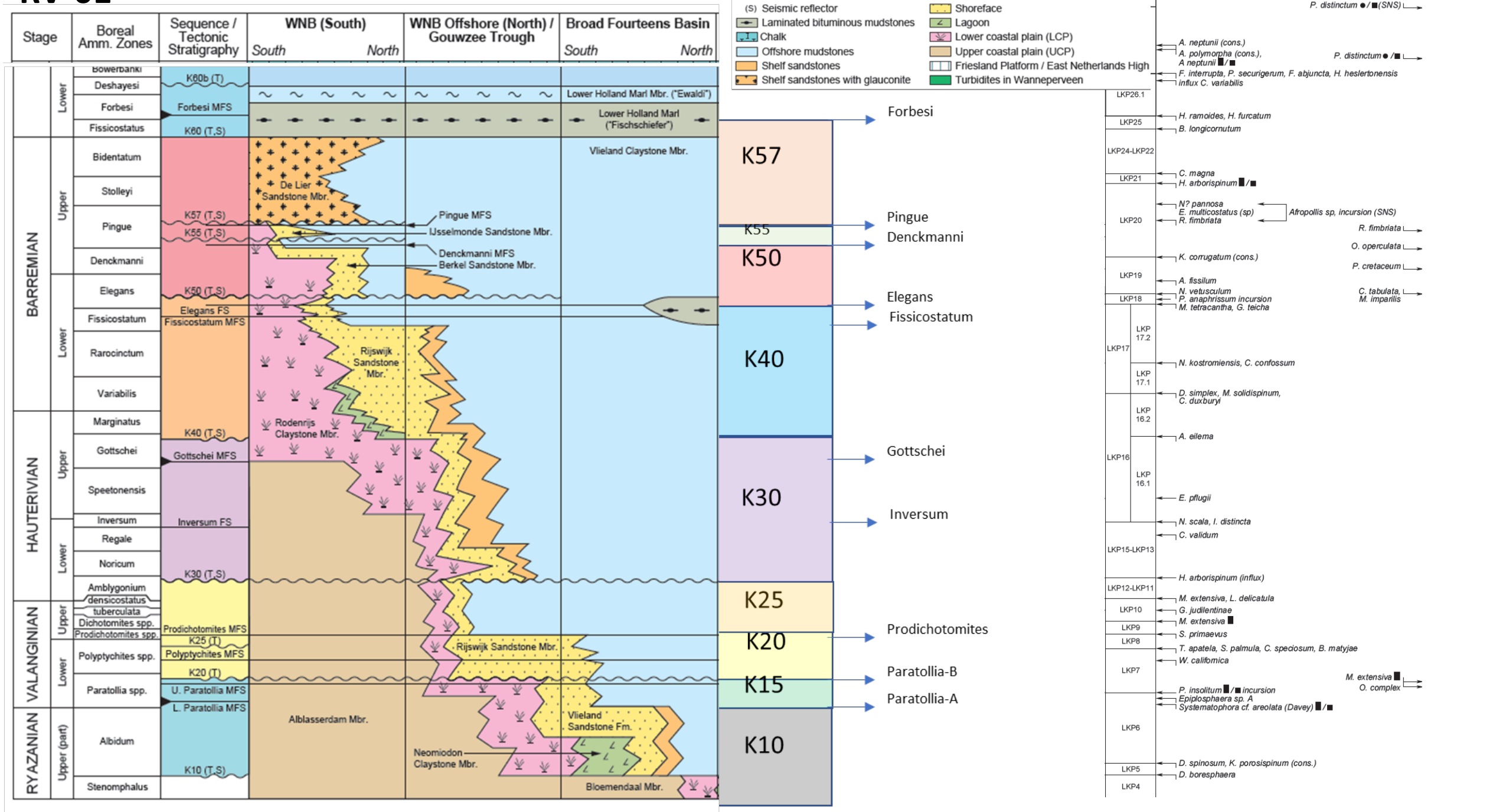
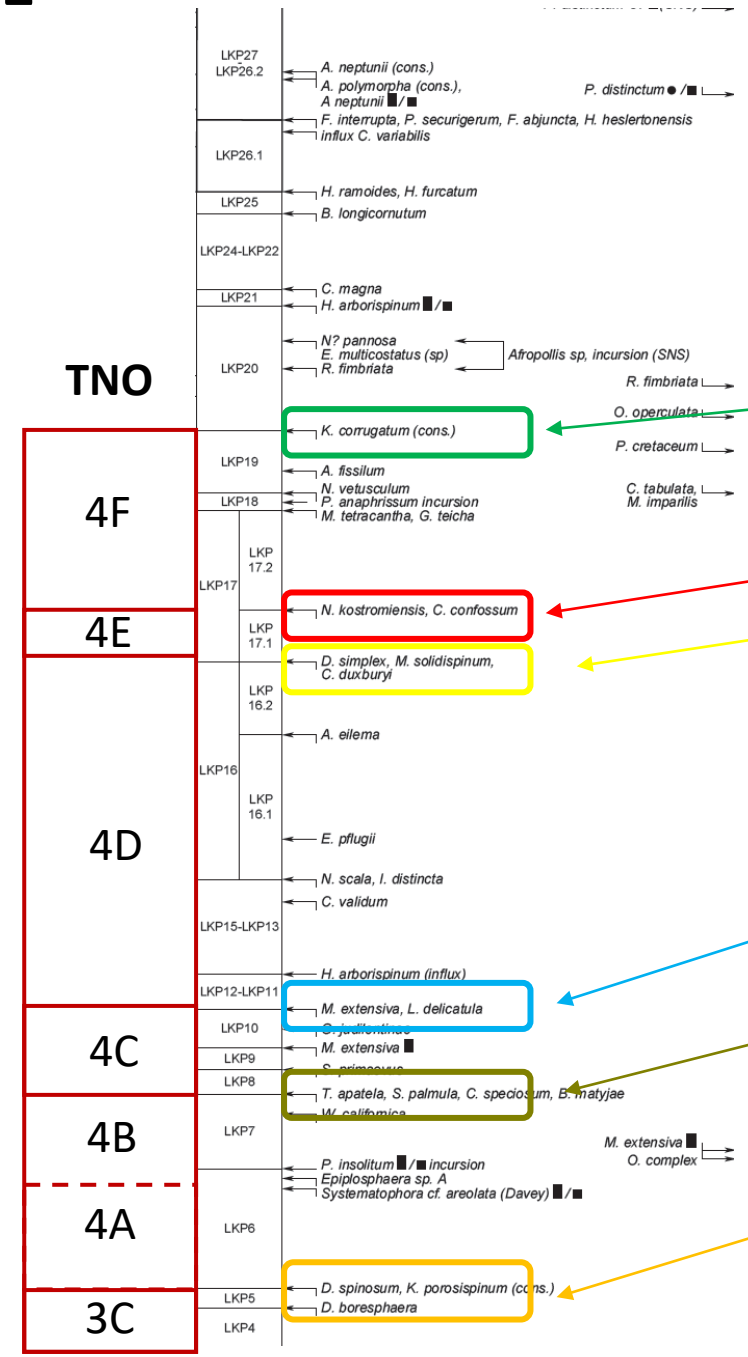
A Figures

RV-01

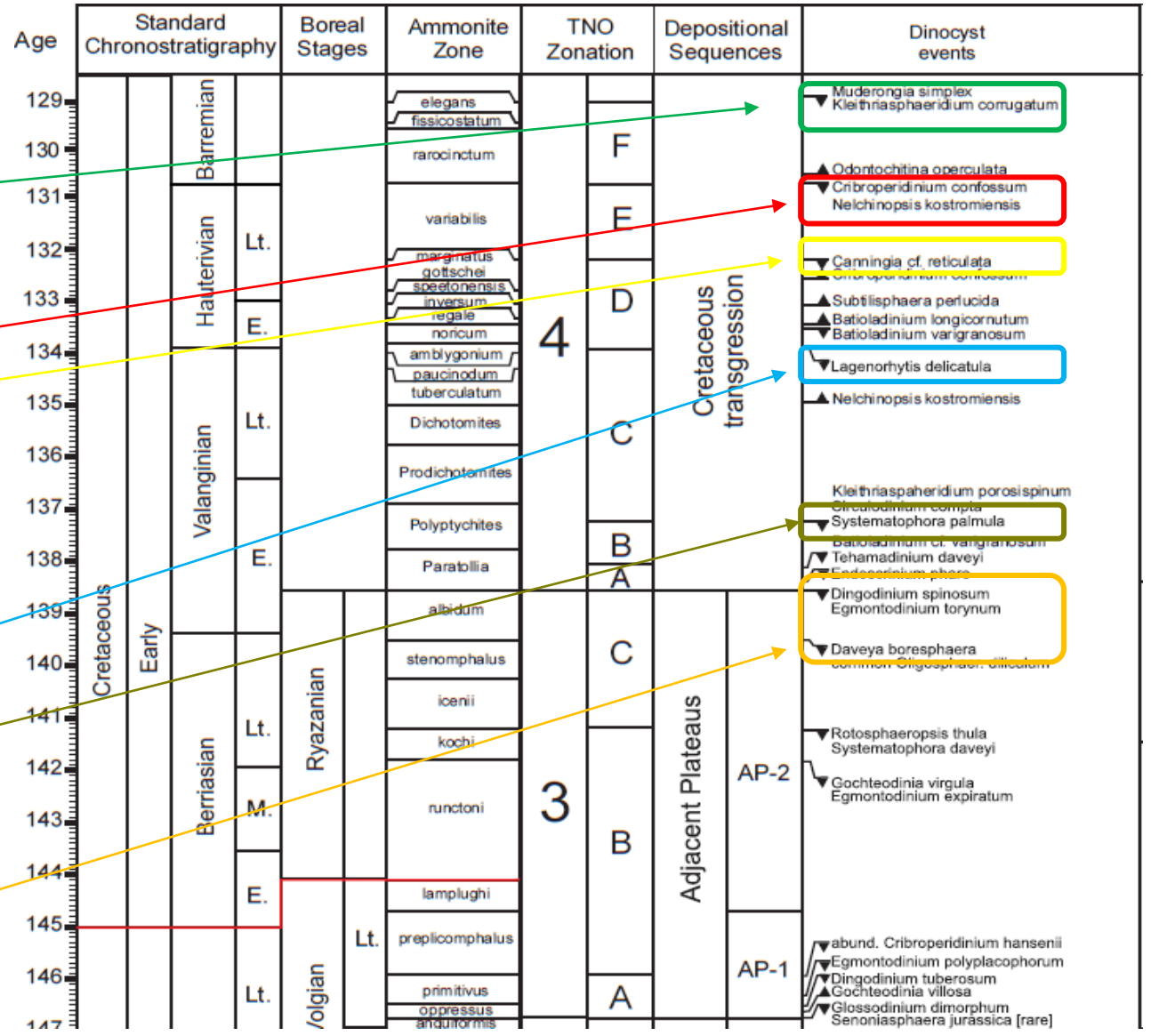

Stage
Boreal Amm. Zones
Sequence / Tectonic Stratigraphy
WNB (South)
South
North
WNB Offshore (North) / Gouwzee Trough
Broad Fourteens Basin
South
North
(T) Tectonic accentuated
(S) Seismic reflector
Laminated bituminous mudstones
Chalk
Offshore mudstones
Shelf sandstones
Shelf sandstones with glauconite
Ironstone
Shoreface
Lagoon
Lower coastal plain (LCP)
Upper coastal plain (UCP)
Friesland Platform / East Netherlands High
Turbidites in Wanneperveen
BARREMIAN
HAUTERIVIAN
VALANGINIAN
RYAZANIAN
Lower
Upper
Upper (part)
Bowerbanki
Deshayesi
Forbesi
Fissicostatus
Bidentatum
Stolleyi
Pingue
Denckmanni
Elegans
Fissicostatum
Rarocinctum
Variabilis
Marginatus
Gottschei
Speetonensis
Inversum
Regale
Noricum
Amblygonium
densicostatus
tuberculata
Dichotomites spp.
Prodichotomites spp.
Polyptychites spp.
Paratollia spp.
Albidum
Stenomphalus
K60b (T)
Forbesi MFS
K60 (T,S)
K57 (T,S)
K55 (T,S)
K50 (T,S)
Elegans FS
Fissicostatum MFS
K40 (T,S)
Gottschei MFS
Inversum FS
K30 (T,S)
Prodichotomites MFS
K25 (T)
Polyptychites MFS
K20 (T)
U. Paratollia MFS
L. Paratollia MFS
K10 (T,S)
Lower Holland Marl Mbr. ("Ewaldi")
Lower Holland Marl ("Fischschiefer")
Vlieland Claystone Mbr.
De Lier Sandstone Mbr.
Pingue MFS
IJsselmonde Sandstone Mbr.
Denckmanni MFS
Berkel Sandstone Mbr.
Rijswijk Sandstone Mbr.
Rodenrijs Claystone Mbr.
Rijswijk Sandstone Mbr.
Alblasserdam Mbr.
Vlieland Sandstone Fm.
Neomiodon Claystone Mbr.
Bloemendaal Mbr.
K57
K55
K50
K40
K30
K25
K20
K15
K10
Forbesi
Pingue
Denckmanni
Elegans
Fissicostatum
Gottschei
Inversum
Prodichotomites
Paratollia-B
Paratollia-A
A. neptunii (SNS)
P. distinctum ●/■(SNS)
A. neptunii (cons.)
A. polymorpha (cons.), A neptunii ■/■
P. distinctum ●/■
F. interrupta, P. securigerum, F. abjuncta, H. heslertonensis
influx C. variabilis
H. ramoides, H. furcatum
B. longicornutum
C. magna
H. arborispinum ■/■
N? pannosa
E. multicostatus (sp)
R. fimbriata
Afropollis sp, incursion (SNS)
R. fimbriata
O. operculata
K. corrugatum (cons.)
P. cretaceum
A. fissilum
N. vetusculum
P. anaphrissum incursion
M. tetracantha, G. teicha
C. tabulata, M. imparilis
N. kostromiensis, C. confossum
D. simplex, M. solidispinum, C. duxburyi
A. eilema
E. pflugii
N. scala, I. distincta
C. validum
H. arborispinum (influx)
M. extensiva, L. delicatula
G. judilentinae
M. extensiva ■
S. primaevus
T. apatela, S. palmula, C. speciosum, B. matyjae
W. californica
M. extensiva ■
O. complex
P. insolitum ■/■ incursion
Epiplosphaera sp. A
Systematophora cf. areolata (Davey) ■/■
D. spinosum, K. porosispinum (cons.)
D. boresphaera
8
LKP26.1
LKP25
LKP24-LKP22
LKP21
LKP20
LKP19
LKP18
LKP17
LKP 17.2
LKP 17.1
LKP16
LKP 16.2
LKP 16.1
LKP15-LKP13
LKP12-LKP11
LKP10
LKP9
LKP8
LKP7
LKP6
LKP5
LKP4

RV-02

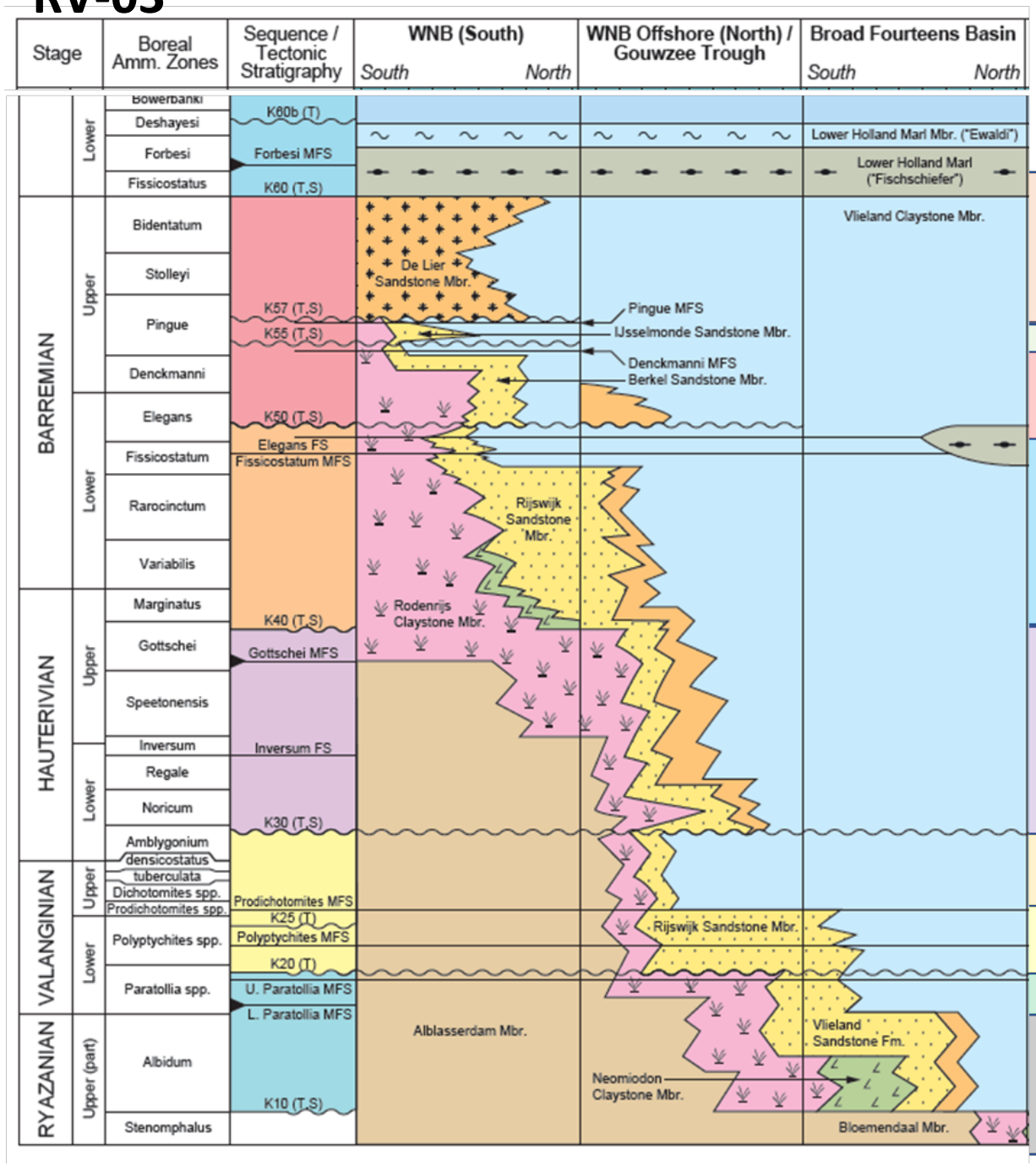
Duxbury 2001



TNO (JUSTRAT)



RV-03



(T) Tectonic accentuated
(S) Seismic reflector
Laminated bituminous mudstones
Chalk
Offshore mudstones
Shelf sandstones
Shelf sandstones with glauconite
Ironstone
Shoreface
Lagoon
Lower coastal plain (LCP)
Upper coastal plain (UCP)
Friesland Platform / East Netherla
Turbidites in Wanneperveen

TNO

4F
4E
4D
4C
4B
4A
3C

LKP29-LKP28
LKP27
LKP26.2
LKP26.1
LKP25
LKP24-LKP22
LKP21
LKP20
LKP19
LKP18
LKP17
LKP 17.2
LKP 17.1
LKP16
LKP 16.2
LKP 16.1
LKP15-LKP13
LKP12-LKP11
LKP10
LKP9
LKP8
LKP7
LKP6
LKP5
LKP4

