Experience with Watergun (a new Seismic Source) offshore Sarawak

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Waterguns have recently been used as an attractive alternative to airguns for marine seismic surveys in many areas. Sarawak Shell Berhad conducted an experiment to compare two Sodera P400 waterguns with various well-tuned airgun arrays in order to evaluate the potentials of the watergun for our marine seismic surveys.

The experiment involved the evaluation of farfield signature characteristics as well as production testing on seismic line shooting using the two waterguns and various airgun arrays. The seismic line was chosen such that it incorporated areas of poor and good seismic reflectivity, gentle and steep dips.

Signature spectral analyses showed that although watergun signatures are rich in high frequencies these are beyond the cut off frequencies at 2 ms sampling. At this sampling interval a well-tuned airgun array can match the performance of the watergun. In the lower frequency range there is a definite lack of energies below 15 Hz. Here a well-tuned airgun array is superior.

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