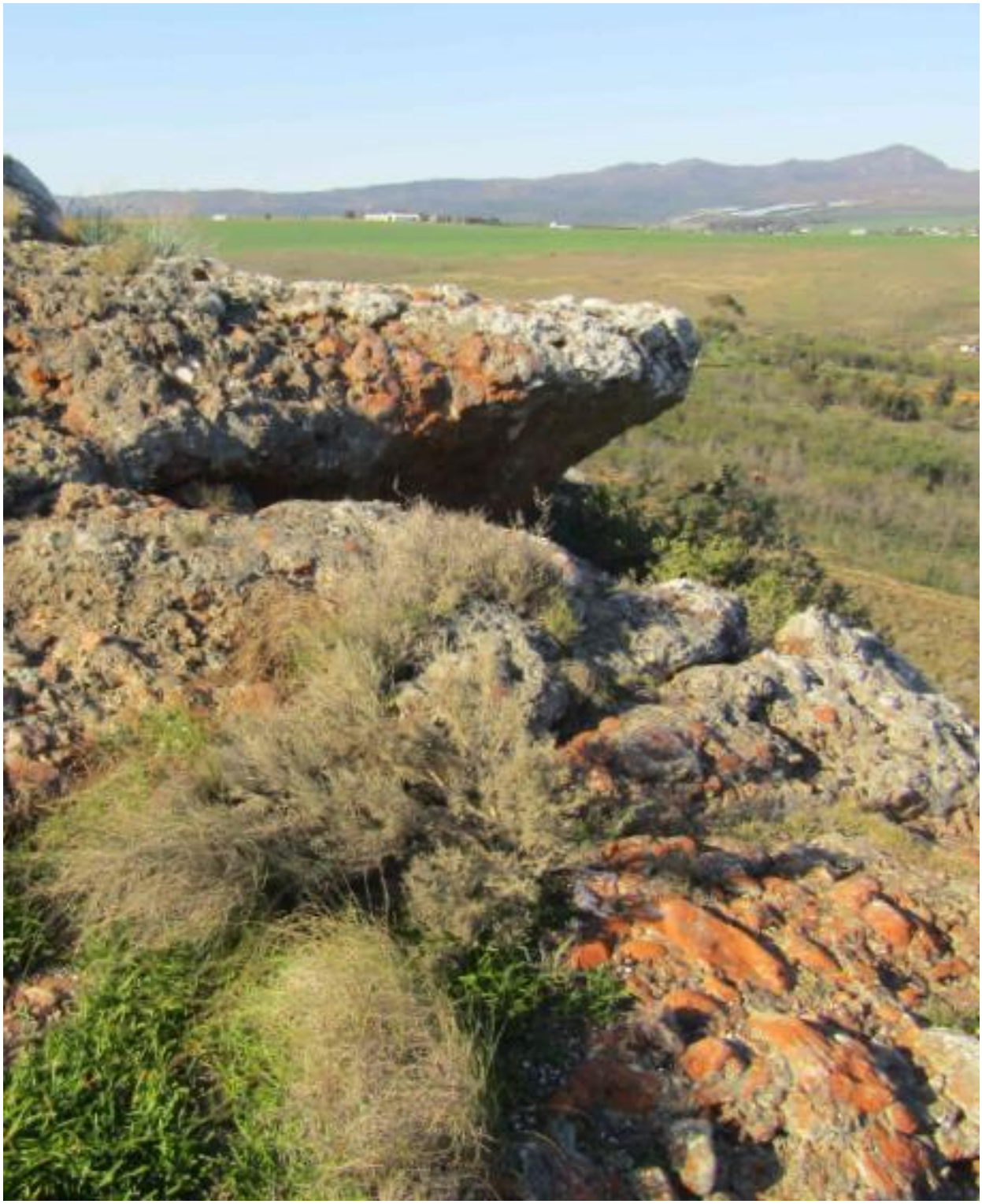
D. DURICRUSTS

Field Note D6b. Napier silcretes and ferricretes



Silcretised hilltop near Napier.

D. DURICRUSTS

Field Note D6b. Napier silcretes and ferricretes

Several silcrete / ferricrete outcrops are present near Napier and NE of it (Figure 1).

