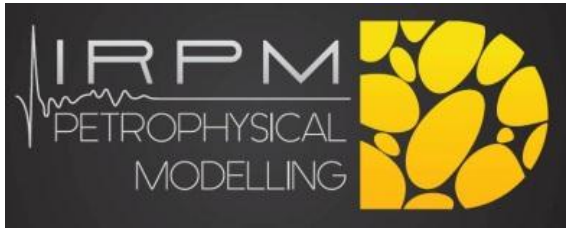
Formation Evaluation Society of Australia

A chapter of the Society of Petrophysicists and Well Log Analysts

Io-Jansz Saturation

Wesley Emery
Director of iRPM Pty Ltd
Director of RTN Pty Ltd



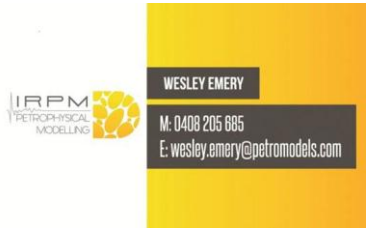
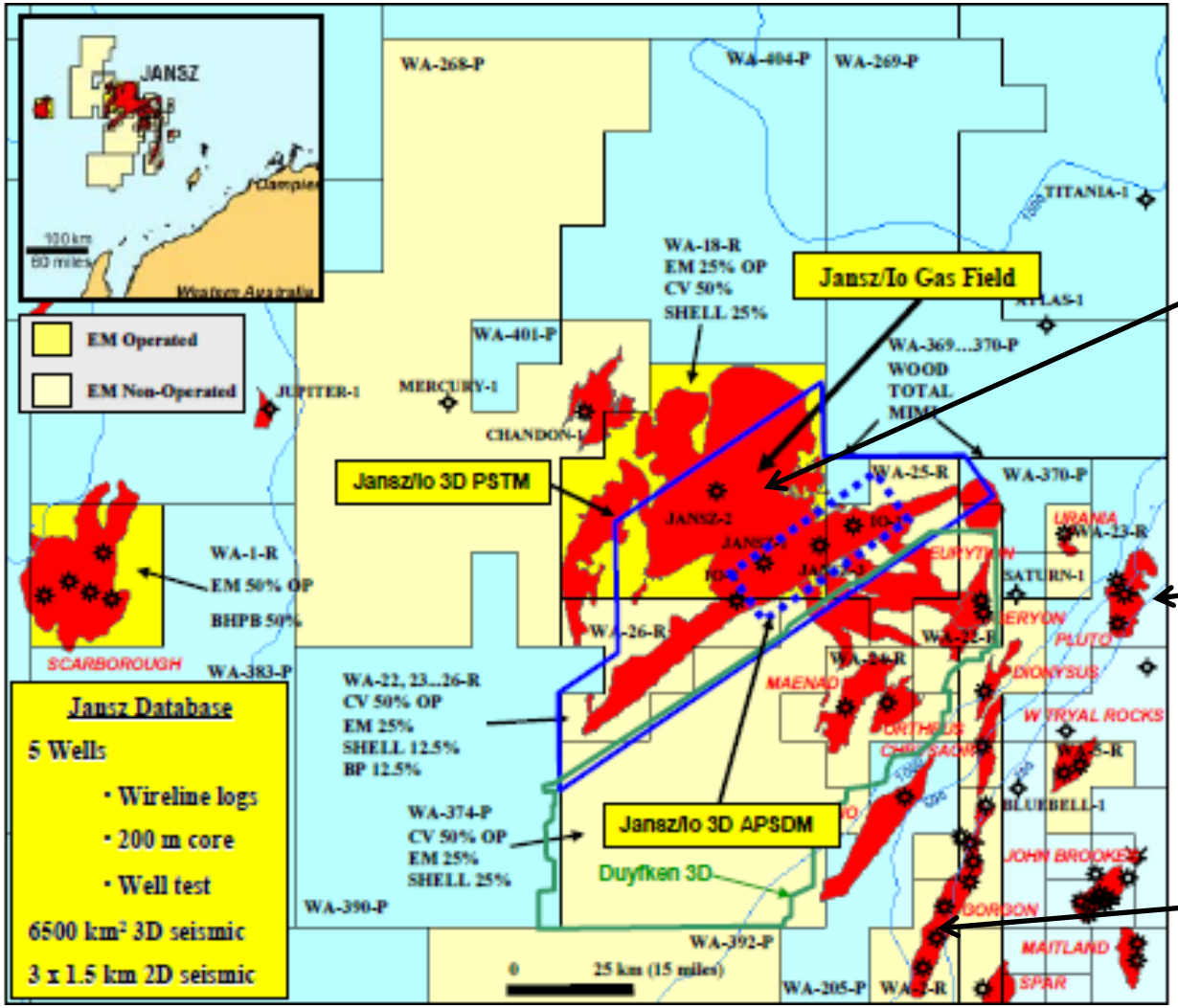