A. neptunii (SNS)
P. distinctum ●/■(SNS)
A. neptunii (cons.)
A. polymorpha (cons.), A neptunii ■/■
P. distinctum ●/■
F. interrupta, P. securigerum, F. abjuncta, H. heslertonensis
influx C. variabilis
H. ramoides, H. furcatum
B. longicornutum
C. magna
H. arborispinum ■/■
N? pannosa
E. multicostatus (sp)
R. fimbriata
Afropollis sp, incursion (SNS)
R. fimbriata
O. operculata
K. corrugatum (cons.)
P. cretaceum
A. fissilum
N. vetusculum
P. anaphrissum incursion
M. tetracantha, G. teicha
C. tabulata, M. imparilis
N. kostromiensis, C. confossum
D. simplex, M. solidispinum, C. duxburyi
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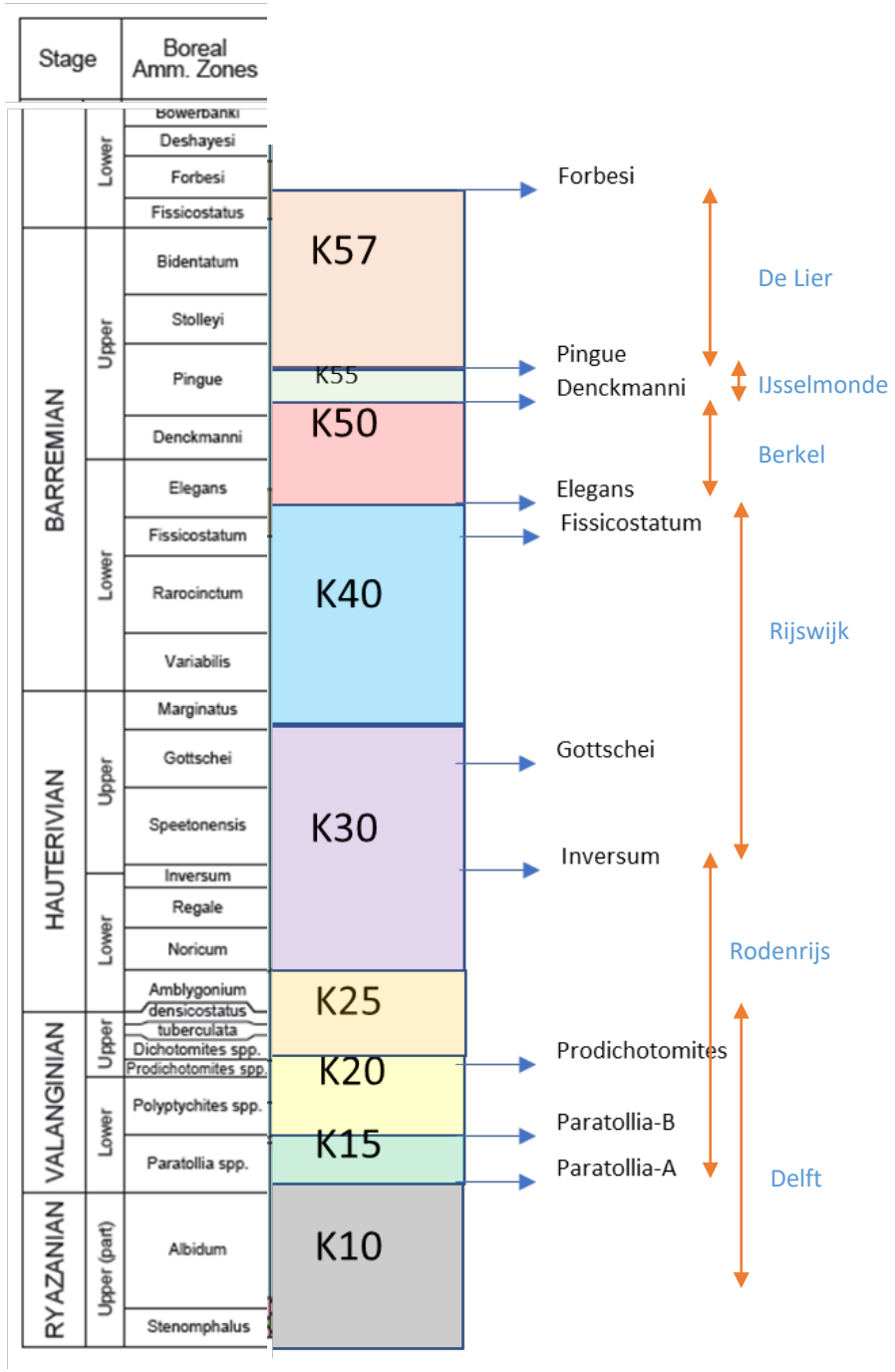
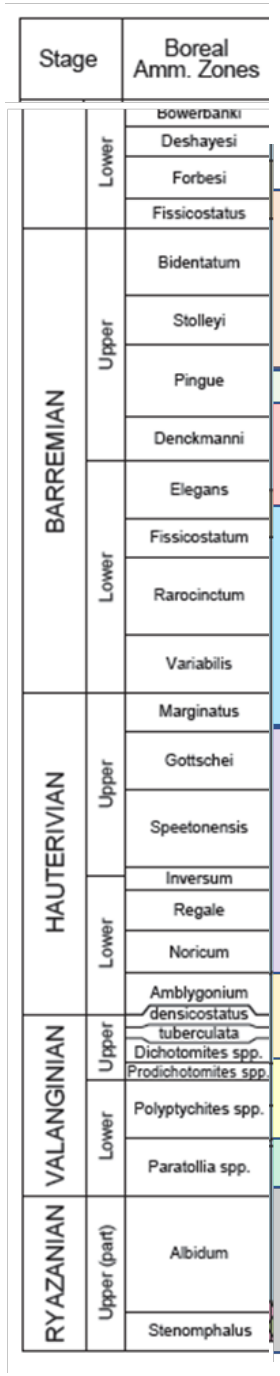
G. judilentinae
M. extensiva ■
S. primaevus
T. apatela, S. palmula, C. speciosum, B. matyjae
W. californica
M. extensiva ■ O. complex
P. insolitum ■/■ incursion
Epiplosphaera sp. A
Systematophora cf. areolata (Davey) ■/■
D. spinosum, K. porosispinum (cons.)
D. boresphaera

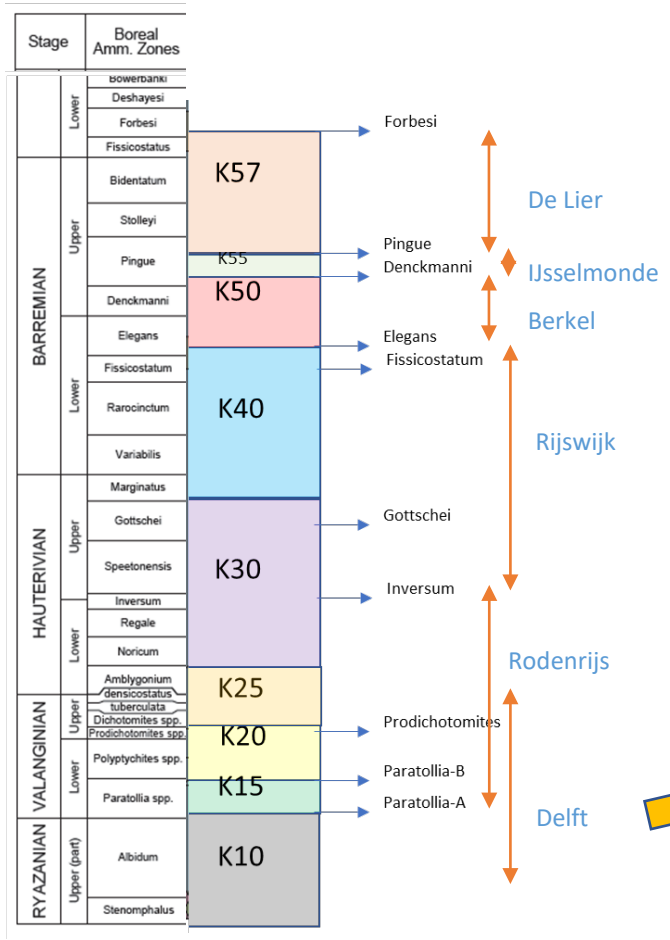
RV-04

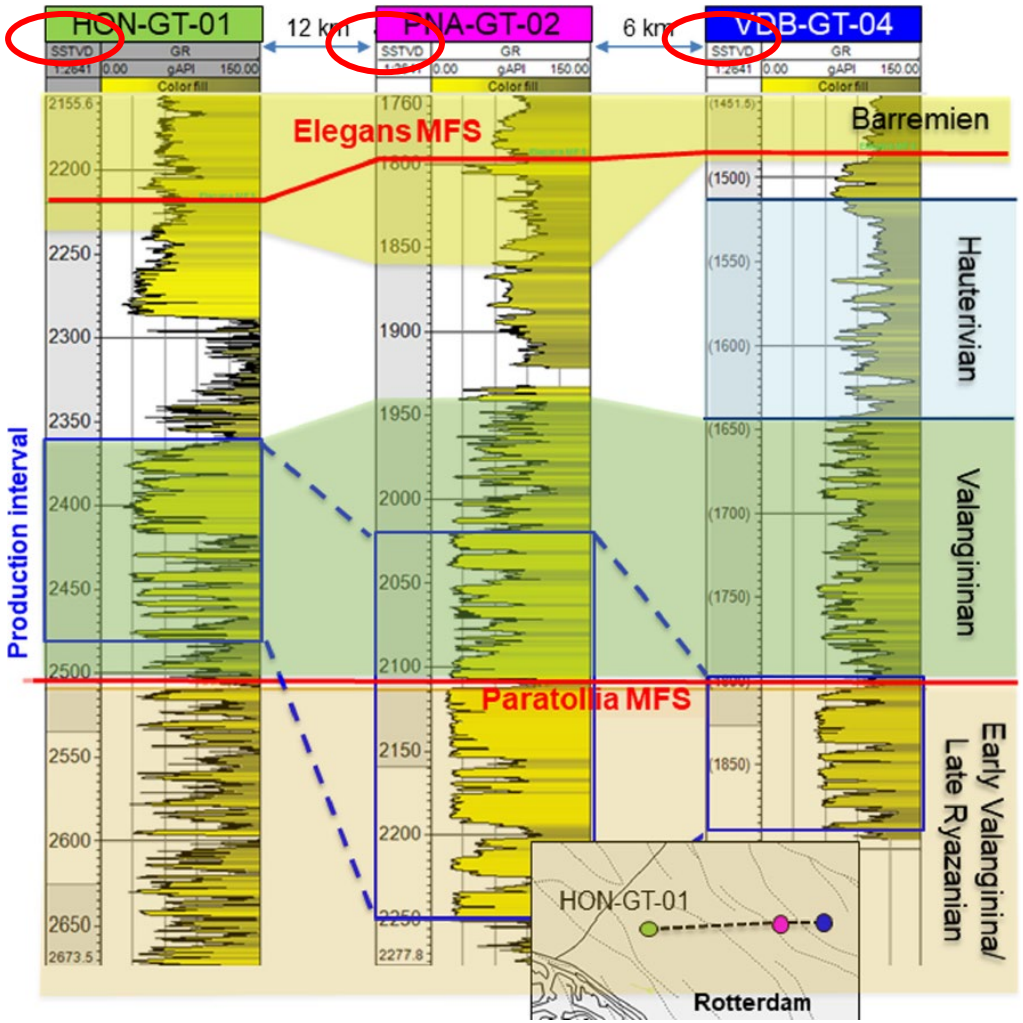




APT-1 forbesi	124,5
BAR-7	125,5
BAR-6 pingue	126
BAR-5 denckmanni	126,5
BAR-4	127,2
BAR-3 elegans	128
BAR-2	128,7
BAR-1	129
HAU-5	130
HAU-4 gottschei	130,4
HAU-3 inversum	131,7
HAU-2	132,2
HAU-1	132,9
VAL-4	134
VAL-3	135
VAL-2	137
VAL-1	138
RYA	141

RV-05

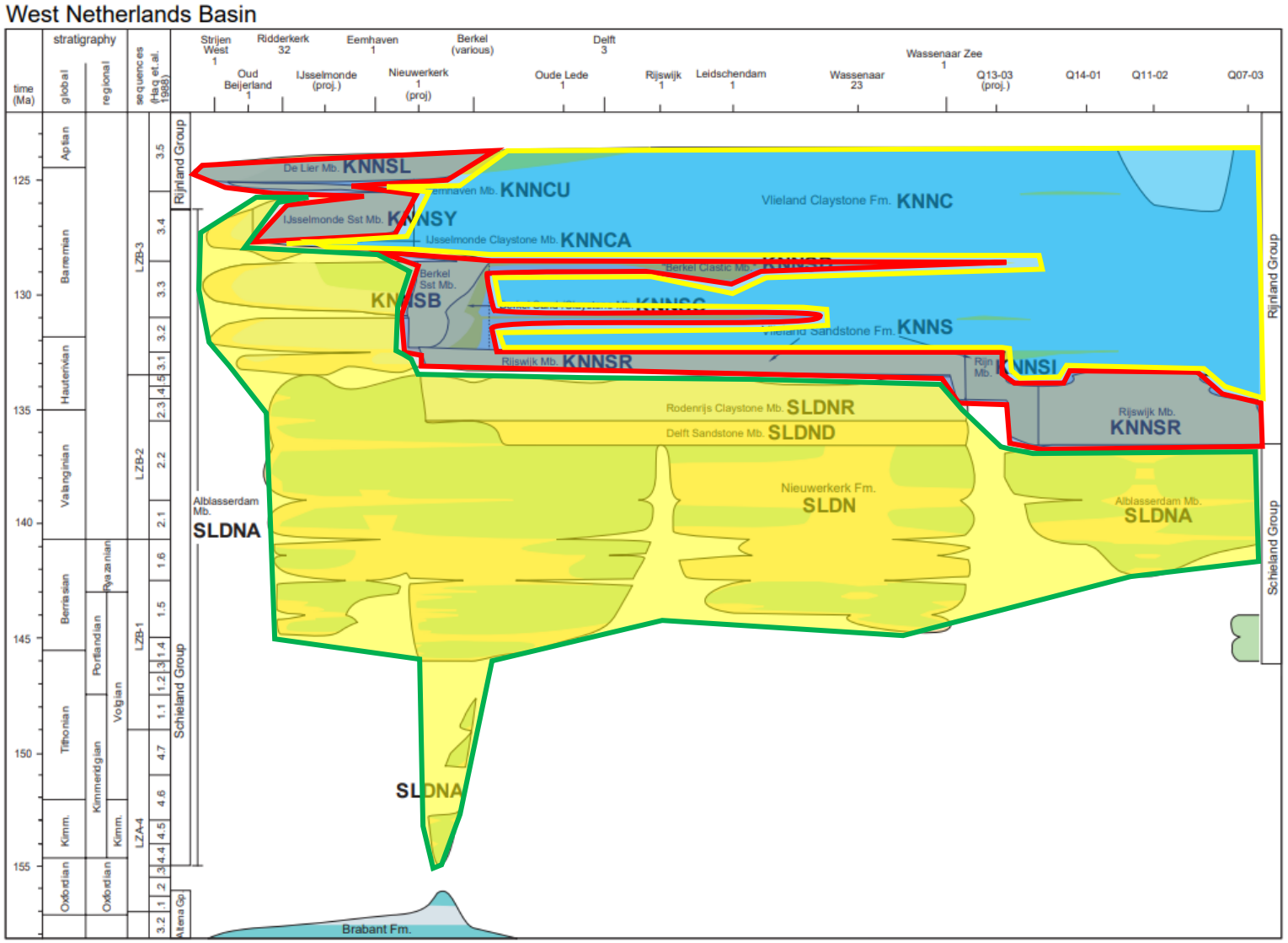




Willems et al., 2020

RV-06

- All lithostratigraphic units defined here
- Transgressive nature of shoreface complexes towards Oosterhout Platform/Zeeland High already recognized



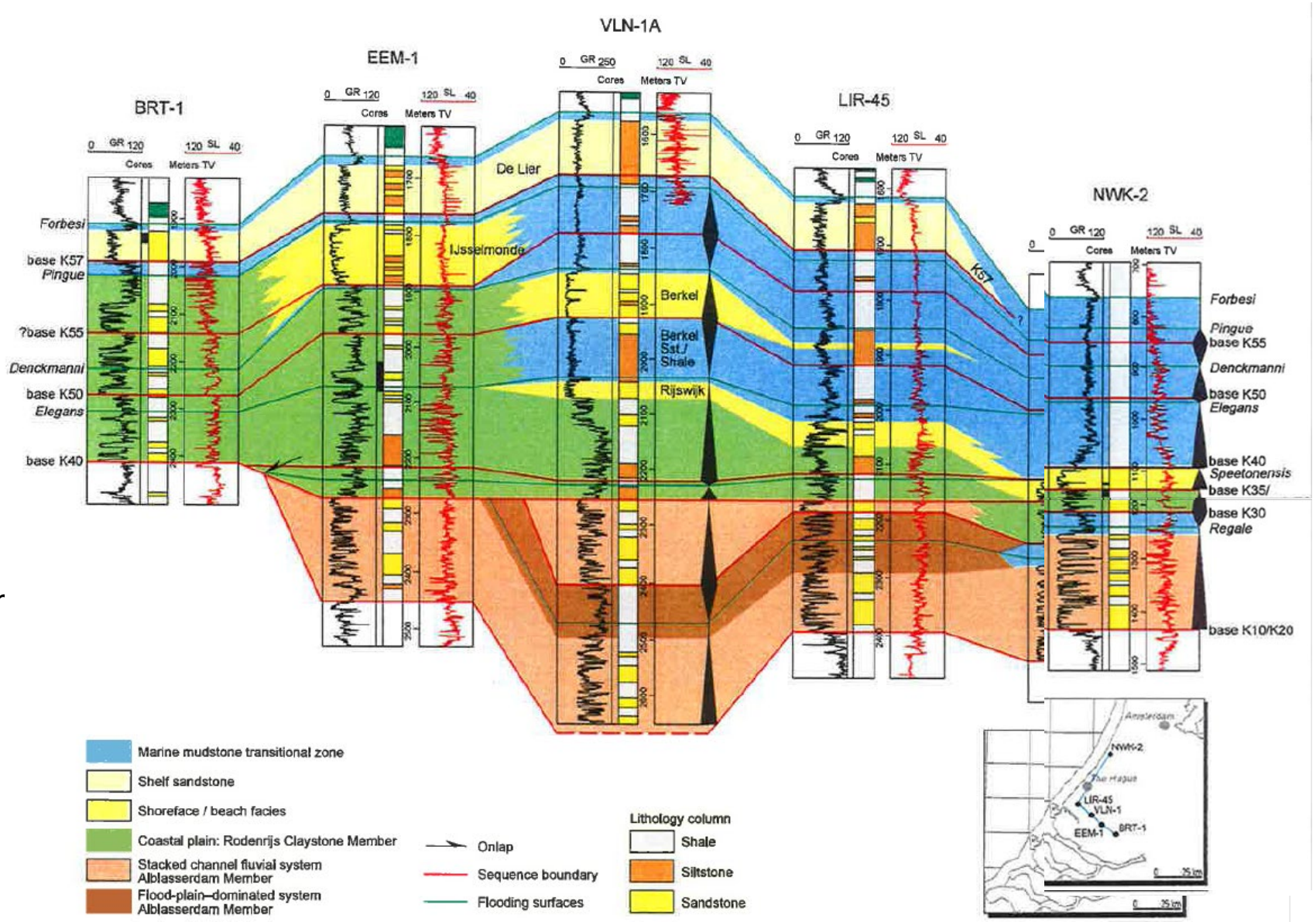
Source: Van Adrichem Boogaert & Kouwe (1993). Stratigraphic nomenclature: Section G - Upper Jurassic and Lower Cretaceous - Mededelingen Rijks Geologische Dienst 50

