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## Appendix 7

# The detailed soil micromorphological descriptions from the buried soils and Ramla and Marsalforn valleys

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### A7.1. Santa Verna

#### Transect L:

Sample 39, BH115, 30–40 cm

*Structure:* weak small columnar blocky peds, <3 cm, with pellety, <250 µm, to aggregated, sub-rounded to irregular, <5 mm, micro-structure; *Porosity:* <5% vughs, sub-rounded, <200 µm; <5% fine channels, <3 cm long, <250 µm wide, vertical, accommodated, weakly serrated; *Mineral components:* <2% fine limestone pebbles, 2–5 mm; c/f ratio: 25/75; coarse fraction: 5% coarse sand-size limestone, 1–2 mm, sub-rounded; 10% medium and 10% fine quartz sand, sub-rounded, 200–750 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 30% micro-sparite; 35% dusty clay; reddish brown (CPL/PPL); *Organic components:* 5–10% organic punctuations, <50 µm; *Pedofeatures:* *Amorphous:* very strong amorphous sesquioxide impregnation of whole groundmass; abundant (40%) aggregates of strongly amorphous sesquioxide impregnated clay, sub-rounded, <2 mm, no birefringence.

#### Trench B:

Sample 1/1, 42–52 cm

*Structure:* pellety, <500 µm, to aggregated, <1.5 cm, sub-rounded to irregular; *Porosity:* 10% vughs, sub-rounded to irregular to interconnected, <1 mm; <2% fine channels, <3 cm long, <1.5 mm wide, accommodated, smooth to weakly serrated; <1% cracks, <1 cm long, <50 µm wide; *Mineral components:* 10–20% fine limestone pebbles, <1.5 and 2–5 cm, sub-rounded to sub-angular, unsorted; c/f ratio: 5/95; coarse fraction: 5% fine quartz sand, sub-rounded, 100–500 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 10–20% micro-sparite; 65% dusty clay, non-birefringent, gold to golden brown (CPL/PPL); reddish/orangey brown (CPL/PPL); *Organic components:* 10–20% organic/charred punctuations, <50 µm; 2% fine charcoal, <75 µm; *Pedofeatures:* *Amorphous:* common to abundant (10–20%) impregnative sesquioxide nodules, sub-rounded, sometimes with soil fabric coatings around them, <2 mm, no birefringence, strong red/orangey-red (CPL), reddish brown to dark brown (PPL).

Sample 1/2, 53–66 cm

Two fabric units: Upper fabric unit 1: as for sample 1/1 above; irregular but distinct boundary with Lower fabric unit 2: *Structure:* pellety, <500 µm; *Porosity:* 10–20% vughs, sub-rounded to irregular to interconnected, <2 mm; *Mineral components:* 5% fine limestone

pebbles, 2–5 mm and <3 cm, sub-rounded to sub-angular, unsorted; 70% micro-sparite; 5% fine-medium quartz sand, sub-rounded, 100–500 µm; 10% very fine quartz sand, 50–100 µm, sub-rounded; 15% aggregates of silty clay, speckled to short striated, moderate birefringence, golden brown (CPL), orange (PPL); pale grey/brown (CPL), pale brown/orangey brown (PPL); *Organic components:* 10–20% organic/charred punctuations throughout groundmass, <50 µm; *Pedofeatures:* *Amorphous:* strong amorphous sesquioxide impregnation of silty clay aggregates, strong red/orangey-red (CPL), reddish brown to dark brown (PPL).

Sample 1/3, 66–73 cm

*Structure:* weakly to moderately well developed small blocky, <1.5 cm, with pellety fabric in some voids, <500 µm; *Porosity:* 5–10% vughs, sub-rounded to elongated, <750 µm; 2% fine channels, <1.5 cm long, <500 µm wide, accommodated, smooth to weakly serrated; *Mineral components:* all fine fraction: 5% very fine quartz sand, 50–100 µm, sub-rounded; 95% silty clay, pure to dusty in groundmass, moderate birefringence, orangey red (CPL); reddish brown (PPL); *Organic components:* <1% organic/charred punctuations, <50 µm; *Pedofeatures:* *Amorphous:* few discontinuous linings/infills of voids/channels with micro-sparite.

Sample 1/4, 74–87 cm

*Structure:* well developed small blocky, <2 cm, with pellety micro-structure, <1 mm, sub-rounded to irregular; *Porosity:* <5% vughs, sub-rounded, <250 µm; 2% fine channels, <2 cm long, <250 µm wide, accommodated, smooth to weakly serrated; *Mineral components:* all fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 90% silty clay, pure to dusty in groundmass, short striated to weakly reticulate, moderate to strong birefringence, gold (CPL); strong to moderate reddish orange (CPL/PPL); *Organic components:* 5% organic/charred punctuations, <50 µm; *Pedofeatures:* *Amorphous:* all strongly reddened with amorphous sesquioxides; towards base of slide, few to common (up to 25% of groundmass), discontinuous linings/infills of voids/channels with micro-sparite and as irregular aggregates/zones in groundmass.

#### Ashby Sondage:

Sample 28, 65–70 cm

*Structure:* dense, sub-angular blocky, <4 cm; *Porosity:* <1% fine cracks, <4 cm long, <200 µm wide, accommodated, smooth to weakly serrated; *Mineral Components:* 25% fine gravel, <1 cm, sub-rounded to sub-angular, mainly limestone; 75% micro-sparitic silt;

grey/yellowish brown (CPL), pale brown (PPL); c. 2% aggregates of clay, <1 mm, sub-rounded, reddish brown to reddish orange (CPL); *Organic components*: 25% very fine organic punctuations, <50 µm.

Sample 2/1, 95–105 cm (context 30)

*Structure*: two, heterogeneous mixed fabrics; pellety, <2 mm, to aggregates, <2 cm; all sub-rounded; *Porosity*: c. 5–10% interconnected vughy; *Mineral components*: Main fabric 1: 50–80% of groundmass; pellety, <2 mm; 10% very fine quartz, 50–100 µm, sub-rounded; 90% silty clay, with weak birefringence, dark golden brown (CPL), orangey brown (PPL); Secondary fabric 2: 20–50% of groundmass; pellety to irregular zones, 100 µm to 4 mm; 5% very fine to fine quartz sand, 100–250 µm, sub-rounded; 10% medium quartz sand, 500–750 µm; 85% micro-sparite; pale grey/yellowish grey (CPL/PPL); *Organic components*: in both fabrics: common to abundant (10–20%) fine charcoal, 100–500 µm; abundant (10–20%) organic punctuations, <50 µm; rare (<1%) bone fragments, <500 µm; rare (<1%) pottery fragment, <1 cm.

