



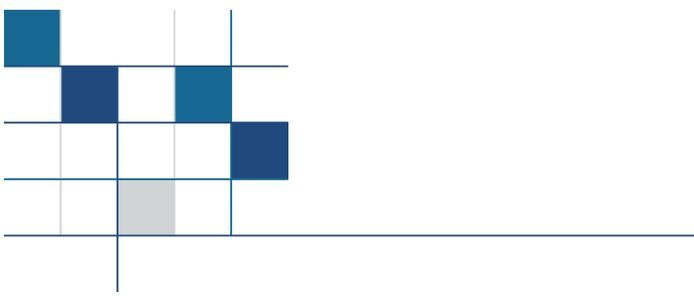
# Guideline

## Spring exemptions

Activities regulated under:

Part III Section 5(1)(a) of the *Rights in Water and Irrigation Act 1914*

April 2023





Department of Water and Environmental Regulation  
8 Davidson Terrace

Joondalup Western Australia 6027

Telephone +61 8 6364 7000

Facsimile +61 8 6364 7001

National Relay Service 13 36 77

[www.wa.gov.au/dwer](http://www.wa.gov.au/dwer)

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# Contents

1. Purpose.....	1
1.1 Intent.....	1
2. Scope.....	1
3. Context.....	2
4. Additional advice and support .....	3
5. Compliance under the Act.....	3
6. Relevant considerations for a landowner or occupier of land.....	4
7. Self-assessment.....	9
8. Management of springs and spring dams .....	17
Appendix 1 – Water legislation .....	20
Appendix 2 – Measuring and estimating the volume of water produced by a spring ..	23
Document implementation .....	26
Related documents.....	26
Custodian and review .....	26

## Figures

<i>Figure 1: Watercourses are present in the landscape where surface runoff and/or subsurface flow collect to flow in a single direction across the land surface, and may or may not have a spring at the head.</i>	6
<i>Figure 2: Diagram showing the catchment hydrology and flow dynamics that may occur on a property following the commencement of the wet season.</i>	8
<i>Figure 3: Section 5(1)(a) springs (green) are at the head of a watercourse and must flow away from the spring over the surface of the land.</i>	11
<i>Figure 4: Any discharge of underground water directly into the bed of a watercourse is not section 5(1)(a) spring.</i>	12
<i>Figure 5: Dams that are positioned on a watercourse directly downstream of a spring are less likely to be interfering with a regulated watercourse and less likely to require licensing.</i>	13
<i>Figure 6: A spring that exists over a property boundary is not a section 5(1)(a) spring.</i>	14
<i>Figure 7: To be exempt from regulation under section 5(1)(a) a dam must not be constructed over a spring and the reservoir water level must not inundate the spring.</i>	17



# 1. Purpose

The Department of Water and Environmental Regulation (the department) has prepared this guideline to help landowners and occupiers of land<sup>1</sup> understand the spring exemption under Part III Section 5(1)(a) of the *Rights in Water and Irrigation Act 1914* (the Act).

The guideline aims to clarify interpretation of section 5(1)(a) of the Act but does not amend section 5(1)(a) of the Act.

The department has established a [field guide](#) (chapters 6 and 7 and Appendix 2) for you to use in the field, to work through the steps needed to undertake a spring exemption assessment of your property. The field guide should be used after you have read and are familiar with the definitions and guidance provided through this guideline. You may wish to print out the field guide, as you undertake a spring exemption self-assessment.

## 1.1 Intent

Section 5(1)(a) of the Act describes the circumstances in which water flowing from a spring is not regulated by the Act.

This guideline outlines what you need to consider in determining whether your property's circumstances meet the requirements of section 5(1)(a).

# 2. Scope

Under the Act, if you take water on your private land from a spring that meets the requirements of section 5(1)(a), you are exempt from regulation under Part III of the Act (referred to in this guideline as a 'spring exemption'). See Appendix 1 for more information on legislative provisions for a spring exemption under the Act.

A spring exemption under the Act does not exempt you from obtaining any other authorisation or approval under Australian, State or local government legislation or regulation, including but not limited to:

- State Aboriginal cultural heritage legislation
- clearing of native vegetation and/or assessment under the *Environmental Protection Act 1986 (WA)*
- the take or disturbance of threatened or priority flora, fauna or ecological communities under the *Biodiversity Conservation Act 2016 (WA)*
- impacts on matters of national significance under the *Environmental Protection and Biodiversity Conservation Act 1999*.

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<sup>1</sup> From here, this guideline will refer to the Department of Water and Environmental Regulation as 'the department' and to the landowners and occupiers of land to whom this guideline is addressed as 'you'.



You need to obtain all the required authorisations or approvals before you begin any activity associated with a spring or the land where it rises.

This guideline is part of the department's policy framework and provides a consistent and transparent process to manage springs under section 5(1)(a) of the Act.

### 3. Context

A Legislative Council inquiry into private property rights, published in September 2020, has raised awareness about the spring exemption in the community. One of the inquiry's outcomes was for the department to prepare this guideline to clarify how to determine a spring exemption.

The department does not grant 'spring rights'. Instead, the Act provides for circumstances when water flowing from a spring is exempt from regulation under the Act. The department needs to clarify the application of section 5(1)(a) because:

- there is a difference between the usual meaning of the word 'spring' and the definition of 'spring' under the Act
- it will reduce the risk of you undertaking works or taking water which may be subject to regulation under Part III of the Act
- the definition of a watercourse changed significantly when the Act was amended in 2000 to include watercourses that are modified from their natural state, or that flow intermittently or occasionally
- the Act does not define the process for determining whether the exemption in section 5(1)(a) applies to a spring
- the Legislative Council's inquiry, [\*Private Property rights: the need for disclosure and fair compensation\*](#), noted there is a lack of understanding regarding how the spring exemption applies.

The department is responsible for administering the Act. We ensure compliance with the Act by responding to complaints and monitoring and investigating potential breaches of the Act.

Before this guideline, the department gave case-by-case advice or determinations to individual landowners and occupiers of land about whether the spring exemption applied to their circumstances. The department acknowledges this previous advice or determinations may not be consistent with the interpretation of the Act as described in this guideline (see Chapter 8.2 related to legacy and historical dams).

This guideline includes a step-by-step self-assessment guide to help you work through the sometimes complex hydrological and legal considerations to decide whether a section 5(1)(a) spring exemption applies to your circumstances on your individual property. This self-assessment process (see chapters 6 and 7) is not a statutory process under the Act. It is included to help you take water and construct dams lawfully.



**The department strongly recommends that you complete the self-assessment in this guideline and compile all relevant evidence to support your determination that your circumstances meet the requirements of section 5(1)(a) before you begin any activities relating to the take of water under this provision.**

You should exercise due diligence to satisfy yourself that you have met the hydrological and legal requirements of section 5(1)(a) before you start any activities relating to the take of water (including the construction of dams and other infrastructure). If you do not, you could commit an offence under the Act. See Appendix 1 for further information. If an offence occurs, the department would consider a range of actions to address the immediate impacts of the offence, as well as a range of other actions in accordance with our compliance and enforcement policy (see Chapter 5).

## 4. Additional advice and support

Given the complexity of some of the hydrological considerations for a spring exemption assessment, it is recommended you contact the department if you have any questions or would like to discuss the self-assessment steps. You should contact the department's [regional office for your area](#) based on your property's location.

Alternatively, you may wish to engage a suitably qualified water specialist(s) to ensure the hydrological elements of section 5(1)(a) are appropriately considered and satisfied.

There is no statutory requirement for you to ask the department to assist you in your assessment of whether section 5(1)(a) applies, and no legal mechanism to allow for the publication of a register of spring exemptions under the Act.

If requested, the department can provide information and advice (e.g. aerial imagery and geographic information systems [GIS] information such as contour maps and flow paths) that may assist you in your self-determination of whether section 5(1)(a) applies to a particular spring.

It is your responsibility to determine whether section 5(1)(a) of Act applies to one or more springs on your property. Any information provided is not a determination by the department as to whether section 5(1)(a) of the Act applies to one or more springs on your property.

In complex cases or where you have uncertainty about a self-determination, it is recommended you contact the department or you engage a suitably qualified water specialist to ensure the hydrological elements of section 5(1)(a) of the Act are appropriately considered and satisfied.

