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Alkalies; Research on Alkalies Reported by Researchers at University of Texas Austin (Depositional model for the spatiotemporal evolution of a mixed carbonate-siliciclastic icehouse system: Pennsylvanian Strawn Group, Eastern Shelf, Permian Basin, USA)

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2026 MAY 1 (VerticalNews) -- By a News Reporter-Staff News Editor at Chemicals & Chemistry -- Researchers detail new data in alkalies. According to news originating from the University of Texas Austin by VerticalNews editors, the research stated, "Mixed carbonate-siliciclastic depositional systems are enigmatic with unique stratal patterns that are poorly understood and poorly represented in models that do not adequately represent complex tectonic, glacioeustatic, and sediment sourcing and routing controls."

Our news editors obtained a quote from the research from University of Texas Austin: "The Pennsylvanian Strawn Group, Eastern Shelf, Permian Basin, Texas, USA, is composed of a highly heterogeneous mixed ramp to proximal-shelf deltaic strata ideal for investigation of mixed system evolution in an icehouse regime. Analyses of Upper Strawn wireline logs and drill cores along a transect spanning three oil and gas fields in King County reveal a wide variety of facies attributed to many depositional environments, including ripple to trough cross-bedded, sand-dominated to heterolithic, commonly bioturbated sandstones (tidally modified delta and associated subenvironments), ooid grainstones (shallow marine shoal), phylloid algal bafflestones/boundstones (bioherm buildup), skeletal-peloidal wackestones/packstones (carbonate-dominated shallow marine low-energy), shaly carbonate and siliciclastic mudstones (offshore/deepwater), and paleosols (terrestrial). The facies and their stacking patterns have few shared characteristics between the fields, and elements of each field challenge traditional models for mixed systems. This heterogeneity can be explained with a modified depositional model ICCE-T (icehouse carbonate-clastic evolution in tectonically influenced systems model), which is tuned for icehouse mixed systems deposited in tectonically active regions. The ICCE-T model invokes differential topography, incompletely filled highstand accommodation, and high-amplitude, high-frequency sea level oscillations as mechanisms producing increasingly convoluted bathymetry through time. As sediments do not fill all accommodation within a sequence across the study area, complex topography is maintained, and positive topographic features are abandoned, reused, or reactivated at different relative sea levels."

According to the news editors, the research concluded: "This model allows for significant spatial variation in depositional systems and better explains patterns observed in the study area."

For more information on this research see: Depositional model for the spatiotemporal evolution of a mixed carbonate-siliciclastic icehouse system: Pennsylvanian Strawn Group, Eastern Shelf, Permian Basin, USA. Sedimentologika, 2026,4(1). The publisher for Sedimentologika is Bibliotheque de l'Universite de Geneve.

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Our news journalists report that additional information may be obtained by contacting Kelly Hattori, University of Texas Austin, Jackson School of Geosciences, **Bureau of Economic Geology**, 10611 Exploration Way, Austin, Texas, 78758, United States. Additional authors for this research include Peter Flaig, Gregory Wahlman.

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