comment on non-compliance in this report under Other Advice.

3. Other Advice

The EPA addressed a number of additional matters under Other Advice in its 2004 audit reports (EPA Bulletins 1134 and 1139) to the Minister. These included:

- On-going breaches of criteria and other environmental conditions and action taken by WRC to address these breaches
- Progress on the Section 46 initiated by the WRC in 2001
- Allocation and private licence decisions under circumstances of non-compliance;

The EPA considers that additional comment is again necessary. Unfortunately there has been little improvement in relation to many of the EPA's comments made last year.

Progress on the Section 46 review

Following a request from the WRC in 2001, the Minister for the Environment requested the EPA to inquire into the environmental conditions applying to management of the Gngangara and Jandakot groundwater mounds. Statement 253 applies to Jandakot.

The Department of Environment (DoE), on behalf of the Water and Rivers Commission, prepared a first stage section 46 review of the environmental conditions applying to management of the Gngangara and Jandakot groundwater mounds. In relation to Jandakot, the Stage 1 review proposed:

- amendments to specific environmental water level criteria, including removal of some of the sites to which criteria apply;
- removal of conditions and commitments that do not apply to the WRC, or where there are inconsistencies between conditions and commitments;
- modifications to several conditions and commitments to improve the consistency of approach between the Gngangara and Jandakot Mounds.

Following consideration of the proposed changes, the EPA recommended to the Minister for the Environment in Bulletin 1155 (EPA 2004b) that a number of environmental criteria sites could be deleted while the criteria at a smaller number of sites should be modified. The statements have yet to be changed.

Given the predominant private ownership of the Jandakot Mound and expansion of urban areas on the western side of the mound, the Stage 1 section 46 pointed to the loss of environmental values due to clearing and land development. The Jandakot Mound is a substantially smaller groundwater resource than the Gngangara Mound but it is fundamental to wetlands of international value and significant remnant vegetation areas. While the primary focus of the section 46 review will be on the Gngangara Mound, the Jandakot Mound also requires a high level of management, including compliance with environmental conditions.

The DoE has been suggesting that a groundwater management plan for the Gngangara Mound is required, and that this would provide an integrated means for improving management of land and water-related issues on the mound. As a result, the DoE has indicated that the stage 2 section 46 report is unlikely to be presented to the EPA until December 2006.

The DoE's response to declining rainfall and recharge on the Gngangara and Jandakot Mounds over the past eight years has been to state that this is beyond the regulators control. While this may be a relevant point in relation to the cause of climatic variation, it is inadequate in relation to management of resultant impacts and regulatory responses that are available. The current approach to management is placing increasing and unacceptable stress on many of the ecological and social values of the Jandakot Mound, and are clearly beyond those approved under the existing conditions. To see on-going levels of non-compliance with environmental conditions while levels of groundwater abstraction for public and private purposes remain unchanged raises questions about the DoE's response under the existing conditions. Changing abstraction rates is likely to be necessary in the short-term but a more adaptive and responsive management water allocation regime is essential in the longer-term. The sooner this is in place the better for all concerned, but will require a whole-of-government commitment to its formulation and implementation.

Allocation and private licence decisions under circumstances of non-compliance

In its audit report last year (EPA 2004a), the EPA recommended that the Minister requires that the sustainable limits for all groundwater abstraction from the Gngangara Mound and Jandakot Mound are reviewed and revised by the WRC as a high priority. This has yet to be done. As mentioned above, the EPA strongly reiterates that this needs to be undertaken as soon as possible.

2005 Status of Non-Compliance (as at May 2005)

As part of its response to the two EPA audit reports last year, the EPA Chairman now receives regular (monthly) reports from the DoE on the current status of water level non-compliances for both the Jandakot and Gngangara Mounds. The most recent report covers up to the end of May 2005 and indicates a total of 8 non-compliances with criteria set under environmental conditions on the Jandakot Mound. The DoE is also identifying criteria sites that at risk of non-compliance.

The following indicates sites with non-compliance over period 1997/98-2003/04, as well as indicating reported non-compliance during 2004/05:

Jandakot Mound							
1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05 #
							LB14
							Bibra L
					JM7	JM7	
					JM19	JM19	
					JM45	JM45	JM45
						JM8	
					JM29	JM29	JM29
			Beenyup R	Beenyup R	Beenyup R	Beenyup R	Beenyup R
			Forrestdale	Forrestdale		Forrestdale	Forrestdale
			North L	North L	North L	North L	North L
Shirley B			Shirley B	Shirley B	Shirley B	Shirley B	Shirley B
T Bartram			T Bartram	T Bartram			

Currently reported to end May 2005 by DoE as non-compliance

While the WRC will report these in its 2004-05 compliance report, they are provided here to illustrate the on-going trend in relation to the number of criteria sites where there is non-compliance.

It should be noted that the EPA has recommended to the Minister that a number of the above criteria sites should be deleted from the environmental conditions. The EPA recommended in Bulletin 1155 that the following sites should be deleted or the criteria varied.

Jandakot Mound
<i>Modified criteria</i>
North Lake
Shirley Balla Swamp
Rare Flora Monitoring Wells JM7, JM8 and JM45
<i>Delete criteria site</i>
Monitoring well JM5, JM15, JM18, JM24, JM27, JM29, JM31, JM33, JM50, JE1B, JE12C, JE18C, JE20C, JE23C, J310, and JE19C

Once these changes are made to the Jandakot and Gnangara Mound statements, the current number of non-compliances with criteria in 2004/05 would fall by 2 sites.

4. Conclusions

The EPA has considered the Annual Compliance Report for Environmental Management of Groundwater Abstraction from the Jandakot Mound July 2003–June 2004 and notes that there continues to be a high and unacceptable level of non-compliance with environmental conditions.

While the EPA understands that issues such as climate variability makes management of the groundwater more difficult, the response by the Department of Environment, on behalf of the Water and Rivers Commission, to comply with the existing conditions continues to be a source of frustration to the EPA. The Commission has a range of options available to it in the longer term, including reviewing existing criteria and conditions through section 46. However, this is not adequate in the short term as non-compliance remains environmentally and legally unacceptable.

5. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes this report on compliance by the Water and Rivers Commission with environmental conditions and proponent commitments set out in Statement 253.
2. That the Minister notes that the EPA has found that the Water and Rivers Commission has not complied with a number of environmental conditions and proponent commitments set out in Statement 253.
3. That the Minister notes that the second stage of the section 46 review is now not expected to be submitted to the EPA until late 2006.

4. That the Minister notes the EPA's increasing concern that deferring action in relation to groundwater management is placing increasing and unacceptable stress on many of the ecological and social values of the Jandakot Groundwater Mound.
5. That Minister requires that the sustainable limits for all groundwater abstraction from the Jandakot Mound are reviewed and revised by the WRC as a high priority.

Appendix 1

References

Appendix 2

**Malcolm (2005). Audit of Compliance Report 2003-04 - Environmental
Management of Groundwater Abstraction from the Jandakot Groundwater
Mound, Water and Rivers Commission**

29 June 2005

**Audit of
Compliance Report
2003-04**

**Environmental Management of
Groundwater Abstraction from the
Jandakot Groundwater Mound**

Water and Rivers Commission

JIM MALCOLM
Environmental Consultant



Audit of Annual Compliance Report for 2003-04

Environmental Management of Groundwater Abstraction from the Jandakot Groundwater Mound

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Audit of Annual Compliance Report for 2002-03

Environmental Management of Groundwater Abstraction from the Jandakot Groundwater Mound

Summary

The taking of groundwater from the Jandakot Groundwater Mound, in the southern suburbs of Perth is subject to a Ministerial approval under Part IV of the *Environmental Protection Act 1986* (the Act). That approval is subject to a number of environmental management conditions. The purpose of those conditions is to ensure that the environment is protected as implementation of the proposal proceeds. The Environmental Protection Authority (the EPA) is responsible for auditing compliance with the conditions.

The Water and Rivers Commission¹ (WRC) submitted to the Environmental Protection Authority in December 2004 its report for 2003-04 on compliance with the conditions (the Report), and this document presents an audit of that compliance report, including an assessment of the significance of instances of non-compliance.

There is detailed reporting of monitoring the water levels in wells and wetlands near and on the mound. This has shown that in seven cases the minimum levels were not maintained and so there is non-compliance with the environmental criteria set for abstracting water from the mound. Some of these water level non-compliances have been predicted in advance and some have recurred over a number of years.

Where future non-compliance can be predicted, the prediction should trigger action to ensure the non-compliance is avoided. The Report acknowledges the non-compliance, argues that this is significantly due to climatic variation beyond WRC's control and advises that a review of conditions has been initiated under section 46 of the Act to set environmental performance criteria more within WRC's control.

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There needs to be a co-ordinated whole-of-government approach to the protection of native vegetation values on the Jandakot Groundwater Mound, of which the management of water abstraction forms a part. At the very least, WRC needs to

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ensure that its administration of the system of clearing permits under the Act works with the management of groundwater abstraction to stop the loss of native vegetation values. Perhaps consideration should be given to declaring the area to be an “environmentally sensitive area” in which all clearing requires a permit.

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No.	Issue	Recommended action
1	Figure 1 has significant deficiencies: <ul style="list-style-type: none"> • Twin Bartram Swamp not labelled; • Can’t tell “areas” from “subareas”; • many monitoring bores not shown; • not clear which subarea some production bores relate to; • Warton Road not labelled; • scale of the map is not shown; and • the position of North is not shown. 	Rectify the deficiencies.
2	Report tells of clearing or degradation of native vegetation making some monitoring bores no longer relevant, but does not show status of native vegetation.	Report should show the changing status of native vegetation on the Jandakot Groundwater Mound.
3	The report continues the confusing use of terminology of last year’s report, where “quota” and “allocation” mean different things in respect of the public scheme and private use.	Report should adopt more consistent terminology.
4	Audit report has a section headed “ <i>Distribution of Allocation and Breaches by Subarea</i> ” that shows non-compliances are associated with subareas with the highest abstraction, public and private.	WRC review this section of the audit report and advise the EPA of the extent to which abstraction can be further diverted from subareas associated with non-compliances.

² Table 1 of Audit of Annual Compliance Report for 2002-03.



