C. GEOLOGY

Field Note C6c. Enon Formation deposits

View of the Soutpansvlakte Basin.

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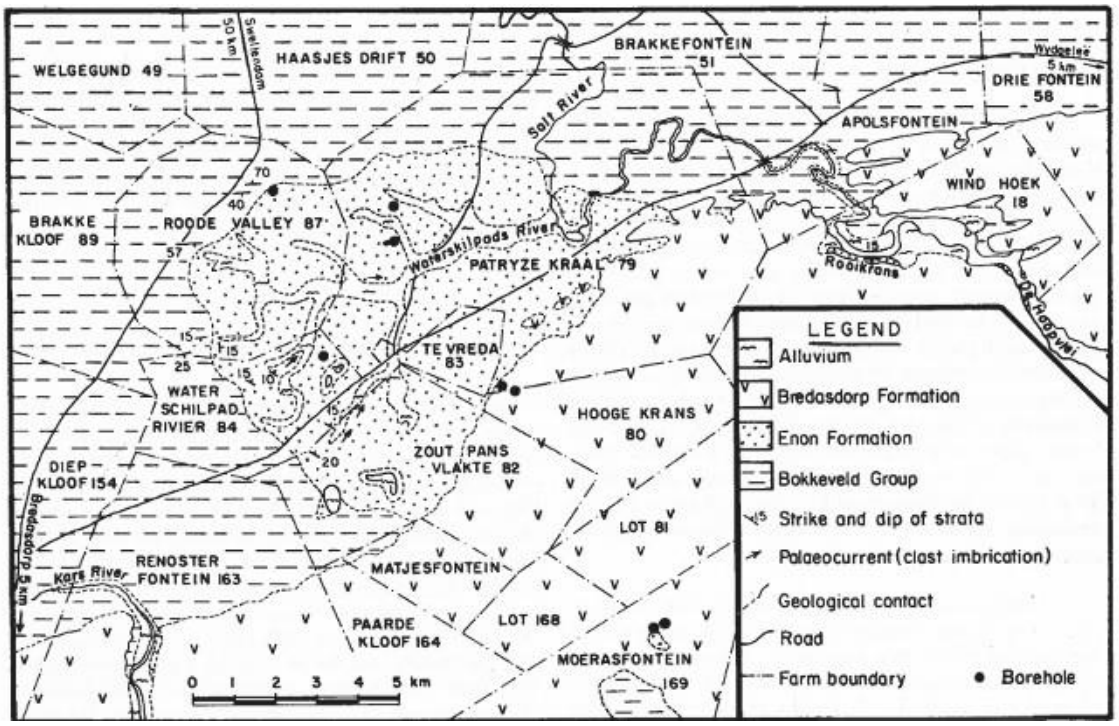
Introduction (from Wikipedia):

Conglomerates are the most diagnostic feature of the Enon Formation. In the past the formation was referred to as the Enon Conglomerate Formation. The conglomerates consist of large, sub-rounded to rounded clasts of sheared or unsheared quartzite and sometimes slate, shale and charcoal. Quartzite clasts are generally more rounded whereas the slate and shale clasts are angular. These are interbedded with subordinate sandstone lenses ranging from white, yellow, red and green in colour claystones and rare mudstone units. These were deposited in a high-energy alluvial environment where debris flows were common.

A large but highly eroded outcrop occurs in the Soutpansvlakte Basin (Figures 1 and 2), in the Waterskilpads River area, north east of Bredasdorp. The far western portion of this conglomerate is composed of Bokkeveld and Table Mountain sandstone clasts. The more northern parts have far more intercalated sandstone and mudstone, with clasts originating from the central Ruèns Bokkeveld deposits. The clasts of the southern parts are predominantly from the surrounding Bredasdorp Mountains and Bokkeveld rocks.

Figure 1. Geology map (J Malan's field sheet, 1984). showing the Enon Formation deposits in the Soutpansvlakte Basin (top) and in the Salt River Gorge (bottom).