Sample 2/2, 105–115 cm (context 51)

*Structure*: two, heterogeneous mixed fabrics; pellety, <2 mm, to aggregates, <2 cm, to small blocky, <3 cm; sub-rounded to irregular; *Porosity*: 10–20% interconnected vughy; <5% fine channels, <3 cm long, <1 mm wide, accommodated, serrated; *Mineral components*: 5% limestone gravel, 2–4 mm; sub-rounded; Main fabric 1: 90% of groundmass; pellety, <2 mm, to blocky peds; 5% very fine quartz, 50–100 µm, sub-rounded; 95% silty clay, striated, with weak to moderate birefringence, gold to dark golden brown (CPL), orangey brown (PPL); Secondary fabric 2: <10% of groundmass; pellety to irregular zones, 100 µm to 4 mm; 5% very fine to fine quartz sand, 100–250 µm, sub-rounded; 10% medium quartz sand, 500–750 µm; 85% micro-sparite; pale grey/yellowish grey (CPL/PPL); *Organic components*: in both fabrics: common to abundant (10–20%) fine charcoal, 100–500 µm; abundant (10–20%) organic punctuations, <50 µm; *Amorphous*: all strongly reddened with amorphous sesquioxides.

Sample 2/3, 115–125 cm (context 51 continued)

As for Sample 2/2 above

Trump Cut 55:

Sample 78, 'torba' floor

*Structure*: small blocky to aggregated to pellety, 2 cm to <500 µm; *Porosity*: 10% interconnected vughy; 10–15% large channels, <2 cm long, <4 mm wide, smooth, accommodated; *Mineral components*: 10% coarse sand-size limestone pebbles, 1–2 mm, sub-rounded to sub-angular, unsorted; 10% medium and 10% fine quartz sand, 100–750 µm, sub-rounded to sub-angular; 30% micro-sparite; 30% silty clay, speckled to short striated, weak birefringence; golden brown (CPL), brown (PPL); *Organic components*: 10–20% organic/charred punctuations throughout groundmass, <50 µm; 5% fine charcoal, <75 µm; few (2%) bone fragments, <1 mm; rare (1%) dung aggregate, <1.5 mm, black (CPL/PPL); *Pedofeatures*: *Amorphous*: strong amorphous sesquioxide impregnation of silty clay aggregates, strong red/orangey-red (CPL), reddish brown to dark brown (PPL); *Fabric*: few (2%) clay aggregates, <1 mm, sub-rounded, orangey red (CPL).

Sample 3/1, 100–120 cm

*Structure*: well developed columnar blocky, <6 cm, with some pellety fabric within, <500 µm; *Porosity*: 5% vughs, sub-rounded to elongated, <750 µm; 10% large channels, <6 cm long, <2.5 mm wide, accommodated, smooth to weakly serrated; *Mineral components*: 5%

fine quartz sand, 100–250 µm, sub-rounded; 10% very fine quartz sand, 50–100 µm, sub-rounded; 10% micrite; 75% silty clay, dusty clay as groundmass, weak birefringence; golden reddish brown (CPL/PPL); *Organic components*: 10% organic/charred punctuations, <50 µm; *Pedofeatures*: *Amorphous*: 10% amorphous sesquioxide nodules, <750 µm, sub-rounded.

Sample 3/2, 120–140 cm

*Structure*: weakly developed columnar blocky, <10 cm, with pellety microstructure, <500 µm, sub-rounded; *Porosity*: 5% vughs, sub-rounded, <750 µm; 5% channels, <8 cm long, <1 mm wide, accommodated, smooth to weakly serrated; *Mineral components*: 10% fine quartz sand, 100–250 µm, sub-rounded; 5% very fine quartz sand, 50–100 µm, sub-rounded; 85% silty clay, dusty clay as groundmass, speckled, weak to moderate birefringence; reddish/orangey brown (CPL), orangey brown (PPL); *Organic components*: <2% organic/charred punctuations, <50 µm; *Pedofeatures*: *Amorphous*: 10% amorphous sesquioxide nodules, <750 µm, sub-rounded.

Sample 3/3, c. 114–127 cm

Three fabric units: Upper and lower fabric units: *Structure*: pellety, <500 µm, to aggregated, <1 cm, sub-rounded; *Porosity*: 10% vughs, sub-rounded to irregular to interconnected, <1 mm; <2% fine channels, <5 mm long, <500 µm wide, accommodated, smooth to weakly serrated; *Mineral components*: <5% fine limestone pebbles, <5 mm, sub-rounded to sub-angular, unsorted; c/f ratio: 5/95; coarse fraction: 5% fine quartz sand, sub-rounded, 100–500 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 10–20% micro-sparite; 65% dusty clay, non-birefringent, gold to golden brown (CPL/PPL); reddish/orangey brown (CPL/PPL); *Organic components*: 10–20% organic/charred punctuations, <50 µm; 2% fine charcoal, <75 µm; rare (<1%) burnt bone fragment, <500 µm; *Pedofeatures*: *Amorphous*: common to abundant (10–20%) impregnative sesquioxide nodules, sub-rounded, <2 mm, no birefringence, strong red/orangey-red (CPL), reddish brown to dark brown (PPL); distinct upper/lower boundaries with Middle fabric unit 2: repeated/alternating fine (c. 15) and coarser (c. 14) crust laminae over 7 cm horizon, composed of silt (80–90%) and very fine charcoal/organic punctuations, <50 µm (10–20%); planar voids inbetween crusts and vertical cracks within crust laminae; fine crust components: 45% micro-sparite, 55% silt, 5% clay, 10% organic dust; coarser crust components: 10% very fine quartz sand, 45% micro-sparite, 40% silt, 5% clay, 5–10% very fine charcoal, <75 µm, 10% organic punctuations, <50 µm; generally laminae/crusts fining up-profile.

Sample 3/4, 130–160 cm

*Structure*: pellety, <500 µm, to aggregated, <600 mm, sub-rounded; *Porosity*: up to 40% open vughy; <2% fine channels, <2 cm long, <500 µm wide, short, irregular, smooth to weakly serrated; *Mineral components*: 10% fine limestone pebbles, <8 mm, sub-rounded to sub-angular, unsorted; c/f ratio: 5/95; coarse fraction: 5% fine quartz sand, sub-rounded, 100–500 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 35% micro-sparite; 50% dusty clay, non-birefringent; golden brown (CPL), brown (PPL); *Organic components*: 30% organic/charred punctuations, <50 µm; 2% fine charcoal, <75 µm; rare (<1%) bone fragment, <500 µm; rare (1%) shell fragments; rare (1%) plant tissue fragments.

Trench E:

Sample 4/1, 40–44 cm

*Structure*: dense, apedal; *Porosity*: <2% vughs, sub-rounded to elongated, <500 µm; <2% short horizontal channels, <1 cm long, <750 µm

wide, accommodated, smooth to weakly serrated; *Mineral components*: 5% fine quartz sand, 100–250 µm, sub-rounded; 10% very fine quartz sand, 50–100 µm, sub-rounded; 10% micro-sparite; 75% silty clay, dusty clay as groundmass, weak birefringence; brown (CPL/PPL); *Organic components*: <5% organic/charred punctuations, <50 µm; 2% shell fragments; 2% bone fragments, <4 mm.

Sample 4/2, 68–75 cm

Two fabric units: **Upper fabric unit 1**: 95% limestone, <5 mm, sub-rounded to irregular, with <5% as pellety aggregates of fabric unit 2 material as below, <2 mm; irregular but distinct contact with **Lower fabric unit 2**: *Structure*: dense, apedal; *Porosity*: <2% vughs, sub-rounded to elongated, <500 µm; <2% short horizontal channels, <1 cm long, <750 µm wide, accommodated, smooth to weakly serrated; *Mineral components*: 5% fine quartz sand, 100–250 µm, sub-rounded; 10% very fine quartz sand, 50–100 µm, sub-rounded; 10% micro-sparite; 75% silty clay, dusty clay as groundmass, weak birefringence; brown (CPL/PPL); *Organic components*: <5% organic/charred punctuations, <50 µm; 2% shell fragments; 2% bone fragments, <4 mm.