No.	Issue	Recommended action
5	<p>This Report does not comply with several of the listed requirements.</p> <p>(1) There is no estimate of the quantity for private use;</p> <p>(2) There is no reporting against “environmental objectives”.</p> <p>(3) There is no review of the effectiveness of the criteria in meeting the objectives.</p> <p>(4) The Audit Report highlights that the Report is inadequate in its proposals for change to management and mitigation.</p>	<p>Modify report to rectify these inadequacies.</p>
6	<p>Breaches of water level criteria have been reported annually, instead of “immediately” as required. In response to last year’s audit WRC has proposed reporting of quarterly monitoring (effectively ‘immediate’).</p>	<p>WRC to submit quarterly reports to the EPA on the results of monitoring, specifically bringing to the EPA’s attention any non-compliances or breaches of preferred minima that the monitoring has revealed, and any short-term management actions proposed in response.</p>
7	<p>There is no information about compliance with items (6) and (7) of M-5-1 (wetland mitigation plan), and no comprehensive reporting of compliance with the environmental management plan of which the wetland mitigation plan forms a part.</p>	<p>WRC to prepare a full compliance table for the environmental management plan, including the wetland mitigation plan, so compliance with the EMP can be properly audited.</p>
8	<p>When there is a breach of specified criteria, under commitment P11 WRC must take one of three actions. The report suggests that option (3) has been taken, but the information provided is inadequate to confirm compliance..</p>	<p>WRC to provide further information to demonstrate compliance.</p>
9	<p>The EPA in Bulletin 1134 called for a repeat of the survey in 2004/05. It is not clear that WRC has complied with this. The item 9 response refers to a “compliance monitoring program of private licences scheduled for 2004/05” that may be intended to meet the call for a water use survey. WRC should be asked to clarify this.</p>	<p>WRC to confirm whether or not the “compliance monitoring program of private licences scheduled for 2004/05” is intended to meet the EPA’s call for a survey of private water use be repeated in the 2004-05 reporting period and if not to advise the EPA when the survey will be undertaken.</p>



No.	Issue	Recommended action
10	There is no report of specific action in response to the commitment for “Intensive compliance monitoring in targeted areas” though WRC “proposes discussions with the EPA regarding merits of an intensive monitoring program”. If the merits are “demonstrated” WRC proposes to include the Banjup subarea in its “compliance monitoring program of private licences schedules for 2004/05”.	EPA to meet with WRC as soon as possible to ensure that there is intensive compliance monitoring in the Banjup subarea as previously required by the EPA.
11	WRC is committed to refusing applications for allocations in under-allocated subareas where analysis shows resulting allocations will exacerbate criteria breaches. In the report it claims to have done so. However, in the Airport subarea there was non-compliance at monitoring well JM45 and breaches of preferred minimum levels at JM7 and JM8. Despite this, the private use allocation for the subarea increased by 27 Megalitres. <i>Prima facie</i> this appears inconsistent with the response provided.	WRC to provide further information to explain the apparent inconsistency.
12	In Bulletin 1134 the EPA made a number of calls for action or the provision of information. WRC has so far failed to comply with six of these. (see Table 4 below)	WRC to rectify non-compliance with EPA recommendations in Table 2 of Bulletin 1134.

Shading indicates non-compliance.



1. Compliance with the environmental criteria

The Report notes that

“Under Ministerial approval conditions M3-1, M5-1, M5-2, and P1.1 (Appendix 1), the Water and Rivers Commission (Commission) is required to manage public and private groundwater abstraction in a sustainable manner, which meets the environmental objectives of the EWPs, and conserves groundwater resources and water dependant eco-systems.”

The conditions do not make plain how management in a sustainable manner is to be determined, but they do establish requirements for monitoring various environmental parameters and compliance with the maintenance of certain water and groundwater levels.

Ministerial condition M-4-1 requires the preparation of a detailed environmental monitoring plan to monitor at least

- Vegetation;
- Fauna;
- Habitat; and
- Groundwater levels.

Under M-6-1 the environmental monitoring plan is incorporated in the environmental management plan (EMP), and M-6-2 requires that it be implemented to the satisfaction of the EPA. These conditions are supplemented by the proponent's commitments P-1 to develop the monitoring and management plan, and P-27 to P-31 to monitor water levels, vegetation, habitat and fauna.

The EMP establishes specific criteria for the water levels in 10 wetlands and 28 bores. In most cases there is a Preferred Minimum and an Absolute Minimum water level specified, the intent being that only breaches of the Absolute Minimum levels amount to non-compliance. However, for some wetlands there are additional criteria such as “not to dry before the end of January” or “must be above preferred minimum 4 in every 6 years”.

The Report advises that there was non-compliance during the reporting year in six wetlands and one bore. This is part of an ongoing pattern of non-compliance that appears to be getting worse. (see Figure 1)

There have been water level breaches in Shirley Balla Swamp every year since 1997/98 (seven years), in Forrestdale Lake every year since then except 1999/2000 (six years), and in North Lake in 1998/99, 2000/01, 2001/02, 2002/03 and 2003/04. In Beenyp Road Swamp the Preferred Minimum level has been breached every year since 1997/98, meaning that the ‘4 years in 6’ criterion has been breached for the last five years.

Figure 1 shows this pattern of breaches and non-compliance. It clearly shows how the number of instances of non-compliance and breach of Preferred Minimum has increased in recent years.



Figure 1 of the Report is headed “Jandakot Mound production wellfields and compliance of criteria wetlands and monitoring bores”. It shows the locations of the monitored lakes and wetlands, monitoring bores and their compliance status, the production bores and the Areas and Subareas used in the management of abstraction. It is potentially a very useful map, but it has a number of important deficiencies:

- Twin Bartram Swamp is not labelled;
- from the marking on the map it is not possible to differentiate between “areas” and “subareas”;
- the location of monitoring bores JM310, JE1B, JE4C, 12C, 17C, 18C, 19C, 20C, 23C, JM7, 8, 18, 19, 24, 27, 29, 31 and 33 is not shown, while the location of 19 monitoring bores not listed in Table 9 is shown;
- because some production bores are close to area or subarea boundaries, it is not clear which subarea they relate to (for example, J10 appears to be in Forrestdale while J20 to 70 are just over the boundary, in Banjup);
- Warton Road is not labelled;
- the scale of the map is not shown; and
- the position of North is not show.

If these deficiencies were rectified the map would be useful in showing how the monitoring bores were distributed throughout the area and the spatial relationships between non-compliances and the levels of public and private abstraction in each subarea.

The report notes the changing status of native vegetation on the mound, suggesting that some monitoring bores are no longer relevant as the vegetation values they were intended to protect have been lost. In view of this it would be helpful if the change in native vegetation (i.e at least the area lost in the reporting period) could be shown with a map or aerial photograph.

It is recommended that the deficiencies in Figure 1 be rectified.

It is recommended that the report should show the changing status of native vegetation on the Jandakot Groundwater Mound.



2. Water Allocation and Water Use

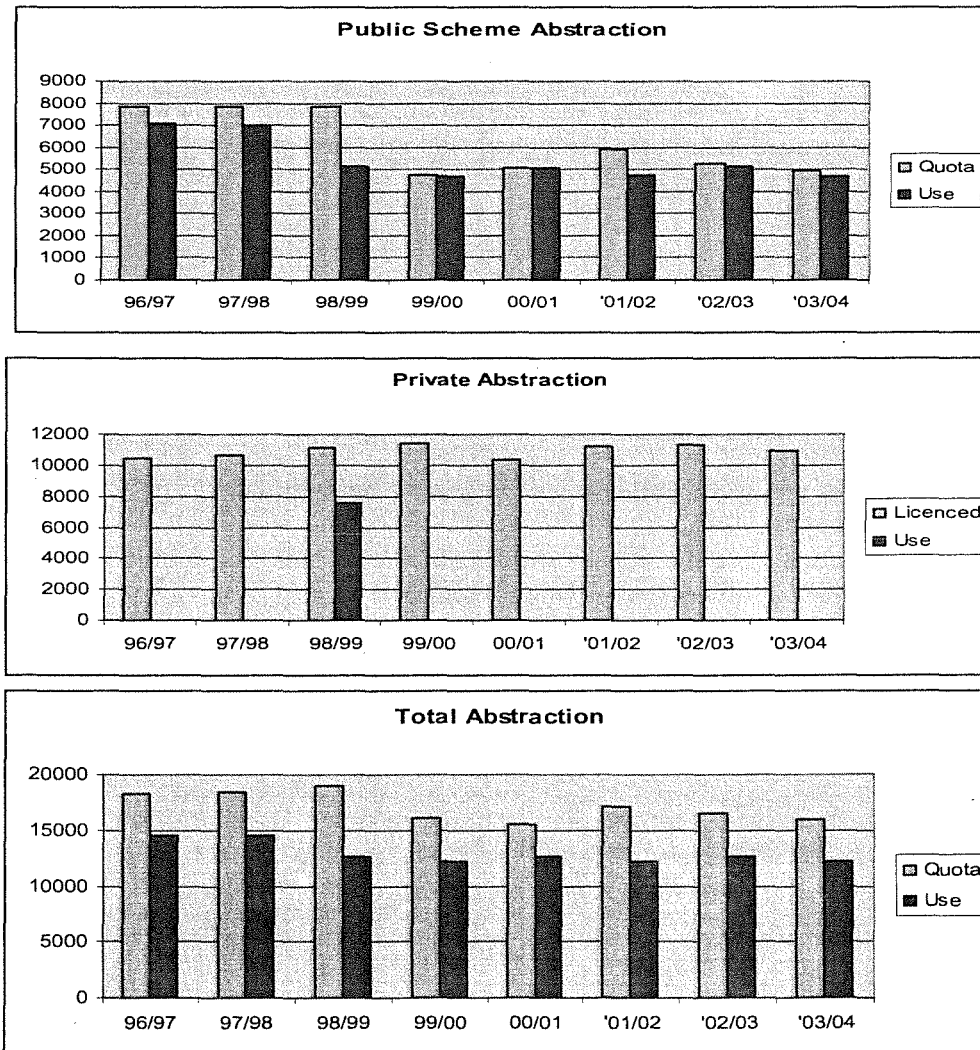
The report continues the confusing use of terminology of last year's report, where "quota" and "allocation" mean different things in respect of the public scheme and private use. The relationship between the terms for the two sectors appears to be as follows.

Table 2 Abstraction terms for public and private schemes

Public Scheme Abstraction	Private Abstraction
Licensed Allocation	Private Use Quota
Quota (Negotiated by agreement)	Private Use Allocation (Licensed)
Actual Use	Actual Use (not reported)

It is recommended that more consistent terminology be adopted.

Figure 2 – Quotas, allocations and licences for abstraction from the Jandakot Groundwater Mound (Total assumes 98/99 private usage)



2.1 Public abstraction

The report states that total scheme abstraction was reduced 0.5 GL from the previous year, and that for each subarea abstraction was below quota. This indicates correction of a non-compliance in the previous report where the abstraction in the Airport subarea exceeded the quota.

Despite this reduced abstraction, and the report's observation of "a relatively stable trend in groundwater level" there are ongoing non-compliances with the absolute and preferred minimum water levels. The questions of whether these levels are an appropriate surrogate for the environmental values to be protected and, if so, whether they are set appropriately to protect those values are to be addressed in the Section 46 Review.

2.2 Private abstraction

As the Private Abstraction chart in figure 2 shows, public water use was surveyed in 1998/99, but since then there has been no follow-up survey, despite significant changes such as reduced rainfall and altered patterns of development that could well have led to a change in public water use, both licensed and unlicensed. It may be that WRC is operating on an assumption that the 1998/99 survey figures are still appropriate for planning purposes, but the report does not state this.

The Ministerial conditions do not require that the amount of water abstracted for private use be measured. However, the Report is to address the estimated quantity of water abstracted for private use (Condition M-4-2). The Report contains no such estimate (nor did last year's report). This deficiency must be rectified.

In item 5 of Table 7 the report suggests that the quantity of water abstracted for private use in 2003-04 has been reported. However, Table 5 lists only the Private Use Quota and Allocation for 2003-04, not the actual amount abstracted.

It is recommended that WRC provide an estimate of the quantity of water abstracted for private use, as required by condition M-4-2.

