

DISPLAY D1

Shearwater Field, managing changing uncertainties through field life.

Rod Gilham, Katy Hardacre, Jan Jaap van der Velde, Carlo Nicolai, Wessel de Haas (Shell Expro) & Cameron Hercus (ex-Shell Expro) & Khalid Sardar (Shell International Exploration and Production)

Development of the Shearwater structure, a deep gas-condensate accumulation in the HPHT region of the UKCS, began in 1997 with the initial of development drilling and construction of topside facilities. Field sanction was based on an understanding and modelling of key subsurface uncertainties.

Development experience since that date has tested that initial subsurface view and helped constrain many of the initial pre-development uncertainties.

The displayed core illustrates several of the pre-development uncertainties:

- depositional and diagenetic controls on reservoir quality
- potential vertical compartmentalisation by dolomite cements
- potential lateral compartmentalisation by sealing sand-sand faults
- potential pore volume reduction by early oil stain.

Plate A

Well: UKCS 22/30b-15s1 Interval: 18601 ft – 18625 ft

Retrogradational cycle at top of Upper Fulmar. Clean coarse grained sandstone. Prominent oil stain (note: this stain pre-dates the current gas-condensate fill in Shearwater). Some stratification. Bioturbation: Thalassinoides; Teichichnus and Chondrites near flooding surface at top of core.

Plate B

Well: UKCS 22/30b-15s1 Interval: 18661 ft – 18664 ft

Fracture style. Few open fractures, generally sand, silt, calcite or dolomite filled.

Plate C

Well: UKCS 22/30b-15s1 Interval: 18776 ft – 18788 ft

Top of Lower Fulmar. Noticeably cleaner than deeper Plate D. Bioturbation: Thalassinoides. Diagenesis: dolomite cement doggers, which depending on lateral extent, are potential barriers to vertical flow.

Plate D

Well: UKCS 22/30b-15s1 Interval: 18947 ft – 18974 ft

Middle Lower Fulmar. Top of core – flooding surface bounds coarsening upwards package with some stratification and shelly lags. Middle of core – clean sand, with Thalassinoides, Ophiomorpha and Cylindrichnus. Base of core – muddier, with Teichichnus.

