I. HEUNINGNES AND KARS RIVERS

Field Note I5b. Kars River Gorge – Geology

[This Field Note describes the various geological formations present in the Kars River Gorge. For the lithology and stratigraphy of these formations, the reader is referred to Chapter C, as well as to Filed Note M3].

The Kars River Gorge goes through the Hard Dunes east of Bredasdorp (Figures 1 to 3).

Figure 1. Satellite image of the middle part of the Kars River showing the Kars River Gorge (arrow) east of Bredasdorp.

Figure 2. Satellite image of the Kars River Gorge.

Figure 3. Topography map of the Kars River Gorge.

Four geological formations crop out on either side of the Kars River Gorge. They are, from old to young: Tra-Tra Formation (Ceres Sub-group, Bokkeveld Group); De Hoop Vlei and Wankoe Formations (Bredasdorp Group) and alluvium (Figure 4).

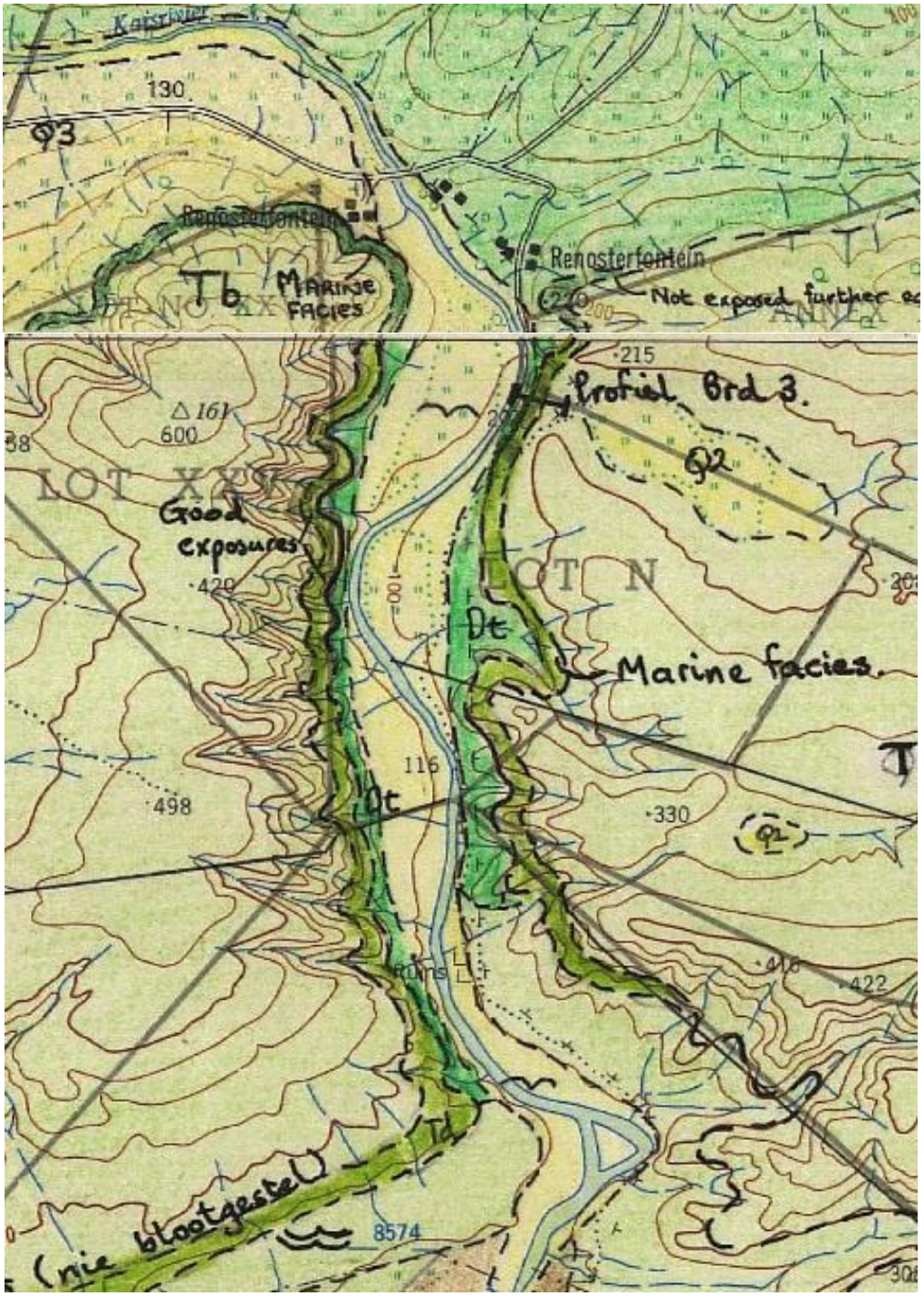

Figure 4. Geology map (J Malan, 1984) of the Kars River Gorge. Green and the symbol Dt represent the Devonian Tra-Tra Formation (Bokkeveld Group, Ceres Sub-group) of shales; the lighter green represents the De Hoop Vlei Formation (basal, marine