



Facies in the Lower Austin Chalk Group, from a Roadcut on U.S. 90 and a Core behind the Outcrop, near Langtry, Texas

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ABSTRACT

One of the longest, most accessible exposures of the Upper Cretaceous Austin Chalk Group occurs in a roadcut along U.S. Hwy. 90, west of Langtry, Texas, where 97 ft (29.6 m) of lower Austin Chalk (late Turonian-Coniacian) overlies the Eagle Ford Shale. The Innes-1 core, drilled behind the same roadcut by Shell in 2012, covers the lowest 74 ft (22.6 m) and allows a comparison of fresh and weathered rock.

Limestone beds in this roadcut average 1.5 ft, ranging from 0.1 to 3.3 ft (average 0.5 m, ranging from 0.03 to 1.0 m), interbedded with thin marlstone beds, which average 0.1 ft (0.03 m). The limestone beds are typically massive; thicker beds commonly have correlatable partings. The Innes-1 core shows extensive bioturbation in the limestone beds. A notable exception to these massive/bioturbated beds occurs from 85 to 89 ft (25.9 to 27.1 m), where marlstone beds having wavy laminations, hummocky cross bedding, and high uranium gamma ray readings occur. This interval looks similar to the underlying Eagle Ford Group and is interpreted as deposited in a storm-influenced, dysoxic environment.

Uniform bedding in the roadcut is interrupted by multiple channel forms, 0.4–3 ft deep and 5–80 ft wide (0.1–0.9 m deep and 1.5–24.4 m wide). These channel forms are often reported in lower Austin Chalk outcrops across Texas; the Langtry section is unique because it offers a three-dimensional view of these features. Here, the channel forms cannot be clearly traced across the road, indicating they are likely local scours, rather

than continuous erosional channels. The scours along the roadcut vary in geometry and fill. Some have limestone on limestone; others have thin marlstones at their base. Some scours occur above locally thickened limestone beds having levee-like bed forms. The lower portions of scour fills are typically concave upward, overlapping the scour margins; the upper portions merge into, or are truncated by, the overlying limestone bed. The current interpretation is that bottom currents associated with storms scoured the semi-consolidated chalk beds. Subtle paleo-topographic lows may have persisted for long periods of time and localized later scours.

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