

Delineation of discrete reservoir sands in Panna formation using Geo-statistical inversion: A case study from western offshore basin, India.

that the sands are discrete. Well W4 is oil bearing while W5 is gas bearing in Panna formation but W-4 is structurally shallower than the well W-5. This is only possible when these two reservoirs are discrete. Sand probability section also supports the same assumption (Fig.15).

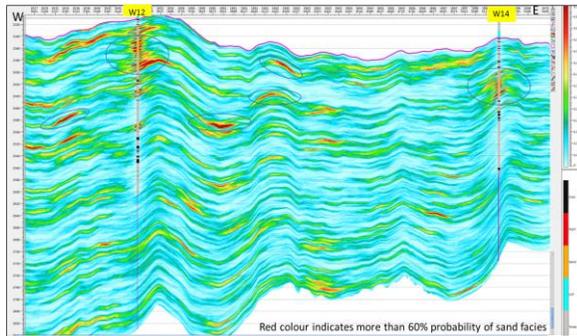


Fig.13 showing most probable distribution of sand facies. Sand distribution is in discrete in nature (in ellipse) within Panna formation

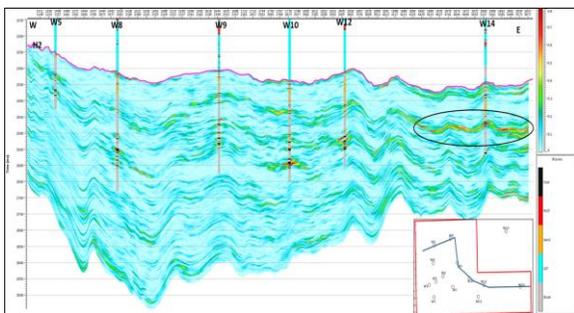


Fig. 14 Coal Probability Section showing probable occurrences of coal is increasing towards eastern side (black polygon)

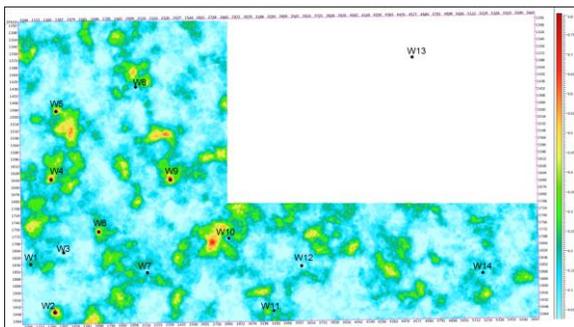


Fig.15 sand probability map close to H2 top (9th layer) showing distribution of most probable (up to 80%) occurrence of sand.

Geobody extraction close to Panna pay reveals the sand dispersal is discrete in nature which is shown in Fig.16.

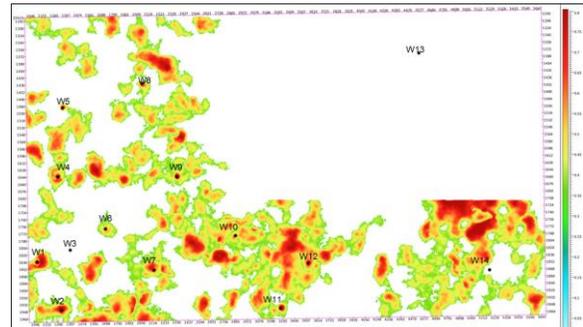


Fig.16: Geo bodies map showing mean sand distribution close to H2 within Panna.

Conclusions:

Probability volumes from pre-stack geostatistical inversion broadly explain the well observations and are good in quality. Geobodies extracted from the sand probability volume depicts the sand dispersal pattern and in agreement with the geological understanding of the area. Thin sands at different levels could be deciphered keeping in view the associated uncertainties. Interpreting sand geobodies by considering higher probability range will reduce risk and uncertainty.

References

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