

Figure 6: Stockwell Fault Block - TWT Map for the base of dolerite (Early Jurassic) based on change in seismic character and continuous strong reflectors

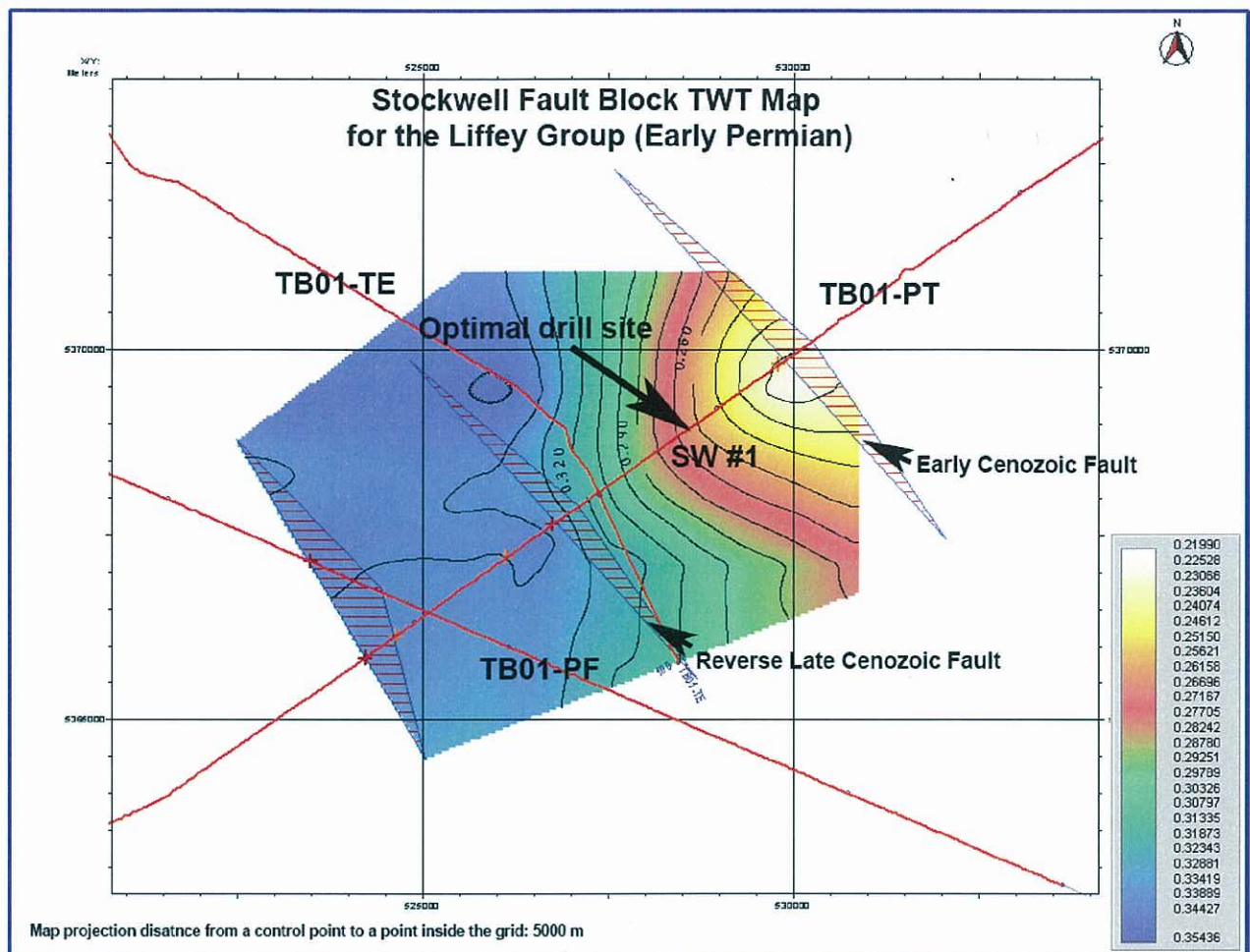


Figure7: Stockwell Fault Block - TWT Map for the Liffey Group (Early Permian) based on change in seismic character and continuous strong reflectors