## 5. Compliance under the Act

Should the department identify a potential breach following a complaint or monitoring, we may ask you for evidence (including advice from a suitably qualified water specialist) to support your determination that your circumstances meet the requirements of section 5(1)(a).



Under the Act and the Rights in Water and Irrigation Regulations 2000 the department can pursue enforcement measures in response to a range of prescribed offences. Where the department identifies a breach of the Act, enforcement action may be taken under our [Compliance and Enforcement Policy](#) to protect the state's water resources by ensuring the requirements of the legislation are complied with. The department considers a range of factors when determining an appropriate enforcement response.

These include (but are not limited to) the:

- nature and severity of the alleged offence
- relevant legislation and any applicable penalty provisions
- public interest
- risk of harm to the water resource, its dependent values and users
- any mitigating or aggravating circumstances.

Enforcement actions for non-compliance against sections 17 and 5C of the Act, related to the unauthorised construction of a dam and/or unauthorised take of water respectively, may include a range of discrete actions or a combination of actions including financial penalties, direction notices involving restoration or rehabilitation works (removal of infrastructure), and prosecution.

## 6. Relevant considerations for a landowner or occupier of land

### 6.1 Guidance to help identify a section 5(1)(a) spring

To constitute a spring under section 5(1)(a), the water must naturally rise to the surface of the land and flow away over the surface of the land from the point at which the water reaches the surface. This makes it different from a wetland, soak, reservoir or other body of standing water (see consideration 2 in Chapter 7).

A discharge of underground water directly into a watercourse, wetland, reservoir or other body of water is not a section 5(1)(a) spring.

For example, where a spring is located in the bed of a watercourse, it is not a section 5(1)(a) spring, as the spring water does not flow away over the surface of the land, but instead will be discharging directly into the watercourse.

See Chapter 7 of this guideline for illustrated examples of springs.



## 6.2 Guidance to help identify watercourses

A watercourse will be visible in the landscape and have a bed or bed and banks<sup>2</sup>, although bank height or bed width may vary. Watercourses vary in size and may be indicated by the presence of biological, hydrological and physical characteristics.

Watercourses may be more obvious in some land settings than others. Minor watercourses in cleared land can be observed as a line of depression in the landscape (a shallow, low-gradient channel) that is able to confine water and provide a flow pathway from areas of high to low elevation.

A watercourse forms where surface runoff (which may occur as sheet flow<sup>3</sup>) and/or subsurface flow<sup>4</sup> collect to flow in a single direction across the land surface.

An example is rain running down opposing hillsides over the land surface (surface runoff) and through the soil below the surface (subsurface flow), meeting in the valley or depression between the hillsides and moving together downslope to form a watercourse. At this low point in the landscape, water collecting from multiple directions increases in volume and velocity. This water moves downslope because of gravity, collecting more water as it flows, forming a watercourse through erosion (Figure 1). With movement downslope, a watercourse may receive additional flow from catchment runoff (surface runoff and subsurface flow) and smaller watercourses (tributaries) that flow into the larger watercourse.

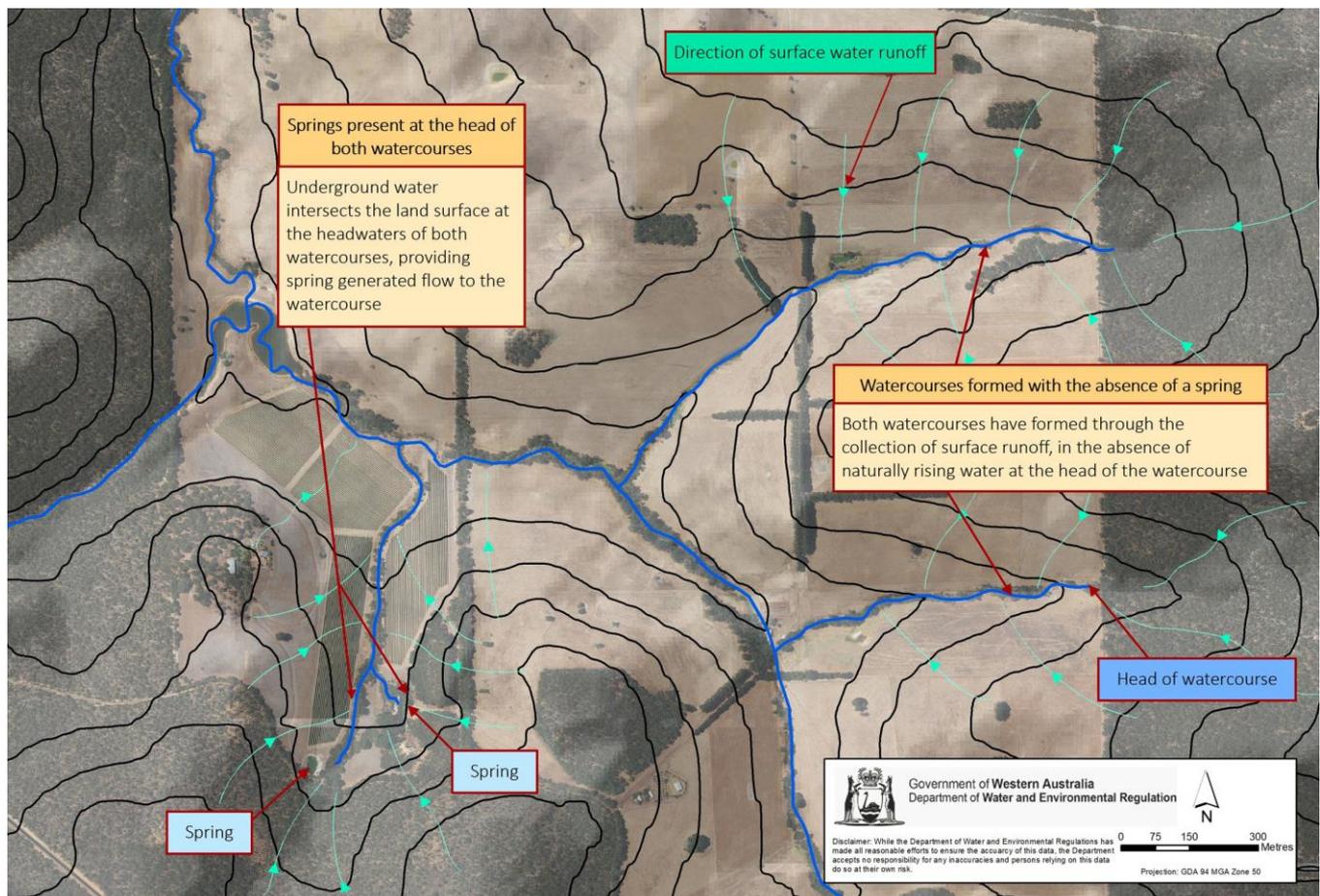
Where a watercourse has been artificially improved or altered, it is still deemed by the Act to be a watercourse. These alterations can include those resulting from land management practices.

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<sup>2</sup> A bank is the sides of a watercourse channel. It extends upwards from the bed (base) of a watercourse until there is a change in gradient to a slope consistent with the surrounding terrain. The bank height can vary along a watercourse and represents the maximum height at which flow is contained within the watercourse. Bank heights can be as low as is required to confine water to a flow path. Banks can be natural features or artificially modified or created because of interference. Banks may also be absent or difficult to identify along sections of a watercourse because of interference (such as land clearing, cropping or cattle accessing a watercourse and trampling a bank).

<sup>3</sup> Sheet flow is where water flows in a uniform direction across the landscape and is not confined to a channel. Most rainfall runoff occurs as sheet flow – a film of water spread broadly across the soil surface – and has low volume, velocity and energy.

<sup>4</sup> Subsurface flow is water that moves below the land surface.



*Figure 1: Watercourses are present in the landscape where surface runoff and/or subsurface flow collect to flow in a single direction across the land surface, and may or may not have a spring at the head.*

## Occasional or intermittent flow

The definition of ‘watercourse’ under the Act is broader than the common law definition. One example of this is the inclusion of the concept that the flow in a watercourse can be intermittent or occasional and still be considered a watercourse under the Act.

