

## Station Description Sheet **E02**

1. General Information
2. Geographical Information / Geomorphology
3. Geological Information
4. Geotechnical Site Characterization
5. Geophysical Site Characterization
6. Site Response
7. References

**1. GENERAL INFORMATION**



**Photo 1:** Outside view of the hosting structure



**Photo 2:** Inside of the E02 installation box

**Station Code:** E02

**Network:** Euroseis

**Instrumentation:** Check the up-to-date EUROSEISTEST stations history file at <http://euroseisdb.civil.auth.gr/stations>

**Power supply:** AC

**Housing:** in a water pump house in the eastern part of the Mygdonian basin

**2. GEOGRAPHICAL INFORMATION / GEOMORPHOLOGY**



**Figure 1:** Location map of E02 station

**Location:** in the Mygdonian basin

**Elevation (from sea level):** 47 m

**Station coordinates:** 23.315498°E / 40.674206°N

**Projection system:** WGS84

**Site morphology:** Valley center (east part of the valley)

**3. GEOLOGICAL INFORMATION**



**Legend**

- Holocene**
  - Lacustrine sediments
  - River deposits/torrent beds
  - Valley deposits
- Pleistocene**
  - Lacustrine sediments
  - Terrestrial (river and flood) red beds
- Quaternary**
  - Alluvial fans
- Alpine formations**
  - Two-mica and biotite granite
  - Two-mica gneiss

**Figure 2:** Geological map of the central Mygdonian basin. The available geological boreholes (borehole 84 & borehole 85) in the vicinity of station E02 are also shown.

**Surface geology (from geological map):** on Holocene valley deposits

**Reference for geological map:** Geological map of Greece - Scale 1:50000, Map Sheets of "Thermi" and "Zagliverion", (IGME, 1978)

**Boreholes (with core description) in the proximity of the station:** two geological boreholes with names 84 & 85. The boreholes were drilled by private companies during 1970 (Borehole 84) & 1984 (Borehole 85). The soil description of these boreholes is available in the following table (IGME, 2001).

**Table 1:** Geological soil description of the two geological boreholes 84 & 85

**Borehole 84**

Depth (m)	Soil description
0-2.5	sandy clay
2.5-6	loam
6-11	sandy clay
11-20	clay, loam
20-25	sand
25-30	clay
30-51	gravels
51-56	clay
56-59	sand, gravels
59-76	clay
76-80	gravels
80-90	clay
90-93	gravels
93-105	clay
105-107	coarse grained
107-109	clay
109-115	reddish clay
115-122	sand
122-128	reddish clay
128-134	sand
134-140	clay

**Borehole 85**

Depth (m)	Soil description
0-1	top soil
1-3	sand
3-14	green clay
14-38	pebbles, gravels
38-46	green clay
46-55	pebbles
55-62	green clay
62-65	pebbles
65-81	green clay
81-86	gravels, coarse grained sand
86-108	black clay
108-113	pebbles, gravels
113-117	brown clay
117-120	pebbles
120-124	brown clay
124-142	clay with small gravels
142-178	clay

**4. GEOTECHNICAL SITE CHARACTERIZATION**

Geotechnical site characterization data for station E02 include:

1. Sampling borehole (EUROSEISTEST Project Reports, 1993-1995).
2. Normal Penetration test (EUROSEISTEST Project Reports, 1993-1995).
3. Cone penetration test (EUROSEISRISK Project Reports, 2002 – 2005).

Data are available in ascii format in:

[http://euroseisdb.civil.auth.gr/uploads/station/geotechnical/4/Site\\_characterization\\_geotechnical\\_E02.txt](http://euroseisdb.civil.auth.gr/uploads/station/geotechnical/4/Site_characterization_geotechnical_E02.txt)

