5289 Decoding Gotnia Basin of Kuwait, Stratigraphic Approach

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Few studies and publication that have really considered Gotnia formation of any value rather than being the effective seal to the Jurassic Petroleum system especially in Kuwait because of the great thickness of cyclic salt-anhydrite that varies from 200-1500ft, triggered the attention to the need of understanding their distribution in Kuwait for being hazard zone to drillers with the high pressure & associated H₂S gas by predicting the number of cycles in the meaning of where but not really why.

The regional work on Gotnia started as part of regional Jurassic sequence stratigraphy study. where we know already the fact of lacking age control over this particular part of the Jurassic section basically because of not enough core coverage for the reason of no reservoir potentiality so we allowed our self first to navigate, observe & write down findings without interpretation, making advantage of more confident data from above and below Gotnia, & allowing the sparkling facts to arrange the thoughts and ideas and only then when we started weaving Gotnia basin story.

Gotnia evaporites formed during arid, dry climate, filling the north most identified intra shelf basin, bounded from east by significant tectonic element the Burgan arch, to the south by Rimthan arch, to the west by the stable to unstable relation boundary and to the north by tectonic element envisaged to be extending up to central Iraq, has provoked the shallow carbonate “Jubialah-ArabD” to form along, which is believed to have also contributed in the restriction of the basin.

The first Gotnia cycle correspond to mild geomorphology of the basin at earlier, where as the middle cycles “2nd and 3rd” associated with accommodation space availability as the intra shelf basin developing in a form of pulses of subsidence , the 4th cycle on the other hand filled the remaining space & prograded eastward announcing the end of intrashelf basin development and allowing Hith to extend as massive anhydrite over most of Arabia.

This work is not just aiming to reveal Gotnia secrets but also to highlight the importance of every single data available to the Geoscientist.