## Imaging dikes and sills using true-3D Electrical Resistivity Imaging (ERI)



**3D Inverted Resistivity Image** marine shale outcropping 1.00 dioritic dike marine shale -0.29Ζ -1.58 0.00 -2.87 2.00 4.00 4.00 X 8.00 Y 12.00.00 Resistivity (Ohm-m) 94. 957. 9785. 100000.

**Objective:** to image the geologic contact of an outcropping dioritic dike of Oligocene age intruding a late Cretaceous deep marine shale and any potentially buried dioritic dikes using true-3D electrical resistivity imaging.

Date: 23 of February, 2017

Site: Sierra de San Carlos-Cruillas, Tamaulipas, Mexico

**Instrument:** SuperSting R8 Wi-Fi with 28 electrodes spaced at 2 m, and 2 m line spacing **Software:** EarthImager 3D

Array type: true-3D dipole-dipole and strong-gradient

**Results:** successfully imaged the exposed intrusive contact between the dioritic dike and the marine shale, as well as the presence of buried dioritic sills. The marine shale and dioritic intrusions correspond to low and high resistivity values, respectively.

true-3D electrode grid



dike-shale relationship





## Imaging dikes and sills using true-3D **Electrical Resistivity Imaging (ERI)**





**Inverted Resistivity Image** 



## **Inverted Resistivity Image** marine shale outcropping dioritic dike marine shale 1.00 -0.29 Z <sub>-1.58</sub> 0.00 -2.87 2.00 4.00 4.00 X 8.00 buried Y 12.00.00 dioritic sills Resistivity (Ohm-m) 957. 9785. 100000.

Opacity applied to marine shale to highlight intrusions.

3.5







Opacity applied to marine shale to highlight intrusions.