

# GUIDELINES FOR ASSESSING APPLICATIONS FOR WELL DRILLER'S LICENCES

Water Resources Policy  
Policy #2013/2

July 2013



Department of Primary Industries, Parks, Water & Environment

In 2008 Parliament amended the *Water Management Act 1999* ('the Act') to provide for enhanced regulation of the State's groundwater resources. Under the Act, the Department of Primary Industries, Parks, Water and Environment now has the powers to regulate where groundwater wells are drilled and who performs the drilling.

Due to a number of different factors, enhanced regulation of Tasmania's groundwater activities has become an imperative. Firstly, unprecedented drought conditions have meant that water users have begun to look for other sources of water outside the more traditional form of surface water extractions. This has meant that more and more water users are beginning to access the groundwater resources underlying their property.

Secondly, there is a growing understanding of the interconnectedness of surface water and groundwater resources and the potential impact groundwater extraction may have on surface water availability. This has meant that there is a need to jointly manage the two resources to ensure their on-going sustainable use.

Thirdly, the National Water Initiative – Australia's blue print for water reform – requires a planning system that provides for the adaptive management of surface and groundwater systems in order to meet productive, environmental and other public benefit outcomes. An initial step in planning for the adaptive management of groundwater systems is to have appropriate regulatory control over groundwater activities.

Finally, the Council of Australian Governments Subgroup on Water agreed to introduce national uniformity of licensing for water well drillers. National uniformity will enable the knowledge and skills of a driller licensed in one State or Territory to be recognised nationally.

Under the Act, well drillers are now required to hold a Tasmanian Well Driller's Licence before they perform well works. This will bring Tasmania into line with all other jurisdictions where drillers are licensed. Licences will be issued for five years and will be non-transferable.

These Guidelines clarify the administrative process for assessing applications for well driller's licences and the Department's position on the interpretation of the relevant provisions of the Act.

Department of Primary Industries, Parks, Water and Environment

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<b>Version</b>	<b>Author</b>	<b>Reason</b>
January 2009	Christina Jackson	Guidelines released.
July 2013	Kris Andrews	Minor amendments.

## 1. INTENT OF THE GUIDELINES

The intent of these guidelines is to provide guidance when exercising discretionary powers under the *Water Management Act 1999* (‘the Act’) for issuing well driller’s licences. The Act is administered by the Minister for Primary Industries and Water, who has delegated certain functions such as granting of well drillers licences to specified positions within the Water Resources Division in the Department of Primary Industries, Parks, Water and Environment (DPIPWE).

These Guidelines detail the procedure applying to all applications for well driller’s licences under Division 4 of Part 7 of the Act. The guidelines will assist those people applying for a well driller’s licence and will also provide greater certainty regarding the administrative and decision making process.

## 2. SCOPE

The *Guidelines for Assessing Applications for Well Driller’s Licences* will apply to all applications for a well driller’s licence in Tasmania, including applications seeking the variation of an existing licence. The Guidelines should be considered in conjunction with the requirements prescribed in the *Water Management Regulations 1999* and are supported by DPIPWE’s *Well Driller’s Handbook*.

## 3. TASMANIAN WELL DRILLER’S LICENCE

DPIPWE has the responsibility under the Act for the management and protection of the State’s freshwater resources. The Tasmanian Well Driller’s Licence system enables DPIPWE to regulate the drilling of groundwater wells by licensed drillers. It also ensures that only those drillers with relevant qualifications and levels of competency are licensed.

The Tasmanian Well Driller’s Licensing system reflects the requirements of the National Water Well Driller’s Licensing System. Under the national system, licences are classified according to the type of aquifers licensees are permitted to work on and licenses are endorsed with the relevant drilling method qualifications. This ensures the skills, knowledge and experience of a driller will match the groundwater protection requirements.

Three classes of licences are available through the Tasmanian Well Driller’s Licensing system:

- **Class 1:** restricted to drilling operations in single non-flowing aquifer systems.
- **Class 2:** in addition to operating in Class 1 conditions, permits drilling operations in multiple on-flowing aquifer systems (i.e. confined aquifers).
- **Class 3:** in addition to operating in Class 1 and 2 conditions, permits drilling operations in flowing aquifer systems (i.e. artesian aquifers).

The three licence classes are backed by drilling method endorsements. The classes match the skill required to work in different types of aquifers, while five types of licence endorsements reflect different drilling and construction methods.

A driller's licence is for Class 1, 2, or 3 as above and one or more of the following drilling and construction method endorsements:

- non-drilling rig;
- cable tool;
- auger;
- rotary air;
- rotary mud;
- sonic.

An application for a Tasmanian Well Driller's Licence must be made in accordance with Division 4 of Part 7 of the *Water Management Act 1999*. Licences can only be held by an individual and therefore cannot be held on behalf of a company. Before being considered for a licence, a person must gain a specified minimum amount of practical experience for the class of licence being applied for.

An application can be made for a new licence, a licence Class upgrade, additional endorsements or amendment. No application is required for licence renewal and minor variations to a licence (e.g. change in personal details) can be made at any stage.

Section 4 of these Guidelines outlines the Standard Well Driller's Licence Approvals Process. It is envisaged that the majority of applications for a Tasmanian Well Driller's Licences will follow this.

As outlined in Section 5 of these Guidelines, a slightly different process will be followed for those applicants holding an equivalent licence in another State or Territory.

## 4. STANDARD WELL DRILLER'S LICENCE APPROVALS PROCESS

The Standard Well Driller's Licence Approvals Process is to be followed when an application is made for:

- a new Tasmanian Well Driller's Licence;
- a variation to an existing driller's licence to either upgrade the licence class or including additional endorsements on a licence.