The department considers that the terms ‘intermittent flow’ and ‘occasional flow’ simply mean that flow is not continuous, with intermittent flow occurring at a higher frequency than occasional flow. The pattern, intensity and duration of rainfall has a significant impact on when and for how long many watercourses in Western Australia flow. Watercourses need not flow continuously; they may flow intermittently or occasionally, depending on local land and environmental conditions. Some watercourses may only flow for short periods, in some years.

Assessment of intermittently or occasionally flowing watercourses may require onsite inspection and desktop analysis from a suitably qualified water specialist, particularly in instances where the physical features of the watercourse may not be well defined. You can contact the department’s regional office for your area to discuss the circumstances on your property or for hydrological information to guide whether a watercourse may be present on your property.



## 6.3 Naturally rising water at the head of a watercourse

The term ‘head of the watercourse’ is not used in the Act. However, the department uses this term to describe the origin of a watercourse. In the spring context, the head of the watercourse is the point at which water naturally rises to the surface of the land.

The term ‘spring watercourse’ is not used in the Act. The department has used the term ‘spring watercourse’ in this guideline for ease of reference, to differentiate between that section of a watercourse which is fed solely by a spring and that section of a watercourse which is a watercourse due to being fed by other sources of water.

Not all watercourses have a spring at the head, with flow being provided from other catchment sources (surface runoff and/or subsurface flow) to generate the watercourse (Figure 1). However, all section 5(1)(a) springs will present in a catchment at the head of a watercourse or spring flow because these springs satisfy all elements of section 5(1)(a).

Multiple springs may exist within a catchment. Each small watercourse in a catchment will have its own head and may, or may not, have a spring present at that head. Refer to figures provided in Chapter 7.

## 6.4 Guidance to help distinguish between spring water and other sources of water

If naturally rising water on the property is at the head of a watercourse, then a watercourse formed solely from that spring water (‘spring watercourse’), may not be a regulated watercourse until it leaves the boundaries of that property.

However, with increasing distance downstream, away from a section 5(1)(a) spring, the spring watercourse is likely to also be receiving flow from other catchment sources such as surface runoff (commonly occurring as sheet flow), subsurface flow and tributary flow, and increasing in flow volume. Other catchment flows can combine with the water in a spring watercourse, increasing the volume of flow with distance downstream.

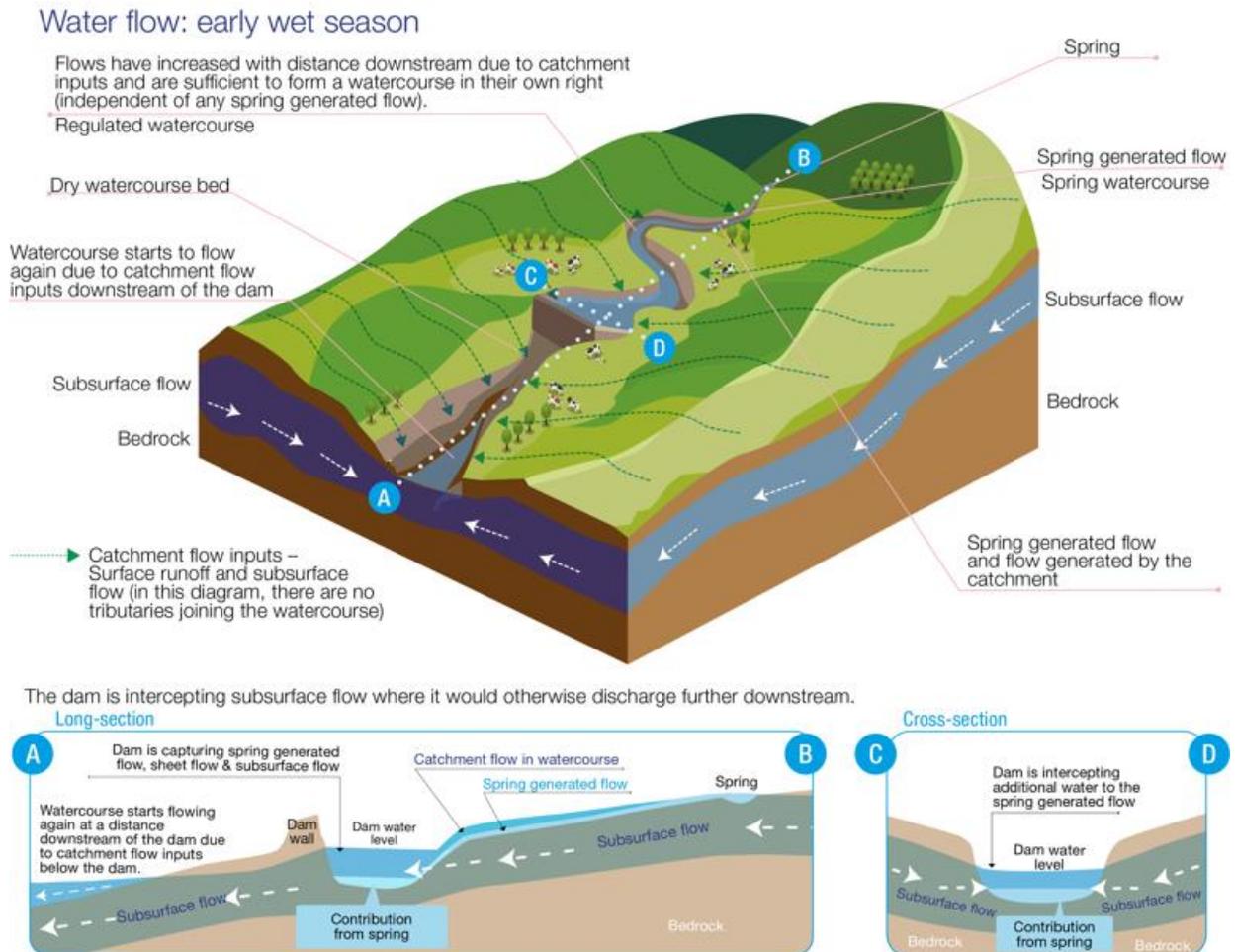
If the spring water collects with other flows in circumstances where those other flows would, by themselves, be sufficient to form a watercourse, then the spring water has mixed with a regulated watercourse<sup>5</sup> (see consideration 4, Chapter 7).

Taking of spring generated flow, as close to the spring as possible, without interfering with the spring, will help ensure the take and any dam construction does not require a licence or permit by reason of section 5(1)(a).

Dams constructed on a watercourse further downstream, away from a spring, run the risk of interfering with a regulated watercourse (Figure 2).

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<sup>5</sup> A regulated watercourse is a watercourse in a proclaimed area or a watercourse that is part of a system of watercourses that are specified in a proclamation made under section 6 of the Act.



**Figure 2:** Diagram showing the catchment hydrology and flow dynamics that may occur on a property following the commencement of the wet season. The diagram shows how flow in a watercourse may change from the head of a watercourse to the downstream property boundary. In this scenario, underground water levels have risen in response to rainfall and the spring is discharging water. The flow volume from the spring does not increase once it leaves the spring until it mixes with other water flows coming from the catchment. In this scenario the land is sufficiently wet and rainfall is reaching the watercourse via surface runoff (commonly occurring as ‘sheet flow’) and water flowing through saturated soil profiles below the land surface (subsurface flow). Both types of flow travel downslope, meet at the watercourse and then flow together in a downstream direction with the flow from the spring. The volume of flow in the watercourse continues to increase with distance downstream due to surface and subsurface flows coming in from opposing hillsides and accumulating with the upstream flow. In this scenario the dam is located away from the spring and has interfered with a regulated watercourse due to catchment flows upstream of the dam being sufficient to form a watercourse in their own right (not including the flow generated by the spring).



If a spring watercourse on that land is subsequently fed by other discharges of underground water into its bed or bed and banks, then those discharges are not exempt under section 5(1)(a) (see consideration 3, Chapter 7). The regulated watercourse downstream will contain some exempt water from the spring at the head of the watercourse.<sup>6</sup> If this were the case on your property, you would need a licence to take water from the regulated watercourse and a permit to interfere with the bed or bed and banks of that regulated watercourse. Where regulation applies, the department will specify the amount of water that may be taken under the licence. For the department to understand how much water is regulated water and how much water in the watercourse is exempt spring water, we would ask you to measure or estimate the amount of water produced by the spring at the head of the watercourse and describe how you measured or estimated that volume (see Appendix 2).