Table of Contents

1. Io/Jansz - SHF



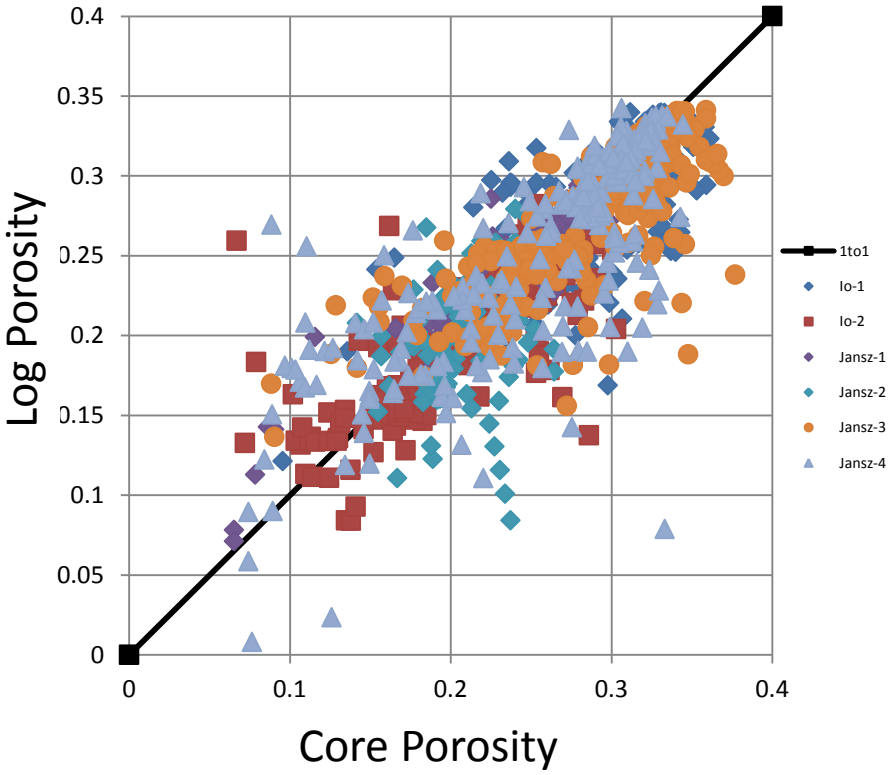
IoJansz

Pluto

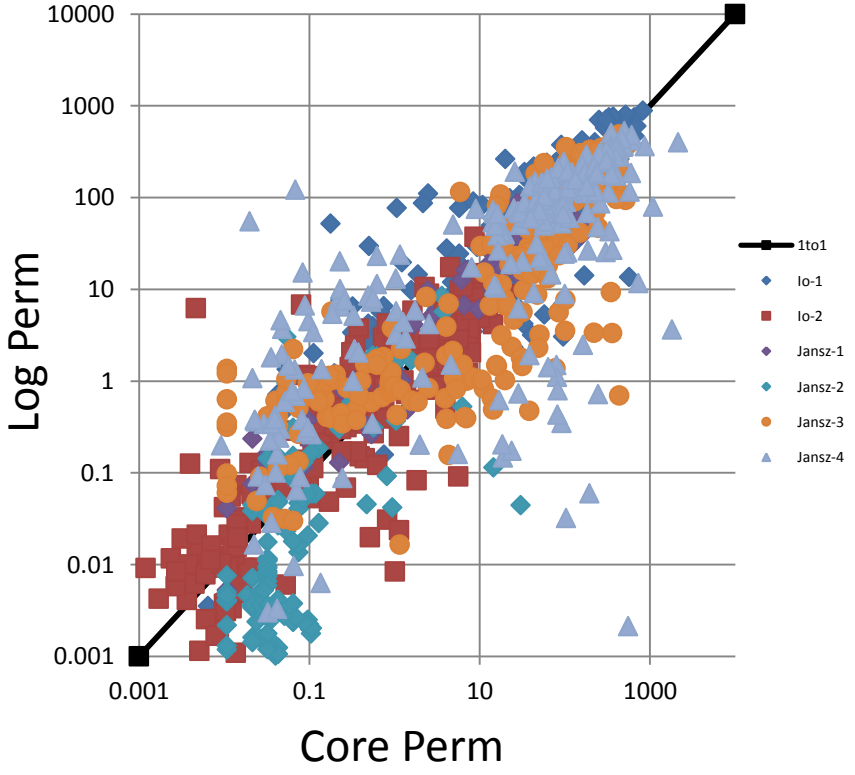
Gorgon

1a. Core – Porosity, Perm,
Dean Stark, Capillary Press

Core – Log Porosity

