

RegisteredUse

Every water use registered with the Department of Water and Sanitation, by area • in-browser app • Hydrogeological Repository

What it does

RegisteredUse puts South Africa's water use register behind a map. It compiles the twelve regional WARMS exports of 9 May 2024 into one database – 79 535 registered water uses under 49 340 registrations, 20,836 million cubic metres a year, across 1 750 quaternary catchments – and answers one question properly: **what is registered here, and how much water is it?**

Choose an area by quaternary catchment, or by distance from a town or a coordinate. Every registered use in it is drawn with a symbol for the resource it takes water from, listed in full in a sortable table, and summarised by type, sector, lawfulness and volume – with a standalone printable report and CSV exports that can be filtered to one resource type.

Where the data comes from

The Water Use Authorisation and Registration Management System (WARMS), the Department of Water and Sanitation's register of water use – <https://www.dws.gov.za/projects/WARMS/>. The source is the register's own quality-assured data report, exported by twelve regional offices and catchment management agencies on 9 May 2024. Every record here is a registration under **section 21(a) of the National Water Act (Act 36 of 1998)**: the taking of water from a water resource.

Regional office or CMA	Records
BREEDE-GOURITZ CMA	10,532
EASTERN CAPE OFFICE	10,468
FREE STATE OFFICE	6,814
GAUTENG OFFICE	3,861
INKOMATI-USUTHU CMA	2,550
KWAZULU NATAL OFFICE	11,878
LIMPOPO OFFICE	7,464
MPUMALANGA OFFICE	4,108
NORTH WEST OFFICE	6,588
NORTHERN CAPE KIMBERLEY OFFICE	2,690
NORTHERN CAPE UPINGTON OFFICE	6,177
WESTERN CAPE OFFICE	6,405
Total	79,535

What the register is, and what it is not

This is a record of what has been declared and registered, not a measurement of abstraction.

A registered volume is an *entitlement*. Actual abstraction is generally lower than it, and in a drought is capped well below it. Water use that was never registered - including unlawful use - is by definition absent, and nothing in this dataset says how much of that there is. Treat an area total as the registered position, not as what is being taken out of the ground or the river.

The nine resource types, and the symbol each is drawn with

Symbol	Resource type	Group	Records	Mm³/a
Circle	Borehole	Groundwater	29,406	3,151.1
Diamond	Spring / Eye	Groundwater	2,329	154.9
Cross	Boreholes And Windmills On Government Land	Groundwater	110	23.9
Square	River / Stream	Surface water	30,935	5,806.8
Triangle	Dam	Surface water	6,083	1,316.6
Pentagon	Lake	Surface water	66	32.9
Inverted triangle	Wetland	Surface water	60	11.9
Star	Estuary	Surface water	16	3.8
Hexagon	Scheme	Scheme	10,530	10,333.8

Shape carries the resource type and colour repeats it. Nine shapes at the size a national view draws them are not tellable apart, so both are used – shape survives greyscale printing and colour blindness, colour makes the map readable before it is decoded. A spring is counted as groundwater, as it is in South African water accounting.

Scheme is neither groundwater nor surface water: the use is supplied from a government or irrigation scheme, and what that scheme itself abstracts from is not recorded on these rows. It is 13 % of the records and 50 % of the registered volume, so it cannot be quietly folded into either.

What you get

Output	Detail
Area search	One or more quaternary catchments (a three-character code such as A21 takes the whole tertiary), or a 5 to 200 km radius around any of 1 943 named towns or a typed coordinate. Clicking a catchment on the map selects it; Ctrl+click adds another, so a working area of several adjoining catchments can be built up.
Map	Every registered use in the area over the quaternary catchment boundaries, each drawn with its resource type's symbol. Hover for the record, click for everything held on it. Catchments can be shaded by what is registered in them, nationally, so an area can be placed against its neighbours.
Proportional symbols	Size by registered volume draws each symbol in proportion to what that record is registered for, scaled <i>within its own resource type</i> . Sizes go by area rather than radius, and are measured against the 95th percentile of the type so one very large record does not flatten the rest.
Type filter	One switch per resource type, showing the symbol and the count. It drives the map, the table, the volume charts and the record export together - so “the boreholes in this area” is one click. The area summary deliberately does not follow it: an area does not change because a symbol has been hidden.

