Supplementary materials for

Variable slip mode in the past 3300 years on the fault ruptured in the 2012 M5.6 Pernik slow earthquake in Bulgaria

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The supplementary materials include BERT configuration files, high-resolution photomosaics of the trenched deposits and a diffractogram of a sample from unit E in the trench.

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Code SI.1: BERT configuration file for resistivity profile R1

```
DATAFILE=lrme12.AMP.ohm.txt
DIMENSION=2
TOPOGRAPHY=1
SURFACESMOOTH=1
PARADX=0.3
SPLINEBOUNDARY=1
PARA2DQUALITY=34.2
PARAMAXCELLSIZE=40
INTERFACE=me12.limit
RECALCJACOBIAN=1
LAMBDA=10
LAMBDADECREASE=.5
ERRMAX=3
##### start content file me12.limit
# 253.30 818.1
# 201.08 723.9
##### end content file me12.limit
```

Code SI.2: BERT configuration file for resistivity profile R2

```
DATAFILE=lrme13.AMP.ohm.txt
DIMENSION=2
TOPOGRAPHY=1
SURFACESMOOTH=1
PARADX=0.3
SPLINEBOUNDARY=1
PARA2DQUALITY=34.2
INTERFACE=me13.limit
RECALCJACOBIAN=1
LAMBDA=20
LAMBDADECREASE=.5
ZWEIGHT=1
ERRMAX=3
##### start content file me13.limit
# 95.22 814.81
# 83.12 793.93
#
# 51.58 813.96
# 48.35 796.69
##### end content file me13.limit
```

Code SI.3: BERT configuration file for resistivity profile R3

```
DATAFILE=me02.amp.ohm.txt
DIMENSION=2
TOPOGRAPHY=1
SURFACESMOOTH=1
PARADX=0.3
SPLINEBOUNDARY=1
PARA2DQUALITY=34.2
PARAMAXCELLSIZE=5
RECALCJACOBIAN=1
LAMBDA=50
LAMBDADECREASE=.5
ZWEIGHT=1
ROBUSTDATA=1
BLOCKYMODEL=1
ERRMAX=3
```

Code SI.4: BERT configuration file for resistivity profile R4

```
DATAFILE=me03.amp.ohm.txt
DIMENSION=2
TOPOGRAPHY=1
SURFACESMOOTH=1
PARADX=0.3
SPLINEBOUNDARY=1
PARA2DQUALITY=34.2
PARAMAXCELLSIZE=10
RECALCJACOBIAN=1
LAMBDA=5
ZWEIGHT=1.2
ROBUSTDATA=1
BLOCKYMODEL=1
ERRMAX=3
```

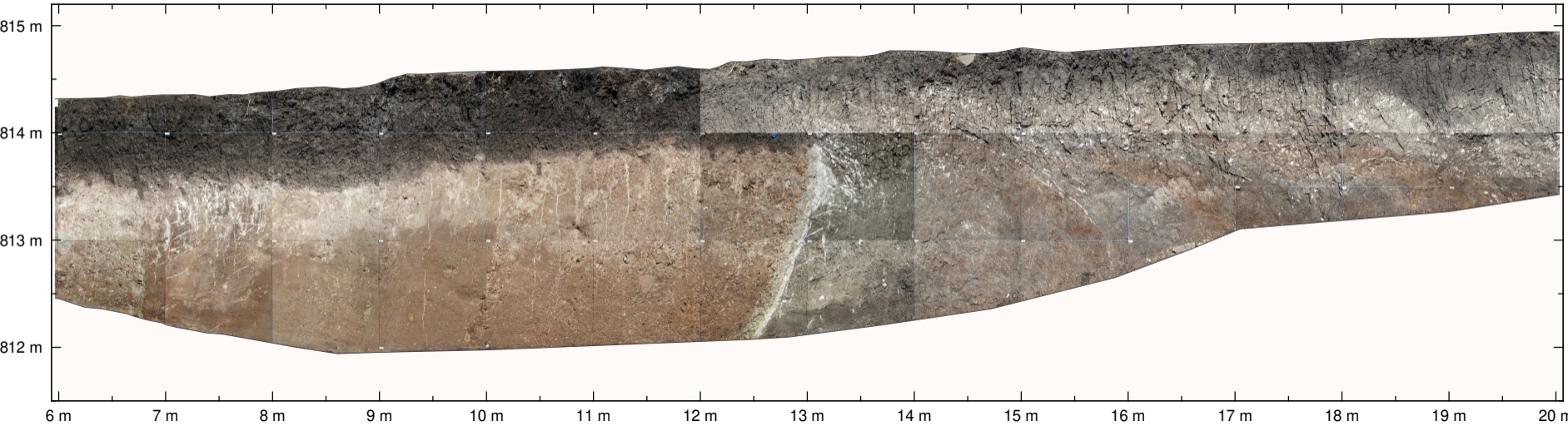Figure SI.1: Photomosaic of the NW trench wall, f1 fault damage zone

