Figure F1. IODP convention for naming sites, holes, cores, sections, and samples, Expedition 398. Ship positioning while coring was exclusively accomplished with GPS data.

Figure F2. APC system used during Expedition 398 (Graber et al., 2002). ID = inner diameter.

Figure F3. XCB system used during Expedition 398 (Graber et al., 2002).

Figure F4. RCB system used during Expedition 398 (Graber et al., 2002). ID = inner diameter, OD = outer diameter.

Figure F5. Overall work flow of cores, sections, analyses, and sampling during Expedition 398. PWL = *P*-wave logger, PWC = *P*-wave caliper.

Figure F6. Example VCD and key for all lithologies and features observed during Expedition 398. cps = counts per second.

Figure F7. Examples of deformation and disturbance, Expedition 398. A. Fall-in at top of core caused by sediment above the target sample depth falling into the hole and atop in situ sediments. B. Uparching of fine-grained sediment below volcanic ash. C. Soupy sediment caused by drilling disturbance in which the primary structure is destroyed. Note the presence of water even after efforts to drain the core. D. Sediment flowage caused by drilling disturbance. E. Midcore flow-in, producing mixed sediment and moderately to severely disturbed original sedimentary structures and stratigraphy. F. Drilling disturbance resulting in brecciation of sediments into angular fragments. G. Cracks caused by shearing of cohesive beds. H. Drilling biscuits created by the rotation of sediment behind the coring surface and up into the core barrel. I. Void space allowing sediment-rich fluid to enter space between layers of cohesive sediments.

Figure F8. Examples of artificial and primary grain size and density segregation in volcanic lithologies, Expedition 398. A. Artificial grain size variation created by remobilization of less dense, vesicular clasts within a soupy ash matrix. This disturbance was often observed in water-rich volcanic sediments where clasts could float freely in the core liner. B, C. Sedimentary features interpreted as primary observed in core sections with more tightly packed sediments and grading across cores. Though the interval in (B) is affected by uparching and sediment flowage core disturbances, the thin layer of lithic enrichment is preserved. The normally graded ash in (C) transitions downcore to a graded lithic-rich layer, which then returns to a normally graded ash (not pictured). The density and uniform distribution of clasts suggests these features are primary.

Figure F9. Volcanic, tuffaceous, and nonvolcanic sedimentary lithology naming conventions based on relative abundances of grain (particles < 2 mm) and clast (particles > 2 mm) types. Expedition 398. Principal lithology names are compulsory for all intervals. Prefixes and suffixes are optional and can be combined with any principal lithology name. First-order division is based on abundance of volcanic particles irrespective of fragmentation mechanism (e.g., pyroclastic, hydroclastic, epiclastic). Lithologies with 25%–100% volcanic particles are either "volcanic" (>75% volcanic-derived grains and clasts) or "tuffaceous" (25%–75% volcanic-derived particles). For tuffaceous lithologies, if the dominant nonvolcanic particle component is siliciclastic, the grain size classification of Wentworth (1922) was used; if not siliciclastic, it was named by the dominant type of chemical or biogenic lithology. Lithologies with 0%–25% volcanic particles were classified as "nonvolcanic" and treated similarly to the tuffaceous lithologies. If the lithology is predominantly nonvolcanic siliciclastic, the grain size classification of Wentworth (1922) is used. In nonvolcanic chemical or biogenic lithologies, the principal lithology name is derived from the dominant lithology. Where multiple lithologies are intercalated and repetitive (e.g., alternating silt and mud beds), the term "alternating" was added to the principal name of the most abundant facies, followed by "with" suffix for the subordinate facies (e.g., organic-rich mud with alternating sand).

Figure F10. Grain size scheme for classification of sedimentary and volcanic rocks based on Wentworth (1922) and a simplified adaptation of Fisher and Schmincke (1984), Expedition 398.

Figure F11. Volcanic grain size terms and classification of polymodal volcanic rocks based on the proportions of blocks/bombs, lapilli, and ash (Fisher and Schmincke, 1984), Expedition 398.

Figure F12. Sand, silt, clay classification scheme from Shepard (1954), Expedition 398.

Figure F13. Sand, gravel, mud classification scheme from Folk (1980), Expedition 398.

Figure F14. Biogenic sediments and sedimentary rocks classification (simplified and adapted from Shepard [1954]), Expedition 398.

Figure F15. Descriptive terms for sorting and rounding of grains and clasts (Folk, 1980), Expedition 398.

Figure F16. Template used to characterize volcanic sediments in smear slides, Expedition 398. Abundance (left column) is described in Smear slides in this chapter. This template records greater detail of ash grains and is based on previous IODP Expedition 375.

Figure F17. Selected smear slide images from Expedition 398, supporting identification of lithologic units and/or subunits based on lithologic changes. A. Volcanic ash with cuspate and blocky glass shards. B. Crystal-rich ash. C. Tuffaceous ooze. D. Ooze. A–C: PPL, D: XPL.

Figure F18. Selected thin section images from Expedition 398, supporting identification of individual mineral phases and rock texture and naming of recovered lithologies, such as sedimentary, igneous, and metamorphic rocks. A. Bioclastic limestone (packstone) containing component (allochemical) particles of predominantly bioclasts including foraminifera, bivalves, gastropods, corals, and algae. B. Evaporite consisting of laminar anhydrite and gypsum. C–D. Porphyritic volcanic rock with phenocrysts of plagioclase, clinopyroxene, and amphibole in fine-grained groundmass. Left: PPL, right: XPL.

