BLACKMOUNTAIN
ENERGY

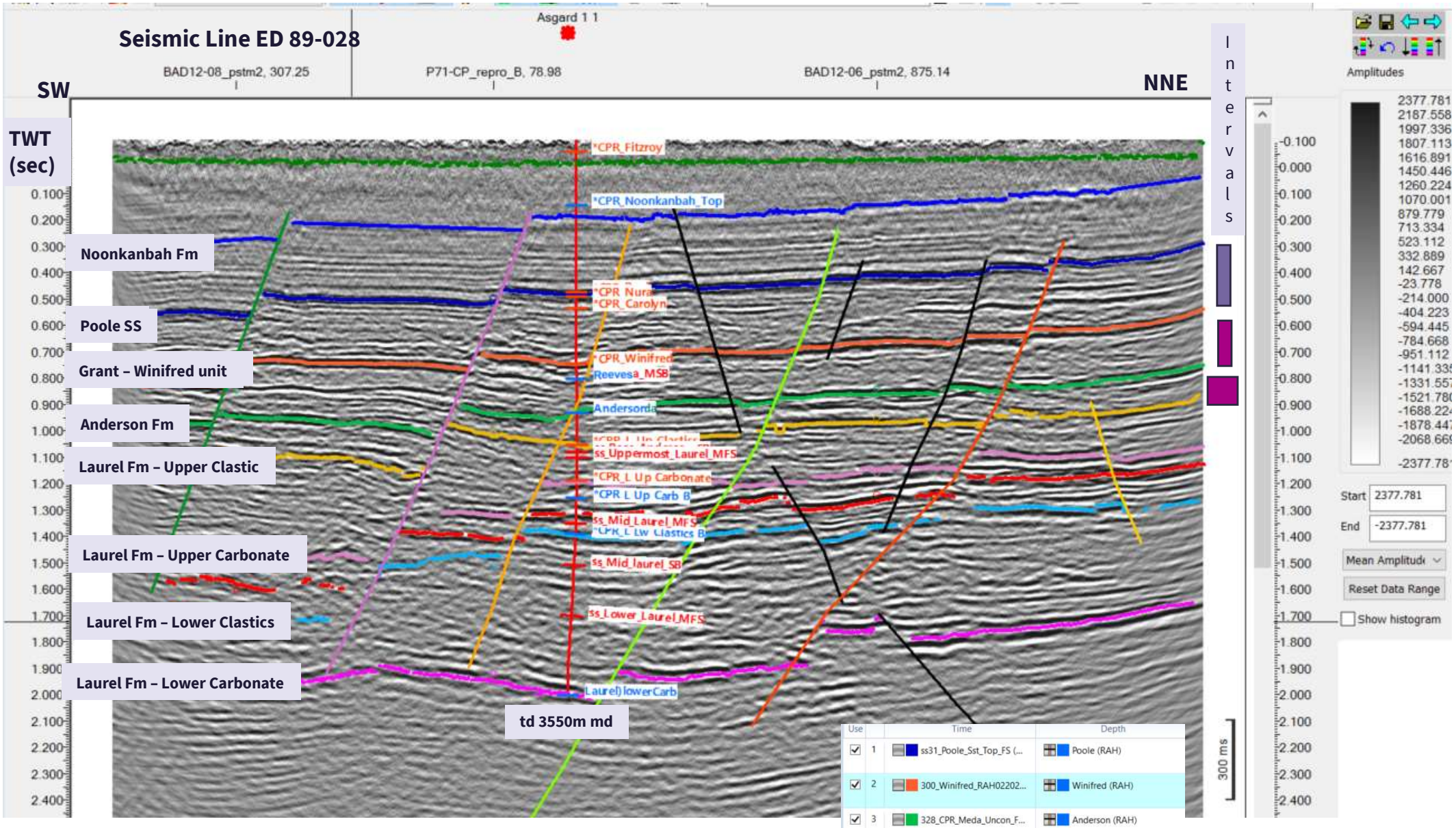
CANNING BASIN – TECHNICAL DISCUSSION EPA ESD

November 1, 2023

Strictly Private and Confidential

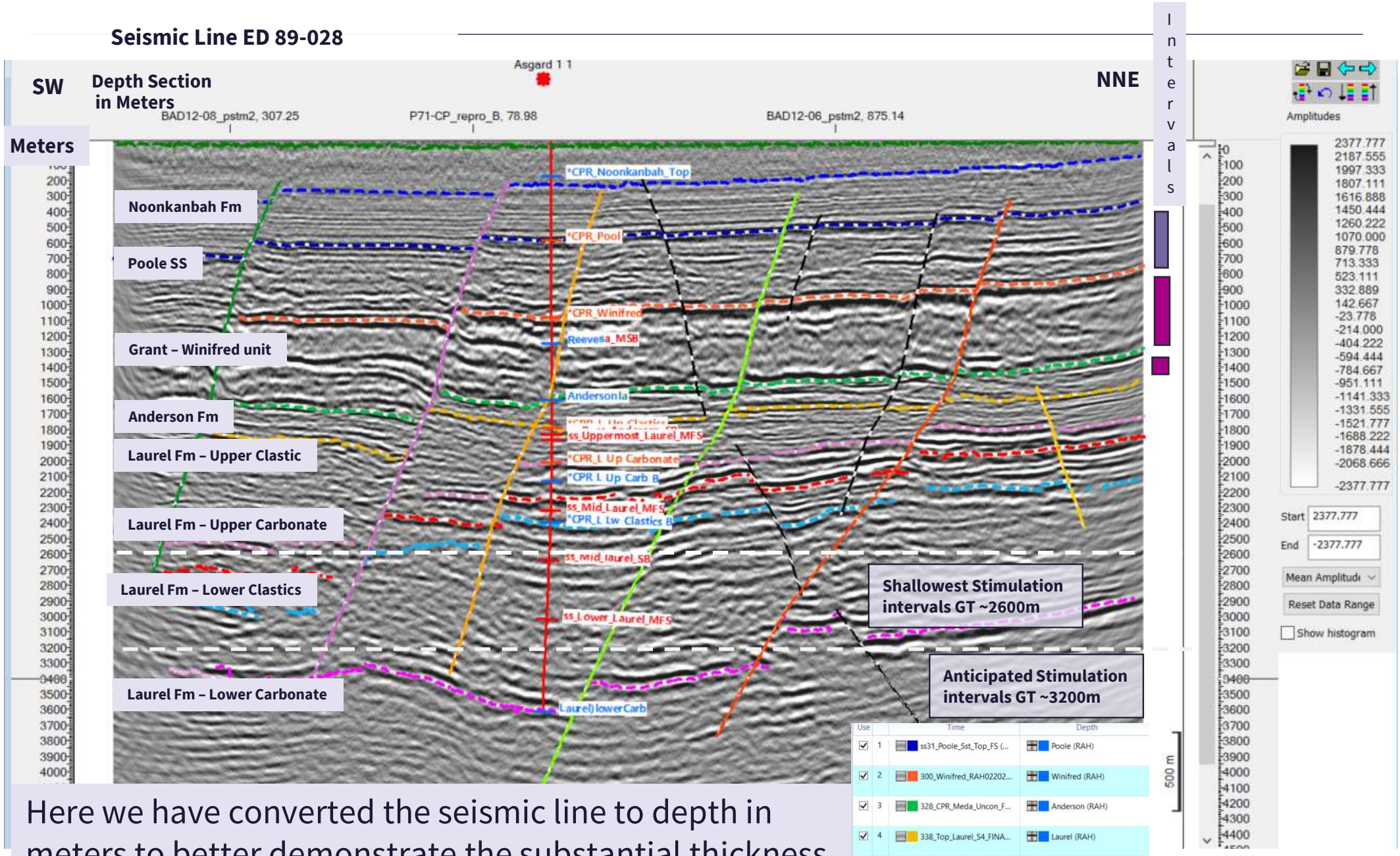
INTRODUCTION

Figure 1a, 2D Seismic time section showing key geological intervals for Anderson, Grant/Winfred and Poole Formations