Output	Detail
Site table	Every record, sortable on any column, with a free-text find over registration number, resource name, catchment and sector. Paged at 100 rows so the browser's own Ctrl+F still works on what is shown.
Summary	Registered uses and registered volume by resource type, side by side - because the two answers usually disagree, and the disagreement is the point. Plus groundwater / surface water / scheme as concentric rings, sector, lawfulness, and the area's share of each type's national total.
Volume	A box plot per resource type on a logarithmic axis, and a concentration curve showing what share of the records hold 80 % of the water - the two charts to read before quoting an average.
Seasonality	The area's mean monthly abstraction pattern, where records declare one.
Report	A standalone printable page of the whole area - map, figures, every breakdown, the charts and the records - opened in a new tab with its own Print and Download buttons.
Exports	CSV of the records, the summary, the monthly patterns, the per-type figures, or every catchment in the country. PNG of the map and of each chart. Coordinates are given in WGS-84.

Faults in the register, left visible rather than repaired

- **501 records state a volume per day or per month rather than per year.** Scaled to a year as the interval field says, those 0.6 % of records account for 14 % of the national registered volume – 2,939 of 20,836 Mm³/a. Several are plainly mis-keyed, including an irrigation borehole registered for 80 000 m³ a *day*. They are annualised exactly as the field states and flagged everywhere they appear, because there is no defensible way to tell which are errors. The app reports how much of any area's total rests on them.
- **8.6 % of mapped records name a catchment their own coordinate does not fall in.** 72,573 of 79,379 agree; 6,806 do not, and 155 fall outside every quaternary polygon. The catchment search matches the recorded code, because that is what a DWS extract is keyed on, and every disagreement is marked in the table so a water balance drawn on the code can be checked against one drawn on the ground.
- **Some irrigated areas are impossible.** 24 records claim more than 10 000 ha under irrigation and the largest claims 1,588,314 ha – against a national irrigated area of about 1.6 million ha. Kept exactly as recorded.
- **The Limpopo export in this dataset is a partial one.** Its 7,464 records carry only the water-use half of the report – the water use, resource, coordinate and volume are all there, but there is no registration number, register status, lawfulness finding or municipality. They are included, and their missing fields are blank rather than guessed.
- **7,902 records are registered for a volume of zero,** mostly Schedule 1 uses, which the Act permits without a registered volume. They are counted in the record totals and contribute nothing to the volume totals.
- **Only 4,626 records – about one in seventeen – declare a monthly abstraction pattern,** and of those given as a percentage, 426 do not sum to 100. The pattern is used only for the shape of the year, never for a volume.
- **One (registration, water use) pair appears twice** with two different volumes. Both rows are kept rather than one being silently dropped; the database keys on its own row id.

No water user is named

The dataset carries no registrant identity, and the app publishes none.

The export carries no customer-name field at all. What it records about the registrant is a *category* - company, individual, water services provider, national or provincial department, water user association - and that is all this app holds or shows. The name fields it does carry name *things*, not people: the DWS regional office, the district municipality, and the water resource itself (rivers, dams, boreholes, government water schemes and canals). The build checks this and fails if it stops being true, so it holds for future editions rather than by accident.

Large areas

The database stays on the server and is queried an area at a time, as QuaternaryInfo and RainfallArchive do. Every area request answers with a summary computed over every matching record and the points themselves up to a cap of 8 000 – so the totals are right even for a 200 km radius that matches 14 000, and the page says so when the map and table have been capped.

Beta.

RegisteredUse is published for evaluation and feedback. Check any figure you rely on against the original WARMS record before using it in an assessment or a licence application.

Credit

The register is the work of the Department of Water and Sanitation and the regional offices and catchment management agencies that maintain it – <https://www.dws.gov.za/projects/WARMS/>. The quaternary catchment boundaries are those used across this repository. This app compiles and presents that work and claims no authorship of it.