Display D1 Plate A

Well UKCS 22/30b-15s1

18601 ft

18604 ft

18607 ft

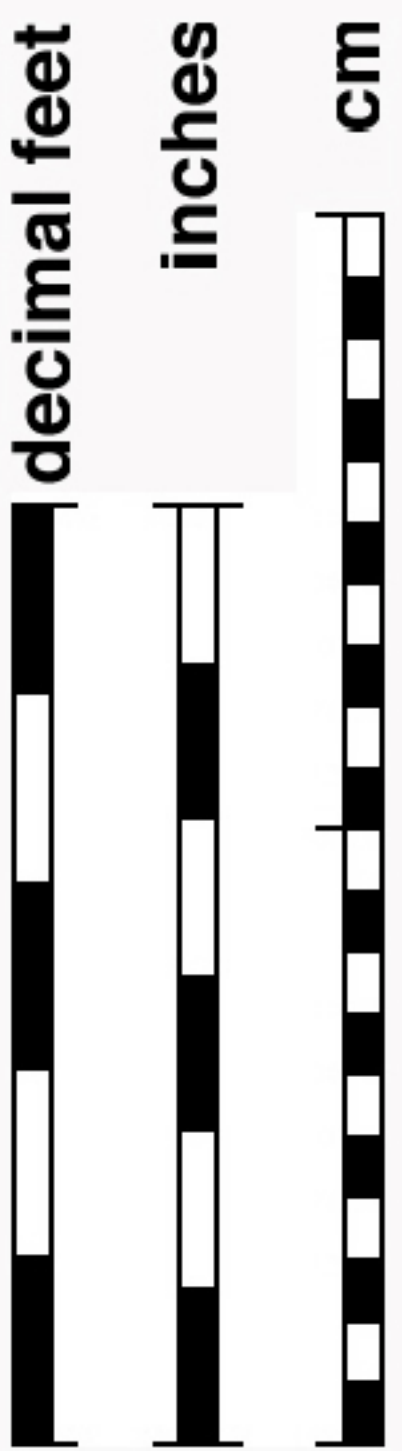
18610 ft

18613 ft

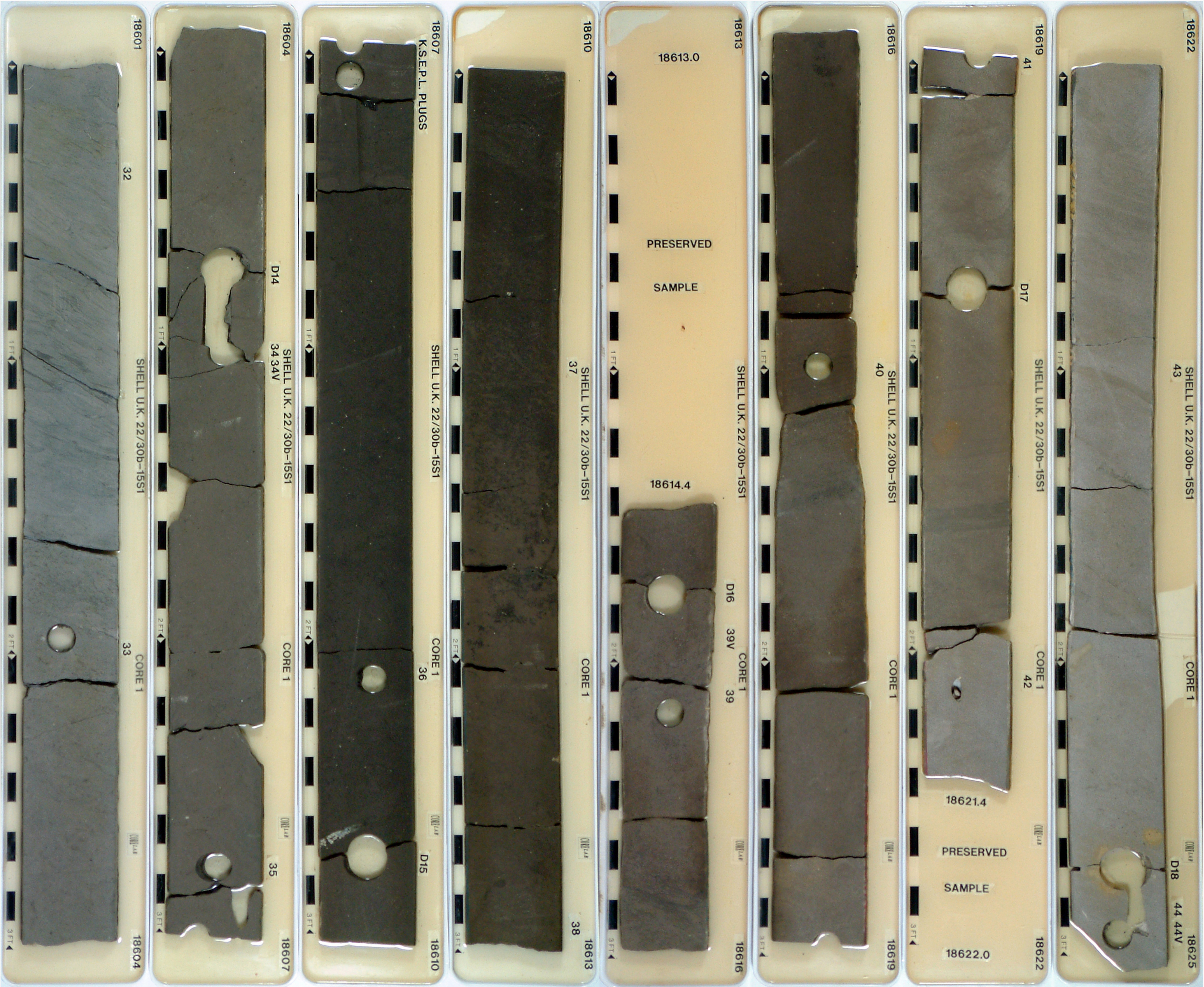
18616 ft

18619 ft

18622 ft



Core photography and digital processing by
Robert Leppard (Leppard Sedimentology Ltd)
and
Colin Oakman (Colin Oakman Associates)