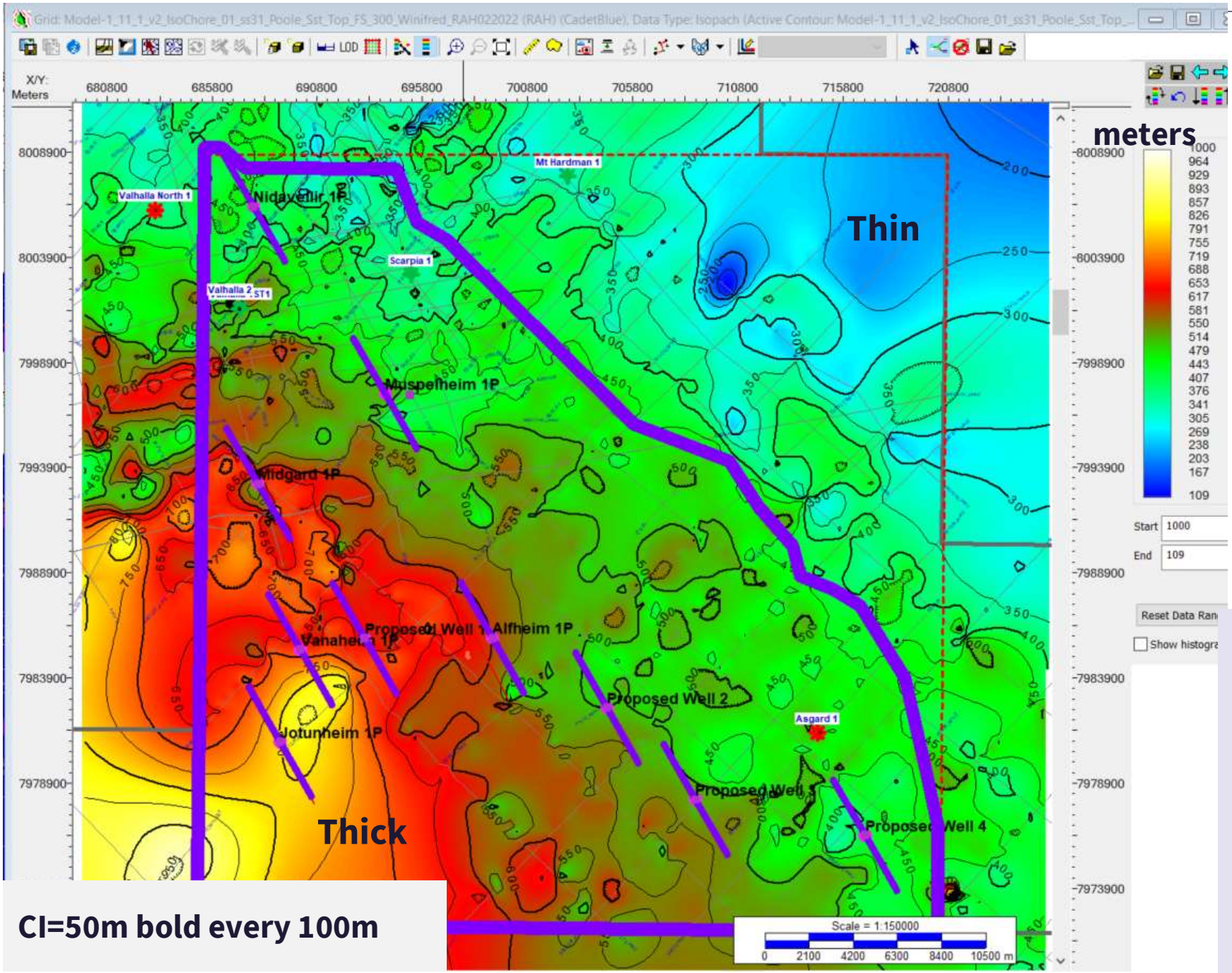
Geological Survey of Western Australia rpt 207 notes the difficulty of discerning the Anderson pick from Reeves in this area. Further stratigraphic study or additional well data is needed to understand the local unconformities and their timing.

Figure 1b, 2D seismic depth section showing key intervals of Anderson, Grant/Winfred and Poole Formations



Here we have converted the seismic line to depth in meters to better demonstrate the substantial thickness of the overlying sediment above any proposed HFS.

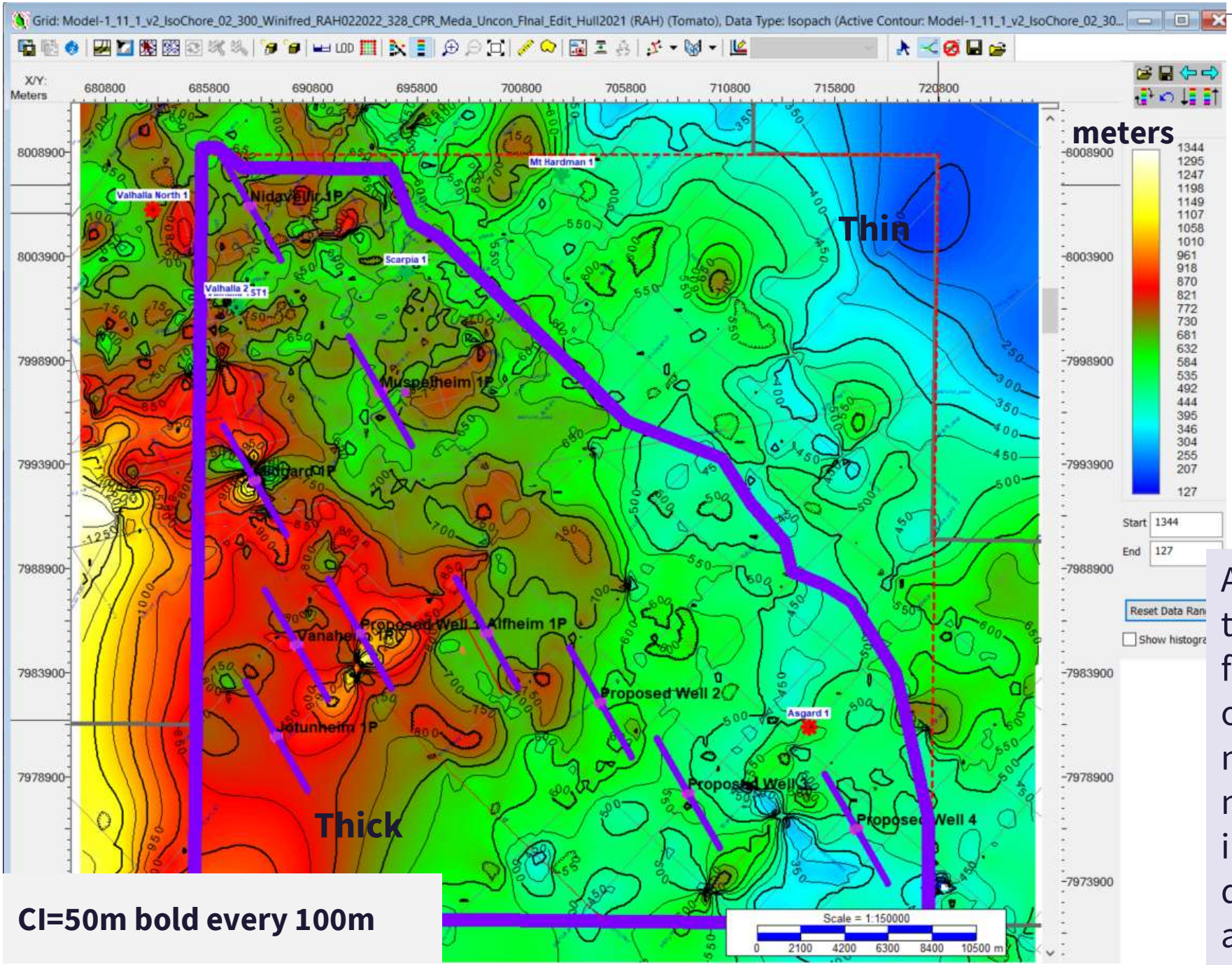
Figure 1c Poole to Grant/Winifred Isochore (Aquifer)



CI=50m bold every 100m

A substantial thick section from 400 m to over 900m is noted for this interval in the development area.

