

Subsurface Reservoir Characterization Using Core Images and Petrophysical Properties: Case Study of an Onshore Field, in the Niger Delta Basin.

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Summary (All headings should be Arial 12pt bold)

The characterization of subsurface reservoirs involves the creation of models for hydrocarbon reservoirs that is governed by the petrophysical (storage and flow) and geological properties. The use of core images coupled with petrophysical properties, aids in the characterization of these reservoirs.

Theory / Method / Workflow

This work looks at core images from a deltaic system in the Niger Delta Basin. The processes that affected this Basin are fluvial, wave and tidal processes. Core images will be examined and linked to their depositional environments. This would also, be tied to their petrophysical properties such as porosity, permeability and flow units using the flow zone index concept.

Results, Observations, Conclusions

Core images obtained from each depositional environment showed distinct petrophysical properties, sedimentary structures/bodies and lithology.

Novel/Additive Information

By knowing the depositional environments and linking them to core images and petrophysical properties, depositional environments could be predicted for cored intervals with core images whose depositional environments are not originally known.

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