The '02/03 Audit report recommended the inclusion of relevant rainfall data, given the significance of rainfall to recharge and abstraction. This report includes rainfall data for Perth and Jandakot airports.

2.3 Management of abstraction

The report provides some information on how WRC has administered the abstraction of water in response to the ongoing problems of non-compliance.

For the Public Scheme "a cooperative approach between the Commission and the Water Corporation" is employed in determining the amount of water to be abstracted. Despite the non-compliance, the report claims that this "has resulted in responsible management of scheme groundwater abstraction from the Jandakot Groundwater Mound".



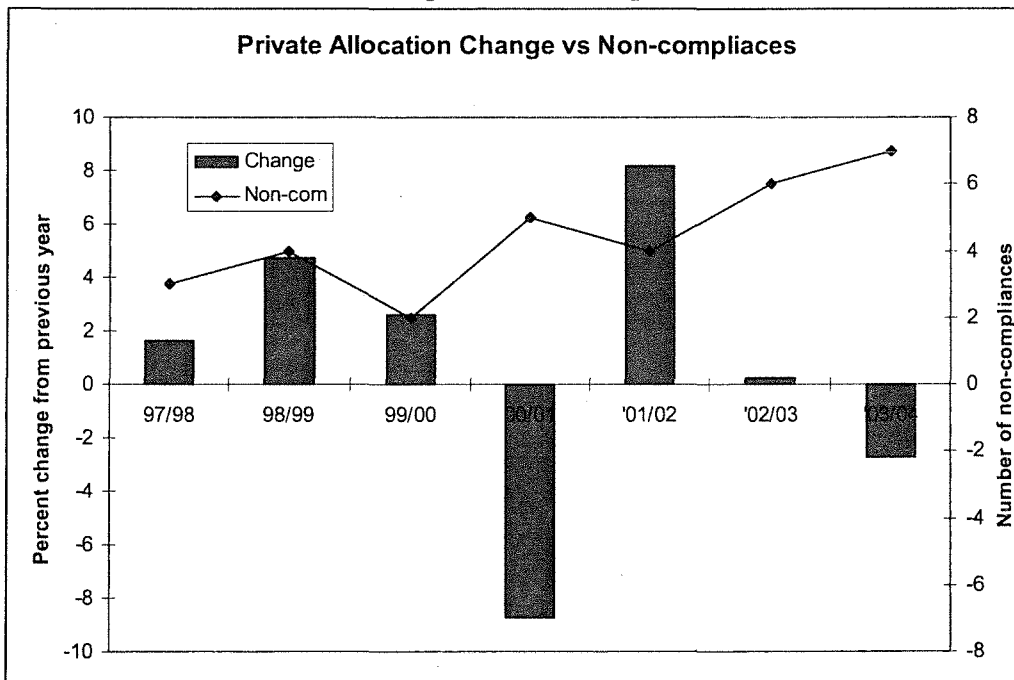
The report notes that “abstraction limits are currently operating at less than 60% of the total wellfield licensed allocation”. While this may be true, it tends to suggest that the “total wellfield licensed allocation” is an unrealistically high figure that could never be achieved and is therefore meaningless for the purpose of ongoing abstraction management. More importantly, the actual amount abstracted in 2003-04 of 4,668 Megalitres was a historical low, though only slightly (6%) down on the average of the last five years (4953 Megalitres).

The actual amount of water extracted by private users is not known, despite the fact that private allocations are more than double the allocation for the public scheme. The report states that allocation limits for private abstraction “have been set to limit groundwater abstraction to levels which do not cause unacceptable environmental impacts and enable EWPs to be achieved”. Given the non-compliances this intent has clearly not been achieved.

Despite increasing numbers of reported non-compliances in recent years, the private use quota for each of the subareas for 2003/04 was unchanged from that applying the previous year. It would seem reasonable, at least for those subareas where past evidence of non-compliance or breach of preferred minima indicates that the environment is under pressure, to reduce the “Private Use Quota” to no more than the present “Private Use Allocation”.

The report notes that, as a result of the recovery of unused water allocations upon renewal of licences and water recovered from the urbanization of formerly irrigated land the total public allocation has been reduced by 306 Megalitres (3.2%) from the previous year. Figure 2 provides a historical context and shows that such a reduction is not a significant response to the ongoing non-compliance problems.

Figure 3 Private Allocation Change and Non-compliances



As noted last year, WRC's focus for managing private users was to develop a commitment to 18 water resource management initiatives which were put forward in the 2001 Section 46 Stage 1 Report. The Compliance Report provides a progress report on the implementation of these commitments (see Appendix 2 for details).

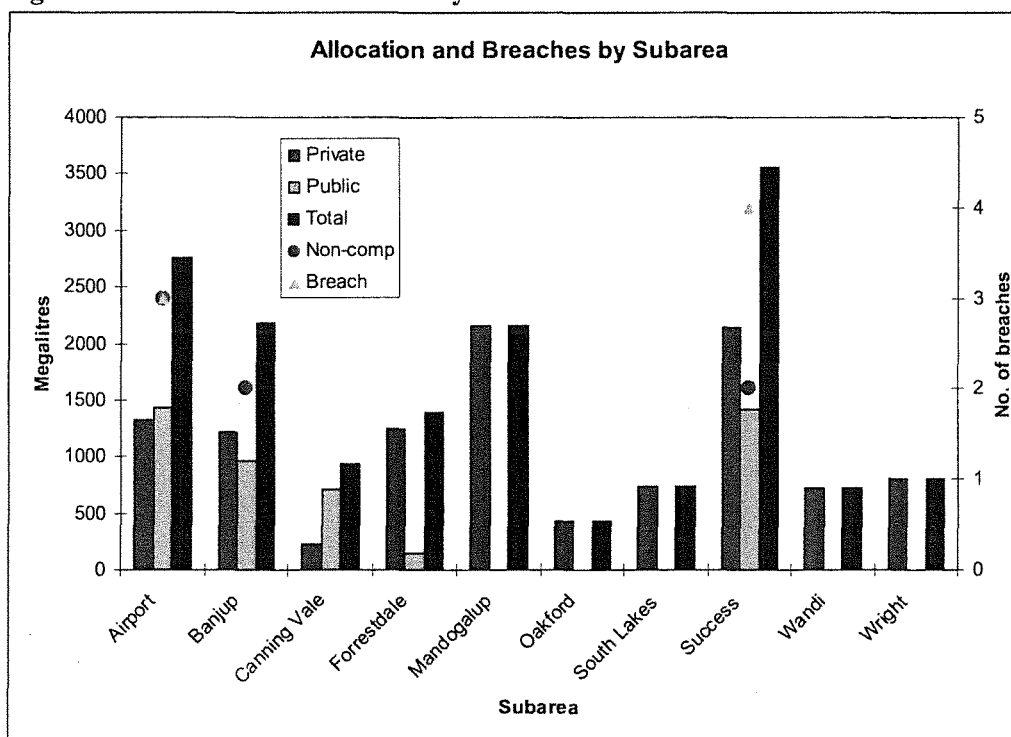
Distribution of Allocation and Breaches by Subarea

Figure 3 is an attempt to relate the occurrence of non-compliances and breaches of the preferred minimum water levels with the amounts of water allocated for abstraction for each subarea. The compilation of this diagram involved a number of assumptions.

The map in Figure 1 of the report does not show the location of five of the six bores where preferred minimum water levels were breached. The locations are assumed to be unchanged from last year's report, where they were shown.

The diagram relates the non-compliances to the subarea of the nearest production well. Several of the production and monitoring bores are close to subarea boundaries. It has been assumed, for example, that J50 is in Banjup, and J370 in Success.

Figure 4 Allocation and Breaches by Subarea



The diagram shows that the three subareas where the total allocation is highest are also those where the occurrence of non-compliances and breaches is highest. It suggests that it may be wrong to assume that the non-compliances are primarily due to reduced rainfall.

Private allocation is also high in Mandogalup, where there are no recorded breaches, but for that subarea there is less reported monitoring of adjacent water levels.



There may be other reasons for not doing so, but from the information in Figure 3 it would seem advisable to investigate shifting some of the scheme allocation from Airport, Banjup and Success to Canning Vale and Forrestdale, as well as recovering as much as possible of the private allocation in Airport, Banjup and Success.

It is recommended that WRC review the above observations and advise the EPA of the extent to which abstraction can be further diverted from subareas associated with non-compliances.



3. Meeting the environmental conditions and commitments

The purpose of the Compliance Report is to demonstrate publicly that the proponent (WRC, in this case) has complied with the environmental conditions and commitments. The key part of the Report that does this is the Compliance Audit Table, a detailed table listing all the conditions and commitments and briefly stating how they have been complied with.

Appendix 1 presents WRC's Compliance Audit Table (from Appendix 1 of the Compliance Report), with some comments on the adequacy of the responses and the degree of compliance.

Sometimes the ongoing implementation of a proposal gives rise to additional initiatives, undertakings or commitments that must be reported on. One such matter with this proposal is a series of 18 private abstraction management initiatives. These initiatives were committed to by WRC in the 2001 Section 46 Stage 1 Report.

Appendix 2 presents WRC's table reporting on the implementation of these initiatives (from Appendix 2 of the Compliance Report). As noted below, implementation of the elements of the Environmental Management Plan and compliance with the environmental objectives should be similarly reported on.

Table 1 of last year's audit report presented 10 recommendation to the EPA for action that WRC should be required to take. In Table 2 of Bulletin 1134 the EPA endorsed all but one of these. In Table 7 of its report WRC has provided its responses, and Table 4, below, provides detailed comment on the adequacy of those responses.

3.1 Non-compliance with conditions/commitments on the evidence presented

The audit of the tables in Appendix 1 and 2 identified seven instances of non-compliance with the requirements of the relevant condition or commitment³, based on the information presented in the Report (see Table 3).

3.1.1 Incomplete Report

Ministerial condition M-4-2 spells out the required content of the compliance report. The Report submitted does not address some of the required elements and so does not comply with M-4-2. The missing elements are

- No estimate of the quantity of water abstracted for private use;
- No reporting against the "environmental objectives"; and
- No review of the effectiveness of the environmental criteria in meeting the environmental objectives.

In addition, the "proposed changes to management, monitoring or mitigation of wetland impacts" are inadequate, given the ongoing non-compliances.

³ Actually the conditions are subdivided into "auditable elements". For example, condition 4 has five auditable elements. Two of these were satisfactory, one had insufficient information and two were non-compliant. M refers to a Ministerial condition, P to a commitment by the proponent and I to one of the 18 management initiatives committed to in the context of the section 46 review, Stage 1.



Under M-4-2 the Report is to be “to the satisfaction of” the EPA. The omissions are significant and need to be addressed.

It is recommended that the EPA require that the omissions be rectified before expressing itself satisfied with the Report.

3.1.2 Delayed notification of breaches

M-4-4 requires that any breach or anticipated breach of the environmental criteria or environmental objectives is to be reported to the EPA immediately. Commitment P-35 goes a step further, stating that, in addition to this immediate notification, details of action taken to avoid the breach or its consequences will be reported to the EPA “at the earliest feasible date.