Display D1 Plate B

Well UKCS 22/30b-15s1

18661 ft



Display D1 Plate C

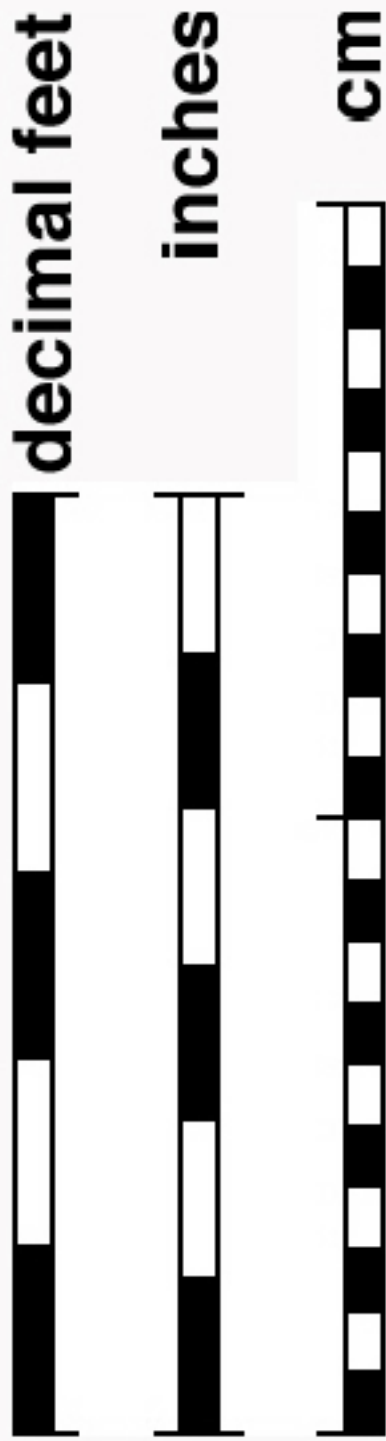
Well UKCS 22/30b-15s1

18776 ft

18779 ft

18782 ft

18785 ft



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Display D1 Plate D