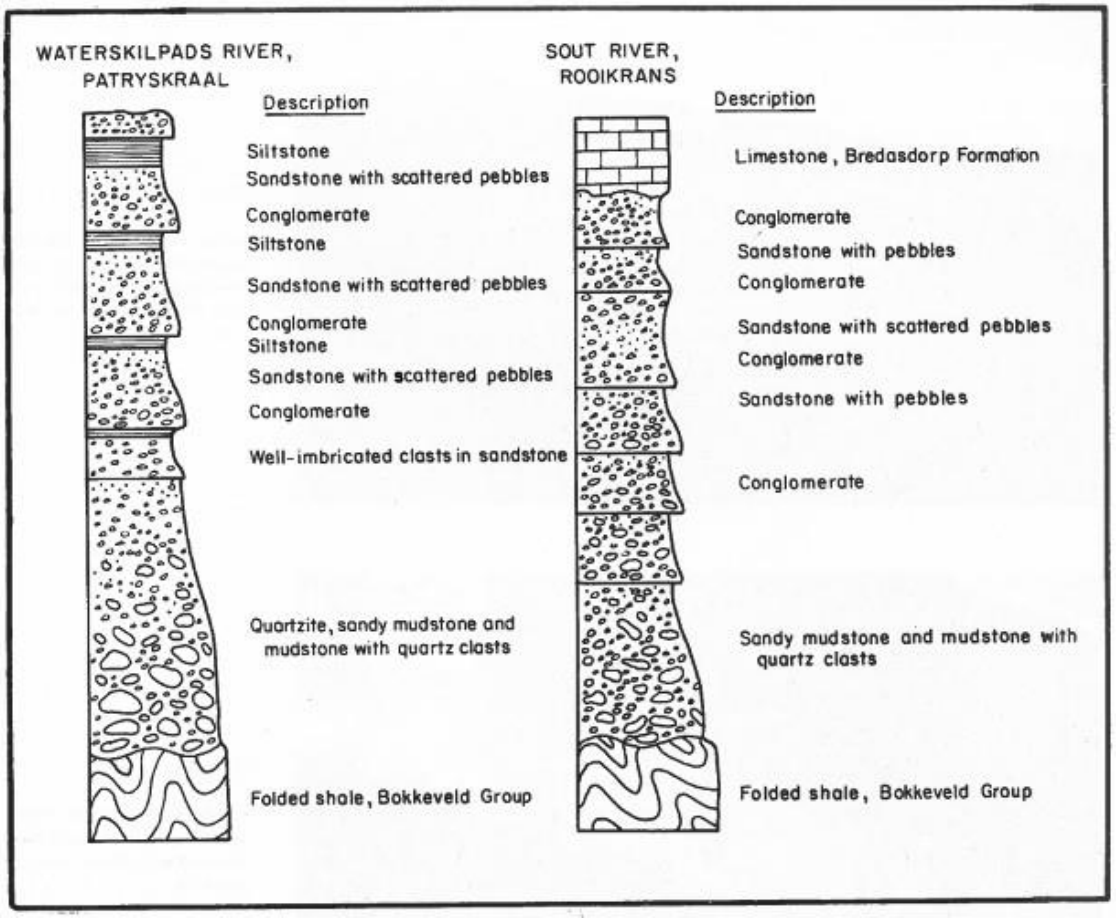


Figure 2. Top: map of the Soutpansvlakte Basin. Bottom: generalised profiles of the Enon Formation. The profile at Rooikrans (Salt River Gorge) is shown below (Figures 3 to 5).
Source: J Malan and J Theron, 1987.
Author's note: These profiles only represent small areas around them.

The author noticed that the Enon Formation deposits in the east end of the Soutpansvlakte Basin extend slightly differently to the extent, which was mapped in 1984 (Figure 3). For Enon Formation deposits and outcrops east of the Soutpansvlakte Basin, see Field Note C6b.

