

### CHEERS!

Welcome to our August 2010 *Perfiles*. In our previous issue we mentioned we were going to present one of our case histories of a gravity survey modeled in 3D space with very high detail. With this new modeling tool we expand our applications for one of the classic geophysical methods, which is most useful in detecting high density targets such as some type of mineralized deposits, but with operational limitations, particularly in areas of abrupt topography

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### NEW INSTRUMENTS

We have just placed an order for an additional GPS system, a Trimble ProXRT receiver with a Ranger 500X collector. This unit is our second GPS of this kind, which operates in the L1-L2 and Glonass satellite signals and with Omnistar differential correction.

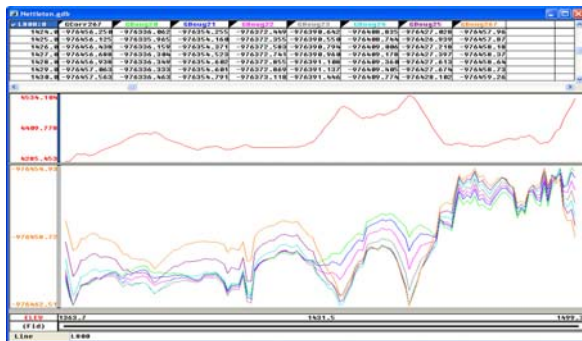
In our previous *Perfiles*, we announced we were about to receive our latest seismograph, a Geometrics SmartSeis ST 24-channel instrument, which is for our third field crew for seismic applications. Simultaneously we ordered a new set of seismic cables, as well as two additional sets of geophones, with 4.5Hz and 14Hz frequencies, for seismic tomography and MASW (Multichannel Analysis of Surface Waves) applications. The new SmartSeis ST has just completed its first field survey.



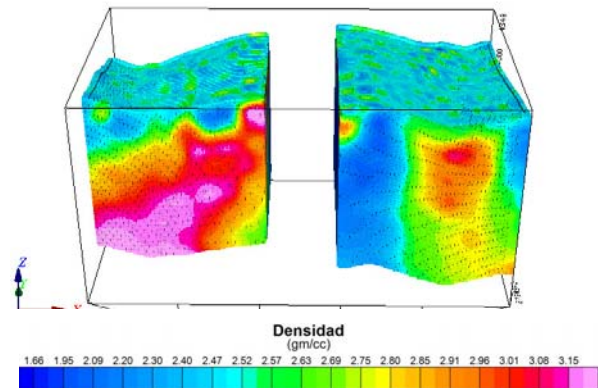
Geometrics SmartSeis ST Seismograph

### DETAILED 3D GRAVITY MODELING

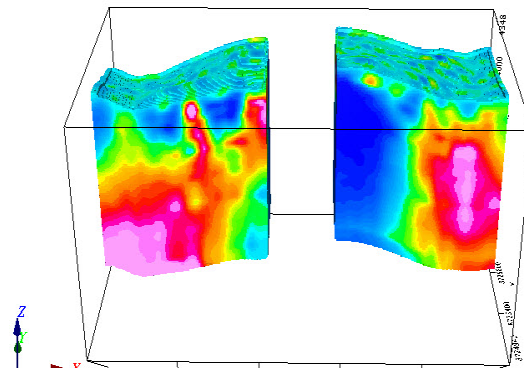
Similar as with magnetometry, now we can model gravity surveys in very high detail and in 3D space. To do this, we must first determine an average density value representative of the area being surveyed. This is done with a Nettleton analysis of the Complete Bouguer Anomaly for various densities. In the example below, we determined that an appropriate average density for the survey area was 2.6 gm/cc.



The images shown next are the result of the 3D modeling of gravity information obtained in a mineralized target in the Peruvian Andes, and with possible Pb-Zn mineralization. Surface topography was simple enough to allow us to complement our IP survey with gravity measurements. When we first arrived, we observed a mineralized breccia with sphalerite and galena located in the North-South creek on the Western flank of the survey area. Even though this outcrop was not large enough, the purpose of the survey was to determine if it had a considerable depth reach, as well as if there were other similar targets in the area that were not surfacing. In the following image we have an East-West section showing a high density mass in the Western flank, which was modeled up to some 800m in depth and colored with red-pink.



If we observe another East-West section, located further up North, we can see that in the Western creek there is an outcropping anomaly with a density of about 2.7 gm/cc (green-yellow), coincidental with the known mineralized breccias. We also see a higher density (red-pink) target, with almost vertical dip, that approaches surface about 200m East of the original breccia. Both, the original breccia, as well as this new target, seem to have a very deep source in the Southwestern edge of the area. In the Eastern flank, we only see a single and dense mass.



Until next time...

