Watercut Correlation @model

The general form of the Water-Oil Ratio (WOR) regression is:

(1) $$WOR = WOR_0 + Q_O \cdot \text{Regression}(\{q_k\}, \{Q_k\}), \quad k = [1..N]$$

Watercut Power Regression

(2) $$WOR = WOR_0 + Q_O \cdot \sum_{k=1..N} \left[a_{O,k}\, Q_{O,k}^{gQ_{O,k}} + a_{W,k}\, Q_{W,k}^{gQ_{W,k}} + b_{O,k}\, q_{O,k}^{gq_{O,k}} + b_{W,k}\, q_{W,k}^{gq_{W,k}} \right]$$

Watercut Rational Regression

(3) $$WOR = WOR_0 + \frac{Q_O \cdot \sum_{k=1..N} \left[a_{O,k}\, Q_{O,k}^{gQ_{O,k}} + a_{W,k}\, Q_{W,k}^{gQ_{W,k}} + b_{O,k}\, q_{O,k}^{gq_{O,k}} + b_{W,k}\, q_{W,k}^{gq_{W,k}} \right]}{1 + \sum_{k=1..N} \left[c_{O,k}\, Q_{O,k}^{hQ_{O,k}} + c_{W,k}\, Q_{W,k}^{hQ_{W,k}} + d_{O,k}\, q_{O,k}^{hq_{O,k}} + d_{W,k}\, q_{W,k}^{hq_{W,k}} \right]}$$

Watercut Neural Network Regression

(4) $$WOR = WOR_0 + Q_O \cdot \text{ANN}(\{Q_{O,k}\}, \{Q_{W,k}\}, \{q_{O,k}\}, \{q_{W,k}\}), \quad k = [1..N]$$

See Also

Petroleum Industry / Upstream / Subsurface E&P Disciplines / Well Testing (WT) / Flowrate Testing / Flowrate / Production Water cut (Yw)

[WOR] [Watercut Diagnostics][Watercut Fractional Flow @model]