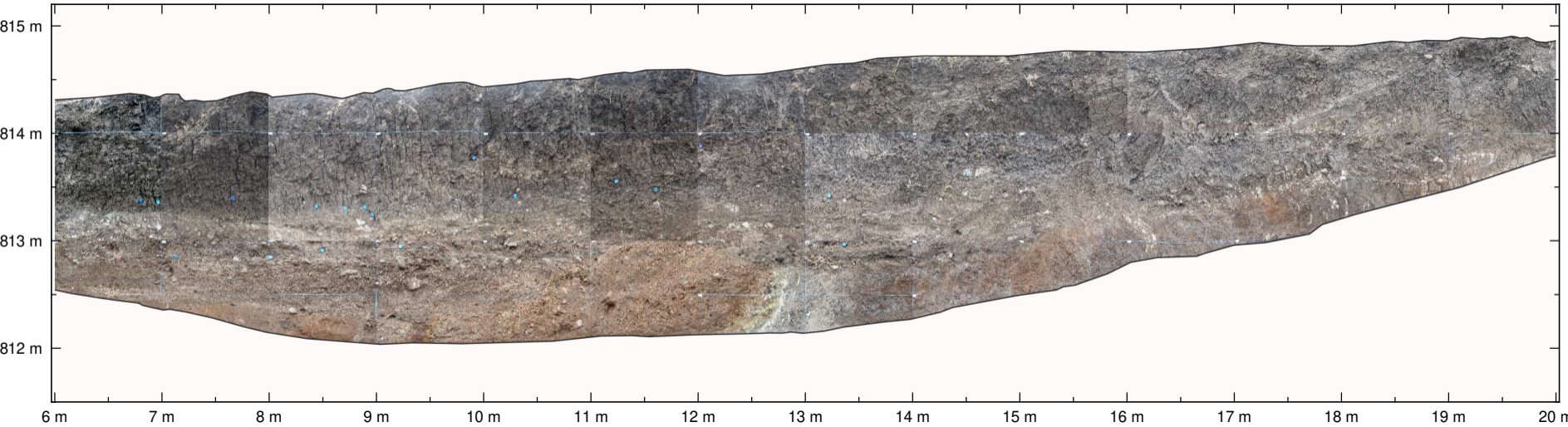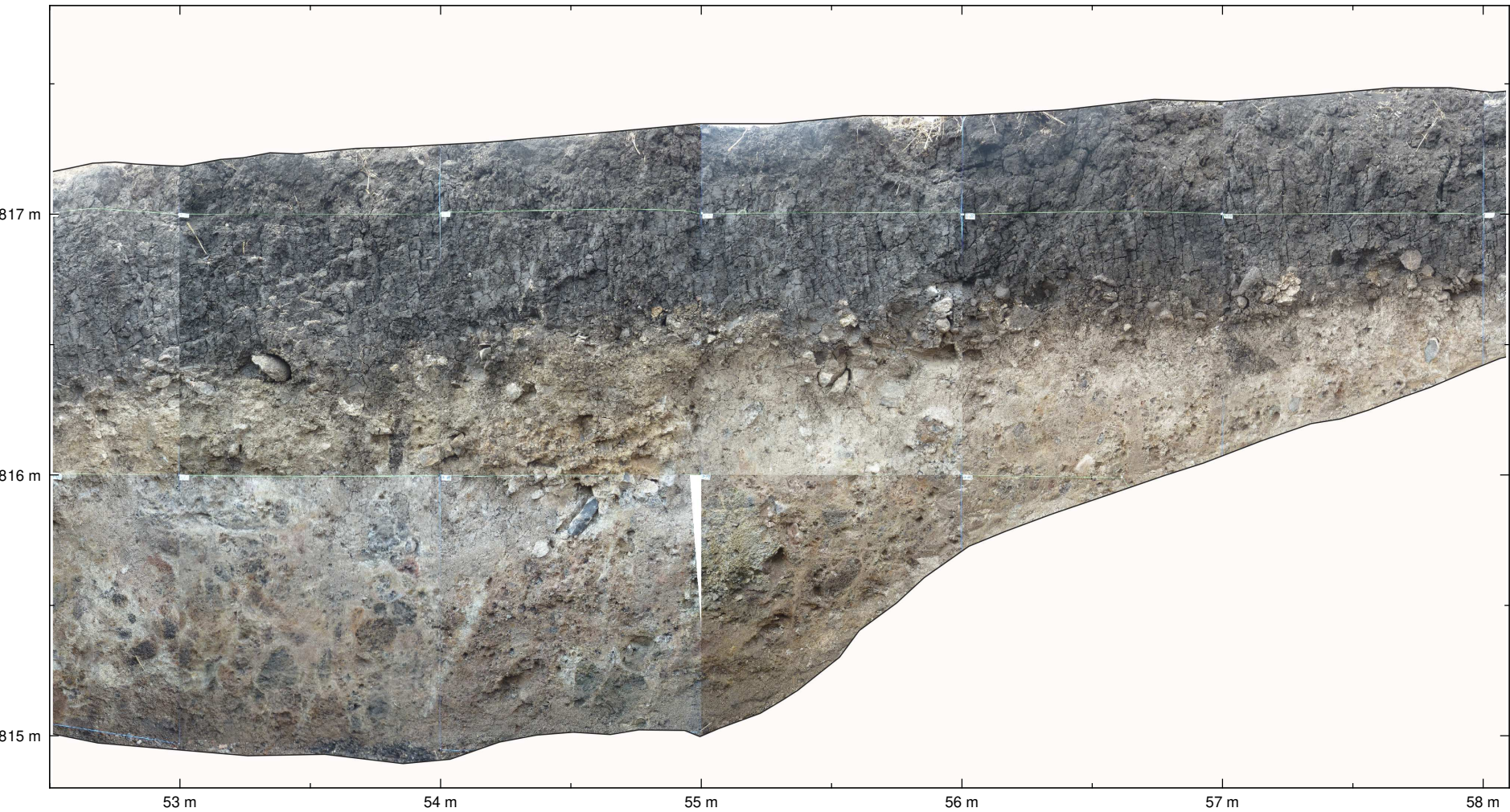Figure SI. 2: Photomosaic of the SE trench wall, f1 fault damage zone