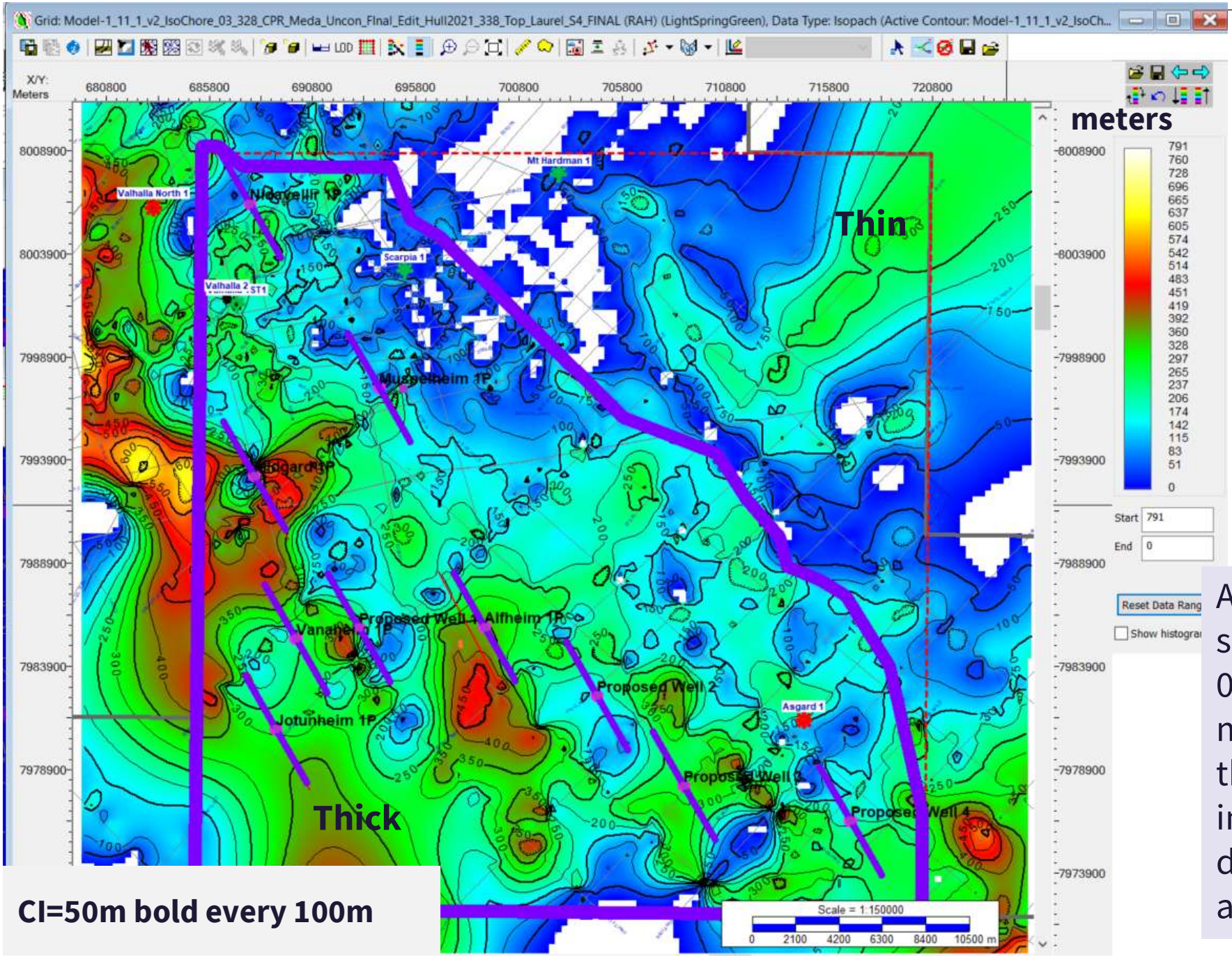
Figure 1d Winifred To Anderson Isochore (Non-Aquifer)



CI=50m bold every 100m

A substantial thick section from 500m to over 900m is noted for this non aquifer interval in the development area.

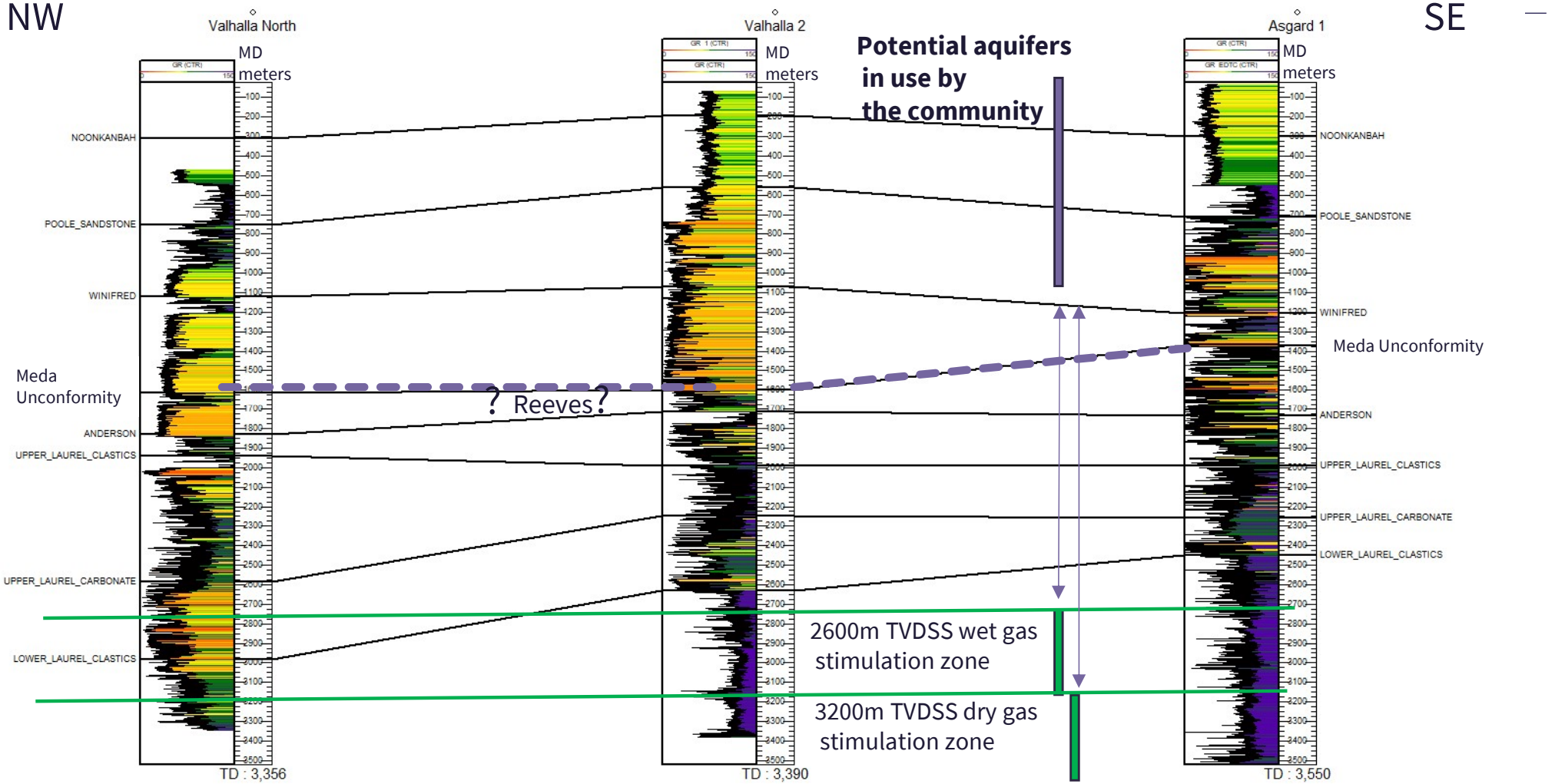
Figure 1e Anderson to Laurel Isochore (Non-Aquifer)