WRC has not complied with this requirement, breaches being notified annually. The EPA brought the problem to WRC’s attention last year in Bulletin 1134. WRC’s response in Table 7 is that monitoring is undertaken quarterly, and that if there are non-compliances the quarterly monitoring reports, which are presented on the WRC website for public scrutiny, will be sent to the EPA. WRC proposes that the reporting of management actions, which tend to be more long-term, would remain on an annual basis.

Since WRC first becomes aware of non-compliance through the quarterly monitoring, prompt reporting of this would represent “immediate” reporting as required in condition M-4-4. It is commendable that the quarterly monitoring reports are made publicly available. This adds to the requirement for the EPA, as auditor of compliance, to be promptly (i.e. before the reports are made public) informed about breaches and management actions taken.

The public would reasonably expect the EPA, which is publicly accountable for auditing compliance with the Ministerial conditions and ensuring the environment is protected, to be aware if the conditions are not being complied with and to know what is being done in response.

It is recommended that WRC be required to submit the quarterly monitoring reports to the EPA, specifically bringing to the EPA’s attention any non-compliances or breaches of preferred minima that the monitoring has revealed, and any short-term management actions proposed in response.



Table 3 - Instances of non-compliance in the compliance tables

No.	Requirement	Response	Auditor's comment
M4-2	Submit brief annual and more detailed triennial reports addressing, but not limited to the following: (1) the quantity of water abstracted for public use and estimated quantity for private use; (2) environmental monitoring results; (3) compliance with the environmental criteria and the commitments; (4) compliance with the environmental objectives; (5) a review of the effectiveness of the criteria in meeting the environmental objectives; and (6) any proposed changes to management, monitoring or mitigation of wetland impacts. To the satisfaction of the Environmental Protection Authority.	Condition met by the preparation of this report to EPA.	This Report does not comply with several of the listed requirements. (1) There is no estimate of the quantity for private use (2) OK (3) OK, except for inadequacies listed here. (4) There is no reporting against "environmental objectives". (5) There is no review of the effectiveness of the criteria in meeting the objectives. (6) The Audit Report highlights that the Report is inadequate in its proposals for change to management and mitigation. Since the Report is to be to the satisfaction of the EPA it is recommended that the EPA require it to be modified to rectify the inadequacies before expressing its "satisfaction" with the Report.
M4-4	Report any breach or anticipated breach of the environmental criteria or environmental objectives to the EPA immediately.	Although not reported 'immediately', expected non-compliances were given in 2002-03 annual report and actual non-compliances reported in 'end of summer' compliance report to the EPA.	Breaches and anticipated breaches were not reported "immediately". WRC should submit quarterly reports to the EPA on the results of monitoring, specifically bringing to the EPA's attention any non-compliances or breaches of preferred minima that the monitoring has revealed, and any short-term management actions proposed in response.



No.	Requirement	Response	Auditor's comment
M-5-1	<p>Prior to commissioning the borefield, the proponent shall prepare a plan to mitigate losses of wetland area and wetland function ...etc. This plan shall include but not necessarily be limited to:</p> <p>(6) a commitment to modify the plan to the satisfaction of the Environmental Protection Authority, based on the results of future environmental impact monitoring; and</p> <p>(7) a commitment to modify the plan to the satisfaction of the Environmental Protection Authority, if impacts are detected which are deemed to be unacceptable by the Environmental Protection Authority.</p>	<p>Commitment met by the submission of the 1992 EMP except for items (6) and (7) which are on-going.</p>	<p>There is no information about compliance with items (6) and (7), and no comprehensive reporting of compliance with the environmental management plan of which the wetland mitigation plan forms a part. WRC should prepare a full compliance table for the environmental management plan, including the wetland mitigation plan, so compliance with the EMP can be properly audited.</p>
P-11	<p>In the event that monitoring indicates that there will be significant impacts of a nature not predicted in this evaluation or a breach of the specified criteria, then the Water Authority must undertake one or more of the following:</p> <p>(1) demonstrate to the satisfaction of the EPA that the breach of criterion is not a result of groundwater abstraction; or</p> <p>(2) satisfy the EPA that the breach of criterion is transient and not of permanent significance; or</p> <p>(3) take the relevant action as specified in Section 7 of the EPA Bulletin:</p> <p>(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</p> <p>(b) in the case of a wetland, artificially maintain the "action minima" water level (see Table 7.5); and</p> <p>(c) implement a short-term detailed monitoring program to establish the condition of agreed species in the affected area.</p>	<p>Wellfield abstraction has been modified to limit environmental impact. Private abstraction has been reduced in reporting period.</p> <p>DEP will be advised immediately if results of ongoing biological monitoring indicate that adverse impacts have occurred.</p> <p>Section 46 Review is currently being undertaken with respect to this.(refer Appendix 6).</p>	<p>The precondition for this commitment (a breach of the specified criteria) has been met. The commitment requires that WRC take one of three actions. The report suggests that option (3) has been taken. Abstraction has been modified, but WRC has not provided</p> <ul style="list-style-type: none"> • information to show that WRC has identified where changing abstraction would have a measurable effect; • evidence of significant economic hardship as a reason for not changing abstraction; or • advice from CALM that low water levels would be beneficial. <p>There is information about the supplementation of Thomsons Lake, but the target criterion was a water depth adequate for cygnet flight, not specified "action minima". There is no evidence of the implementation of a short-term detailed monitoring program or any agreement over species to be monitored. WRC should provide the additional information.</p>



No.	Requirement	Response	Auditor's comment
P35	Advise the EPA immediately upon becoming aware that specific environmental protection criteria might be breached. Details of the actions taken to avoid such a breach of criteria or, in the event of a breach occurring, its consequences, will be reported to the EPA at the earliest feasible date.	Refer to Condition M-4-4.	The commitment requires that the EPA be notified "immediately" and "at the earliest feasible date". In fact notification has occurred annually, long after WRC has become aware of some non-compliances.
I5	Licence compliance surveys and enforcement	Initiative 11 also covers the intent of this initiative. Refer to discussion in Table 7 item 8.	Table 7 item 9 refers to a "compliance monitoring program of private licences scheduled for 2004/05". This should be submitted to the EPA to ascertain whether it satisfies the requirements of initiatives 5, 11 and 15.
I11	Enforcement of licence allocations and conditions	Additional licensing staff employed in the reporting period has enabled the processing of a back-log of licence applications. Enforcement of licence allocations and conditions are considered upon renewal of licences. No new action has been taken to recover unused allocations for 'active' licenses because of the view that to do this might provide incentive for over-watering. Also, by not being used, this component of the water allocation is contributing to environmental maintenance. An updated Commission policy on Operating Strategies now provides the option of requiring such strategies in environmentally sensitive areas (ie. not just for large allocations).	Table 7 item 9 refers to a "compliance monitoring program of private licences scheduled for 2004/05". This should be submitted to the EPA to ascertain whether it satisfies the requirements of initiatives 5, 11 and 15.
I15	Intensive compliance monitoring in targeted areas	Initiative 11 also covers the intent of this initiative. Refer to discussion in Table 7 item 8.	Table 7 item 9 refers to a "compliance monitoring program of private licences scheduled for 2004/05". This should be submitted to the EPA to ascertain whether it satisfies the requirements of initiatives 5, 11 and 15.



3.2 Incomplete or inadequate responses

3.2.1 Missing elements of wetland mitigation plan

Under M-5-1, there is to be a plan to mitigate losses of wetland area and wetland function. This plan is to include, among other things:

- (6) a commitment to modify the plan to the satisfaction of the Environmental Protection Authority, based on the results of future environmental impact monitoring; and
- (7) a commitment to modify the plan to the satisfaction of the Environmental Protection Authority, if impacts are detected which are deemed to be unacceptable by the Environmental Protection Authority.

The compliance report acknowledges that these elements are ongoing, but provides no information about compliance. Both elements relate to modifying the wetland mitigation plan to the satisfaction of the EPA. The report does not specifically ask if the EPA wishes any modifications. It is likely that WRC expects the EPA to initiate any calls for the plan to be modified.

Under condition 6, the wetland mitigation plan is to be incorporated into a comprehensive environmental management plan. A comprehensive audit of compliance should include an audit of compliance with commitments made in the environmental management plan, including the wetland mitigation plan. To date this has not been possible.

In last year's audit report it was recommended that WRC prepare a compliance table for the EMP listing the commitments made and evidence of compliance. This was not done.

It is recommended that the EPA require WRC to prepare a full compliance table for the environmental management plan, including the wetland mitigation plan, so compliance with the EMP can be properly audited.

3.2.2 Incomplete reporting of action upon breach of criteria

Under commitment P11, in the event that monitoring indicates that there will be either

- significant impacts of a nature not predicted in this evaluation; or
- a breach of the specified criteria,

WRC must undertake one or more of the following:

- (1) demonstrate to the satisfaction of the EPA that the breach of criterion is not a result of groundwater abstraction; or
- (2) satisfy the EPA that the breach of criterion is transient and not of permanent significance; or
- (3) take the relevant action as specified in Section 7 of the EPA Bulletin:



- (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 (see Table 7.5); and
- (c) implement a short-term detailed monitoring program to establish the condition of agreed species in the affected area.

The precondition for this commitment (a breach of the specified criteria) has been met. The commitment requires, then, that WRC take one of the three listed actions.

In response to this commitment the report states that "Wellfield abstraction has been modified to limit environmental impact. Private abstraction has been reduced in reporting period." which suggests that option (3) has been taken. Abstraction has been modified, but WRC has not provided any information about how the quantum and location of the change in abstraction was determined, including the elements of (3)(a):

- information to show that WRC has identified where changing abstraction would have a measurable effect;
- evidence of significant economic hardship as a reason for not making further changes to abstraction; or
- advice from CALM that low water levels would be beneficial.

With regard to (3)(b) there is information about the supplementation of Thomsons Lake, but the target criterion was a water depth adequate for cygnet flight, not specified "action minima". There is no evidence of the implementation of a short-term detailed monitoring program as mentioned in (3)(c) or any agreement over species to be monitored.

It is recommended that the EPA require WRC to provide the additional information.

3.2.3 Possibly inadequate enforcement of private abstraction licences

As part of its management strategy for private abstraction WRC has committed to implementing 18 management initiatives covering matters such as partnership with local government and industry associations, sprinkler bans and encouraging efficient water use. WRC has provided a report on its work in complying with these commitments, and Appendix 2 presents this, along with audit comments on the adequacy of the responses.

Three of these initiatives relate to the enforcement of private abstraction licences:

- I-5 Licence compliance surveys and enforcement;
- I-11 Enforcement of licence allocations and conditions; and
- I-15 Intensive compliance monitoring in targeted areas.

For I-5 and I-15 there is no separate report of progress, rather the response claims that the intent of I-5 and I-15 is covered by I-11. There is also a reference to the discussion



in Table 7 item 7 of the compliance report (see Table 4 below). In fact item 7 relates to a communications strategy, not enforcement, however item 8 relates to a survey of private water use that, potentially, could act as a compliance survey for those private abstractors who hold, or should hold, licences. Also item 9 relates to intensive compliance monitoring.

To adequately address compliance with all three, there is a need to report on how licence allocations and conditions are enforced (what monitoring occurs, when field inspections are undertaken and how they are prioritized, what the enforcement policy is with regard to warnings, serving of field notices and prosecutions). In addition special reference is required to “licence compliance surveys” and “intensive compliance monitoring in targeted areas”.