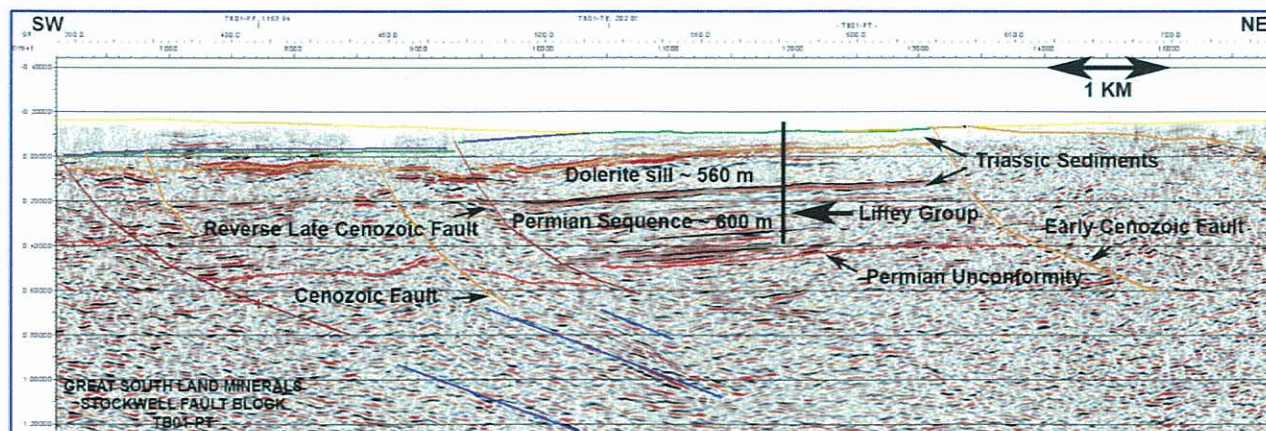


Figure 8: Stockwell Fault Block onTB01-PT

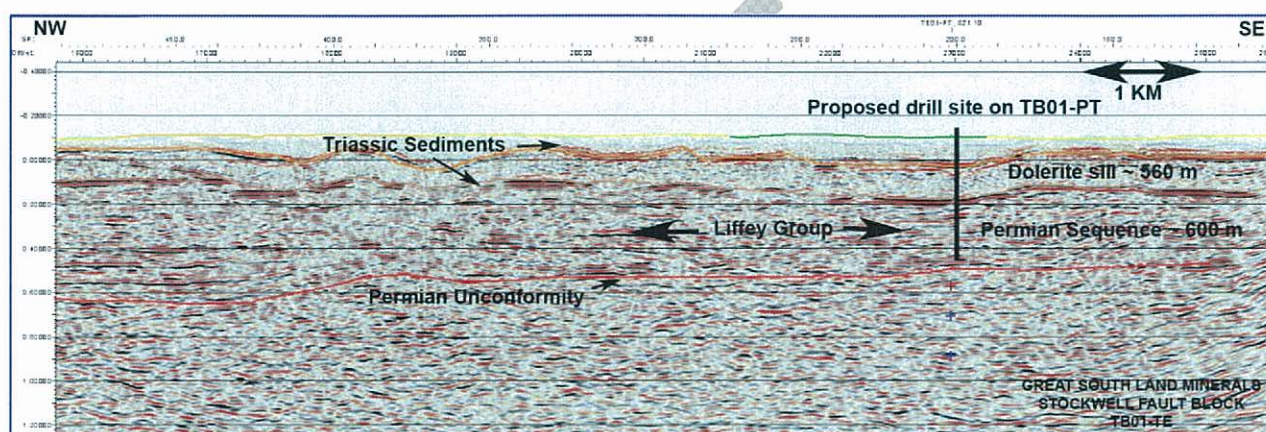


Figure 9: Stockwell Fault Block onTB01-TE

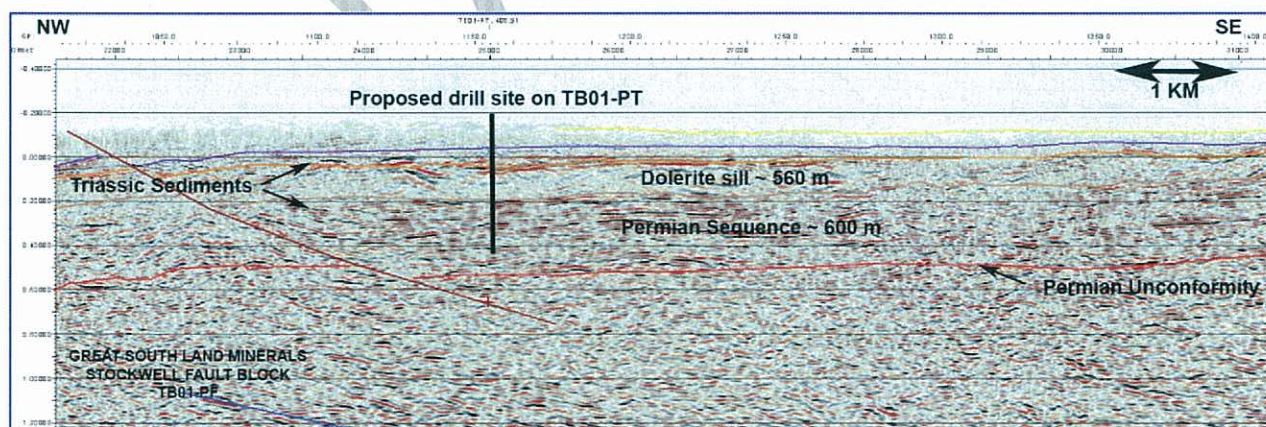


Figure 10: Stockwell Fault Block onTB01-PF

## Stockwell (Lachish)

**Drill Hole:** Stockwell #1

**Location:** 528 560.70 mE, 5 368 921.81 mN

**Landowner:**

**On seismic line:** TB01-PT    **between shot-points:** 550 and 650

**Structure:** Fault Block bounded to the NE by an Early Tertiary Fault and to the SW by a Later Tertiary Fault

**Size of structure:** 3500m (two-way)

**Size of potential reservoir (based on 1km square area, 50m Pay Zone, 10% Porosity):**

5 MM m<sup>3</sup> *in situ* (Unit 2)

**Size of potential reservoir (based on 1.2km square area, 15m Pay Zone, 5% Porosity):**

1 MM m<sup>3</sup> *in situ* (Liffey Group)

**Depth to Target:** Multiple Targets, Unit 2-Triassic, Liffey Group-Lower Parmeener Supergroup

Top Unit 2 ~ 800m

Liffey Group ~ 1200m

**Seal:** Jurassic Dolerite, Ferntree Formation

**Reservoir:** Unit 2, Liffey Group

**Source:** Woody Island Formation (Tasmanites)

**Risks:** Timing - Maturation and migration in the Mid-Jurassic to the Cretaceous - traps were formed in the early Tertiary to the Miocene. Burial in the Tertiary, plus an elevated geothermal gradient may result in generation of late hydrocarbons.

**Reservoir Volume as US Barrels (BOE)**                      **4 million barrels (P90)**

**(Monte Carlo calculation of potential,**                      **11 million barrels (P50)**

**undiscovered prospective resources)**                      **25 million barrels (P10)**

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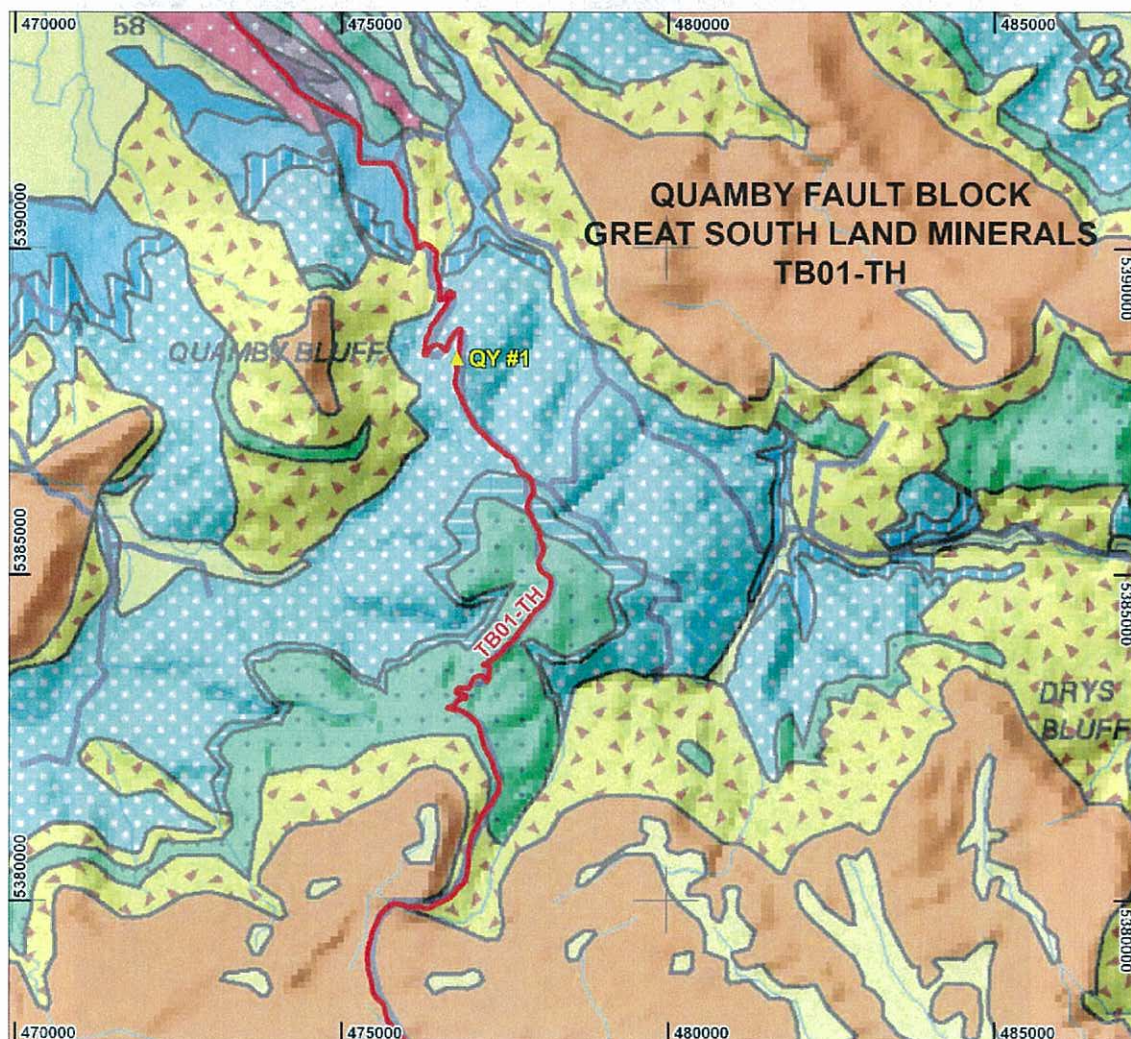






**GREAT SOUTHLAND MINERALS LTD**  
**LEAD / PROSPECT DEFINITION (Draft)**  
**Quamby Fault Block**

Plays in the Gondwana petroleum system such as the Quamby Fault Block involve a diversity of structural traps developed by both pre- and post- dolerite tectonic events and stratigraphic traps resulting from pinch outs with dolerite sheets. The best potential traps are formed by rollover anticlines and numerous tilted fault blocks in the Longford Sub-basin. Large fault bounded blocks are the most common style in the Northern Midlands. No exploration well has been drilled on a target identified from a seismic reflection survey.



