Figure F1. Schematic of the APC system used during Expedition 349.

Figure F2. Schematic of the XCB system used during Expedition 349.

Figure F3. Schematic of the RCB system used during Expedition 349.

Figure F4. IODP conventions for naming sites, holes, cores, and samples.

Figure F5. Example of the graphic description form (VCD), Expedition 349.

Figure F6. Lithology symbols used for visual core description, Expedition 349.

Figure F7. Symbols and nomenclature used for visual core description, Expedition 349.

Figure F8. Siliciclastic-calcareous-biosiliceous ternary diagram used for sediment names of different compositions.

Figure F9. Lithologic classification for textural names. A. Shepard ternary classification diagram (Shepard, 1954). B. Biogenic classification. D = diatom.

Figure F10. Udden-Wentworth grain-size classification of terrigenous sediment (Wentworth, 1922).

Figure F11. GPTS (Gradstein et al., 2012), biostratigraphic zonations, and microfossil events from 0 to 13 Ma used during Expedition 349. B = base, T= top, Bc = base common, Tc = top common, Ba = base acme, Ta = top acme, Br = base regular, Tr = top regular, X = crossover in abundance.

Figure F12. GPTS (Gradstein et al., 2012), biostratigraphic zonations, and microfossil events from 12.5 to 26.5 Ma used during Expedition 349. B = base, T= top, Bc = base common, Tc = top common, Ba = base acme, Ta = top acme, Br = base regular, Tr = top regular, X = crossover in abundance.

Figure F13. GPTS (Gradstein et al., 2012), biostratigraphic zonations, and microfossil events from 26 to 40 Ma used during Expedition 349. B = base, T= top, Bc = base common, Tc = top common, Ba = base acme, Ta = top acme, Br = base regular, Tr = top regular, X = crossover in abundance.

Figure F14. Example of a standard graphic report (VCD) for igneous rocks, Expedition 349.

Figure F15. Comparison charts for describing the shape of vesicles in volcanic rocks. Modal shape and sphericity of vesicle populations were adapted from the Wentworth (1922) scheme for describing grain shape in sedimentary rocks.

Figure F16. Example of thin section description for igneous rocks, Expedition 349.

Figure F17. A–F. Examples of thin section description types used in DESClogik, Expedition 349.

Figure F18. A–D. Examples of thin section modal calculations, Expedition 349.

Figure F19. Example of the structural geology observation sheet used during Expedition 349.

Figure F20. Vein description scheme, modified after Expedition 324 Scientists (2010).

Figure F21. Goniometer used during Expedition 349 to measure dip and dip direction of planes in split cores.

Figure F22. Diagram of core reference frame and coordinates used in orientation data calculation during Expedition 349.

Figure F23. Diagram 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). V_n denotes the unit vector normal to plane. A. $\beta_n < 0°$. B. $\beta_n > 0°$.

Figure F24. Diagrams of azimuth correction based on paleomagnetic data. α_p = paleomagnetic declination, α_d and α_s = dip direction and right-hand rule strike of a plane. A. $\beta_p > 0°$. B. $\beta_p < 0°$.

Figure F25. Diagram of whole-round sample with subsample locations and perfluorocarbon tracer (PFT) sample locations on the outside of the core (Y) and on the inside of the core (Y*).

Figure F26. Diagram of whole-round sample and section half showing recommended microsphere sample locations on the outside of the core (Y) and on the inside of the core (Y*).

Figure F27. Generalized plan for microbiological sampling of whole-round sections and section halves, as well as planned tracer sampling points. PFT = perfluorocarbon tracer.

Figure F28. A. Coordinates of paleomagnetic samples (after Richter et al., 2007). B. Natsuhara-Giken sampling cubes (7 cm^3 volume) shown with the sample coordinate system. Hatched arrow is parallel to the "up" arrow on the sample cube and points in the $-z$ sample direction. C. Coordinate system used for the superconducting rock magnetometer (SRM).

Figure F29. Positioning of discrete samples in the "automatic holder" of the JR-6A magnetometer. The cube and JR-6A magnetometer coordinate systems are indicated by yellow and red, respectively.

Figure F30. WRMSL, which measures GRA bulk density, magnetic susceptibility, and *P*-wave velocity. A water standard is measured at the end of each core for QA/QC purposes.

Figure F31. NGRL for whole-round cores, which conducts 8 measurements at a time in 2 positions, resulting in 16 measurements per core.

Figure F32. Main elements of the NGRL (from IODP NGR User Guide, 2014).

Figure F33. SHMG showing the *x*-axis caliper and *y*- and *z*-axis bayonets to measure *P*-wave velocity on split-core sections of soft sediment or discrete samples of indurated sediment or hard rock. AVS is used to measure shear strength. A. Deformation in the sediment after rotation of the vane. B. Measurement of P-wave velocity on a hard rock discrete sample using the x-axis caliper.

Figure F34. Pycnometer used to measure the volume of dry samples, either in small vials for soft sediment or as discrete samples.

Figure F35. Wireline tool strings used during Expedition 349. Numbers next to tool strings mark the height of the tool joints and sensors above the bottom of the tool string. For definitions of tool acronyms, see Table **T6.** LEH-QT = Logging Equipment Head (model QT).