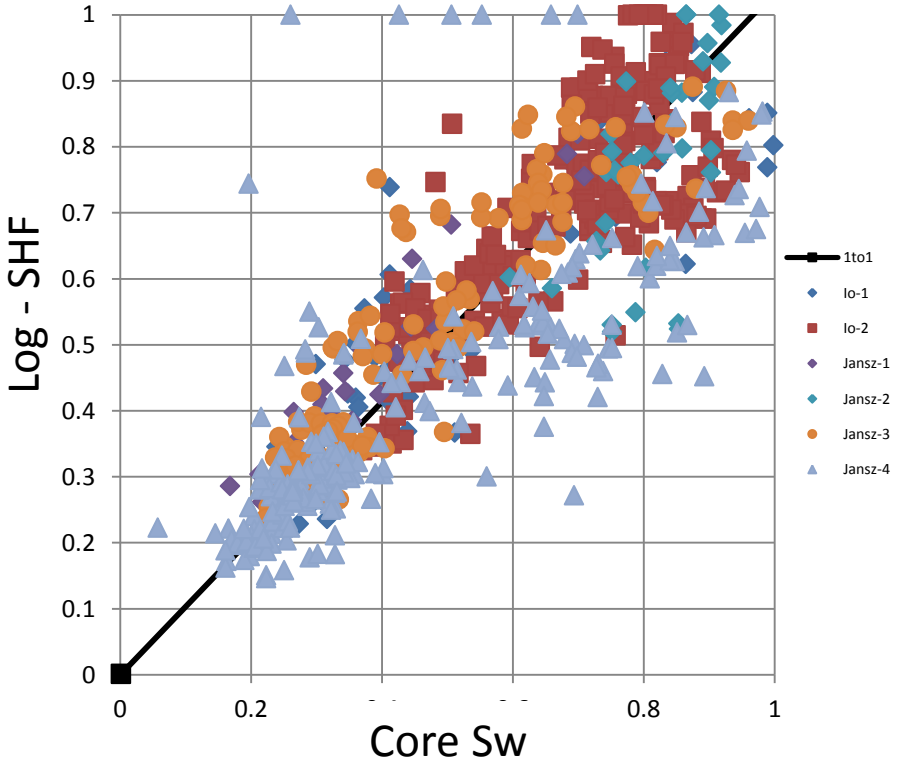


Core – Log Perm

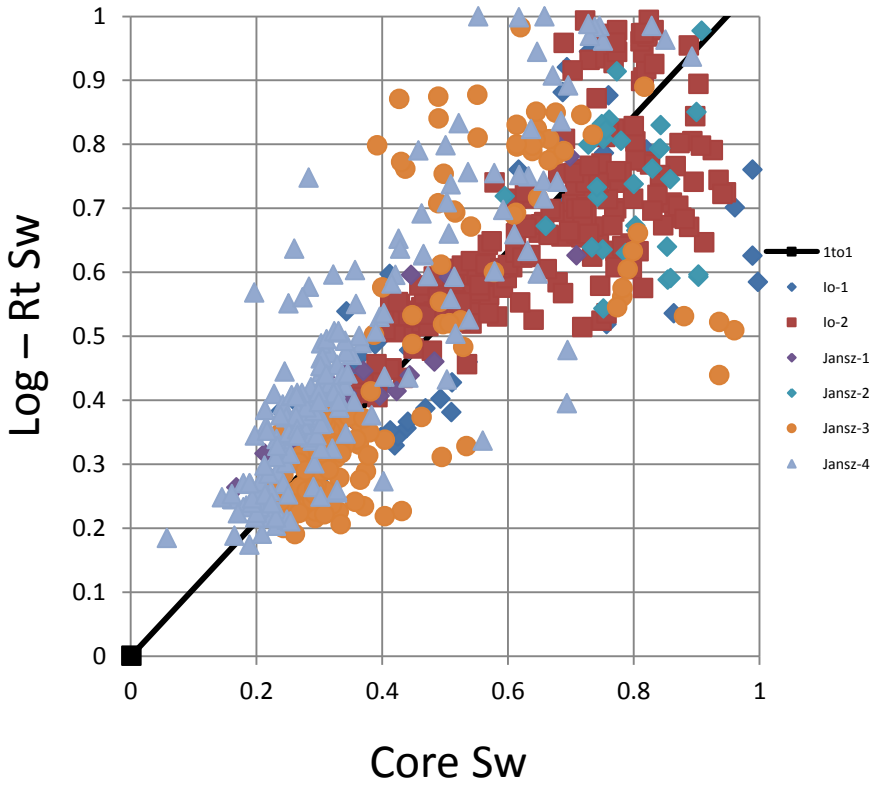


1a. Core – Porosity, Perm, Dean Stark, Capillary Press

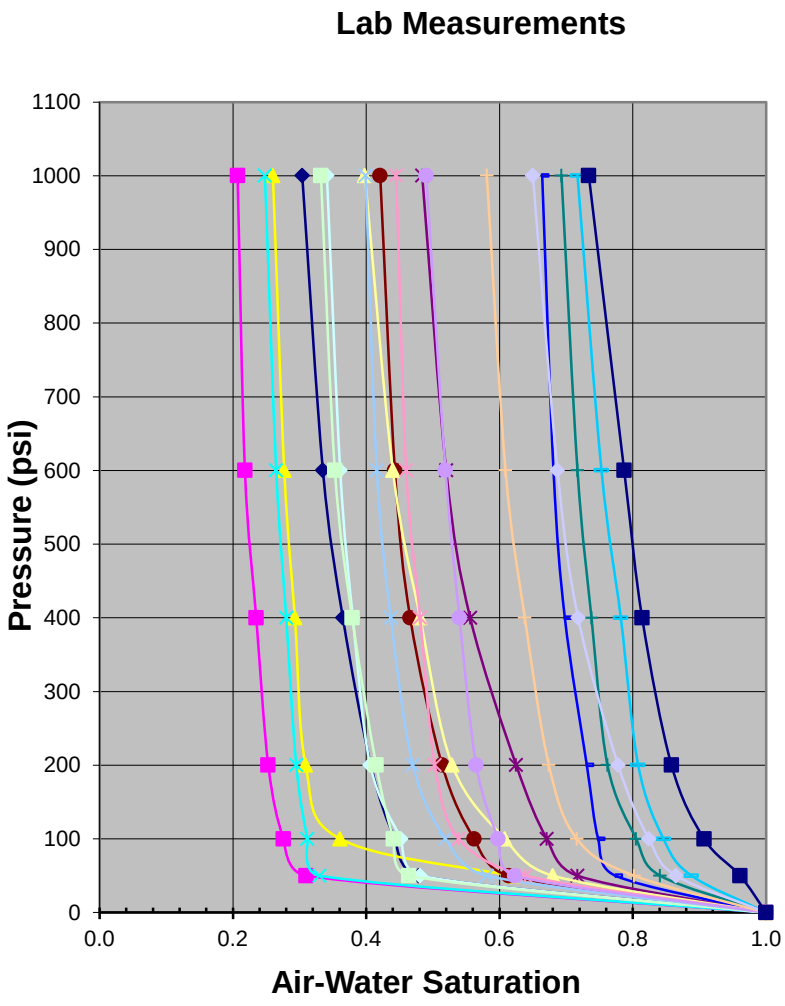
Core – Log SHF