**Figure 1: Geology DEM Map (Dolerite outcropping in orange)**

The gravity data is presented in terms of AMG66 zone 55 coordinates and AHD. **Figure 2** presents raw Bouguer anomalies (as observed, corrected and reduced), and **Figure 3** shows residual Bouguer anomalies (after removal of crustal trends using the method of Leaman & Richardson, 1989 and Roach et al, 1994).



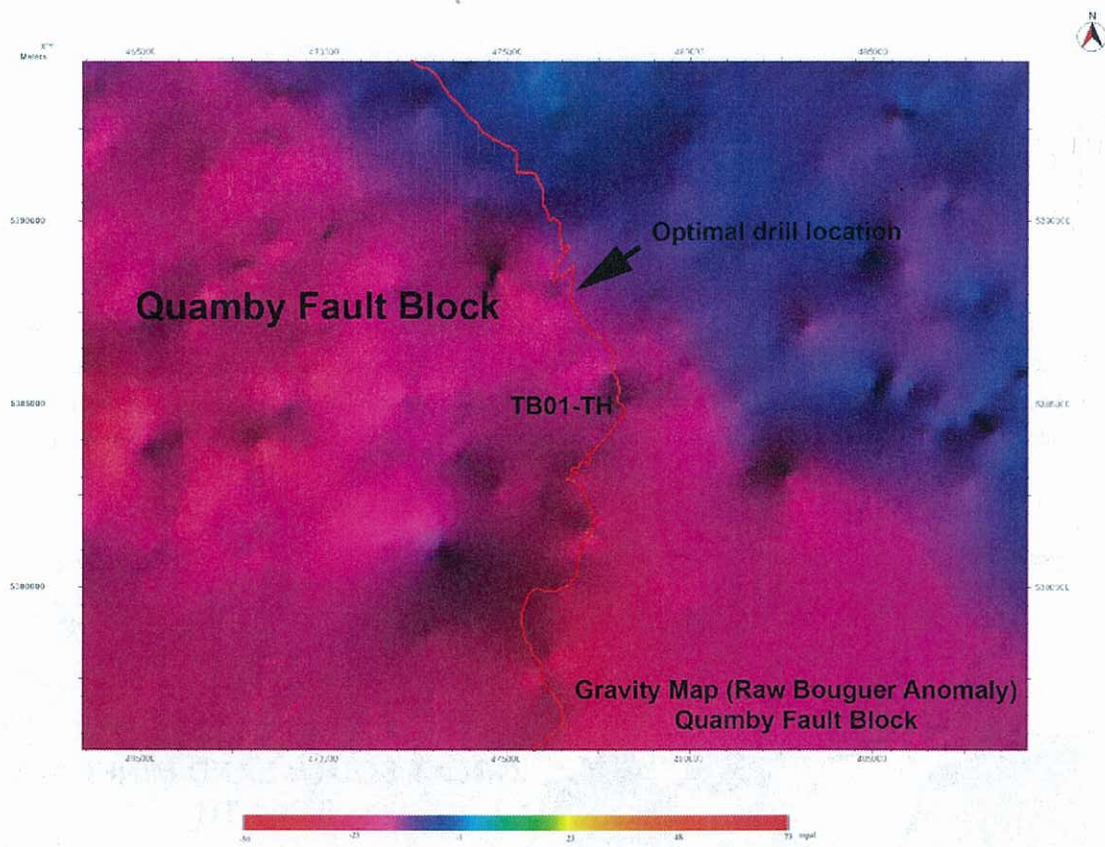


Figure 2: Gravity Map (Raw Bouguer Anomaly), Quamby Fault Block

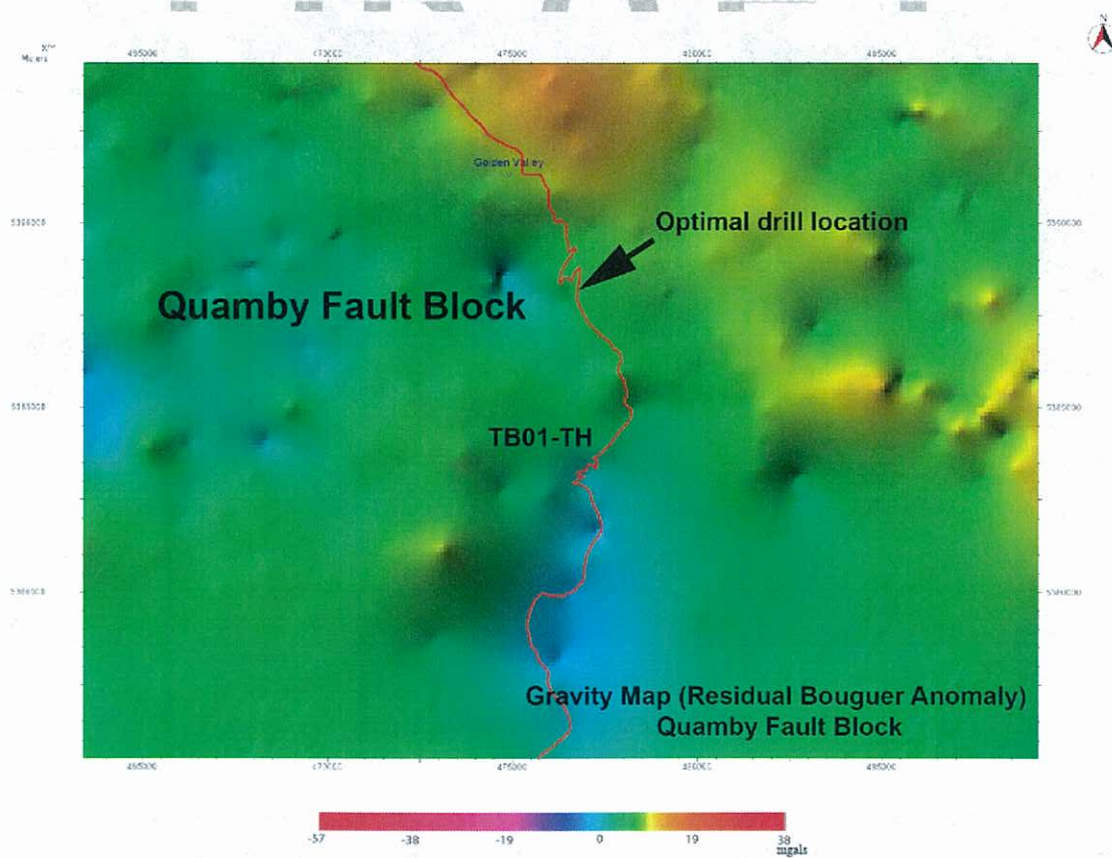


Figure 3: Gravity Map (Residual Bouguer Anomaly), Quamby Fault Block

The Tasmania Basin was faulted and weakly folded prior to and/or during the intrusion of dolerite in the Middle Jurassic. Structures of this age are common in the Central Highlands, but difficult to recognise in the Longford Sub-basin/Northern Midlands regions. Gentle folds and faults with both normal and reverse offset are recognised. Some faults have acted as conduits for dolerite dykes and step ups in sills. Following the intrusion of dolerite the Tasmania Basin was affected by uplift, erosion and extensional faulting. Folds and faults formed in the Tasmania Basin at this time are more common than earlier structures (Stacey A, 2007).