You can contact the department's regional office in your local area to request information to guide whether you have a section 5(1)(a) spring. Alternatively, you may need to hire a suitably qualified water specialist to conduct an onsite inspection and desktop analysis.

## 7. Self-assessment

### 7.1 Determine whether a section 5(1)(a) exemption applies

The requirements under the Act need to be demonstrated for a spring exemption to apply to the taking of water. The considerations are:

1. The land where spring water naturally rises and flows must have been granted or demised by the Crown.
2. The water must naturally rise to, and flow over, the surface of land.
3. Underground water must not discharge directly into a watercourse, wetland, reservoir or other body of water.
4. The spring water has not mixed with water in an otherwise existing watercourse at the point it is to be taken.<sup>7</sup>
5. The spring must be wholly within the boundary of the land belonging to the landowner or occupier of land and the exemption applies only within the boundary of the land belonging to the landowner or occupier of land where the spring rises and flows.

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<sup>6</sup> See definition of 'spring' and 'watercourse' in sections 2 and 3 of the Act and in Appendix 1. These definitions operate so that a spring only occurs at the head of a watercourse or in cases where no watercourse forms from the spring.

<sup>7</sup> This is not part of the definition of spring but is relevant to the point at which any spring water may be proposed to be taken. If at the point of taking, the spring water has mixed with regulated water, you may need a licence to take the regulated water and a permit to dam that regulated water.



If the spring satisfies all the above considerations, then it is a spring for the purpose of section 5(1)(a) and taking water will be exempt from Part III regulation.

You should use the self-assessment guide provided in this chapter to determine whether a spring for the purposes of section 5(1)(a) exists on your property.

### **Consideration 1 - Land is granted or demised by the Crown**

Land is granted or demised by the Crown if it:

- has been granted in such a way that it is no longer Crown land (e.g. freehold land), or
- is Crown land that is subject to a Crown lease to a person who is not part of the Crown (e.g. pastoral lease or other leasehold interest).

The status of the land can be verified by a certificate of title or a lease agreement with the Crown.

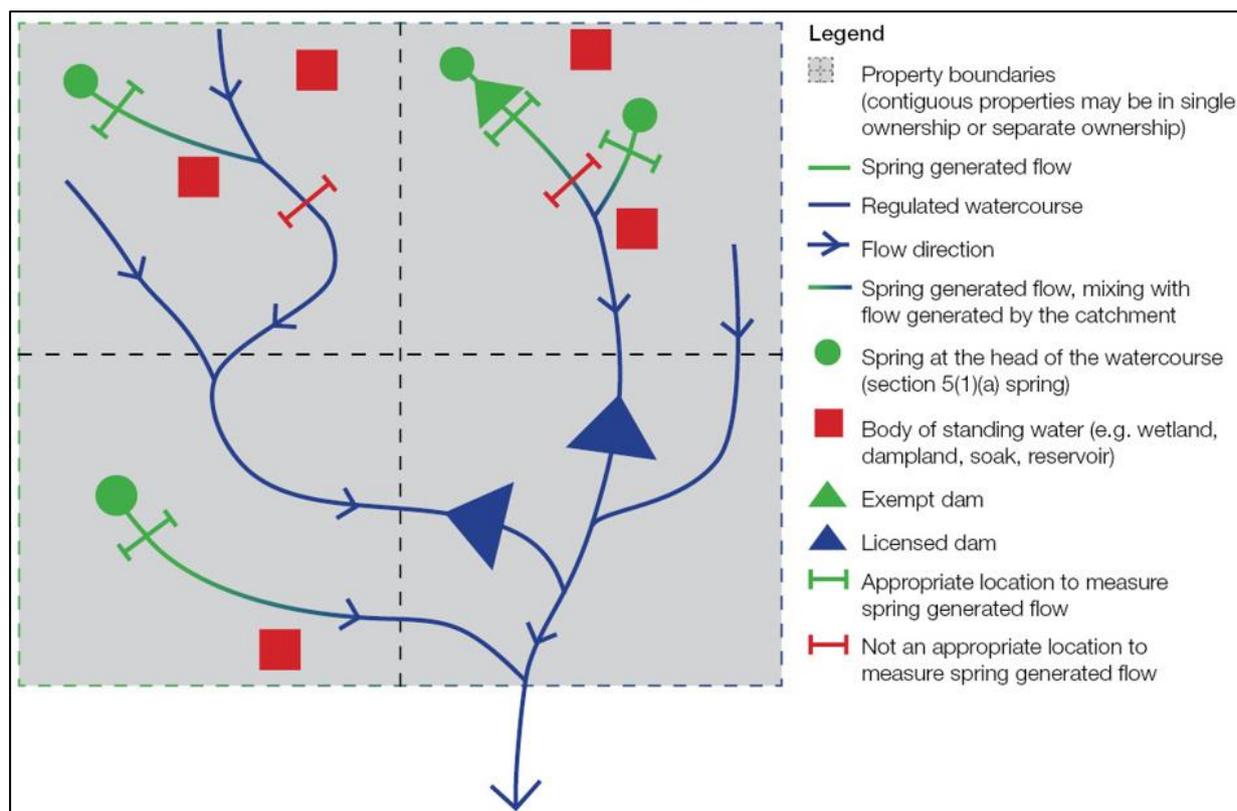
### **Consideration 2 - Spring water must naturally rise and flow over the surface of land**

A spring must be ‘a spring of water naturally rising to and flowing over the surface of land’. The fact that it must be ‘a spring of water’ and must be ‘rising’ indicates that it refers to water rising to the surface under its own pressure and does not include percolation of water because of waterlogging. The water must also be flowing away from this location and does not include wetlands, soaks, reservoirs or any other body of standing water.

Water should not be brought to the surface by artificial methods, meaning water must not be pumped to the surface, abstracted from underground or accessed by excavating or disturbing the land to access underground water.

You should consider:

- where the naturally rising water occurs
- whether the water flows over the surface of the land away from the point it rises to the surface
- how to measure and estimate the volume of water flow, produced by the spring (e.g. litres per second/ or cubic metres per second). Refer to Appendix 2.



*Figure 3: Section 5(1)(a) springs (green) are at the head of a watercourse and must flow away from the spring over the surface of the land. To ensure you are measuring the volume of flow generated by the spring, measurement locations should be located as close as is feasibly possible to the spring. Where a dam already exists below a spring, measure the flow leaving the dam at the spillway or in the watercourse just downstream of the dam. This should be done during periods where there are no other catchment flow inputs (e.g. outside of the wet season).*

### **Consideration 3 - Spring water must not discharge directly into a watercourse wetland, reservoir or other body of water**

You should be satisfied that the rising water does not discharge directly into a watercourse.<sup>8</sup>

Where a spring is located in the bed of a watercourse, it is not a section 5(1)(a) spring, as the spring water does not flow away over the surface of the land, but instead will be discharging directly into the watercourse.