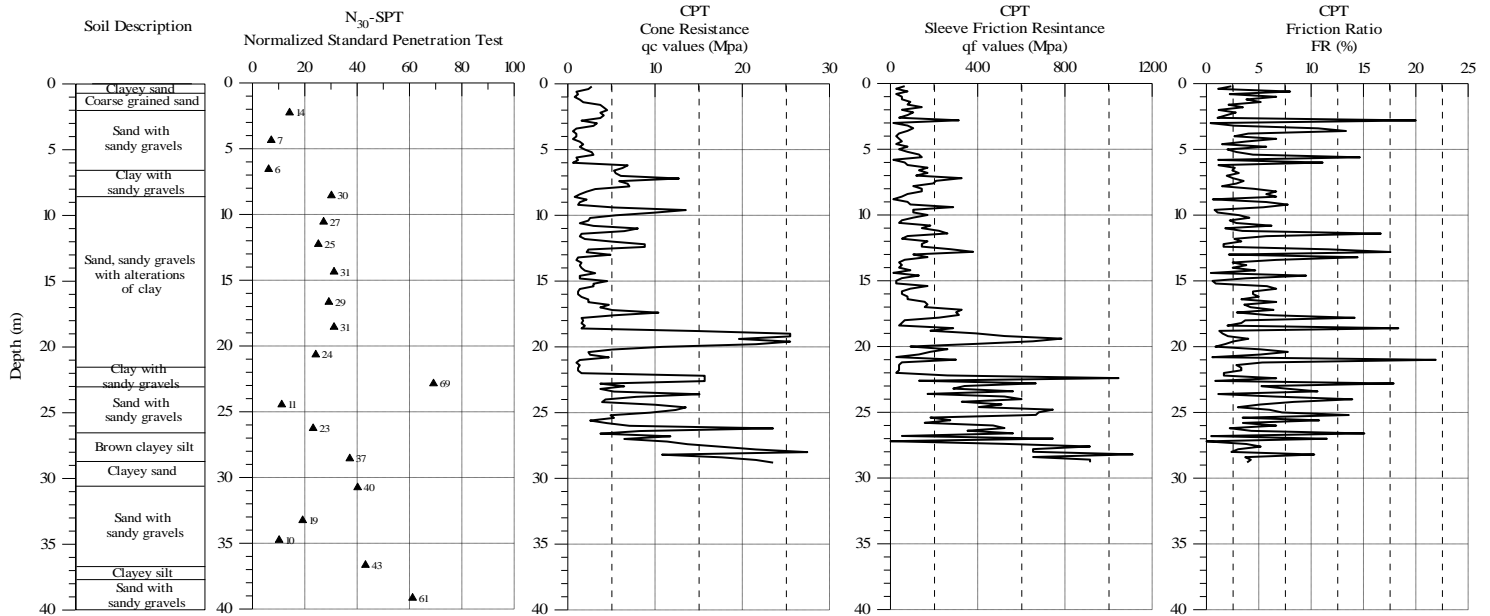


Figure 3: Geotechnical data at station E02

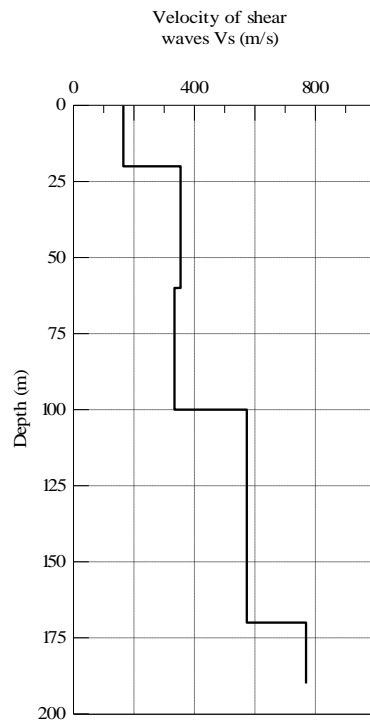
**5. GEOPHYSICAL SITE CHARACTERIZATION**

**Geophysical site characterization data for station E02 include:**

1. Shear wave velocity values ( $V_s$ ) determined by array SPAC microtremor measurements (Manakou et al., 2010)

Data are available in ascii format in:

[http://euroseisdb.civil.auth.gr/uploads/station/geophysical/4/Site\\_characterization\\_geophysical\\_E02.txt](http://euroseisdb.civil.auth.gr/uploads/station/geophysical/4/Site_characterization_geophysical_E02.txt)



**Figure 4:** Shear wave velocity values at station E02

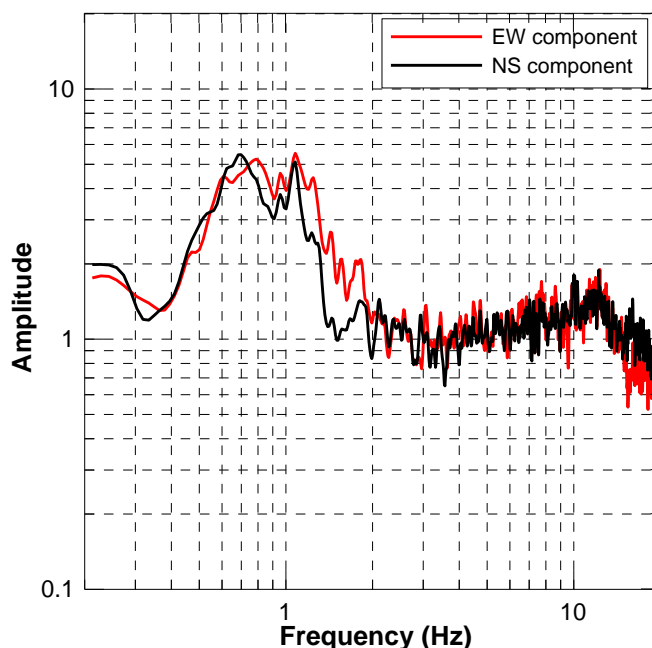
## 6. SITE RESPONSE

Site response data for station E02 include:

1. Horizontal-to-vertical spectral ratios (HVSr) / applied on array SPAC microtremor measurements (Manakou et al., 2010)

Data are available in ascii format in:

[http://euroseisdb.civil.auth.gr/uploads/station/response/4/Site\\_response\\_E02.txt](http://euroseisdb.civil.auth.gr/uploads/station/response/4/Site_response_E02.txt)



**Figure 5:** Horizontal-to-Vertical Spectral Ratios (HVSr) for the two horizontal components at station E02. Ratios are based on array SPAC microtremor measurements

## 7. REFERENCES

- EUROSEISTEST Project Reports, 1993–1995. (*Available in PDF upon request*)
- EUROSEISRISK Project Reports, 2002–2005. (*Available in PDF upon request*)
- IGME, 1978. Geological map of Greece - Scale 1:50.000. Map Sheets of "Thermi" and "Zagliverion".
- IGME, 2001. Inventory—recording of water boreholes in the graben of Koronia, Thessaloniki. (Project coordinator: Mylopoulos I. editors: Veranis and Katirgioglou). Geophysical surface survey in the graben of Koronia, Thessaloniki. (Project coordinator: Mylopoulos I., editor: Atzemoglou et al). Reports of the project Investigation of the exploitation possibilities of the deepest water table in the graben of Koronia, Thessaloniki, Water Supply Company of Thessaloniki (in Greek).
- Manakou M., D. Raptakis, F. J. Chavez-Garcia, P. Apostolidis and K. Pitilakis, 2010. 3D soil structure of the Mygdonian basin for site response analysis. *Soil Dynamics and Earthquake Engineering*, Vol. 30, pp. 1198-1211.