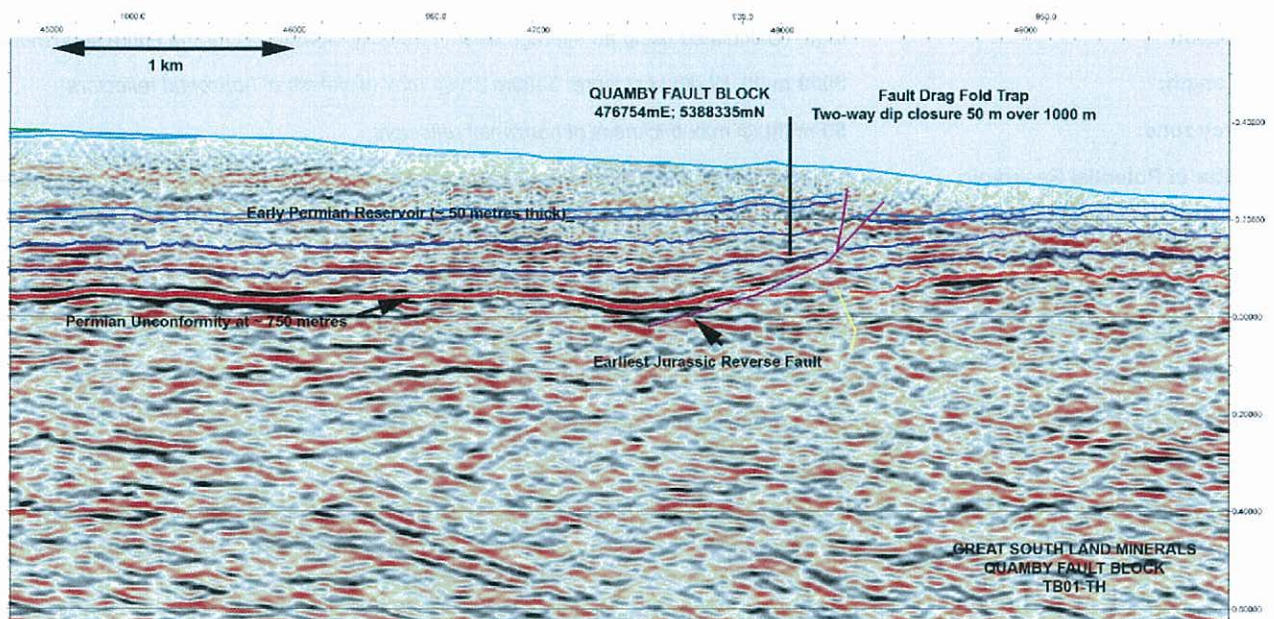


Figure 4: Quamby Fault Block - Two-way dip closure 50m over 1000m



**Drill Hole:** QY#1  
**Location:** 476 754 mE: 5388 335 mN  
**Landowner:** TBA  
**On seismic line:** TB01-TH  
**Structure:** Quamby Fault Block

**Target Surface Area:** 9 km<sup>2</sup> m (two-way)  
**Depth:** m (ft) (Calculated using an average seismic velocity of 4500m/s for the entire sequence)  
**Length:** 3000 m (ft), Width of closure: 3000m (ft) @ *max thickness of horizontal reflectors*.  
**Pay zone:** 50 m (ft) @ *max thickness of horizontal reflectors*  
**Size of Potential Reservoir:** 0.9 x 10<sup>9</sup> m<sup>3</sup> @ *max thickness of horizontal reflectors* (calculated using a rectangle to determine reservoir area and reservoir length of 3 km) which at 10% porosity approx. 0.56 billion barrels (or gas equivalent)  
**Depth to Target:** Liffey Group-Lower Parmeener Supergroup  
 Liffey Group at ~ 230 m  
**Seal:** Jurassic Dolerite, Ferntree Formation  
**Reservoir:** Liffey Group - Early Permian  
**Source:** Woody Island Formation (Tasmanites)  
**Risks:** Timing - Maturation and migration in the Mid-Jurassic to the Cretaceous - traps were formed in the early Tertiary. Burial in the Tertiary, plus an elevated geothermal gradient may result in generation of late hydrocarbons.

<b>Reservoir Volume as US Barrels (BOE)</b>	<b>2 million barrels (P90)</b>
<b>(Monte Carlo calculation of potential,</b>	<b>5 million barrels (P50)</b>
<b>undiscovered prospective resources)</b>	<b>10 million barrels (P10)</b>

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## GREAT SOUTHLAND MINERALS LTD

### LEAD / PROSPECT DEFINITION

#### Bracknell Dome

This prospect is located on the northeast part of the license area (SEL 13/98) where a northwest to southeast trending Tertiary Sub-basin was formed on the Jurassic age dolerites causing them to subside under the Tertiary basin filling. The structure is defined primarily by seismic lines TB01-SA, TB01-PM and TB01-SD; TB01-PW TB01-SC and TB01-SB are within vicinity of the structure and help the characterize the structure. Bracknell Dome is approximately 2.5 km wide and at least 8 km long.

The Tertiary sequences are not prospective on their own, due to the lack of mature source rocks and appreciable structuration. But, a very distinct NW-SE trending fault bound structural trap is formed beneath the Tertiary basin at the level of Jurassic dolerites which could be quite prospective provided Permian sequences consisting of thick shales and sandstones underlie the Jurassic dolerite which is distinctly visible on the reflection seismic sections studied.

Permian sequences consist of good reservoir and mature source rocks which have proven their oil generating potential in the live oil seeps found in the cracks and fissures of overlying dolerites found in the quarries near the city of Hobart. As such, it is also thought that the Jurassic dolerites could be good reservoirs containing oil due to the extensive fracturing and breakage caused by the faulting and compression related to the Tertiary tectonism which formed this prospect.

Tertiary fault bounded structures may be exploration targets if charged by secondary migration. Steep faults and vertical feeder and dyke systems associated with Jurassic Dolerite may provide migration pathways to stratigraphically higher reservoirs such as the Risdon Sandstone and Unit 2 (Bacon et al., 2000). Stratigraphic traps may include the lutite of Unit 2 and pinch outs beneath dolerite seals (Bedi, 2003).

