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OBJECTIVES

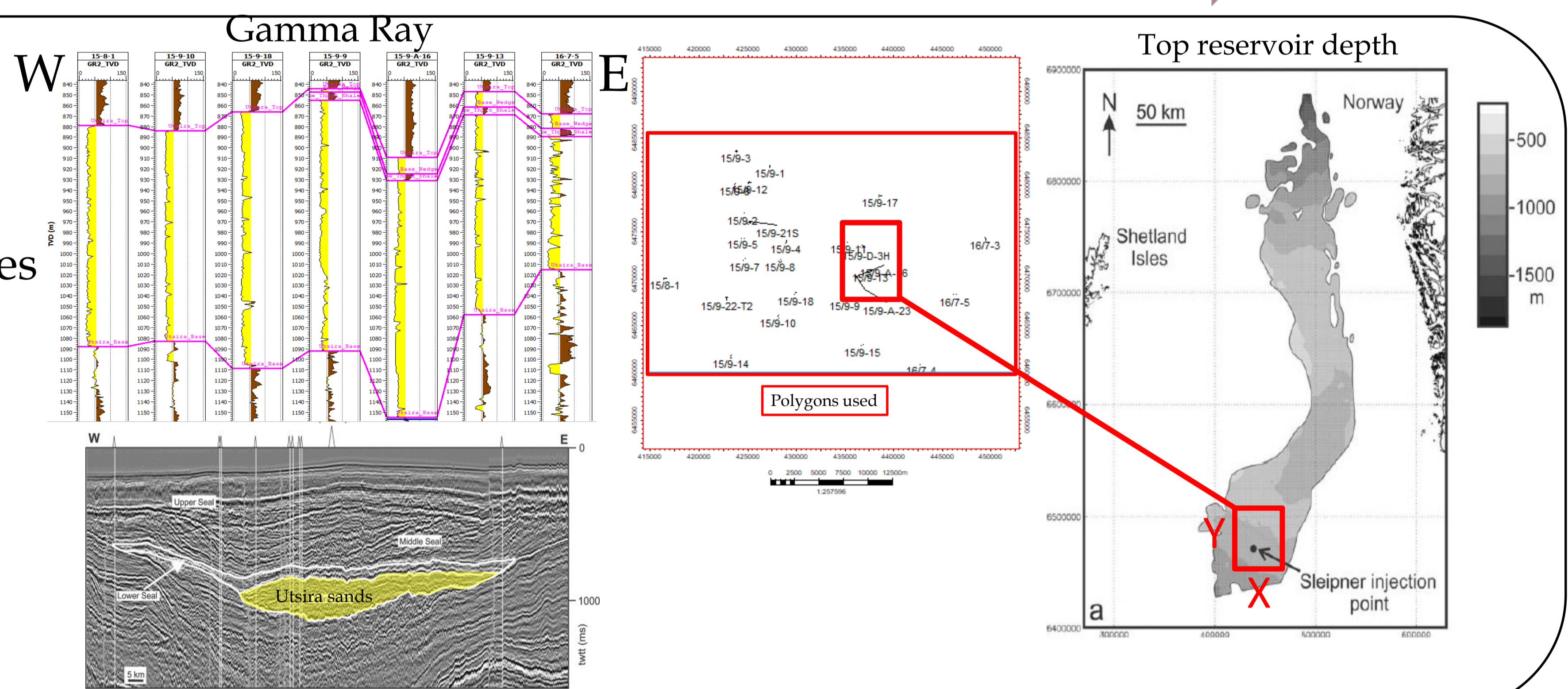
- Identify main elements, from data to properties
- Describe the workflow for building a static model
- Parameters controlling the main methods for 3D properties distribution
- Upscaled 3D geo-model for fluid flow simulation

