LOW FLOW RATE WATER DETECTION IN VERY SHALLOW AREAS BEHIND MULTIPLE CASINGS BY USING PULSED NEUTRON LOG
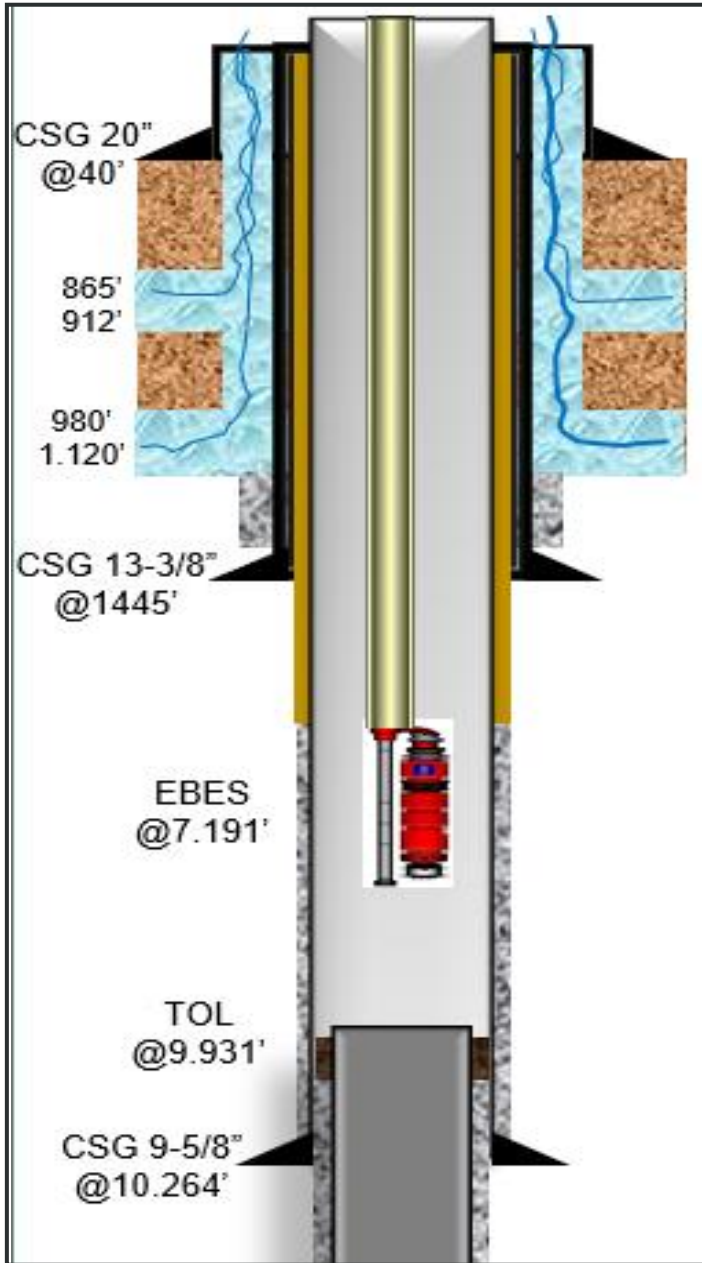
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Challenges

