

How 3D Seismic in the Talara Basin Might help to Maximize the Recovery of Hydrocarbons

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Abstract

It is well known that in order to maximize hydrocarbon recovery, it is vital to have solid geological models to help select the location, number and type of wells for optimal drainage of the reservoir.

Throughout the history of production in the fields of Talara Basin, it always has been said seismic information helped little to nothing to improve geological models of fields in production. This is primarily due to the poor quality of seismic images.

In 2012, the company Savia Peru SA decided to reprocess the existing 3D seismic data in one of its producing fields in order to improve the depicted poor image. This special technique called "Multi Focusing Stack" improved seismic images significantly, thereby helping to the re-interpretation of the different reservoir levels in the field.

As a result of the re-processing and re-interpretation of the area, the structural-stratigraphic model of Lobitos field greatly improved, and the company began a drilling campaign looking for new locations through high angle deviated wells at smaller well spacing. The strategy allowed Savia to increase the production of the field from an average of 3000 BOPD to almost 5000 BOPD (67 % increment of total production).

This work shows an important step in seismic imaging improvement and opens a new perspective on processing in a basin that has been producing for over a century yet to this day continues adding significant reserves. This experience could be brought to onshore fields, where this positive experience could be repeated easily. In conclusion, applying new technologies and appropriate use of information, can create new opportunities.