CI=50m bold every 100m

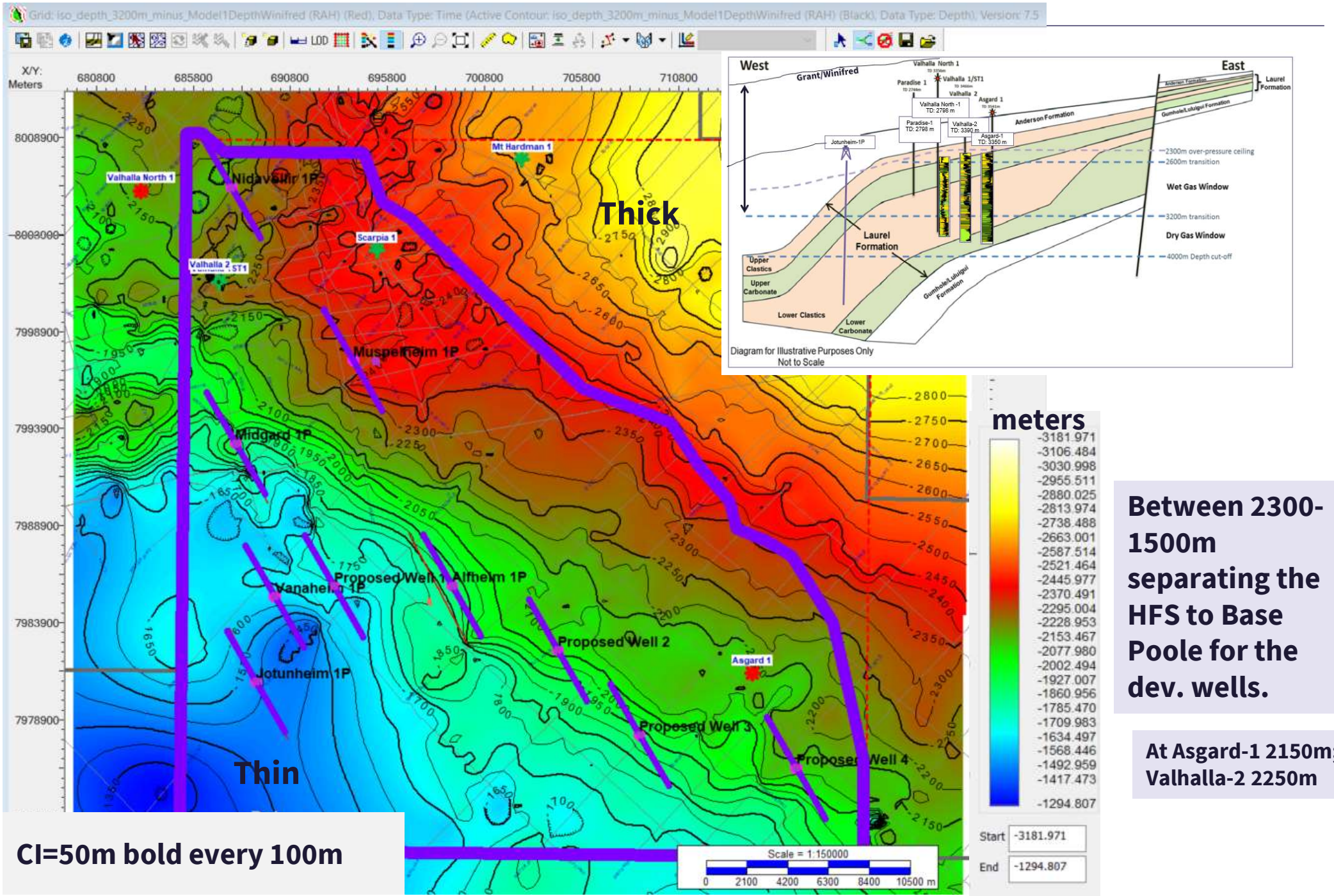
A thinner section from 0m to over 450 m is noted for this non aquifer interval in the development area.

Figure 2 Regional Cross Section illustrating regional lithostratigraphy



Shallowest stimulation depths in excess of 1,550 m from aquifers in use at Asgard -1.
Deeper dry gas in excess of 2,150m from aquifer at Asgard-1.

Figure 3a map showing the lateral variability of offset between the shallowest HFS interval that is likely (3200m) and the base of the deepest aquifer (Poole)/ Top Grant Winifred

