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3-D Seismic Expression of Salt-Related Structures in the Espirito Santo Basin, Brazil

3-D pre-stack time migrated seismic data were used to examine salt-related structures in the BMES 1 and 2 blocks of the Espirito Santo Basin, Brazil. The two blocks cover approximately 5500 square kilometers in water depths ranging from less than 1200 meters to more than 2700 meters.

Across much of the BMES 1 and 2 area only a small amount of the Aptian age salt remains at its original autochthonous level. Cretaceous to Early Tertiary minibasins evacuated salt into adjacent stocks and salt walls, leaving numerous turtle structures and peripheral sinks grounded above the primary salt weld (Figure 1). A north-south oriented

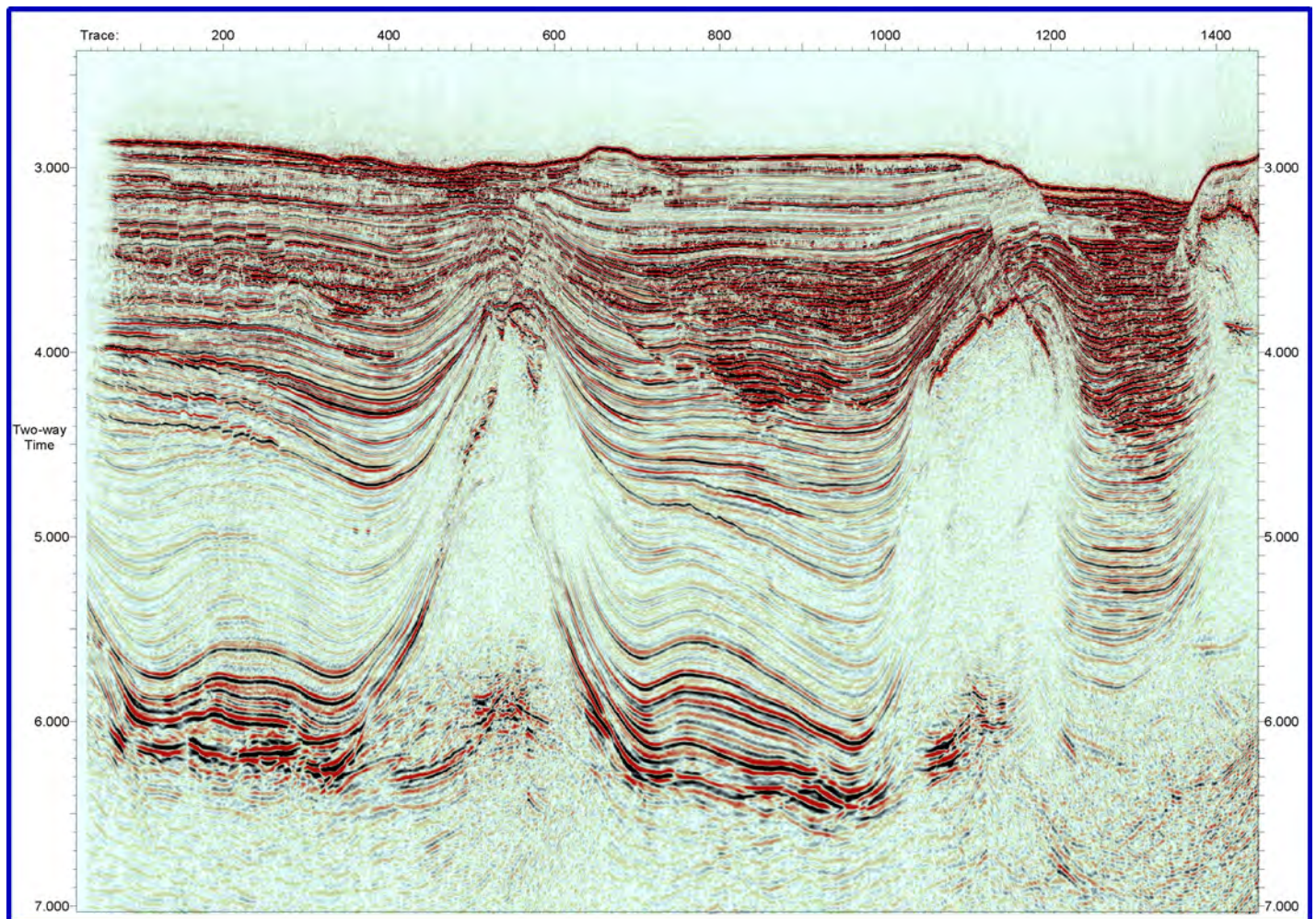


Figure 1.

