

Experiences in the Development of Reserves and Expected Production Increases in Mature Fields in the Peruvian Northwest

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Abstract

The Talara Basin located in Northwest Peru, has a long history of oil production since 1863, and it exhibits the importance of being the scene of the national oil industry birth in all of Hispanic America.

During this long history various technologies and improvements in working methods have been used as the science and technology in the global oil industry have evolved.

The great challenge for improving the recovery factor after more than a hundred years of exploitation is the main objective of operators and it is being worked several projects with good results, which favors investment in the current state of these mature fields.

This compilation work aims to be a comprehensive overview of the most emblematic projects of oil activities in the fields of the Talara Basin from the peak of production. The development of science and technology throughout this process has been applied and adapted to the Talara basin according to implementation feasibility and technical criteria. The application of technical improvements is evident In field operations, technical studies and especially on increasing reserves and production.

Throughout the history of production various private companies running oil blocks in the Northwest Peru are replacing every year and increasing reserves in these fields as a result of the constant work and scientific and technological innovation in these mature fields.

Reserve development begins with the drilling of wells, however in the Talara Basin, pressure maintenance projects were implemented in the early stages as in the case of gas injection into the Verdun Alto field in the Pariñas Formation (Lower Eocene) in 1925, being one of the first gas injection projects in the world and later on around 69 gas injection projects in the various blocks of the basin have been implemented.

Water injection projects were implemented in the early 1950s, when about 30 water injection projects were deployed in the basin. LPG injection projects have been developed and are pioneers in the world in using this methodology. Other types of experimental projects like "huff and puff" and inhibition projects with the aim of improving the recovery factor have been implemented.

Today after several infill drilling projects in the basin demonstrate the possibility of drilling in a smaller spacing, ie: areas where it is possible to increase the recovery factor depending on the characteristics of the reservoir rock. These infill drilling projects can then be used as a basis to

implement enhanced recovery projects. There are also areas where exploration work can be carried out both in deeper horizons as well as in areas that were not drilled at the time due to lack of information and technology, which did not allow adequate detailed studies. We conclude that after a hundred years of operation there is work to do to increase the reserves of the Talara basin so that it remains as a source of reliable reserves for the country.