
Water Policy Bulletin**Dewatering and Drainage Wells under the *Water Sustainability Act***

This bulletin provides general information on the [Water Sustainability Act](#) (WSA) requirements for constructing, operating and decommissioning **dewatering** and **drainage wells** in British Columbia (B.C.). It explains the legislative similarities and differences between the two types of wells and includes additional resources for reference. This bulletin does not discuss the regulatory requirements for drainage works.

This document is accompanied by the Dewatering and Drainage Wells Flowchart ([black and white PDF, 116 KB](#)) ([colour PDF, 180 KB](#)). The flowchart summarizes the legislative and regulatory requirements for dewatering and drainage wells in B.C.

Disclaimer: This document is provided as guidance only. In the event of a discrepancy between this information and the provisions in the WSA and regulations, the provisions in the statute and regulations will apply.

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1. Dewatering and drainage well construction, operation and decommission

The construction of a **dewatering well** or a **drainage well** may be necessary to divert groundwater temporarily or permanently for construction or engineering purposes. Under the WSA, the [Groundwater Protection Regulation](#) (GWPR) describes the minimum standards for well construction, maintenance, deactivation and decommissioning. It describes the types of qualified people certified to drill wells, install well pumps and perform related services.

1.1 What is the difference between a dewatering well and a drainage well?

[GWPR s.1](#) defines **dewatering wells** and **drainage wells** as wells used or intended to divert or convey groundwater. Both types of wells are used to facilitate an excavation; stabilize an area of land, a building or other improvement; or reduce water pressure in a geological formation. Additionally:

- a **dewatering well** is defined as a well used or intended to be used for the purpose of diverting or conveying groundwater by pumping; and,
- a **drainage well** is defined as a well used or intended to be used for the purpose of diverting or conveying groundwater by the force of gravity and without pumping.

1.2 What is the difference between a permanent and a temporary well?

As defined under [GWPR s.1](#):

- a **permanent** well is a well or a well pump that is intended to be in service for a period of more than 90 days after construction and installation; and,
- a **temporary** well is a well or a well pump that is intended to be in service for a period of not more than 90 days after construction and installation. The owner of a temporary well must ensure that the well is decommissioned in accordance with [GWPR s.71](#) within 90 days after drilling is complete.

A **temporary dewatering well** may be turned into a **permanent dewatering well** by upgrading the well to meet the construction standards and requirements under the WSA and GWPR within 90 days after drilling is complete ([GWPR s.73](#)). An alteration report must be submitted to the comptroller and well owner ([GWPR s.76](#)).

1.3 Converting a dewatering or drainage well into a monitoring or water supply well

If the intended purpose of a well is changed, the well must meet the minimum well construction standards for its new well type. An alteration report must be completed and submitted to the comptroller and well owner within 90 days after the alteration ([GWPR s.76](#)).

Example: If a temporary/permanent dewatering well is completed with a sounding tube to monitor water levels over time, the dewatering well is deemed to have been converted to a monitoring well and the well must meet minimum well construction standards for a monitoring well.

1.4 Who can construct dewatering wells or drainage wells?

Who can construct **dewatering wells** or **drainage wells** depends on well depth. Under [WSA s.49](#), a well that:

- is drilled into or through an aquifer must be constructed by a [registered water well driller](#) or under the direct supervision of a registered water well driller, or professional engineer or professional geoscientist (e.g., P.Eng. or P.Geo., registered with Engineers and Geoscientists BC); or,
- is excavated to a depth of less than 15 metres, into or through an aquifer, does not need to be constructed by a [registered water well driller](#) or under the direct supervision of a registered water well driller or professional engineer or geoscientist.

If artesian conditions are encountered during well drilling or excavation, the well driller or professional must stop or bring the flow under control, as described in [WSA s.52\(1\)](#). The well owner must be notified to ensure that a [registered well driller](#) or professional qualified for artesian conditions is engaged to oversee or take over the work ([GWPR s.66](#)).

1.5 What are the well construction standards?

The well driller, professional or other person responsible for constructing a well is required to comply with [Part 3, 4 and 5 of the GWPR](#). The responsible person must ensure that the well meets the minimum standards for the casing material, wellhead completion, surface seal, well caps and covers and well identification. The responsible person must also submit a well construction report to the Province, if required.

Different types of wells have different requirements*:

- **Dewatering wells** constructed, altered, or decommissioned after November 1, 2005, must meet the minimum construction standards in the GWPR. Additional construction standards were enacted on February 29, 2016, under the WSA and GWPR. Well pump installation must meet the requirements of [WSA s.50](#).
- **Drainage wells** are exempt from the requirements ([GWPR s.4 \(b\)](#)) and do not require a surface seal unless artesian conditions are encountered.

*Note: **dewatering wells** and **drainage wells** that have artesian conditions must meet the minimum construction standards in the GWPR, including artesian flow requirements ([GWPR Part 8; WSA ss.52, 53 and 57 \(3\)\(b\)](#)) and reporting requirements for decommissioning flowing artesian wells ([GWPR ss.72 \(b\), 78 and 80](#)). Artesian flow management reports must include the required information of [GWPR Schedule 1](#).