The response at I-11 says of enforcement only that “Enforcement of licence allocations and conditions are considered upon renewal of licences.” If this is the only enforcement of licences it is clearly inadequate. Further information about enforcement is required, including a copy of WRC’s enforcement policy as applied to these licences.

As noted in 2.2 above, the most recent information on private water use on the Jandakot Groundwater Mound is from a 1998/99 survey. The EPA in Bulletin 1134 called for a repeat of the survey in 2004/05. It is not clear that WRC has complied with this. The item 9 response refers to a “compliance monitoring program of private licences scheduled for 2004/05”. WRC should be asked to clarify this.

It is recommended that WRC be asked to confirm whether or not the “compliance monitoring program of private licences scheduled for 2004/05” is intended to meet the EPA’s call for a survey of private water use be repeated in the 2004-05 reporting period and if not to advise the EPA when the survey will be undertaken.

As part of its response in item 8 WRC raises the issue of underused allocations and whether they should be taken back. This is a matter not specifically addressed in the conditions and commitments, though it is clearly part of managing the water resource.

WRC argues that unused allocations should not be taken back for two reasons:

- to do so might provide an incentive for over-watering; and
- by not being used, this component is contributing to environmental maintenance.

WRC is already recovering a small quantity of unused water allocations upon renewal of licences but it is not clear that this rate of recovery is sufficient. At present under WRC’s management system, for each subarea there is a private use quota. In all cases the total of licences for the subarea (the private use allocation) is less than this and the actual amount used, if the 1998/99 survey can be relied upon is less still. Despite this there is evidence of environmental stress with non-compliances and breaches of preferred minima in or adjacent to several subareas.



If the present level of use is already causing environmental stress it is misleading to suggest that a higher level of abstraction (the licensed allocation), or an even higher level (the private use quota) might “not cause unacceptable environmental impacts and enable EWPs to be achieved”. In subareas where environmental stress is already evident, a licence that offers the holder more water than the present usage level (which is contributing to that stress) is sending the wrong message. Nevertheless, the matter is complex, and no specific recommendation is made.

There is no report of specific action in response to the commitment for “Intensive compliance monitoring in targeted areas” though WRC “proposes discussions with the EPA regarding merits of an intensive monitoring program”. If the merits are “demonstrated” WRC proposes to include the Banjup subarea in its “compliance monitoring program of private licences schedules for 2004/05”.

It is recommended that the EPA meet with WRC as soon as possible to ensure that there is intensive compliance monitoring in the Banjup subarea as previously required by the EPA.

3.3 Mitigation actions

The audit report for 2002/03 made ten specific recommendations for action with regard to non-compliances or other deficiencies with WRC’s 2002/03 compliance report (column 2 of Table 4, below). The EPA invited WRC to respond to those matters and WRC made the responses listed in column 3 of Table 4.

After considering these responses, the EPA, in Bulletin 1134 endorsed all but one of the auditor’s recommendations, calling on WRC to take the required action. WRC’s actions or other responses in 2004/05 are listed in column 4

It appears that WRC regards the EPA’s calls for action as optional, or at least open to negotiation. The EPA, in auditing compliance, is acting in place of the CEO under section 48(1) of the EP Act.



Table 4. Management actions- WRC response to EPA 2002-03 annual compliance report Bulletin 1134, with Auditor's comments in *italics*

Issue No.	Recommended Action and EPA's response	WRC Response to 2002/03 audit matters	2003-04
1. Scheme abstraction in Airport subarea ⁴ .	Set action level below quota to trigger closer monitoring to ensure the quota is not exceeded Agree with Auditor's recommended action.	The WRC will require the Water Corporation to report any quotas likely to be exceeded before the event. The WRC will then examine the impact of the exceedance and direct the Corporation to take appropriate remedial action. This response will be reported to the EPA in the annual report. Any exceedances of quotas will be reported to the EPA as soon as practicable after the WRC is aware of them.	Water Corporation abstraction was below quota. <i>OK</i>
2. Rainfall data.	Report should include annual rainfall data for Jandakot airport Agree with Auditor's recommended action.	This information will be provided.	Included in this 2003-04 report. <i>OK</i>
3. Management actions in response to non-compliance s ineffective.	Develop interim new, more effective management options, to be used on 04/05 summer when there is a breach of Preferred Minima, to ensure no subsequent non-compliance Agree with Auditor's recommended action, to be included in 2004 section 46 review.	WRC now has 23 additional audit and compliance officers across the State. Their work will focus on private extraction, the main cause of non-compliances on the Jandakot Mound after climate. The PRAMS model is designed to provide a more quantitative understanding of how much impact the various factors influencing groundwater levels have both in terms of level and extent. This information will allow WRC to identify the most effective options it has available to help relieve pressure on the Mound. WRC will continue to develop options, under its jurisdiction, likely to have the greatest influence on reducing non-compliances.	Management of groundwater licensing has been more effective due to additional staff employed for the Jandakot area. There has been a significant reduction in the time for processing licenses. This has also enabled more site inspections. Total private groundwater abstraction has been reduced for the Jandakot Groundwater Area in 2003-04. <i>From the above response, which fails to mention the s46 review, it appears that the EPA's call for action was not complied with.</i>

⁴ The public quota is 90% of the licensed allocation and public use is only 83% overall so it is not a breach of a licensed allocation. To put it into context, 50ML is the amount used by 30 – 40 private bores.



Audit of Annual Compliance Report for 2003-04
Environmental Management of Groundwater Abstraction from the
Jandakot Groundwater Mound – Water and Rivers Commission

Issue No.	Recommended Action and EPA's response	WRC Response to 2002/03 audit matters	2003-04
4. No quantitative criteria set by EPA for monitoring vegetation, habitat or fauna.	<p>Develop quantitative criteria for the required status of vegetation, habitat and fauna in the s46 review</p> <p>Disagree. This may be desirable and proposed in the S46 review, but should not be stipulated at this time..</p>	WRC will investigate what quantitative criteria can be set as part of the Stage 2 report for the section 46 review.	<p>WRC will investigate what quantitative criteria can be set as part of the Stage 2 report for the section 46 review.</p> <p><i>OK</i></p>



Audit of Annual Compliance Report for 2003-04
Environmental Management of Groundwater Abstraction from the
Jandakot Groundwater Mound – Water and Rivers Commission

Issue No.	Recommended Action and EPA's response	WRC Response to 2002/03 audit matters	2003-04
5. M-4-2 - omitted information	<p>Provide the omitted information</p> <p>Agree with Auditor's recommended action, but not to delay this report. [i.e. WRC's finalized 2002/03 compliance report].</p>	<p>WRC will provide information on quantity of water abstracted for private use.</p> <p>Reporting against environmental objectives is in the Triennial report and annual progress reports (last one submitted in December 2003). As the annual report covers the period to June 2003 the December 2003 progress report should provide the information required. WRC proposes the annual report be amended to refer to section 4 of the 2003 Progress Report – Review of 2002/03 performance and outcomes so that it meets the condition.</p> <p>As noted in the auditor's report, there is a lack of quantitative criteria set for the required minimum status of vegetation, habitat and fauna. To date, WRC has relied on semi-quantitative surveys conducted by recognised experts and their opinions to determine impact on environmental condition and objectives. This has, to date, met the requirement of the condition. If the EPA now requires amendments to the condition, the WRC requests guidance on what those amended requirements might be.</p>	<p>Reported quantity of water abstracted for private use in 2003-04.</p> <p><i>The request for the specified information has not been complied with. The 2003/04 report still does not contain information on the actual or estimated quantity of water abstracted for private use. It reports on the amount allocated for private use under licences, however, the 1998/99 survey indicates that the actual use was, at that time, much less than the allocation. In addition, the many smaller users are not required to hold a licence and the report provides no estimate of their abstraction.</i></p> <p><i>Condition M-4-2 differentiates between "environmental monitoring results", "compliance with environmental criteria" and "compliance with environmental objectives", requiring that the report address all three, as well as providing a "review of the effectiveness of the criteria in meeting the environmental objectives". This information has not been provided for 2002/03 and the 2003/04 report also fails to address the "environmental objectives" or the review.</i></p>



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Environmental Management of Groundwater Abstraction from the
Jandakot Groundwater Mound – Water and Rivers Commission

Issue No.	Recommended Action and EPA's response	WRC Response to 2002/03 audit matters	2003-04
6. Non-compliance s reported annually rather than immediately.	<p>Change reporting practices to ensure breaches and predicted breaches are reported immediately</p> <p>Agree with Auditor, for prompt notification of non-compliances.</p>	<p>WRC monitors quarterly and will submit quarterly monitoring reports specifically to the EPA if there are any non-compliances.</p> <p>These quarterly monitoring data are also presented on the WRC website for public scrutiny.</p> <p>Feasible management actions tend to be long term because of the long response time between action and water level change. Therefore, WRC proposes maintaining the current regime of reporting management actions in annual, triennial and section 46 reports as they are unlikely to change on a quarterly basis.</p>	<p>The WRC has not submitted quarterly monitoring reports to the EPA. Rather, an end of summer report was submitted.</p> <p><i>WRC has not complied with the EPA's call to change to immediate reporting of breaches and predicted breaches. Breaches and anticipated breaches were not reported "immediately".. WRC should submit quarterly reports to the EPA on the results of monitoring, specifically bringing to the EPA's attention any non-compliances or breaches of preferred minima that the monitoring has revealed, and any short-term management actions proposed in response.</i></p>
7. No action on communication strategy to influence private abstraction.	<p>Complete development for the strategy by 30 June 2004</p> <p>Agree with auditor's recommended action, to be included in 2004 section 46 review.</p>	<p>WRC is currently developing a communication strategy as part of its <i>Private Use Strategy</i> in the Stage 1 report for the section 46 review. This will be submitted as part of that report.</p>	<p>Most of the WRC's communication efforts regarding private abstraction have been focused on the Gnangara Mound. The Kwinana Peel Regional Office has focused on improving efficiencies in the licensing assessment process including groundwater applications from the Jandakot Mound.</p> <p>OK.</p>



Issue No.	Recommended Action and EPA's response	WRC Response to 2002/03 audit matters	2003-04
8. Existing knowledge of private use based on 1998/99 survey.	<p>Repeat the survey in 2004/05</p> <p>Agree with Auditor, for up-to-date information on groundwater use to be available.</p>	<p>Although there are some merits in obtaining current private water use statistics in Jandakot, the value of this information in achieving environmental benefit needs consideration. The previous survey determined that there was more underutilisation of allocations than overallocation. There is no environmental gain in taking back unused allocations as in a sense the unused water is already going to the environment (ie. not being drawn from the aquifer). A detailed study of the likely impact of private abstraction on environmentally sensitive areas may be of more value than intensive water use surveys. Use of the updated PRAMS computer model is likely to be beneficial in assessing such impact. In areas where modelling suggests detrimental impact, ground truthing by select surveys of private use may be required.</p> <p>Discussions with the EPA on surveys versus other approaches (eg. PRAMS modelling) in the management of private abstraction is proposed.</p>	<p>Refer to WRC Comments (left).</p> <p>A 'Local Area' computer model that focuses on potential impacts to wetlands is being developed by the Commission and will be available in 2005 for localised areas of the Gnangara and Jandakot Mounds.</p> <p><i>WRC has failed to comply with the EPA's call for the survey to be repeated. WRC's proposal for "discussions" should have been made immediately on release of Bulletin 1134, not months later. Since WRC considers public abstraction as second to climate in causing non-compliances there is a clear need to know whether the pattern of water use has changed with the drier climate. In the 2003/04 Gnangara compliance report WRC states "It is also important to measure actual use to see whether it is use or allocations that need to be reduced first." This comment is also relevant for Jandakot.</i></p> <p><i>The question of whether or not to take back unused water allocations is a complex one on which the EPA may wish to offer comment.</i></p>