Figure 1 shows the Standard Well Driller's Licence Approvals Process and should be viewed in conjunction with the following commentary.

### 4.1 Preliminary matters

#### Stage 1. Prospective applicant obtains a Tasmanian Well Driller's Kit

Prior to lodging an application with the Water Resources Division in the DPIPWE, an applicant will need to contact the Department for a Well Driller's Licence Kit. The kit contains the following documentation:

- Tasmanian Well Driller's Licence application form;
- enrolment forms for the Australian Drilling Industry Training Committee Ltd (ADITC) national examinations;
- a copy of relevant provisions of the *Water Management Act 1999* and multiple choice examination on the Act;
- *Minimum Construction Requirements for Water Bores in Australia*;
- a checklist to complete for the application including explanation of required fees; and
- *Water Well Driller's Licensing Handbook*.

#### Stage 2. Prospective applicant collates information to support an application

The following information must be included with an application before it will be processed by the Department.

- Relevant Australian Drilling Industry Training Committee Limited (ADITC) national examination results (refer to Appendix 1 for more details on ADITC examinations).
- Supporting evidence of qualifications and/or experience, including the Drilling Industry Certification and Training (DICAT) course, drill log records and a Certificate of Practical Competency relating to on the job experience and practical drilling and grouting knowledge. Refer to Appendix 2 for more information on these requirements.
- Evidence of knowledge of relevant provisions of the *Water Management Act 1999* through completion of multiple choice exam (Appendix 3 provides information on this requirement).

The costs associated with obtaining this information are paid for by the prospective applicant.

## **4.2 Formal application process**

### Stage 3. Applicant submits formal application

Once the applicant has obtained the relevant information to support their application, it is submitted to the DPIPWE<sup>1</sup>. The application must be accompanied by a digitised image or passport sized photo of the applicant as well as the prescribed application fee.

### Stage 4 Water Resources Division reviews the application

DPIPWE checks that the applicant has provided all the required information to support the application. This includes ensuring that information has been provided as required by the *Water Management Regulations 1999*, as well as other requirements (completion of the multiple choice exam on the Act and Certificate of Practical Competency).

DPIPWE is responsible for marking the multiple choice exam on the Act and examination outcomes will be as follows:

- Applicant receiving a mark of 80% or greater is considered a pass.
- An applicant is deemed to have failed if the mark received is between 0–49%.
- If an applicant received a mark of 50–79% the applicant will be requested to redo the incorrect questions. If the applicant still receives a mark below 80%, the Minister's delegate will use their discretion to determine whether or not there are other means of testing the applicant on the knowledge of the Act (e.g. oral examination).

### Stage 5. Further information sought from the applicant

DPIPWE may determine that further information is required from the applicant to enable their application to be appropriately assessed.

### Stage 6. Water Resources Division assessment of further information

If required, any additional information requested under Stage 5 and satisfactorily provided by the applicant will be assessed.

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<sup>1</sup> The relevant contact within DPIPWE is the Licensing Coordinator, Water Management Branch (GPO Box 44, Hobart 7001, fax: 03 6233 7781)

### Stage 7. Water Resources Division seek advice from Victorian Drillers' Licensing Board

Given that the licensing of drillers in Tasmania is in its infancy, the Victorian Drillers' Licensing Board has offered to assist Tasmania in the assessment of applications. If required, DPIPWE will seek the advice of the Victorian Drillers' Licensing Board about the suitability of an applicant for a particular class of licence and endorsements.

DPIPWE will provide all the information upon which the Victorian Drillers' Licensing Board can make a recommendation. This will include information regarding the applicant's qualifications, course certificates, references, compliance history, work history, results from the ADITC exams and multiple choice exam on the Act and Certificate of Practical Competency.

### Stage 8. Victorian Drillers' Licensing Board make recommendation to DPIPWE

The Victorian Drillers' Licensing Board make a recommendation to DPIPWE as to whether in its opinion, the applicant meets the requirements of the National Water Well Drillers' Licensing system.

### Stage 9. Decision to approve or refuse an application

The Minister's delegate<sup>2</sup> in DPIPWE then determines whether to:

- (a) approve the application as submitted; or
- (b) if the applicant agrees, approve the application as if it were a licence of a class lower than that actually applied for (where practical); or
- (c) refuse the application.

Where the decision to approve or refuse an application has been made by the Minister's delegate, a notice under Section 271(2) of the WMA must be served to notify them of the decision.

