

Water withdrawal Registration and Reporting Guidance Document

Introduction

A new state law, Act 135 of 2022 ([full text](#); [summary](#)), requires any person withdrawing a certain amount ‘surface water’ (as defined in 10 V.S.A. § 1002 (20)) to register with and report the water withdrawal and usage to the Vermont Department of Environmental Conservation (VDEC) beginning January 1, 2023. The purpose of the registration and reporting program is to collect baseline information on surface water use to fill the existing information gap in the state. All Vermonters and sectors withdrawing water are advised to register their water withdrawal and begin record keeping of water withdrawn.

It is important to note that registration program for water withdrawal will be open throughout year for those that meet or exceed the threshold (see Threshold for Registration and Reporting).

Surface water withdrawals required to register are also required to file an annual report of their actual surface water use with VDEC the following year. The first such report will be due to the VDEC on January 15, 2024. **It is advised that those withdrawing surface water begin record keeping starting January 1, 2023** (see Example for record keeping).

Surface water withdrawals that are used for fire suppression or other public emergency purposes are not required to register and report use. Additionally, surface water withdrawals that report under the following sections of law are not required to register or report under the new law. This includes surface water withdrawal reporting under 10 V.S.A. Chapter 41 Subchapter 3 – Water Withdrawals for Snowmaking and surface water withdrawals approved pursuant to 10 V.S.A. Chapter 56 – Public Water Supply and the rules adopted for public drinking water supply. Additionally, surface water withdrawals for irrigation for farming, and livestock watering or other uses for farming as defined in [6 V.S.A. § 4802](#) are required to report to the Vermont Agency of Agriculture Food and Markets ([Act 135 of 2022: Farm surface water reporting program | Agency of Agriculture Food and Markets \(vermont.gov\)](#)).

What is a surface water

A surface water is a body of water that is open to the atmosphere. Examples include lakes, ponds, streams, and rivers. Some surface waters are considered to be manmade or diverted waters (such as reservoirs or diverted rivers) and others are considered natural.

For this registration and reporting requirement we are not interested in the following: ground water, treatment ponds, lagoons or wetlands created solely to meet the requirements of a permit issued for a discharge or constructed off-stream ponds or impoundments.

A constructed off stream pond or impoundment is one which does not directly connect to another surface water, either inflow or outflow, including overflow pipes. However, if a constructed off stream pond is filled using a surface water, this will have to be reported if the amount withdrawn meets or exceeds the thresholds.

What is a water withdrawal

A surface water withdrawal is an intentional diversion of water by pumping, gravity, trenching, or other methods from a river, stream, creek, brook, reservoir, pond, or lake for another uses (e.g. snowmaking, irrigation, water supply, construction). In this case a withdrawal does not include hydroelectric project that are regulated by the Federal Energy Regulatory Commission or the Public Utility Commission.

Threshold for Registration and Reporting

If you withdraw from a surface water more than 10,000 gallons in a 24-hour period or withdraw 150,000 gallons or more over any 30 day period, then it is required by statute to register the water withdrawal and report the total amount of water withdrawn.

Methods to estimate water use

Inches

If you know how much water you may be withdrawing and applying in inches, there is a straightforward conversion. Inches multiplied by 0.0043 equals the amount in gallons. Multiple this by the number of hours the water was withdrawn.

For example, say you apply 1 inch of water in a 1 foot by 1 foot area. The total footprint of the area is 144 sq inches. If you apply 1 inch of water per hour that equals 144 cubic inches. Multiply 144 by 0.0043 that equals 0.62 gallons per hour. 144 cubic inches per hour equates to 0.62 gallons per hour. (see Figure 1.).

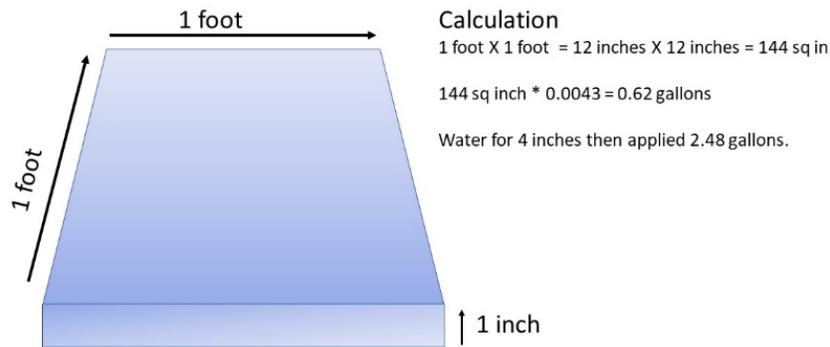


Figure 1.

Estimated Pipe flows

Additionally, estimation of water withdrawn can be approximated based on the diameter of the pipe used to withdraw water and the pounds per square inch generated by a pump. The table below shows how much water in gallons per minute and gallons per hour can be withdrawn with pipes of diameters between a half inch to eight inches.

Pipe Diameter (inches)	Gallons per minute (gpm)	Gallons per Hour (gph)
1/2	14	840
1	37	2,200
2	127	3,048
4	48	28,800
8	1,600	96,000

Pipe Flow Assumptions: 20- 100 psi pipe pressure; 12 ft/sec velocity in pipe

Conversions: 1 gal/min = 0.0022 ft³/sec

Flow Test

A flow test is another simple way to estimate how much water is being withdrawn. A flow test can be done by using a container with a known volume and timing how long it takes to fill. For example, if it takes 10 minutes to fill a standard 5-gallon bucket. The withdrawal rate is 5 gallons divided by 10 minutes, or 0.5 gallons per minute (gpm) which equates to 30 gallons per hour.

Informational Resources

[Act 135 of 2022](#)

[Act 135 Summary](#)

[Surface Water Diversion and Transfer Study Group Final Report](#)

For questions please contact

Jeff Crocker, Supervising River Ecologist
Vermont Department of Environmental
Watershed Management Division/River Program
1 National Life Drive, Davis 3
Montpelier, VT 05620 – 3522
802-490-6151 (cell)
Jeff.Crocker@vermont.gov

Betsy Simard, River Ecologist
Vermont Department of Environmental
Watershed Management Division/River Program
1 National Life Drive, Davis 3
Montpelier, VT 05620 – 3522
802-585-8189 (cell)
Betsy.Simard@vermont.gov

Example for record keeping

Withdrawal information

Withdrawal info	WithdrawalFlow Rate (GPM)	Surface water source (gps coordinates)	Surface water name (if known)	Water Measurement Technique (estimated or metered)	Nickname of withdrawal (if needed)
<i>Ex: Honda GX120</i>	<i>164 GPM</i>	<i>44.260112007, -72.580939080</i>	<i>Winooski</i>	<i>Estimated</i>	<i>Drip line</i>

Record keeping

Date	Nickname	Irrigation Duration (hrs.)	Application amount (gallons)	Notes
<i>Ex: July 1</i>	<i>Drip line</i>	<i>1</i>	<i>50</i>	<i>Estimated using duration X GPM applied</i>
TOTAL	NA			