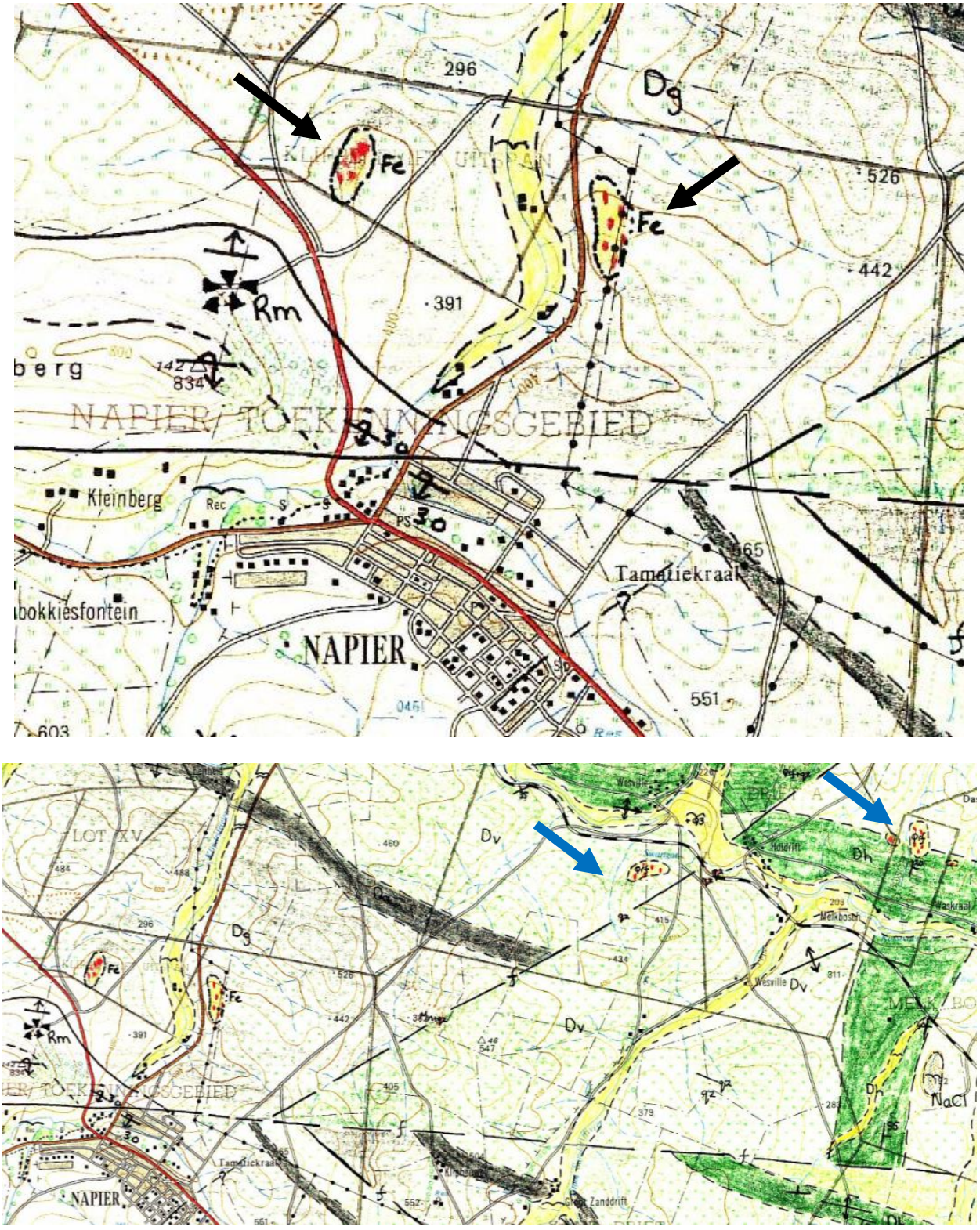


Figure 1. Geology map (JA Malan, 1984) of Napier (top) and NE from it (bottom), showing ferricrete outcrops (arrows). Black arrows point to the outcrops described in this Field Note.

The Napier outcrops are at an average elevation of 133 m above sealevel. They may not be part of the 'high-level' silcretes and ferriretes, described so by a number of geologists (Figure 2). This Field Note describes the two ferruginised outcrops near Napier, namely the Napier West outcrop and the Napier East outcrop (names given by the author).

