Carbonate Reservoir Characterization Research Laboratory (RCRL)

2023 RCRL Summer Workshop

The RCRL group will conduct an interactive core workshop at the BEG's Houston Core Research Center (HRC) from June 26-28, 2023 followed by a 2-day combined field trip to outcrops of the Austin Chalk (AC) and core viewing of the AC at the BEG CRC in Austin. This unique experience will showcase decades of work in carbonate reservoirs of the Permian Basin and Austin Chalk.

There are no registration limits per company. Signup here: https://forms.office.com/r/AeEer3Nmzr

Mon, June 26	Tues, June 27	Wed, June 28	Thurs, June 29	Fri, June 30
Permian Cores Conventional to Unconventional Houston HRC	**Permian Cores Conventional to Unconventional** Houston HRC	**Permian Cores Conventional to Unconventional** Houston HRC	**Austin Chalk Field Trip** Central Texas	**Austin Chalk Core Workshop** Austin CRC

Core Workshop - June 26-28, 2023, 8:30-4:00 pm
BEG Houston Research Center (HRC)
11611 West Little York Rd
Houston, Texas 77041

Conventional to Unconventional Transition in San Andres-Grayburg Reservoir Systems

The RCRL has worked repeatedly over a 35 year stretch on the mid-late Guadalupian reservoirs of the Permian Basin which have traditionally dominated production from this basin. While emphasis has shifted to a large extent to the deeper water systems of Wolfcampian-Leonardian Delaware and Midland Basins, the importance of the San Andres-Grayburg system as a basis for understanding depositional, diagenetic, and petrophysical aspects of this petroleum system cannot be overstated. Over the last decade significant advances have been made through work in the Brokeoff Mountains and Cutoff Ridge/Western Escarpment (Jason Rush, OXY) as well as in detailed reservoir characterization studies by RCRL together with operators on the Central Basin Platform and in the Midland Basin (OXY, Fasken, Apache, others). New directions in unconventional resource plays continue to appear including prospects such as Tall Cotton and updip Wasson/Brahaney/Slaughter trends.

During this workshop we want to share important advances in our understanding of late Permian evolution of the shelf to basin system through presenting a series of cores that will transition from late Leonardian 7 and 8 sequences (Holt reservoirs on the platform and Avalon strata in the basin) through prograding G1-4 platform top strata including far updip plays (Slaughter-Levelland) and core assets (main pay in fields like Wasson and Seminole), the Brushy Canyon to upper San Andres G5-9 sequences and associated forced regression (here seen at Monument using a remarkable continuous core) and finally Grayburg lowstand (Midland Farms) and transgressive to highstand (east side Central Basin Platform) reservoirs. A sampling of exploration-scale and reservoir-scale studies will be reviewed to place these cores in context. The workshop will be enhanced through use of ***a virtual reality immersive experience*** taking participants to the oft-visited Lawyer Canyon outcrop analog system minus the lechuguilla.

TEXAS Geosciences
Bureau of Economic Geology
Jackson School of Geosciences
The University of Texas at Austin
Reservoir Characterization Research Laboratory

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AC Field Trip - June 29, 2023, 8:30-4:00 pm
Trip meets at the HEB Plus SE Waco Area (31.495933, -97.219946) at 9:00 am
9100 Woodway Dr
Woodway, TX 76712

Mechanical Stratigraphy and Natural Fracture Development in the Austin Chalk

The Austin Chalk is undergoing renewed petroleum exploration interest in Texas and Louisiana and many of the elements that are critical to successful development are exposed in outcrops in Central Texas. We will observe the stratigraphy, lithofacies, mechanical rock properties and natural fracture development within the Austin Chalk in two exposures. These classic localities allow us to: (1) examine vertical facies in 3D exposures where bioturbation, trace fossils and lithology changes can be observed; (2) measure the relationship between lithofacies, stratigraphy, and rock strength (UCS) (i.e., mechanical stratigraphy); (3) view the influence of mechanical stratigraphy on fracture development in areas close to and away from regional faults; (4) make critical assessments of fracture development along a transect that can be viewed as multiply hydraulic fracture stages in the subsurface; and (5) highlight how the natural fracture network may influence the hydraulically-stimulated fracture network (NF vs. SRV).

9:00 am - Stop 1: Lehigh Cement Quarry, Woodway, Texas (31.482522, -97.244666). This stop requires closed-toed leather boots, pants and hard hat (if available). Safety video and orientation required at gate.

1:30 pm – Stop 2: Richland Creek Exposure, U.S. Hwy 77, west of Milford, TX 76670 (32.109989, -96.964108). Shorts and water shoes (Tevas or old shoes that get wet) suggested for this exposure. We will wade approximately 300 m through Richland Creek to the main exposure along water's edge.

Field trip complete at 4:00 pm.

AC Core Workshop - June 30, 2023, 8:00-3:30 pm
BEG Austin Core Research Center (CRC)
10100 Burnet Road
J. J. Pickle Research Campus, Building 131
Austin, Texas 78758

Overview
The Upper Cretaceous Austin Chalk on the drowned Lower Cretaceous GOM paleoshelf displays a cyclic sedimentation pattern that includes relatively organic-poor chalk lithofacies and organic-rich chalky marl lithofacies. In recent years, well completions have focused in two intervals—the rigid upper chalks and the TOC-rich lower chalk-marl intervals. Some companies have found that the lower organic-rich section of the Austin Chalk to be a potentially better reservoir than the Eagle Ford below and the upper Austin Chalk above. Specific objectives of this core workshop are to: (1) define the general lithofacies; (2) provide information on the mineralogy, texture, fabric, general biota, organic matter, and pore networks; (3) display cores from South Texas and East Texas (Brookeland); and (4) carbonate debrites associated with volcanic mounds (Elaine field).