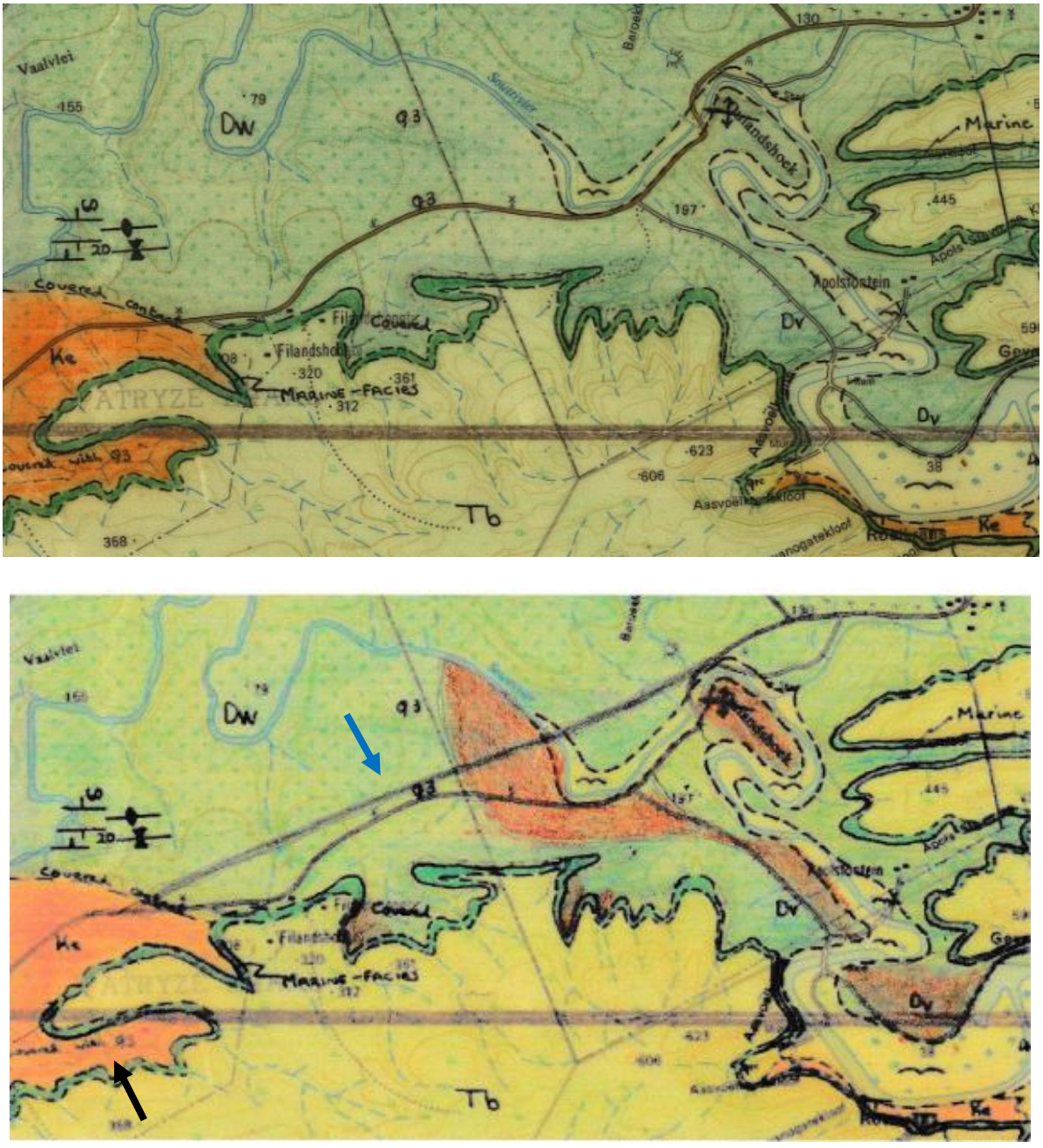


Figure 3. Geology maps of the east end of the Soutpansvlakte Basin. Top – mapped by J Malan, 1984. Bottom – Enon Formation deposits (orange), mapped by the author, 2020; black arrow points to a kloof, which is not covered with Enon deposits, but with the red, loose sand of the Wankoe Formation (see Field Note C9c and Chapter W); blue arrow points to a section of the road Bredasdorp - Malgas, which was constructed after the publication of Malan's map.

The Enon Formation deposits range from clays to gravel to pebbles and to boulders of all sizes (Figures 4 to 13).

Figure 4. Enon Formation conglomerate with a high content of angular shale fragments below Rooikrans in the Salt River Gorge.

Figure 5. Block of ferricrete breccia at the top of the Enon Formation below the Rooikrans, in the Salt River Gorge.

Figure 6. Enon sediments on the floor of the Soutpansvlakte Basin.

Figure 7. Satellite image of Enon sediments (the north reaches of the Soutpansvlakte Basin; the white patches are areas, which are partially covered with calcrete).

Figure 8. Enon Formation deposit (arrow), in the Salt River Gorge.

Figure 9. Conglomerate of the Enon Formation.

Figure 10. Conglomerate of the Enon Formation.

Figure 11. Conglomerate of the Enon Formation.

Figure 12. Conglomerate of the Enon Formation.

Figure 13. Conglomerate of the Enon Formation.

The soft soils of the Enon Formation in the Soutpansvlakte Basin are capped with calcrete and strewn with calcrete chunks (Figure 14).