### Stage 10. Review of decision

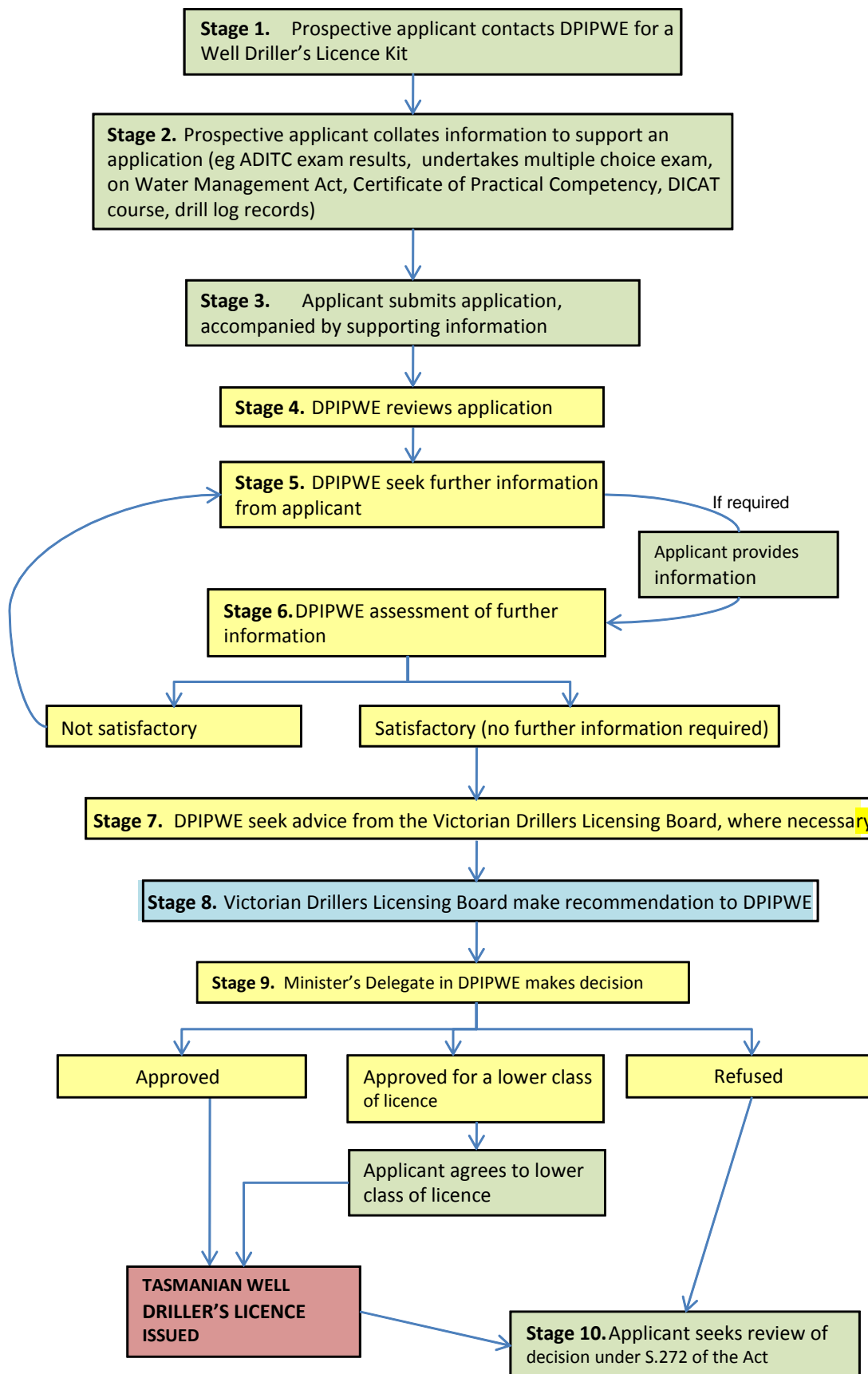
The applicant has 14 days to seek a review from the Minister of the decision to approve or refuse an application for a Tasmanian Well Driller's Licence.

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<sup>2</sup> The Minister for Primary Industries and Water has delegated the assessment and approval of well drillers licences to specified officers within the Water Resources Division of DPIPWE.



**Figure 1. Standard Well Drillers Licence Approvals Process.**



## 5. PROCESS FOR APPLICATIONS FOR DRILLERS LICENSED IN OTHER JURISDICTIONS

Licensed water well drillers from interstate cannot work in Tasmania unless they hold a Tasmanian Well Driller's Licence. If an interstate driller holds a licence in a State or Territory where the licensing system is aligned to the National Water Well Drillers' Licensing System, that licence can be used as proof of knowledge. For example, a Class 2 driller from Victoria can apply for a Tasmanian Well Driller's Licence and their Victorian Class 2 Water Well Driller's Licence can be used as proof of qualifications and experience for a Class 2 licence in Tasmania.

One of the components of the National Water Well Drillers' Licensing System is demonstration of knowledge of the *Water Management Act 1999*, assessed by examination. An applicant who is licensed interstate will be required to complete a multiple choice exam on the Act (refer Appendix 3).

The other major difference with the Standard Well Drillers Licence Approvals Process is that the DPIPWE will not seek the advice of the Victorian Drillers' Licensing Board about the suitability of an applicant for a particular class of licence.

Figure 2 describes the Approvals Process for those drillers who are licensed interstate that are seeking an equivalent licence in Tasmania.

### 5.1 Preliminary matters

#### Stage 1. Prospective applicant obtains a Tasmanian Well Drillers Kit

Prior to lodging an application with DPIPWE, an applicant will need to contact the Department for a Well Drillers Licence Kit.

#### Stage 2. Prospective applicant collates information to support an application

The Well Drillers Licence Kit includes a multiple choice exam on the relevant provisions of the *Water Management Act 1999*. The prospective applicant must complete this exam before submitting their application.

### 5.2 Formal application process

#### Stage 3. Applicant submits formal application

Once the applicant has obtained the relevant information to support their application, it is submitted to DPIPWE (e.g. multiple choice exam on the Act). The application must also be accompanied by a digitised image or passport sized photo of the applicant as well as the prescribed application fee. A copy of an equivalent current licence held in another State or Territory must also be submitted.

#### Stage 4 Water Resources Division reviews the application

DPIPWE accepts the formal application and checks that the applicant has provided all the required information to support the application. This includes ensuring that information has been provided as required in the *Water Management Regulations 1999*.