Sample 4/3, 83–93 cm

*Structure*: pellety, <500 µm, to aggregated, <1 cm, sub-rounded; *Porosity*: 10% vughs, sub-rounded to irregular to interconnected, <1 mm; <2% fine channels, <5 mm long, <500 µm wide, accommodated, smooth to weakly serrated; *Mineral components*: <5% fine limestone pebbles, <5 mm, sub-rounded to sub-angular, unsorted; c/f ratio: 5/95; coarse fraction: 5% fine quartz sand, sub-rounded, 100–500 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 10–20% micro-sparite; 65% dusty clay, non-birefringent, gold to golden brown (CPL/PPL); reddish/orangey brown (CPL/PPL); *Organic components*: 10–20% organic/charred punctuations, <50 µm; 2% fine charcoal, <75 µm; rare (<1%) burnt bone fragment, <500 µm; *Pedofeatures*: *Amorphous*: common to abundant (10–20%) impregnative sesquioxide nodules, sub-rounded, <2 mm, no birefringence, strong red/orangey-red (CPL), reddish brown to dark brown (PPL).

Sample 4/4, 65–70 cm context 80 (wall plaster?)

*Structure*: dense, apedal; *Porosity*: <2% vughs, sub-rounded to elongated, <500 µm; *Mineral components*: 40–50% fine limestone, 2–5 mm, sub-rounded, evenly distributed; 10% very fine quartz sand, 50–100 µm, sub-rounded; 50% micro-sparitic silt; greyish/yellowish brown (CPL), pale brown (PPL); *Organic components*: 25% organic/charred punctuations, <50 µm; 1% bone fragments, <2 mm; 2% degraded plant tissue remains.

## A7.2. Ġgantija Test Pit 1

Sample 28, 40–47 cm

*Structure*: pellety, <250 µm, to irregular/sub-rounded aggregated, 500 µm to 4 mm; well sorted; *Porosity*: 20–25% open vughy; <5% fine channels, <1 cm long, <100 µm wide, partly accommodated, weakly serrated; *Mineral components*: 20% small limestone/carbonate gravel, <1 cm, sub-rounded to sub-angular; coarse/fine ratio: 42/58; coarse fraction: 2% coarse, 10% medium and 30% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 5% micro-sparite; c. 32% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), reddish brown to very dark brown (PPL); *Organic component*: very strong brown staining of whole groundmass; 5% shell fragments, <2 mm; <2% bone fragments, burnt and unburnt, <1.5 mm; <1% very fine charcoal fragments, <500 µm; *Pedofeatures*:

*Textural*: see above; *Fabric*: few (5%) aggregates of silty clay and clay (Bt material), strong birefringence, sub-rounded, <750 µm, gold (CPL); *Amorphous*: weak to moderate amorphous sesquioxide impregnation of whole groundmass; few (5%) sesquioxide nodules, <750 µm, sub-rounded.

Sample 27, 50–67 cm

As for Sample 28 above, except for:

*Pedofeatures*: *Excrements*: rare (<1%) dung fragment, sub-rounded, <1 mm; *Amorphous*: rare (<1%) rolled clay (Bt material) aggregate, sub-rounded, gold (CPL), strong birefringence, <1 mm.

Sample 26, 60–77 cm

*Structure*: weak irregular small blocky, <2 cm; pellety, <500 µm, to sub-rounded aggregated micro-structure, 1–5 mm; *Porosity*: 10–20% interconnected vughy; <5% fine channels, <2 cm long, <500 µm wide, accommodated, smooth; *Mineral components*: <5% small limestone gravel, <1 cm, sub-rounded to sub-angular; coarse/fine ratio: 15/85; coarse fraction: 5% medium and 10% fine quartz sand, 100–500 µm, sub-rounded; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 10% micro-sparite; 45% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); dark brown (CPL), brown to reddish brown (PPL); *Organic component*: very strong brown staining of whole groundmass; <5% shell fragments, <2 mm; 10% bone fragments, burnt and unburnt, <500 µm; <5% very fine charcoal/organic punctuations, <50 µm; *Pedofeatures*: *Textural*: see above; *Fabric*: few (5%) aggregates of silty clay (Bt material), strong birefringence, sub-rounded, <750 µm, gold (CPL); *Amorphous*: moderate amorphous sesquioxide impregnation of whole groundmass.

Sample 25, 88–100 cm

*Structure*: finely aggregated micro-structure, <2 mm; close porphyric; *Porosity*: 5% vughs, sub-rounded to irregular, <500 µm; 5–10% fine channels, <1 cm long, <250 µm wide, accommodated, smooth; *Mineral components*: <5% small limestone/carbonate gravel, <1 cm, sub-rounded to sub-angular; coarse/fine ratio: 20/80; coarse fraction: 10% medium to coarse sand size limestone, 500–1000 µm, sub-rounded; 10% fine quartz sand, 100–250 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 40% micro-sparite; 30% dusty clay in groundmass, weak to non-birefringent, gold (CPL); gold (CPL), golden brown (PPL); *Organic component*: 5% bone fragments, <1000 µm; <5% very fine charcoal, <50 µm; 2% coarse charcoal, 1–2 mm; 10% organic punctuations, <50 µm; *Pedofeatures*: *Textural*: see above; *Fabric*: few (2%) clay aggregates (Bt material), <500 µm, strong birefringence, sub-rounded, reddish brown (CPL/PPL); *Amorphous*: few to common (<10%) calcitic hypo-coatings.

Sample 24, 100–111 cm

*Structure*: weakly developed sub-angular blocky, <2 cm; pellety, <500 µm, to sub-rounded aggregated, 2–4 mm, micro-structure in zones; *Porosity*: 10–15% open interconnected vughy and sub-rounded, <1 mm; 10% fine channels, <5 cm long, <2 mm wide, accommodated, weakly serrated; *Mineral components*: <5% small limestone/carbonate gravel, <5 mm, sub-rounded to sub-angular; coarse/fine ratio: 15/85; coarse fraction: 5% coarse, 5% medium and 5% fine quartz sand, 100–500 µm, sub-rounded; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 40% dusty clay in groundmass, weak birefringence, gold to yellowish brown (CPL); brown to reddish/yellowish brown (CPL), brown to reddish brown (PPL); *Organic component*: 10% organic/charred punctuations in groundmass; <10% shell fragments, <2 mm; <2% bone fragments, <1 mm; *Pedofeatures*: *Textural*: see above; *Fabric*: one large aggregate, <1 cm, sub-rounded, of organic fabric of Sample 26 incorporated from above; common (5–10%) aggregates of silty

clay (Bt material), strong birefringence, sub-rounded, <750 µm, gold (CPL); *Amorphous*: c. 40–60% of groundmass with stronger staining with amorphous sesquioxides in irregular zones; common (c. 20% of groundmass) partial void infills with amorphous to micro-sparitic calcium carbonate.

