

# Soil Scout Solution

## REAL-TIME GAINS BEGIN UNDERGROUND

Soil Scout's ground-breaking underground wireless technology enables the continuous monitoring and profiling of your soil, regardless of season or conditions. Enabling you to tailor actions based on the specific conditions of your soil.

Having accurate and real-time data about your soil enables better and more timely management decisions, based on facts, not estimates.



## HOW IT WORKS





# Happi100

The world's first commercially available wireless soil oxygen sensor, fully compatible with all Soil Scout products

The Happi100 sensor measures and transmits raw data to the network hourly for up to 10 years, including:

- Capacitive Moisture
- Temperature
- Ambient Oxygen



# Dual Depth

Now you can measure two depths in the same hole.

The master Scout sensor takes care of all radio communication. It can be buried in shallow ground to give an excellent range, whilst querying subsoil data from the second sensor, deep down in the same hole.



# Scout Sensor

A small, robust, wireless buried sensor that was specifically designed to transmit from up to two metres below ground.

The Scout Sensor measures and transmits raw data to the network hourly for up to 20 years, including:

- Capacitive Moisture
- Temperature
- Electric Conductivity

Proprietary calculus is used to convert raw measurement data to Moisture content, Temperature and Salinity at the Soil Scout Hub Monitoring Service.



# Soil Scout Hub

The server performs data validation and applies correction equations to incoming raw measurement packets. The user interface facilitates easy analysis of data and is also the hub for equipment management. Alarm and Notification functionality allows for exception emails, and real-time export of data via a Web Service API can be activated.

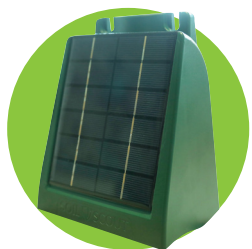


# Base Station

Receives the signals from Scouts via a Receiving Antenna and uploads data to the Soil Scout Hub server using a cellular modem.

Typically pole or building mounted, it can provide up to 1,000m range for sensors [1].

The antenna type is chosen according to the specific needs of the site. Each Base Station can handle more than 1,000 Scouts.



# Echo Repeater

When direct transmission to the Base Station is not possible because of distance or topographical barriers, one or more solar powered Echo Repeaters can be used to forward the signal. Range over 5km line of sight.



Screenshots from Soil Scout Monitoring Service indicating the individual sensor data.



[1] Underground to air range depends heavily on receiver antenna type and elevation, soil type, topography, vegetation, etc. See [www.soilscout.com/user-guides](http://www.soilscout.com/user-guides) for more guidance on indicative ranges.