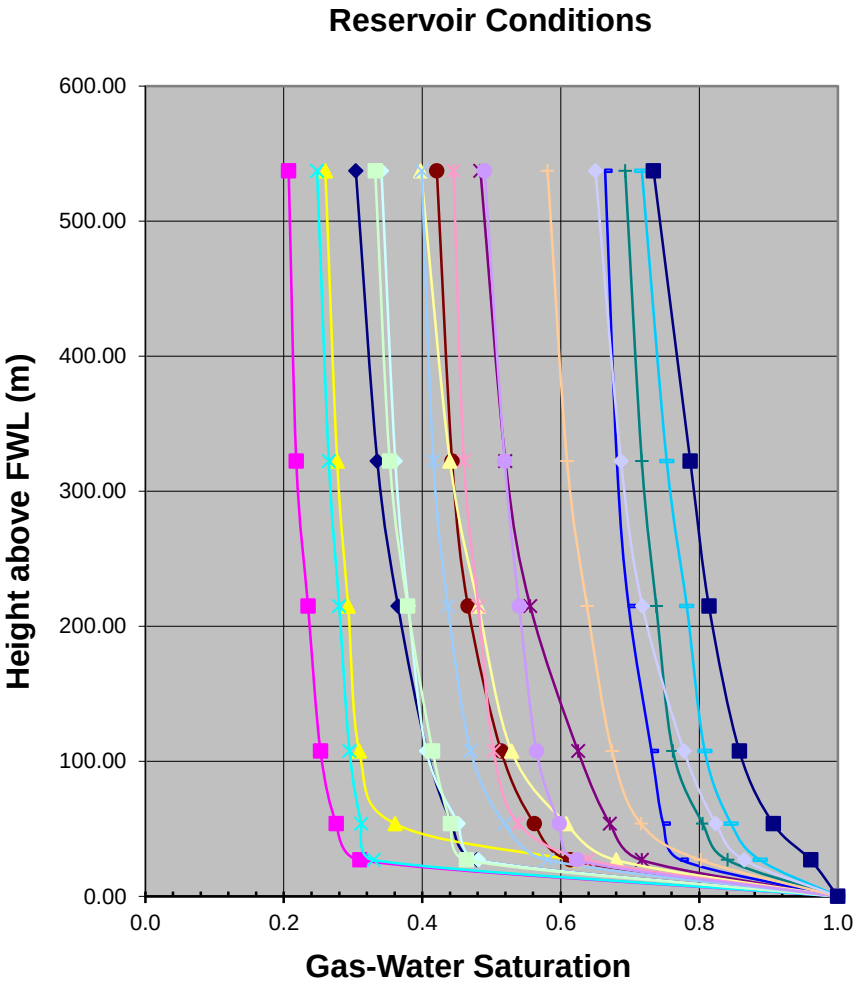


Core – Log Rt Sw

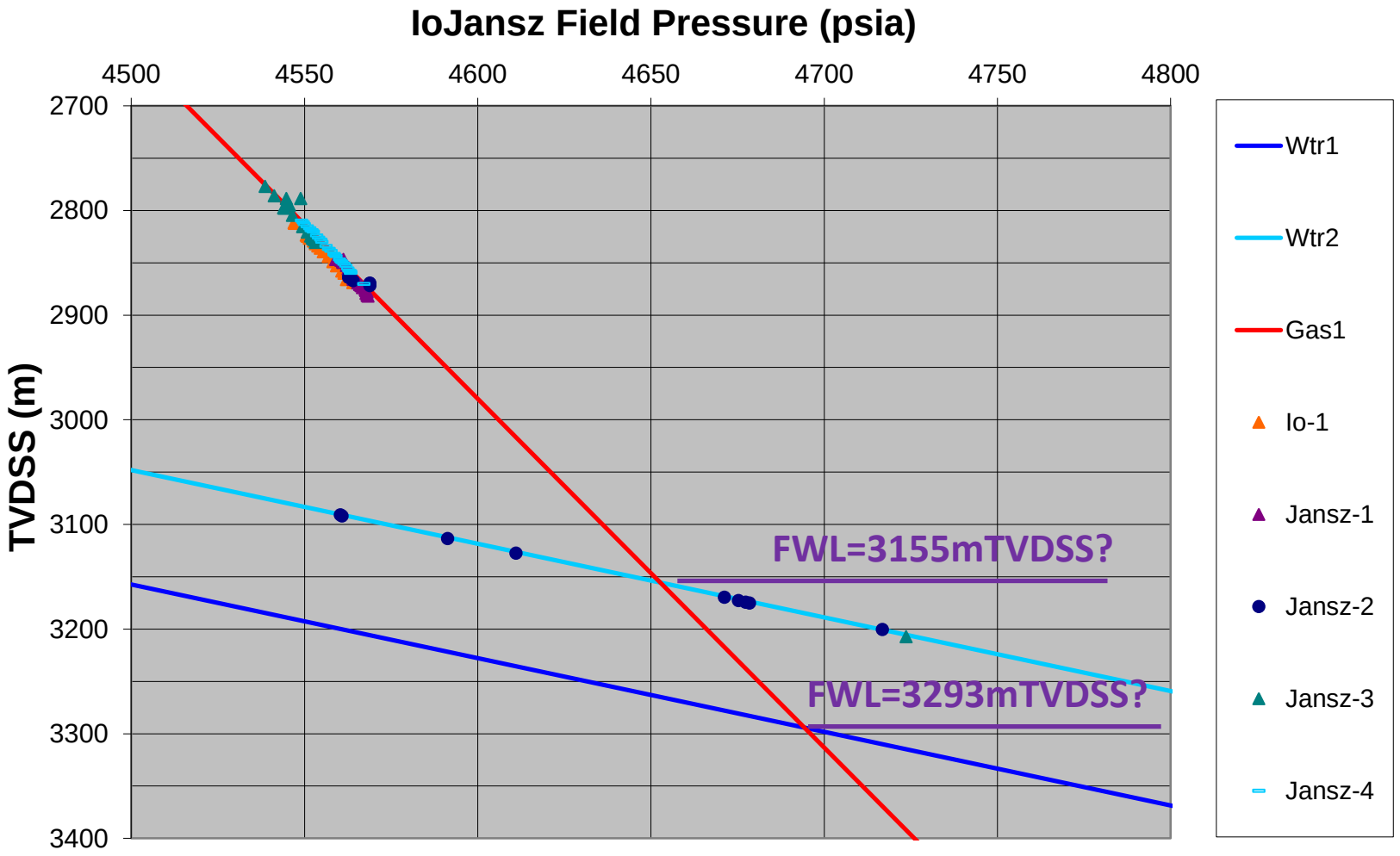


1a. Core – Porosity, Perm, Dean Stark, Capillary Press

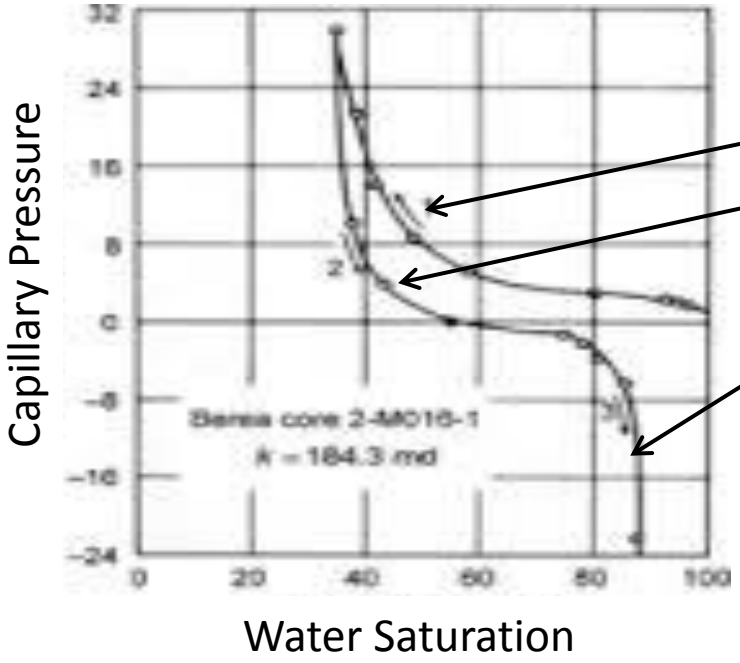




1b. Press Grad Plot



1b. Drain/Imbib SHF



