

## BOREHOLE ENHANCED IP/RESISTIVITY

The resolution of IP/Resistivity surveys decreases greatly with depth. Conventional downhole Resistivity surveys normally image within a few meters of the borehole with no directional information. A simple way to increase the subsurface resolution is to use the Borehole Enhanced IP/Resistivity Array. This will dramatically increase the resolution of the inversion in the vicinity of the borehole.

### Benefits of Borehole Enhanced IP/Resistivity

- Profiles in 4 directions = full 3D imaging.
- Improved resolution of features near borehole.
- Surface Forward & Reverse PDP surveys.
- No moving receiver.
- No specialized borehole cables and equipment.
- No expensive probe.
- Fewer personnel = relatively lower cost.

### Borehole Enhanced IP/Resistivity Array

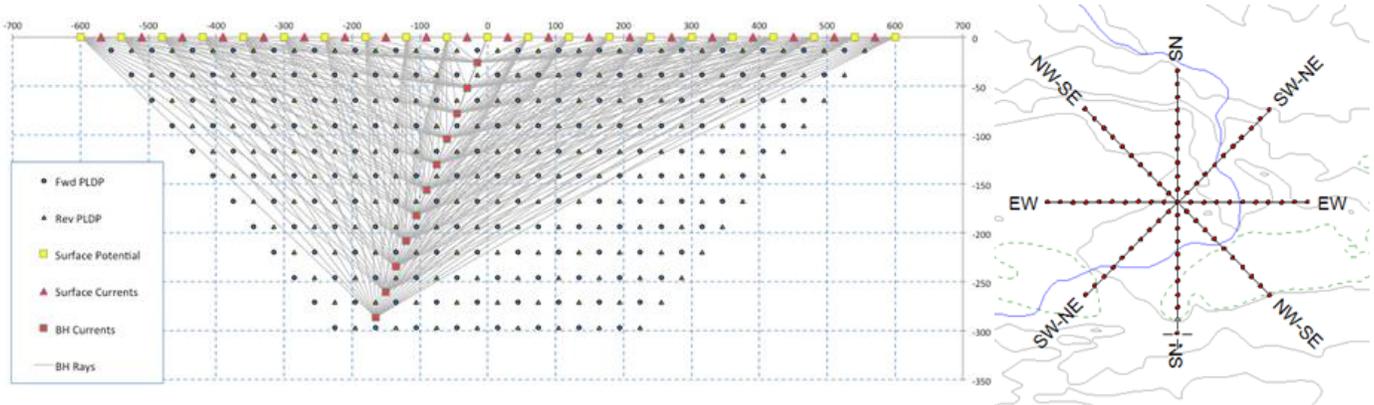
The borehole array consists of surface potential electrodes with both surface and subsurface current injections. For each

surface profile, there are forward and reverse pole-dipole measurements as well as the downhole injections. Since only a single current electrode is lowered and raised down the hole, the setup is extremely simple.

### Survey Equipment

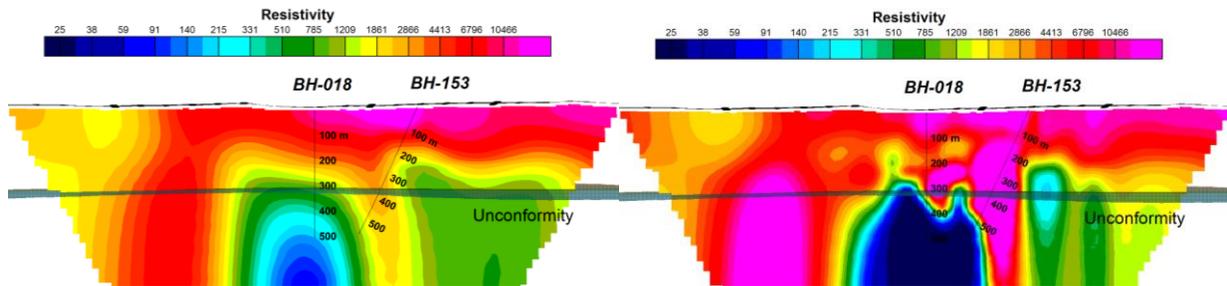
Any standard IP equipment can be used, but with a distributed array system (such as the DIAS32 Resistivity/IP System), the survey becomes even more efficient. A single borehole survey takes approximately 4 days (1 day setup, 2 days survey and 1 day teardown). Spacings are easily modified to accommodate project requirements.

Results of a recent survey suggest modifications to the typical survey layout, originally designed for detecting stockworks in a relatively homogenous environment. Surface lines along dominant trends are not useful in defining structural offsets. Rather, it seems a layout consisting of lines across dominant trends would be much more effective at mapping cross features. The results are even better when incorporating older surveys to provide more background information.



**Typical Survey Layout**

The sections below are extracted from Resistivity 3D inversions of borehole surveys combined with historical survey data. The borehole surveys were done recently in the Athabasca Basin area (data courtesy of ALX Uranium Corp.). The Borehole Enhanced survey inversion shows a significant increase in resolution in the deeper portion of the section near the boreholes.



**Surface Resistivity**

**Borehole Enhanced Resistivity**