

## Free Float Recording System Seismic Survey – Efficient and Cost Effective Solution for Depth Imaging in Complex Geological Environment

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Over the last decades seismic industry struggles with precise velocity models building. That leads to inaccurate depth imaging problems, especially in complex geological environments such as high velocity and “non-transparent” for reflected waves medias (salt bodies, faults and fractures zones, etc.). To solve these uncertainties seismic companies require to involve in wide-azimuth and long-offset data sets on the processing and interpretation stages. Nowadays long offset and wide azimuth surveys can be acquired utilizing OBS, multi vessels, coil and double coil shooting. Unfortunately, these seismic data acquisition techniques are highly time and cost demanding solutions. Newly developed FloatSeis™ seismic data acquisition and processing technique based on free floating seismic recording modules (GWL Seismobuoy™) and joint reflected and refracted waves tomography velocity model building approach (TrueVelocitySolution™) was invented to make wide-azimuth and long-offset surveys much more affordable especially in a low oil price environment. The most recent FloatSeis™ survey was conducted on Bjørnøya basin (the Barents Sea, Norwegian sector) in October 2016. Bjørnøya basin is a thoroughly studied and drilled area with a complex geological framework which makes it perfect for revealing advantages of the FloatSeis™ technology in comparison to a conventional towed seismic streamer surveys. Reflected waves structural imaging gives basic geological layers geometry mainly fair only in time domain. Long offset refracted waves tomographic velocity model gives us true velocity distribution over the understudy area. Integration of both data sets on the Pre-Stack Depth Migration stage provides us with true vertical depth of geological structures verified by well data. The final data obtained permitted to reduce velocity model’s uncertainties, increase level of confidence on the interpretation stage and build detailed geological section of the area understudy. The FloatSeis™ technology is an efficient and cost effective solution and a promising survey tool for making proper staking wells decisions, especially in complex geological environment suited both for 2D and 3D offshore seismic surveys.

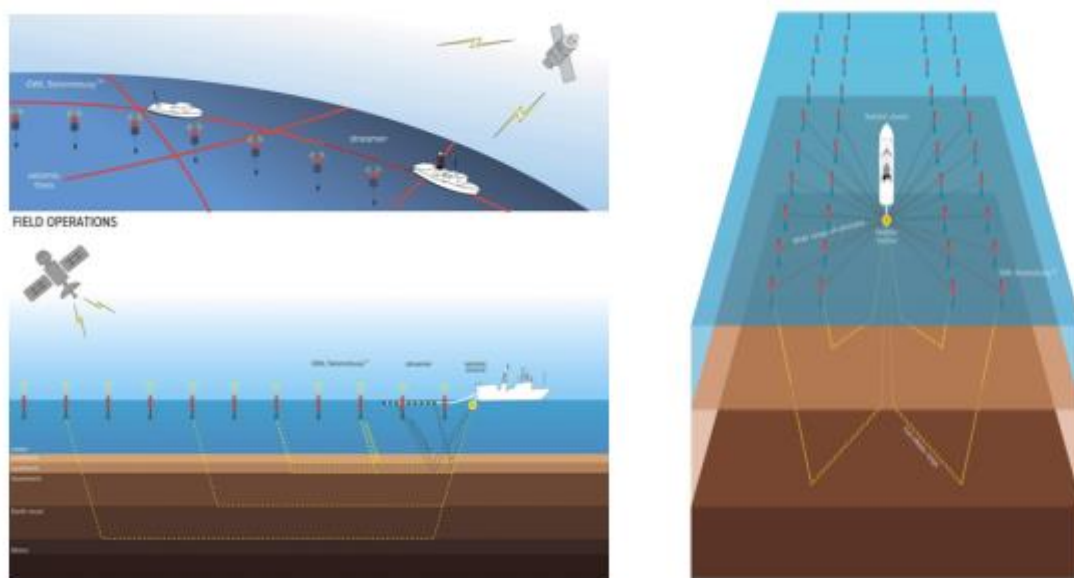


Fig.1 “FloatSeis™ Survey in 2D (left) and 3D (right) modes”