

EASTERN SHELF PERMIAN SANDSTONES AND CRETACEOUS CARBONATES: SURFACE EXPOSURES AND SUBSURFACE APPLICATIONS

April 9, 2016

Stops 1A, 1B, and 1C. Road cuts south of Sweetwater. Three road cuts expose transitions between Cretaceous shoal grainstone, rudstone-oid shoal margin, rudist patch reef facies, HW 70 South of Sweetwater (Holterhoff and Oyedeji, 2010). Leader: Peter Holterhoff, Hess Corporation

Stop 2. Edith Springs, near the town of Edith, Coke County. Hydrogeology, Natural History, and regional Ecology stop to view the spring. Edith springs has a Caliche Breccia cap rock that overlays the Permian Yates Formation. Meteoric water enters a regional stream that disappears under the conglomerate cap rock, then flows laterally on the top of the Yates Formations (acting as an aquatard to downward flow). As a result the gravels consisting of Edwards Limestone and chert nodules have become calcite cemented due to evaporation over time. This is also a historically significant area and an area that has a lot of localized riparian plants to view. Leaders: Steve Shaw, Firstview Resources, and Maigan Dunlap, Erin Noonan, William Bond, and James W. Ward, Angelo State University

Stop 3. Box Ranch, West of Edith. Permian Yates and Seven Rivers sandstones folded in small tar-sand-bearing anticline exposed in high bluff along Pecan Creek. Geology is similar to the Millican Field to the west. Leaders: Robert Raney, Apache Corporation, and Sean Czarnecki and Jacob Jarvis, Angelo State University

Optional Stop 4. Series of road cuts on HW 2034 at divide between Water Valley and Robert Lee Basal Cretaceous section: Paluxy/Antlers Sandstone through Segovia Formation, Edwards Group. The Edwards Group section consists of several progradational cycles capped by tidal flats and includes paleokarst, rudist mounds, and channel deposits. Leader: Emily Stoudt, University of Texas of the Permian Basin

Stop 5. March Ranch. North of Grape Creek, Deformed Permian Whitehorse Sandstone containing tar sands exposed in bluff beside Grape Creek. Folds are probably associated with the Higgins Field to the north Leaders: Joe Satterfield and Turner Doggett, Angelo State University, and Charlie Teague, Texas Railroad Commission (retired)

Stop 6. HW 277 at Rattlesnake Hill road cut beside Goodyear Proving Grounds. Permian San Angelo Formation point bar sandstone displaying lateral accretion forsets and interbedded shale. Leader: Joe Satterfield, Angelo State University

Stop 7. Mount Margaret section, near Tennyson: Complete Permian Sand Angelo Formation section including two conglomerate intervals, through Edwards Limestone. Leaders: Bruce Swartz, Swartz Oil Company, and Travis Sparks, Angelo State University

