The San Lorenzo Canyon area is located ~15 km north of Socorro, New Mexico. Seated within the Rio Grande Rift, the area has experienced substantial rift-related sedimentation, extension, and related deformation. Detailed geologic mapping (1:24,000) has been done in this area, but a full structural analysis of the San Lorenzo Canyon area has yet to be completed. An interesting aspect of the area is that Tertiary strata describe a faulted anticline of extensional origin. Understanding the structural cause of this fold is a crucial step towards structural analysis of the study area. Since folds are generally found in contractional terrains, the presence of this structure in an extensional terrain is counterintuitive.

The study area is located at the common corner of four quadrangles, of which the San Lorenzo Springs (Chamberlin, 2004) and Lemitar (Chamberlin et al., 2001) quadrangles are the most important. The stratigraphy was defined and correlated between the two quadrangles to create a working stratigraphic column. Cross sections drawn from the maps are discussed, in order to eliminate as many hypotheses as possible.

There is evidence from faulting relationships and angular unconformities in the map area that faulting, tilting, and sedimentation occurred simultaneously with folding. The southern end of the anticline terminates against the generally east-west striking Puerto fault. Possible origins of the fold, such as in a transfer/accommodation zone or a relay ramp, or by listric, antilistric, and/or antithetic domino-block tilting are explored.


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