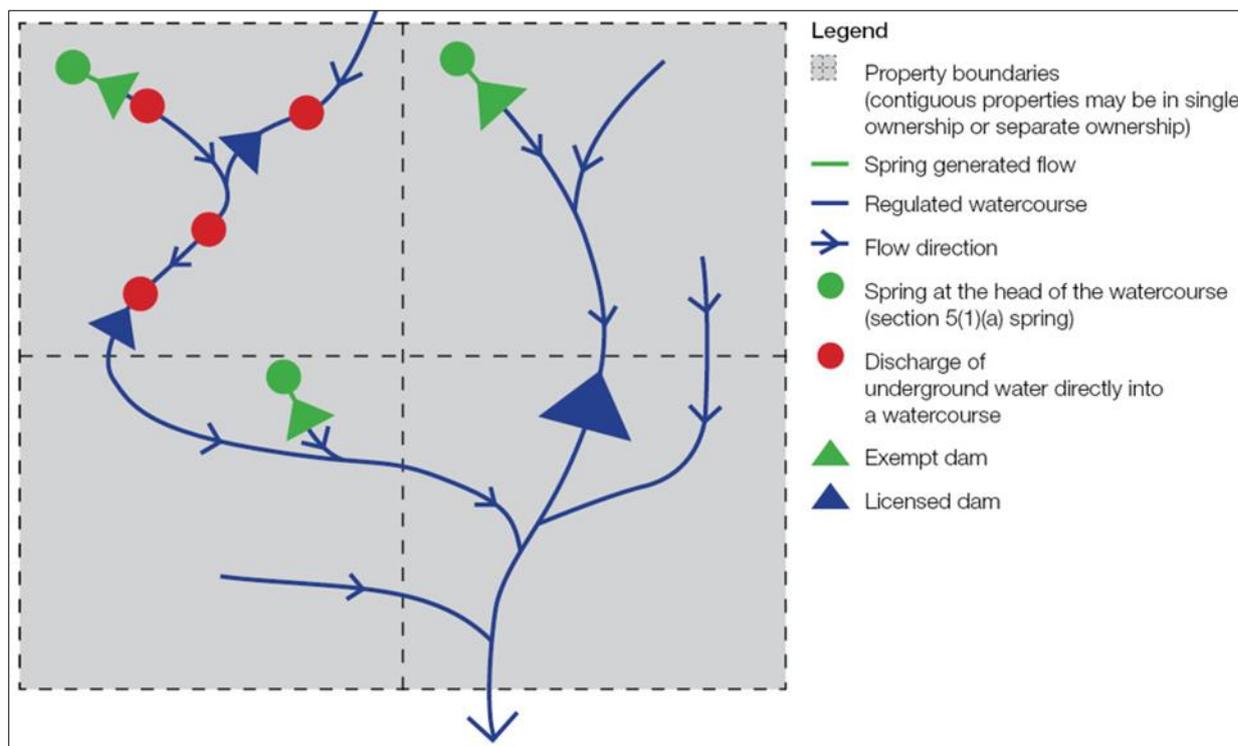
All section 5(1)(a) springs will be present in the catchment at the head of a watercourse or spring flow. Refer to Chapter 6.3.

It is important to identify the watercourses on your property and the sources of the water that contribute to the existence of those watercourses. You should consider the

<sup>8</sup> A spring, as defined under the Act, does not include the discharge of underground water directly into a watercourse, wetland, reservoir or other body of water.



guidance provided in Chapter 6.2 to help you identify whether a watercourse may be present and whether a discharge of underground water is into the bed of a watercourse. You can contact the department's regional office for your area or a suitably qualified water specialist if you are unsure whether a spring on your property is a section 5(1)(a) spring.



*Figure 4: Any discharge of underground water directly into the bed of a watercourse is not a section 5(1)(a) spring.*

#### **Consideration 4 - Spring water has not mixed with water in an otherwise existing watercourse at the point that it is to be taken**

With increasing distance downstream, away from a section 5(1)(a) spring, the spring watercourse is likely to also be receiving flow from other catchment sources such as surface runoff (commonly occurring as sheet flow), subsurface flow and tributary flow, and increasing in flow volume. Other catchment flows can combine with the water in a spring watercourse, increasing the volume of flow with distance downstream.

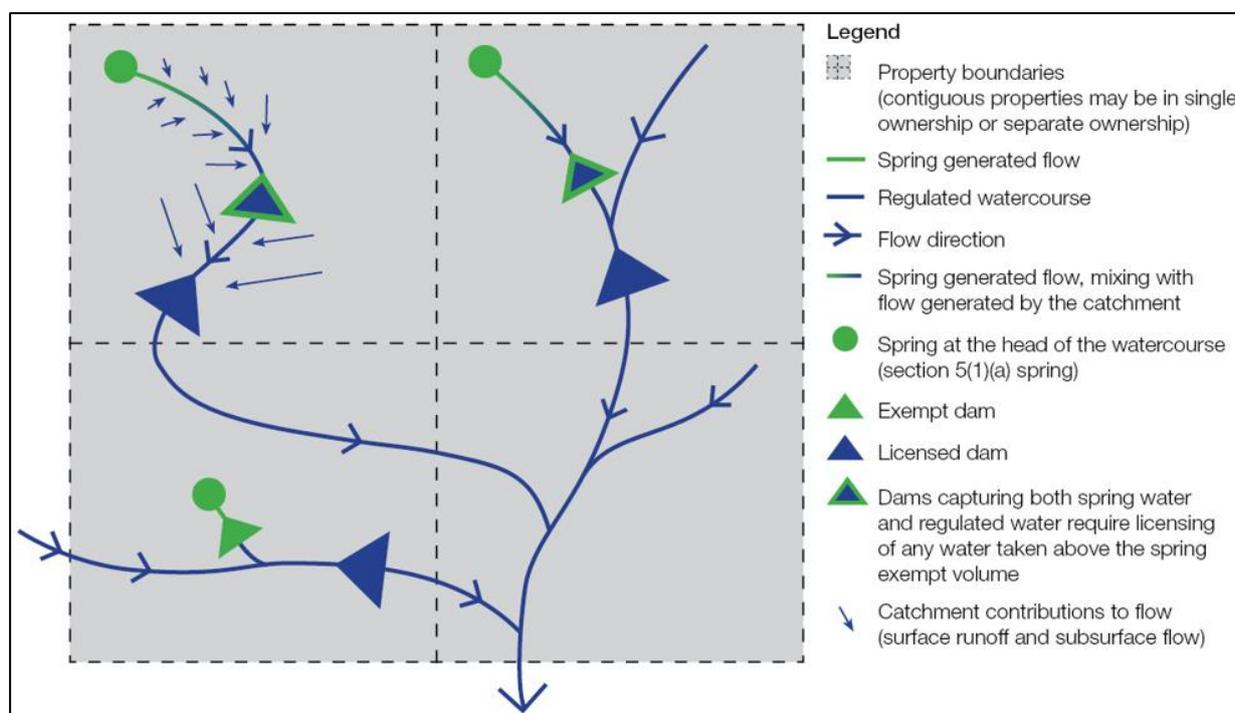
If the spring water collects with other flows, in circumstances where those other flows would, by themselves, be sufficient to form a watercourse, then the spring water has mixed with a regulated watercourse.<sup>9</sup>

If you want to take spring water from a point (or downstream from a point) where the spring water has mixed with a sufficiently formed watercourse in its own right, and you are in a proclaimed surface water area, you need a licence and, if you intend to

<sup>9</sup> A regulated watercourse is a watercourse in a proclaimed area or a watercourse that is part of a system of watercourses that are specified in a proclamation made under section 6 of the Act.



interfere with that watercourse, a permit. You would need to measure or estimate the total amount of water taken from the spring and used on your property. Refer to Appendix 2.



*Figure 5: Dams that are positioned on a watercourse directly downstream of a spring are less likely to be interfering with a regulated watercourse and less likely to require licensing. Dams constructed on a watercourse further downstream, away from the spring, run the risk of interfering with a regulated watercourse. Where a dam has interfered with a regulated watercourse, the take of the volume of water produced by the spring would be exempt and the take of other water generated by the catchment may need to be regulated.*

### **Consideration 5 - The spring must be wholly within the boundary of the land belonging to the landowner or occupier of land and the exemption applies only within this boundary where the spring rises and flows**

The exemption from regulation under section 5(1)(a) applies only within the boundary of the land that belongs to you; that is, where the spring rises and flows. The spring must be present wholly within your property.