METHODOLOGY

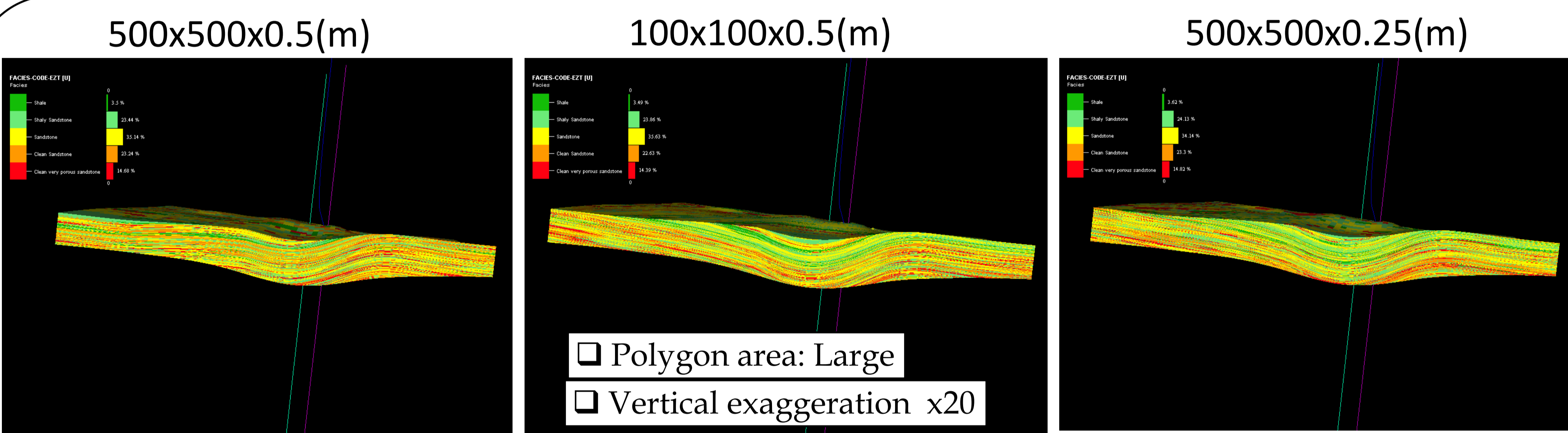


GEOLOGY

- Reservoir: Utsira sands
- Age: Mio-Pliocene
- Depositional environment: Graben with sand lobes
- Saline Aquifer (100%Sw)
- Unconsolidated sands – high ϕ, k
- ✓ Heterogeneities
- ✓ Mud diapirs \rightarrow layer division parallel to reservoir top
- Reservoir range (X-Y-Z: 100-400~0.2km)



TESTS

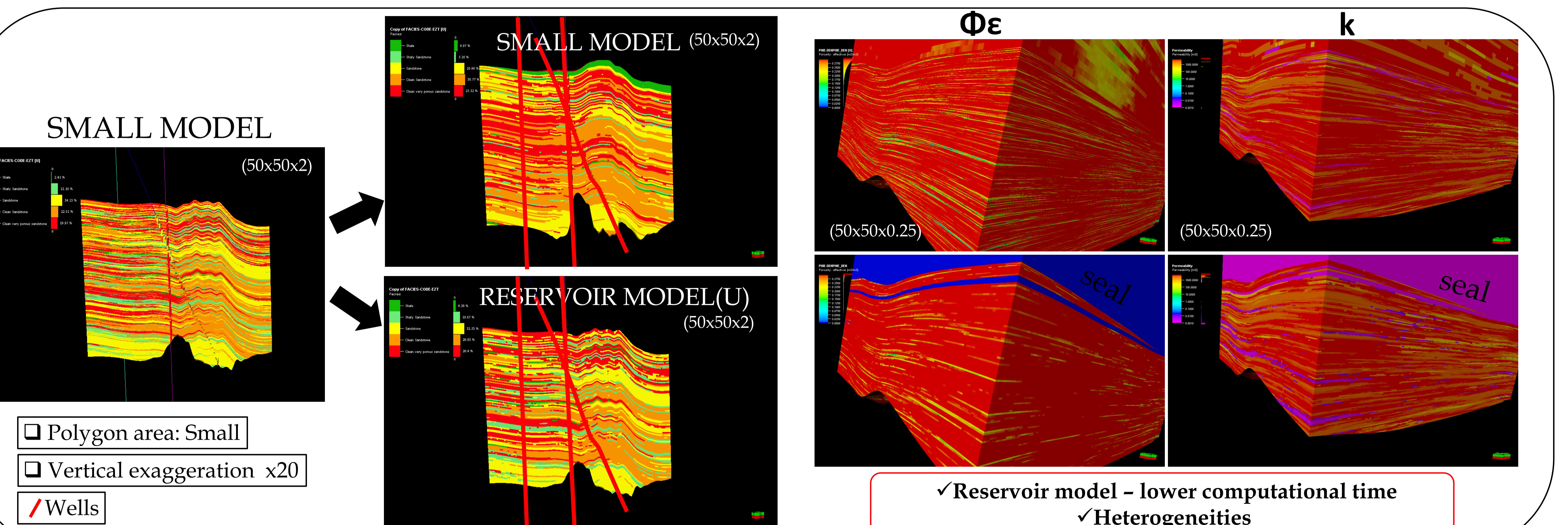


Variogram tests

Variogram	Test 1	Test 2	Test 3
X	2330	2440	2600
Y	6180	6140	6180
Z	4	4	4

- Little differences were shown on the variogram tests
- Larger model ranges kept \rightarrow more wells included

RESERVOIR UPSCALING



DISCUSSION

- Shale layers within reservoir (heterogeneities)
- Smaller grid \rightarrow better retaining heterogeneities
- Small differences in variogram ranges \rightarrow larger grid ranges kept
- Major variogram direction W-E ($\sim 2 \times$ N-S) – more wells present
- Heterogeneities are retained by structure upscaling
- Perforations in sand intervals
- Overburden seal considered 100%shale for fluid flow