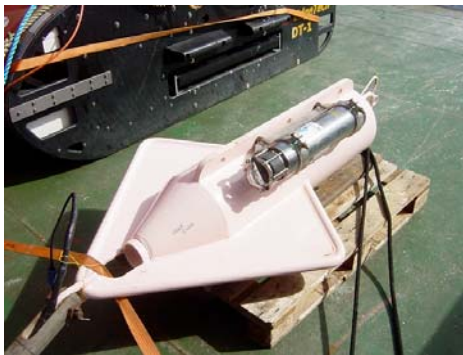


SO191/1 - 2. Weekly Report

During the second week first results could already be seen. The regional measurements using the 600 m long streamer of our NIWA colleagues was completed with the expected data quality. The signals of the two cluster array are clear and provide a high resolution within the sediment basins and are strong enough to image the decollement as well. First analysis of the manifold fractures proof that offsets down to about size of a wavelength could be resolved.

Operation of the Sidescan again proofed to be a reliable and efficient tool. Mapping of the areas at Builders Pencil, Wairarapa and Uruti could be completed. Besides several promising structures seen in the backscatter data indications of gas flares were observed in the Sidescan picture as well. The permanent record of the high frequent signal of the Parasound system did detect several flares as well. Unfortunately the deep towed streamer could not be used. After successful test in the pool on deck the controlling PC failed. Obviously the main processor board has a malfunction as not even a Bios messages appears when the system is switched on. As this unit is a special industry type PC design repair onboard is not possible. During the deployment of the Sidescan a 4 channel mini-streamer was deployed using the magnetometer boom. Signals from the GI gun could be received with good quality by this streamer and the deployed OBS. At several locations where flare observations are known a BSR reflection could be followed all the way up to the seafloor.

Great success could be reported from the first deployments of the Controlled Source Electromagnetic (CSEM) as well. This technique allows to measure resistivity of the subsurface. For this purpose a



The „Pig“ secured on deck

This depressor weight is used as tow fish of transmitter and receiver of the CSEM technique. On top mounted a transponder used for distance measurements.

rectangular shaped electric current of up to 6 A is used to send out an electro-magnetic field through transmitter at the seafloor, which is measured by two receivers in several 100 m offset. It was the first time to apply this technique onboard SONNE. Despite the limitations of the current due to the diameter of the deep sea cable, a prominent signal could already be observed in the raw data along two lines in the Wairarapa field next to the known seep sites. As it has been shown that this technique can be successfully operated further deployments of the CSEM will be carried out even in greater depth. Giving out a larger amount of the deep sea cable will then allow to increase the transmitting power and to reach into greater depth.

The remaining working days will be used to investigate site no. 9 published by Lewis and Marshall with

Sidescan, OBS, mini streamer and CSEM. This will result in detailed mapping of four major seep locations, which will be revisited for further experiments during leg 2 and 3. The ongoing data processing onboard will result into poster displays, which will enable precise definition of locations for sampling. The regional work could close a large gap in the seismic coverage along the east coast of the North Island. As there will be a short transit of a few hours into port only first equipment will already be stowed away. Space is requested to stow equipment shipped within 8 containers during the port call for the next two legs.

Up to now the work need to be interrupted for a few hours only, when wind and sea conditions did not allow save working on deck any more. We are happy about the increasing friendly weather, although 15°C are not what the one or other might have expected during a southern summer.

All onboard are doing well. Regards on behalf of all participants

Jörg Bialas