Van Adrichem Bogaert & Kouwe, 1993

RV-07

- Sequence stratigraphic approach
- Emphasis on MFS
- Diachronous nature Rijswijk Mb

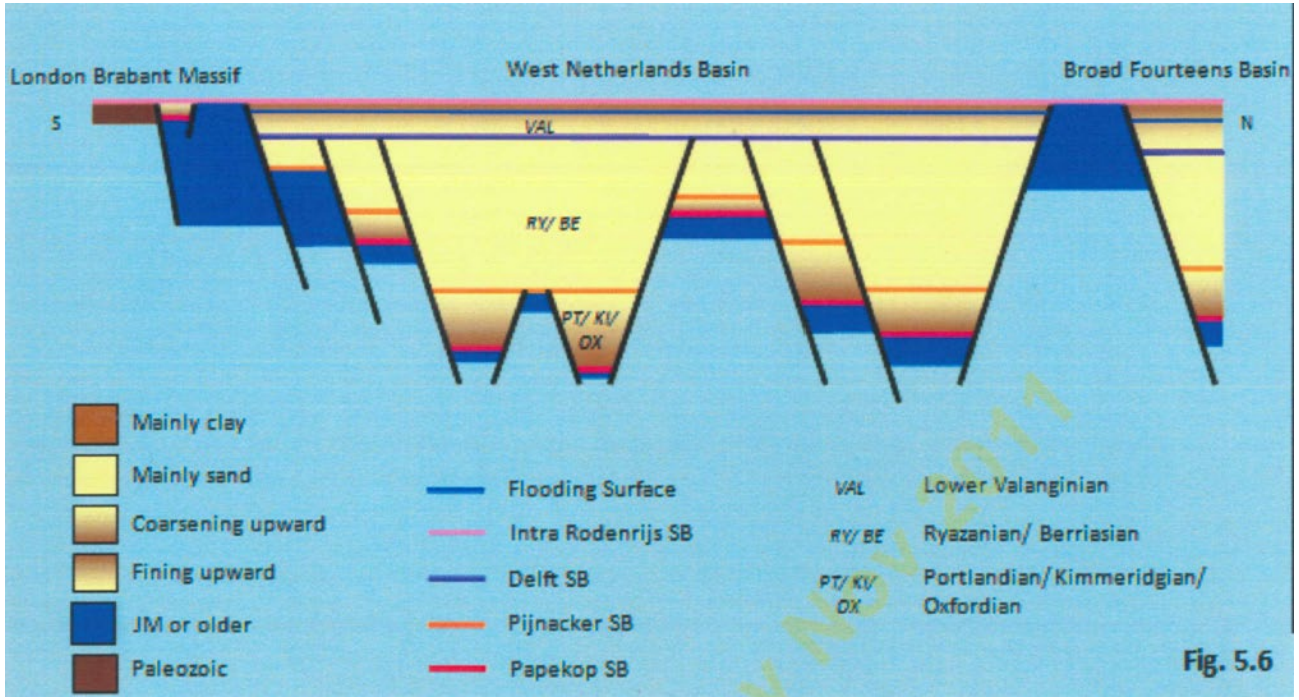
DeVault & Jeremiah, 2002



RV-08

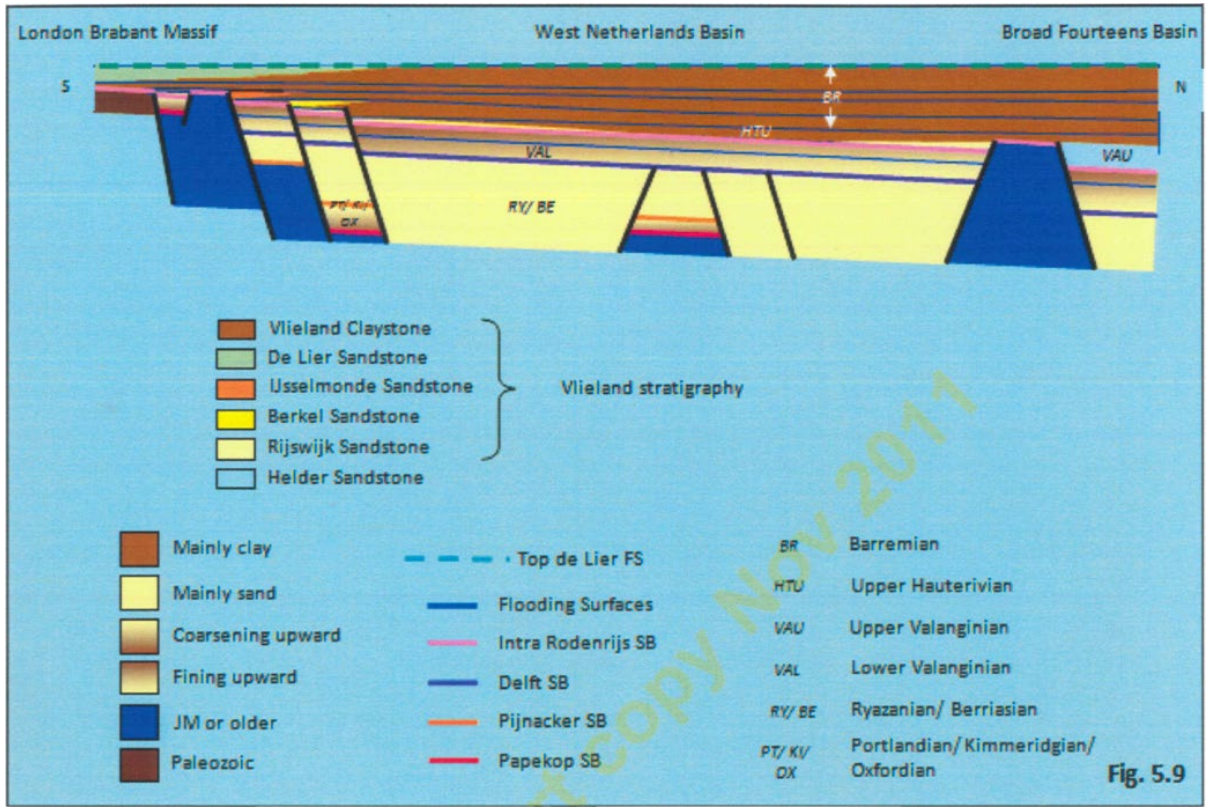
- Mainly well based correlations
- Two additional sandy units proposed within the Nieuwerkerk Fm: Papekop and Pijnacker

Schieland Tectonostratigraphic model



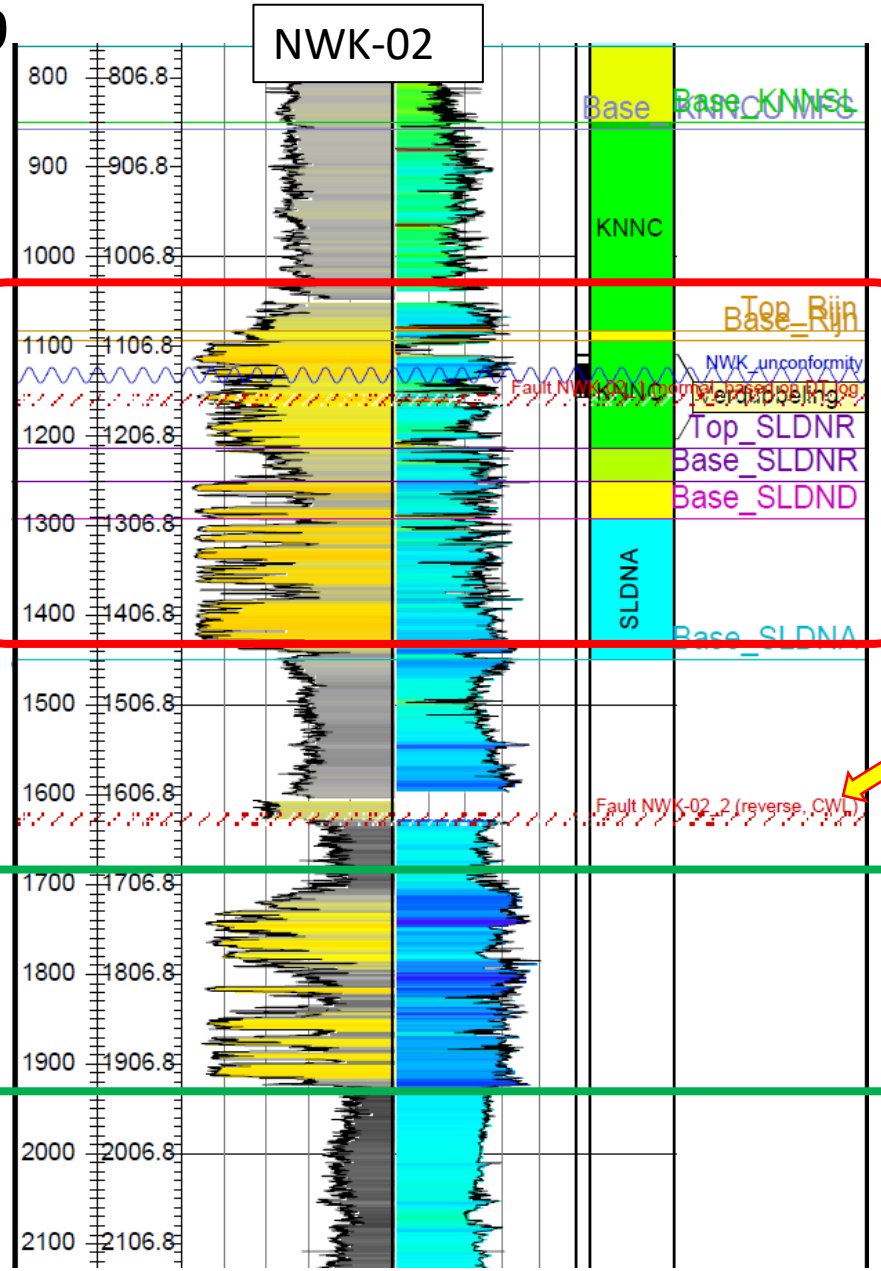
Speksnijder, 2011

Vlieland Tectonostratigraphic model



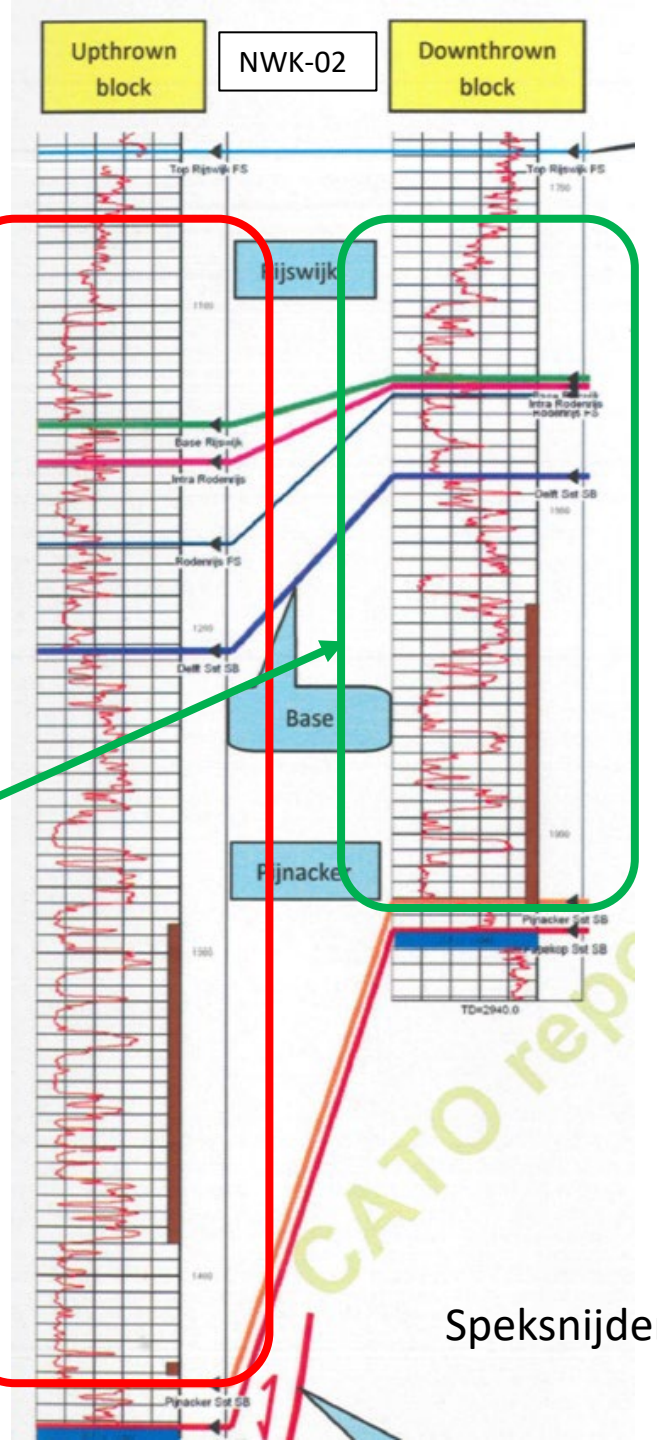
Speksnijder, 2011

RV-09



repetition

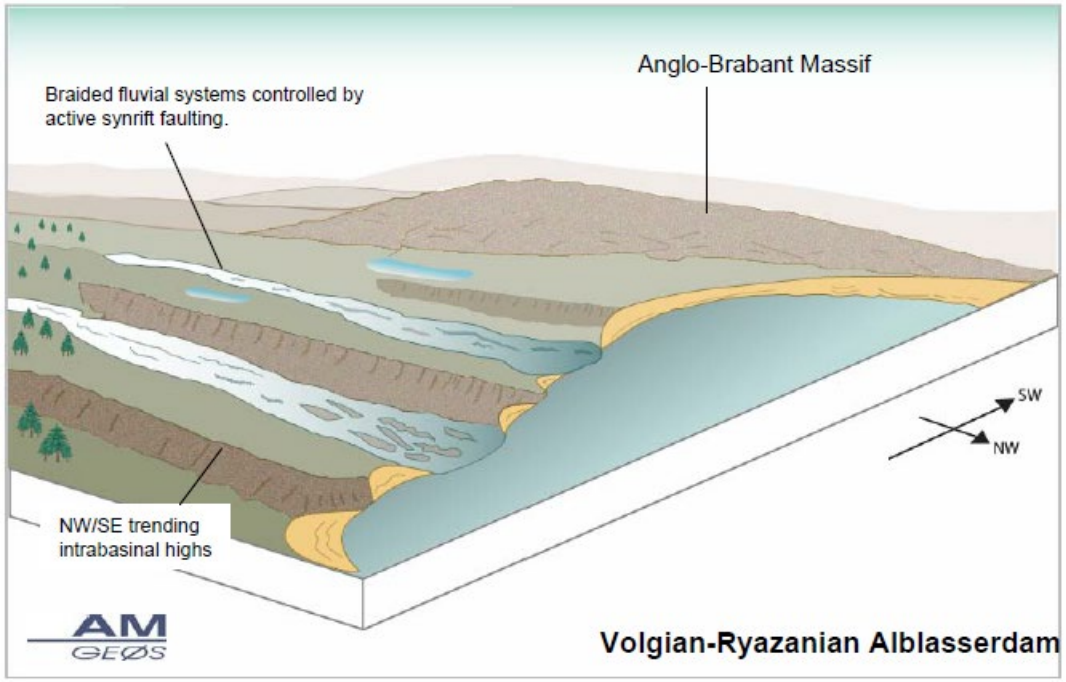
Reverse fault that once was a normal fault, active at the time of deposition

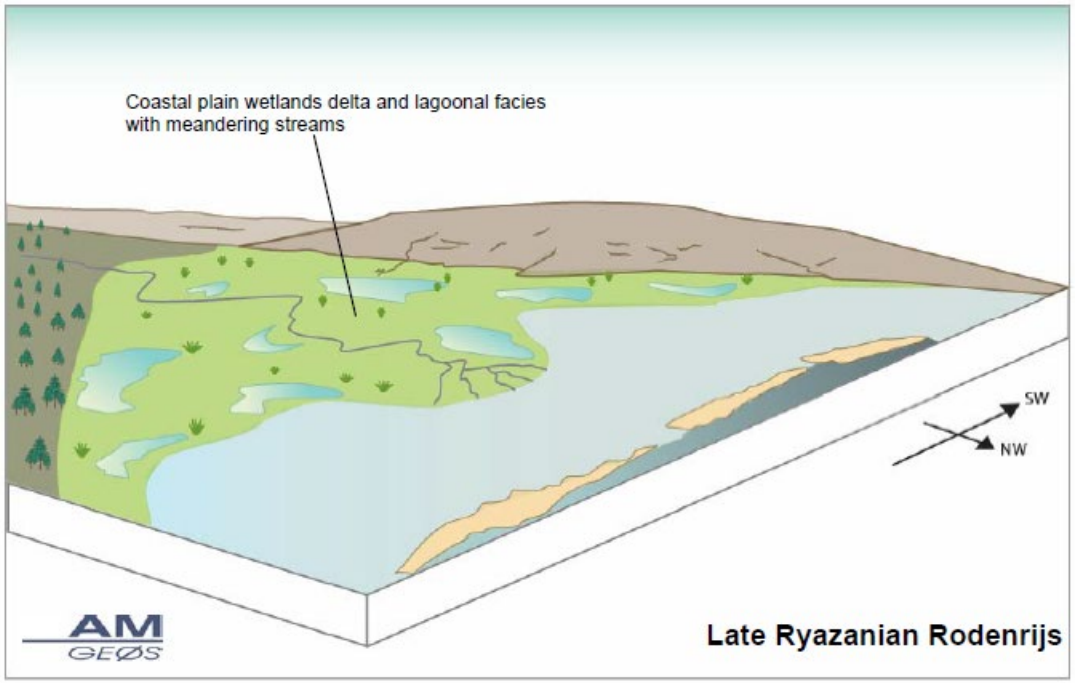


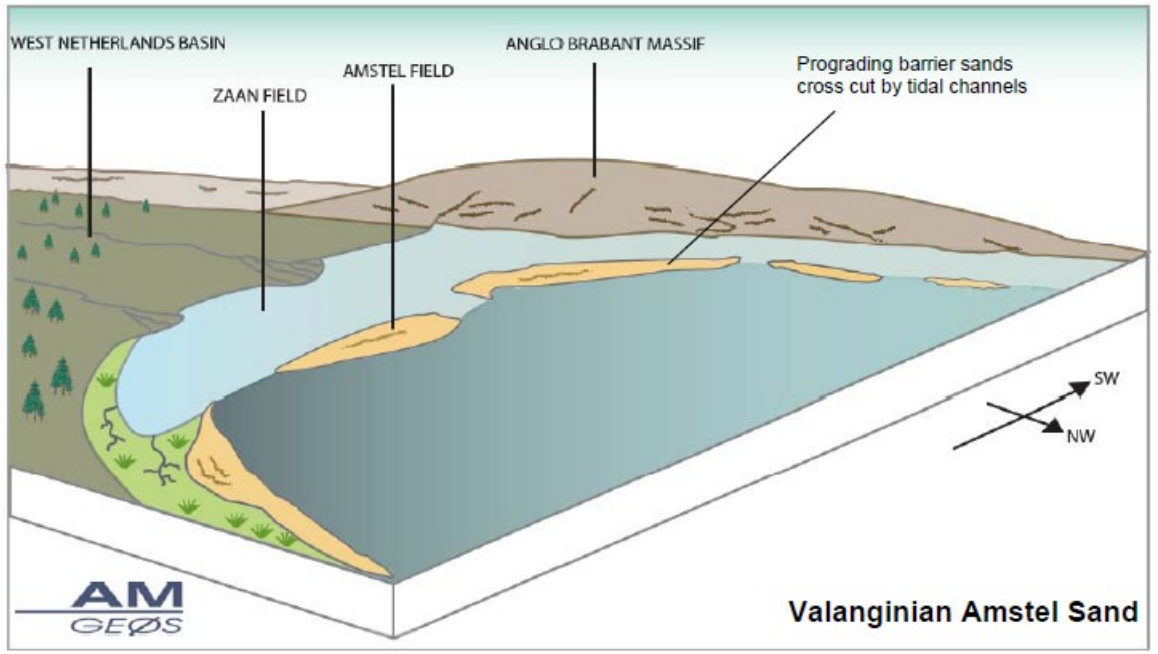
DGM Diep 2021 (Panel 1)

