

## OPERATIONAL POLICY

# DARWIN RURAL WATER LICENSING - VERIFYING WATER REQUIREMENTS

---

## 1.0 PURPOSE

To provide guidance, transparency and consistency as to the approach used by the Department of Environment and Natural Resources to verify water requirements relating to water extraction licence applications in the Darwin Rural Water Control District (DRWCD).

## 2.0 SCOPE

This policy applies to applications to take or use water under a licence under section 45 or 60 of the *Water Act* in the DRWCD.

This policy does not apply to stock and domestic users who remain exempt from water licensing requirements under the *Water Act*.

## 3.0 CONTEXT

On 6 July 2016, the Administrator of the Northern Territory revoked a declaration made under the *Water Act* exempting water extractions from bores equipped to pump 15 litres per second or less from the licence requirements under Division 4 of Part 6 of the *Water Act*.

Removing the exemption in the DRWCD means that residential users who are irrigating a garden larger than 0.5 hectares and persons using ground water for commercial purposes other than for rural stock and domestic, are required to be licensed for the extraction of ground water.

Community consultation occurred in conjunction with the revocation of the exemption and the Department of Environment and Natural Resources (Department) has been encouraging and assisting residents and businesses operating in the DRWCD to assess their requirement for a water extraction licence under the *Water Act* and where required, to apply for a water extraction licence. Existing water users in the DRWCD were encouraged to submit an application for a water extraction licence seeking an allocation of water based on their current water use, which would be verified by the Department.

## 4.0 VERIFYING WATER REQUIREMENTS

Assessment of water requirements varies depending on the beneficial use(s) applied for. Outlined below is an explanation of the process used for assessment of each beneficial use.

### 4.1. Agriculture (irrigated horticulture):

- Crop water use estimates are calculated with consideration for: crop type, crop water requirement (ML/ha), area cropped (ha), and local rainfall.
- Area cropped is verified using satellite imagery from NR Maps or Google Earth (NT Visualiser). Google Earth (NT Visualiser) has the added advantage of historical imagery which may assist in verifying activities prior to revocation of the exemption.

- Crop water requirement data is provided by the Department of Primary Industry and Resources (DPIR), which relates to the specific crop type and in some cases the stages of development for the relevant crop type, calibrated with local rainfall data.
- The first decile (D1) of rainfall data is used as the basis for determining allocation. D1 represents the lowest 10 per cent of recorded rainfall for the 30-year data period.
- Crop water requirements are calculated using the most current Crop Water Requirement worksheets as provided by DPIR.
- When determining the crop water requirements the maximum water entitlement is rounded up to the nearest whole number.
- Workings are recorded in a 'Crop Water Requirements Summary Sheet', Attachment A and filed appropriately.
- Table A outlines the process that is taken for addressing discrepancies between the application volume, and the volume calculated by the Department (Department volume).
- Recommended licence entitlements.

**Table A**

<b>Application volume exceeds Department volume by &lt;5%</b>	Application proceeds based on the application volume.
<b>Department volume exceeds application volume by &lt;5%</b>	Application proceeds based on the application volume.
<b>Department Volume exceeds Applicant volume by &gt;5%</b>	<p>Department contacts the applicant:</p> <ul style="list-style-type: none"> <li>• Advising of the discrepancy (and calculation method); and</li> <li>• Request information from the applicant as to the reason for the variation and if the applicant would like to revise their application, or proceed with their application based on the application volume.</li> </ul> <p>The assessing officer makes a recommendation to the Controller based on the response provided by the applicant.</p>
<b>Application volume exceeds Department volume by &gt;5%</b>	<p>Department contacts the applicant:</p> <ul style="list-style-type: none"> <li>• Advising of the discrepancy (and calculation method);</li> <li>• Seeking authorisation for reduction of the application volume to align with Department volume; and</li> <li>• Advising that if the applicant wants to proceed with their application volume: <ul style="list-style-type: none"> <li>- Supporting information is required to be provided within 7 days. Supporting information may include actual water metering data and pumpage rates and times or other supporting evidence; and</li> <li>- The revised application volume will be assessed on a case-by case basis by the Department.</li> </ul> </li> </ul>

## 4.2. Industry

Due to the varying nature of industry water requirements, each application is to be assessed on an individual basis and will involve negotiations between the applicant and the Department.