Sample 23, 111–125 cm

*Structure*: weakly developed sub-angular blocky, <2 cm; pellety, <500 µm, to sub-rounded aggregated, 2–4 mm, micro-structure in zones; *Porosity*: 10–15% open interconnected vughy and sub-rounded, <1 mm; 10% fine channels, <5 cm long, <2 mm wide, accommodated, weakly serrated; *Mineral components*: <5% small limestone gravel, <5 mm, sub-rounded to sub-angular; coarse/fine ratio: 15/85; coarse fraction: 5% coarse, 5% medium and 5% fine quartz sand, 100–500 µm, sub-rounded; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 40% dusty clay in groundmass, weak birefringence, gold to yellowish brown (CPL); brown to reddish/yellowish brown (CPL), brown to reddish brown (PPL); *Organic component*: 10% organic/charred punctuations in groundmass; <10% shell fragments, <2 mm; <2% bone fragments, <1 mm; *Pedofeatures*: *Textural*: see above; few (2%) aggregates of clay (Bt material), strong birefringence, sub-rounded, <750 µm, gold (CPL); *Amorphous*: up to 20% of groundmass with irregular/sub-rounded aggregates of strongly amorphous sesquioxide impregnated silty clay, <1 mm; c. 40–60% of groundmass with stronger staining with amorphous sesquioxides in irregular zones.

### A7.3. Ġgantija WC Trench 1

Sample 3/2, 60–63 cm

*Structure*: apedal, homogeneous; *Porosity*: <10% vughs, <250 µm, sub-rounded to irregular; <2% channels, <1 cm long, <750 µm wide, accommodated, smooth to weakly serrated; *Mineral components*: 100% silt-sized calcium carbonate; greyish yellow (CPL), pale greyish brown (PPL).

Sample 3/9, context 1015, 45–56 cm

*Structure*: fine aggregated, <2 mm to weak to moderately well developed small blocky, <1.5 cm, with pellety micro-structure, <500 µm; *Porosity*: 10% open vughy; <10% channels, <1.5 cm long, <750 µm wide, partly accommodated, weakly serrated; *Mineral components*: 10–20% small limestone gravel towards base of slide, <1.5 cm, sub-rounded to sub-angular; coarse/fine ratio: 40–50/50–60; coarse fraction: 10% coarse sand size limestone, 1–2 mm, sub-rounded; 20% medium and 10–20% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 5–10% very fine quartz sand, 50–100 µm, sub-rounded; 20–25% micro-sparite; 20–25% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), pale brown to brown (PPL); *Organic component*: <10% organic punctuations, <50 µm; <1% very fine charcoal fragments, <500 µm; *Pedofeatures*: *Textural*: see above; *Amorphous*: weak to moderate amorphous sesquioxide impregnation of whole groundmass.

Sample 3/10, context 1016, 70–80 cm

*Structure*: fine aggregated, <2 mm to weak to moderately well developed small to columnar blocky, <3 cm, with pellety micro-structure, <500 µm; *Porosity*: 10% open vughy; <10% channels, <1.5 cm long, <750 µm wide, partly accommodated, weakly serrated; *Mineral components*: 20–30% small limestone gravel towards base of slide, 2–4 cm, sub-rounded to sub-angular; coarse/fine ratio: 40/60; coarse fraction: 10% coarse sand size limestone, 1–2 mm, sub-rounded; 20% medium and 10% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 25%

micro-sparite; 25% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), pale brown to brown (PPL); *Organic component*: 10–20% organic punctuations, <50 µm; <1% very fine charcoal fragments, <500 µm; <2% fine bone fragments, <1 mm, sub-rounded; *Pedofeatures*: *Textural*: see above; *Amorphous*: weak to moderate amorphous sesquioxide impregnation of whole groundmass; common strong humic/amorphous sesquioxide staining of groundmass around void spaces.

Sample 3/1/1, context 1016, 68–77.5 cm

*Lower fabric unit*: *Structure*: fine aggregated to pellety, <500 µm; *Porosity*: 10–15% open vughy, <1 mm; two fabric units: *Mineral components*: 20% small limestone gravel, <2 cm, sub-rounded to sub-angular; coarse/fine ratio: 50/50; coarse fraction: 20% coarse sand size limestone, 1–2 mm, sub-rounded; 10% medium and 20% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 30–40% micro-sparite; 20–25% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), pale brown to brown (PPL); *Organic component*: 10–50% of groundmass as humified organic/charred fragments and punctuations, <250 µm and <50 µm; few (<2%) bone fragments, <500 µm; few (2%) fine charcoal, 250–500 µm; *Amorphous*: weak to moderate amorphous sesquioxide impregnation of whole groundmass; merging over <1 mm with *Upper fabric unit*: same as below, except 20% fine limestone gravel, <8 mm, sub-rounded; and <10% humified organics/punctuations.

Sample 3/1/2, context 1016, 78–85 cm

As for the lower fabric unit of Sample 3/1/1 above, except for: *Mineral components*: up to 40% fine limestone gravel, <1 cm, sub-rounded; *Fabric*: rare (<1%) silty clay soil aggregate, sub-rounded, <500 µm, with short clay striae, orange (CPL), moderate birefringence.

Sample 3/3, context transition of 1004/1019, 84–94 cm

*Structure*: well developed small blocky, <2.5 cm, to columnar blocky, <5 cm, with fine aggregated to pellety microstructure, <1 mm; *Porosity*: 10% channels, <7 cm long, <2 mm wide, accommodated, smooth to weakly serrated; 10% open vughy, <1 mm; two fabric units: *Mineral components*: 20% small limestone gravel, <2 cm, sub-rounded to sub-angular; coarse/fine ratio: 50/50; coarse fraction: 20% coarse sand size limestone, 1–2 mm, sub-rounded; 10% medium and 20% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 30–40% micro-sparite; 20–25% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), pale brown to brown (PPL); one large pottery fragment, <1.5 cm, sub-angular; *Organic component*: 10% of groundmass as humified organic/charred fragments and punctuations, <250 µm and <50 µm; few (<2%) bone fragments, <500 µm; few (2%) fine charcoal, 250–500 µm; *Amorphous*: weak to moderate amorphous sesquioxide impregnation of whole groundmass.

Sample 3/4, contexts 1016/1040 transition, 80–85 cm

*Lower fabric unit*: *Structure*: fine aggregated to pellety, <500 µm; *Porosity*: 10–15% open vughy, <1 mm; two fabric units: *Mineral components*: 75–80% small limestone gravel, <1 cm, sub-rounded to sub-angular; with 20–25% soil fabric inbetween: coarse/fine ratio: 50/50; coarse fraction: 20% coarse sand size limestone, 1–2 mm, sub-rounded; 10% medium and 20% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 30–40% micro-sparite; 20–25% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), pale brown to brown (PPL); *Organic component*: 10–30% organic/charred punctuations, <50 µm; few (<2%) bone fragments, <500 µm; few (2%) fine charcoal, 250–500 µm; *Amorphous*: weak to

moderate amorphous sesquioxide impregnation of whole groundmass; with dispersed horizontal zone of red soil aggregates above, sub-rounded, <4 mm, with strong amorphous sesquioxide reddening; same as lower B horizon of Santa Verna Trench B; associated with c. 1.5–2 cm thick zone of fine limestone gravel above; then Upper fabric unit: as for lower unit.