Speksnijder, 2011

RV-10

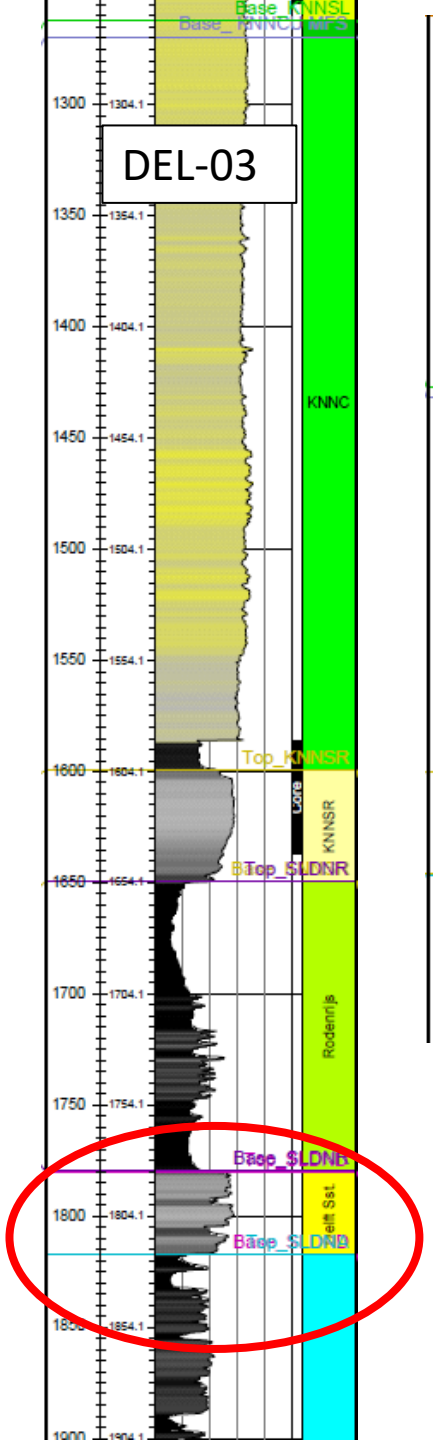


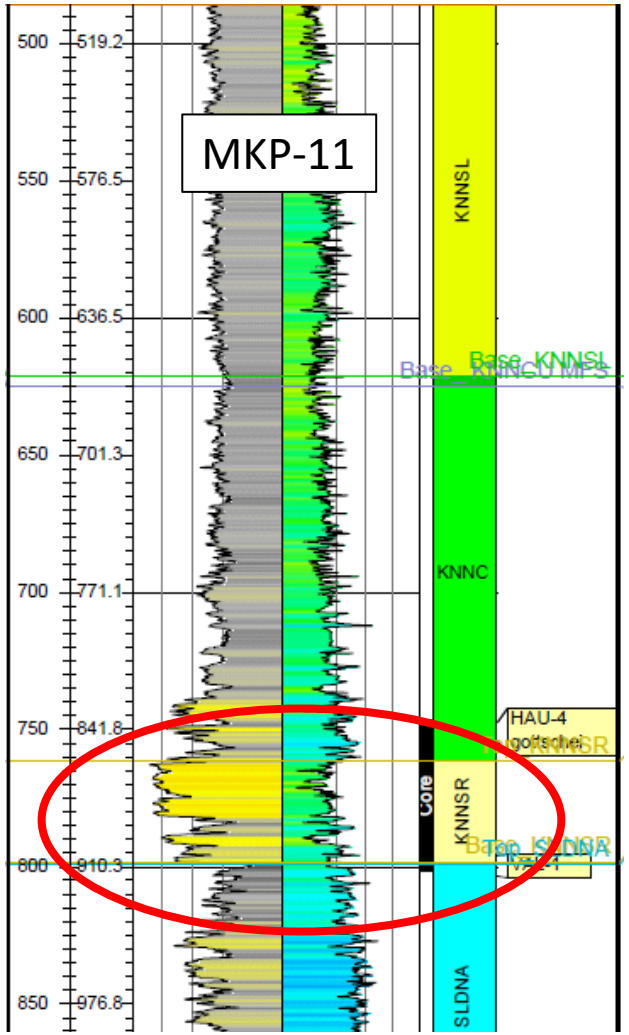




Melvin, 2007

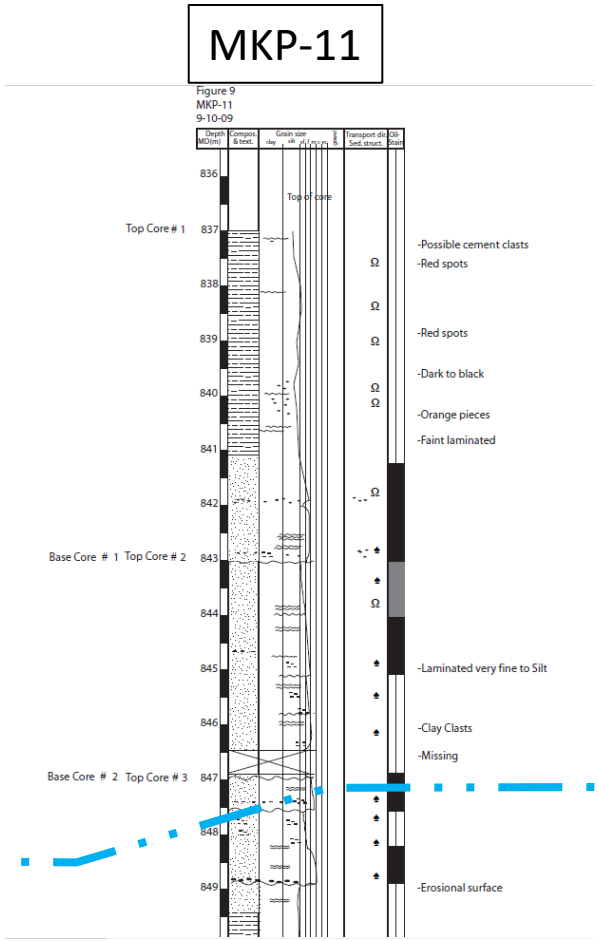
RV-11



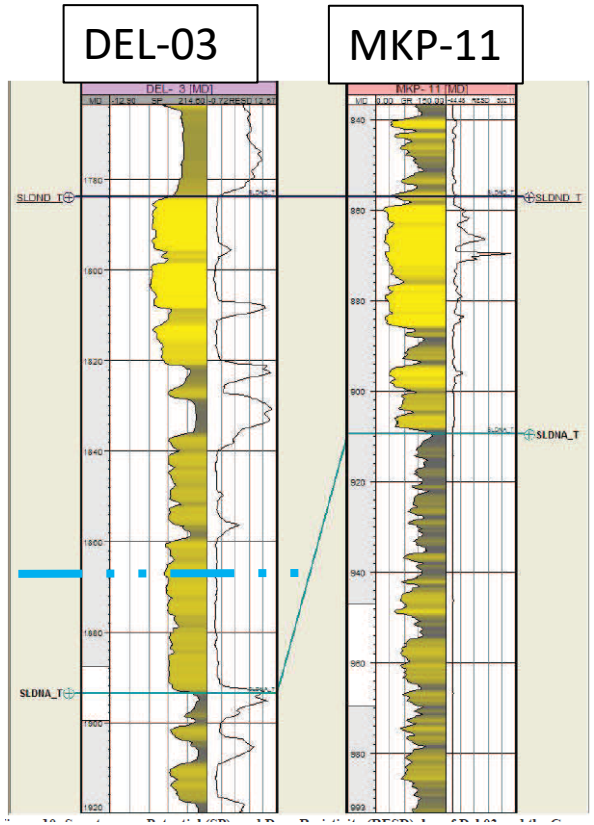


DGM Diep 2021

Be on guard with formation and member names in theses, reports and papers!