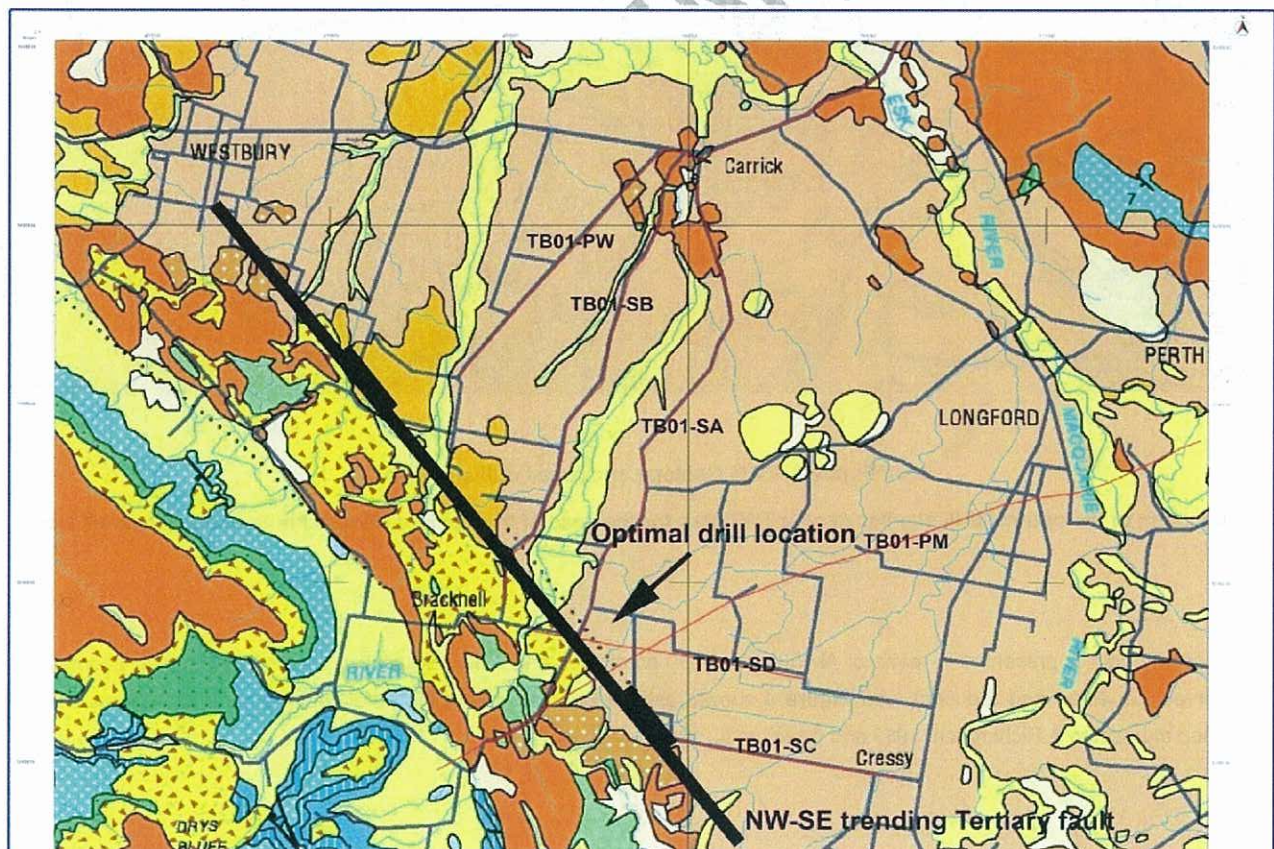


Figure 1: Geology Map (Dolerite outcropping in orange). Location of the optimal drill site based on a TWT Map for the base of the Tertiary Unconformity of the Bracknell Dome.



A well that will test this prospect will be drilled into the Jurassic dolerites and underlying Permian sequences, consisting of reservoirs and mature source rocks, at an approximate depth of about 1450m.

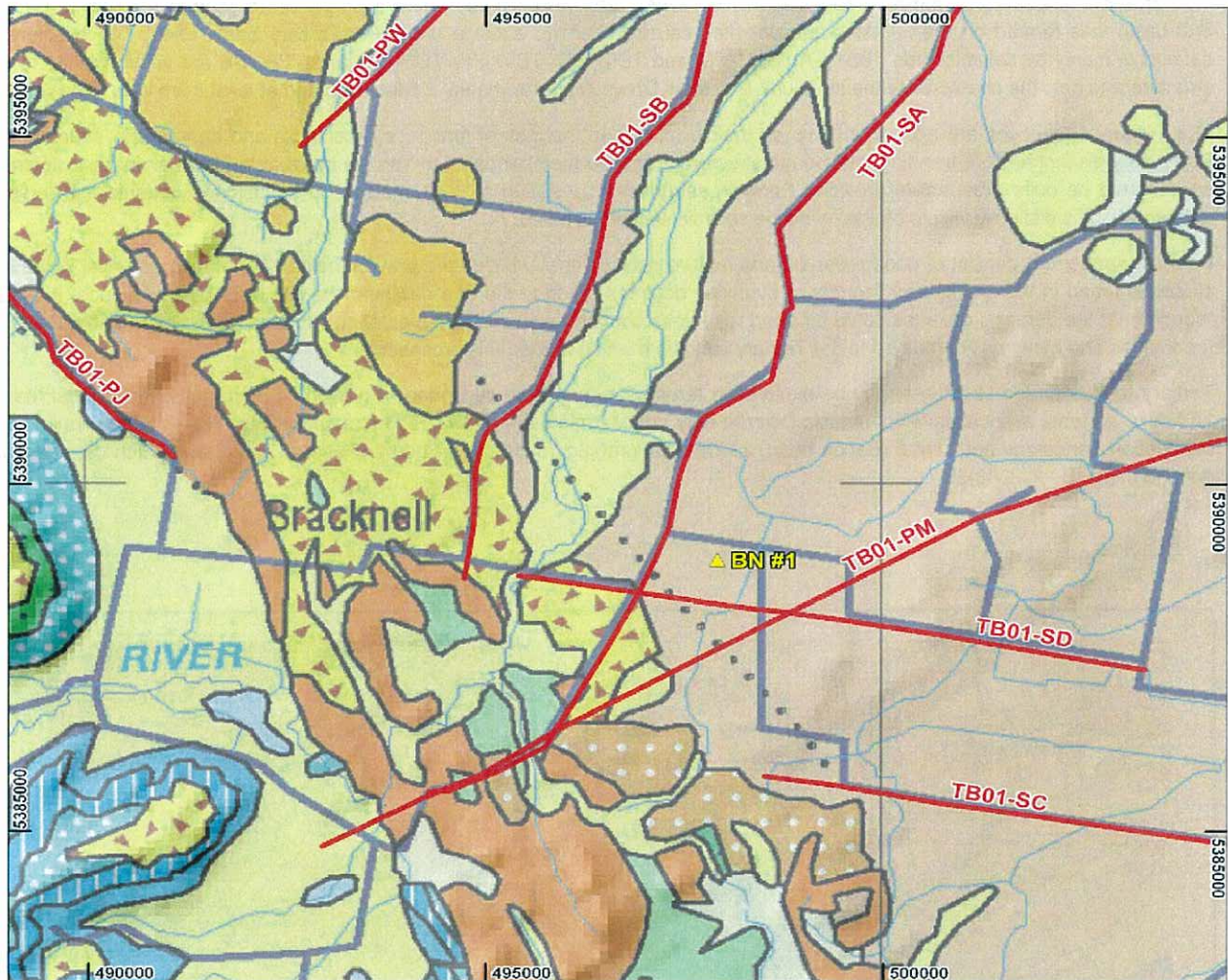


Figure 2: DEM Geology, proposed drill site BN#1 -

Location of the optimal drill site based on a TWT Map for the base of the Tertiary Unconformity of the Bracknell Dome.

The gravity data is presented in terms of AMG66 zone 55 coordinates and AHD. **Figure 3** presents raw Bouguer anomalies (as observed, corrected and reduced), and **Figure 4** shows residual Bouguer anomalies (after removal of crustal trends using the method of Leaman & Richardson, 1989 and Roach et al, 1994).