Sample 3/5, context 1004, 85–96 cm

As for Sample 3/1/1 above

Sample 3/6, context 1016, 96–104 cm

As for Sample 3/1/1 above, except:

Upper fabric unit: *Structure*: fine aggregated to pellety, <500 µm; *Porosity*: 10–15% open vughy, <1 mm; two fabric units: *Mineral components*: 20% small limestone gravel, <2 cm, sub-rounded to sub-angular; coarse/fine ratio: 50/50; coarse fraction: 20% coarse sand size limestone, 1–2 mm, sub-rounded; 10% medium and 20% fine quartz sand, 100–1000 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 30–40% micro-sparite; 20–25% dusty clay in groundmass, weak to non-birefringent, gold/golden brown (CPL); brown (CPL), pale brown to brown (PPL); *Organic component*: 20% organic/charred punctuations, <250 µm and <50 µm; few (<2%) bone fragments, <500 µm; common (10%) fine charcoal, <75 µm; *Amorphous*: weak amorphous sesquioxide impregnation of whole groundmass; merging/undulating boundary with Lower fabric unit: as above except for: *Amorphous*: strongly reddened with amorphous sesquioxides.

Sample 3/7, context 1019, 104–113 cm

As for Sample 3/6, lower fabric unit (above).

Sample 3/8, context 1019, 113–124 cm

*Structure*: fine aggregated, 1–2 mm, to pellety, <100 µm; *Porosity*: 25% open, interconnected vughy, <1 mm; *Mineral components*: 30% small limestone gravel, <2.5 cm, sub-rounded to sub-angular, all orientations; coarse/fine ratio: 10/90; coarse fraction: 20% coarse sand size limestone, 1–2 mm, sub-rounded; 5% coarse and 5% medium quartz sand, 500–1000 µm, sub-rounded; fine fraction: 15% very fine quartz sand, 50–100 µm, sub-rounded; 10% micro-sparite; 40% dusty clay in groundmass, weak to non-birefringent, golden brown (CPL); brown to golden brown (CPL), orangey/reddish brown (PPL); *Organic component*: 10–15% organic/charred punctuations, <50 µm; *Fabric*: rare (1%) fine sandy/silty clay soil aggregate, <1 mm, sub-rounded, dark orangey red (CPL/PPL); *Amorphous*: moderate amorphous sesquioxide impregnation of whole groundmass.

#### A7.4. Ġgantija olive grove and environs

Sample 35, Test Pit 5, 75–80 cm

*Structure*: pellety to fine aggregated, <2 mm; *Porosity*: 10–20% interconnected vughy; *Mineral components*: 50–75% fine limestone gravel, <1 cm, sub-rounded; c/f ratio: 50/50; coarse fraction: 15% coarse sand size limestone, 1–2 mm; 20% medium and 15% fine quartz, 100–750 µm, sub-rounded to sub-angular; fine fraction: 15% fine quartz sand, 50–100 µm; 25% dusty clay, non-birefringent, orangey brown (CPL); greyish brown (CPL/PPL); *Organic component*: few charcoal, <1 mm; <5% organic punctuations.

Sample 41, BH54, 70–80 cm

*Structure*: pellety to fine aggregated, <5 mm; *Porosity*: 10–20% interconnected vughy; *Mineral components*: 20% fine limestone gravel,

<1 cm, sub-rounded; c/f ratio: 30/70; coarse fraction: 10% coarse, 10% medium and 10% fine quartz, 100–750 µm, sub-rounded to sub-angular; fine fraction: 20% fine quartz sand, 50–100 µm; 20% micro-sparite; 30% dusty clay, non-birefringent, orangey brown (CPL); golden brown (CPL), pale reddish brown (PPL); *Organic component*: few charcoal, <1 mm; <5% organic punctuations; c. 2 cm thick zone of plant cell tissue at base of slide, with abundant excrements within; *Amorphous*: weak to moderate sesquioxide impregnation of groundmass.

#### A7.5. Skorba

*Trench A, section 1:*

Sample 11, 70–82 cm

Two fabric units: Upper fabric unit 1: *Structure*: pellety, <2 mm; *Mineral components*: as for lower fabric 2 below; Lower fabric unit 2: *Structure*: well developed sub-angular blocky, <4 cm; pellety micro-structure, <500 µm; *Porosity*: 10% channels, <4 cm, <1 mm wide, accommodated, weakly serrated, vertical/horizontal, all lined with micro-sparite and with up to 50% discontinuous infills of same fabric; 5–10% vughs, <250 µm, irregular to sub-rounded; both contain discontinuous pellety fabric within; *Mineral components*: 10% fine limestone, <2 cm, sub-rounded; coarse/fine ratio: 25/75; coarse fraction: 5% coarse and 10% medium sand-size limestone, 250–1500 µm, sub-rounded; 10% fine quartz sand, 100–250 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 20–40% micro-sparite; 25–45% dusty clay, weak to moderate birefringence; golden/reddish brown (CPL/PPL); *Organic components*: 5–10% fine charcoal, <250 µm; 5% organic/charred punctuations, <50 µm; rare (<1%) amorphous sesquioxide replaced plant tissue fragment; rare (<1%) shell fragments; *Amorphous*: rare (<1%) sesquioxide nodule, sub-rounded, <500 µm.

Sample 20, 85–97 cm

Mixture of two fabric units as for Sample 28: Fabric 1: 60% of groundmass; Fabric 2: 40% of groundmass; *Amorphous*: moderate amorphous sesquioxide staining of whole fabric.

Sample 24, 105–114 cm

*Structure*: aggregated micro-structure, <5 mm; *Porosity*: up to 20% interconnected vughy; *Mineral components*: coarse/fine ratio: 40/60; coarse fraction: 20% medium sand-size limestone, 500–1000 µm, sub-rounded; 20% fine quartz sand, 250–750 µm, sub-rounded; fine fraction: 10% very fine quartz, 100–250 µm, sub-rounded; 20% micro-sparite; 30% dusty clay, weak birefringence; towards base of slide are rare aggregates of dusty clay, <500 µm, sub-rounded, weak birefringence, golden brown (CPL); golden brown (CPL), brown (PPL); *Organic components*: 2–5% fine charcoal, <250 µm; 2% shell fragments; 2% bone fragments, <50 µm; rare (<1%) plant tissue fragments.

