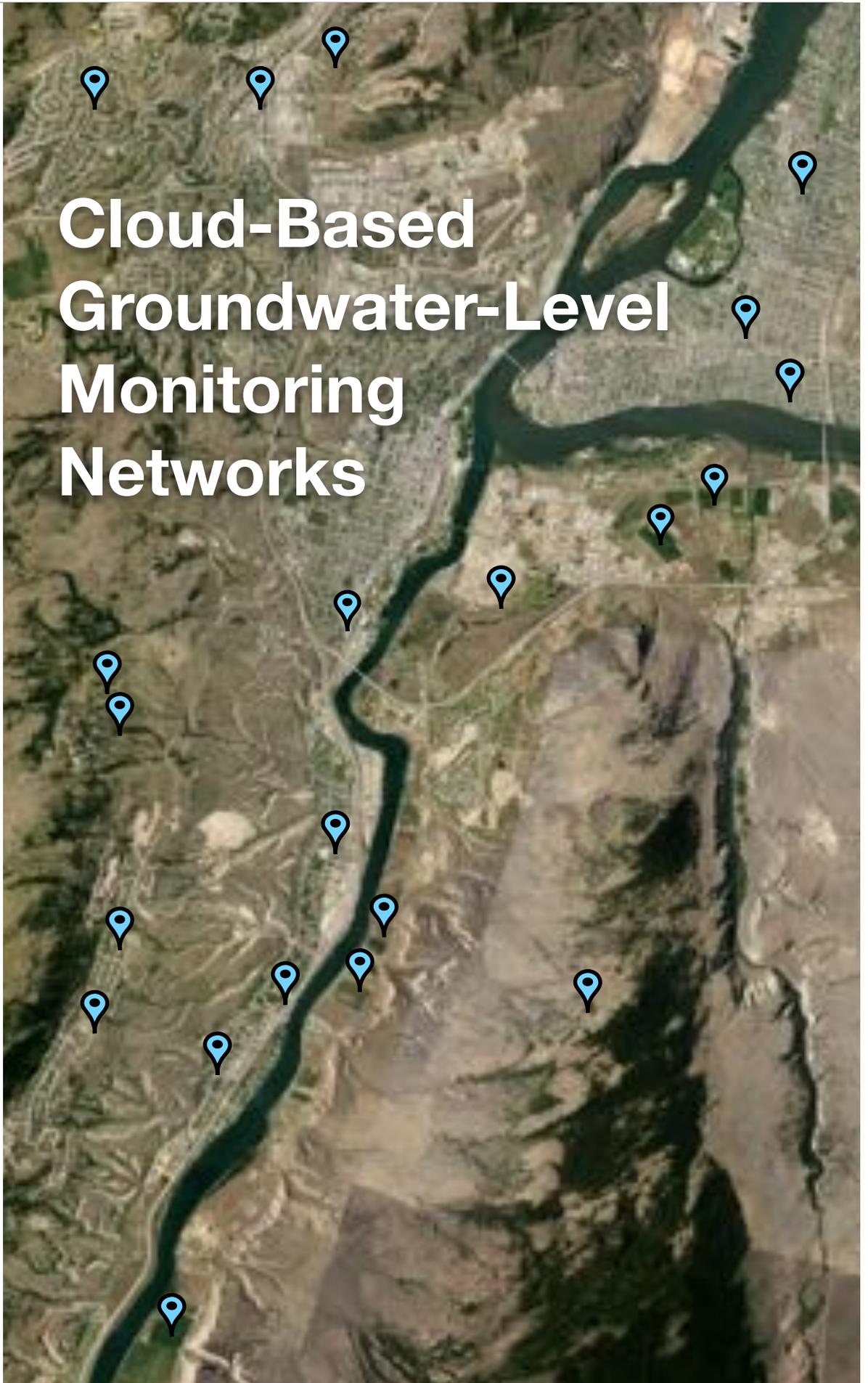# Cloud-Based Groundwater-Level Monitoring Networks
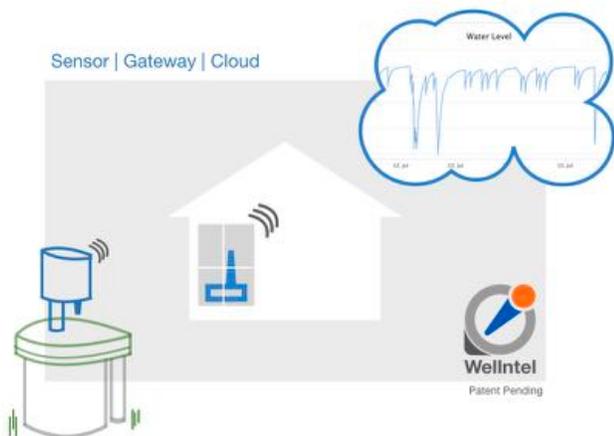
Wellntel

Groundwater-Level Monitoring Innovation

Using simple sensors deployed on private and public wells, Wellntel creates cost effective networks to measure groundwater levels. Dense, accurate data are continuously uploaded to the cloud so that groundwater managers can view trends, model water resources, and plan for sustainability and resilience.