Applications with similar characteristics or industry type are to be assessed in a consistent way.

### 4.3. Aquaculture

Due to the varying nature of aquaculture water requirements, each application is to be assessed on an individual basis and involve negotiations between the applicant and the Department. Applications with similar characteristics are to be assessed in a like-for-like method, including the consistent application of evaporation rates for all surface water structures (such as dams or ponds). Differences, including specific water quality requirements of the produce, influence the volume of water required for ongoing replenishment of ponds.

DPIR - Fisheries may need to be consulted as an industry expert to verify aquaculture water requirements.

### 4.4. Cultural

Irrigation of gardens greater than 0.5 of a hectare per dwelling are to be recommended for licensing as 'cultural' use as this is the most appropriate beneficial use under the *Water Act* where it is defined as 'to provide water to meet aesthetic, recreational and cultural needs'. For the purpose of assessment, 0.5 of a hectare of garden is defined as the total area of irrigated garden, as confirmed from an aerial perspective, irrespective of variance in vegetation type.

When determining the water requirements, the maximum water entitlement is to be rounded up to the nearest whole number at the end of the calculation.

Gardens may include a variety of vegetation types including lawn and fruit trees. To accommodate variations and simplify the assessment process, the Department has selected a single irrigation rate to apply to cultural use. The Department determined that the maximum volume for irrigation of a garden exceeding 0.5 ha is 15.1 ML/ha/year. This figure has been derived from the DPIR crop water use estimates for grass.

Table B outlines the process that was taken for addressing discrepancies between the application volume, and the volume assessed by the Department.

**Table B**

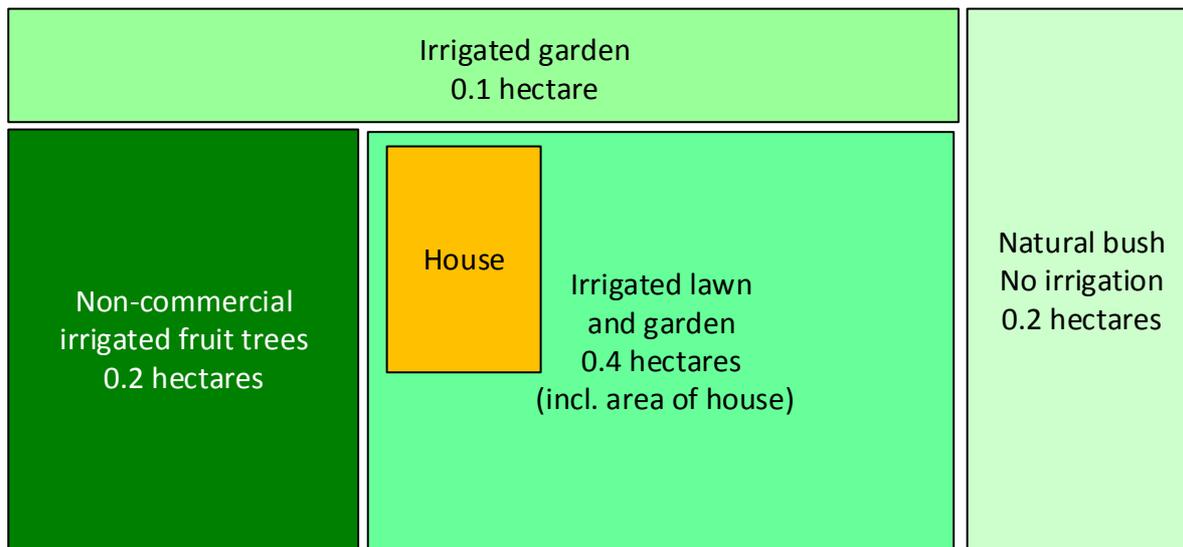
<b>Application volume exceeds Department volume by &lt;5%</b>	Application proceeded based on application volume.
<b>Department volume exceeds application volume by &lt;5%</b>	Application proceeded based on application volume.
<b>Department Volume exceeds application volume by &gt; 5%</b>	Department contacts the applicant: <ul style="list-style-type: none"><li>• Advising of the discrepancy (and calculation method); and</li><li>• Request the applicant advise the Department within 7 days that the applicant would like to either revise their application, or proceed with their application based on the application volume.</li></ul> The assessing officer makes a recommendation to the Controller based on the response provided by the applicant.
<b>Application volume exceeds Department volume by &gt;5%</b>	Applications for volumes more than 16.4 ML/ha/year will be provided with the opportunity to provide supporting information to support the larger volume, which will be assessed by the Department on an individual basis.

