Breccias in hydrothermal ore deposits need to be described in terms of their components, texture, morphology and contact relationships in order for sufficient data to be acquired to permit genetic interpretation. Such data can be difficult to obtain during the early phases of exploration, when geological information is primarily obtained from drilling, preventing resolution of morphologies and contact relationships. The Ladolam gold deposit on Lihir Island, PNG, is a 44 Moz gold resource that is associated with the ‘Ladolam Breccia Complex’, which was previously interpreted to have formed after sector collapse of the Luise Volcano approximately 0.4 m.y. ago. We have mapped new open pit exposures of breccias in the Minifie ore zone in order to test previous hypotheses regarding the composition and origin of breccias at Ladolam. Our mapping and drill core logging has revealed that Minifie is hosted primarily in a southwards-dipping sequence of subaqueous to subaerial, volcano-sedimentary breccias that are intercalated with minor sandstones and mudstones. These strongly K-feldspar-altered volcaniclastic rocks are easily mistaken for hydrothermal breccia in drillcore, and have lead previous workers to overstate the abundance of hydrothermal breccias at Minifie. An early biotite-cemented breccia dyke has cut the stratigraphy, and provides evidence for pre-sector collapse magmatic-hydrothermal brecciation. Sub-horizontally oriented epithermal-style quartz-adularia-anhydrite-cemented hydrothermal breccias provide evidence for suprahydrostatic pressures during epithermal gold mineralisation, and their orientation implies that they may have been the precursor to sector collapse. Late-stage epithermal veins and breccias have sub-vertical orientations consistent with formation after the sector collapse event.