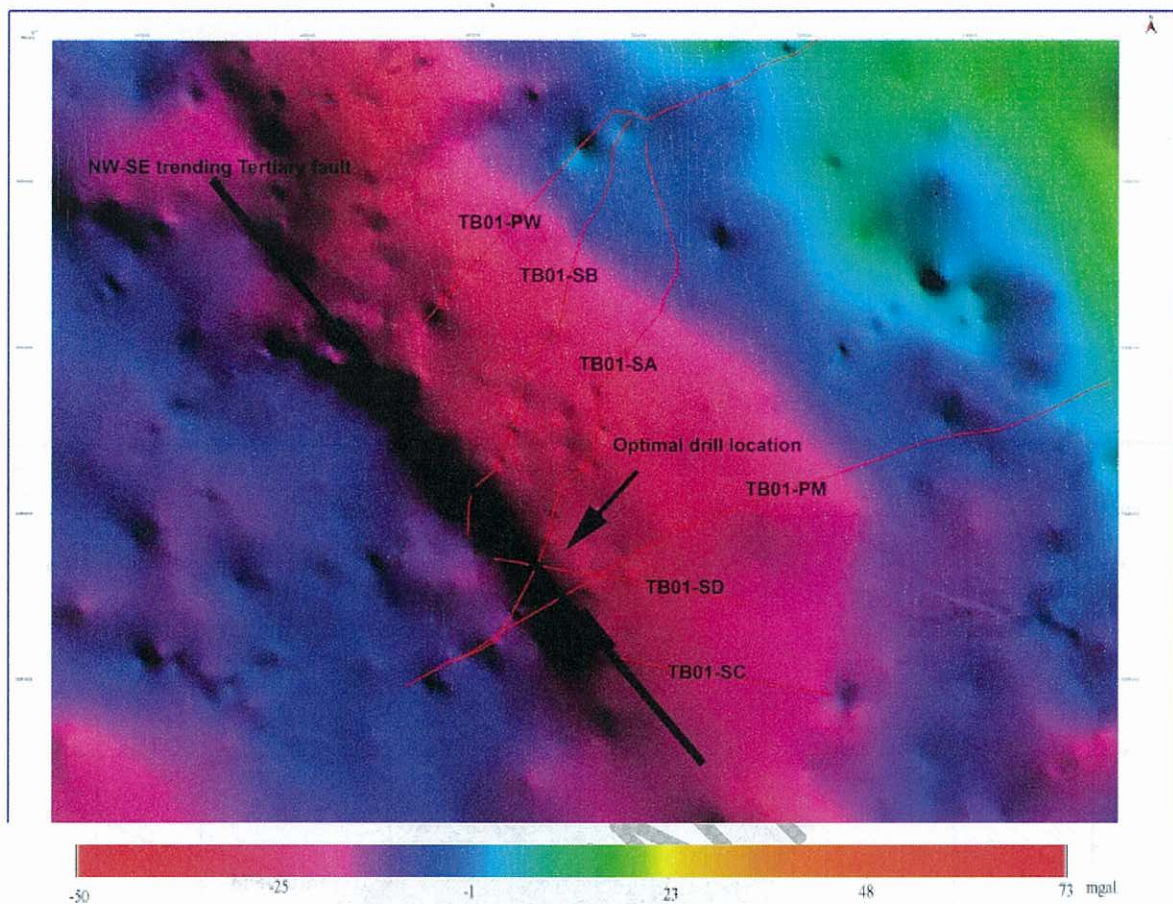


Figure 3: Gravity Map (Raw Bouguer Anomaly Bracknell Dome

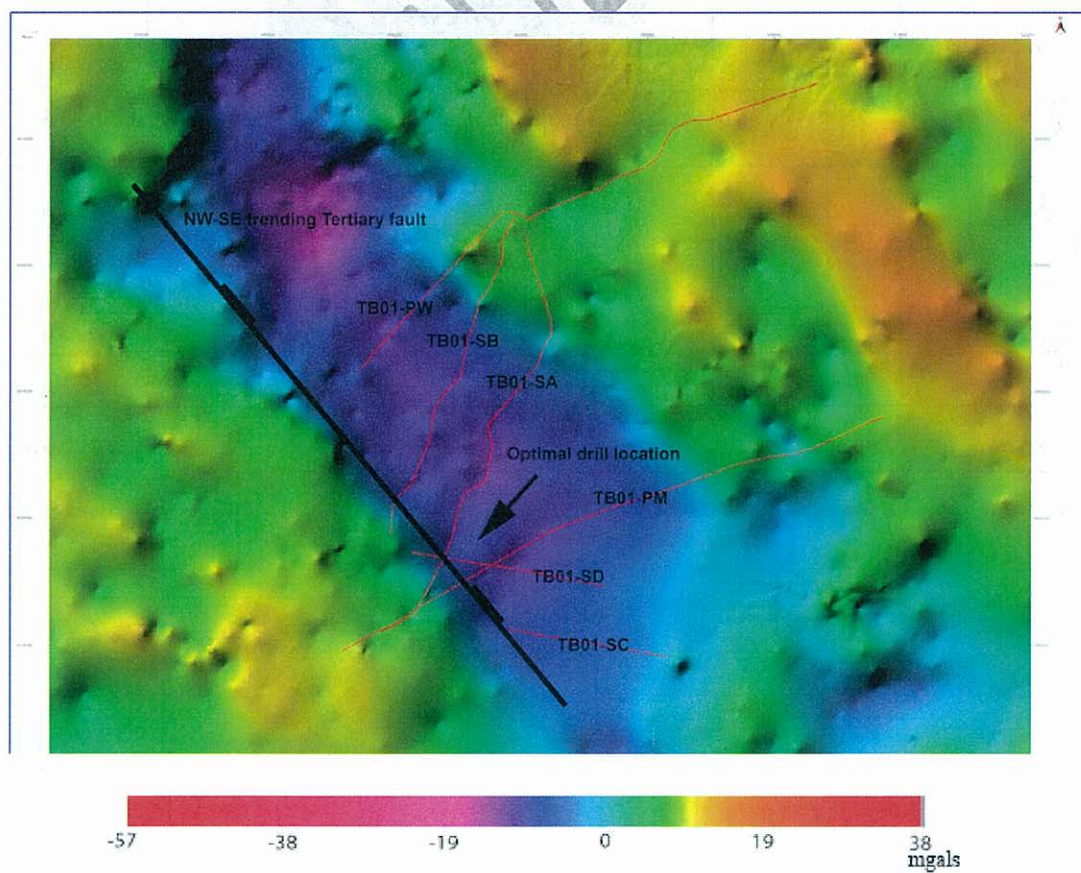


Figure 4: Gravity Map (Residual Bouguer Anomaly) - Bracknell Dome



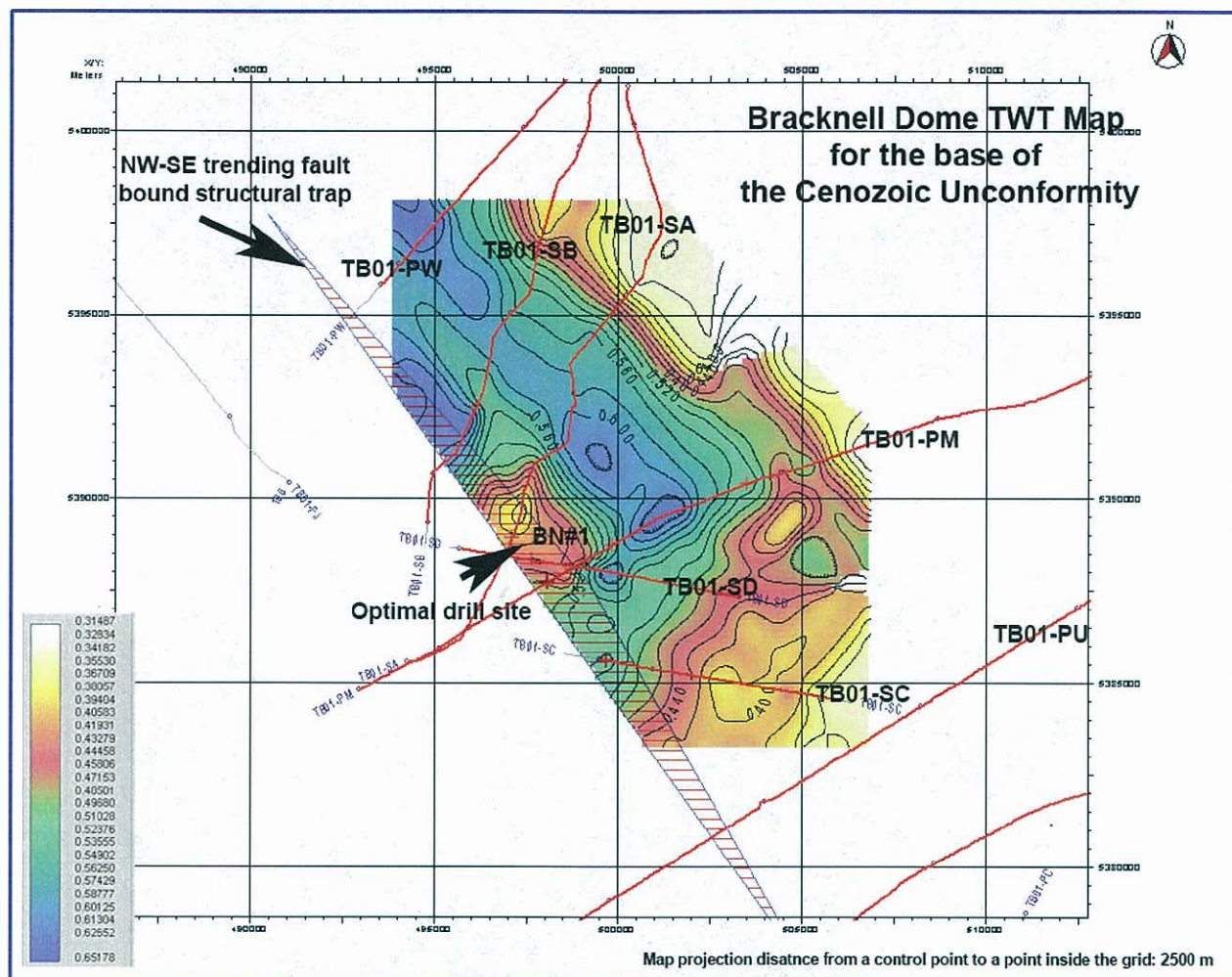


Figure 5: TWT Map for the base of the Cenozoic (Tertiary) Unconformity of the Bracknell Dome based on change in seismic character and continuous strong reflectors.