Sample 28, 120–131 cm

Main fabric 1: >90% of total groundmass; *Structure*: pellety, <250 µm; *Porosity*: up to 20% vughs, interconnected, irregular to sub-rounded, <3 mm; *Mineral components*: 3% of total groundmass; *Structure*: pellety micro-structure, <500 µm; 30–40% fine limestone pebbles, <5 cm, sub-rounded; slight horizontal orientation; coarse/fine ratio: 25/75; coarse fraction: 10% coarse and 10% medium sand-size limestone, 250–1500 µm, sub-rounded; 5% fine quartz sand, 100–250 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 40% dusty clay, pellety, weak to moderate birefringence, golden brown (CPL); whitish/golden brown

(CPL), pale grey/golden brown (PPL); *Organic components*: 2% very fine charcoal, <250 µm; 5% organic/charred punctuations, <50 µm; *Anthropogenic inclusions*: rare (<1%) bone fragments, <250 µm; *Minor fabric 2*: <10% of total groundmass; *Structure*: aggregated micro-structure, <1 cm; *Porosity*: <2% vughs, <200 µm; *Mineral components*: coarse/fine ratio: 40/60; coarse fraction: 20% medium sand-size limestone, 500–1000 µm, sub-rounded; 20% fine quartz sand, 250–750 µm, sub-rounded; fine fraction: 10% very fine quartz, 100–250 µm, sub-rounded; 20% micro-sparite; 30% dusty clay, weak birefringence; dark golden brown (CPL), golden brown (PPL); *Organic components*: 2–5% fine charcoal, <250 µm.

#### Trench A, section 2:

##### Sample 26, 70–80 cm

Two fabric units: *Upper fabric unit 1*: *Structure*: pellety, <250 µm; *Porosity*: up to 20% vughs, interconnected, irregular to sub-rounded, <3 mm; *Mineral components*: 3% of total groundmass; *Structure*: pellety micro-structure, <500 µm; 30–40% fine limestone pebbles, <5 cm, sub-rounded; slight horizontal orientation; coarse/fine ratio: 25/75; coarse fraction: 10% coarse and 10% medium sand-size limestone, 250–1500 µm, sub-rounded; 5% fine quartz sand, 100–250 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 40% dusty clay, pellety, weak to moderate birefringence, golden brown (CPL); whitish/golden brown (CPL), pale grey/golden brown (PPL); *Organic components*: 2% very fine charcoal, <250 µm; 5% organic/charred punctuations, <50 µm; *Anthropogenic inclusions*: rare (<1%) bone fragments, <250 µm; distinct horizontal boundary with *Lower fabric unit 2*: *Structure*: dense, apedal; *Porosity*: none; *Mineral components*: <2% fine limestone fragments, <1 cm, sub-rounded; 98% calcitic amorphous 'slurry'; 10% calcitic soil fabric aggregates, <1 cm, irregular, same fabric as for Sample 78; *Organic components*: 5–10% charred organic punctuations, <50 µm; 5% fine charcoal, <3 mm, sub-rounded; 5% burnt and amorphous sesquioxide replaced plant fragments, <3 mm.

##### 'Floor' spot sample, upper sample 26, 75–82 cm

Two well mixed fabrics: *Main fabric 1*: 60% of groundmass; *Structure*: dense, apedal; *Porosity*: none; *Mineral components*: <2% fine limestone fragments, <1 cm, sub-rounded; 98% calcitic amorphous 'slurry'; 10% micritic soil fabric aggregates, <1 cm, irregular, same fabric as for Sample 78; *Organic components*: 5–10% charred organic punctuations, <50 µm; 5% fine charcoal, <3 mm, sub-rounded; 5% burnt and amorphous sesquioxide replaced plant fragments, <3 mm; *Fabric*: rare (<1%) burnt soil aggregate, reddish/crimson brown (CPL), <2 mm; *Minor fabric 2*: 40% of groundmass; *Structure*: pellety, <2 mm; *Porosity*: 15% interconnected vughy; *Mineral components*: same as Sample 20.

##### Sample 75, 91–100 cm

*Structure*: pellety, <5 mm; *Porosity*: 20% interconnected vughy; *Mineral components*: mixture of three main components: 1) 40–50% of groundmass: 40% fine sand-size limestone, 100–200 µm, sub-rounded; 10% fine quartz, 100–200 µm, sub-rounded; fine fraction: 50% micro-sparite; 2) 10–20% aggregates of calcitic ash, <1 mm, sub-rounded, grey (CPL/PPPL); 3) 20–30% aggregates of dusty clay, non- to weak birefringence, <5 mm, sub-rounded to sub-angular, golden brown (CPL), sometimes coated with birefringent dusty clay; *Organic components*: 5% charred organic punctuations, <50 µm.

##### Sample 78, 107–120 cm

*Structure*: weakly developed columnar blocky, <5 cm; pellety micro-structure, <500 µm; *Porosity*: 5% channels, <5 cm, <1 mm wide, accommodated, smooth to weakly serrated, mainly vertical; 10%

vughs, <2 mm, irregular to sub-rounded; both contain discontinuous pellety fabric within; *Mineral components*: 5% fine limestone, <5 mm, sub-rounded; coarse/fine ratio: 25/75; coarse fraction: 10% coarse and 10% medium sand-size limestone, 250–1500 µm, sub-rounded; 5% fine quartz sand, 100–250 µm, sub-rounded; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 40% dusty clay, pellety, weak to moderate birefringence, golden brown (CPL); golden brown (CPL), pale grey/golden brown/brown (PPL); *Organic components*: 2–5% fine charcoal, <500 µm; 5% organic/charred punctuations, <50 µm; *Anthropogenic inclusions*: few (<2%) pot and burnt/unburnt bone fragments, <8 mm; rare (<1%) calcitic ash fragment, <1 mm, sub-rounded; *Amorphous*: rare (<1%) sesquioxide nodule, <500 µm, rounded.

##### Plaster spot sample

*Structure*: dense, apedal; *Mineral components*: <1% fine limestone fragments, <1 cm, sub-rounded; 70–80% calcitic amorphous 'slurry'; 10% calcitic soil fabric aggregates, <1 cm, irregular, same fabric as for Sample 78; *Organic components*: 5% charred organic punctuations, <50 µm; 2% very fine charcoal, <200 µm.

#### A7.6. Xaghra town

##### Sample 5: Abandoned stone quarry on northeast side of town on road to Ramla Bay

*Structure*: very well developed sub-angular blocky, <6 cm; *Porosity*: 10% channels, <5 cm long, <750 µm wide, accommodated, smooth; 5% vughs, sub-rounded, <500 µm; *Mineral components*: all fine fraction: 15–20% very fine quartz, 50–100 µm, sub-rounded; 80–85% dusty clay in groundmass, speckled to striated to reticulate striated in places, gold to orange (CPL), moderate to strong birefringence; orangey brown (CPL), reddish orange (PPL); *Organic components*: <1% fine charcoal, <100 µm; 5% organic punctuations in groundmass; rare (<1%) silicified/clay replaced plant tissue fragments; *Amorphous*: 90% of the groundmass strongly impregnated with amorphous sesquioxides.

##### Sample 11: Modern house construction site 2

*Structure*: very well developed sub-angular blocky; *Porosity*: <5% vughs, sub-rounded, <500 µm; *Mineral components*: c/f ratio: 5/95; coarse fraction: 5% fine quartz, 100–250 µm; fine fraction: 15% very fine quartz, 50–100 µm, sub-rounded; 80% dusty clay in groundmass, striated to weakly reticulate striated in places, gold to orange (CPL), moderate to strong birefringence; orangey brown (CPL), reddish orange (PPL); *Organic components*: <1% fine charcoal, <100 µm; 5% organic punctuations in groundmass, <50 µm; *Amorphous*: 90% of the groundmass strongly impregnated with amorphous sesquioxides; *Fabric*: occasional aggregate of humic, fine sandy/silty clay loam, sub-rounded, <2 mm.