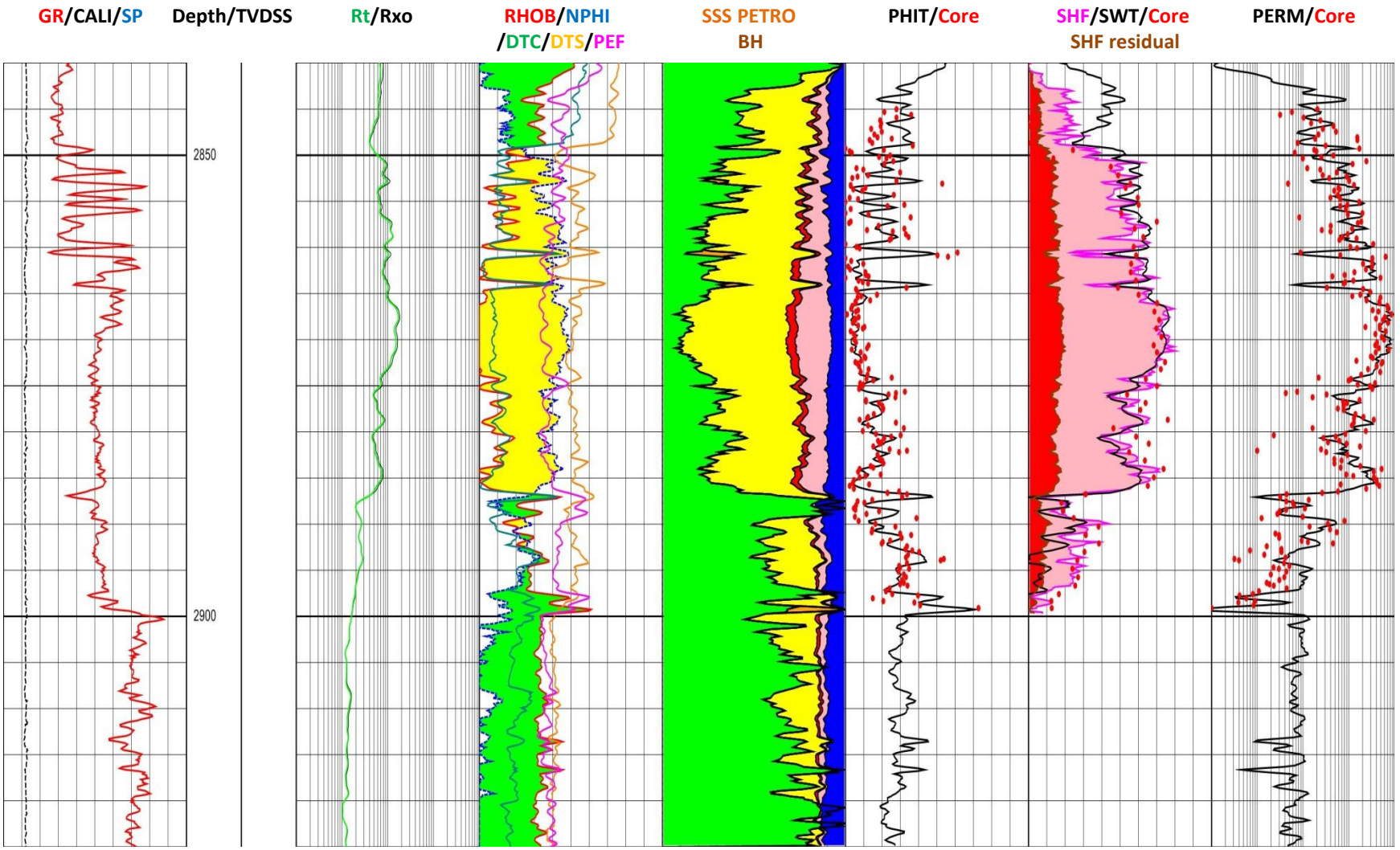
1. Drainage
2. Spontaneous Imbibition
3. Forced Imbibition (EOR)

<u>SHF available:</u>

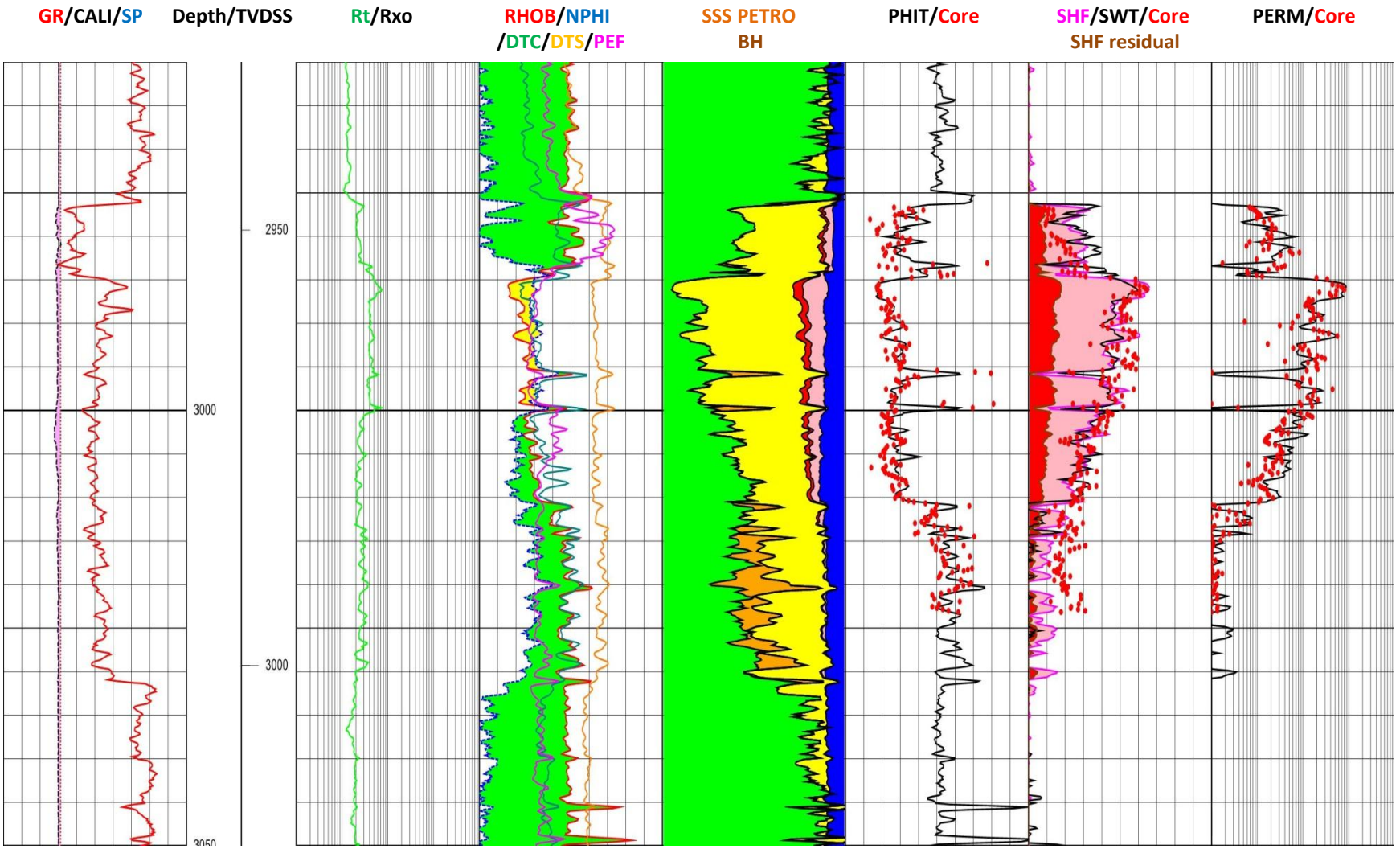
1. Leveret-J
2. Skelt Harrison
3. Lambda
4. Heseldin