Figure F19. X-ray diffraction (XRD) spectra of volcanic, tuffaceous, and nonvolcanic siliciclastic and chemical/biogenic sediments, Expedition 398. A. Volcanic ash. B. Tuffaceous mud/ooze. C. Ooze. D. Anhydrite. Il = illite, Pl = Ca-rich plagioclase, Qtz = quartz, Cc = calcium carbonate (calcite, aragonite), Gl = glauconite, Sm = smectite.

Figure F20. Relationships between cored material and the depth scales used during Expedition 398. We obtained the CSF-A scale by adding the curated core length (CSF) to the core top depth (DSF). Here, the mudline was cored in Hole A Core 1 but not in Hole B Core 2. Stratigraphic overlaps result from core expansion (dashed lines). For correlation, we identify distinct events in adjacent holes (turquoise lines) working from the top downward. By applying the according depth shifts, we construct the CCSF-A scale. The splice (CCSF-D) is constructed by combining selected intervals between tie points (yellow) such that coring gaps and disturbed sections are excluded.

Figure F21. Example log sheet used to record structural and orientation data and observations from the working half of the split core, Expedition 398.

Figure F22. Method for logging structures, Expedition 398. Top and bottom offsets from the top of section of a structure are logged where the structure intersects the edge of the core. A. Distributed structures are logged for the interval over which they occur. B. Discrete structures are logged over the interval between the top and bottom of the structure. If a structural feature is a vein or fracture network, then the interval over which the network occurs is logged.

Figure F23. Protractor used to measure apparent dips, trends, plunges, and rakes on planar and linear features in a split core, Expedition 398.

Figure F24. Core reference frame and *x*-, *y*-, *z*-coordinates used in orientation data calculations, Expedition 398.

Figure F25. Calculation of plane orientation (shaded) from two apparent dips, Expedition 398. Intersections of split core surface, section perpendicular to split core surface, and section parallel to core direction with plane of interest are shown. (α_1, β_1) and (α_2, β_2) = azimuths and dips of traces of the plane on two sections, respectively.

Figure F26. Diagram of apparent rake measurement of striations on a fault surface from 270° direction of split core surface trace, Expedition 398. ϕ_a = apparent rake.

Figure F27. Diagrams of dip direction (α_d), right-hand rule strike (α_s), and dip (β) of a plane deduced from its normal azimuth (α_n) and dip (β_n), Expedition 398. v_n = the unit vector normal to plane. A. $\beta_n < 0°$. B. $\beta_n \geq 0°$.

Figure F28. Diagrams of rake of striations (ϕ) deduced from the rake of intersection line between fault plane and split core surface (ϕ_i) and apparent rake measured (ϕ_a), Expedition 398. α_s = right-hand rule strike of fault plane, v_n = unit vector normal to fault plane, v_c = unit vector normal to split core surface, v_i = unit vector parallel to intersection line between fault plane and split core surface. A. ϕ_a from top or 90° direction when fault plane dips westward. B. ϕ_a from bottom or 90° direction when fault plane dips eastward. C. ϕ_a from top or 270° direction when fault plane dips eastward. D. ϕ_a from bottom or 270° direction when fault plane dips westward.

Figure F29. Biostratigraphic scheme adopted for Expedition 398. From left: Cenozoic chronostratigraphic units (0–6 Ma), Geomagnetic Polarity Timescale (GPTS), Mediterranean nannofossil zones and datums (Rio et al., 1990; Lourens et al., 2004; Raffi et al., 2006; Di Stefano and Sturiale, 2010), and Mediterranean foraminiferal zones and datums (Lourens et al., 1996, 1998; Lirer et al., 2019; Farouk et al., 2022; Margaritelli et al., 2022). Black bars = normal polarity, white bars = reversed polarity. AB = acme base, B = base/first appearance datum (FAD), T = top/last appearance datum (LAD), Tc = top common, RE = reentrance, Bc = base common, A = acme, PT = paracme top, PB = paracme base, Tr = top rare, AT = acme top.

Figure F30. Adopted marine paleoenvironmental classification and oceanicity after Hayward et al. (1999) used during Expedition 398 (modified from Wallace et al., 2019).

Figure F31. Hydrocarbon content risk assessment determined by the C_1/C_2 ratio, Expedition 398.

Figure F32. Proposed sampling locations within a recovered core, Expedition 398.

Figure F33. Major element compositions of ICP-AES standards compared to rocks from the CSK volcanic field, Expedition 398. MV = Megalo Vouno.

Figure F34. Minor and trace element compositions of ICP-AES standards compared to rocks from the CSK volcanic field, Expedition 398. MV = Megalo Vouno.

Figure F35. COY anaerobic chamber, Expedition 398.

Figure F36. Whole-round sample after subsampling of interior for microbiology, Expedition 398.

Figure F37. Whole-round sample after subsampling with labeled samples, Expedition 398.

Figure F38. Culture-based samples, Expedition 398. Left: aerobic cultures in an Fe^{+2}-rich medium; right: characteristic orange layer that formed during incubation.