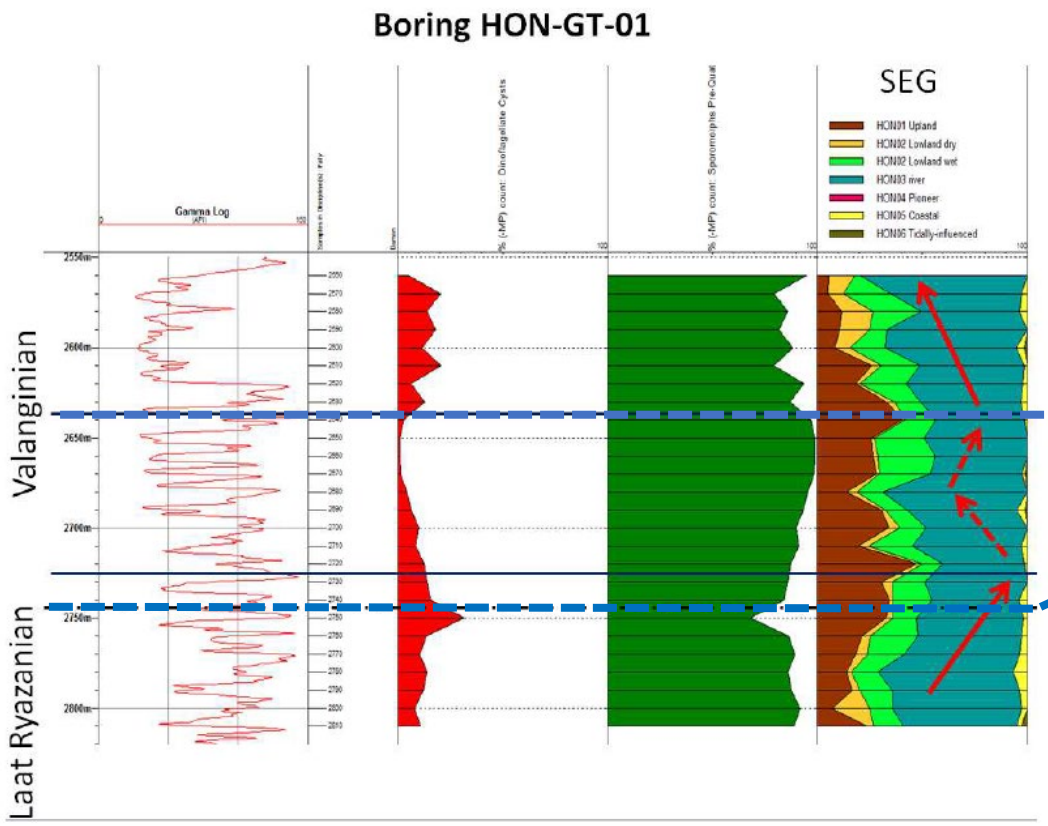
Loerakker, 2009



Wiggers, 2009

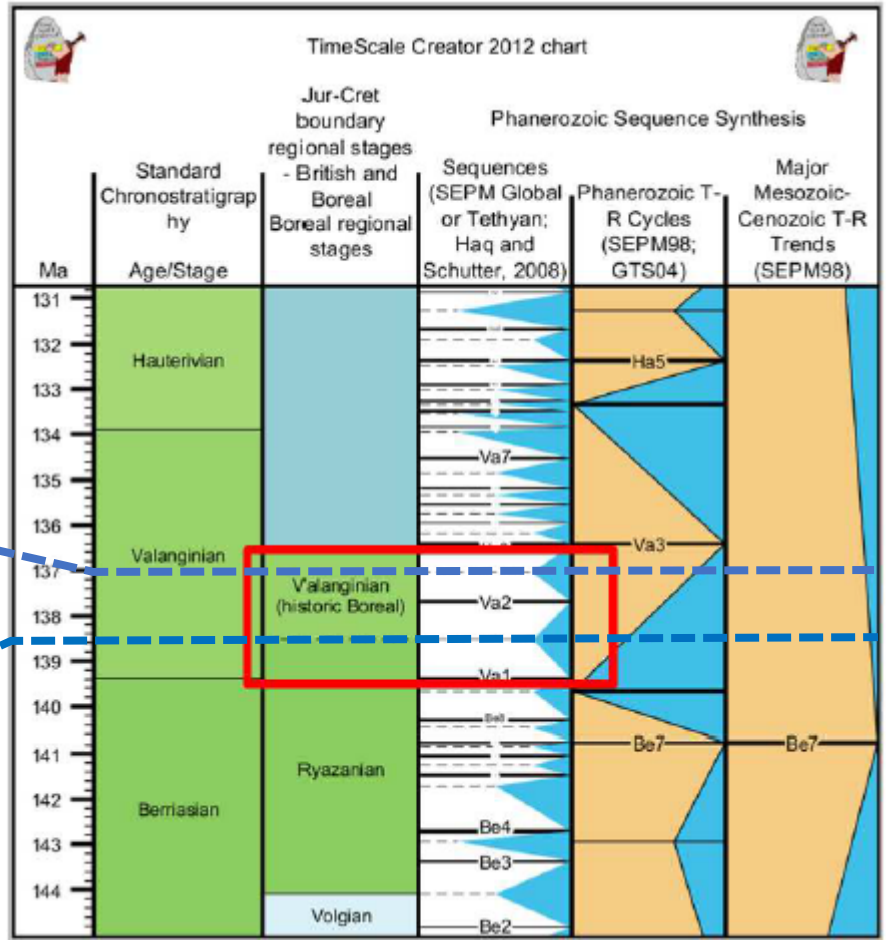
RV-12

Palynostratigraphic model for the Delft Sandstone Mb

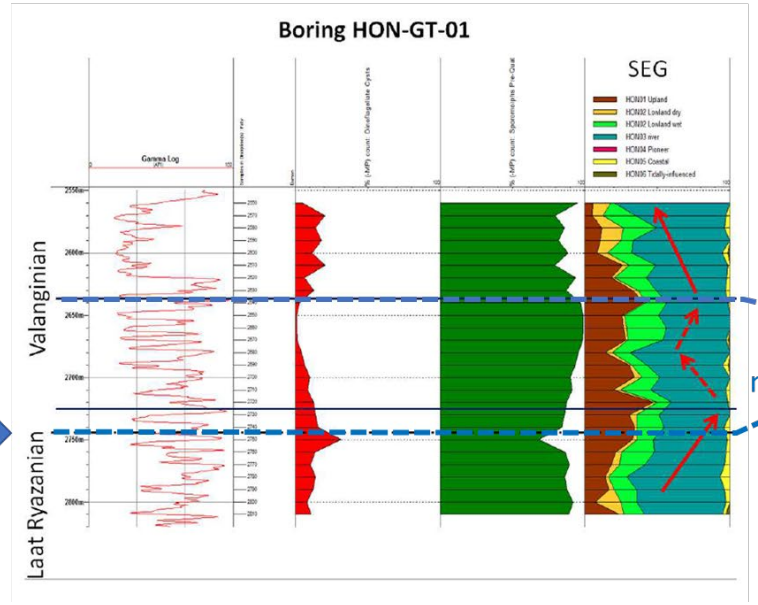


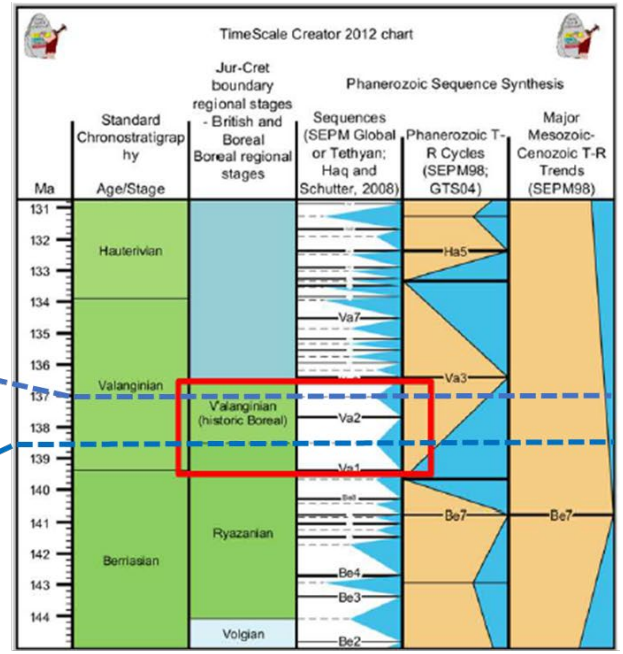
Paratollia MFS

Musterman, 2017

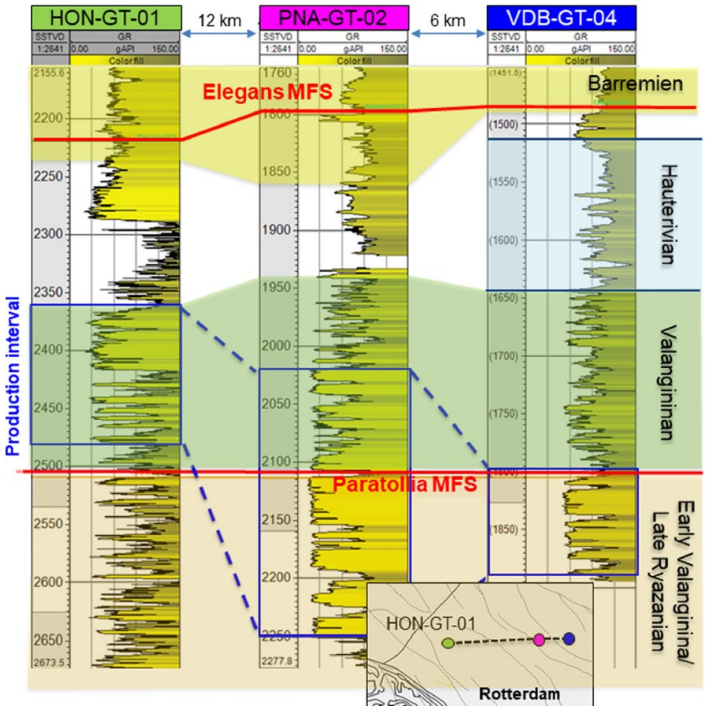


RV-13

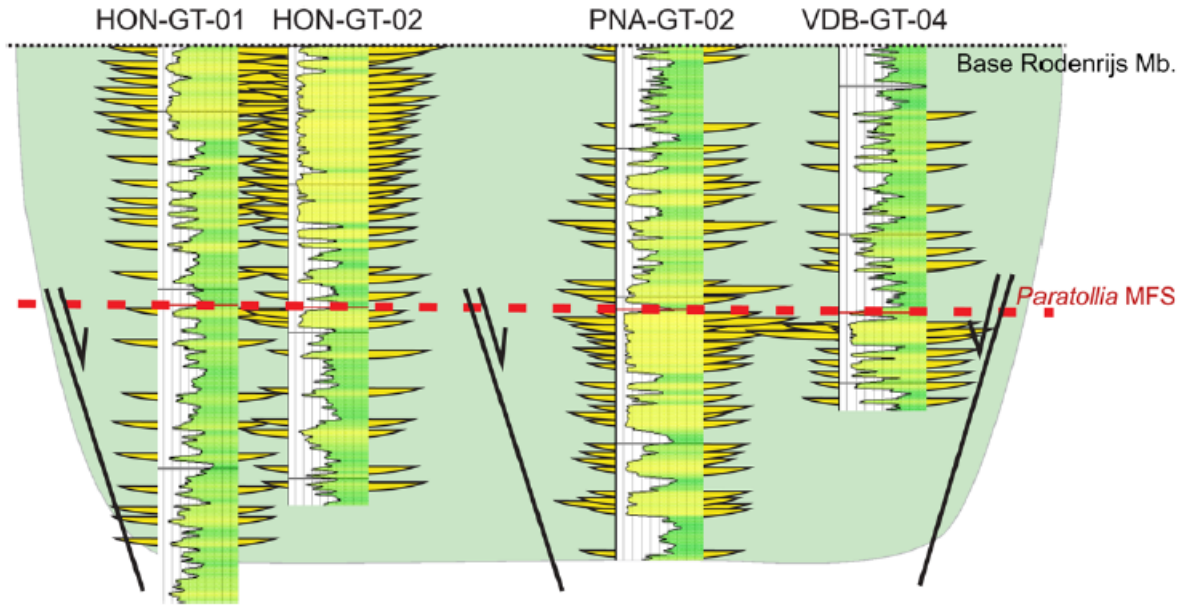




Munsterman, 2017

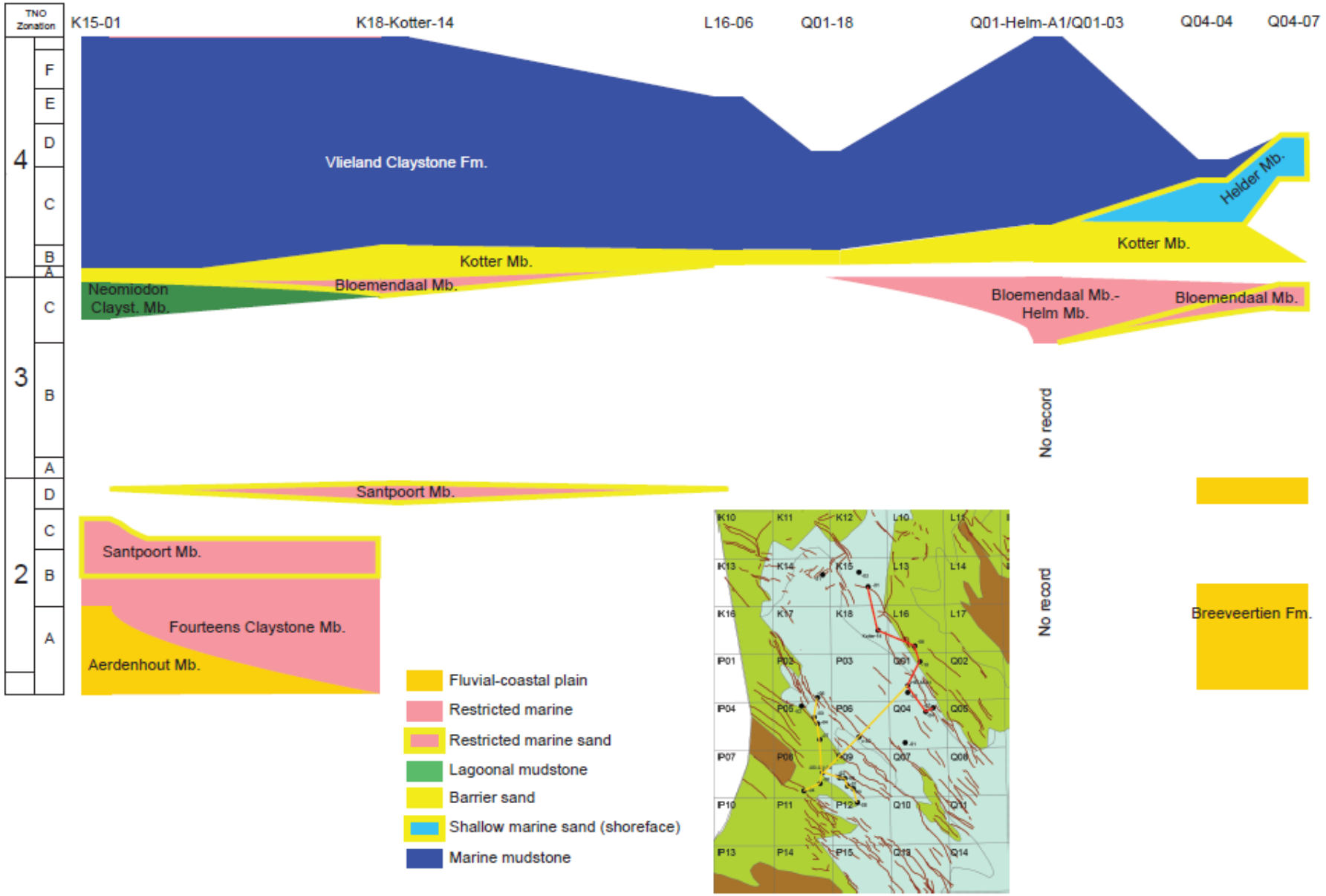


Willems et al., 2020

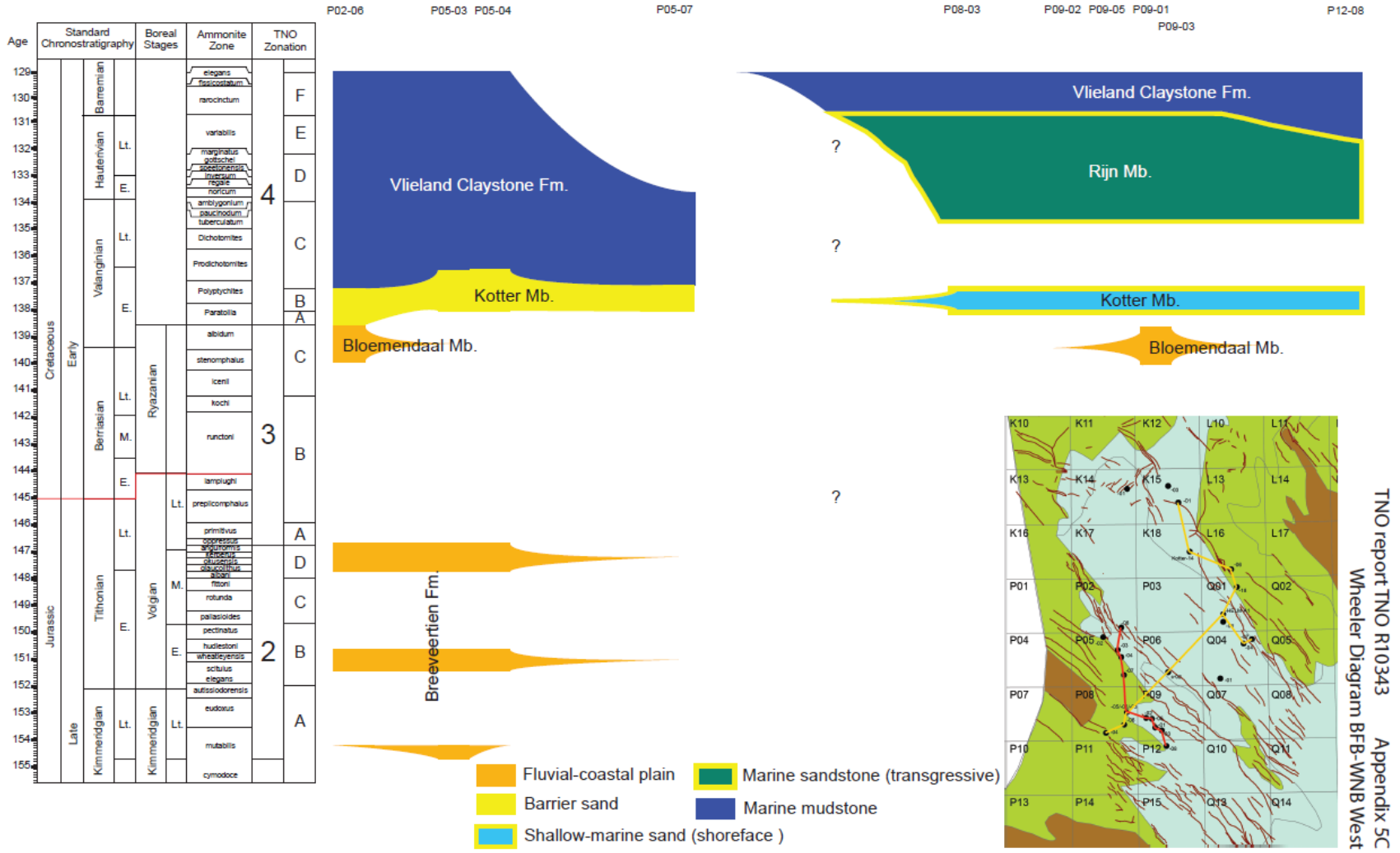


Vondrak et al., 2018

RV-14

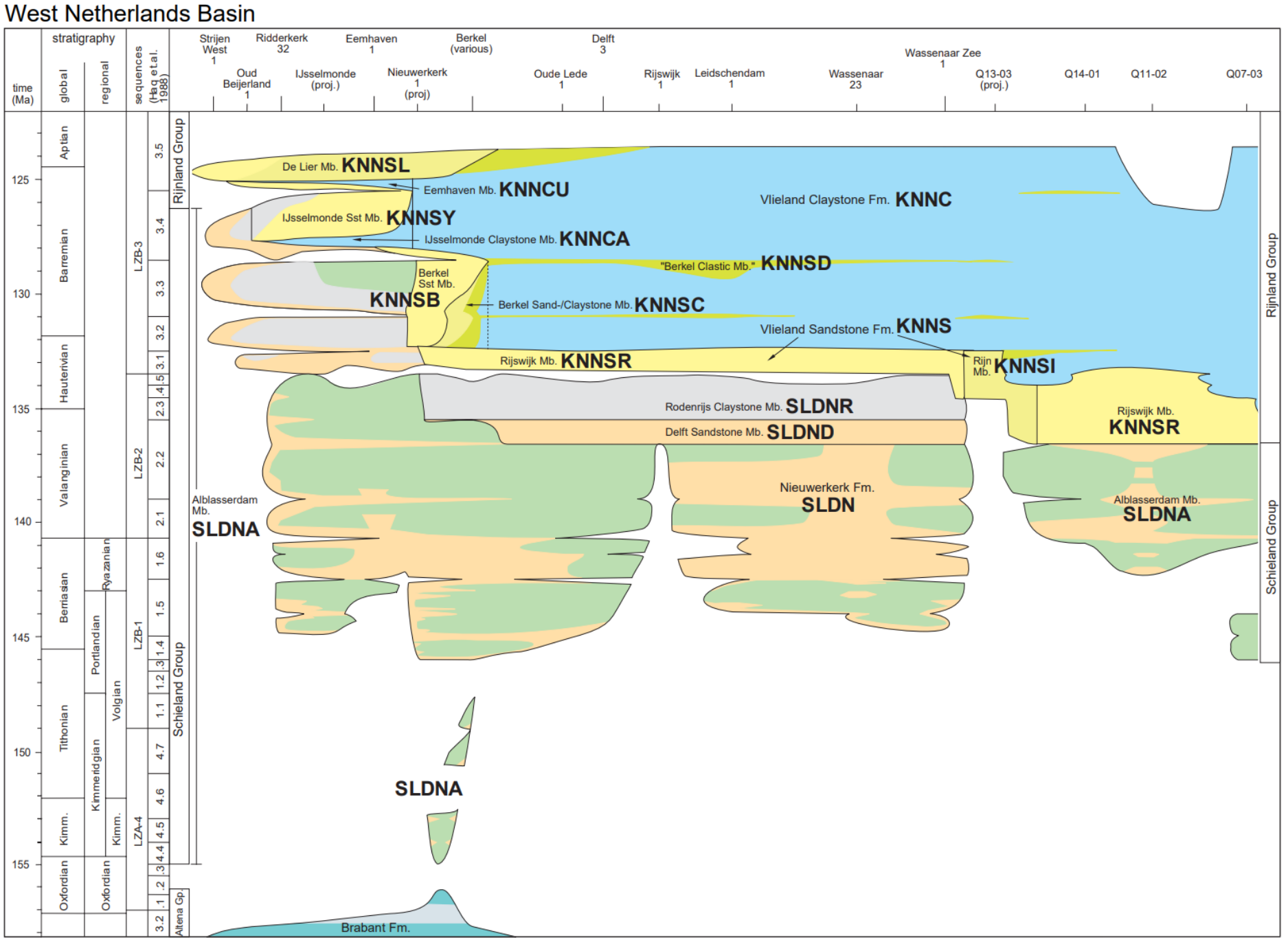

TNO Zonation
K15-01
K18-Kotter-14
L16-06
Q01-18
Q01-Helm-A1/Q01-03
Q04-04
Q04-07
4
F
E
D
C
B
A
3
C
B
A
2
D
C
B
A
Vlieland Claystone Fm.
Helder Mb.
Kotter Mb.
Kotter Mb.
Bloemendaal Mb.
Neomiodon Clayst. Mb.
Bloemendaal Mb.-Helm Mb.
Bloemendaal Mb.
No record
Santpoort Mb.
Santpoort Mb.
Fourteens Claystone Mb.
Aerdenhout Mb.
No record
Breeveertien Fm.
Fluvial-coastal plain
Restricted marine
Restricted marine sand
Lagoonal mudstone
Barrier sand
Shallow marine sand (shoreface)
Marine mudstone

RV-15



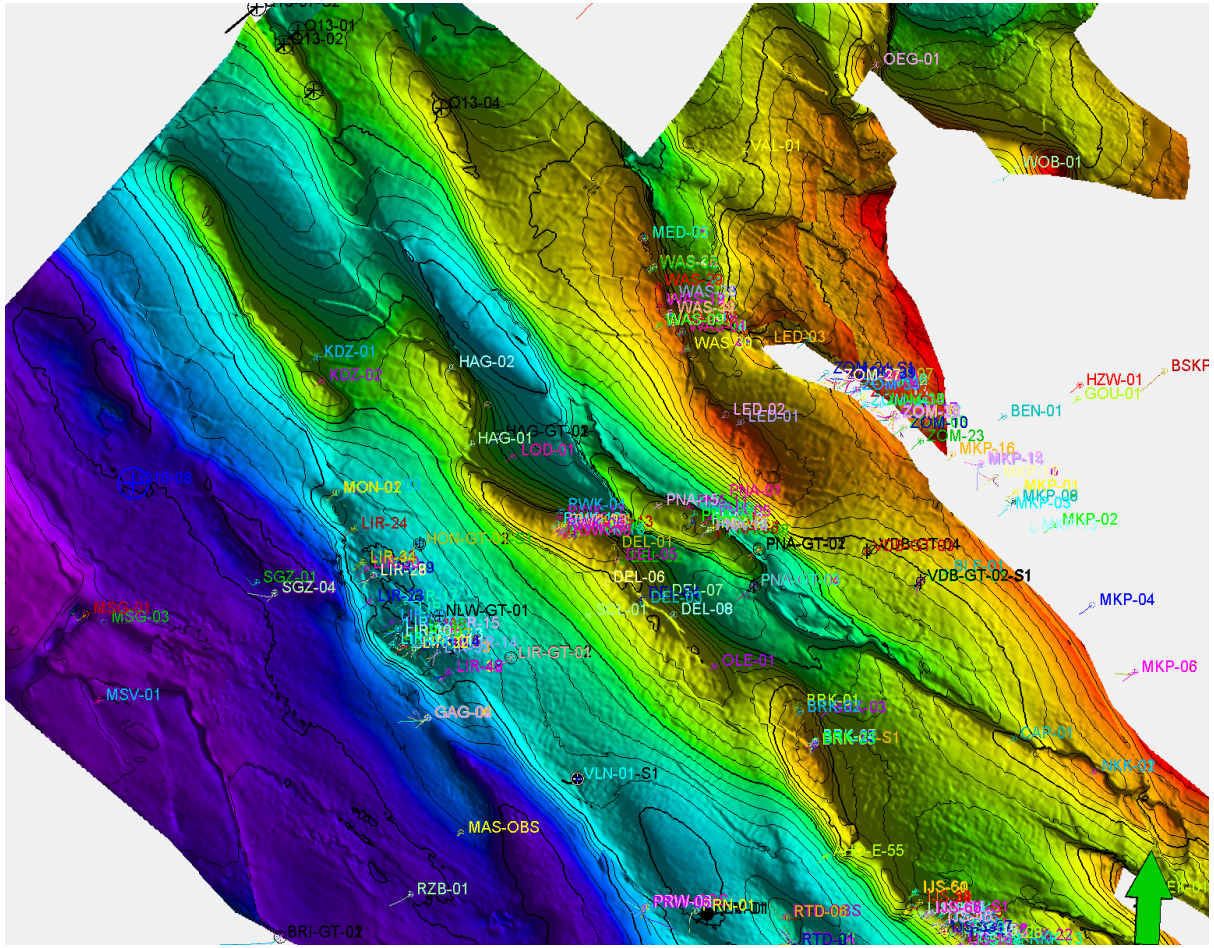
TNO report TNO R10343 Appendix 5C
Wheeler Diagram BFB-WNB West

Figure H1



Source: Van Adrichem Boogaert & Kouwe (1993). Stratigraphic nomenclature: Section G - Upper Jurassic and Lower Cretaceous - Mededelingen Rijks Geologische Dienst 50