DPIPWE is also responsible for marking the multiple choice exam on the Act and examination outcomes will be as follows:

- Applicant receiving a mark of 80% or greater is considered a pass.
- An applicant is deemed to have failed if the mark received is between 0–49%.
- If an applicant received a mark of 50–79% the applicant will be requested to redo the incorrect questions. If the applicant still receives a mark below 80%, the Minister’s delegate will use their discretion to determine whether or not there are other means of testing the applicant on the knowledge of the Act (eg oral examination).

#### Stage 5. Further information sought from the applicant

DPIPWE may determine that further information is required from the applicant to enable their application to be appropriately assessed.

#### Stage 6. Water Resources Division assessment of further information

If required, any additional information requested under Stage 5 and satisfactorily provided by the applicant will be assessed by DPIPWE and a recommendation made to the Minister’s delegate as to whether the applicant meets the requirements of the National Water Well Drillers’ Licensing system and Tasmanian Well Drillers Licence system.

#### Stage 7. Decision to approve or refuse an application

The Minister’s delegate<sup>3</sup> in DPIPWE then determines whether to:

- (a) approve the application as submitted; or
- (b) if the applicant agrees, approve the application as if it were a licence of a class lower than that actually applied for; or
- (c) refuse the application.

Where the decision to approve or refuse an application has been made by the Minister’s delegate, a notice under Section 271(2) of the WMA must be served to notify them of the decision.

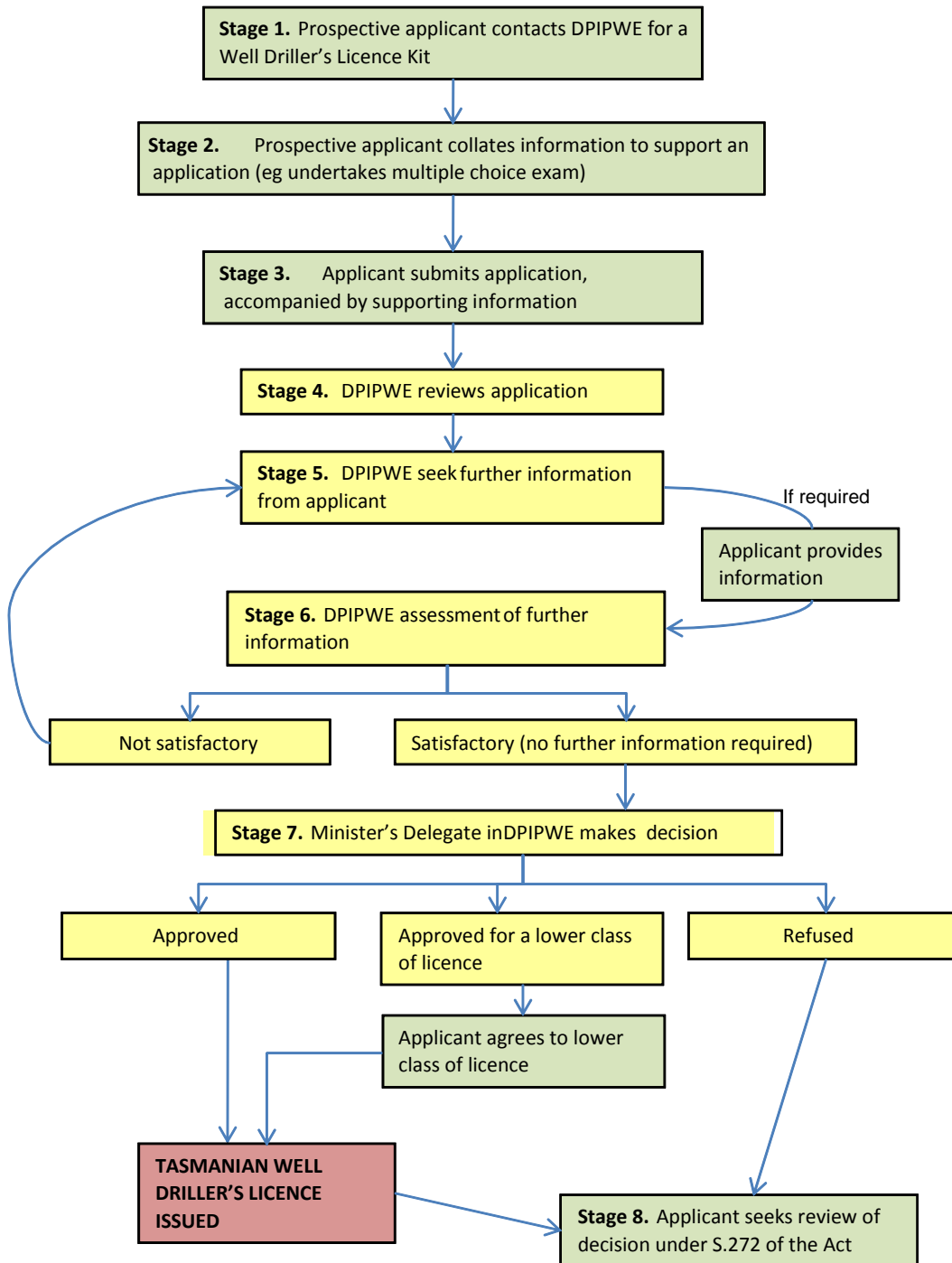
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<sup>3</sup> The Minister for Primary Industries and Water has delegated the assessment and approval of well drillers licences to specified officers within the Water Resources Division of DPIPWE.

Stage 10. Review of decision

The applicant has 14 days to seek a review from the Minister of the decision to approve or refuse an application for a Tasmanian Well Driller's Licence.