##### Sample 12: Modern house construction site 3: upper red soil

*Structure*: pellety, <500 µm, to sub-rounded aggregated, 2–4 mm; *Porosity*: 15–20% open interconnected vughy, sub-rounded to elongate, <3 mm; *Mineral components*: <5% small limestone gavel, <5 mm, sub-rounded to sub-angular; coarse/fine ratio: 15/85; coarse fraction: 5% coarse, 5% medium and 5% fine quartz sand, 100–500 µm, sub-rounded; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 40% dusty clay in groundmass, weak birefringence, gold to yellowish brown (CPL); dark brown to reddish brown (CPL/PPPL); *Organic component*: brown to dark brown humic staining of whole groundmass; rare (<2%) charcoal fragments, <500 µm; 10% organic/charred punctuations in groundmass; rare (1%) bone fragments, <1 mm; *Pedofeatures*: *Textural*: see above; *Fabric*:

one aggregate of humic silt Ah material, <5 mm, sub-rounded, dark brown to black (CPL/PPL); *Amorphous*: strong to very strong staining with amorphous sesquioxides throughout groundmass.

Sample 14: Modern house construction site 3: lower red soil

*Structure*: very well developed, small irregular/sub-angular blocky, <3 cm; *Porosity*: 10% channels, <5 cm long, <750 µm wide, accommodated, smooth; 5% vughs, sub-rounded, <500 µm; *Mineral components*: 20% fine limestone gravel, <1.5 cm, sub-rounded; c/f ratio: 20/80; coarse fraction: 10% medium and 10% fine quartz sand, 100–500 µm, sub-rounded; fine fraction: 20% very fine quartz, 50–100 µm, sub-rounded; 60% dusty clay in groundmass, mainly speckled, gold to orange to reddish brown (CPL), moderate to strong birefringence; brown (CPL), reddish brown (PPL); *Organic components*: <1% fine charcoal, <100 µm; 5% organic punctuations in groundmass; *Amorphous*: groundmass moderately impregnated with amorphous sesquioxides.

#### A7.7. Tač-Cawla

Sample 9

*Structure*: dense, well developed small blocky, <3 cm; irregular aggregated to pellety micro-structure, <2 mm; *Porosity*: 5% vughs <250 µm, sub-rounded to irregular; 2% fine channels, <3 cm long, <750 µm wide, accommodated, smooth to weakly serrated; *Mineral components*: 25% very fine quartz sand, 50–100 µm, sub-rounded; 75% silty clay, stipple speckled and short striae, moderate to strong birefringence, red/reddish orange (CPL); very strong red (CPL/PPL); *Amorphous*: very severe amorphous sesquioxide impregnation of whole groundmass.

Sample 14

*Structure*: dense, moderately well developed blocky, <6 cm; irregular aggregated to pellety micro-structure, <2 mm; *Porosity*: 5% vughs, <500 µm, sub-rounded to irregular; 5% fine channels, <3 cm long, <500 µm wide, accommodated, smooth to weakly serrated; *Mineral components*: <2% fine limestone gravel, 2–4 mm, sub-angular; 20–25% very fine quartz sand, 50–100 µm, sub-rounded; 75–80% silty clay, striated to weakly reticulate striated, moderate to strong birefringence, red/reddish orange (CPL); very strong red (CPL/PPL); *Amorphous*: very severe amorphous sesquioxide impregnation of whole groundmass; 5–15% amorphous sesquioxide nodules, <250 µm, sub-rounded, orangey red (CPL/PPL).

Sample 139

*Structure*: aggregated, sub-rounded to irregular, <4 mm; *Porosity*: 5% channels, <5 mm long, <250 µm wide; 5% vughs, sub-rounded to irregular, <500 µm; *Mineral components*: 5% fine stone, <2 cm, sub-rounded to sub-angular; c/f ratio: 15/85; coarse fraction: 10% medium and 5% fine quartz sand, sub-rounded, 200–750 µm; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 20% micro-sparite; 10% silt; 25% dusty clay; golden brown (CPL), yellowish brown (PPL); *Organic components*: very few (1%) charcoal fragments, <5 mm; few (2%) micro-charcoal, <75 µm; 5–10% organic punctuations, <50 µm; *Pedofeatures*: *Amorphous*: weak to moderate amorphous sesquioxide impregnation of whole groundmass with few zones of greater impregnation; common partial infills and linings of voids with micritic to amorphous calcium carbonate.

Sample 261

*Structure*: aggregated, 100 µm to <2 mm; *Porosity*: up to 20% vughs, sub-rounded to irregular, <1 mm; most with calcitic coatings; *Mineral*

*components*: c/f ratio: 15/85; coarse fraction: 10% medium and 5% fine quartz sand, sub-rounded, 200–750 µm; fine fraction: 5% very fine quartz sand, 50–100 µm, sub-rounded; 75% micro-sparite; 20% dusty clay; pale golden/greyish brown (CPL), pale yellowish brown (PPL); *Excremental*: few (<5%) dung aggregates, <4 mm, sub-rounded; *Organic components*: 5–10% organic/charred fragments, <500 µm.

Sample 301

Two fabric units; **Upper fabric unit 1**: *Structure*: dense, aggregated, <5 mm; *Porosity*: 10% vughs, <500 µm, sub-rounded; <5% channels, <5 cm long, <500 µm wide, partly accommodated; *Mineral components*: <10% very fine quartz sand, 50–100 µm, sub-rounded; 80–90% dusty clay, weak to non-birefringent; aggregate of silt crust in upper right hand corner of slide, <1 cm; reddish brown (CPL), golden brown (PPL); *Organic components*: 10–20% organic/charcoal dust, <50 µm; **Lower fabric unit 2**: 50–75% limestone pebbles, <1.5 cm, sub-rounded in matrix of fabric as above; orangey red (CPL/PPL); very strong amorphous sesquioxide impregnation.

#### A7.8. In-Nuffara

Sample 17

*Structure*: aggregated, 500 µm to 4 mm, sub-rounded to irregular; *Porosity*: 20–50% interconnected vughy; 10% horizontal channels, <2 mm wide, weakly serrated, partly accommodated; *Mineral components*: 10% large limestone pebbles, <3 cm, sub-rounded to sub-angular; 10% fine limestone gravel, <5 mm, sub-rounded to sub-angular; c/f ratio = 10–20/80–90; coarse fraction: 10–20% fine sand-size limestone, sub-rounded to sub-angular, 100–250 µm; fine fraction: 10% very fine sand-size limestone, sub-rounded to sub-angular, 50–100 µm; 10% micro-sparite; 40% silty clay, in groundmass, weak birefringence; golden brown to brown (CPL); dark greyish brown (PPL); *Organic components*: <1% charcoal, <5 mm; 5–10% charred 'dust' in groundmass, <50 µm; <1% shell fragments.

Sample 40

As for Sample 17, except for:

*Mineral components*: 20% micro-sparite; occasional zone of amorphous calcium carbonate; *Organic components*: <1% bone fragments, <2 cm; <1% pot fragments, <1 cm; <1% fired clay fragments, <6 mm; *Fabric pedofeatures*: few silt crust fragments, with micro-lamination, <4 mm.

