

**Inter Agency Agreement
The Groundwater Replenishment
Trial**

Department of Water

And

Department of Environment and Conservation

And

Department of Health

And

Water Corporation

This Inter Agency Agreement

is made on 20th March 2007 between the following parties:

1. **Department of Water**, of 168 St Georges Terrace, Perth, Western Australia
2. **Department of Environment and Conservation**, of 168 St Georges Terrace, Perth, Western Australia
3. **Department of Health**, of 189 Royal Street, East Perth, Western Australia
4. **Water Corporation**, a statutory body corporate established under the Water Corporation Act 1995, of 629 Newcastle Street, Leederville, Western Australia

All collectively referred to as the **Participants**.

Recitals

- A. The Department of Water, as the entity performing the administrative functions of the Water and Rivers Commissioner, is responsible for providing advice to the government and the community on the quantity, quality, use and availability of the State's water resources.
- B. The Department of Environment and Conservation provides leadership on key environmental and conservation issues in Western Australia, including protection, conservation, sustainable use and enjoyment of our natural environment.
- C. The Department of Health is responsible for assessing and approving all water recycling schemes where human contact is likely to occur.
- D. The Water Corporation provides water services across Western Australia.
- E. The participants have a common intention to investigate whether water sourced from reverse osmosis treated wastewater can provide a potential future public drinking water source for Perth, by way of managed aquifer recharge. The Water Corporation refer to this type of managed aquifer recharge as "Groundwater Replenishment" and the trial will be referred to as the Groundwater Replenishment Trial.

- F. The Groundwater Replenishment Trial will be carried out at the Beenyup Wastewater Treatment Plant, in a Priority 3 Public Drinking Water Source Area.
- G. The Groundwater Replenishment Trial has the following objectives:
1. To treat approximately 1.5GL/y of wastewater by microfiltration, reverse osmosis and possibly advanced oxidation.
 2. To inject the highly treated water into the confined Leederville aquifer at approximately 200m depth.
 3. To carry out detailed monitoring and characterisation of the water produced by the plant and in the aquifer.
- H. The Water Corporation undertakes the Groundwater Replenishment Trial with the intention of implementing a full scale Groundwater Replenishment system to deliver 25-35GL/y of public drinking water by 2015.
- I. A regulatory framework to assess managed aquifer recharge systems for the supply of drinking water does not currently exist and Government policy on the environmental and health issues is currently under development. The participants recognise that the results of the Groundwater Replenishment Trial may inform Government policy on the environmental and health issues associated with groundwater replenishment and assist with the development of a regulation framework.

This Inter Agency Agreement defines the roles and responsibilities of the Participants with respect to the Groundwater Replenishment Trial.

This Inter Agency Agreement establishes:

That in consideration of, among other things, the mutual commitments contained in this deed, the Parties agree:

1 Definitions

In this Inter Agency Agreement, unless the contrary intention appears:

Commencement Date means the date on which the last party to sign this Inter Agency Agreement signs;

GL/y means gegalitres per year;

Governmental Agency means any government or any governmental, semi-governmental, administrative, fiscal or judicial body, department, commission, authority, tribunal, government Minister, agency or entity;

Groundwater Replenishment means the deliberate infiltration or injection of highly treated water into the aquifer and refers specifically to the potential future public drinking water source;

Managed Aquifer Recharge generally refers to the deliberate infiltration or injection of water into an aquifer for immediate or deferred beneficial uses;

Public Drinking Water Source Areas are underground water pollution control areas, water reserves and catchment areas that have been identified as current or future sources of drinking water;

Priority 3 Public Drinking Water Source Areas are classification areas defined to manage the risk of pollution to the water source from catchment activities. Protection is mainly achieved through guided or regulated environmental risk management of land use activities. P3 areas are declared over land where water supply sources co-exist with other land uses such as residential, commercial and light industrial development;

Term means a 3 year period from the commencement of operations of the Groundwater Replenishment Trial;

Working Group means the group established to meet the commitments of the Inter Agency Agreement which has the objectives and terms of reference set out in Annexure A.

2 Objectives

- (a) For the Groundwater Replenishment Trial to be conducted by the Water Corporation to allow the Water Corporation to assess the technical feasibility of Groundwater Replenishment and assist the Participants in addressing the environmental, water resources and health issues relevant to managed aquifer recharge;
- (b) To provide an approvals framework for the Water Corporation to allow it to progress the assessment and implementation of the Groundwater Replenishment Trial;
- (c) To define the information requirements for assessing the Groundwater Replenishment Trial;
- (d) To ensure that the Groundwater Replenishment Trial provides relevant information required to assess a future full scale confined aquifer Groundwater Replenishment system;
- (e) To form an Inter Agency Working Group to meet the commitments of the Participants as set out in this Inter Agency Agreement.