Audit of Annual Compliance Report for 2003-04
Environmental Management of Groundwater Abstraction from the
Jandakot Groundwater Mound – Water and Rivers Commission

Issue No.	Recommended Action and EPA's response	WRC Response to 2002/03 audit matters	2003-04
9. No action on commitment for intensive compliance monitoring of private licences.	<p>Intensive monitoring of Banjup sub-area in summer of 2004/05</p> <p>Agree with Auditor (see 8 above) and include portions of Airport, Wright and Success subareas in proximity to breach sites.</p>	<p>Banjup sub-area covers Airport, Wright and Success. Wright and Success areas have no non-compliances so it is unclear why they have been included.</p> <p>WRC proposes discussions with the EPA regarding merits of an intensive monitoring program. If demonstrated, WRC will include the Banjup sub-area in its compliance monitoring program of private licences scheduled for 2004/05.</p>	<p>Refer to WRC Comments (left).</p> <p><i>WRC has failed to comply with the EPA's call for intensive monitoring. WRC's proposal for "discussions" should have been made immediately on release of Bulletin 1134, not months later. Report Tables 4 and 5 list "groundwater area/subarea(s)". From the list and from Figure 1 of the report, which shows the boundaries, it is not possible to tell which are "areas" and which "subareas".</i></p>
10. No action on commitment to introduce water efficiency measures.	<p>Metering of water use as part of the above monitoring, as a pilot study for wider use of metering</p> <p>Agree with Auditor that metering requirements should be applied to licences greater than 5,000kL per annum.</p>	<p>WRC is supporting WaterWise on the Farm programs (to encourage more efficient water use by growers) on the Gnangara Mound area. It is also developing a policy on water conservation plans with the requirement for licensees to introduce such plans as part of their licence requirements. More details on these will be provided in the <i>Private Use Strategy</i> for Jandakot and Gnangara Mounds, being developed as part of the Stage 1 report for the section 46 review.</p> <p>WRC is currently developing a policy on the Measurement of Water Use (metering). Metering is an indirect tool for obtaining water efficiency as it indicates the amount of water a licensee uses, not the degree of efficiency they have achieved. Metering is being targeted in key areas where private use is likely to be having the greatest impact on sensitive environments such as Wanneroo, to achieve optimal return on effort.</p>	<p>Measurement of use (metering) project currently focussed on Gnangara Mound. Lessons learned will be incorporated in a Measurement of Use Policy to be developed by the WRC and will have application the Jandakot Groundwater Area.</p> <p><i>WRC has failed to demonstrate compliance with the EPA's call for all licences greater than 5,000kL per annum to impose a requirement for metering.</i></p> <p><i>Metering, while indirectly related to efficiency of water use is essential for effective management of the water resource and enforcement of licence requirements. It also potentially has a role in changing attitudes about the perceived value of the water resource.</i></p>

Shading indicates non-compliance (2002-03)



4. Significance of the compliance results

Compliance with the Ministerial conditions is a statutory requirement and failure to comply is a Tier 1 offence under the Environmental Protection Act 1986. Consequently, a failure to comply with any of the conditions is a significant matter. However, the purpose of the conditions is to protect the environment. How significant are the identified non-compliances in their effect on the environment?

The Report fails to provide an assessment of compliance with the environmental objectives or a review of the effectiveness of the environmental criteria in meeting the environmental objectives. This makes it exceedingly difficult to assess the effect of the non-compliances on the environment.

In some instances there may be a requirement for the maintenance of a certain water level in a lake or wetland for visual amenity purposes but, in general, the water level criteria that have been set are intended to protect vegetation, habitat and fauna on, in and near the wetlands.

There are no set quantitative criteria for the required minimum status of vegetation though the possibility of developing such criteria is to be addressed in the section 46 review. An expert study by Loomes et al (2003), quoted in the Report, has concluded that, so far, there is “no significant risk” of changes to vegetation species, though there has been a decline in condition of some wetland dependant shrub and tree species and an increase in weediness at several wetlands.

A falling water level could mean that too much water is being taken, and that allocations should be cut back. Abstraction monitoring by the Water Corporation and the 1999 survey of private bore owners have shown that use is below the allocation. Nevertheless there have been significant non-compliances with the minimum water levels.

If abstraction of amounts well below the “quota” or “allocation” can lead to non-compliances, it would follow that the method of setting quotas and allocations appears to be flawed. To continue to refer to quotas and allocations that are never likely to be achievable in the foreseeable future, given the prevailing climatic conditions, appears to be pointless and misleading.



Appendix 1 – Compliance Audit Table - with Auditor's Comments

A. Ministerial Conditions (Ministerial Statement No.196- Environmental conditions Jandakot Groundwater Scheme, Stage 2)

Code	Description	Responsibility	Compliance assessment/ Mitigation actions	Auditor Comments <i>[Italic = Response inadequate]</i>
M-1	In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the Public Environmental Review and included as Appendix 1 in Environmental Protection Authority Bulletin 587.	WRC and Utility	Refer to conditions and commitments below.	OK
M-2	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. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material 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.	WRC and Utility	No changes sought during the reporting period.	OK
M-3-1	Prior to 1 December each year, the proponent shall determine anticipated public water supply abstraction limits and shall advise the Environmental Protection Authority of those limits, the period to which the limits apply and details of the actual and anticipated environmental effects of abstraction.	WRC	EPA notified through submission of Section 46 Progress Report 2003, Section 6.2.1.	OK
M-3-2	The proponent shall operate within the limits and the period specified in condition 3-1.	WRC (Utility via licence conditions)	No quota was exceeded and in fact abstraction was less than previous reporting period (refer Section 2.3.	OK



Code	Description	Responsibility	Compliance assessment/ Mitigation actions	Auditor Comments [Italic = Response inadequate]
M-3-3	The proponent shall inform the Environmental Protection Authority immediately of any proposed change to the anticipated abstraction limit and period. Changes made after 1 December each year shall be to the satisfaction of the Environmental Protection Authority.	WRC	No changes proposed.	OK
M-4-1	Prior to commissioning the borefield, the proponent shall prepare a detailed environmental monitoring plan, to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management. This monitoring plan shall include, but not be limited to monitoring the following: vegetation; fauna; habitat; and groundwater levels.		Cleared (conditional) by the submission of the 1992 EMP. The Commission seeks clearance of Condition M4-1.	The condition has already been cleared. The Auditor is unaware of the conditions of that clearance, but if they are adequately addressed in other conditions or commitments it may be possible to delete this condition from the table for on-going reporting.
M-4-2	The proponent shall submit brief annual and more detailed triennial reports addressing, but not limited to the following: (1) the quantity of water abstracted for public use and estimated quantity for private use; (2) environmental monitoring results; (3) compliance with the environmental criteria and the commitments; (4) compliance with the environmental objectives; (5) a review of the effectiveness of the criteria in meeting the environmental objectives; and (6) any proposed changes to management, monitoring or mitigation of wetland impacts. to the satisfaction of the Environmental Protection Authority.	WRC	Condition met by the preparation of this report to EPA.	<i>This Report does not comply with several of the listed requirements.</i> (1) <i>There is no estimate of the quantity for private use</i> (2) <i>OK</i> (3) <i>OK, except for inadequacies listed here.</i> (4) <i>There is no reporting against "environmental objectives".</i> (5) <i>There is no review of the effectiveness of the criteria in meeting the objectives.</i> (6) <i>The Audit Report highlights that the Report is inadequate in its proposals for change to management and mitigation.</i> Since the Report is to be to the satisfaction of the EPA it is recommended that the EPA require it to be modified to rectify the inadequacies before expressing its "satisfaction" with the Report.



Code	Description	Responsibility	Compliance assessment/ Mitigation actions	Auditor Comments <i>[Italic = Response inadequate]</i>
M-4-3	The proponent shall submit the reports required by condition 4-2 to the Environmental Protection Authority and shall make them publicly available. The annual reports shall be submitted by 1 December and the triennial reports by 1 March, following commencement of the operation of the scheme.	WRC	Reports are publicly available from the Commissions library and copies sent to key stakeholders (eg Water Corporation). Report to be put on Commission's internet.	OK.
M-4-4	The proponent shall report any breach or anticipated breach of the environmental criteria or environmental objectives to the Environmental Protection Authority immediately.	WRC	Although not reported 'immediately', expected non-compliances were given in 2002-03 annual report and actual non-compliances reported in 'end of summer' compliance report to the EPA.	<i>Breaches and anticipated breaches were not reported "immediately".</i>
M-4-5	If impacts are detected which are deemed to be unacceptable by the Environmental Protection Authority, the proponent shall modify subarea water allocations and abstraction strategies for the Jandakot Public Water Supply Area to the satisfaction of the Environmental Protection Authority.	WRC	Groundwater allocations- both for public water supply and private use from the superficial aquifer has been reduced in 2003-04. Demand for new allocations are not expected to be significant for either purpose in keeping with the Commission's precautionary management approach.	<i>As the breaches were not reported in a timely fashion the EPA was not given the opportunity of determining whether or not it found the impacts "unacceptable" nor whether or not the subarea allocations should be modified. This audit report has some suggestions for changed subarea allocations for the EPA's consideration.</i>



Code	Description	Responsibility	Compliance assessment/ Mitigation actions	Auditor Comments <i>[Italic = Response inadequate]</i>
M-5-1	<p>Prior to commissioning the borefield, the proponent shall prepare a plan to mitigate losses of wetland area and wetland function that are likely to occur as a consequence of the development and operation of the borefield, based initially on the anticipated impacts associated with the likely future landuse/abstraction scenario for the area, to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority. This plan shall include but not necessarily be limited to:</p> <p>(1) a description of the processes used for identifying the likely wetland impacts;</p> <p>(2) the identification of individual wetlands that will be affected, quantification of the likely changes in water level expected to occur, and the likely impacts of these changes on the areas and functions of the wetlands;</p> <p>(3) identification of wetlands that are likely to be dry on December 1 each year as a result of abstraction (i.e. the area of free water is less than 1 000 square metres or less than 20 percent of the wetland area);</p> <p>(4) the existing importance of the areas that will be affected (e.g. rare and endangered flora and fauna present, number of breeding waterbird species);</p> <p>(5) a strategy to mitigate losses of wetland area and functions, including details of compensatory action. This should include details of the strategy to mitigate against impacts on Twin Bartram and Solomon Road Swamps, using all reasonable and practicable means;</p> <p>(6) a commitment to modify the plan to the satisfaction of the Environmental Protection Authority, based on the results of future environmental impact monitoring; and</p> <p>(7) a commitment to modify the plan to the satisfaction of the Environmental Protection Authority, if impacts are detected which are deemed to be unacceptable by the Environmental Protection Authority.</p>	WRC – partial delegation to Utility via allocation licence.	Commitment met by the submission of the 1992 EMP except for items (6) and (7) which are on-going.	<i>There is no information about compliance with items (6) and (7). It is likely that they are being addressed in the section 46 review, but this needs confirmation.</i>