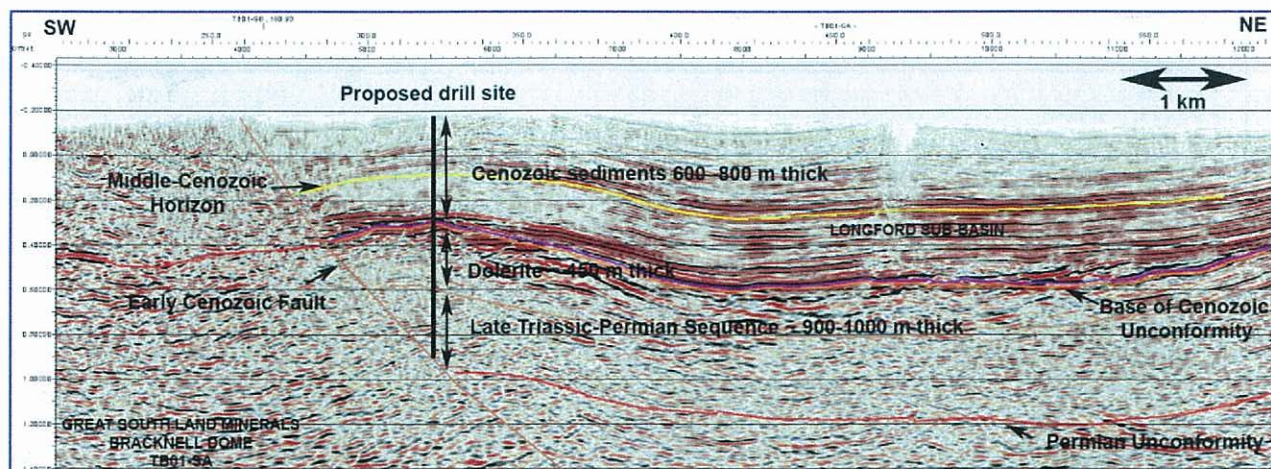


Figure 6: TB01-SA Bracknell Dome - Proposed drill site based on TB01-SA

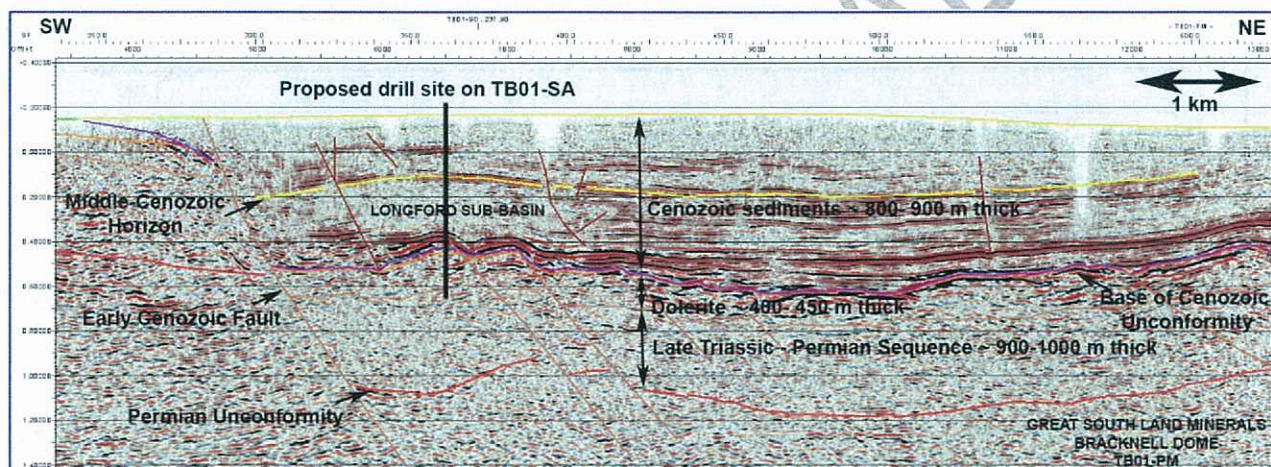


Figure 7: TB01-PM Bracknell Dome - Proposed drill site based on TB01-SA

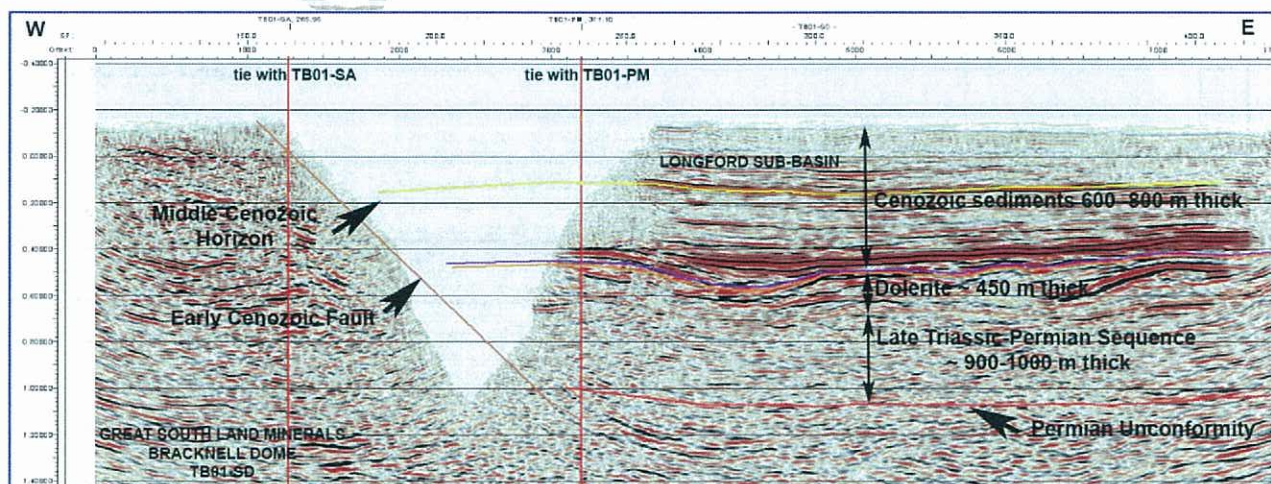


