

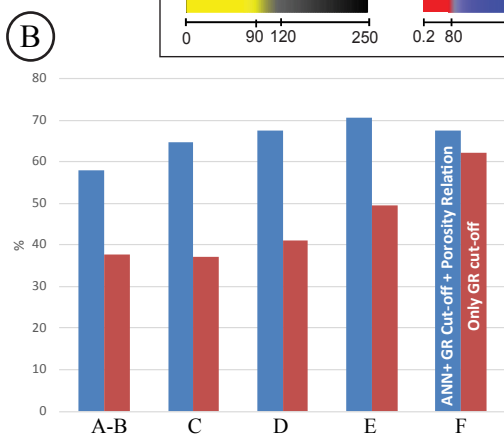
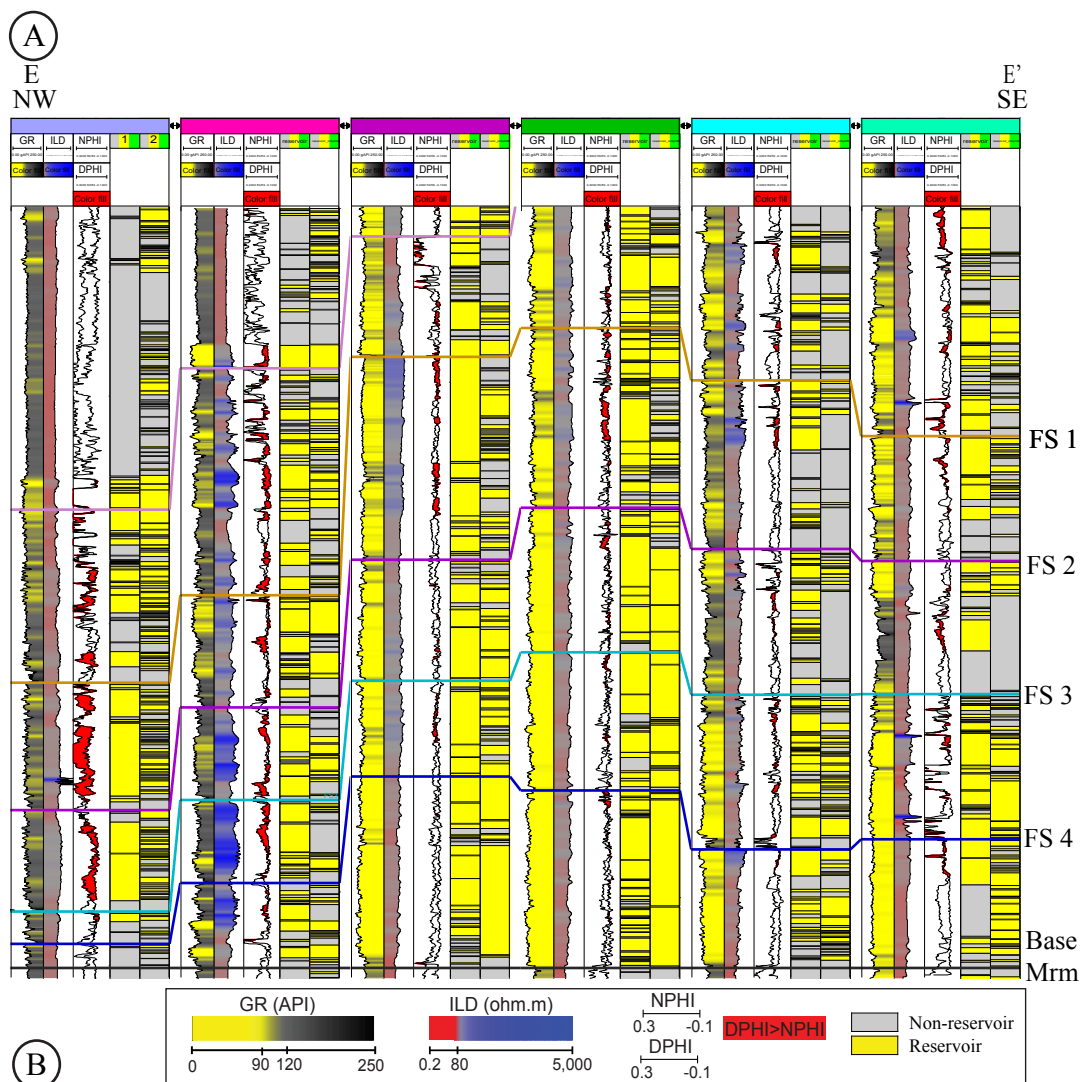


Figure E-4. A) Stratigraphic cross-section flattened on the Upper Skinner shale (Base Marmaton). Refer to figure 2 for the location of the cross section. GR: gamma-ray, ILD: deep-resistivity, NPHI: neutron-porosity, DPHI: density-porosity, Mrm: Marmaton. 1) estimated lithology logs by combining Artificial Neural Network, GR cut-off values and the relation between lithology and porosity. Conglomerates and sandstones are merged under reservoir group. 2) Estimated lithology logs by only using GR cut-off values. 120 API and 105 API cut-off values are used on the northwest and southeast side of the study area, respectively. Note the underestimated reservoir intervals by the GR cut-off values analysis. B) Histogram showing the percent of reservoirs and non-reservoirs in the well-logs for each zone estimated by combining Artificial Neural Network (ANN), GR cut-off values and the relation between lithology and porosity (blue), and by only using GR cut-off values (red). There is significant amount of underestimation of reservoirs in the GR cut-off value analysis.