1.6 Who is responsible for a dewatering well or drainage well?

The well driller or the well driller supervising the work is generally responsible for the construction, alteration or decommission work for a well. However, if a well driller is working under the direct supervision of a professional, the professional is responsible for

work on the well. The well driller and the professional should clarify their supervisory relationship and their respective responsibilities under the GWPR before starting work.

A well owner is responsible for ensuring a well meets or exceeds construction standards, operating and maintaining a well and having the well decommissioned at the end of its life.

1.7 What does it mean to control a flowing artesian well?

Under [WSA s.52\(1\)](#), a flowing artesian well is under control if the artesian flow:

- is clear of sediment,
- is entirely conveyed through the well's production casing to the wellhead, if the well has a production casing,
- may be mechanically stopped for an indefinite period in a manner that prevents leakage onto the surface of the ground or into another aquifer penetrated by the well; and,
- does not pose a threat to public safety or the environment.

1.8 What are alternative specifications and when and how are they used?

Some requirements in the GWPR (e.g., well siting, well decommission) allow for alternative specifications in specific circumstances where it is not feasible¹ to meet the minimum standards in the GWPR.

A professional with competency in hydrogeology can prepare written alternative specifications, provided that the alternative specification achieves the same objectives as the standards in the GWPR. Alternative specifications must be submitted to and accepted by a provincially designated engineer before the work is undertaken ([GWPR ss.18, 72](#)). If accepted, the provincially designated engineer may specify Terms and Conditions for the alternative specifications.

The work must be done in accordance with the accepted alternative specifications and Terms and Conditions, if applicable ([GWPR ss.18, 60, 72](#)). A copy of the alternative specifications must be attached to the well construction report ([GWPR Schedule 3](#)) or well decommissioning report ([GWPR Schedule 4](#)) (as applicable) on the completed work.

1.9 Designing alternative specifications for well construction

Per [GWPR s.18](#), a professional responsible for designing alternate specifications for well construction must:

¹ "Feasible" is generally accepted to mean "capable of being done or carried out". The term is not defined in the WSA or associated regulations. Whether something is feasible or not must be determined by a professional under the GWPR based on the common meaning of the term "feasible" as indicated by its dictionary definitions.

- provide written alternative specification for siting the proposed well so that the existing uses of the existing water supply well will not be adversely affected,
- submit the alternative specification report to a provincial engineer, under the Act, for acceptance prior to drilling the proposed well,
- the person responsible drills the dewatering well in accordance with the alternative specifications accepted by the engineer, and
- the person responsible for drilling the well must include the accepted alternate specifications with the well report submitted to the comptroller and well owner.

1.10 What are the well siting requirements?

Under [GWPR s.18](#), **permanent dewatering wells** must be sited a minimum of 15 metres from existing water supply wells to reduce the potential adverse impacts to existing water supply wells, contamination from adjacent sources and/or to groundwater quality.

The exception to this requirement is if the existing water supply well is not in use and is not intended to be in use, or if the owner of the proposed well also owns the existing well, and only one additional well is proposed to be drilled.

Alternative specifications for siting must be prepared and submitted by a professional with a competency in hydrogeology to a provincially designated engineer for acceptance before the well is drilled.

Temporary dewatering wells and **drainage wells** are exempt from the siting requirements.

1.11 When do you need to attach a well identification plate?

Well identification plates must be attached to **permanent dewatering wells**. **Temporary dewatering wells** and **drainage wells** do not require well identification plates. [Schedule 6 of the GWPR](#) summarizes the requirements for attaching well identification plates for each class of well.

1.12 Are well yield tests required for dewatering wells?

Yes, the person responsible for drilling or altering a **permanent dewatering well** must conduct a well yield test and include the details of the well yield test in the well construction report. A well yield test is not required if there is insufficient water in the well to conduct the test ([GWPR s.31](#)).

Depending on the project, a pumping test and additional assessments may also be required (learn more about pumping tests in the [Before You Drill Brochure](#) and [Guide to Conducting Pump Tests Brochure](#)).

1.13 Multiple wells and “well fields”

A “well field” is generally considered to be one or more wells used to divert groundwater for the same project, or where, in the reasonable opinion of the technical reviewer, the wells are so closely related they can be considered to form a single project or operate together. “Well field” is not defined under the WSA or the GWPR.

Under the WSA, well reports must be submitted for individual wells and well identification plates only apply to individual wells. Multiple wells should not be grouped together as a “well field” when submitting well reports or issuing well identification plates.