formation of the Bredasdorp Group); very light green represents the Wankoe Formation (aeolianites of the Bredasdorp Group); yellow represents alluvium. The yellow colour with symbols with Q2 and Q3 represents Quaternary sediments. The author contend that these areas contain Enon Formation conglomerate (Chapter C).

Tra-Tra Formation (Bokkeveld Group, Ceres Subgroup)

Shales of the Tra-Tra Formation are found on either side of the gorge (Figures 5 to 8).

Figure 5. Tra-Tra Formation shales on the bank of the Kars River.

Figure 6. The Kars River cuts into the Tra-Tra Formation shales.

Figure 7. Tra-Tra Formation shales.

Figure 8. Tra-Tra Formation shales at the base of the weir south of the gorge.

Bredasdorp Group: De Hoop Vlei Formation

The De Hoop Vlei Formation is found on either side of the gorge, overlying the Tra-Tra Formation (Figures 9 to 12). Access to this formation is impossible due to thick vegetation.

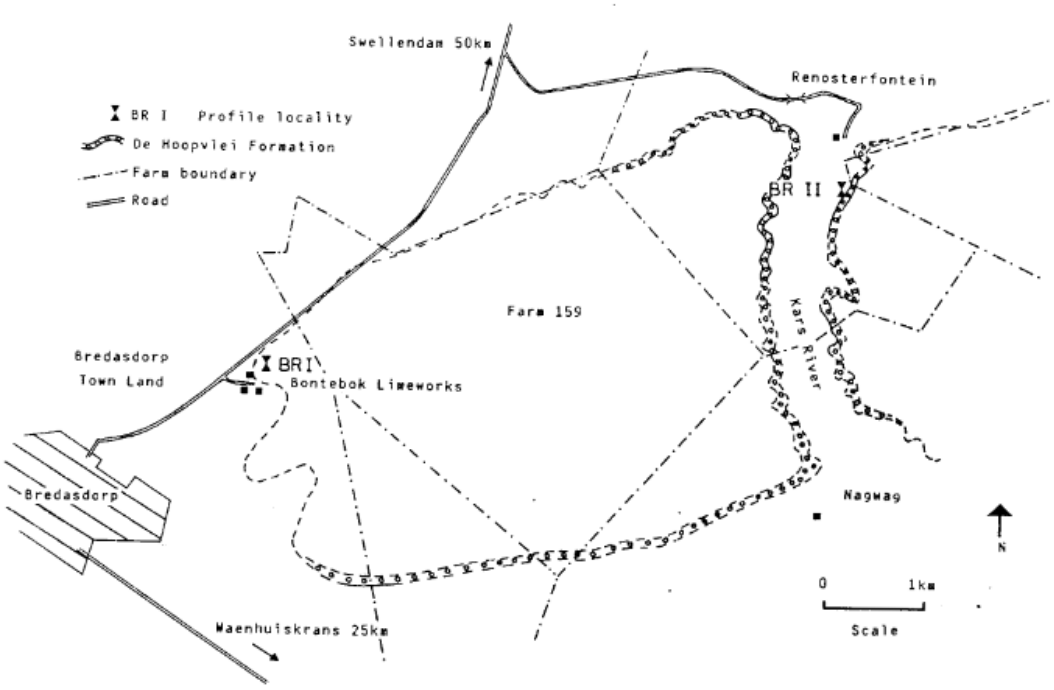

Figure 9. The distribution of the De Hoop Vlei Formation in the Kars River Gorge. The profile BR II is shown in figure 10.
Source:J Malan's MSc thesis, 1990.