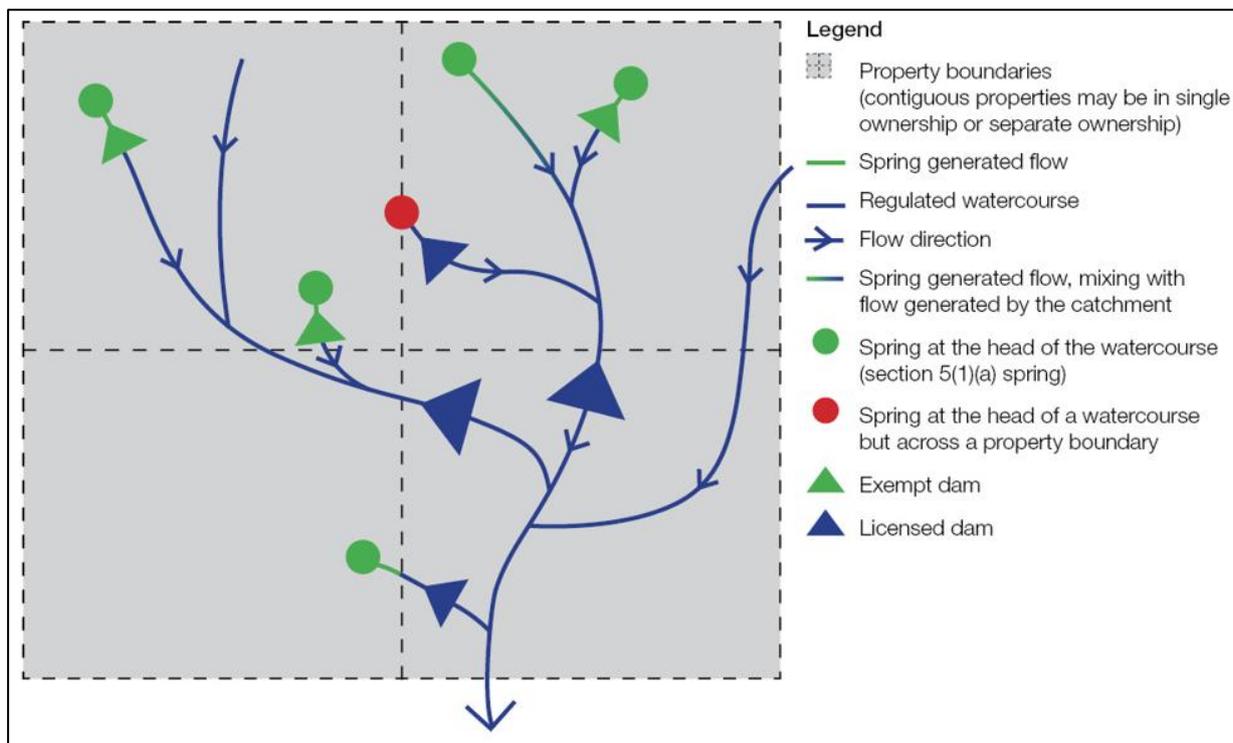
If you have confirmed that a spring exists wholly within a property boundary, the water flow generated from the spring may be exempt from regulation (subject to considerations 1 to 4) until the flow crosses a property boundary. The exemption does not apply once the spring water flows beyond the boundary of your land.

When spring water has passed beyond the boundary of the land where it rises and flows, then the section 5(1)(a) exemption no longer applies and regulation under Part III of the Act is required.



You should consider:

- the location where a spring rises and flows on the property – see considerations 2 and 3
- the location of other watercourses relative to the spring and your proposed location to take water – see consideration 4
- where the property boundaries are in relation to that spring.



*Figure 6: A spring that exists over a property boundary is not a section 5(1)(a) spring. The spring must be wholly within a property boundary and the water flow generated by that spring must be taken within that property boundary to be exempt from regulation.*

## 7.2 Self-assessment methods

You may undertake the following self-assessment methods:

- Onsite self-assessment and evidence gathering.
- Desktop assessment and evidence gathering.

In complex cases, you may wish to contact the department to discuss an assessment relative to your individual circumstances or obtain advice from a suitably qualified water specialist.

### Onsite self-assessment and evidence gathering

The department recommends you gather onsite evidence and record as much information as possible on the self-assessment considerations. This can be in the form of photos, videos and written documents.



You should record the date of the onsite property survey, including climatic details (e.g. rainfall, season), to provide useful information on the factors that may influence the rise and flow of water in the area.

Springs may flow all year round or have intermittent flow, making it a difficult task to identify whether water is a spring or a standing body of water such as a wetland, soak or waterlogging. The department recommends you conduct onsite validation of springs in late summer to reduce the perceived impact of rainfall (waterlogging) and elevated groundwater tables (i.e. seasonal variation of the watertable).<sup>10</sup>

### **Desktop assessment and evidence gathering**

You can undertake a desktop assessment to collect data for a specific property and see how it fits into the broader surface water catchment.

Your desktop assessment may consider information such as geospatial datasets from geographic information systems (GIS) available from government agencies (e.g. Landgate) or suitably qualified water specialists. If you engage a water specialist, you may have to pay for professional services and/or to obtain information and reports.

You can use a desktop assessment to determine the presence of a watercourse upstream of a potential spring by using geospatial datasets (e.g. hydrography, aerial photography, topography, geology).

The department may also be able to provide information that will assist you in your self-assessment as outlined in Chapter 4.

### **Assessing complex cases**

If your case is complex, you may need to seek technical validation from a suitably qualified water specialist for further investigation and review to determine the:

- natural rise and flow of spring water from underground water sources, and/or
- the presence of a watercourse and its interaction with uprising groundwater.

The following tools may be used as part of the assessment:

- *Confirm flow paths and catchment boundaries* – this process uses elevation data and GIS software to derive the flow direction and catchment area of a watercourse.
- *Determine likelihood of runoff from the catchment* – this process determines the likelihood of sheet flow being generated in intense rainfall events where the rainfall rate exceeds the soil infiltration rate.
- *Confirm that runoff will be likely to reach the catchment outlet* – this process will estimate the time of flow concentration and help estimate the likelihood of flow

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<sup>10</sup> A key difference between a section 5(1)(a) spring and standing water such as a wetland, soak or waterlogging, is that the water in a section(5)(1)(a) spring will flow away from the point at which the water reaches the surface.



reaching the catchment outlet, which may represent the intersection with another watercourse or existing or proposed dam.

- *Streamflow modelling* – this process scales measured streamflow<sup>11</sup> from the nearest stream-gauging station, where relevant and applicable.

These tools may be used in conjunction with on-site inspection and validation.

### 7.3 Compile information

Once you have completed your self-assessment and appropriately determined that the circumstances on your property meet the considerations of section 5(1)(a), the department recommends that you collate and retain all supporting evidence. This may include:

- maps identifying property boundaries, location and extent of water collection areas and water flow, topography or vegetation
- satellite imagery, photographs and videos
- hydrological reports from suitably qualified surface water experts addressing hydrological elements of the provision
- methodology and records of measurement to demonstrate volumetric estimations of flow and annual calculations
- any legal documents relating to land tenure or access.

You will need to pay all costs associated with the engagement of a suitably qualified water specialist to undertake any investigations and any written assessment reports.

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<sup>11</sup> Streamflow is water that flows along a defined channel and bed and may flow permanently, intermittently or occasionally. Stream flow describes the flow of water in any watercourse and is part of the catchment's water balance.



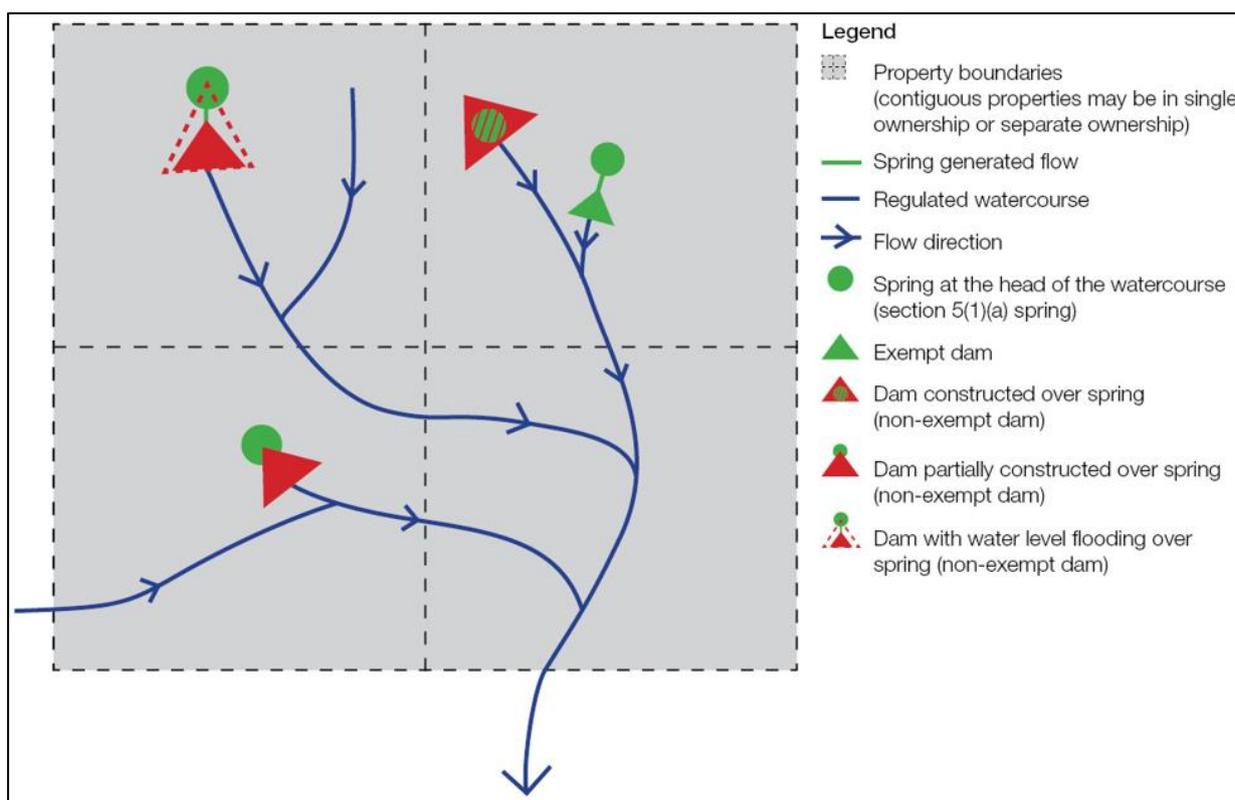
## 8. Management of springs and spring dams