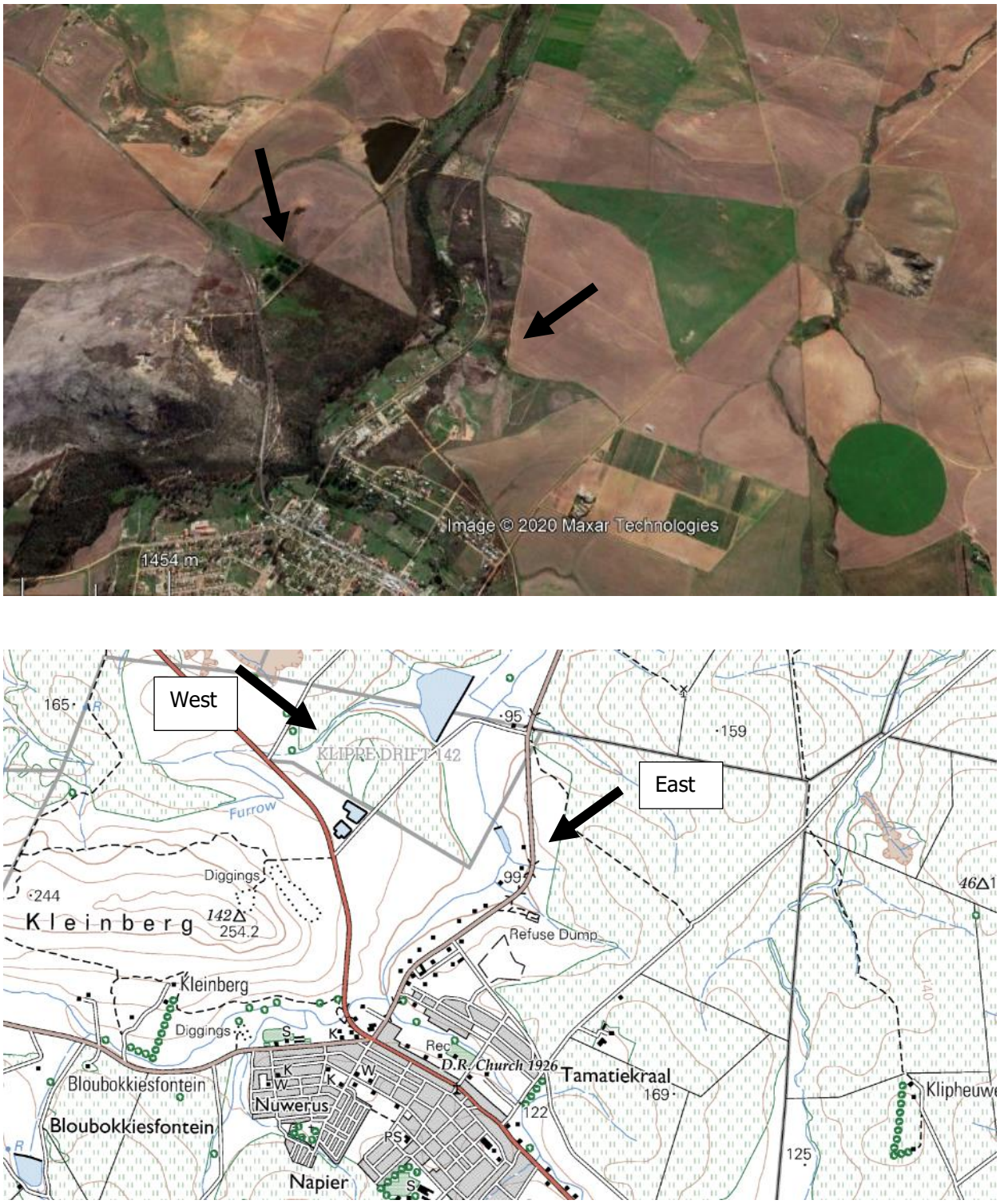


Figure 2. Top – satellite image and bottom - topography map: the area near Napier, showing the locations of ferricrete outcrops (arrows) described in this Field Note.

1. Napier West outcrop

The Napier West outcrop is situated at the top of a river gravel terrace (Figures 3 to 5).

Figure 3. Satellite images of the Napier West ferricrete outcrop (arrow). Top – in winter, covered with crops. Bottom – in summer: the brown, ferricrete-rich, cultivated land is revealed.

Silcrete / ferricrete pillows protrude the ground (Figure 4).

Figure 4. Lenses at the Napier West outcrop. Views to the southeast (top) and south (bottom). Arrow points to Napier.

The ferricretes of the Napier West outcrop consists of conglomerate and breccia (Figure 5).

Figure 5. The ferricrete of Napier West outcrops are of conglomerate (top) and breccia (bottom).

Silcrete / ferricrete slabs from the surrounding fields were collected and removed to the top of the terrace (Figure 6).

Figure 5. Top and bottom - slabs heaped by farmers at the top of Napier West outcrop.

1. Napier East outcrop

The Napier East outcrop is situated 1 km east of, and across the valley from, the Napier West outcrop (Figures 7 and 8).