The approved application form does not include reference to stock and domestic needs and many licence applicants are not aware of the need to include an application for 'cultural' water for irrigation of more than 0.5 of a hectare of garden. As such, all applicants were assessed for 'cultural' water.

In circumstances where land owners or occupiers also use groundwater from the same bores for domestic purposes, they will be allowed a variance of 0.5 ML per year for compliance purposes.

A diagram showing an example for verifying cultural use water requirement is provided in Figure 1, below.

**Figure 1. Verifying cultural use water requirement.**



Calculation for water use for non-commercial domestic use with an irrigated garden >0.5 hectares:

Irrigated mixed garden area = Irrigated garden + irrigated fruit trees + irrigated grass and garden  
 = 0.1 + 0.2 + 0.4  
 = 0.7 ha

Estimated water use for irrigation = 0.7 x 15.1 ML  
 = 10.57 ML

Total entitlement Estimated Water use for irrigation = 11 ML

## 5.0 DEFINITIONS AND ABBREVIATIONS

Term	Definition
commercial purpose	<p>All water to be extracted for beneficial uses of:</p> <ul style="list-style-type: none"> <li>• Agriculture: to provide irrigation for primary production including related research;</li> <li>• Aquaculture: to provide water for commercial production of aquatic animals including related research;</li> <li>• Public Water Supply: to provide source water for drinking purposes delivered through community water supply systems;</li> <li>• Industry: to provide water for industry, including secondary industry and a mining or petroleum activity, and for other industry uses not referred to elsewhere in this subsection; and</li> <li>• Cultural: to provide water to meet aesthetic, recreational and cultural needs. This includes extraction for the purpose of irrigating a garden exceeding 0.5 hectares, which exceeds the rural stock and domestic entitlements under section 14 of the <i>Water Act</i>.</li> </ul>
Department volume	The water requirement calculated by the Department of Environment and Natural Resources in accordance with this Operational Policy.

DPIR	Department of Primary Industry and Resources.
dwelling	A building or part of a building, designed, constructed or adapted as a self-contained residence (as defined in the NT Planning Scheme).

## 6.0 RELATED DOCUMENTS AND LEGISLATION

This Operational Policy is subject to the provisions of the *Water Act* and the Water Regulations. Related documents include:

- Northern Territory Water Allocation Planning Framework
- Berry Springs Water Allocation Plan 2016-2026
- Policy - Darwin Rural Water Licensing.

## 7.0 DOCUMENT CONTROL

### Document Control

<b>Document Title</b>	Operational Policy: Darwin Rural Water Licensing – Verifying Water Requirements
<b>Version</b>	1.0
<b>Document Reference Number</b>	LRM2017/0059~0053
<b>Document Owner</b>	Director Licensing and Water Regulation
<b>Approver and Date</b>	Executive Director Water Resources 4/9/2018
<b>Next Review</b>	August 2020

### Document Change History

The following table records the history of any significant changes made to this document. The version number of the document is incremented as follows:

- by 1.0 for significant changes
- by 0.1 for changes made for clarity and reading ease only.

Version	Date	Change Details and Approver
1.0	4/9/2018	Approved by Executive Director Water Resources