- Producer well leaking 0.3 bpd water at surface through annulus (13 3/8" & 20").
- Previous Noise log with alternate vendor reported flow at bottom.
- Identify the leak point behind the 13 3/8" casing to define remediation plan.
- Customer needed to evaluate from 100' deep to assess shallowest zones.
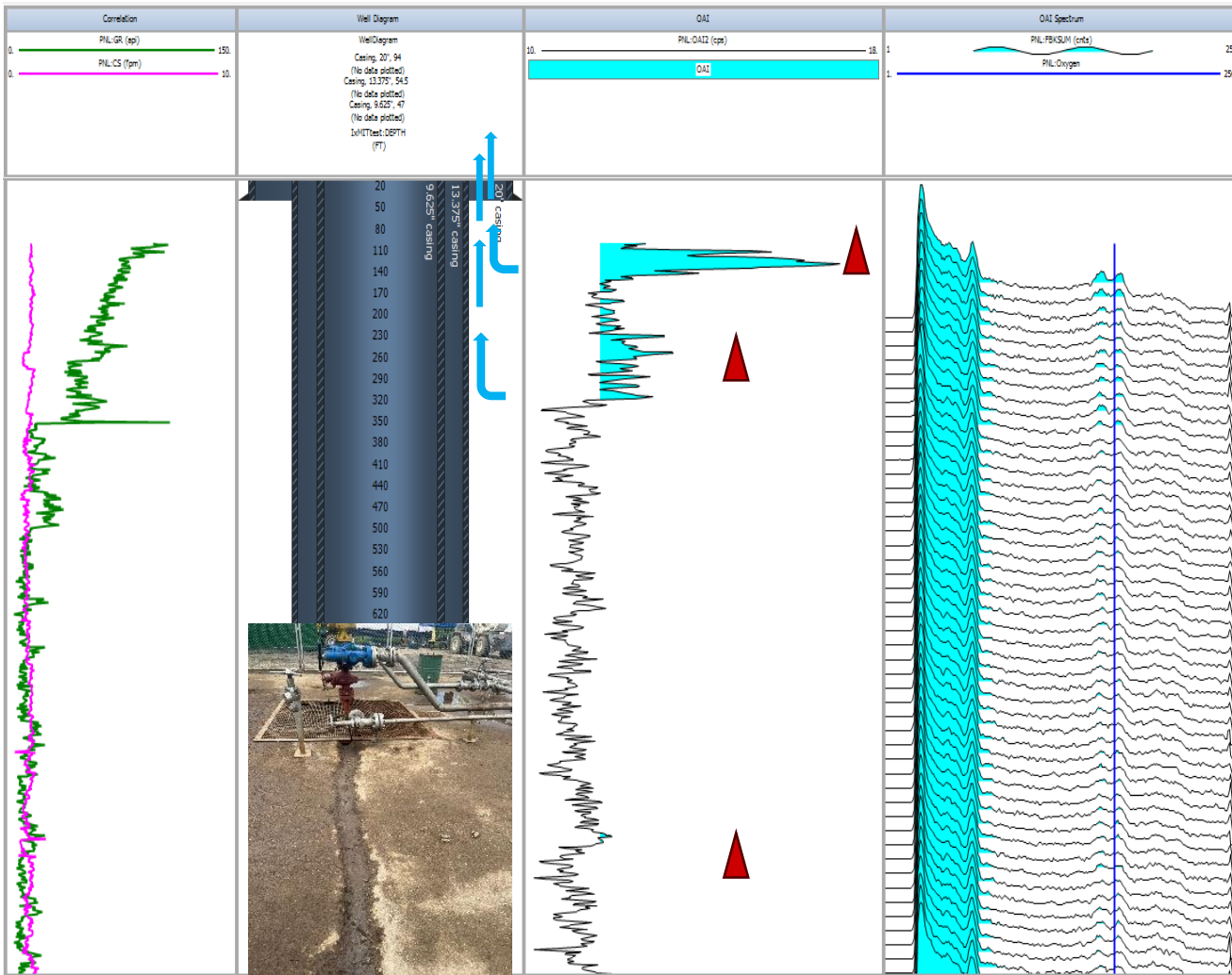
Solution

- Pulsed Neutron Log in normal mode for Oxygen Activation analysis in continuous and stations at 1fpm.
- MOC realized in order to be able to run PNL at 100'