Easy, Fast, Budget-Friendly Networks

Leveraging existing private wells and internet access infrastructure, Wellntel delivers continuous water-level measurements collected at a fraction of the cost of conventional technologies and methods.

A Wellntel network consists of water-level sensors, communication gateways, and a cloud-based database.

Wellntel sensors are compatible with most existing submersible pumping or monitoring wells. Installation is easy and often done by DIY'ers with commonly available tools. The gateway leverages existing internet infrastructure in the home, farm, or business. A community can have a network of dozens of sensors up and feeding a continuous stream of water-level data within a few days.

Maintenance is easy too. Since the Wellntel system continuously uploads data, stakeholders are immediately alerted to system status changes. Most issues can be resolved with a battery replacement (about once per year, depending on sampling rate) or a system re-power. Wellntel has remote diagnostic capabilities if more difficult challenges arise.

Continuous, Accurate, Secure Data

Groundwater-level data from networked wells are available online, to any stakeholder granted access, at any time of the day. Data can be viewed, downloaded or delivered via API to support models and information sharing.

Wellntel Sensors use a precise, programmed acoustic signal to identify and track groundwater level and other in-well conditions. Assuming user-entered measurement point values are correct and temperature is well understood, a Wellntel Sensor can be very precise, at +/- 0.2% regardless of depth -- accurate enough for most groundwater modeling purposes.

Readings are taken on customizable time intervals and can even be triggered by and meta-tagged as pumping events, opening opportunities for new resource analysis.

Groundwater information from all monitored wells is served seamlessly to the cloud. Security is paramount and enforced via encryption and proprietary message handling.

Each network has a "Manager" account and unlimited "Team" accounts. Naming conventions and regional displays are flexible. Managers decide how the data will be shared with consultants, communities and other stakeholders.

As the dataset grows, groundwater managers see season-over season trends, develop an understanding of groundwater resources and limits, collect data to support local and regional hydrological studies, make informed resource management decisions, and have the data necessary to comply with reporting requirements.
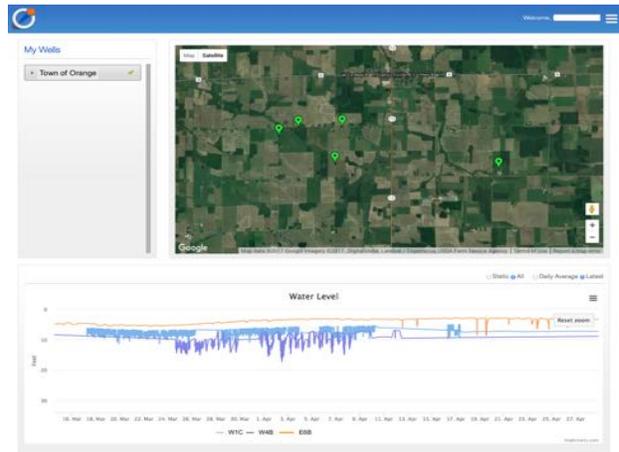
Engaged, Informed Communities

Water managers work together with their community to collect and share groundwater level data and insight.

Wellntel networks also serve to unite communities in the effort to monitor, understand and manage groundwater resources.

Communities enlist private well owners to volunteer their well as a network site. In return, these citizen scientists get access to data from their own well and insight into the dynamics of their resource, often for the very first time.

Nearly every private submersible pump well can become a monitoring well and contribute toward the creation of much needed but previously unavailable geo-spatially and temporally dense datasets.

If the sponsor chooses to make the network data available to other community members and stakeholders the resource becomes visible to them – and provides the basis for informed discussion.

Non-pumping monitoring wells are also excellent candidates for deployment of Wellntel systems. Using Wellntel telemetry options, these wells can be brought online to contribute to the network.

Wellntel is Ready to Help

With installations in more than 25 US states, Wellntel's experienced team can help you create the groundwater monitoring network that is right for your community and meets your goals.

During the design phase, Wellntel works with communities and their consultants to understand density and resolution goals, evaluate well locations and feasibility, and recommend equipment.

Sponsors can deploy and manage their own networks or contract with Wellntel for a turnkey solution.

Community-Managed Networks

Because Wellntel is designed for simple installation and maintenance, Network Sponsors frequently opt to create a Community Managed Network. We provide online training so that local teams can oversee installation, start-up and maintenance. Sponsors and well owners receive alerts if the system needs attention. Wellntel's team of technicians can be reached via email or phone call with questions. Typically the Network Sponsor has a negligible role in maintenance of sensors or systems, but an involved authority always can help things run more smoothly.

Wellntel-Managed Networks

Wellntel can be contracted to provide on-site evaluation and selection, system installation, well owner education, on-going maintenance services or turn-key solutions

We can also support community engagement with best practices, sample member agreements and online discussion forums.

To discuss your groundwater monitoring projects,
contact Wellntel at 844-WELLH20 (844-935-5426) or info@wellntel.com