Figure 8: TB01-SD Bracknell Dome



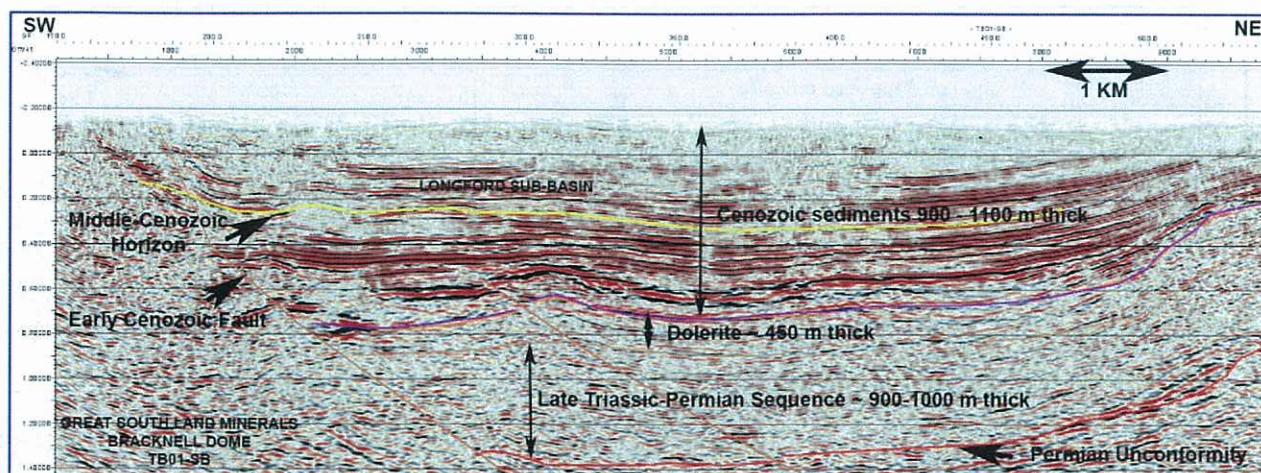


Figure 9: TB01-SB Bracknell Dome

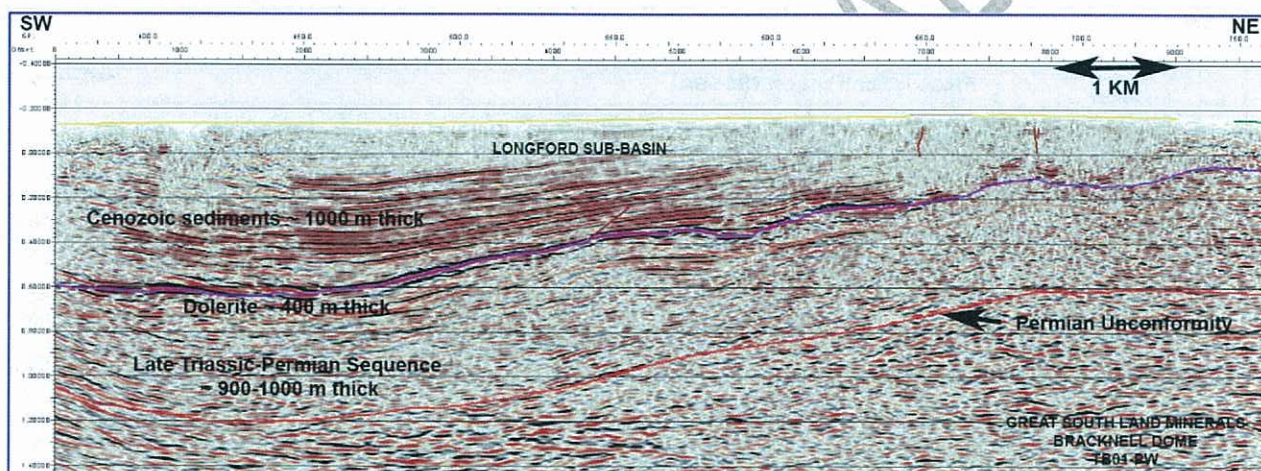


Figure 10: TB01-PW Bracknell Dome

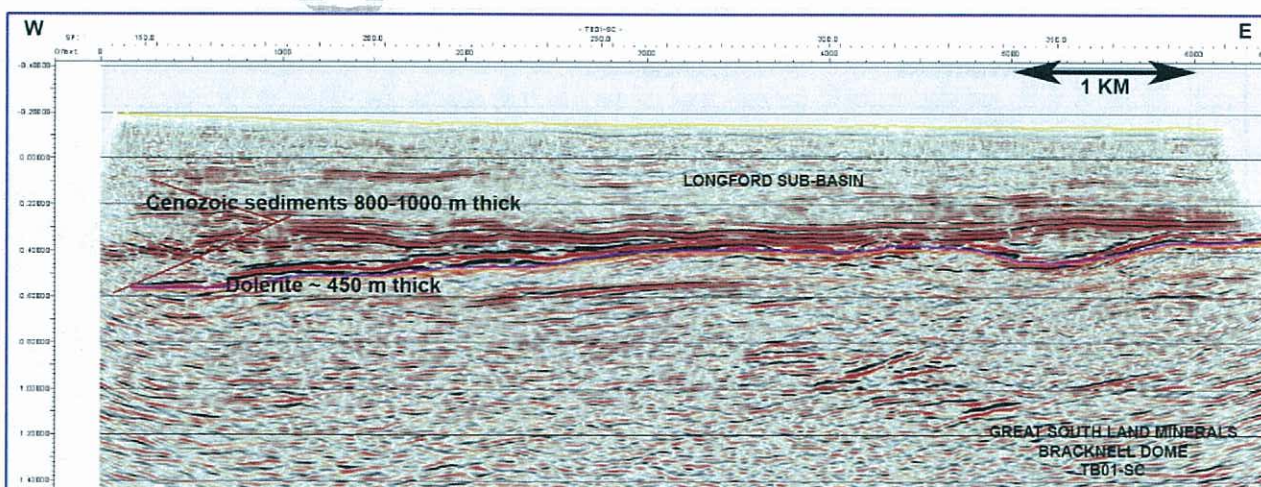


Figure 11: TB01-SC Bracknell Dome