Oxygen Activation │ Pulsed-Neutron Logging
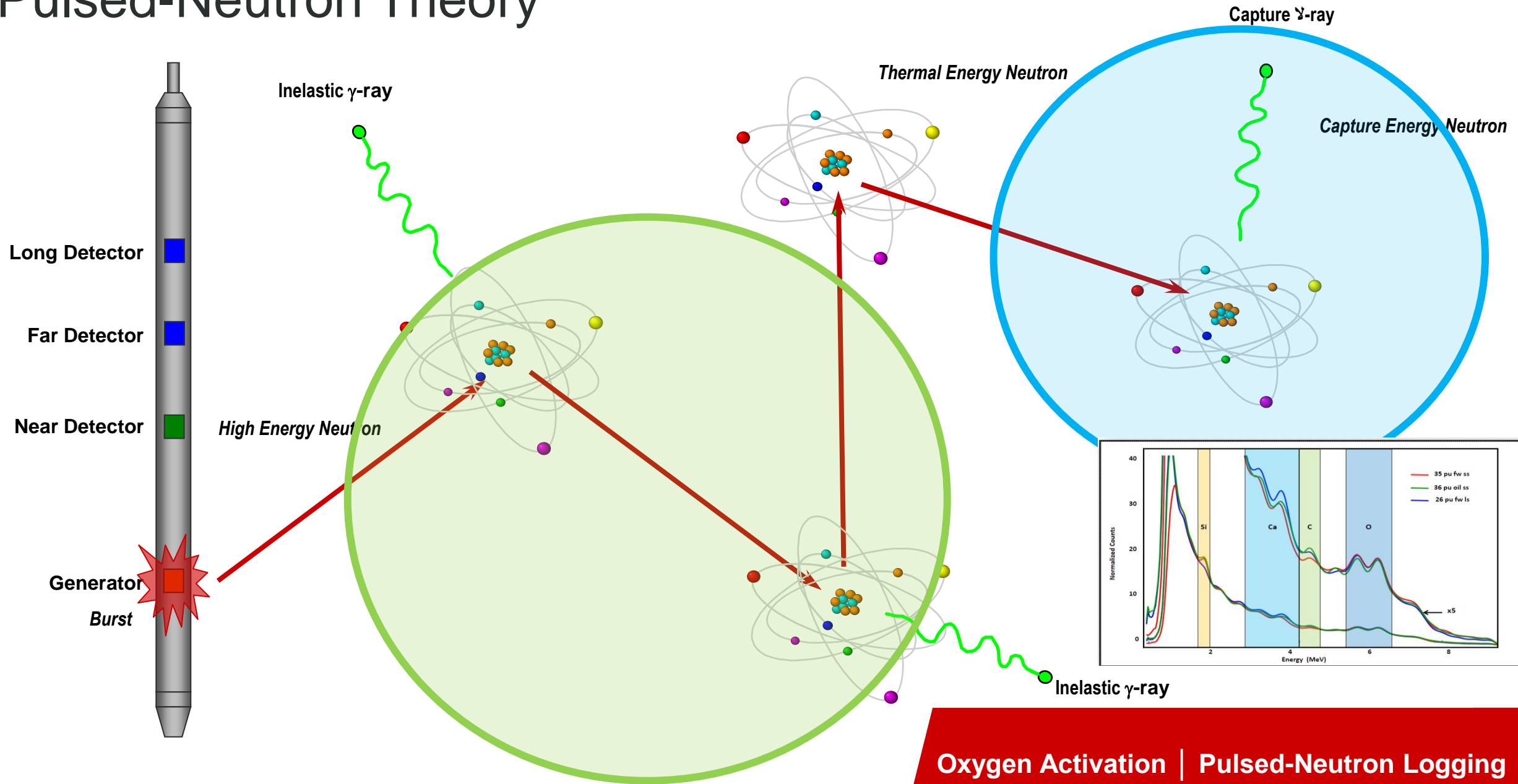
Pulsed-Neutron Theory

Results & Conclusions

- Water flow evidenced from 329' to surface, with additional entry point at 145'.

- Listening & respond was crucial to identify the full path flow including very shallow areas in the logging program.

- Effective remediation plan saved **1M$** in supplies and operation time.

- Oxygen activation technique provides confidence for evaluation of conformance problems in multi-tubular completions and very low flow.
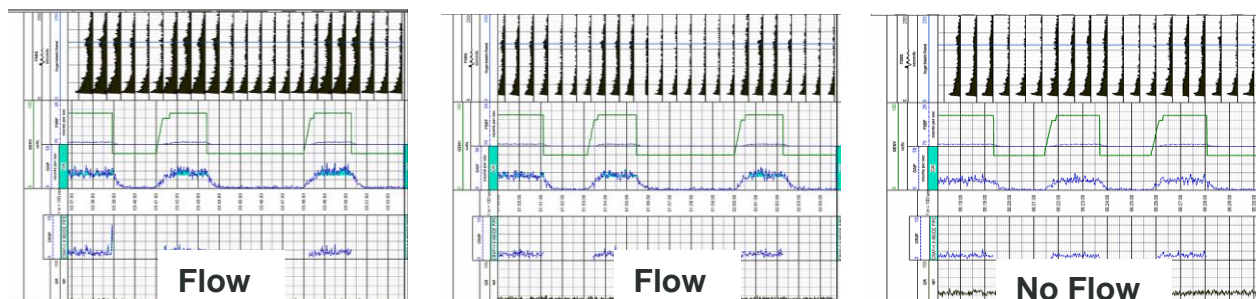
Oxygen Activation │ Pulsed-Neutron Logging

THANK YOU

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