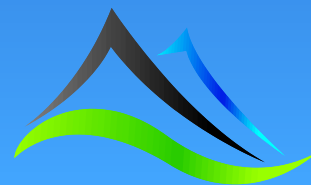


# Double offset Pole-Dipole DOPD

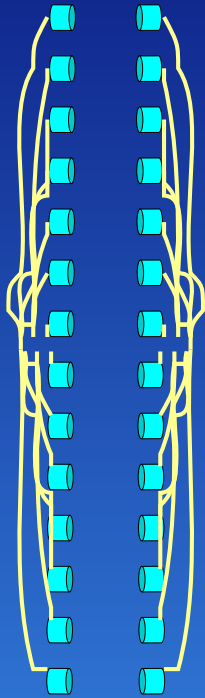
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Field Layout - Simplified Explanation

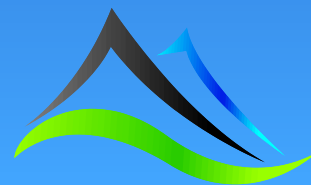
ExploreGeo Technical Note 3



# Receiver Array



Consists of two parallel lines of potential electrodes ("pots"), wired using a multi conductor harness. The number of pots in each receiver line can vary but for optimum production should be a multiple of the maximum input for the receiver instrument or multicore cable used (Usually 7 to 15). The distance between the pots is called the dipole spacing. The two lines are spaced between 2 and 4 dipoles apart. The further apart the lines the poorer the near surface, between line resolution.





Pots can be either good quality stainless steel stakes or ceramic porous pots filled with copper sulphate. They are placed in a small hole which is filled with water to improve coupling. Bentonite clay can be added to the water or directly to the ground to improve moisture retention.



Stainless Steel stake and CAT5 cable



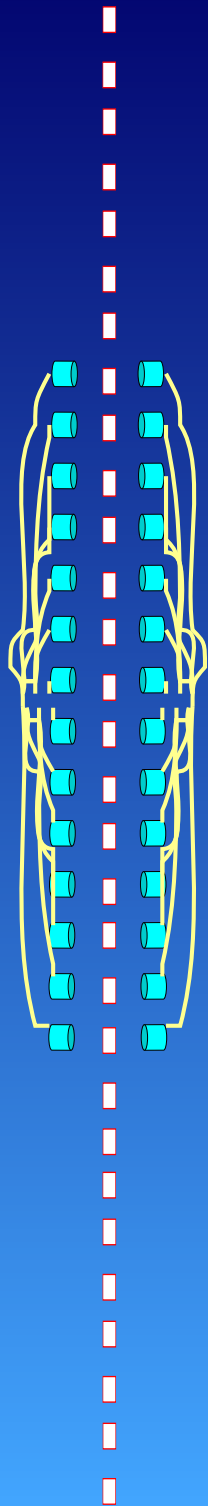
Porous pot and multicore cable



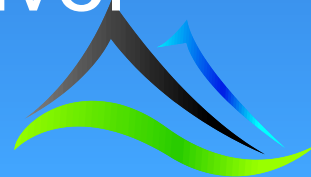
The wires from the pots are then run into a receiver or group of receivers. These are usually placed in the centre of the receiver array and controlled by the receiver operator. The receiver operator normally controls the survey. The receiver wires are low voltage and very low current and the whole receiver array is passive.







Before or while the pot crew are laying the receiver lines a pit crew will be digging current electrode pits both along the transmitter line and at a remote point 3 to 5 km away from the survey area. Pits vary in size depending on the ground conductivity but will generally be of the order of 2m x 1m x 20 cm deep. The remote should be bigger or double pits dug as it will be in use for the whole survey. The electrode pits should extend at least 8 dipole spacing off the end of the receiver lines.





The pits are filled with water and lined with Alfoil to spread the current over a large area of the ground and thus make better electrical contact. Salt may need to be added to the water to improve the contact.

**A small pit and danger sign in Thailand**

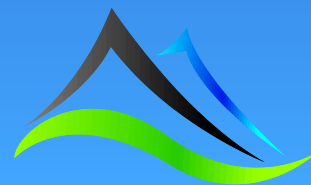
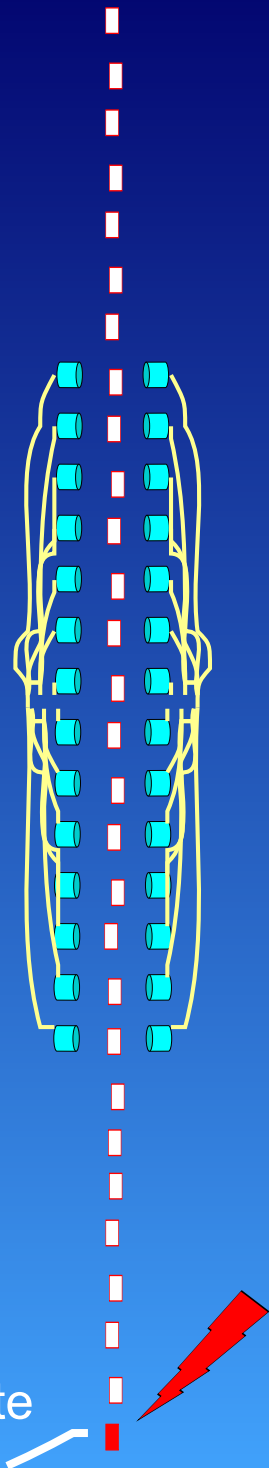


**A quick pit using a roadside drain as a base.**





When the receiver crew have set up, the receiver operator will ask the transmitter operator to wire up the first electrode to the remote and transmit into it. The currents transmitted into these pits vary from 2 Amps to 70 Amps with a driving potential of between 50 Volts and 4000 Volts. The more current, the stronger the signal at the receiver, high currents are therefore desirable for good data quality. The pits and the wires joining them carry lethal voltages at this stage.





The motor generator and transmitter will generally be set up at one end of the current line. However where access is restricted leads can be run from the transmitter to the active pits.

Motor Generator in trailer and transmitter under tarp



Motor Generator off picture, transmitter set up on packing box. Active pit in view between onlookers and vehicle.



For high powered surveys the motor generators are usually large and heavy and are best carried on a tray or trailer





When the receiver operator is satisfied with the readings for the first electrode he will instruct the transmitter operator to shut down and move up the wire. This process is repeated until all electrodes have been recorded. A set of readings from a single current electrode can take anywhere from 15 minutes to 2 hours depending on the instrument, ground resistivity and ambient noise levels. However in good conditions with open access it should be possible to record one 15 to 16 dipole array (as illustrated here) per day.