Code	Description	Responsibility	Compliance assessment/ Mitigation actions	Auditor Comments <i>[Italic = Response inadequate]</i>
M-5-2	The plan required by condition 5-1 shall be made available for public comment.	Cleared	Condition met - public comments were invited on the EMP.	OK
M-5-3	Subsequent to conditions 5-1 and 5-2, the proponent shall commence implementation of the approved wetland management plan within two years of commissioning the borefield, to the satisfaction of the Environmental Protection Authority	WRC	The borefield has been commissioned and a wetland management program has commenced as discussed in Section 3 and Appendix 4. The Commission seeks clearance of Condition M-5-3.	<i>For the condition to be cleared, WRC needs to provide evidence of when the borefield was commissioned, when implementation of the wetland monitoring plan commenced and when the wetland monitoring plan was approved by the EPA..</i>
M-6-1	Prior to the commissioning of the borefield, the proponent shall prepare a comprehensive environmental management program to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority. This program shall reflect the anticipated future landuse/abstraction scenario for the area and shall include, but not necessarily be limited to: (1) an environmental monitoring plan as required by condition 4; and (2) a wetland management plan as required by condition 5.	Cleared (conditional) in EMP	Condition met by submission of the EMP.	OK.
M-6-2	The proponent shall implement the comprehensive environmental management program required by condition 6-1, to the satisfaction of the Environmental Protection Authority.	WRC (with delegation to the Utility).	Ongoing commitment. This report details the implementation for the current review period (Tables 2, 6, 7, 9,10; Appendix 1, 2, 4.	<i>As noted in last year's audit, the EMP has many elements and commitments. A separate table reporting on implementation of the EMP is needed for effective, transparent auditing.</i>
M-7-1	At least six months prior to decommissioning the borefield, the proponent shall prepare a decommissioning and rehabilitation plan, to the satisfaction of the Environmental Protection Authority.	Utility	Not relevant at this time.	OK
M-7-2	The proponent shall implement the decommissioning and rehabilitation plan required by condition 7-1, to the satisfaction of the Environmental Protection Authority.	Utility	Not relevant at this time.	OK



Code	Description	Responsibility	Compliance assessment/ Mitigation actions	Auditor Comments <i>[Italic = Response inadequate]</i>
M-8	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.	WRC/Utility. See Reallocation Schedule for amended conditions	No action in this reporting period.	OK.
M-9	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 by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority.)	WRC/Utility	Not relevant. Proposal has been implemented. The Commission seeks clearance of Condition M-9.	Agree, the condition can be cleared.



B. Proponent Commitments

Code	Description	Responsibility	Compliance assessment/Mitigation actions	Auditor Comments <i>[Italic = Response deficient]</i>
P-1	To prepare a Management and Monitoring Program, satisfactory to the EPA, prior to commissioning of the Stage 2 Scheme.	WRC	Commitment met by submission of the EMP.	OK
P-2	To ensure that groundwater abstraction satisfies the environmental criteria presented in this PER. To mitigate impacts associated with construction of the Stage 2 Scheme by the Water Authority.	WRC (delegation to Utility via allocation licence)	Stage 2 Scheme has been constructed. The Commission seeks clearance of Commitment P-2.	The first two lines are a general heading, consistent with the use of headings before commitments 13-18 and 19 onwards. The second sentence is the commitment. When WRC has provided evidence that construction impacts were mitigated, the commitment can be cleared.
P-3	Clearing of vegetation at bore sites will be restricted to the area of the enclosure (approximately 25 metres square) in non-urban areas, and the immediate area of the bore head in the case of bores located in public open space in urban areas.	Utility (completed)	No action required in reporting period.	OK
P-4	Where practical, the collector main will be located within existing road reserves.	Utility (completed)	Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-4.	When WRC has provided evidence that commitment was complied with, it can be cleared.
P-5	On Crown Land, top-soil from the collector main trench will be separately stripped, stock-piled and re-spread on completion of pipe laying.	Utility (completed)	Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-5.	When WRC has provided evidence that commitment was complied with, it can be cleared.
P-6	On private land, the collector main route will be left in a state agreed to by the land owner/occupier.	Utility (completed)	Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-6.	When WRC has provided evidence that commitment was complied with, it can be cleared.
P-7	Where feasible, bore site compounds will be used for the storage of materials and for contractors' facilities, in preference to the establishment of separate short-term sites.		Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-7.	When WRC has provided evidence that commitment was complied with, it can be cleared.
P-8	Where temporary construction sites are established, the area will be returned either to its original state, in the case of Crown Land, or to a state agreed to by the land owner/occupier.	Utility (completed)	Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-8.	When WRC has provided evidence that commitment was complied with, it can be cleared.



Code	Description	Responsibility	Compliance assessment/Mitigation actions	Auditor Comments <i>[Italic = Response deficient]</i>
P-9	All work on extensions to and modifications of the Jandakot Treatment Plant will be undertaken on existing cleared areas within the boundary of the Plant site, and	Utility (completed)	On-going commitment for Utility.	OK, but the word “(completed)” in column 3 is incorrect.
P-10	All workers involved in project construction in natural areas will be instructed on environmental protection procedures before work proceeds.	Utility (completed)	Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-10.	When WRC has provided evidence that commitment was complied with, it can be cleared.
P-11	In the event that monitoring indicates that there will be significant impacts of a nature not predicted in this evaluation or a breach of the specified criteria, then the Water Authority must undertake one or more of the following: (1) demonstrate to the satisfaction of the EPA that the breach of criterion is not a result of groundwater abstraction; or (2) satisfy the EPA that the breach of criterion is transient and not of permanent significance; or (3) take the relevant action as specified in Section 7 of the EPA Bulletin: (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 (see Table 7.5); and (c) implement a short-term detailed monitoring program to establish the condition of agreed species in the affected area.	WRC	Wellfield abstraction has been modified to limit environmental impact. Private abstraction has been reduced in reporting period. DEP will be advised immediately if results of ongoing biological monitoring indicate that adverse impacts have occurred. Section 46 Review is currently being undertaken with respect to this.(refer Appendix 6).	<i>The precondition for this commitment (a breach of the specified criteria) has been met. The commitment requires that WRC take one of three actions. The report suggests that option (3) has been taken. Abstraction has been modified, but WRC has not provided</i> <ul style="list-style-type: none"> • <i>information to show that WRC has identified where changing abstraction would have a measurable effect;</i> • <i>evidence of significant economic hardship as a reason for not changing abstraction; or</i> • <i>advice from CALM that low water levels would be beneficial.</i> <p><i>There is information about the supplementation of Thomsons Lake, but the target criterion was a water depth adequate for cygnet flight, not specified "action minima". There is no evidence of the implementation of a short-term detailed monitoring program or any agreement over species to be monitored.</i></p>



Code	Description	Responsibility	Compliance assessm't/Mitigation actions	Auditor Comments <i>[Italic = Response deficient]</i>
P-12	To modify the chlorine withdrawal system to a liquid process prior to commissioning of the Stage 2 line of bores.	Utility	Not relevant. Proposal has been implemented. The Commission seeks clearance of Commitment P-12.	When WRC has provided evidence that commitment was complied with, it can be cleared.
	To operate the treatment plant with established buffer zones.	Utility	On-going commitment for Utility.	OK
P-13	The personal risk hazard of fatality associated with chlorine release is less than one in a million in any year; and	Utility	On-going commitment for Utility.	OK
P-14	Hydrogen sulphide levels attributable to plant operation will be below noticeable levels of 5 parts per billion	Utility	On-going commitment for Utility.	OK
P-15	Regularly reviewing 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.	WRC	Bulk allocation (total allocation limit/quota) is below the allocation limit. Application of the PRAMS model (2005) will better define sustainable limits.	<i>The response does not provide evidence that the bulk allocations have been reviewed with regard to sustainable yield, as required.</i>
P-16	Restricting 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 subareas.	WRC	Commitment met (refer Table 5).	OK
P-17	Investigating and implementing efficient mechanisms for groundwater allocation.	WRC	On-going. Being addressed in Statewide planning and policy development and initiatives recommended in State Water Strategy (eg. metering of use).	OK
P-18	Conduct pump tests on Stage 2 bores and liaise with nearby private users of groundwater prior to commissioning to assess the impact of Stage 2 bores on private bores.	Completed	Commitment met. The Commission seeks clearance of Commitment P-18.	When WRC has provided evidence that commitment was complied with, it can be cleared.
	To protect the groundwater resource by active participation in:			
P-19	The development of Environmental Protection Policies to protect groundwater.	WRC/Utility	On-going.	OK



Code	Description	Responsibility	Compliance assessm't/Mitigation actions	Auditor Comments <i>[Italic = Response deficient]</i>
P-20	The review of Regional Plans proposed by the Department of Planning and Infrastructure, Local Government Town Planning Schemes, and re-zoning and development applications.	WRC	Commitment met. WRC continues to provide advice to Department of Planning and Infrastructure on planning and development proposals affecting the Jandakot Mound.	OK
P-21	Review of development submissions to EPA.	WRC	WRC provides advice on development proposals to the EPA upon request.	OK
P-22	To work with the Department of Planning and Infrastructure to prepare an integrated Landuse and Water Management Strategy for the Jandakot Mound.	Cleared	Commitment cleared. The Commission seeks clearance of Commitment P-22.	The table entry states that this has already been cleared. In that case, there is no need for reporting. A final entry in the table could list those conditions and commitments that have been cleared and have therefore been deleted from the table.
P-23	To 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 Authority's supply system will also be pursued.	WRC/Utility	This is primarily a Utility responsibility. The Commission has input to demand management in supporting the sprinkler restrictions and regular liaison with industry (eg. water use efficiency programs- WaterWise on the Farm, metering of use).	OK
P-24	To actively participate in integrated management of the Jandakot catchment.	WRC/Utility	Commitment ongoing. The Commission actively engages in integrated catchment activities through its role as water resource manager of the area (licensing function, ecological monitoring programs).	OK
P-25	To review the management criteria and strategies, with the agreement of the EPA, as knowledge of the Jandakot environment and its interaction with groundwater improves.	WRC	The Section 46 Review (Stage 1 to be reported to the EPA in late 2004) is currently being undertaken in this regard.	OK. Has the report now (January 2005) been submitted?
P-27	To monitor water levels in groundwater monitoring bores and North, Bibra, Yangebup, Kogolup, Thomsons, Forrestdale Lakes. The Spectacles and Twin Bartram Swamp as well as some other small wetlands.	Utility	Commitment met (Table 8,9) and ongoing.	OK
P-28	To monitor vegetation transects on a triennial basis to establish significant changes in the condition, floristics or structure of vegetation communities.	WRC	Detailed in triennial reports (next compliance report will be a triennial one for 2002- 2005).	OK
P-29	To continue to fund the research projects 10.6.3 listed in Appendix 2 of the EPA Bulletin for the duration of the studies.	Cleared	Commitment cleared.	Delete. A final entry in the table could list those conditions and commitments that have been cleared and have therefore been deleted from the table.