1. Kuttan K, Stockbridge C.P, Crocker H, Remfry J.G, July 1980 SPWLA, Log Interpretation in the Malay Basin.
2. Chiew Fook Choo, June 2010 SPWLA, State-of-the-art Permeability Determination from Well Logs to Predict Drainage Capillary Water Saturation in Clastic Rocks.

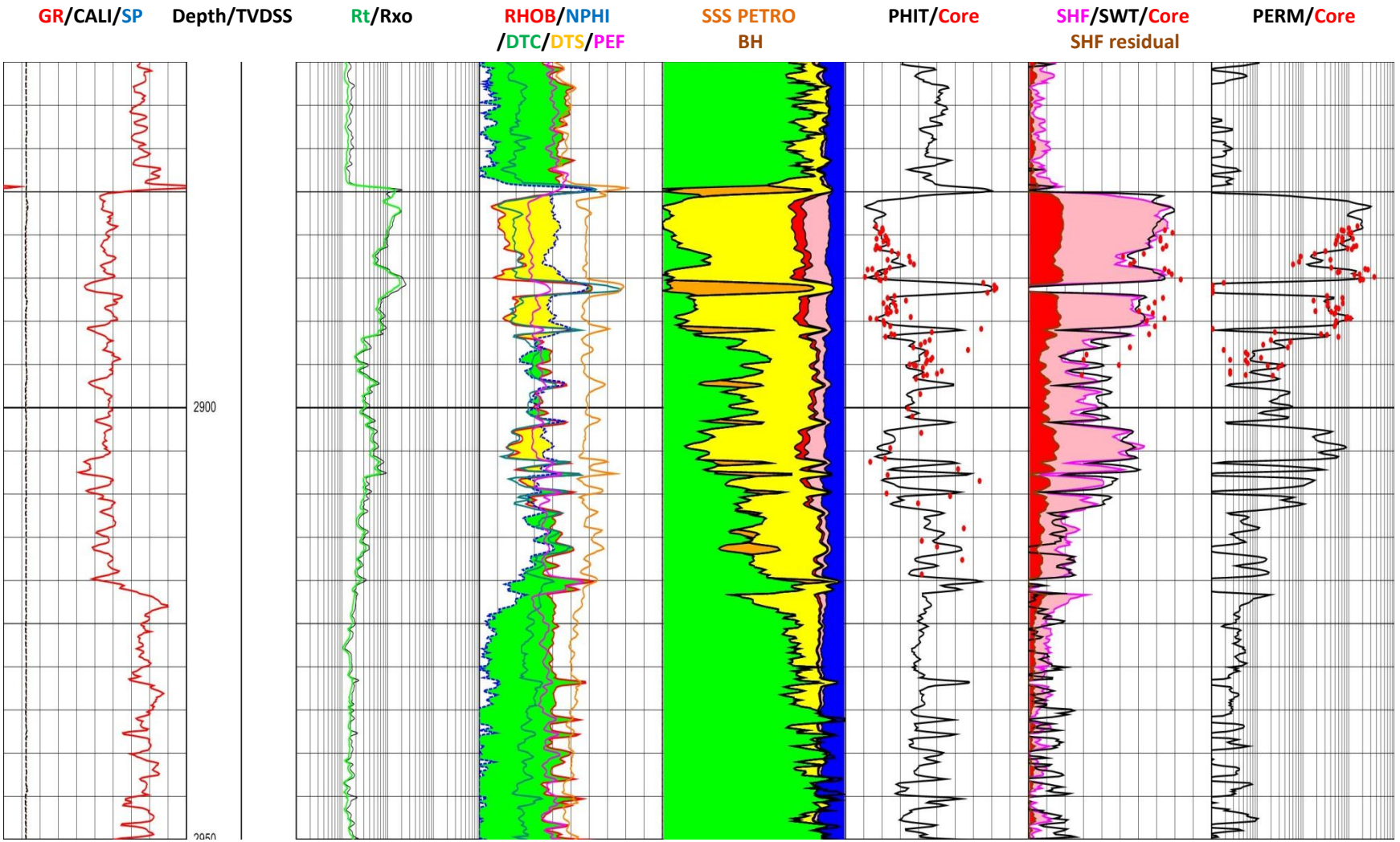
1c. Io-1 Results



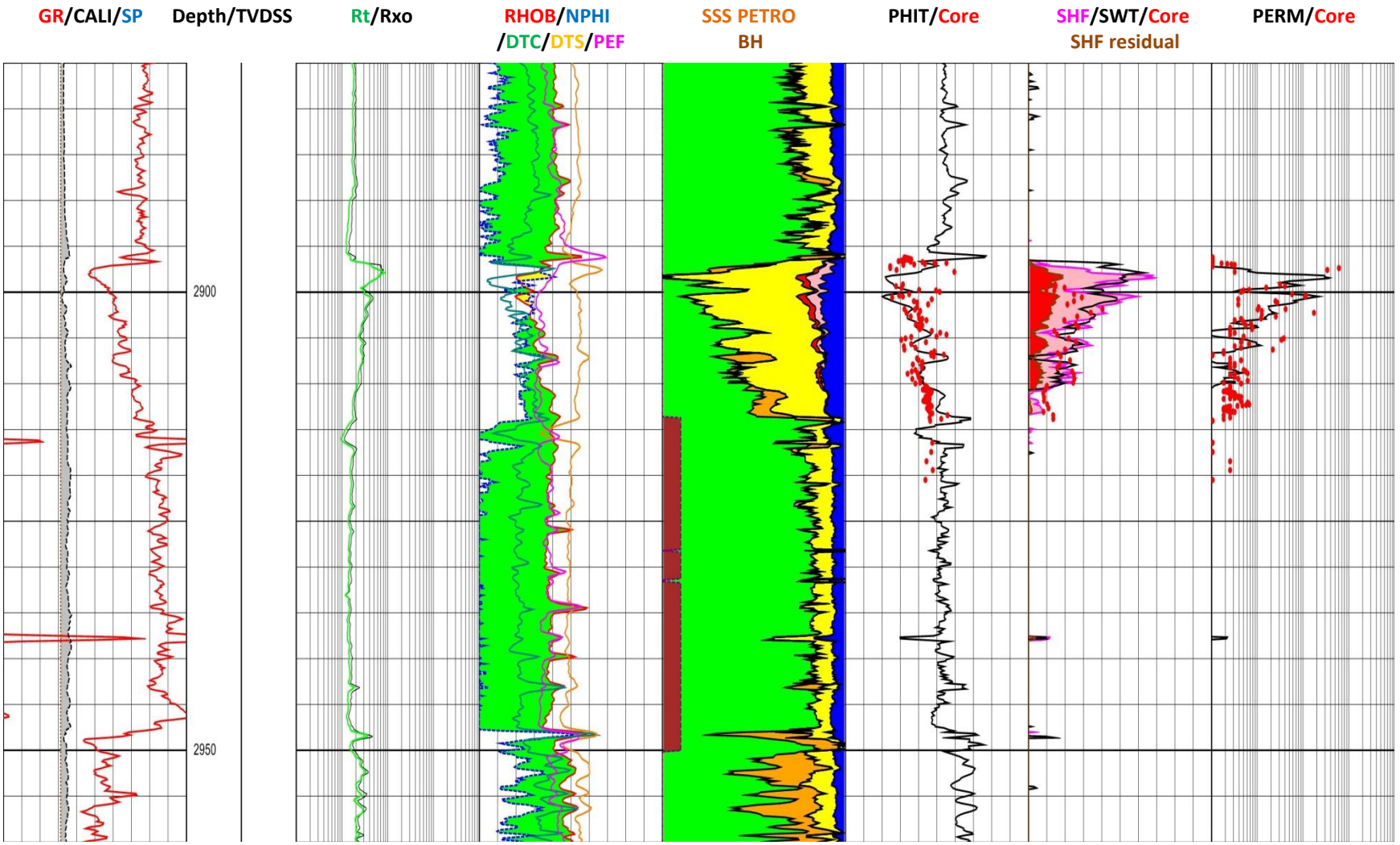
1c. Io-2 Results



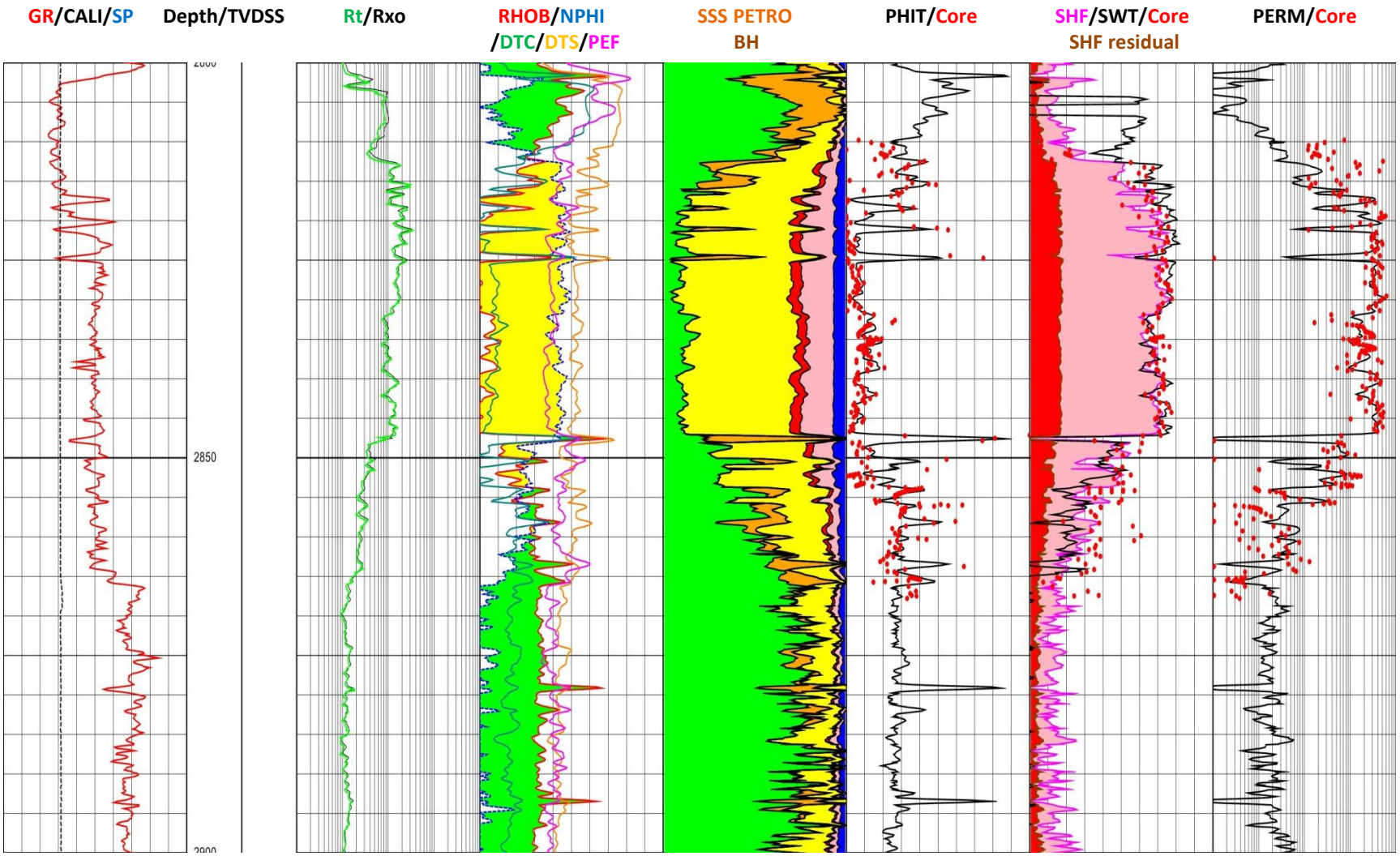
1c. Jansz-1 Results



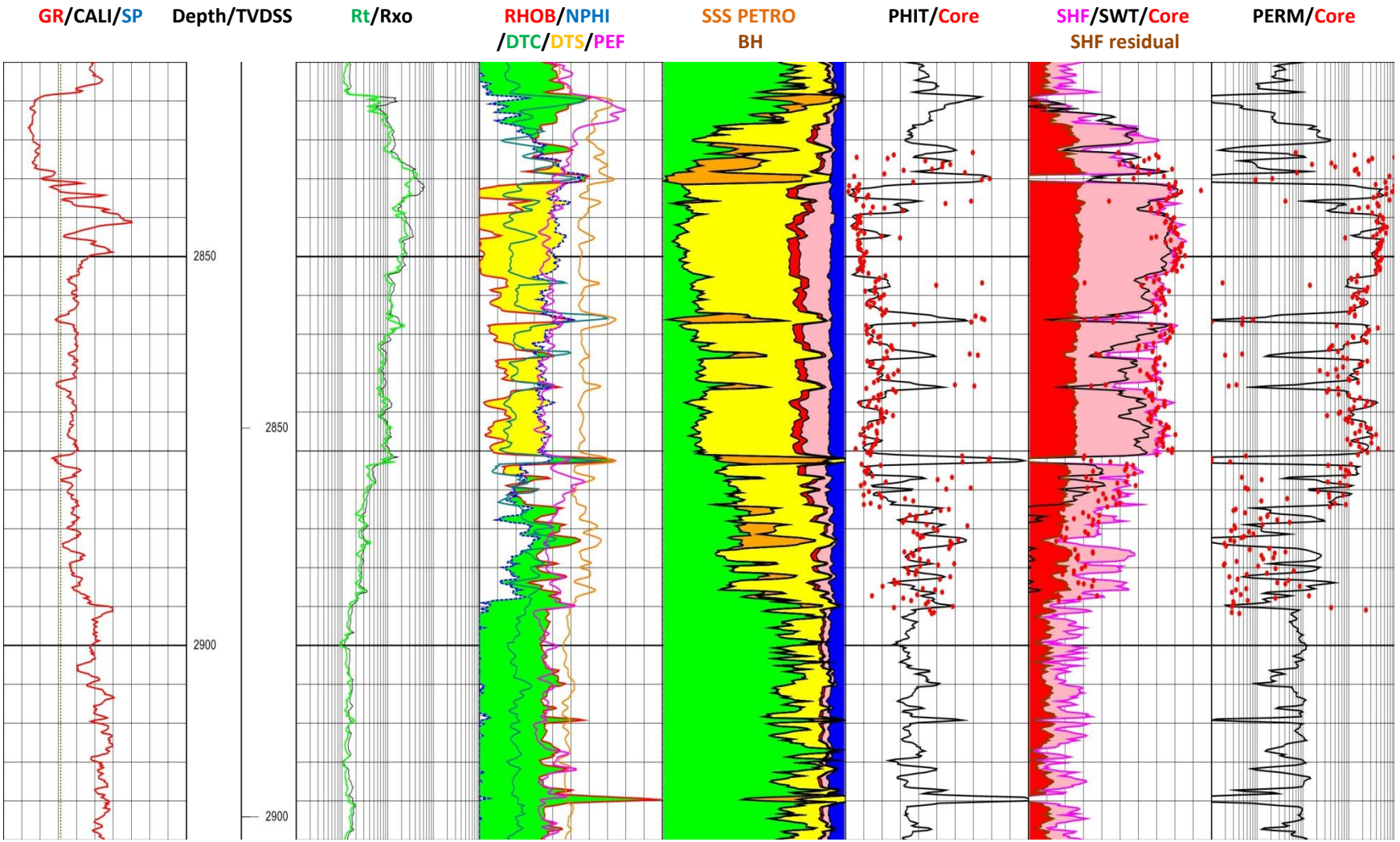
1c. Jansz-2 Results



1c. Jansz-3 Results



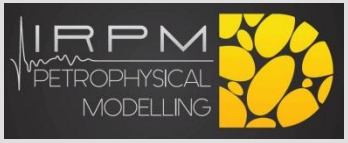
1c. Jansz-4 Results



2. Io/Jansz Conclusions