Figure 14. Top and bottom – calcrete on the floor of the Soutpansvlakte Basin.

The southwestern margin of the Soutpansvlakte Basin is covered with myriads of very well-rounded pebbles and boulders (Figures 15 and 16).

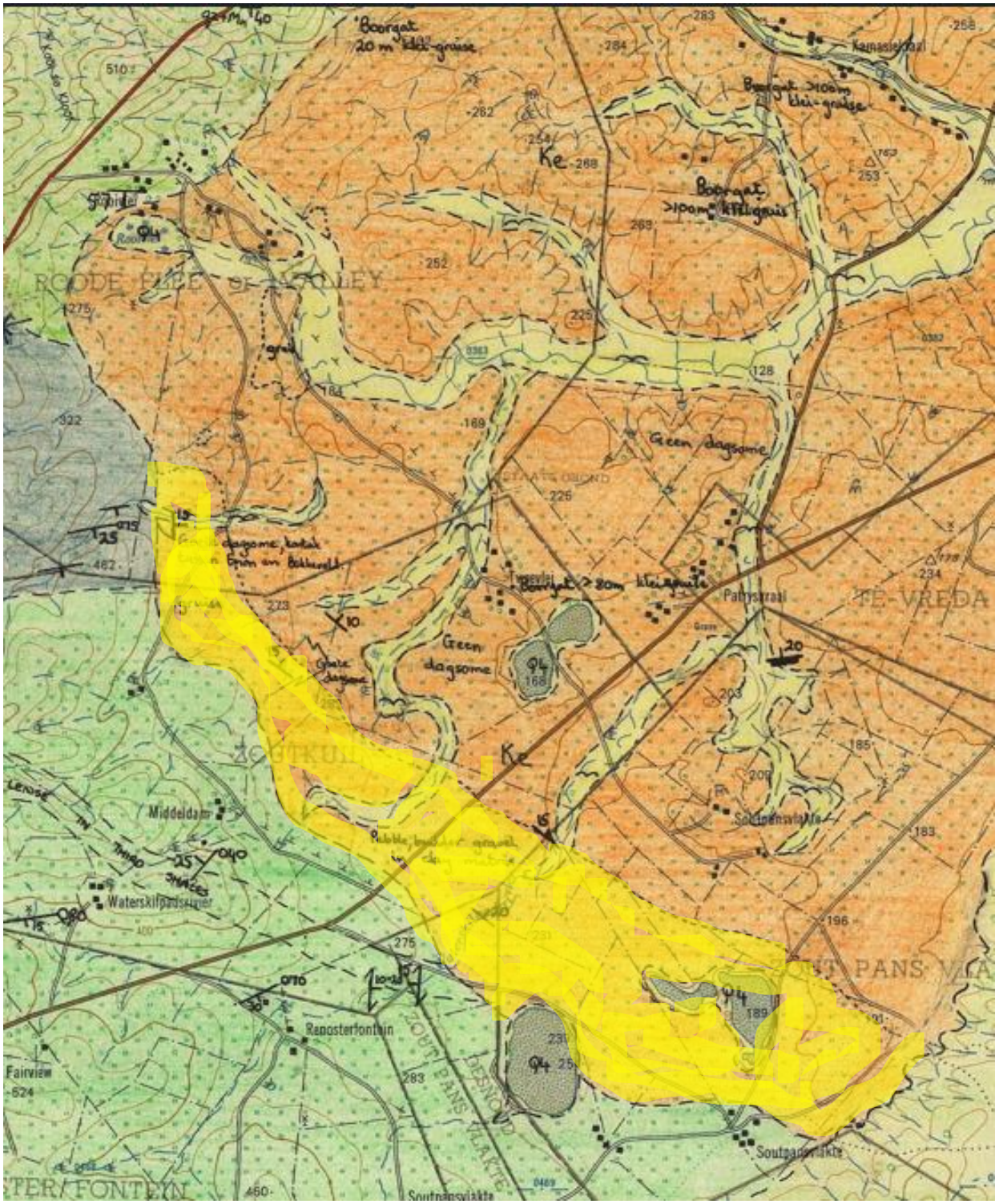


Figure 15. Geology map of the western half of the Soutpansvlakte Basin (J Malan's field sheet, 1984). The area covered with rounded pebbles and boulders is highlighted yellow.

Figure 16. Well-rounded pebbles and boulders in the Soutpansvlakte Basin.

The various clasts of the Enon Formation are the subject of Field Note C6e.