1.14 Who can decommission dewatering wells or drainage wells?

Dewatering wells and drainage wells:

- that have artesian conditions must be decommissioned by a [registered water well driller](#) or ensure a professional qualified with respect to the artesian conditions is engaged to oversee or take over the work ([GWPR s.71](#));
- that are drilled without encountering artesian conditions must be decommissioned by a [well driller or well pump installer registered with the Province](#) or under the direct supervision of a well driller, well pump installer or a professional ([WSA s.49](#)); or
- that are excavated to a depth of less than 15 metres or are a drilled well that has a depth of not more than 5 metres without encountering artesian conditions, can be decommissioned by any person in accordance with the regulations ([GWPR s.17](#)).

1.15 When is a well report required?

“Well reports” refer to construction, alteration and decommission reports. Well reports must be submitted to the Province and the well owner for:

- **permanent dewatering wells**; and,
- all wells that encounter artesian conditions, including **temporary dewatering wells** and **drainage wells**.

Well reports are not required for **temporary dewatering wells** and **drainage wells** without artesian conditions.

The well report must be submitted within 90 days after completing well drilling or alteration and be retained by the person responsible for drilling or altering a well for at least 10 years ([GWPR s.76](#)).

[Schedule 6 of the GWPR](#) summarizes well report submission requirements for dewatering wells, including construction, alteration and decommission reports.

2. Permission to use, divert or store water

2.1. When is WSA authorization required?

The WSA is B.C.'s principal act regulating the sustainable management of water. Most uses of water from a stream or aquifer require WSA authorization before the water can be used, diverted or stored. This authorization can be a WSA water licence or use approval and applications are submitted online through [FrontCounter BC](#). The WSA and [Water Sustainability Regulation](#) (WSR) describe when WSA authorization is required.

Dewatering wells that are:

- in operation for less than 24-months require a [Use Approval](#); or,
- in operation for more than 24 months require a [Water Licence](#) or multiple [Use Approvals](#).

The authorization type depends on site and project specific conditions. Contact your [regional FrontCounter BC office](#) for additional information.

Example: A dewatering well was installed to remove groundwater from a mall redevelopment work site. The work being undertaken is below the static groundwater level or water table in this area. A water licence is required to pump the groundwater from the dewatering well.

Drainage well and works exemptions

Under [WSR s.35](#), **drainage wells** do not require authorization if:

- they meet the definition of “drainage well” under the GWPR;
- the groundwater is not used for a water use purpose under the WSA between the time it is diverted and when it is discharged; and,
- the groundwater is discharged without causing a significant risk of harm to public safety, the environment, land or property.

[WSR Division 4 \(ss.31 to 35.1\)](#) describes when certain drainage works or the diversion and uses of water do not require authorization. These include works for diverting water to protect road or railway corridors, nuisance water drainage in local government works, agricultural and building perimeter drainage, mine drainage works, and water diversion and use for mineral exploration and placer mining activities and for firefighting. Note that, among other requirements, water must be discharged without causing a significant risk of harm to public safety, the environment, land or other property.

2.2. What other legislation and regulations may apply?

Anyone seeking to divert or use water in B.C. is responsible for ensuring that they are compliant with all applicable statutes and regulations (Federal, Provincial, Municipal).

For example, additional considerations and permits may be required for dewatering and drainage wells include but are not limited to:

- a 30 metre minimum setback from a sewerage system (*Public Health Act*, Sewerage System Regulation, Health Hazards Regulation);
- a 60 metre minimum discharge setback from a municipal wastewater facility to a well (Municipal Wastewater Regulation);
- treatment, discharge or removal of groundwater must not cause an adverse impact on the receiving environment (*Environmental Management Act*, Municipal Wastewater Regulation); and,
- local government permit requirements if the water will be discharged into a municipal drainage system.

Example: Groundwater may have a lower concentration of dissolved oxygen and/or naturally higher concentrations of metals and minerals compared to surface water. If the groundwater will be discharged to a stream, the proponent must consider potential impacts associated with water quality and the additional requirements that may apply.

3. Contact Us

FrontCounter BC

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[Regional FrontCounter BC Contacts](#)

Regional Contact Information

- [Regional Groundwater Contacts](#)
- [Regional Health Authorities](#)

4. Links and resources

Applying for WSA authorization:

- [Apply Online: Water Licence](#)
- [Apply Online: Use Approval](#)
- [Water Licences and Approvals](#)
- [Waste Discharge Authorizations](#)

Water policy and guidance:

- [Before You Drill](#)
- [Guide to Conducting Pump Tests](#)
- [Water Policy list](#)
- [Managing flowing artesian wells](#)

Water tools and resources:

- [Provincial Registry for Well Drillers and Well Pump Installers](#)
- [Water Data and Tools](#)
- [Groundwater Science and Data](#)
- [Report a Natural Resource Violation](#)

Provincial Acts and Regulations:

- [Water Sustainability Act](#)
 - [Groundwater Protection Regulation](#)
 - [Water Sustainability Regulation](#)
- [Environmental Management Act](#)
 - [Hazardous Waste Regulation](#)
 - [Waste Discharge Regulation](#)
- [Public Health Act](#)
 - [Health Hazards Regulation](#)
 - [Sewerage System Regulation](#)