### 8.1 Management provisions

You need to determine whether a spring exemption applies before starting any works or taking any water from a spring. The department recommends you follow the self-assessment steps in Chapter 7 of this guideline to determine this.

If a spring exemption applies, you should ensure:

- the spring is not excavated as the water must naturally rise to the surface for that spring to continue to be a spring for the purposes of section 5(1)(a) (Figure 7)
- a dam is not constructed over the spring and reservoir water does not inundate the spring. If you put a spring dam as close as possible to the spring (without inundating it), this will reduce the likelihood that licensing will be required when spring water mixes with other water in a watercourse. In those cases, you may need to measure or estimate the volume of water from the spring to ensure you take only the exempt volume (Figure 7).



*Figure 7: To be exempt from regulation under section 5(1)(a) a dam must not be constructed over a spring and the reservoir water level must not inundate the spring.*

*Top right: The property has two section 5(1)(a) springs. The dam to the right is exempt as it is constructed on the spring watercourse below the spring and the dam does not inundate the spring when full. The dam to the left is constructed*



*over a spring and is not exempt as the spring has been excavated and the underground water no longer rises naturally to the surface.*

Top left: *The dam on the property is constructed below the spring on the spring watercourse but when full, the dam water level extends back over the spring and is therefore not an exempt dam.*

Bottom left: *The property has a dam partially constructed over and interfering with a spring and is not an exempt dam.*

If you have self-assessed that a spring exemption does not apply under section 5(1)(a), then Part III of the Act applies, and you need to apply to the department for:

- a section 5C licence to take water (unless a riparian right<sup>12</sup> applies)
- a section 17 permit to interfere with the bed and banks of a watercourse (even where a riparian right applies).

The department will consider your application in accordance with Schedule 1 clause 7(2) of the Act, which includes assessing the availability of water at the time the application was received by the department.

You must not undertake any works to interfere with the bed or bed and banks of a watercourse or take water until the department has granted the licence and/or permit.

The department will continue to respond to potential non-compliance following a complaint or site inspection as part of its proactive compliance monitoring programs, in accordance with its [Compliance and Enforcement Policy](#).

## 8.2 Previous determinations of a spring exemption, legacy and historical dams

There may be circumstances where the department's advice regarding the application of section 5(1)(a) spring exemption to a spring on your property was correct at the time the advice was given, but the construction or placement of the infrastructure to take the water has the effect that section 5(1)(a) no longer applies. In circumstances where section 5(1)(a) no longer applies, you may need a licence to take water.

Where you have commenced construction or propose to commence construction of a dam or other infrastructure to take spring water, please ensure that you undertake the self-assessment in this guideline before completing or starting works. If your self-assessment indicates that your spring exemption no longer applies, you may need a permit and a licence to take water (see chapter 8.1 above for further guidance).

<sup>12</sup> Riparian right is a right provided under section 9 of the Act and, in summary, is a right of an owner or occupier of land through which, or contiguous to, runs any watercourse; or contiguous to which, or partly within which, a wetland is situated, to take water from that watercourse or wetland for domestic, stock (not being raised under intensive conditions) or garden use (the garden must not exceed two hectares, from which no produce is sold and is used in connection with a dwelling).



Where you have completed construction works, you are also encouraged to undertake the self-assessment process in this guideline to verify that you continue to meet the requirements of section 5(1)(a) post-construction of your dam or other water take infrastructure. If your self-assessment indicates that your spring exemption no longer applies, you may need a licence to take water (see chapter 8.1 above for further guidance).

The department can assist you with your self-assessment by providing access to information and advice.

Where an existing licensed dam is considered eligible for a spring exemption after a reassessment (e.g. because of associated land transfer of freehold title or lease arrangements with the Crown), the department can terminate the licence, or reduce it by an equivalent volume for the exempt dam (if there are other regulated dams on the property). This is to ensure that the take of any other water on the property, which is still subject to Part III, remains licensed.



## Appendix 1 - Water legislation

The following primary legislation for managing the take and use of water in Western Australia is:

- [Rights in Water and Irrigation Act 1914](#) (the Act)
- [Rights in Water and Irrigation Regulations 2000](#) (the Regulations).

The Act provides for rights in water resources, and makes provision for the regulation, management, use and protection of water resources, and for related purposes.

### Legislative provisions of the Act

#### Part I of the Act

##### *Sections 2, 3 and 4A of the Act*

Sections 2 and 3 of the Act provides the definition of water terms such as spring and watercourse. These terms and how they relate to a spring exemption are discussed in this guideline.

##### Section 2:

**spring** means a spring of water naturally rising to and flowing over the surface of land, but does not include the discharge of underground water directly into a watercourse, wetland, reservoir or other body of water.

**underground water or underground water source** includes water that percolates from the ground into a well or other works.

##### Section 3:

(1) In this Act, unless the contrary intention appears —

**watercourse** means —

(a) any river, creek, stream or brook in which water flows;

(b) any collection of water (including a reservoir) into, through or out of which any thing coming within paragraph (a) flows;

(c) any place where water flows that is prescribed by local by-laws to be a watercourse,

and includes the bed and banks of any thing referred to in paragraph (a), (b) or (c).

(2) For the purposes of the definition in subsection (1) —

(a) a flow or collection of water comes within that definition even though it is only intermittent or occasional; and

(b) a river, creek, stream or brook includes a conduit that wholly or partially diverts it from its natural course and forms part of the river, creek, stream or brook; and



*(c) it is immaterial that a river, creek, stream or brook or a natural collection of water may have been artificially improved or altered.*

**wetland** means a natural collection of water, whether permanent or temporary, on the surface of any land and includes —

*(a) any lake, lagoon, swamp or marsh; and*

*(b) a natural collection of water that has been artificially altered,*

*but does not include a watercourse.*

Section 4A:

*In this Part [Part III], **watercourse** includes waters flowing from a spring to which this Part (III) applies.*

Section 3 of the *Water Agencies (Powers) Act 1984*:

**reservoir** means a reservoir, dam, tank or cistern.

### Summary of Part III of the Act

Part III of the Act provides for the management and control of water resources and makes provision for rights in water through regulation or exemption.

If an exemption does not apply, then a landowner or occupier of land would be subject to Part III:

- section 5C licensing to take water (for take that exceeds a riparian right), and/or
- permitting under section 17 to divert water or interfere with the bed or bed and banks of a watercourse.

### *Section 4 of the Act*

This guideline aligns with the objects of Part III of the Act, which are:

- to provide for the management of water resources:
  - (i) for their sustainable use and development to meet the needs of current and future users
  - (ii) for the protection of their ecosystems and the environment in which water resources are situated, including by the regulation of activities detrimental to them.

### *Section 4A of the Act*

Section 4A provides a further definition of watercourse for the purposes of Part III, which includes water flowing from a spring to which Part III applies.

### *Section 5 of the Act*

This guideline focuses on the section 5(1)(a) spring exemption provided by the Act.