Code	Description	Responsibility	Compliance assessm't/Mitigation actions	Auditor Comments <i>[Italic = Response deficient]</i>
P-30	To use aerial photographs on a triennial basis to detect habitat shifts in North, Bibra, Yangebup, Kogolup, Thomsons and Forrestdale Lakes.	WRC	Detailed in triennial reports. There may be limited value for use of aerial photos as a diagnostic tool- issue needs to be addressed with the EPA prior to next reporting period- a triennial report (same issue for Gngara Mound).	OK, but if a change of commitment is proposed, that should be dealt with in the section 46 review.
P-31	To develop a fauna monitoring program, prior to the commissioning of the Stage 2 Scheme, which will focus on: - waterbird species diversity and breeding success, and - number of families of aquatic invertebrate and at infrequent intervals, species richness.	WRC	Commitment met. Program implemented. The Commission seeks clearance of Commitment P-31.	Agree, the program has been developed, and is now being implemented. The condition can be cleared.
P-32	To hold meetings at least annually with a Jandakot Consultative Committee which will be established in consultation with the EPA. This Committee will be informed on the scheme's operation and will provide feed-back to the Water Authority.	WRC	Commitment met. Meetings held with the Jandakot Water Management Community Consultative Committee in September 2003 and March 2004.	OK
P-33	To continue to monitor community response as reported by the media and maintain the current practice of public accessibility of Water Authority officers. Upon request and adequate notice, officers will address community groups on issues associated with groundwater management.	WRC	Commitment met. Commission addressed various community groups including the Jandakot Water Management Community Consultative Committee and Beeliar Community Group.	OK
P-34	After the commissioning of the Stage 2 Scheme, written reports to the EPA will consist of: (1) annual reports addressing compliance with the environmental protection criteria, and (2) triennial reports including, in addition to a review of compliance with the criteria, an evaluation of the effectiveness of the criteria in meeting the environmental protection objectives.	WRC	Commitment met with this report.	OK



Code	Description	Responsibility	Compliance assessm't/Mitigation actions	Auditor Comments <i>[Italic = Response deficient]</i>
P-35	To advise the EPA immediately upon becoming aware that specific environmental protection criteria might be breached. Details of the actions taken to avoid such a breach of criteria or, in the event of a breach occurring, its consequences, will be reported to the EPA at the earliest feasible date.	WRC	Refer to Condition M-4-4.	The commitment requires that the EPA be notified "immediately" and "at the earliest feasible date". In fact notification has occurred annually, long after the proponent has become aware of some non-compliances.
P-36	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.	WRC/Utility	Cleared in 1993 triennial report. The Commission seeks clearance of Commitment P-36.	Delete. A final entry in the table could list those conditions and commitments that have been cleared and have therefore been deleted from the table.
P-37	Undertake a study of Twin Bartram Swamp to consider the feasibility and effectiveness of artificial maintenance of water levels.	WRC/Utility	Cleared in 1993 triennial report. The Commission seeks clearance of Commitment P-37.	Delete. A final entry in the table could list those conditions and commitments that have been cleared and have therefore been deleted from the table.



Appendix 2 – Progress on the 18 Private Abstraction Management Initiatives - with Auditor's Comments

CO-OPERATIVE MANAGEMENT INITIATIVES SHORT TERM (to June 2002)

Initiative	Action taken	Auditor's Comments
1. Direct mail letters and information to users requesting voluntary reductions in use	No action. Mail- out had been done in 2001-02. Community is well aware of need to conserve water with the worsening drought.	OK
2. Property visits	Property visits were done as required with new and renewed licences. Properties in close proximity to sensitive areas were surveyed in 2001-02 to ensure that they complied with their licence conditions.	OK
3. Work in partnership with LGAs to raise awareness of environmental constraints and modify landuse practices linked to private abstraction	Issues related to raising awareness of environmental constraints and modifying private groundwater use were discussed at the Jandakot Community Consultative Committee meetings held in 2003-04. Committee members include City of Armadale, City of Kwinana and City of Cockburn. The Commission is currently working with LGAs Statewide in response to the requirement of all Government agencies with licensed groundwater allocations to comply with daytime sprinkler bans. The Commission has recently formed a water policy discussion group involving local government to enhance cooperation and identify and address issues related to water resource management and use. Membership includes representatives from Perth metropolitan regional councils, the International Council for Environmental Initiatives and the Education Department.	OK
4. Work in partnership with the Irrigation Association of Australia and growers to reduce water use through provision of expert advice on water use efficiency.	The Commission is represented on the Executive Committee of the Irrigation Association of Australia, WA Branch. The Commission is currently engaged in water use efficiency improvements on the Gnangara Mound (WaterWise on the Farm). It is envisioned that the WaterWise program will be promoted in other areas in the future. Refer to discussion Table 7 item 10. Through the Commission's involvement in the State Water Strategy Irrigation Review, recommendations will be made to government that include initiatives to reduce water use in irrigation.	OK



**CO-OPERATIVE MANAGEMENT INITIATIVES
 MEDIUM and LONG- TERM (1-2 years and more)**

Initiative	Action taken	Auditor's Comments
5. Licence compliance surveys and enforcement	Initiative 11 also covers the intent of this initiative. Refer to discussion in Table 7 item 8.	<i>There is no evidence in the report of any licence compliance surveys. It appears from Table 7 item 3 column 4 that enforcement is through site visits, but it is unclear whether these are limited to those associated with licence renewals.</i>
6. Development of a long term communication strategy to provide ongoing advice and education	No new action from last compliance report due to lack of resources. Refer to discussion Table 7 item 7.	Last year's audit suggested the development of this strategy required few resources and should have been completed. EPA, in Bulletin 1134, suggested that it could be included in the 2004 section 46 report. Item 7 of Table 7 indicates that the Stage 1 report of the section 46 review includes a communication strategy as part of its Private Use Strategy. This would satisfy this commitment.
7. Industry group liaison	Meetings have been held with a range of industry and government groups at a variety of levels. This includes liaison with such groups as the Turf and Landscape Industry Association, Parks and Leisure Australia, WA Local Government Association, Irrigation Association of Australia, and the International Council for Local Environmental Initiatives. The Commission is a key driver of many of the WA State Water Strategy initiatives many involving industry. The Commission is also an active participant in the State Water Strategy Irrigation Review.	OK
8. Investigate opportunities to modify local drainage design to minimise impact upon water table (Jandakot only)	Refer to discussion in Section 4.1.	OK



STRUCTURAL MANAGEMENT INITIATIVES
SHORT TERM (to June 2002)

Initiative	Action taken	Auditor's Comments
9. Refusing applications for allocations in under-allocated subareas where analysis shows resulting allocations will exacerbate criteria breaches	No license applications were received that indicated granting allocations would exacerbate criteria breaches.	<i>In the Airport subarea there was non-compliance at monitoring well JM45 and breaches of preferred minimum levels at JM7 and JM8. Despite this, the private use allocation for the subarea increased by 27 Megalitres. Prima facie this appears inconsistent with the response provided.</i>
10. Daytime sprinkler bans on domestic wells	Regulations remain in- force that ban the use of domestic wells (and scheme supply) for irrigation during prescribed hours. Currently garden sprinklers can not be used between 9:00 am and 6:00 pm.	OK
11. Enforcement of licence allocations and conditions	Additional licensing staff employed in the reporting period has enabled the processing of a back-log of licence applications. Enforcement of licence allocations and conditions are considered upon renewal of licences. No new action has been taken to recover unused allocations for 'active' licenses because of the view that to do this might provide incentive for over- watering. Also, by not being used, this component of the water allocation is contributing to environmental maintenance. An updated Commission policy on Operating Strategies now provides the option of requiring such strategies in environmentally sensitive areas (ie. not just for large allocations).	<i>Table 7 item 9 refers to a "compliance monitoring program of private licences scheduled for 2004/05". This should be submitted to the EPA to ascertain whether it satisfies the requirements of initiatives 11 and 15.</i>



STRUCTURAL MANAGEMENT INITIATIVES
MEDIUM and LONG- TERM (1-2 years and more)

Initiative	Action taken	Auditor's Comments
12. Directions to reduce use by imposing restrictions, applying capacity sharing and recognising relative beneficial use of water resource.	No new action. The Commission is still considering the viability of capacity sharing options. It is anticipated that initiatives proposed in the WA State Water Strategy (eg. Statewide Irrigation Review) will have input to issues such as capacity sharing and beneficial use of water resources.	OK
13. Promoting and implementing water use efficiency measures through licence conditions in cooperation with AgWA	The Commission is completing a policy document concerning 'water conservation plans'. As recommended in the WA State Water Strategy, such plans are to be a requirement for issue of a water resource licence. The licence will contain conditions that relate to components of the water conservation plan. It is expected that the implementation of water conservation plans will occur in 2005.	OK
14. Model and review sustainable private allocation limits and reduce where required.	The PRAMS model has been further refined in 2004 and application to the review of sustainable private allocation limits will progress in 2004/05.	OK
15. Intensive compliance monitoring in targeted areas	Initiative 11 also covers the intent of this initiative. Refer to discussion in Table 7 item 8.	<i>This does not duplicate 11, it relates to the medium and long term. Nevertheless, the comment above about submitting to EPA the "compliance monitoring program of private licences scheduled for 2004/05" applies.</i>
16. Intensive Management zones (wetlands)	No new action. This option is yet to be considered in any detail for the Jandakot area although it is currently being considered for the Gnangara Mound.	OK
17. Land use zonings to limit water use (Planning Control Areas)	No new action. This option is yet to be considered in any detail.	OK



Initiative	Action taken	Auditor's Comments
18. State Planning mechanisms (EPPs, SPPs)	<p>State Planning Policies (i.e. The Peel-Harvey Coastal Plain Catchment, Jandakot Groundwater Protection Policy and the Draft SPP Public Drinking Water Source Policy) set out planning controls which may prohibit certain polluting landuses within the Jandakot Mound area. The policies ensure that landuse changes likely to cause environmental damage are referred to Local or/and State Government for approval. The benefit of this is that as well as restricting polluting landuses, it may also restrict large water users (ie turf farms, market gardens, nurseries, intensive agriculture, etc.).The policies are also guiding tools to also look at landuses which may impact on recharge of the aquifer and the quantity of water for abstraction. The Department for Planning and Infrastructure (DPI) have released for comment until 1 December 2004 the <i>Statement of Planning Policy 2.9 – Water Resources (WRSP)</i>. The SPP addresses water resource considerations in land use planning. The main issues addressed by the policy are: (1)the management of waterways and wetlands in relation to the planning and development of land; (2) recognition of the value of water for consumption and the associated planning for its protection and allocation; and (3) water sensitive urban design.</p>	<p>OK, but the comment made in last year's audit remains relevant – “such controls are only as good as their enforcement, which may be adequate for planning purposes but not for water conservation purposes. That is why effective action under initiatives 11 and 15 is needed”.</p>



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