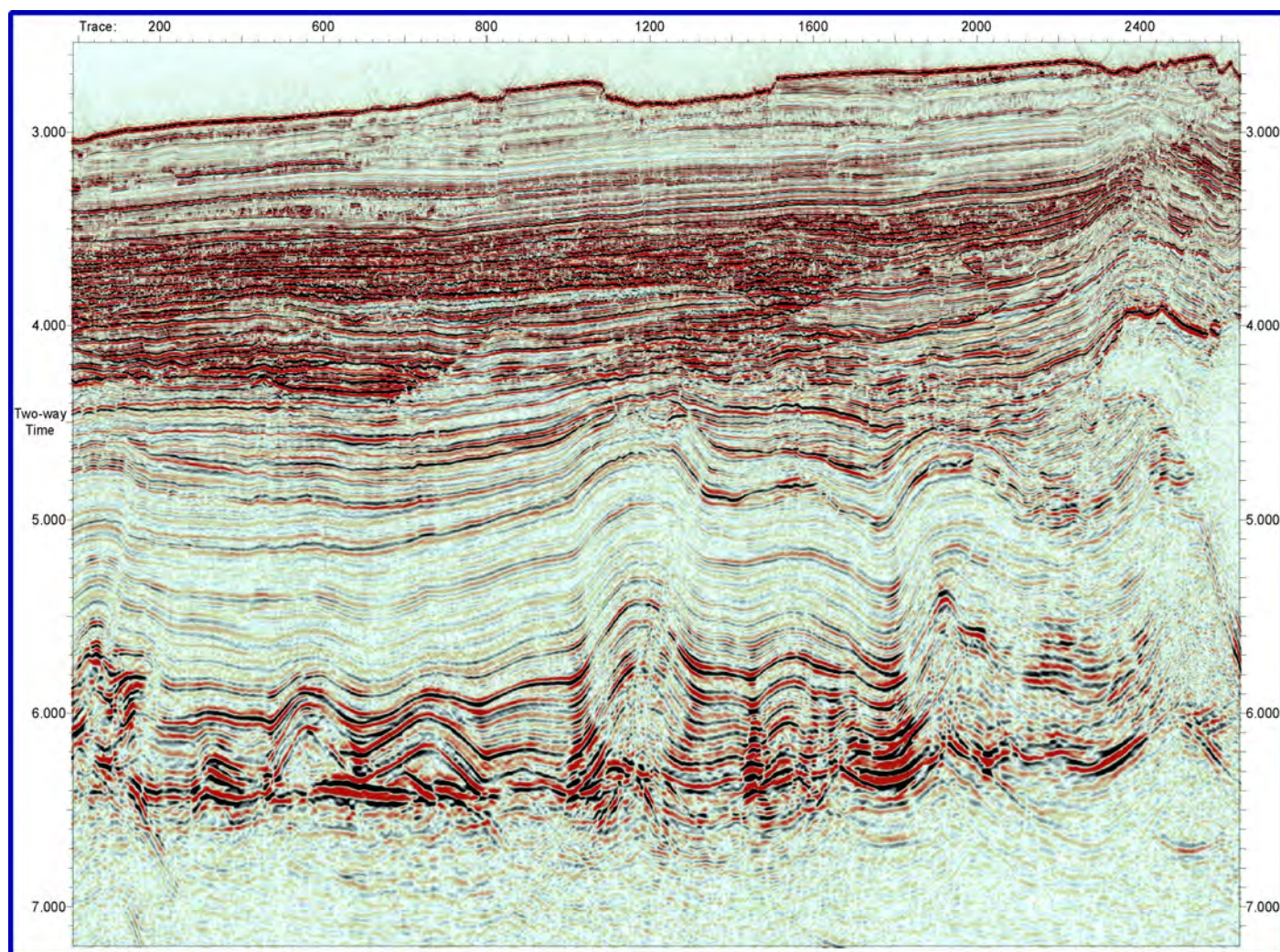


Figure 2.

contractional event later in the Early Tertiary followed. This deformed the grounded sedimentary structures into thrust and fold structures, all detached along the weld (Figure 2). Most of the salt now resided in diapiric stocks or laterally extruded salt tongues, many or most of which are detached from the original source layer (Figure 3).