**Figure 2.** Well Drillers Licence Approvals Process for Applicants Holding an Equivalent Licence Interstate.



## ACRONYMS

Act	<i>Water Management Act 1999</i>
ADITC	Australian Drilling Industry Training Committee Limited
DICAT	Drilling Industry Certification and Training Course
DPIPWE	Department of Primary Industries, Parks, Water and Environment

## REFERENCES

*Water Management Regulations 1999*

DPIPWE 2009 *Well Drillers Handbook*, Department of Primary Industries, Parks, Water and Environment, Hobart.

Land and Water Biodiversity Committee 2003, *Minimum construction requirements for water bores in Australia*, Dept. of Natural Resources, Mines and Energy, Brisbane:

## **APPENDIX 1. ADITC NATIONAL EXAMINATION RESULTS**

An application for a well drillers licence must be accompanied by the results of any relevant ADITC examinations.

The Australian Drilling Industry Training Committee Limited (ADITC) is the industry body responsible for the management of competency standards and qualifications and training for the drilling industry. One of the major components for the national well drillers licensing system is theoretical knowledge assessed by written examination and ADITC is responsible for setting, maintaining and marking examinations for drillers licensing nationally.

Given that each Class of Licence may have endorsements that reflect the various methods of drilling, the examinations undertaken by an applicant will need to reflect this.

The Well Drillers Licence Kit contains an enrolment form for the ADITC examinations. An applicant must send the completed enrolment form, accompanied by the appropriate fee for the examination, directly to ADITC. The applicant will need to specify on the enrolment form the Class of Licence and endorsement/s required.

ADITC then dispatches the examination papers and the applicant has 3 months to complete the examination.

ADITC will send the exam results to the applicant and a copy will also be sent to DPIPWE.

## **APPENDIX 2. SUPPORTING EVIDENCE OF QUALIFICATIONS AND/OR EXPERIENCE**

An applicant may be requested to provide evidence of existing qualifications and/or experience that supports their application to obtain a particular Class of Licence backed by drilling method endorsements. The licence classes match the skill required to work in different types of aquifers, while the five types of endorsements reflect different drilling and construction methods.

The *Water Management Regulations 1999* prescribe the qualifications and experience necessary for each particular Class of Licence.

Supporting evidence is to include:

- Successful completion of the Drilling Industry Certification and Training Course (DICAT course)
- Employment in the operation of drilling machinery for between 6 and 12 months during which time a certain number of Class 1, 2 or 3 wells have been drilled.
- Certificate of practical competence, completed by an authorised individual.
- Certificates for other relevant courses, CV listing relevant job experience and qualifications, drilling history or drilling log records.
- Client references detailing type of works undertaken

### **DICAT course**

ADITC developed and administer the industry recognised DICAT External Study Programme for driller training. The Drilling Industry Certification and Training Course (DICAT course) is a correspondence course available to people who are working in the drilling industry and want to expand their knowledge and theoretical understanding while they are working. The DICAT course uses *Drilling, the Manual of methods, applications and management* as a reference, and includes extensive additional information in a workbook for four modules. The applicant will need to provide evidence of having successfully undertaken the DICAT External Study Programme.

### **On the job experience**

The *Water Management Regulations 1999* prescribe the level of experience and number of wells drilled for each Class of Licence. The applicant will need to provide copies of the required drill logs.

### **Practical drilling and grouting knowledge**

An application must be accompanied by evidence demonstrating practical drilling and grouting knowledge in line with the Class of Licence and endorsements being sought. To obtain such evidence, an applicant will need to have a Certificate of Practical Competence that relates to the particular Class and endorsements being sought, certified by a Qualified Drilling Assessor, or by an appropriately experienced individual approved by DPIPWE.

The following proforma for the Certificate of Practical Competency will need to be completed by a Qualified Drilling Assessor. The Assessor will determine the best way to ascertain practical drilling and grouting knowledge and may involve an oral test or field examination.

ADITC register all Qualified Drilling Industry Assessors and provide the industry's registered national assessment tools.



### Practical Drilling Skills Assessment – Tasmanian Drillers Licensing

#### ASSESSMENT INFORMATION

Assessor  
Name: .....

Date: ..... Applicant: .....

#### REQUIRED SKILLS – CLASS 1

	Shown competency	Indicated competency	Not competent
<b>Siting a Bore</b> - recognising potential contamination sources to water supply bores and appropriately site a bore to prevent contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Setting up a rig</b> – Straightness and plumbness of holes, the causes of bent bores and the methods of hole straightening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Drilling</b> - correctly choosing and using equipment, having regard to such factors as rotational speed and proper annular velocities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Fishing</b> - their tools and procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Formation Sampling and Description</b> - obtaining representative lithological samples, and labelling and describing them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Bore design</b> - designing and constructing bores for domestic and stock, groundwater monitoring and irrigation purposes in single aquifer systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Construction</b> - seating and sealing of casing, casing types and their uses, methods of grouting casing, headworks design and completion of the bore site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Cementing</b> - grouting casing and abandoning bores,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Setting screens and stabilising fill</b> - selecting the appropriate slot size, screen length and diameter, and procedures for screen installation. Selection and installing stabilising fill material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Bore development and disinfection procedures</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Aquifer testing and water sampling</b> - carrying out a constant rate pumping test, and determining static water level, drawdown and yield; taking and labelling a water sample	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Decommissioning</b> - designing and selecting appropriate materials for the abandonment of bores in single non-flowing aquifers systems,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Bore completion reports</b> - correctly filling in a "bore completion" report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REQUIRED SKILLS – CLASS 2 (In addition to class 1 skills)