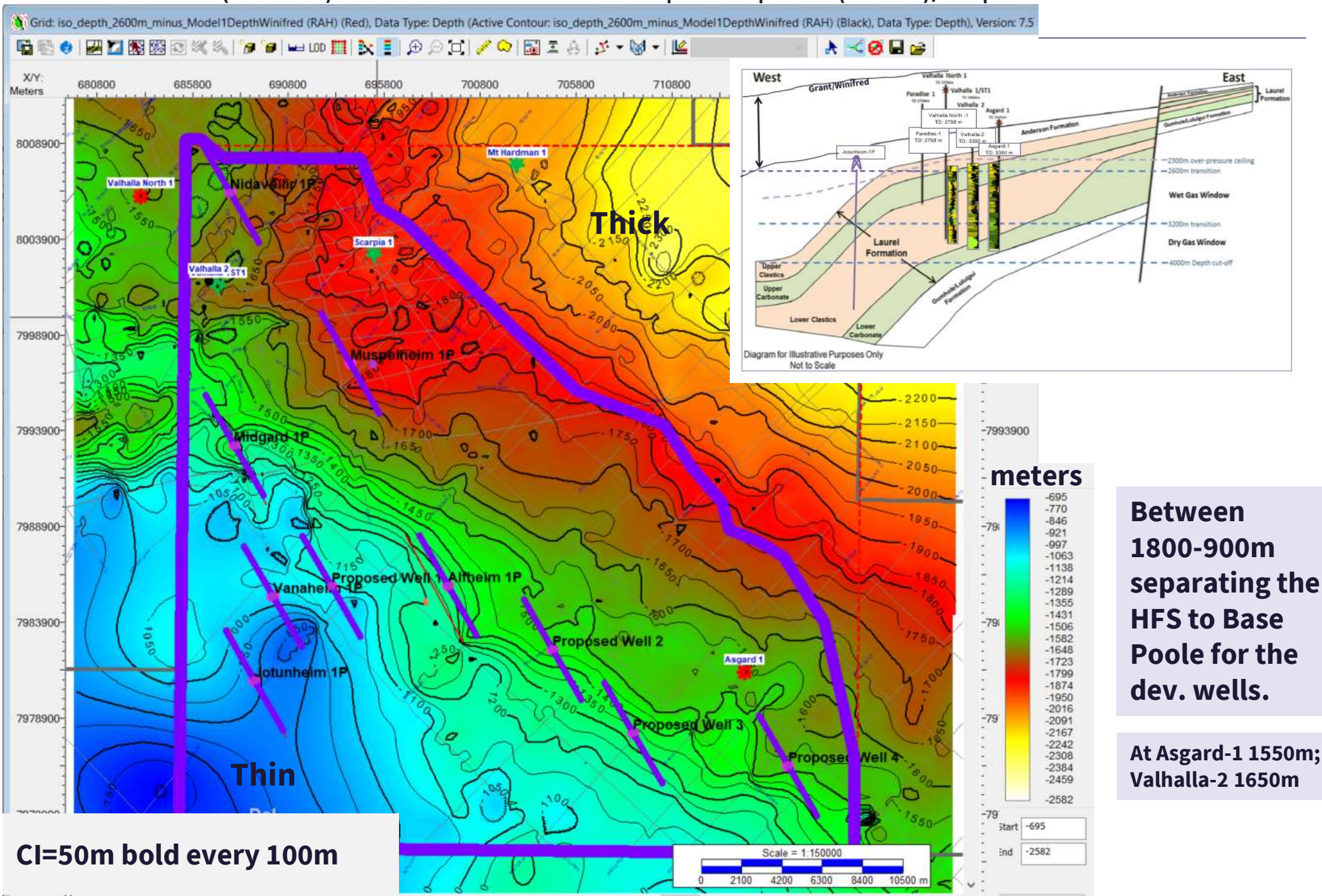


Between 2300-1500m separating the HFS to Base Poole for the dev. wells.

At Asgard-1 2150m; Valhalla-2 2250m

CI=50m bold every 100m

Figure 3b map showing the lateral variability of offset between the shallowest potential HFS interval (2600m) and the base of the deepest aquifer (Poole)/ top Grant Winifred



Between 1800-900m separating the HFS to Base Poole for the dev. wells.

At Asgard-1 1550m; Valhalla-2 1650m

CI=50m bold every 100m

LAUREL STRATIGRAPHIC BENCH MODEL

- Prograding Laurel marine siliciclastics and carbonates were deposited in a transitional ramp setting.
- Key updip vertical have tested producible quantities of thermogenic gas.
- A future well is envisioned targeting downdip upper Laurel reservoirs that are optimal in reservoir quality as well in a dry gas window of higher pressure.

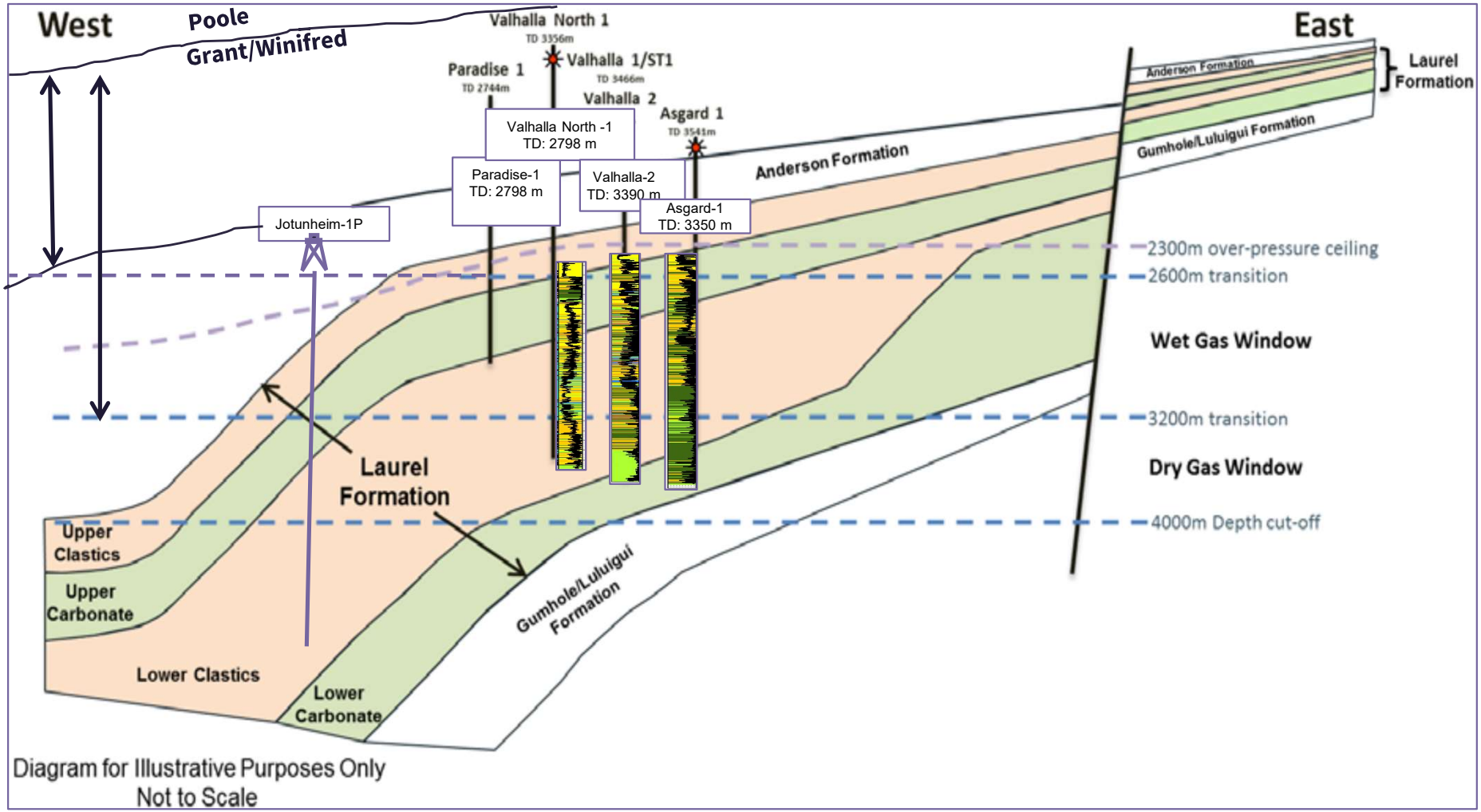
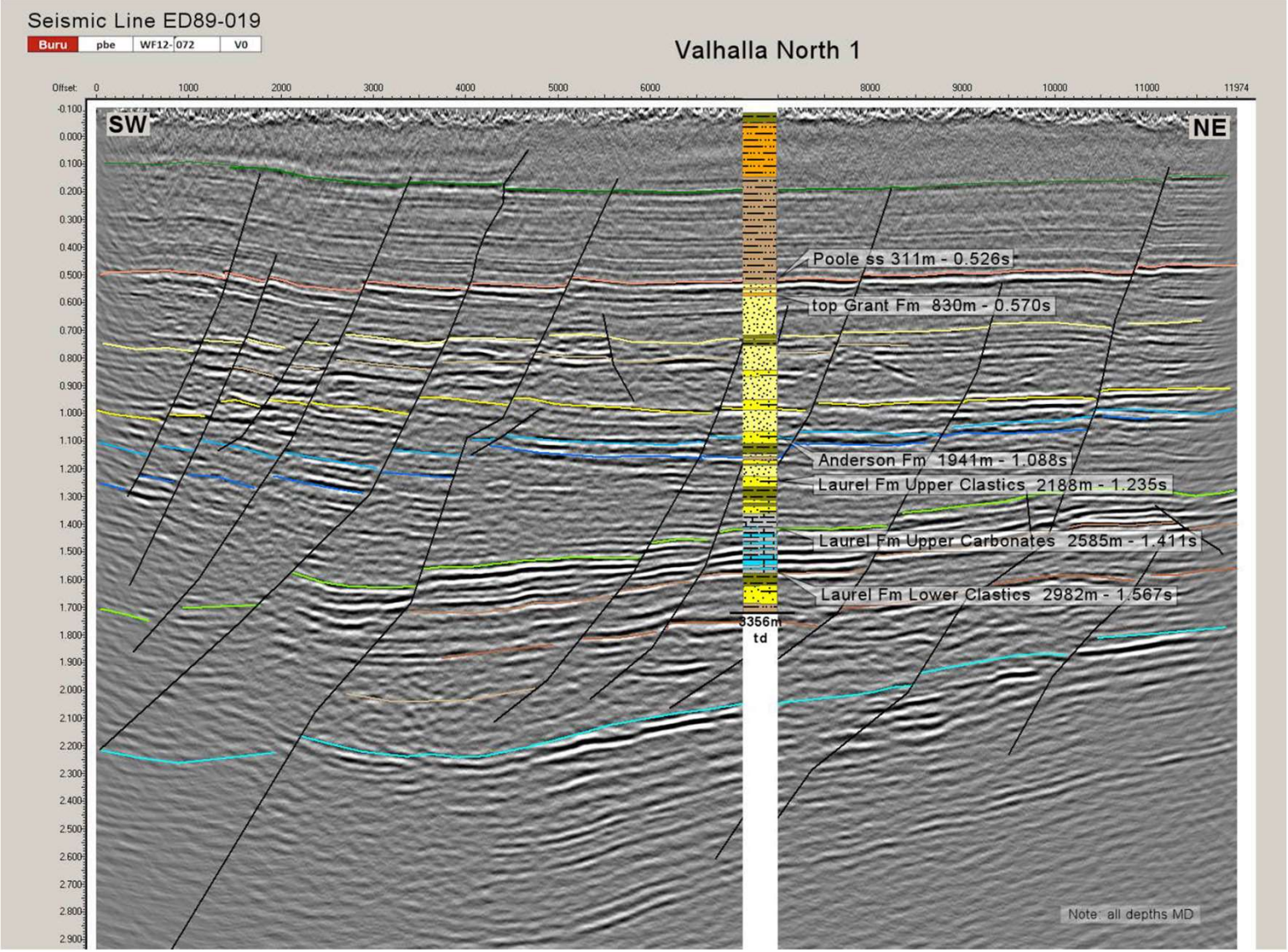