Figure H2



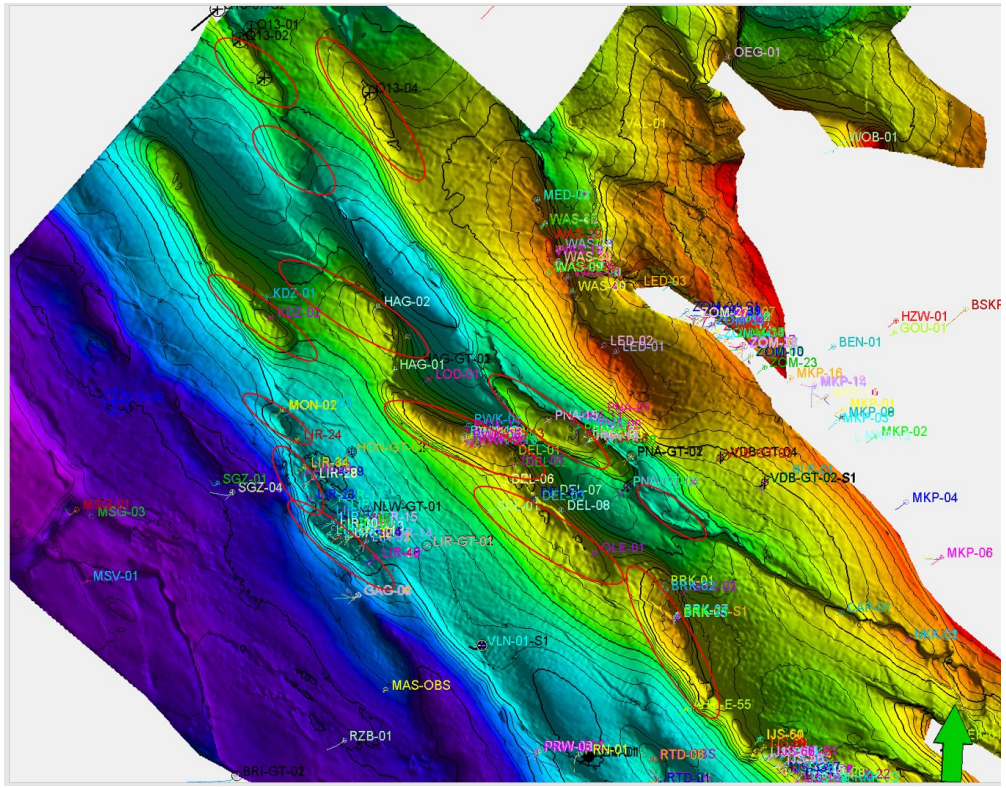
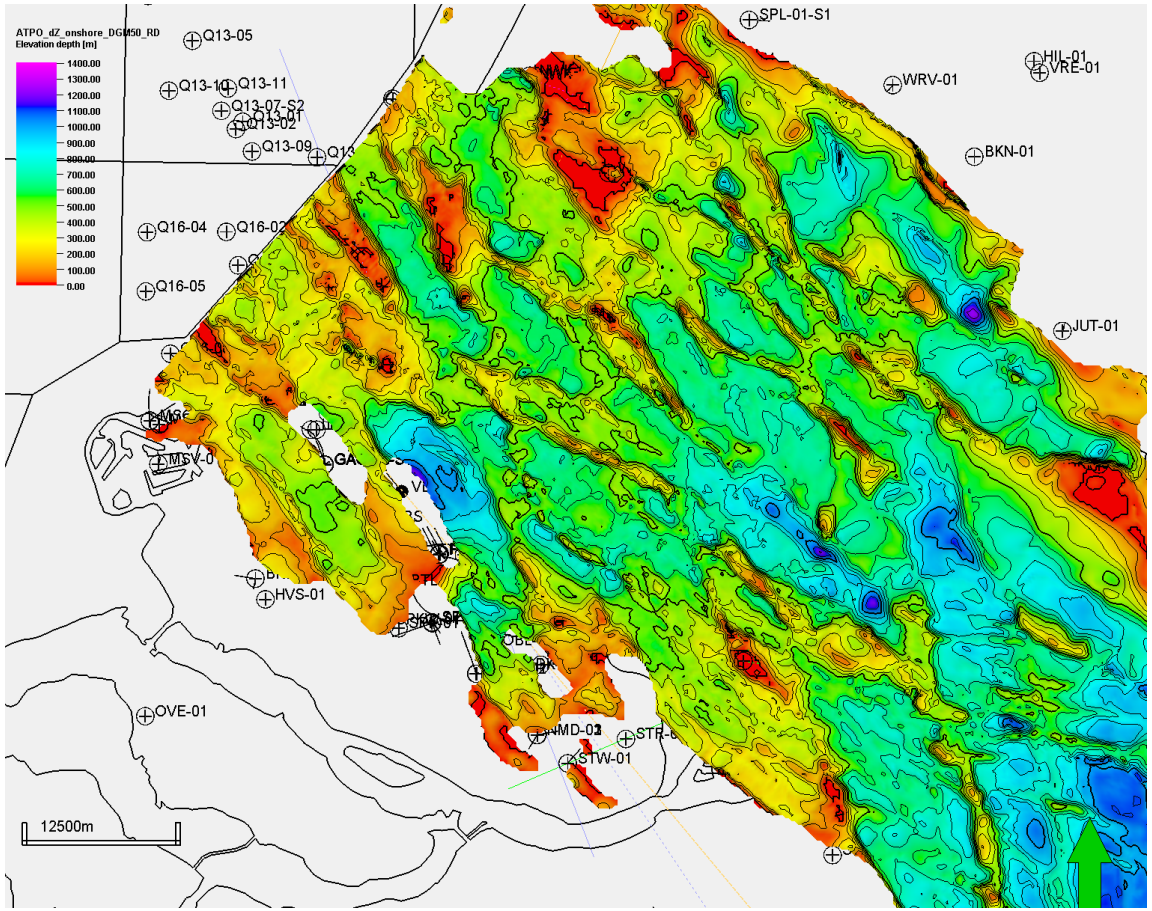
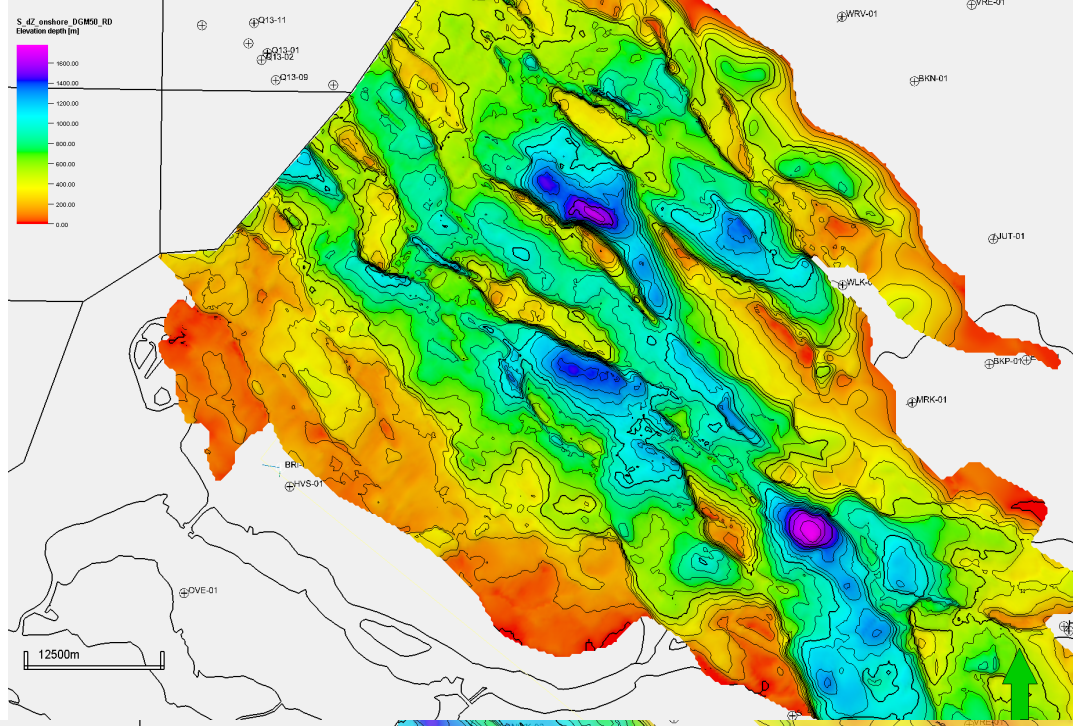


Figure H2 Base of the KNGLU displayed with lighting tool from SW.

Figure H3





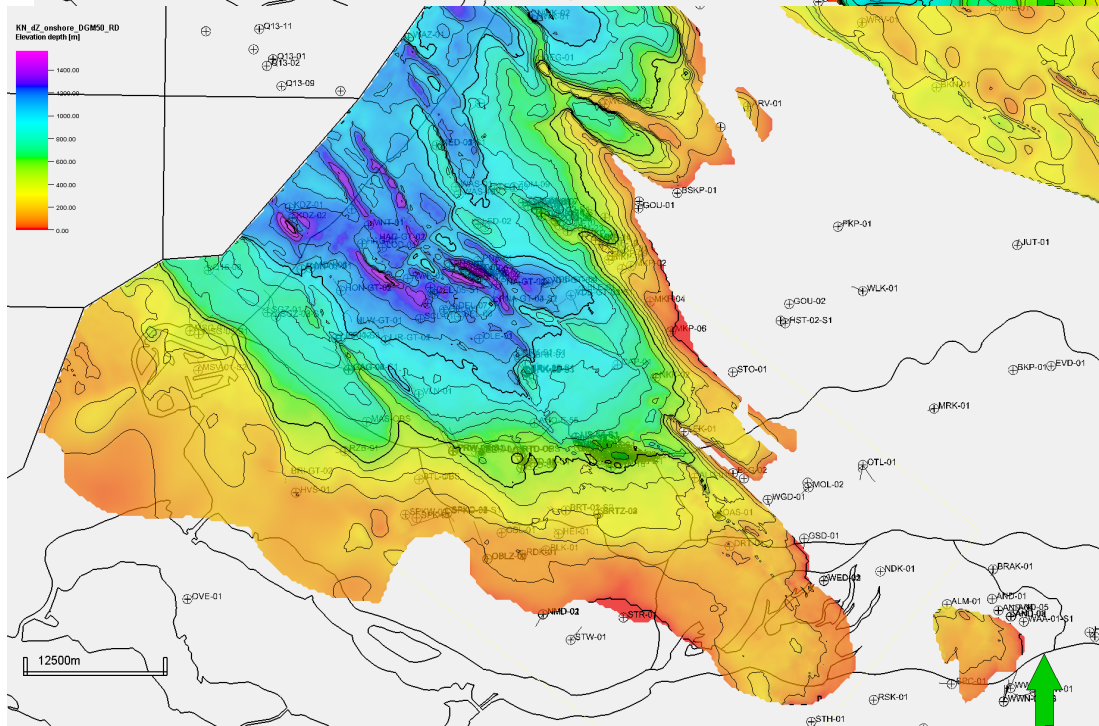
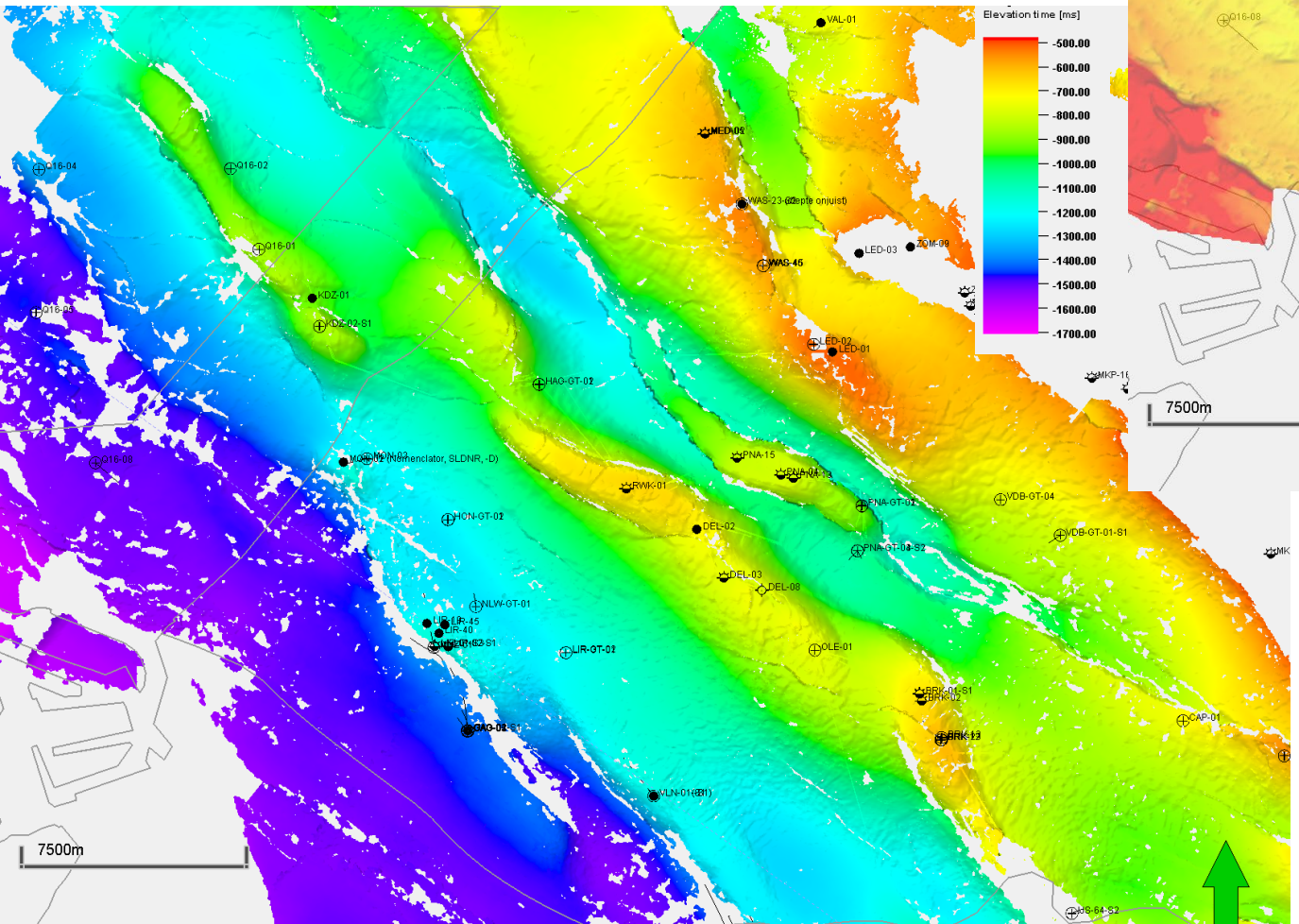


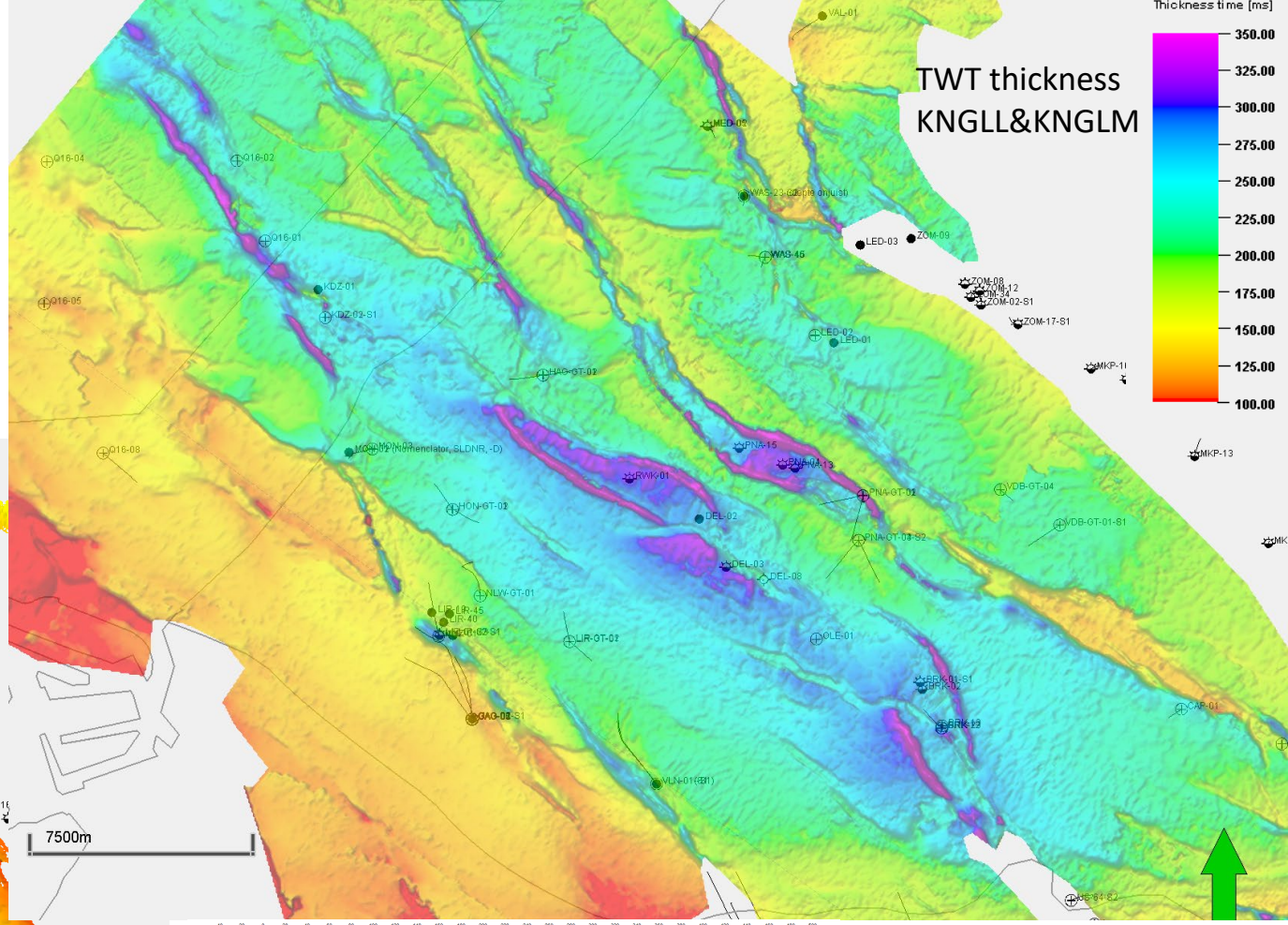
Figure H3 Thickness (m) of the Middle Jurassic, Upper Jurassic and Lower Cretaceous (clockwise) according to the DGM 5 model

Figure H4

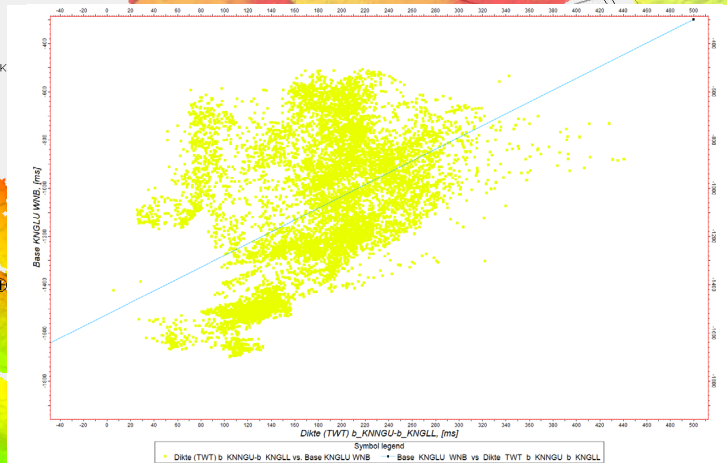
Strong inversion postdates Holland FM: TWT thickness KNGLL&KNGLM inversely correlated to present burial depth (TWT) base KNGLU