Figure SI.3: Photomosaic of the NW trench wall, f2 fault damage zone

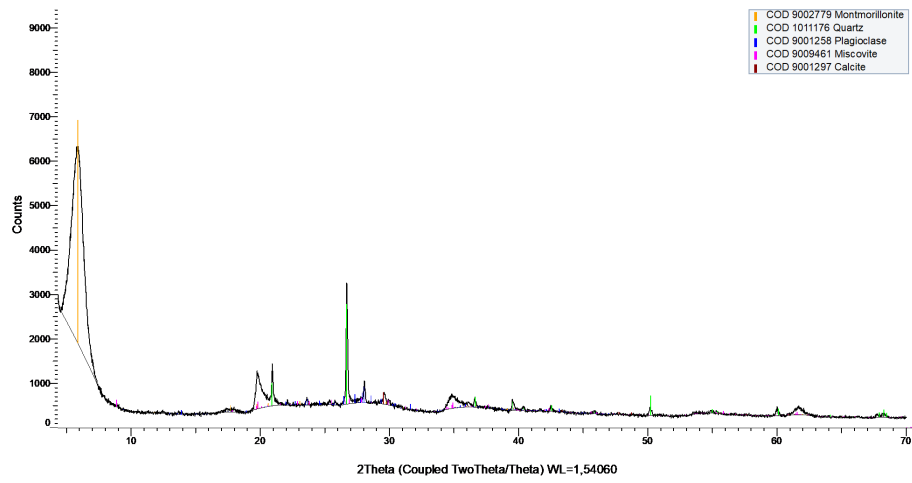Figure SI.4: Photomosaic of the SE trench wall, f2 fault damage zone

Figure SI.5: X-ray diffractogram of a clay sample collected from unit E, NW trench wall