Section 5 was introduced as part of the 2000 Act amendments to balance community interest in water resources, the rights of a landowner or occupier of land that have a spring on their property and the rights of other downstream water users.



Springs that meet the section 5(1)(a) requirements are exempt from licensing and permitting under Part III of the Act, unless a local by-law is prescribed bringing the spring within the control of the Act.

#### *Section 5A of the Act*

The right to the use, flow and control of water at any time vests in the Crown except as allocated under the Act or another written law. The department is the State Government agency responsible for administering the Act on behalf of the Minister for Water.

An exemption or a water licence does not grant ownership to water. It only provides access to take and use water consistent with terms, conditions or restrictions of a section 5C licence, a riparian right or an exception provided under the Act or another written law (e.g. spring or riparian).

#### *Section 5C of the Act*

Taking water without a valid section 5C licence or in accordance with an exemption is considered an offence under the Act and may be subject to compliance and enforcement action.

#### *Section 9 of the Act*

In summary, section 9 provides what is known as a 'riparian right' which is a right of an owner or occupier of land through which, or contiguous to, runs any watercourse; or contiguous to which, or partly within which, a wetland is situated, to take water from that watercourse or wetland for domestic, stock (not being raised under intensive conditions) or garden use (the garden must not exceed two hectares in size) from which no produce is sold and is used in connection with a dwelling.

#### *Section 17 of the Act*

The landowner or occupier of land must not interfere with the bed or bed and banks of a watercourse unless the activity is authorised by a permit or an exemption under the Act. Unauthorised activity is considered an offence under the Act and may be subject to compliance and enforcement action.

#### *Sections 26A and 26B of the Act*

A spring naturally rises from an underground water source. Under sections 26A and 26B, a person must not commence, construct, enlarge, deepen or alter any artesian well across the state or any non-artesian well within a proclaimed area. If a spring is excavated, that spring may be subject to regulation under Part III of the Act (sections 26D and 5C) unless it is exempt from control in accordance with a section 26C exemption order or a local by-law.



## Appendix 2 - Measuring and estimating the volume of water produced by a spring

To meet the requirements of section 5(1)(a) of the Act and be exempt from regulation, the department recommends that you only take the volume of water flow generated by a section 5(1)(a) spring.

Some springs produce flow year-round (perennial springs) while others may flow intermittently (intermittent springs).

### Perennial springs

For perennial springs, you may wish to measure and estimate the flow volume from the spring once in the dry season. Measuring or estimating flow during the peak of the dry season helps ensure there are no other flow inputs from the catchment. In the south-west of the state, this is typically during February.

A one-off flow measurement in the dry season can be used to calculate the flow volume over a year and inform the size of dam construction or installation of infrastructure that will not take more than the spring exempt volume.

Alternatively, you can undertake a series of measurements spaced over a year, or continuous flow measurement, to inform any variability in the flow leaving a spring during the year. As a minimum, a flow measurement is needed during the peak of the dry season to show the volume generated by the spring.

### Intermittent springs

For intermittent springs, you may wish to perform a series of flow measurements or continuous flow measurement. At a minimum, it is recommended a flow measurement is conducted as soon as practicable after the spring starts to flow, and the date of the measurement and the date the spring started to flow, are recorded. Other measurements spread out over the flow season can be conducted to inform how the flow coming from the spring changes over a year. The single flow measurement soon after the spring has started to flow or the series of flow measurements over the year, can be used to estimate the annual volume of water flowing from the spring, which is the volume of water you can take under the spring exemption. Alternatively, you may wish to perform a continuous flow measurement method over the year.

### Flow measurement and estimation approaches

Before measuring and estimating any flow, you should ensure there has been no rainfall in the preceding week.

The method of measurement you choose to estimate the volume of flow leaving a spring will depend on your local land circumstances including:

- the size of the spring and the amount of water flow it generates
- the presence of a confined channel downstream of the spring
- the presence of an existing dam or dams downstream of the spring.



Two simple flow measurement methods you can use for springs with a small amount of flow are the volumetric 'bucket method' and the 'float method'. Please note that these methods only provide a representative flow at the time of measurement in context of the local circumstances in the above dot points.

You can contact the department's regional office in your local area to get advice on how best to measure the flow leaving a spring.

### **Bucket method**

1. Find an area downstream of the spring where flow is confined to a narrow pathway.
2. Place a bucket or container of known volume below the spring and record the time in seconds it takes to fill the container (the container should not be narrower than the width of the flow path). Repeat this step a minimum of three times to provide an average.
3. Divide the volume (in litres) by the time (in seconds) taken to fill the bucket or container to give you the flow rate in litres per second (L/s).
4. Multiply this number by 0.0864 to give you the average flow rate in megalitres per day (ML/day).
5. Multiply this number by the number of days the spring flows in a year to obtain an estimate of the annual volume of water produced by the spring in megalitres (ML). This is suitable where a measurement has occurred soon after the spring has started to flow (ideally within the first week of the spring generating flow) or during the peak of the dry season.
6. Where several flow measurements have occurred for different periods during the year to capture variability in spring generated flow, multiply each ML/day flow rate by the estimated number of days the spring flows at that rate in a year. Add these volumes together to obtain an estimate of the annual volume of water produced by the spring in megalitres (ML).

### **Float method**

1. For springs with a relatively straight and shallow flow path below of the spring, mark out a specific length and record the time (in seconds) it takes for a floating object (e.g. an orange) to travel that distance.
2. Record the length, width and depth of the section being measured (in metres). Multiply these three numbers to get the volume of water in cubic metres (m<sup>3</sup>).
3. Divide this volume by the time (in seconds) taken for the floating object to travel the marked length to give you a flow rate in metres cubed per second (m<sup>3</sup>/s).
4. Multiply this flow rate by 86.4 to give you a flow rate in megalitres per day (ML/day).
5. Multiply the flow rate (ML/day) by the number of days the spring flows in a year to obtain an estimate of the annual volume of water produced by the spring in



megalitres (ML). This is suitable where a measurement has occurred soon after the spring has started to flow (ideally within the first week of the spring generating flow) or during the peak of the dry season.

7. Where several flow measurements have occurred for different periods during the year to capture variability in spring generated flow, multiply each ML/day flow rate by the estimated number of days the spring flows for that period. Add these volumes together to obtain an estimate of the annual volume of water produced by the spring in megalitres (ML).

### Other methods

For springs with a large volume of flow or site-specific conditions not suited to the bucket or float method, you can conduct flow measurement using standardised hydrometric measurement equipment.

This can range from the use of a flow meter (point velocity measurement), to flow gauging across a channel cross-section (area velocity method), to installation of a V-notch weir (gauging station, continuous flow measurement) and should be done in line with the Bureau of Meteorology's [National Industry Guidelines for hydrometric monitoring](#).

You may wish to engage a suitably qualified water specialist if you are considering undertaking this method of measurement.

You can also contact the department's regional office in your local area to discuss potential flow measurement options.



## Document implementation

This guideline comes into effect on the day it is published.

## Related documents

<b>Non-department documents</b>	
<b>Author</b>	<b>Title</b>
WA State Parliament	<i>Rights in Water and Irrigation Act 1914</i>
WA State Parliament	Rights in Water and Irrigation Regulations 2000
WA State Parliament	<i>Environmental Protection Act 1986</i>
WA State Parliament	<i>Biodiversity Conservation Act 2016</i>
Australian Parliament	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
World Health Organization	<i>Guidelines for drinking water quality, volume 3: Surveillance and control of community supplies, second edition 1997</i>

<b>Department documents</b>	
<b>Author</b>	<b>Title</b>
Department of Water and Environmental Regulation	<i>Environmentally sensitive areas</i> (webpage)
Environmental Protection Authority	<i>Environmental factor guideline – Inland waters</i> (webpage and 2018 publication)
Environmental Protection Authority	Chapter B4 of <i>Environmental guidance for planning and development – Guidance statement 33</i> (EPA 2008) (currently being reviewed)
Department of Water and Environmental Regulation	<i>Supplementary information for permit applications to interfere with bed or banks of watercourses</i> (Department of Water 2012)
Department of Water and Environmental Regulation	<i>Field guide: Spring exemptions</i>

## Custodian and review

The currency of this document will be continuously evaluated and reviewed no later than three years from the date of issue or sooner as required.

<b>Document details</b>	
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