Figure 4

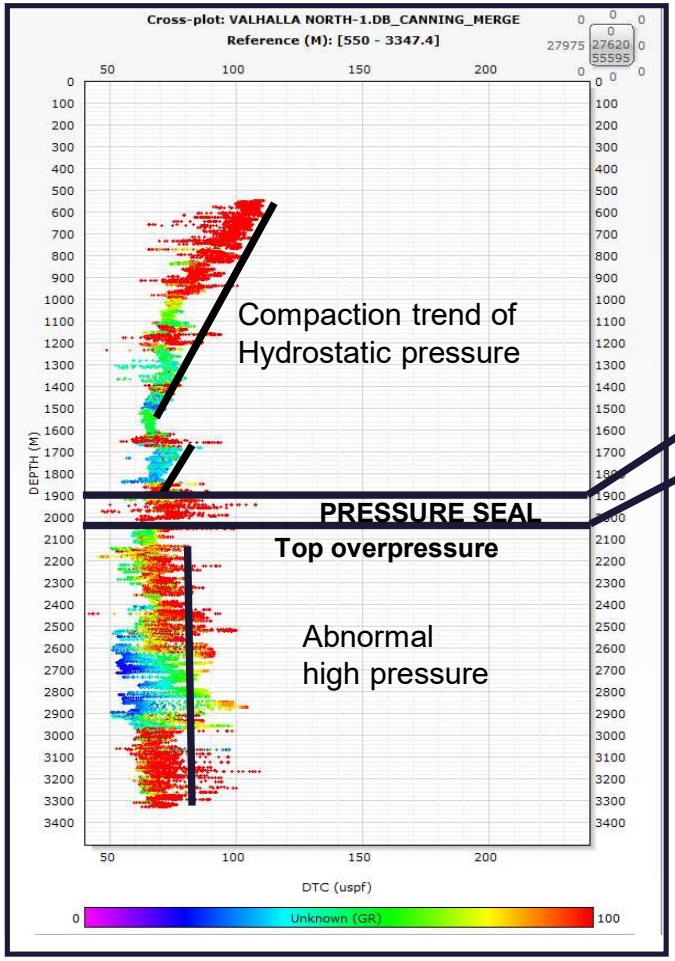
Faults here typically place older units up dip against younger units downdip.

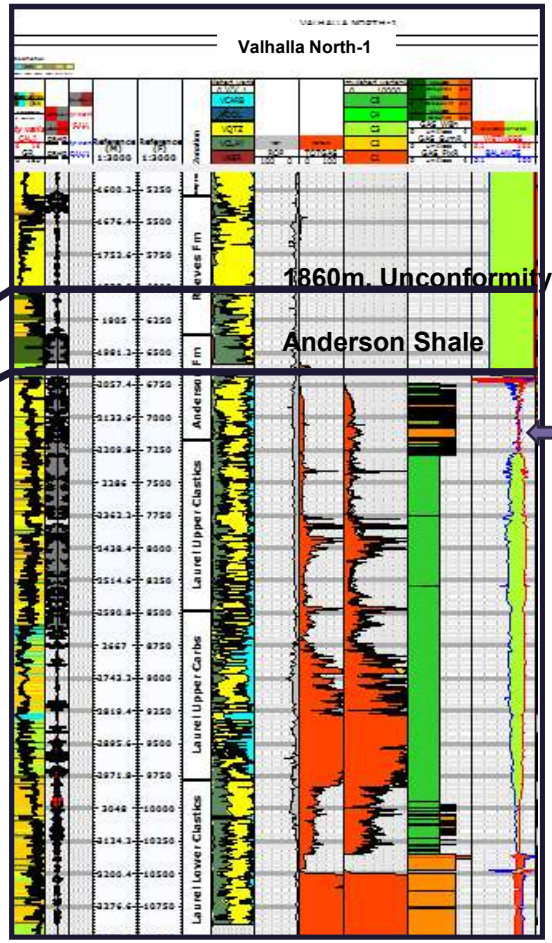
We do not anticipate given the current data any significant juxtaposition against younger (Poole) units updip



Seismic section ED89-019 with Valhalla North 1.