	Shown competency	Indicated competency	Not competent
<b>Bore design</b> - designing and constructing bores in multiple aquifers with emphasis on designs and methods used to exclude unsuitable waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Screen and gravel pack selection</b> - skill in the design of high yielding bores is required. This entails overcoming entrance velocity problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Cementing</b> - grouting casing, plug selected zones, effect of cement additives; ability to calculate hole volume and slurry volumes. Hole preparation, casing installation and circulation requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Aquifer testing</b> - the procedures involved in a step drawdown pumping test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Decommissioning</b> - designing and selecting appropriate materials for the abandonment of bores in multiple aquifers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REQUIRED SKILLS – CLASS 3 (In addition to class 1 & 2 skills)

	Shown competency	Indicated competency	Not competent
<b>Drilling fluids</b> - methods, procedures and calculations required for fluid pressure control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Cementing</b> - methods and procedures and calculations required in carrying out pressure cement jobs – Attach cementing report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Bore design</b> - in aquifer systems that have high pressure conditions; design of efficient bores (ie be able to carry out screen surface area and diameter calculations)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Aquifer testing</b> - the procedures for a flow recession, static and step pumping tests on flowing bores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Decommissioning</b> - designing and selecting appropriate materials and procedures for the abandonment of bores having high-pressure conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ENDORSEMENTS – PLANT OPERATION

Is applicant's knowledge of plant operation, for the endorsements sought, satisfactory?

YES

NO

**DRILLER'S LICENCE RECOMMENDATION**

The issue of a licence is:

- Recommended       Recommended at a lower class       Not recommended

If not recommended or recommended at a lower class state reason:

.....  
.....  
.....  
.....

Any special licence conditions

.....  
.....  
.....  
.....

Signature .....  
Approved Assessor (Drilling)

Date: .....

## APPENDIX 3. DEMONSTRATED KNOWLEDGE OF THE WATER MANAGEMENT ACT

One of the components of the National Water Well Drillers' Licensing System is demonstration of knowledge of the *Water Management Act 1999*, assessed by examination. As part of the Well Drillers Licence Kit, applicants will be provided with a multiple choice exam on the Act. A completed exam is to be submitted with the application.

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### QUESTION 1.

Under the *Water Management Act 1999* the following types of holes require a licensed driller. (Tick correct answer)

- Mineral exploration holes
  - Water supply holes for irrigation
  - Water supply holes for stock and/or domestic use
  - Geotechnical investigation holes
  - Holes used for water monitoring and observation
- 

### QUESTION 2.

The *Water Management Act 1999* defines '**Well Works**' as:

*'an excavation undertaken to give access to groundwater, any other works undertaken to repair or modify the structure of a well or any works undertaken to plug, backfill, seal or decommission a well'*

Tick the activities below that this definition includes:

- Drilling a well deeper than 3m
  - Deepening an existing well
  - Enlarging an existing well
  - Installing a pump
  - Installing a spear bore in coastal sands
  - Decommissioning an old unused bore
-

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**QUESTION 3.**

The *Water Management Regulations 1999* define the meaning of different classes for well drillers licence under the *Water Management Act 1999*. What types of aquifer systems can a Class 1, Class 2 and Class 3 Driller operate in?

(Put a number for the correct licence class next to the type of aquifer system described below)

Class  : Is a licence that authorises the licence holder to carry out drilling activities in single non-flowing aquifer systems.

Class  : Is a licence that authorises the licence holder to carry out drilling activities in all subartesian and artesian aquifer systems.

Class  : Is a licence that authorises the licence holder to carry out drilling activities in all non-flowing aquifer systems

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**QUESTION 4.**

Tick the correct answer to the following:

Drillers licences are valid in Tasmania for a period of :

1 year

3 years

5 years

indefinite period

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**QUESTION 5.**

Tick the person responsible for each of the following:

	<b>Driller</b>	<b>Landholder</b>
Where required, apply for and obtain a Water Licence for an allocation of water.	<input type="checkbox"/>	<input type="checkbox"/>
Apply for and obtain a Well Works Permit for permission to construct a water well.	<input type="checkbox"/>	<input type="checkbox"/>
Before commencing work, check that a Well Works Permit has been obtained.	<input type="checkbox"/>	<input type="checkbox"/>
Ensure a well is constructed to meet Well Works permit construction requirements.	<input type="checkbox"/>	<input type="checkbox"/>
Log and return drilling results to the Department.	<input type="checkbox"/>	<input type="checkbox"/>

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**QUESTION 6.**

Do the *Water Management Regulations 1999* define any construction requirements that must be met for construction of a water well?

Yes  No.

If yes write name of document.....

.....

---

**QUESTION 7.**

A drillers licence can be cancelled or suspended if? (Tick the correct answers).

- A driller contravenes the conditions of the licence in a material or repeated way.
- A driller knowingly drills in contravention of, or without a Well Works Permit.
- A driller breaks a drilling rod down a hole.
- A driller drills a dry hole.
- A driller exceeds the maximum allowed number of demerit points allocated to a licence.

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**QUESTION 8.**

Are the following statements TRUE or FALSE:

Demerit points can be issued against a drillers licence for contravening a condition of the licence, or on a Well Works Permit.

True     False

It is a condition of a drillers licence that: 'The Department must be supplied with a completed drilling log, using an approved form, no later than 30 business days after the completion of a well, or 90 business days after the commencement of a well, whichever comes first'.

True     False

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## QUESTION 9.

Please complete the drillers log attached using the information and driller's notes below. Show how the bore would be constructed by filling in as many fields as practical in the attached drillers log page. (*An example of a completed log is provided in your Water Act Notes*)

Drillers name is..... (Yourself)  
Tasmanian Well Driller Licence No. 0012

The owner of the land is George McGuinness of 43 Bounty Street, Hagley TAS 7292, his telephone number is 0400862893.