Well UKCS 22/30b-15s1

18947 ft

18950 ft

18953 ft

18956 ft

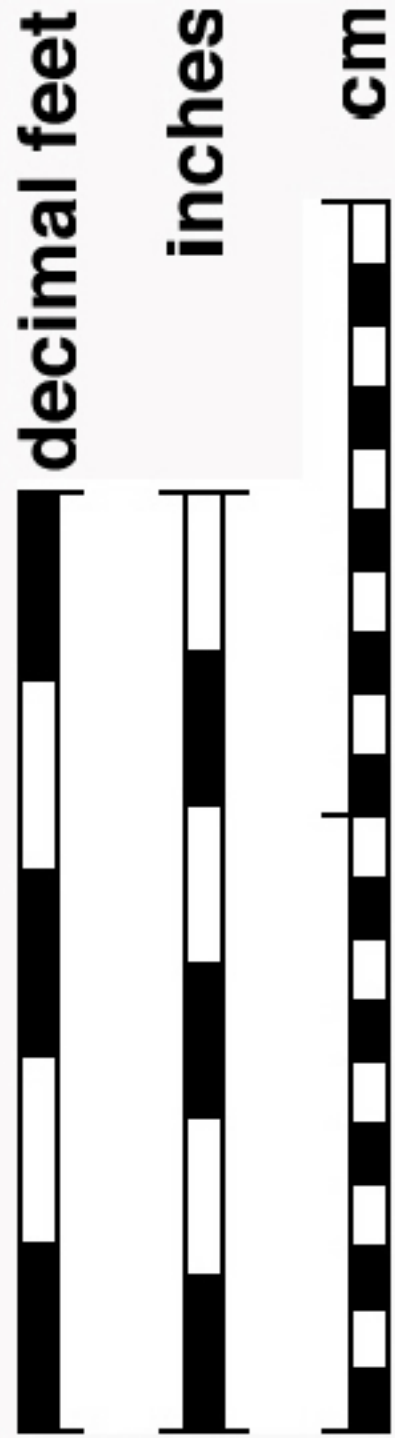
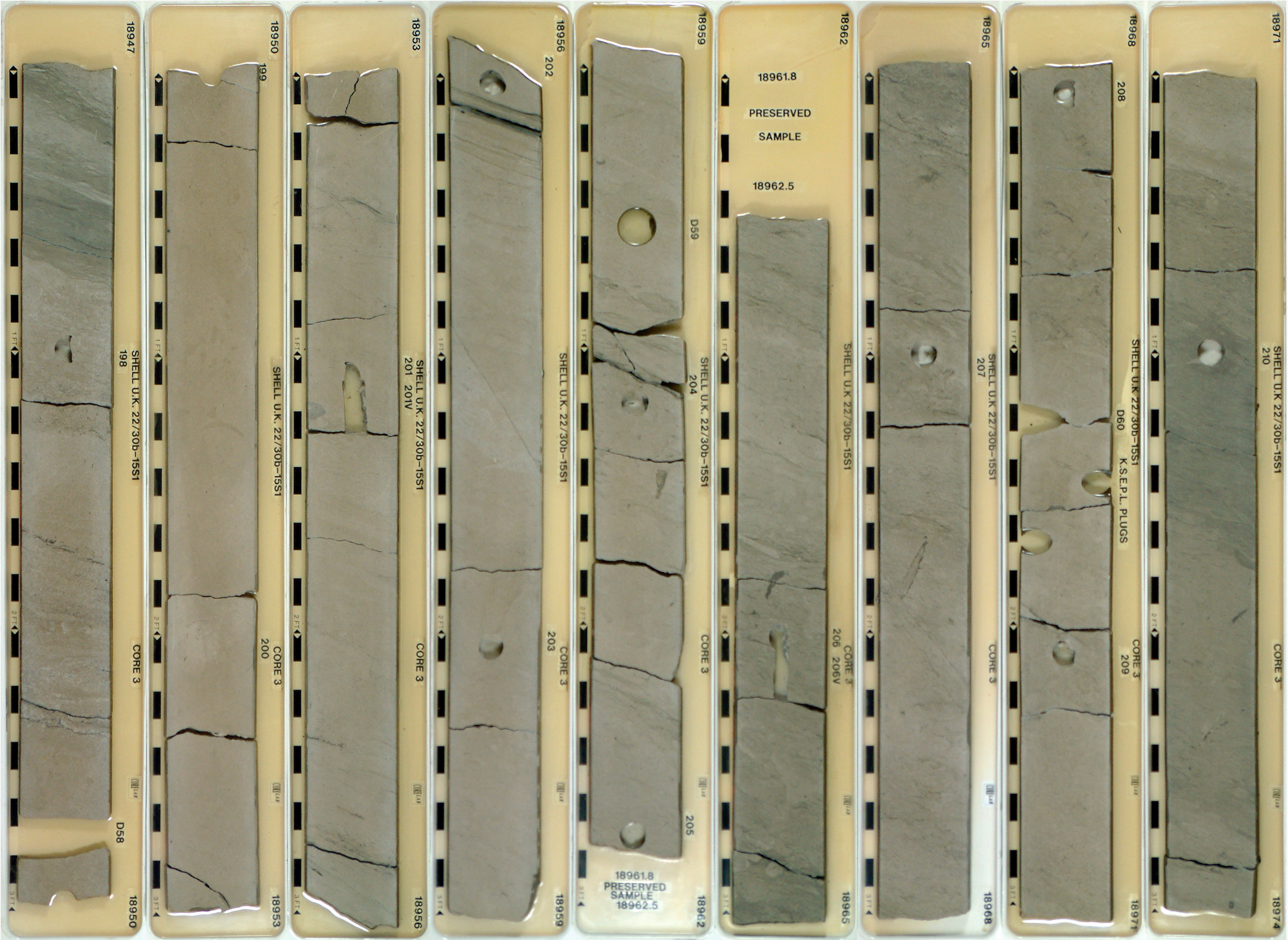
18959 ft

18962 ft

18965 ft

18968 ft

18971 ft



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