Figure 5 Pressure Seal





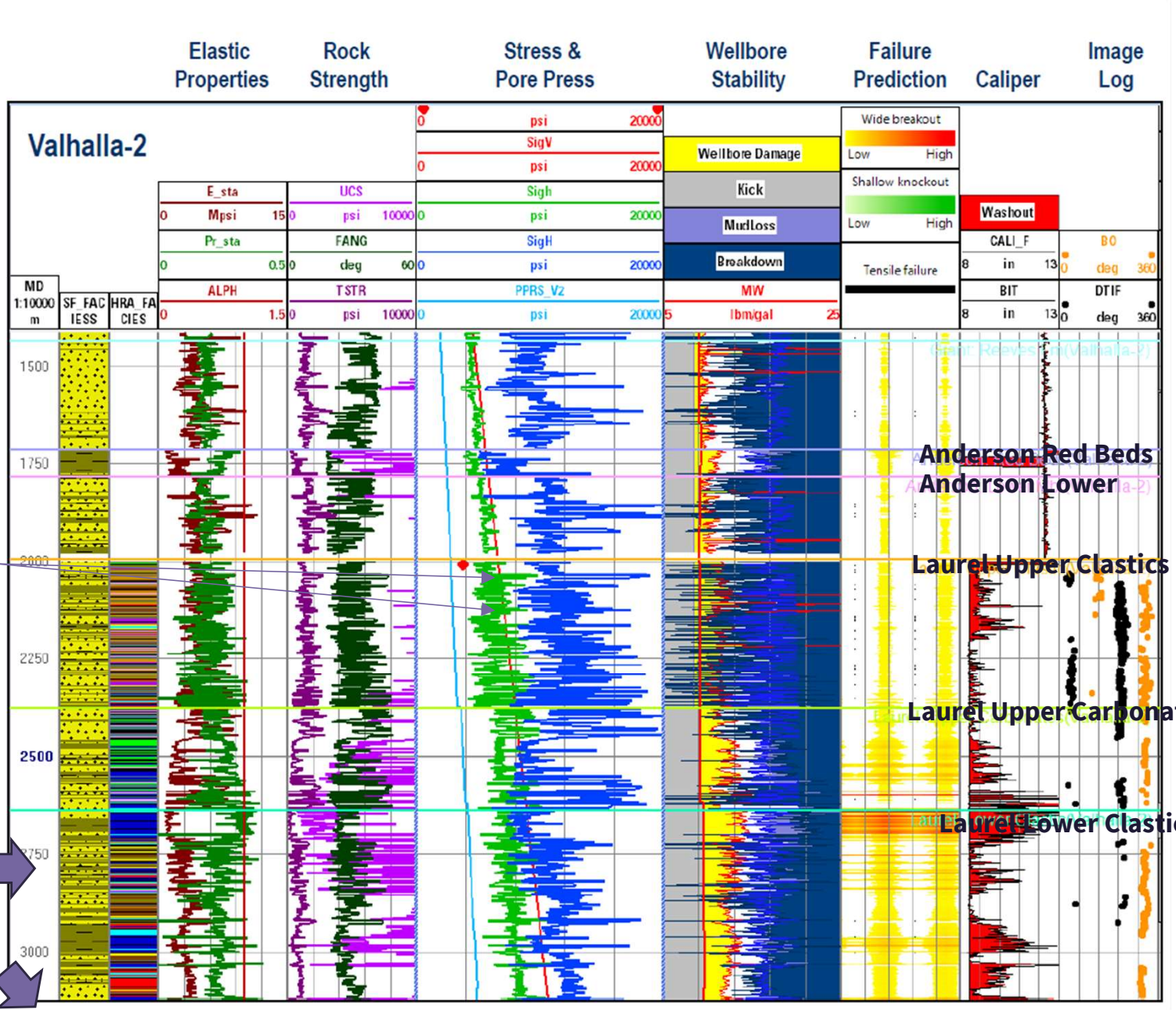
..20m thick sand was encountered at 2130mMD which produced a moderate mud gas increase accompanied by 5-40% gold fluorescence with a weak solvent cut. Thinner sands above and below this zone also exhibited hydrocarbon shows (fluorescence and cut).

Fracturing, Faulting, and Stress

Figure 6: Valhalla 2 Sonic Log

BLACK MOUNTAIN OIL & GAS

Formations with higher rock strength (UCS) and higher relative stress are found above hydrocarbon targets of interest



High Rock Strength ~ 10,000 PSI

Higher Anticipated Poroelastic Stress

High Rock Strength > 10,000 PSI

A stimulation at 2600m SS (2725 MD)

A stimulation at 3200m SS (3325 MD)

Anderson Red Beds

Anderson Lower

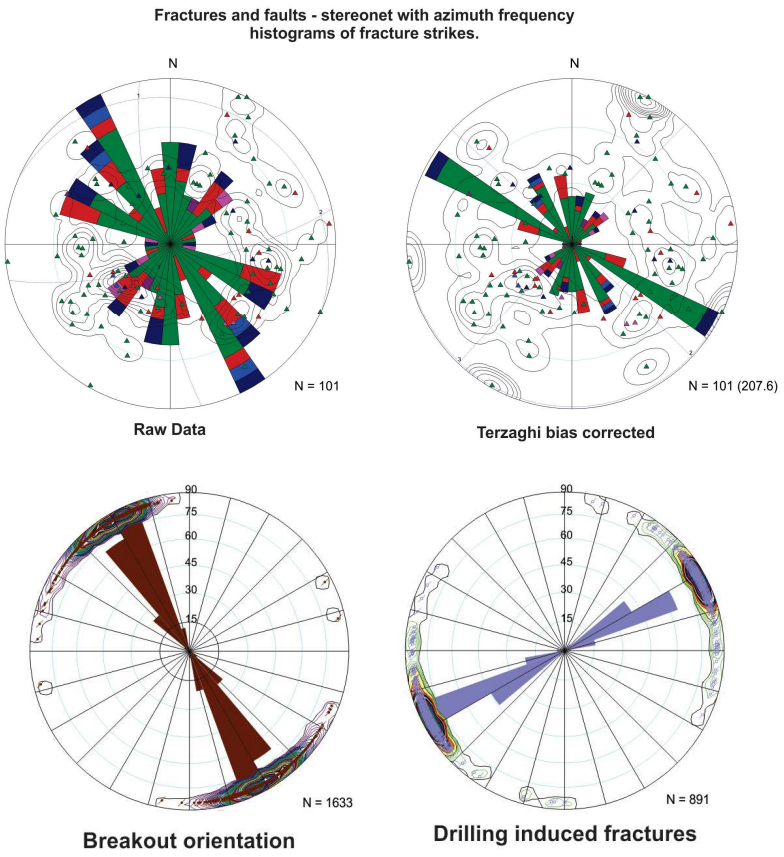
Laurel Upper Clastics

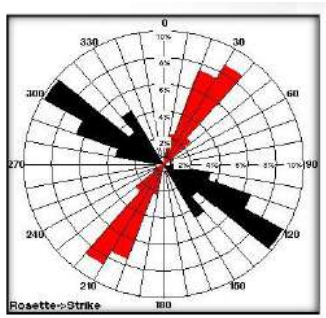
Laurel Upper Carbonates

Laurel Lower Clastics

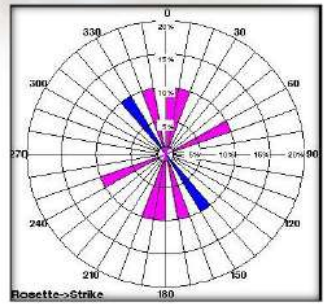
Figure 7: Fracturing/Faulting vs. Stress Direction

- Intense and frequent fracturing and faulting situated 60-90 degrees from SH,max
  - Implications:
    - Ideal orientation to create fracture enhanced system permeability feed-in through crossing fractures
    - Difficulty opening the fractures in tension (mode I), restricting or eliminating the ability to dilate and prop