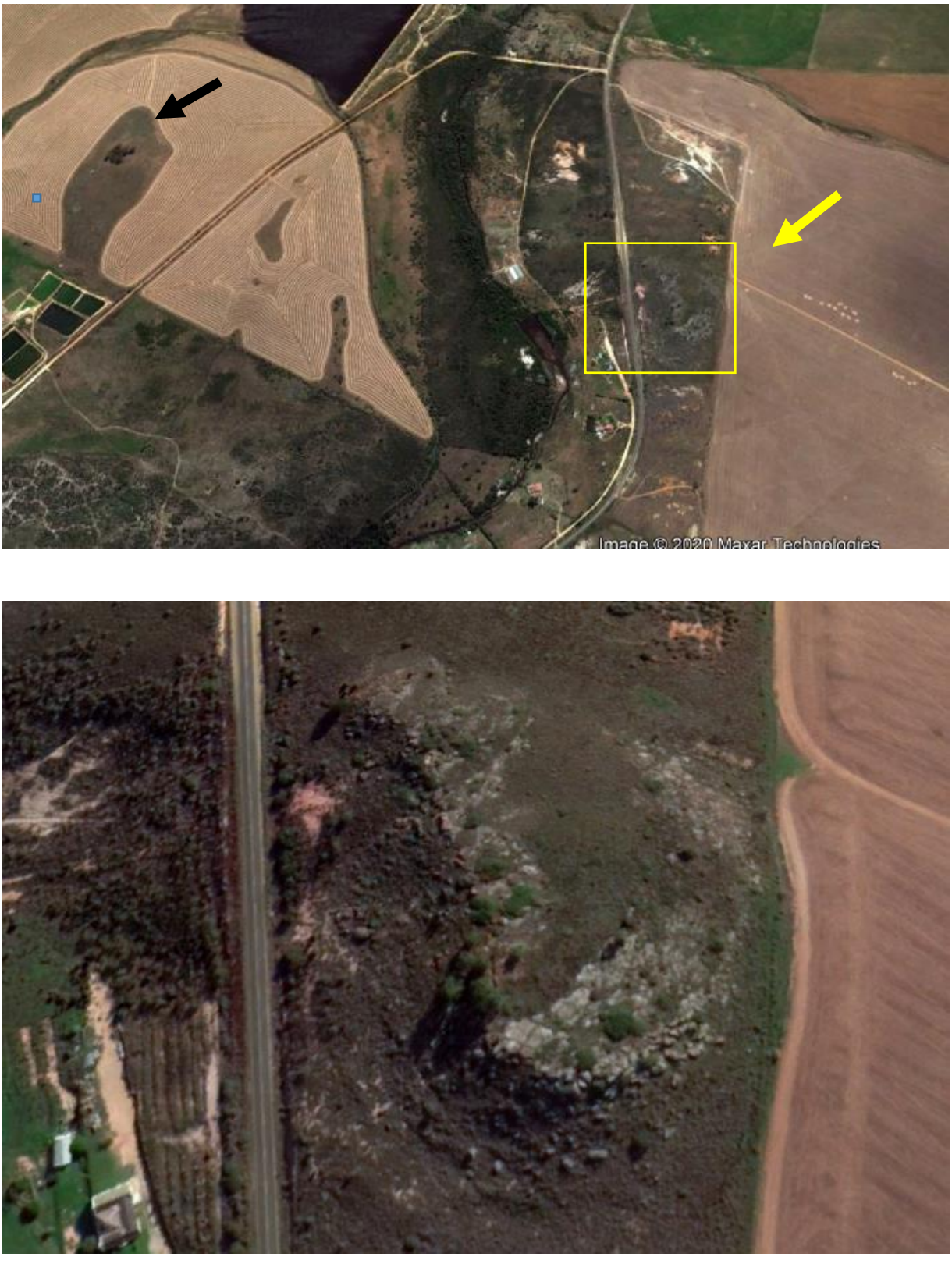


Figure 7. Satellite images of the ferricrete of Napier East outcrop (yellow arrow). Box at top is enlarged at bottom. Black arrow points to the Napier West outcrop.

The Napier East outcrop displays typical morphology of a silcrete-capped small mesa, which has three steep sides, and one side which inclines very gently to the north (Figure 8). The author contends that these are hilltop silcretes, which were heavily ferruginised to transform into ferricrete, and hence marked on the geology map as a ferricrete outcrop (Figures 8 and 9).

Figure 8. Top – view of Napier East outcrop from the west. Bottom – view on the gently northwards-sloping mesa.

Figure 9. The Napier East outcrop. Top – view on the western, steep side. Bottom – view on the eastern, steep side of the ridge. Napier at the background.

The ferruginised silcretes have pillowy, platy and lenticular shapes (Figures 10 and 11).

Figure 10. The Napier East outcrop ferruginised silcrete habits. Top – pillowy. Bottom – platy.

Figure 11. Top and bottom - the Napier East outcrop ferruginised silcrete lenses.

Both conglomerate and breccia are present at the Napier East outcrop (Figure 12).

Figure 12. Napier East ferruginised silcretes comprise conglomerate (top) and breccia (bottom).