The location of the Bore on the property 'Sendace', behind the farm shed and has GPS co-ordinates of Easting: 492560, Northing: 5404439, Datum: AMG 66.

Thursday 5<sup>th</sup> October 2008:

- Start work 7 am drive to Hagley
- Given copy of Well Works Permit WS0001 by landholder (George McGuinness)
- Start drilling 9am: 200mm – down hole hammer

0 – 2m	brown swelling clay damp
2 – 8m	brown basalt clay

- Pull bit, ream hole to 229 mm and set 219 mm OD surface casing to 8m
- Refit 165mm hammer, continue drilling

8 – 16m	Decomposed basalt
16 – 25m	Basalt - <i>Water cuts – 1.3L/s at 630 µs/cm</i>
25 – 27m	Grey clay
27 – 39m	Basalt fractured - <i>Water cuts - 31-36m – 1.5L/s at 660 µs/cm</i>
39 – 45m	Grey sandy clay – some wood fragments
45 – 48m	Fine sand/very sandy clay

- Water clear, hole stable to 45m, water tested for conductivity 660 µs/cm
- Pull rods stop work 6pm

Friday 6<sup>th</sup> Oct.

- Start work 7am
- Load 8 lengths 140mm OD class 9 uPVC casing
- Arrive site 9am measure SWL = 6m
- Slot and set casing, Run casing to the bottom.
- Set annular fill
- Pull surface casing. Cement bore from surface to 11m, using Tremmie Pipe.
- Air flow test of completed bore.
- Drill stem at 40m yield steady at 80mm over V notch weir board (*report as L/s*)
- SWL at rest after development = 6m



Department of Primary Industries and Water — Water Management Act 1999 — **INFORMATION RELATING TO CONSTRUCTION OF A WATER BORE** — Required under Section 131 of the Act

<b>Bore Number (Driller's Number):</b>		<b>Is this a report on:</b> <input type="checkbox"/> A new bore <input type="checkbox"/> Backfilling (decommissioning a bore) <input type="checkbox"/> Deepening an existing bore <input type="checkbox"/> Rehabilitation (improving borehole performance)														
Location of well (nearest town):					Well sited by ( <i>Driller, owner, other</i> ):											
Property name or Plan/Lot No.:					Method of siting used ( <i>geological or hydrogeological map, MRT database, diviner</i> ): .....											
Owner/occupier name:					Well constructed by ( <i>Company and Person</i> )			Company name:								
Owner's telephone contact number:								Driller name:								
Address of owner/occupier in full:					Date construction commenced:				Date construction completed:							
Address of borehole site (or <input type="checkbox"/> if same as above)					Status of well: <input type="checkbox"/> Operating <input type="checkbox"/> Capped <input type="checkbox"/> Abandoned <input type="checkbox"/> Collapsed <input type="checkbox"/> Other .....											
Australian Survey Datum: AMG 66 or GDA 94		Easting: Northing:		<input type="checkbox"/> GPS <input type="checkbox"/> 1:25 000 map		<input type="checkbox"/> Other (specify)		Reason for the above status ( <i>pump not yet installed backfilled due to difficult construction, etc.</i> ):								
<b>DRILLING SUMMARY</b>					<b>BORE DIAMETER</b>					<b>SEAL and other annular fill material (<i>e.g. cement, bentonite, backfill</i>)</b>						
Drilling technique ( <i>type of well construction</i> )		<input type="checkbox"/> Cable tool (P) <input type="checkbox"/> Auger <input type="checkbox"/> Rotary air (R)			From (m)	To (m)	Diameter (mm)	Drilling technique ( <i>complete if multiple techniques used</i> )	From (m)	To (m)	Material type and grain size (max, min & average)					
		<input type="checkbox"/> Down-hole hammer (R) <input type="checkbox"/> Rotary mud (R)														
<input type="checkbox"/> Other (please specify) .....																
Final depth of bore (m):		Original depth of bore (m):														
<b>DRILLER'S LOG</b>					<b>DEPTH TO WATER STRUCK (m)</b>											
From (m)	To (m)	Rock type			<b>CASING – material (<i>PVC, ABS/thermoplastic, steel, FRP/fibreglass</i>)</b>					From (m)	To (m)	Yield (L/s or gph)	SWL (m) before pumping	Drawdown (m)	Duration (h)	Conductivity (µS/cm)
					From (m)	To (m)	Inside diameter (mm)	Outside diameter (mm)	Material							
					<b>SCREEN – Inlet types (<i>slotted, perforated, porous, wire wound, open hole</i>)</b>											
					From (m)	To (m)	Inlet type	Number/metre & size (mm)	Number/metre & diameter (mm)							
											Total yield = <input type="checkbox"/> L/s or <input type="checkbox"/> gph <input type="checkbox"/> dry bore					
											Average Field Conductivity (µS/cm):					
											<b>DEVELOPMENT METHOD</b>					
					<b>GRAVEL PACK</b>					<input type="checkbox"/> Bailed <input type="checkbox"/> Pumped <input type="checkbox"/> Air flow <input type="checkbox"/> Other (specify)			Duration (h)			
					From (m)	To (m)	Material type and grain size (max, min & average)				Standing Water Level (SWL) after development (m)					
											<b>ARTESIAN BORE ON COMPLETION</b>					
											Flow (L/s):	Pressure (kPa):	Temp. (°C):			

Please complete details over page

Original form is to be completed and forwarded to Groundwater Management, GPO Box 44, Hobart, Tasmania 7001  
Duplicate (yellow) to be retained by water bore owner. Triplicate (pink) to be retained by drilling company.