1. Parameters in Rt based Sw are; a, m, n, Vsh/Vcl, porosity and Rw. **Water salinity (Rw)** is the parameter that has the greatest impact on the accuracy of the Sw!
2. Parameters in the CapPress(SHF) based Sw are; a and b(Lev-J), porosity, permeability. **Permeability** is the variable that has the greatest impact on the accuracy of the Sw!
3. If Rt based Sw and CapPress based Sw **compliment** each other, then the **uncertainty** of the Petrophysical interpretation is **reduced**!
4. CapPress Sw is not affected by **invasion** and less affected by **thin beds** (since Density has higher resolution than Rt). Vsh/Vcl and porosity is common to both.
5. Drainage SHF (often used) and Imbibition SHF (rarely ever used) can be determined in **every conventional** hydrocarbon field.
6. There is **no more** saturation uncertainty in Io/Jansz than there is in any other field! It can be completed in **2 Days not years**!
7. If somebody tells you: -
   a) "I tried it and it doesn't work"
   b) "I don't have time now"
   c) "I don't like that line of questioning"
8. Become **suspicious** and investigate for **yourself**!
9. Some companies say no to SSS. Is this a lesson learnt?

Questions?


IRPM
PETROPHYSICAL
MODELLING


RTN
Resource
Technology
Network