3 Staging for the Trial

The parties agree that the Groundwater Replenishment Trial will need to be conducted in the following stages:

- (a) Stage One : Regulatory
 - (i) The Participants to examine the existing regulatory framework for the approval of the Groundwater Replenishment Trial identifying the current regulatory requirements and any improvements required to the existing framework;
 - (ii) The Participants to agree on the specific issues that the Groundwater Replenishment Trial must address;
 - (iii) The Participants to agree on what must be demonstrated by the Groundwater Replenishment Trial to address the specific issues and establish the decision criteria to evaluate the level of success or failure of the Trial;
 - (iv) The Water Corporation to apply for approvals for the Groundwater Replenishment Trial.
- (b) Stage 2 : Design and construct the groundwater replenishment Processes and Assets
 - (i) Subject to obtaining the necessary funding and obtaining the necessary approvals, the Water Corporation will design and construct the infrastructure required to carry out the Groundwater Replenishment Trial as detailed in Annexure B;
 - (ii) The Water Corporation to commence carrying out the Groundwater Replenishment Trial.
- (c) Stage 3 : Carry out and monitor the Groundwater Replenishment Trial
 - (i) The Water Corporation to carry out the Groundwater Replenishment Trial for a period of three years after the commencement of the Trial;
 - (ii) The Participants to evaluate the Trial performance to establish whether it is meeting the required benchmarks;
 - (iii) The Department of Water, Department of Environment and Conservation and the Department of Health to provide policy and regulation relevant to future ground water replenishment systems, taking into account findings from the Groundwater Replenishment Trial.

- (d) Stage 4 : Evaluate the outcomes of the Groundwater Replenishment Trial and complete relevant policy and regulation
 - (i) Within one year of the completion of the Term, the Participants will review the evaluation criteria and agree on guidelines to be met to enable a full scale reverse osmosis Groundwater Replenishment system to be considered by Government;
 - (ii) The Department of Water and the Department of Health to incorporate specific provisions for regulation of Groundwater Replenishment system.

4 Roles and Responsibilities

- (a) The Department of Water:
 - (i) grant the Water Corporation an increase in allocation from the Leederville aquifer of approximately 1.5GL/y for the duration of the Groundwater Replenishment Trial subject to the standard application procedure;
 - (ii) has granted approval under By-law 5.4.6 of the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, and determined that By-law 5.4.7 does not apply;
 - (iii) will produce policy or regulation required for a future full scale Groundwater Replenishment system, taking into account the findings of the Trial and will seek to ensure groundwater replenishment is addressed in the update of State water legislation;
 - (iv) will provide a representative to the Working Group and will chair the group.
- (b) The Department of Environment and Conservation will:
 - (i) advise the Water Corporation on requirements with respect to environmental issues associated with the Groundwater Replenishment Trial;
 - (ii) consider the Groundwater Replenishment Trial under Part V of the *Environmental Protection Act 1986*;
 - (iii) produce policy or regulation if considered necessary by the Department of Environment and Conservation for a future full scale Groundwater Replenishment system, taking into account the findings of the Trial;
 - (iv) provide a representative to the Working Group as considered necessary.

- (c) The Department of Health will:
- (i) approve infrastructure for the Groundwater Replenishment Trial under the *Health Act 1911*, and approve operation of the Trial subject to compliance with the Department of Health Draft 'Recycled Water – Groundwater Recharge Guidelines' (2005);
 - (ii) will produce policy or regulation required for a future full scale Groundwater Replenishment system, taking into account the findings of the Trial and will incorporate specific provisions for groundwater replenishment in the update of the State health legislation;
 - (iii) provide a representative to the Working Group.
- (d) The Water Corporation will:
- (i) fund and conduct a stakeholder and community engagement programme, in consultation with the Department of Water and Department of Health, for the Groundwater Replenishment Trial and for groundwater replenishment as a general concept;
 - (ii) refer the proposed Groundwater Replenishment Trial to the Environmental Protection Authority under Part IV of the *Environmental Protection Act 1986*;
 - (iii) conduct an environmental and health risk assessment of the Groundwater Replenishment Trial consistent with the 'Australian Guidelines for Water Recycling: Managing Health and Environmental Risks';
 - (iv) apply by standard procedures to the Department of Water for a 1.5GL/y increase in allocation;
 - (v) subject to obtaining the necessary approvals and funding, the Water Corporation will finalise the engineering and design construction for the works required to carry out the Groundwater Replenishment Trial and will construct all the works required;
 - (vi) will monitor the performance of the Trial on a basis agreed by the Participants;
 - (vii) provide a representative to the Working Group and provide executive support to the Working Group.

5 Key requirements

- (a) The key requirement of the Department of Water is that the Groundwater Replenishment Trial fully characterises the impact of groundwater replenishment on the groundwater in the zone influenced by the proposal, in particular the potential for geochemical reactions and the formation of disinfection by-products in the aquifer.
- (b) The key requirement of the Department of Environment and Conservation is that scientifically robust studies are undertaken before, during and after the Groundwater Replenishment Trial to demonstrate the injection of highly treated water into the confined Leederville aquifer does not pose an unacceptable risk to the water quality and ecosystems in the overlying superficial aquifer.
- (c) The key requirements for the Department of Health will be that the Groundwater Replenishment Trial:
 - i) Validates predicted residence and travel times in the aquifer, identifying any short-circuiting;
 - ii) Further validates the proposed treatment trains effectiveness in terms of removing the key chemicals of concern that are detailed in Appendix C of the draft Recycled Water – Groundwater Recharge Guidelines (as amended); and
 - iii) Characterisation of the groundwater after recharge for the formation of disinfection by-products in the aquifer.

6 Information Sharing

- (a) All information obtained and gathered during the Groundwater Replenishment Trial will be openly shared with each of the Participants and with the Working Group.

7 Review

- (a) The Inter Agency Agreement will be reviewed annually the first such review date being 12 months from the commencement date.

8 Limitations

- (a) This Inter Agency Agreement is not intended to and does not affect any of the statutory responsibilities of the Water Corporation, the Department of Water, the Department of Environment and Conservation or the Department of Health.
- (b) It is acknowledged by the participants that a number of terms used in this Inter Agency Agreement are currently being reviewed and any