TWT base KNMGU



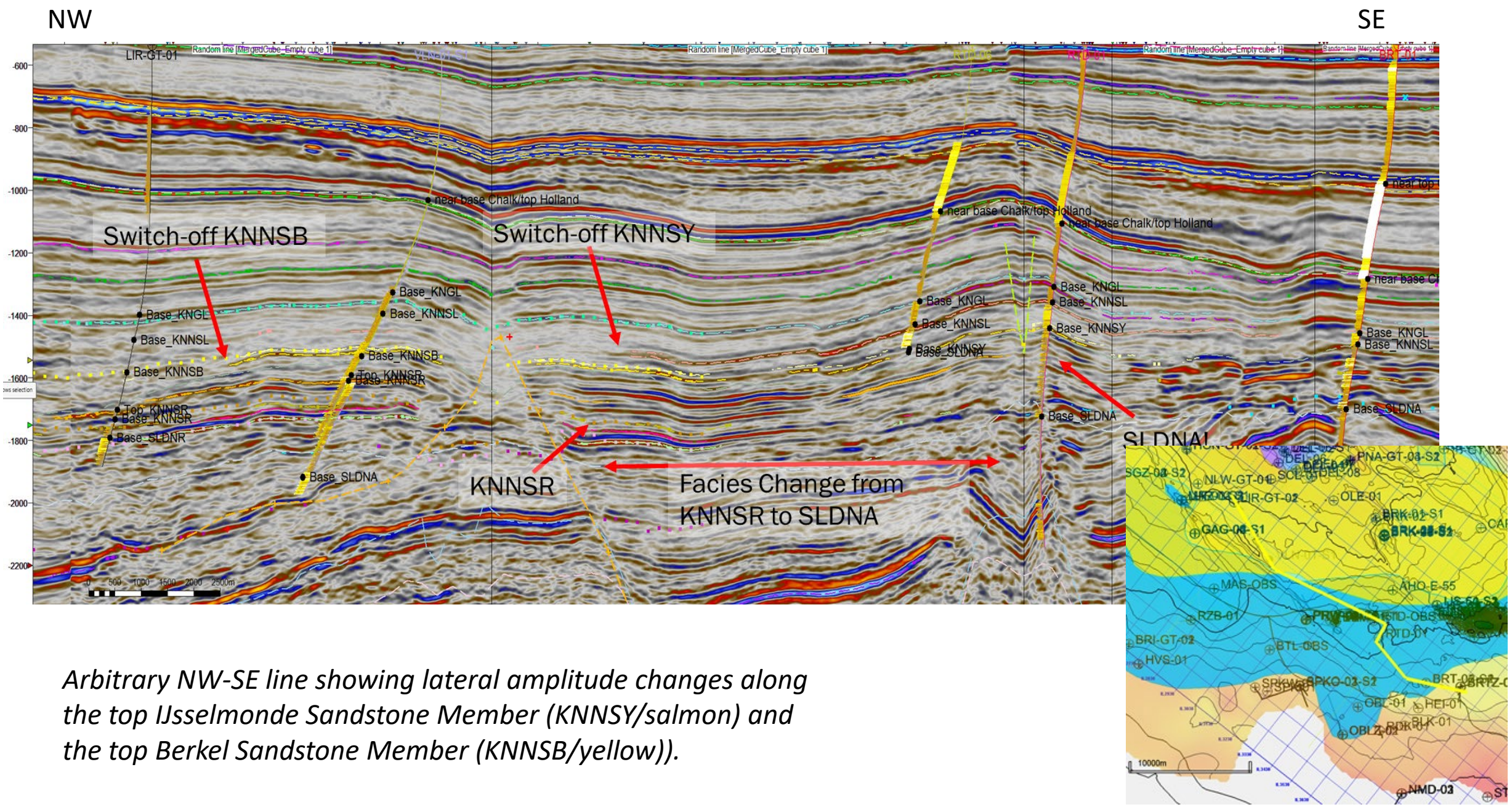


TWT thickness KNGLL&KNGLM



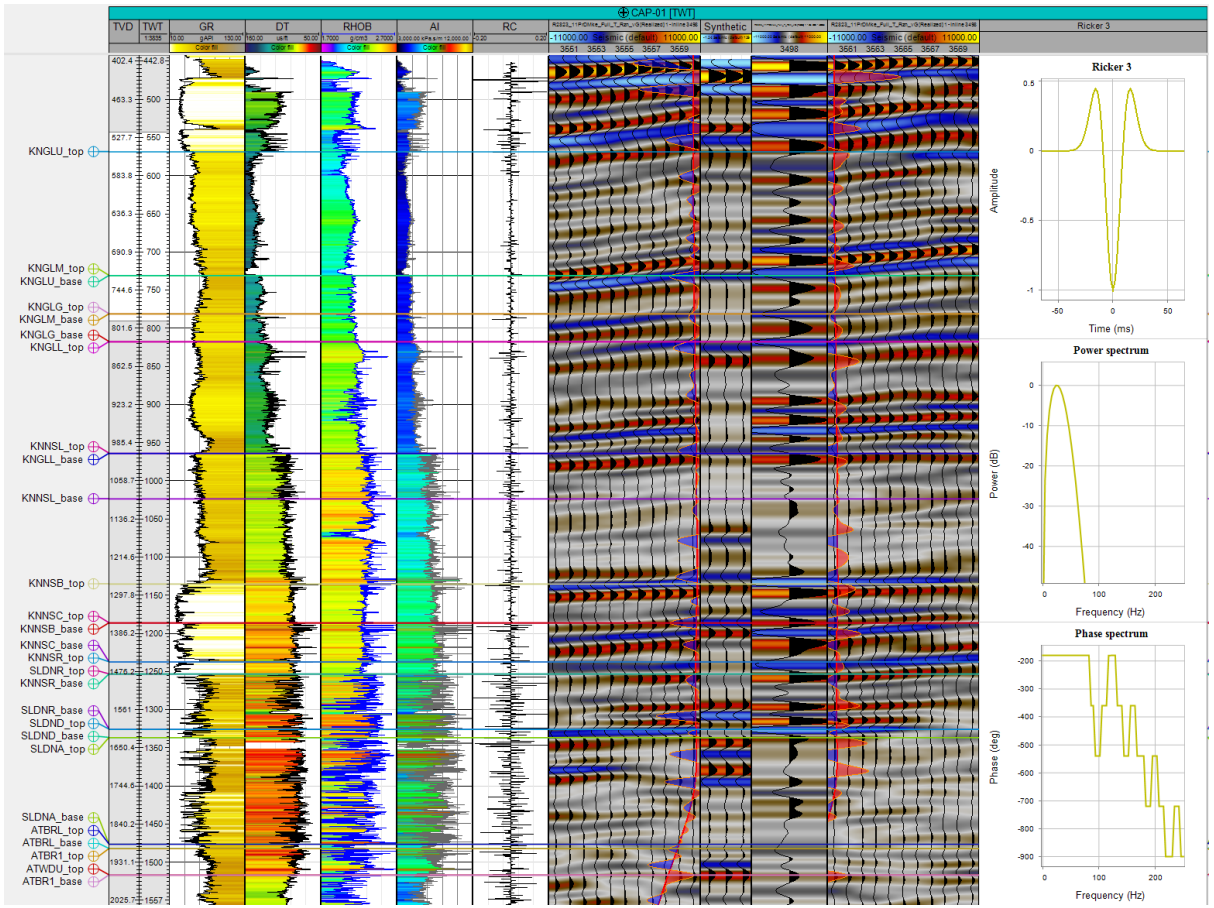
Negative correlation betweenTWT base KNMGU amd TWT thickness KNGLL&KNGLM

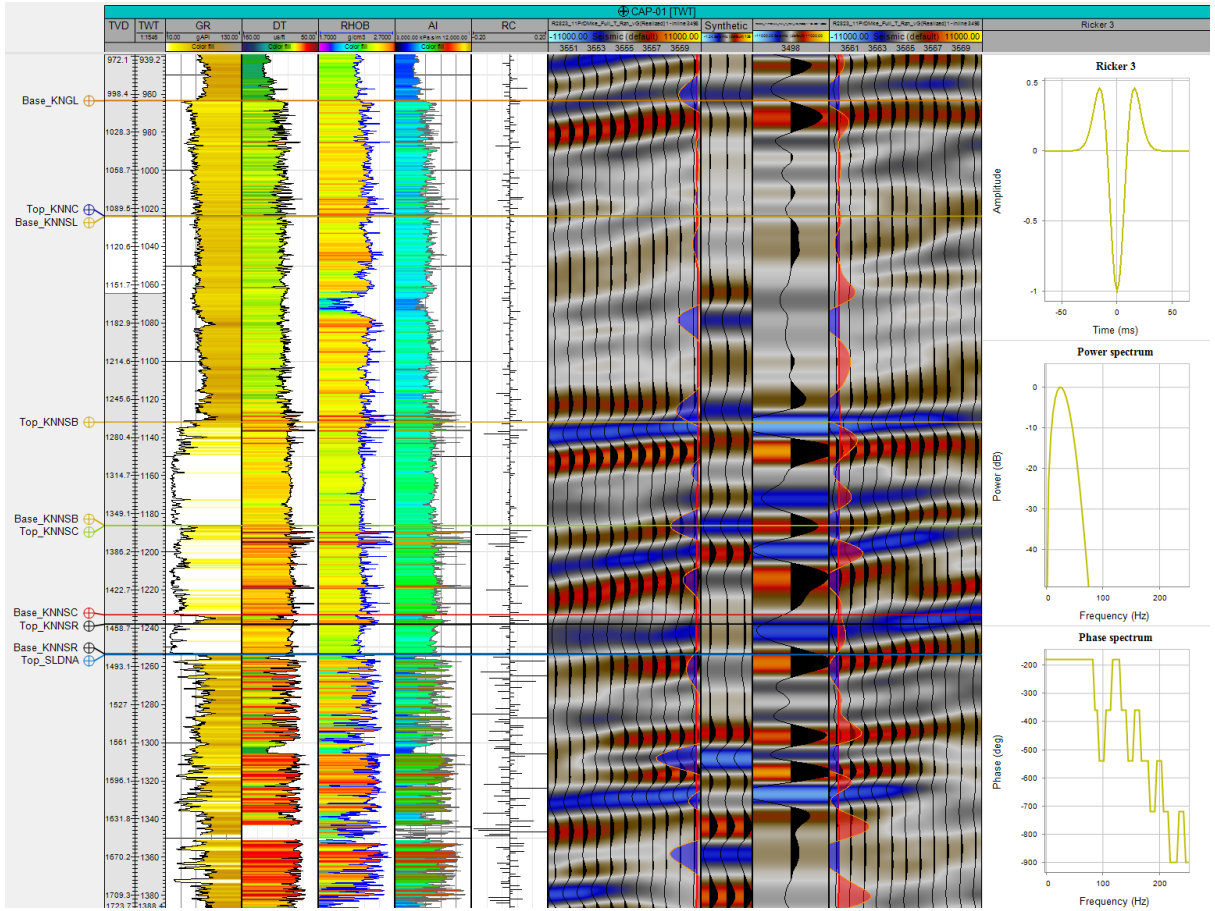
Figure H6



Arbitrary NW-SE line showing lateral amplitude changes along the top IJsselmonde Sandstone Member (KNNSY/salmon) and the top Berkel Sandstone Member (KNNSB/yellow)).

Figure H7





Synthetic seismogram of the well CAP-01 showing that top and base of cemented zones (high AI zones) do not necessarily line up with picked stratigraphic tops. As a consequence exact picking of top Berkel Sandstone Member on seismic data will be difficult.

Figure H8

Thickness increase Rijswijk-Delft interval towards SE visible on the Wassenaar survey. Jump in thickness over WNW-ESE trending fault

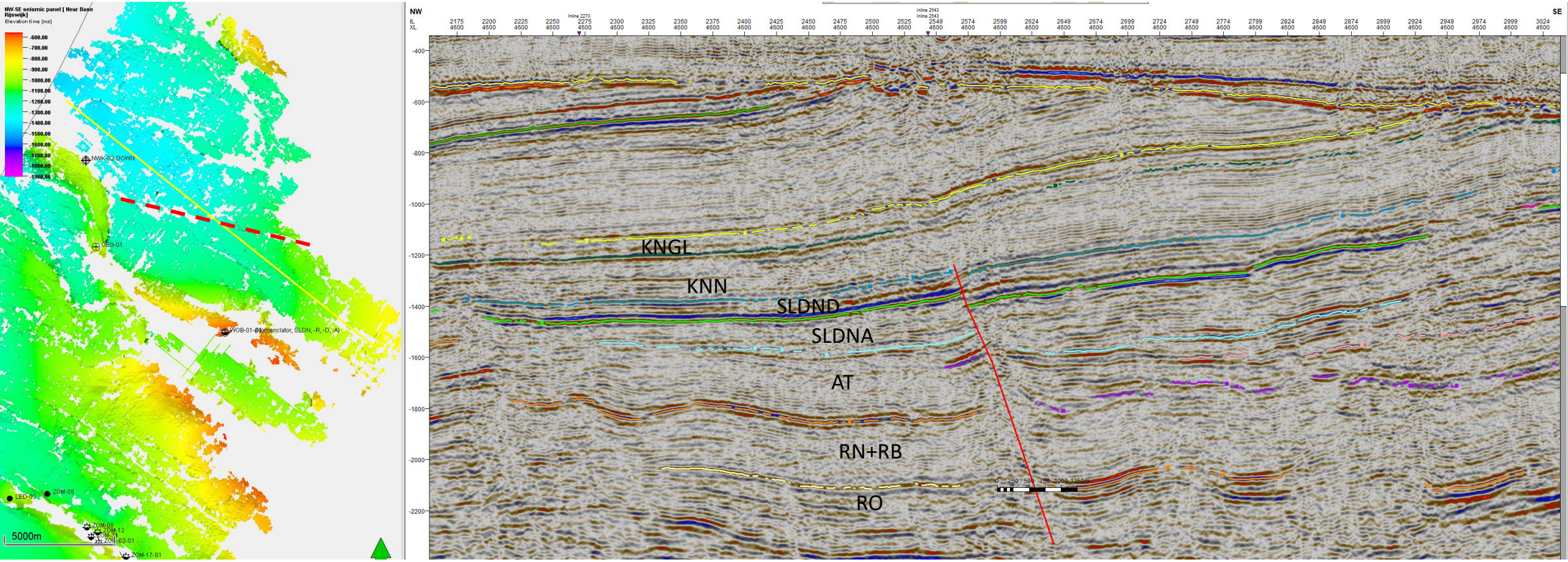
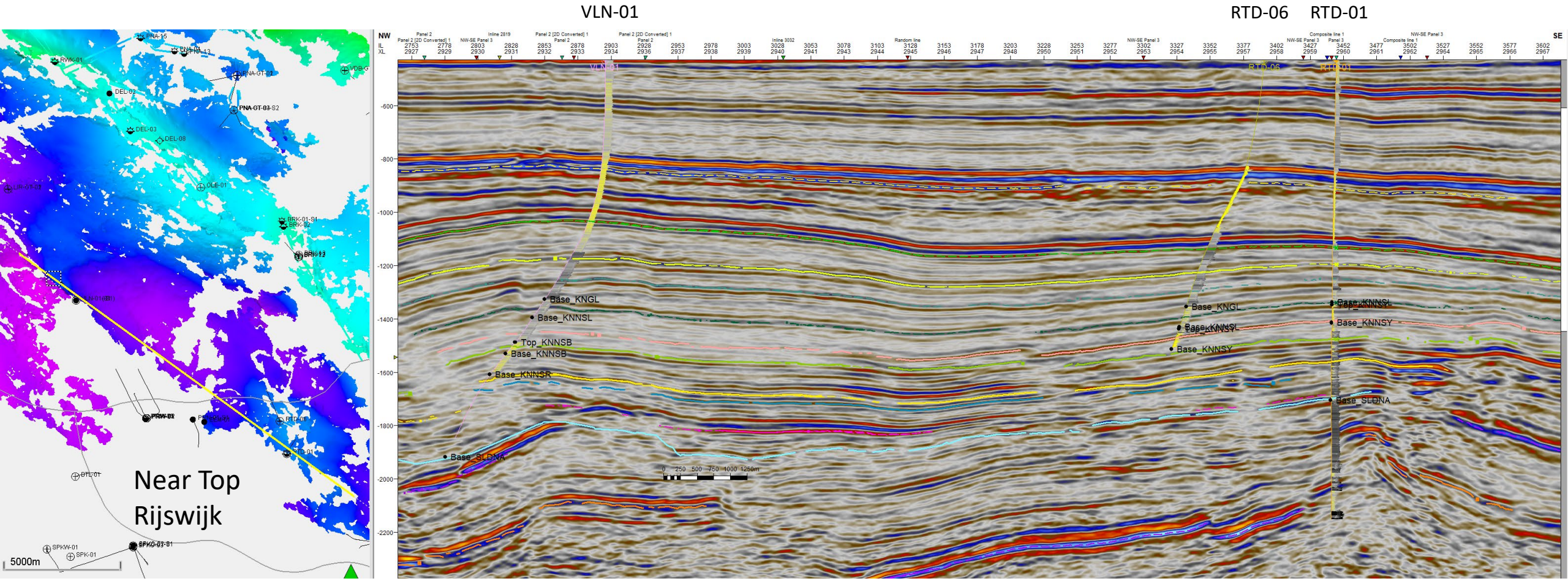
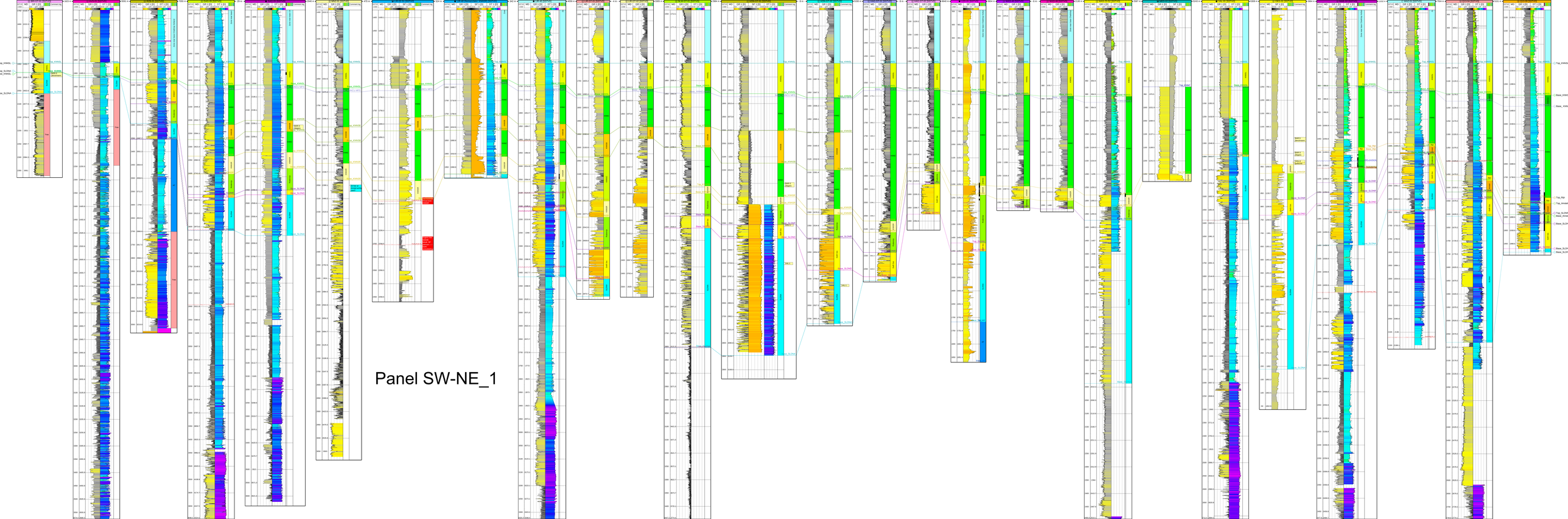