Around most shallow salt structures there is extensive normal faulting. This records the continuous reshaping of shallow salt by ongoing sedimentation. Normal faulting often reaches to near the ocean bottom except where the section has been removed or replaced by canyon incision and redeposition.

There are some contractional structures in the shallow section of BMES 1 and 2. These consists of thrust faulting in front of allochthonous salt, thrusting of section up the back of shallow salt, and the lifting of section above it's regional level. All of these features could be products of down slope gravity gliding.

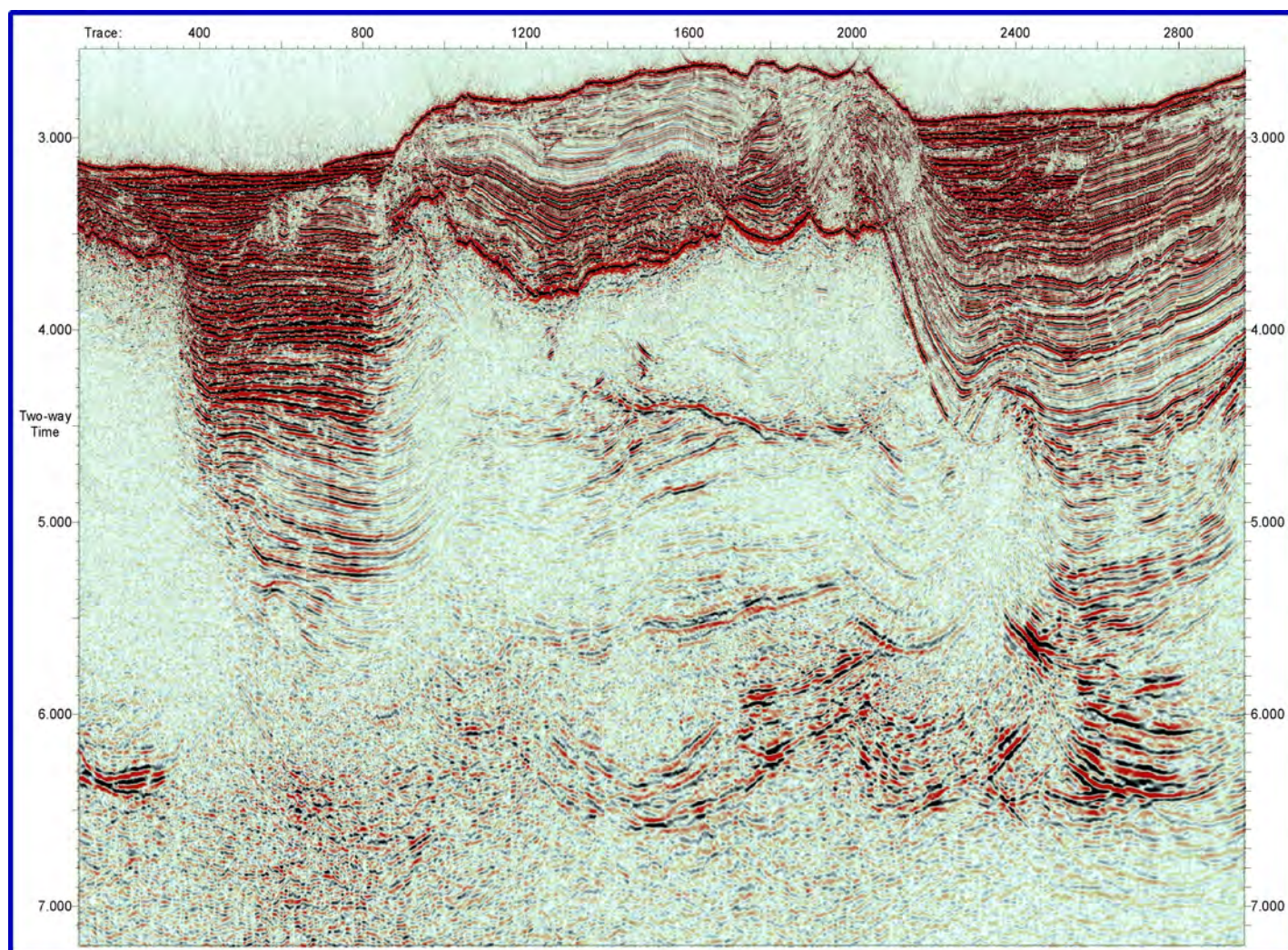


Figure 3.