**GW**

**SAMPLE**

Sampled for analysis? <input type="checkbox"/> YES <input type="checkbox"/> NO		Analysis attached? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, specify the name of the laboratory to which the sample was submitted.			
Was the sample taken before, during or after the FLOW TEST?		<input type="checkbox"/> Before <input type="checkbox"/> After	Time (hours) .....
		<input type="checkbox"/> During ( <i>specify time</i> )	
Describe the TASTE, COLOUR and ODOUR of the water.	TASTE:	COLOUR:	ODOUR:
Results of any other field chemical test: (e.g. pH, nitrate, dissolved oxygen, etc.)			
Intended use for the water:	<input type="checkbox"/> Drinking	<input type="checkbox"/> Domestic	<input type="checkbox"/> Irrigation
	<input type="checkbox"/> Stock water	<input type="checkbox"/> Garden	<input type="checkbox"/> Toilet
	<input type="checkbox"/> Other? ( <i>please specify</i> ) .....		

**SKETCH OF PROPERTY** (showing actual location of bore)

**PUMP TEST ON BOREHOLE COMPLETION**

Date of test:	
Standing Water Level before test (m):	
Standing Water Level after test (m):	
Maximum drawdown from standing level (m):	
Period of test (hours):	
Type of pump used:	
Suction depth (metres below surface):	
Method of measuring flow:	
Pump test yield (litres per second):	

If detailed pump test readings are available please attach them to this form.

**GEOPHYSICAL LOG**

Please tick if any of the following have been carried out, and attach results if available.

<input type="checkbox"/> gamma	<input type="checkbox"/> spontaneous polarisation	<input type="checkbox"/> density	<input type="checkbox"/> Other ( <i>please specify</i> )
<input type="checkbox"/> resistivity	<input type="checkbox"/> camera	<input type="checkbox"/> caliper	.....

The location of the well is further described by the method ticked below:

- A sketch plan showing the location of the well and also showing prominent roads, buildings, structures, and other features such as the distance to the nearest property boundary and any known nearby well.
- I attach the relevant section of a 1:25 000 scale map of the land showing the location of the well and any known nearby wells (*This information can also be accessed on the Mineral Resources Tasmania website [www.mrt.tas.gov.au](http://www.mrt.tas.gov.au)*).

**REMARKS**

Signature of person constructing well: ..... Date: .....

# WEIR BOARD DISCHARGE TABLES

DISCHARGE HEIGHT  
150-195mm

DEPTH mm	V NOTCH	
	l/s	m <sup>3</sup> /d
10	0.015	1
11	0.019	2
12	0.023	2
13	0.028	2
14	0.034	3
15	0.040	3
16	0.047	4
17	0.055	5
18	0.063	5
19	0.072	6
20	0.082	7
21	0.093	8
22	0.104	9
23	0.116	10
24	0.129	11
25	0.143	12
26	0.157	14
27	0.173	15
28	0.189	16
29	0.206	18
30	0.225	19
31	0.244	21
32	0.264	23
33	0.284	25
34	0.306	26
35	0.329	28
36	0.353	30
37	0.378	33
38	0.404	35
39	0.430	37
40	0.458	40
41	0.487	42
42	0.517	45
43	0.548	47
44	0.581	50
45	0.614	53
46	0.648	56
47	0.684	59
48	0.720	62
49	0.758	66

DEPTH mm	V NOTCH	
	l/s	m <sup>3</sup> /d
50	0.797	69
51	0.837	72
52	0.879	76
53	0.921	80
54	0.965	83
55	1.010	87
56	1.056	91
57	1.103	95
58	1.152	100
59	1.202	104
60	1.253	108
61	1.305	113
62	1.359	117
63	1.414	122
64	1.470	127
65	1.528	132
66	1.587	137
67	1.647	142
68	1.709	148
69	1.772	153
70	1.836	159
71	1.902	164
72	1.969	170
73	2.038	176
74	2.108	182
75	2.179	188
76	2.252	195
77	2.326	201
78	2.402	208
79	2.479	214
80	2.557	221
81	2.637	228
82	2.719	235
83	2.802	242
84	2.886	249
85	2.972	257
86	3.060	264
87	3.149	272
88	3.239	280
89	3.331	288
90	3.425	296
91	3.520	304
92	3.617	312
93	3.715	321
94	3.815	330
95	3.916	338
96	4.019	347
97	4.124	356
98	4.230	365
99	4.338	375

DEPTH mm	V NOTCH	
	l/s	m <sup>3</sup> /d
100	4.448	384
101	4.559	394
102	4.671	404
103	4.786	413
104	4.902	424
105	5.020	434
106	5.139	444
107	5.260	454
108	5.383	465
109	5.507	476
110	5.633	487
111	5.761	498
112	5.891	509
113	6.022	520
114	6.155	532
115	6.290	543
116	6.427	555
117	6.565	567
118	6.705	579
119	6.847	592
120	6.990	604
121	7.136	617
122	7.283	629
123	7.432	642
124	7.582	655
125	7.735	668
126	7.889	682
127	8.046	695
128	8.204	709
129	8.363	723
130	8.525	737
131	8.689	751
132	8.854	765
133	9.021	779
134	9.191	794
135	9.362	809
136	9.535	824
137	9.709	839
138	9.886	854
139	10.065	870
140	10.245	885
141	10.428	901
142	10.612	917
143	10.798	933
144	10.987	949
145	11.177	966
146	11.369	982
147	11.563	999
148	11.759	1 016
149	11.957	1 033