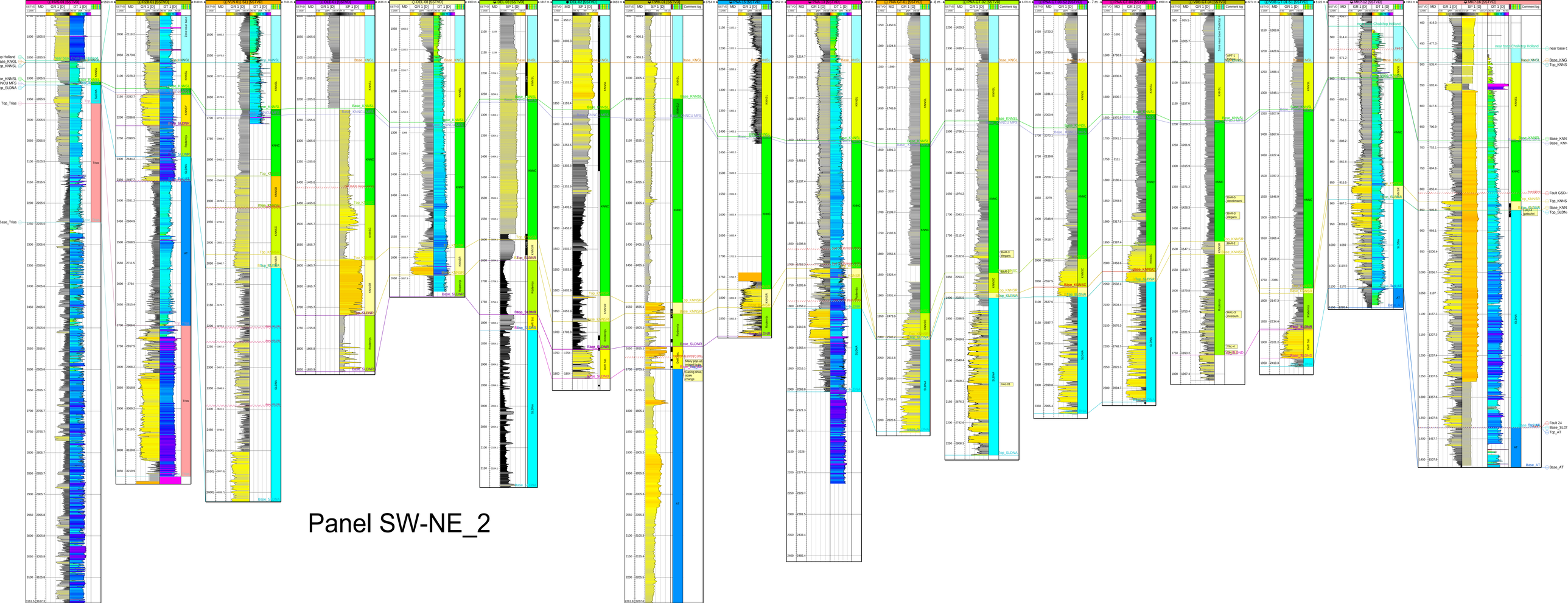
Figure H9

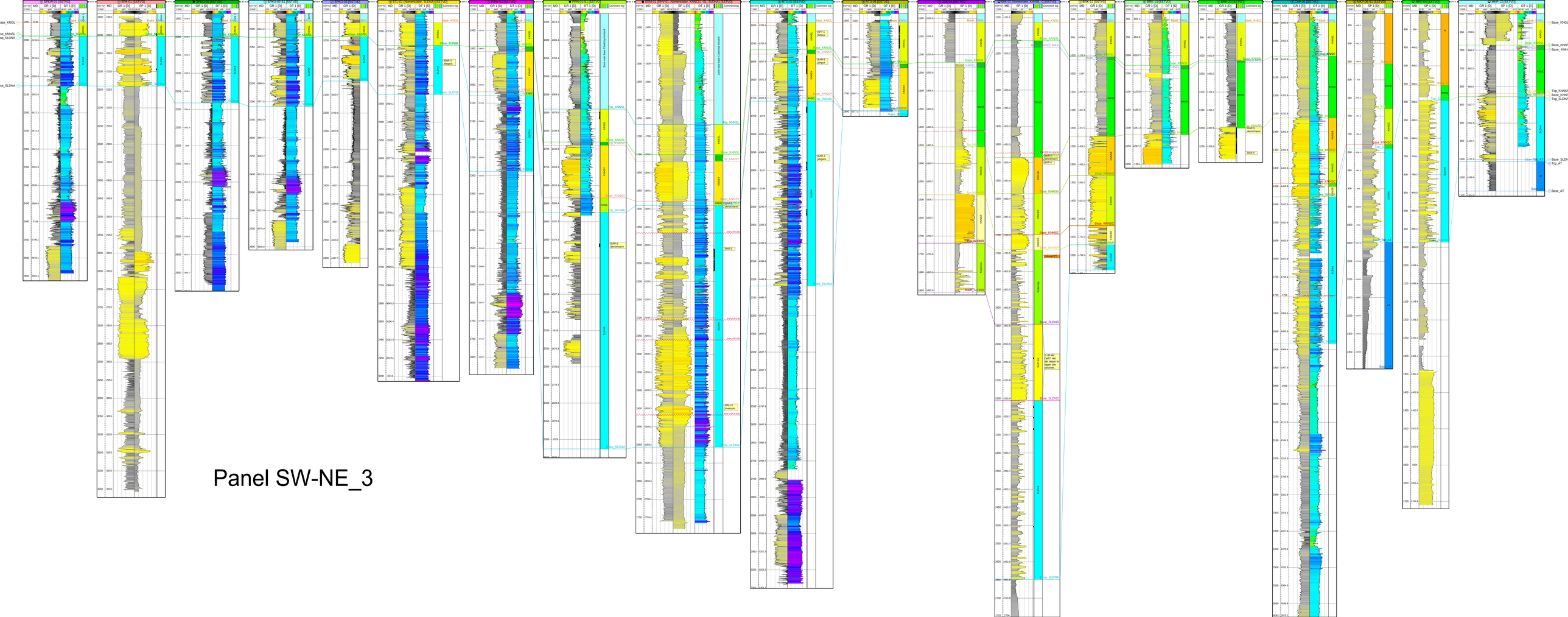
Timeline correlation Rijswijk sst into the Alblasserdam: VLN-01 – RTD-01. The KNNSR interval (Yellow-Petrol) in VLN-01 correlates with SLDNA in RTD-01 (KNNSY overlying SLDNA)



B Well panels


Panel SW-NE_1


Panel SW-NE_2


Panel SW-NE_3

Panel SW-NE_4

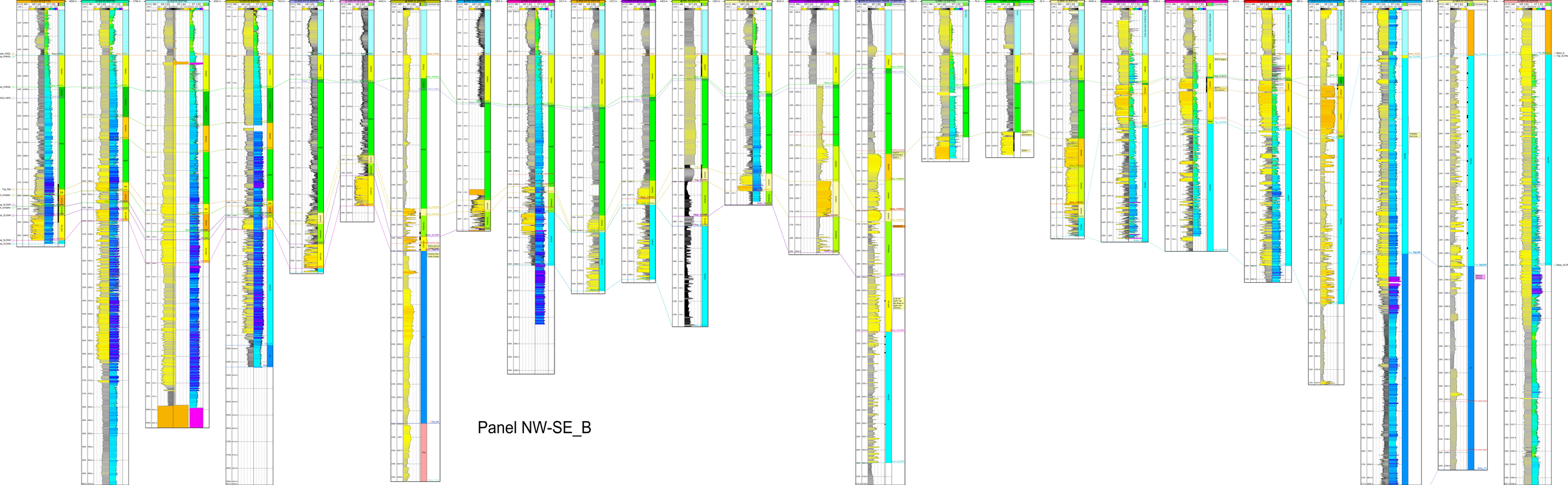
Panel SW-NE_5

STW-01 [SSTVD] — 4983 m
STR-01 [SSTVD] — 11123 m
DRT-01 [SSTVD] — 6518 m
GSD-01 [SSTVD] — 4629 m
WGD-01 [SSTVD] — 3804 m
BLG-02 [SSTVD] — 6539 m
MOL-01 [SSTVD] — 418 m
MOL-02-S2 [SSTVD] — 5126 m
OTL-01 [SSTVD] — 4983 m

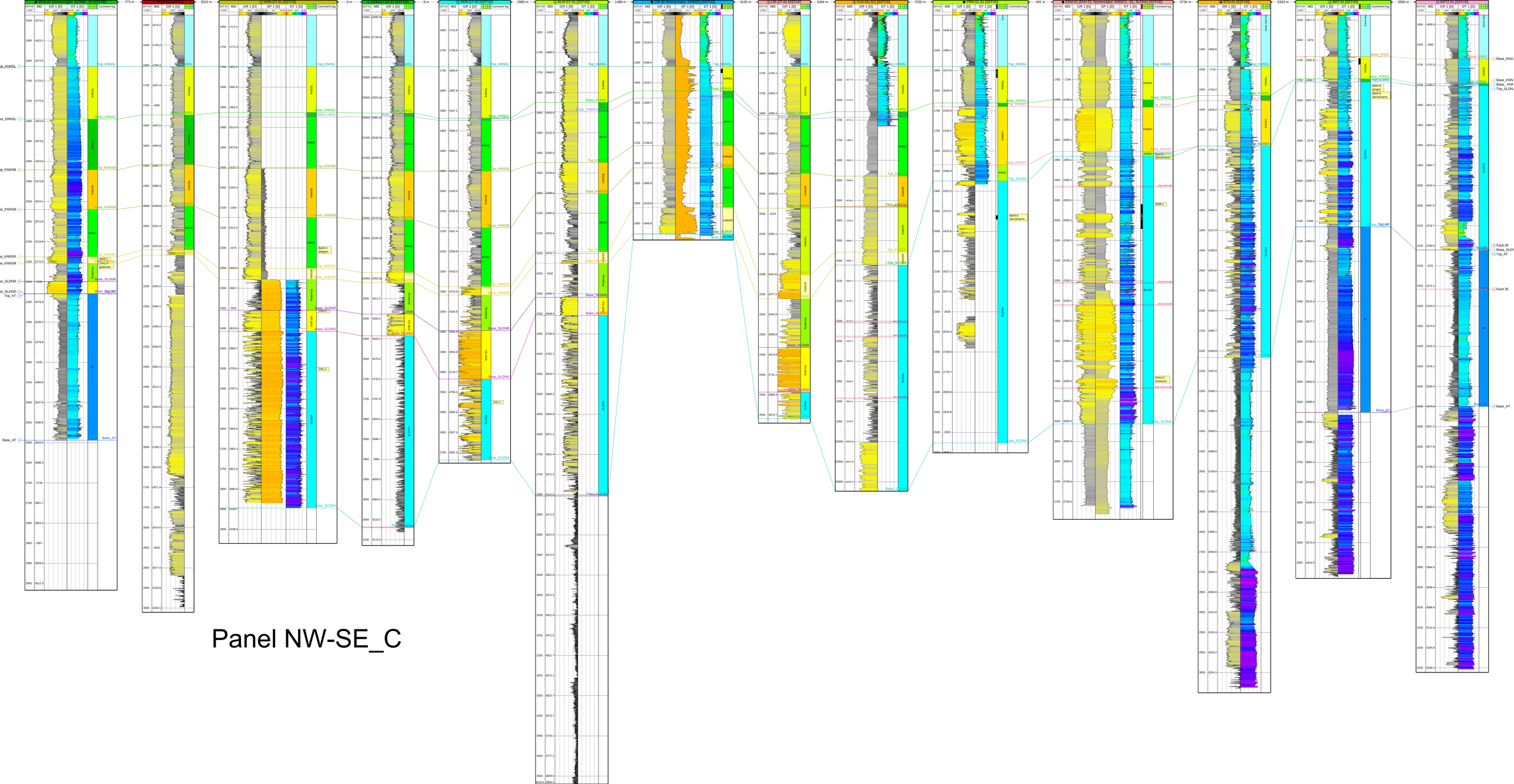
Top Holland
Top_SLDNA
Base_SLDNA
Top_AT
Base_AT
near base Chalk
Base_KNGL
Comment log
Probable fault zone
SLDNA
AT
Base_N
Top_SLDNA
Base_SLDN
Top_AT

Q13-09 [SSTVD]
5151 m
Q13-04 [SSTVD]
9591 m
MED-01 [SSTVD]
2600 m
WAS-23-S2 [SSTVD]
2130 m
WAS-46 [SSTVD]
3610 m
LED-01 [SSTVD]
7315 m
VDB-GT-04 [SSTVD]
2274 m
VDB-GT-01-S1 [SSTVD]
7267 m
CAP-01 [SSTVD]
3498 m
NKK-01 (Nomenclator, SLDN, -A) [SSTVD]
5319 m
LEK-01 [SSTVD]
5599 m
BLG-02 [SSTVD]
3804 m
WGD-01 [SSTVD]
4629 m
GSD-01 [SSTVD]
SSTVD
MD
GR 1 [D]
DT 1 [D]
SP 1 [D]
Comment log
Color fill
Base_KNGL
Top_KNNSL
Base_KNNSL
Base_KNNCU MFS
Top_Rijn
Top_Amstel_complex
Base_Amstel_complex
Top_SLDNR
Base_SLDNR
Base_SLDND
Top_SLDND
Top_SLDNA
Base_SLDNA
Top_KNNSR
Base_KNNSR
Top_KNNSB
Base_KNNSB
Top_KNNSC
Base_KNNSC
Top_KNNSY
Base_KNNSY
Top_AT
Base_AT
Base_N
Zone near base Chalk/top Holland
KNNSL
KNNCU
KNNC
KNNSR
KNNSB
KNNSC
KNNSY
Rijn
Amstel
Rodenrijs
Delft Sst.
SLDNA
AT
N
Core
APT-1 forbesi
BAR-5 denckmanni
BAR-3 elegans
BAR-2
HAU-3 inversum
VAL-4
VAL-1
HAU-4 gottschei
HAU-2
CAP-01 (normal, seismic, which depth?)

Panel NW-SE_A



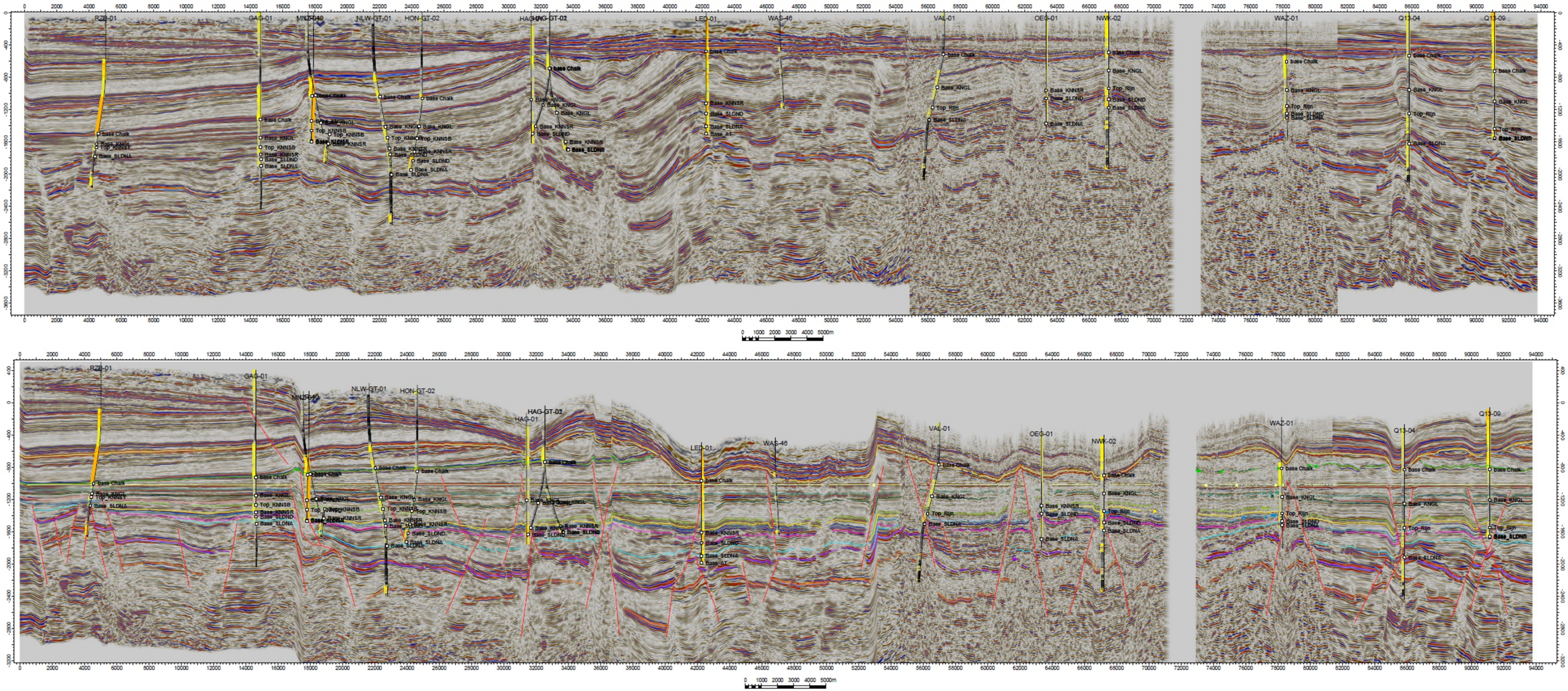
Panel NW-SE_B


Panel NW-SE_C

C Seismic panels

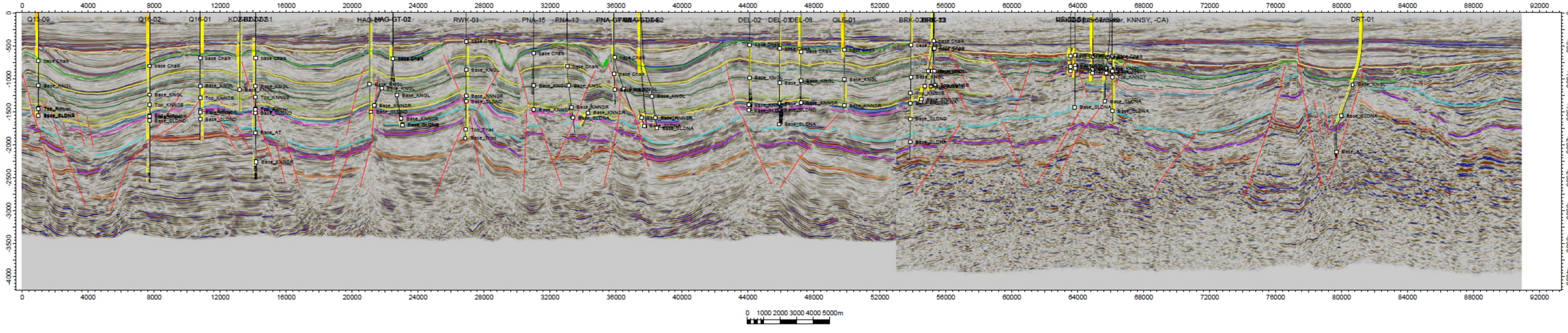
Appendix 3a

Composite seismic section 1



Appendix 3b

Composite seismic section 2



Appendix 3c

Composite seismic section 3