

Site Investigation

Westbay Multi-level Monitoring

The accurate assessment of the ground water regime is critical to any site evaluation. Representing a significant advancement, the Westbay System provides multilevel groundwater monitoring in a multi-port system.

The Westbay system enables the monitoring of multi-zones in a single borehole to:

- Avoid the drilling of multiple boreholes
- Enable the collection of samples without repeated purging
- Provide a greater level of data from which a better understanding of sub-surface conditions can be built.

The Westbay System comprises a series of interconnected remotely operated ports which enable the instrumentation probes to access separate layers within a single borehole and sample from any horizon to determine flow characteristics of an infinitely small order. Its key features include:-

- Any number of monitoring zones in a single well
- Sealed monitoring zones
- Option for automated monitoring of multiple depths
- Samples obtained at formation pressure
- Removable and upgradeable probes
- Option to monitor chemical parameters
- Improved security
- Defensible QA/QC procedures.

How it works

Westbay works in some of the deepest, most complex ground conditions as a highly automated system with four key operational advantages:

Well completion - The modular casing provides blank pipe segments in variable lengths with multiple packers, couplings and valved ports to seal and provide access to multiple monitoring zones in a single borehole.

Removable probes - A series of portable wireline-operated tools run inside the casing to take measurements, collect samples and carry out tests.

Monitoring software - Enables users to operate probes and collect data at the surface or from a remote location via a laptop computer.

Support services - Soil Mechanics' experienced engineers install and operate the Westbay System and provide an effective monitoring service.



1. Packer

- Engineered seal in a range of borehole sizes
- Controlled hydraulic inflation with record of pressure and volume
- Quality control tests to confirm performance at any time after installation.

2. Measurement Port

- For fluid pressure measurements, fluid sampling and low-k testing

3. Pumping Port

- For purging, hydraulic conductivity testing and quality control testing.

Benefits

- Improved understanding of hydrogeological conditions and contaminant transport
- Minimises storage volumes and prevents flow along the borehole
- Reduces drilling and installation costs
- Fewer holes drilled and reduced site disturbance
- Avoids cross contamination through discrete sampling.

Applications

The Westbay System has been used for a variety of applications around the world including studies for landslides, ground settlement, mines, tunnels and dams, ground water basin management, environmental and geological repository site characterisation studies, deep contaminant monitoring projects and wherever high quality, verifiable Piezometric data and ground water samples are required.

Uses

The Westbay System can be used for:

- In situ fluid pressure measurement
- Pressure profiling
- Single-zone permanent pressure monitoring
- Multi-zone permanent pressure monitoring
- Fluid sampling at formation pressure
- Fluid pumping
- In situ chemical testing (P, T, pH, Redox, conductivity, dissolved oxygen etc)
- Single zone tests
- Vertical interference tests (with sampler probe)
- Slug interference tests (with pumping port)
- Cross-well tests.

Available with casings in two sizes:

MP55 System (55mm ID)

MP38 System (38mm ID)