Sample 503

*Structure*: weakly developed sub-angular blocky, <3 cm; *Porosity*: 10–20% vughs, sub-rounded to irregular, <2 mm; 5% channels, irregular, <3 mm long, <500 µm wide, weakly serrated to smooth, partly accommodated; *Mineral components*: c/f ratio = 10/90; coarse fraction: 10% fine quartz sand, sub-rounded to sub-angular, 100–250 µm; fine fraction: 20% very fine quartz sand, sub-rounded to sub-angular, 50–100 µm; 70% silty clay, in groundmass and coating grains and voids, weak birefringence; golden brown (CPL); brown (PPL); *Organic components*: <1% charcoal, <500 µm; 5% charred 'dust' in groundmass, <50 µm; <1% bone fragments, <2 mm; <1% pot fragments, <4 mm; *Amorphous pedofeatures*: 10% of groundmass with irregular zones of sesquioxide formation.

Sample 509

As for Sample 503, except for:

*Structure*: very weakly developed sub-angular blocky, <5 cm; *Organic components*: whole groundmass is stained dark brown to brown.

**A7.9. Marsalforn Valley Profile 626**

Sample 626/1, 175–185 cm

*Structure:* weakly developed, sub-angular to columnar blocky, <1.5 cm; *Porosity:* <5% vughs, sub-rounded to irregular, <1 mm; 5% channels, <1.5 cm long, <500 µm wide, smooth to weakly serrated, accommodated; *Mineral components:* 5–10% fine limestone, sub-rounded, <5 mm; c/f ratio: 50/50; coarse fraction: 10% shell fragments; 2–5% coarse, 5% medium and 20% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 20% micro-sparite; 20% dusty clay; golden brown (CPL), greyish/yellowish brown (PPL); *Organic components:* rare (<1%) fragments of amorphous iron replaced humified organic matter and/or vegetal voids; *Fabric:* rare void infill of weakly reticulate, very fine sandy clay loam, golden brown/yellow (CPL), moderate birefringence, with 5% charred punctuations; *Amorphous:* rare (<1%) sesquioxide nodule, sub-rounded, <750 µm.

Sample 627/2, 200–210 cm

*Structure:* moderately well developed, sub-angular blocky, <4 cm; *Porosity:* <5% vughs, sub-rounded to irregular, <750 µm; 5% channels, <4 cm long, <750 µm wide, smooth to weakly serrated, accommodated; *Mineral components:* 5–10% fine limestone, sub-rounded, <5 mm; c/f ratio: 50/50; coarse fraction: 10% shell fragments; 2–5% coarse, 5% medium and 20% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 20% micro-sparite; 20% dusty clay; golden brown (CPL), greyish/yellowish brown (PPL); *Organic components:* rare (<1%) fragments of amorphous iron replaced humified organic matter and/or vegetal voids; *Amorphous:* rare (<1%) sesquioxide nodule, sub-rounded, <750 µm.

Sample 627/3, 275–285 cm

*Structure:* weakly developed, sub-angular blocky, <4 cm; *Porosity:* <5% vughs, sub-rounded to irregular, <750 µm; 5% channels, <4 cm long, <750 µm wide, smooth to weakly serrated, accommodated; *Mineral components:* 5–10% fine limestone, sub-rounded, <5 mm; c/f ratio: 50/50; coarse fraction: 10% shell fragments; 2–5% coarse, 5% medium and 20% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 20% micro-sparite; 20% dusty clay; golden brown (CPL), greyish/yellowish brown (PPL); *Organic components:* rare (<1%) fragments of amorphous iron replaced humified organic matter and/or vegetal voids; *Fabric:* few (<5%) silt and silty clay crust fragments, <2 mm; *Amorphous:* rare (<1%) sesquioxide nodule, sub-rounded, <750 µm.

**A7.10. Ramla Valley Profile 627**

Sample 627/1, 4–14 cm

*Structure:* moderately well developed, large sub-angular to columnar blocky, <5 cm; *Porosity:* <5% vughs, sub-rounded, <500 µm; 5%

channels, <5 cm long, <1 mm wide, smooth to weakly serrated, accommodated; *Mineral components:* 10–15% fine limestone, sub-rounded, <6 mm; c/f ratio: 40/60; coarse fraction: 10–15% shell fragments; 10% coarse, <5% medium and 10% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 20% very fine quartz sand, 50–100 µm, sub-rounded; 40% micro-sparite; 20% dusty clay; yellowish brown (CPL), pale yellowish brown (PPL); *Organic components:* rare (<1%) bone fragment, <500 µm; few (<2%) irregular zones of humified organic matter.

Sample 627/2, 75–85 cm

*Structure:* 50% of groundmass is small, irregular, sub-angular blocky, <1 cm; 50% of groundmass is granular to small aggregated, <500 µm; *Porosity:* 50–75% open vughy in latter fabric; usually infilled with micrite; *Mineral components:* up to 50% fine limestone, sub-rounded, <1 cm, all orientations, occasionally weakly laminar; c/f ratio: 60/40; coarse fraction: 20% shell fragments; 10% coarse, 20% medium and 10% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 5% very fine quartz sand, 50–100 µm, sub-rounded; 25% micro-sparite; 10% dusty clay; greyish brown (CPL/PPL); *Organic components:* rare (<1%) bone fragment, <250 µm.

Sample 626/3, 103–113 cm

Two fabric units: Upper fabric unit (0–3/4 cm): as for Pr 626/2 above; undulating, merging boundary over 1 mm with Lower fabric unit (3/4–8.5 cm): *Structure:* aggregated, <500 µm; *Porosity:* <5% vughs, sub-rounded, <500 µm; 5% channels, <5 cm long, <1 mm wide, smooth to weakly serrated, accommodated; *Mineral components:* <5% fine limestone, <4 mm; c/f ratio: 30/70; coarse fraction: 10% shell fragments; 5% coarse, <5% medium and 10% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 15% very fine quartz sand, 50–100 µm, sub-rounded; 50% micro-sparite; 20–25% dusty clay, aggregated, <500 µm; brown (CPL/PPL); *Organic components:* few (<2%) irregular zones of humified organic matter; *Fabric:* occasional (2%) silty clay aggregate, <1 mm, sub-rounded, yellowish brown (CPL).

**A7.11. Dwerja**

Sample 616: 2.25–2.35 m

*Structure:* weakly developed, small irregular to sub-angular blocky, <5 cm; *Porosity:* <5% vughs, sub-rounded, <250 µm; 2% channels, <1 cm long, <500 µm wide, weakly serrated, partly accommodated; *Mineral components:* <5% fine limestone, sub-rounded, <8 mm; c/f ratio: 35/65; coarse fraction: 10% shell fragments; 5% coarse, 10% medium and 10% fine sand-size limestone, sub-rounded, 100–1000 µm; fine fraction: 10% very fine quartz sand, 50–100 µm, sub-rounded; 35% micro-sparite; 10% coarse calcitic, <50 µm; 10% dusty clay; brown (CPL), yellowish brown (PPL).

(Note: PPL = plane polarized light; CPL = cross polarized light; µm = microns; mm = millimetres; cm = centimeters)