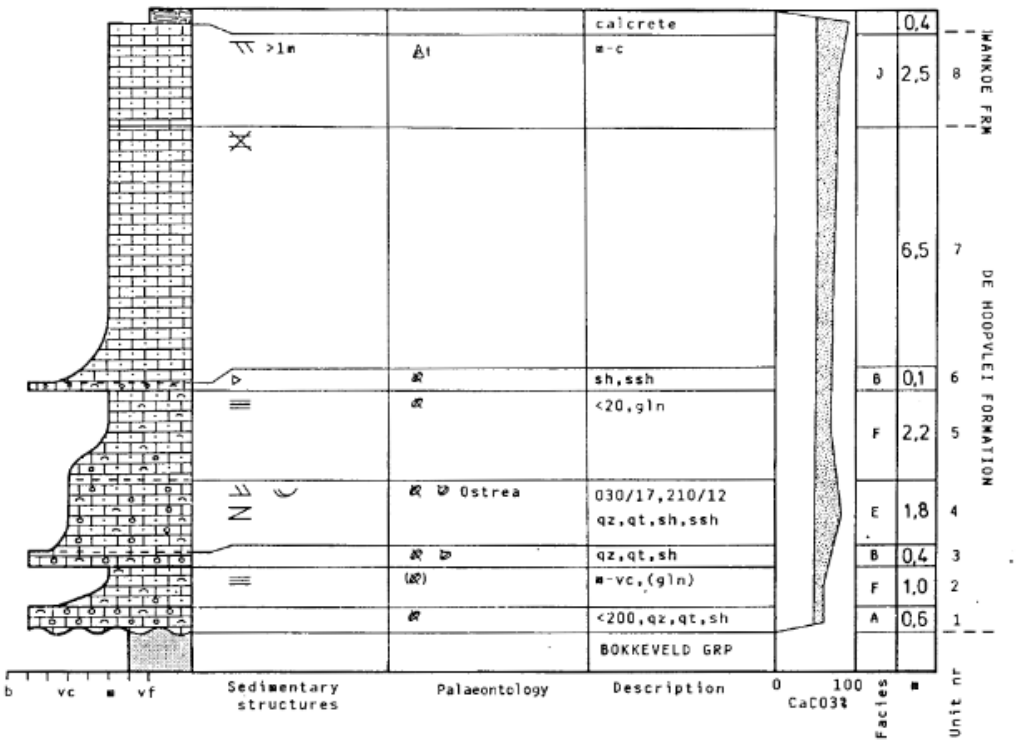

Figure 10. Profile BR II of the De Hoop Formation. See location in Figure 9. Total thickness of the formation at this site is 12.6 m.
Source:J Malan's MSc thesis, 1990.

Figure 11. Views to the south on the De Hoop Formation base (contact with the underlying shales; dashed line); arrow points to the approximate location of Profile BR II. Top – from above and across the Rhenosterfontein farm buildings. Middle – from a road which leads southward from the farmhouse. Bottom – from a hill of the east 'wall' southwest of the farmhouse.

Bredasdorp Group: Wankoe Formation

Calcarenites of the Wankoe Formation (Hard Dunes) are found on either side of the gorge (Figures 12 and 13).

Figure 12. Views to the west (top) and to the southwest (bottom) on the Hard Dunes (Wankoe Formation) at the north entrance to the Kars River Gorge. Arrows point to the limestone quarry.

Figure 13. The limestone quarry at the north entrance to the Kars River.

Alluvium

Thick alluvium (at places some 8 m), consisting of fine and course sediments can be best seen in the southern part of the gorge (Figures 14 and 15).

Figure 14. The Kars River cuts through its own floodplain. View to the NW on a river bend in the southern part of the gorge. The dashed line represents the contact between the underlying Bokkeveld shales and the alluvium.

Figure 15. View to the northwest from the weir south of the gorge. Alluvium can be seen on either side of the river.