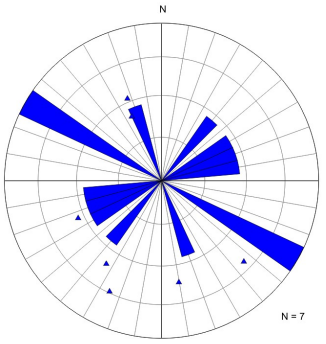


Strike orientations of Drilling induced fractures and Borehole Breakouts



Strike orientations of all natural conductive & partially conductive fractures

Fault and candidate fault strike



Raw data

Figure 8: World Stress Map, 2016 Revision

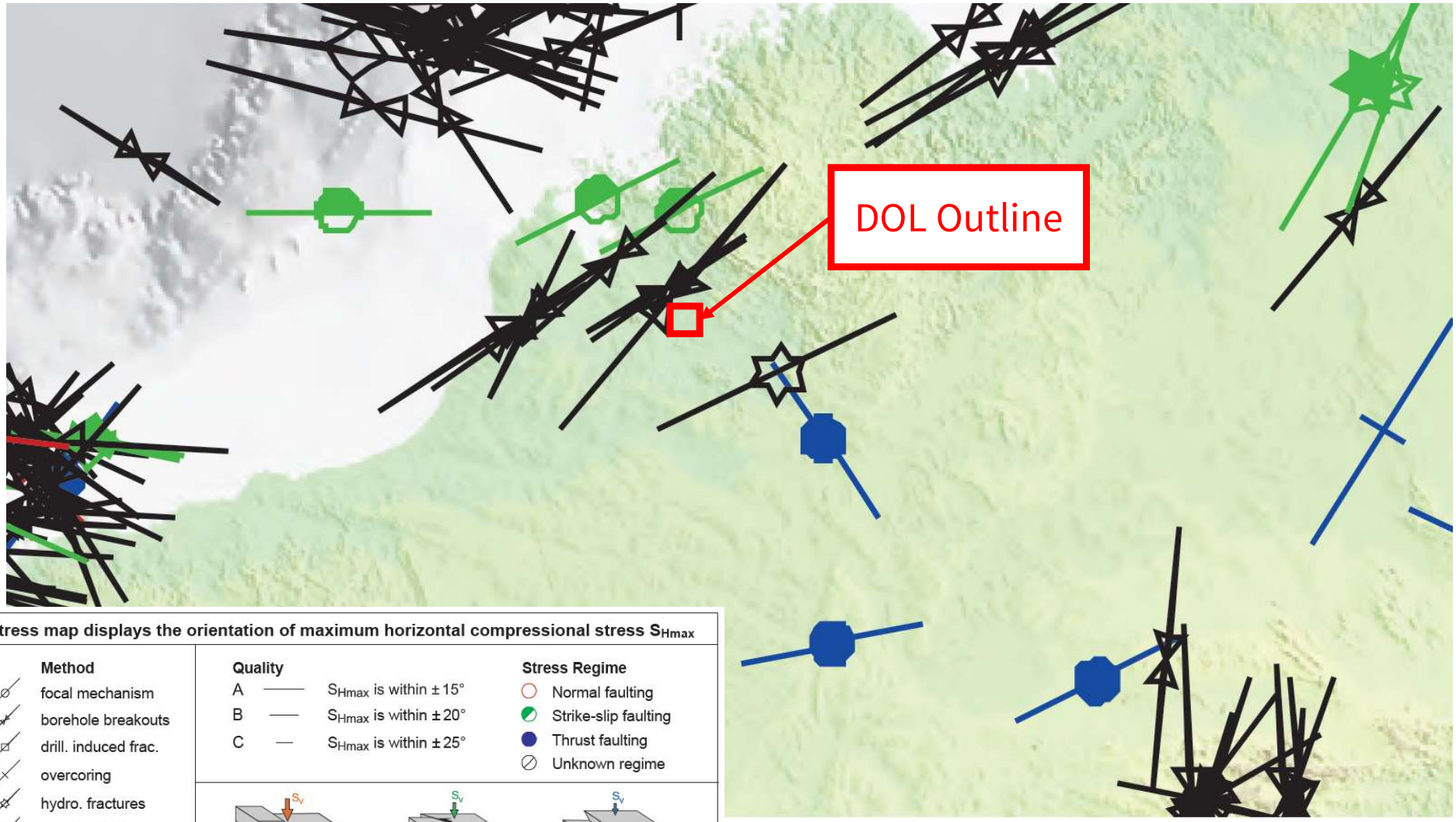


Figure 9: Microseismic Review from Valhalla North 1

- Significant vertical growth, but heights are within range of uncertainties
  - Bulk of microseisms range from 200-300 meters per zone
  - Uncertainty +/- 360 meters

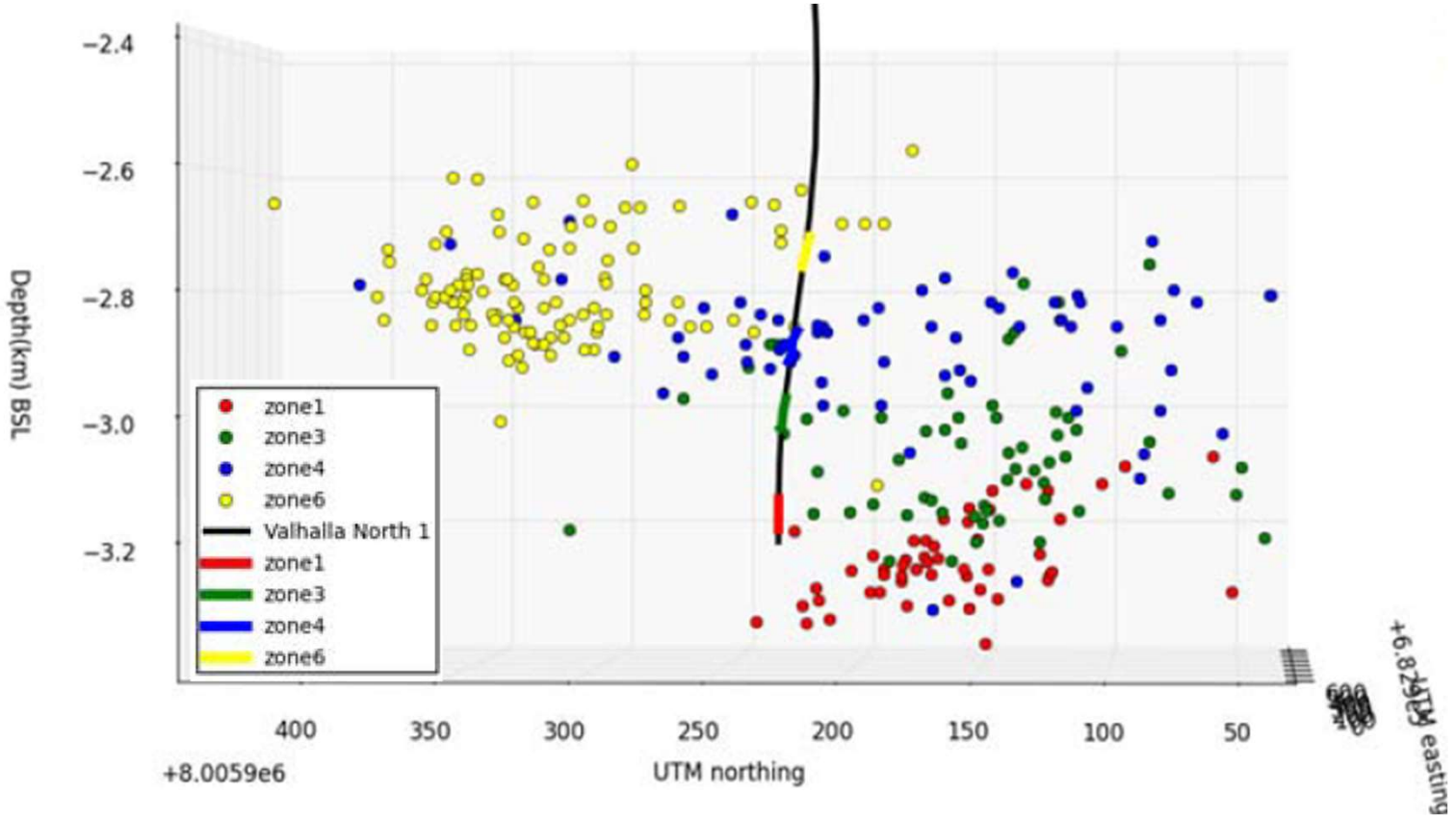


Figure 10: Warpinski 2011: True Vertical Depth in (ft) vs. Aquifer Depth

- 1,000's of feet separate all recorded microseisms and aquifer depths