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Production reassignment and reserves distribution on a giant shared reservoir

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On the conventional scheme of the oil industry, exploitation concessions are granted by areas delimited on the surface but at the subsoil level they often fail to cover the entire volume of the reservoir, even more in large deposits, consequently the reservoir spread underground through various concession areas and it is therefore managed by multiple operators, under this situation the accumulation is known as shared reservoir. On a shared reservoir original oil in place and reserves estimation are made according to the volume of the reservoir contained within the concession, however oil production does not obey limits or estimations, because oil will move freely to zones of greater drainage, this means that throughout the productive life of a shared reservoir the recoveries for each operator can be very different from the estimates or assigned reserves, resulting

in a beneficial situation to one operator and negatively affecting another. This document describes and deals with a review of reserves made on a giant oil reservoir managed by two operators but with preferential drainage to one area, in which cumulative oil production differs greatly from the recoverable volumes calculated for each concession area, creating a complex reserve estimation scenario due to the impossibility of performing a conventional calculation for the remaining volumes available for each operator. To solve this situation a methodology was applied to reallocate the cumulative production between the two areas and a distribution of the remaining reserves was achieved based on production history and forecasts, resulting satisfactory for both parties.

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